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**C** chemical symbol, *carbon*; cathode (cathodal); Celsius or centigrade (scale); cervical; clearance; clonus; closure; contraction; cylinder; cytosine; in the electrocardiogram, C stands for chest (precordial) **lead**<sup>2</sup>; symbol for *complement*.

**C3** the third component of complement; a  $\beta$  protein. Split into two fragments, C3a and C3b, by C3 convertase, which is triggered via the classical or alternative pathway of complement activation. An inherited deficiency occurs in Brittany spaniels and very low serum concentrations occur in some Finnish-Landrace lambs. See also **complement**.

$\chi$  chi, small letter; 22nd letter in the Greek alphabet. Used in statistical analysis.

**C<sub>L</sub>** lung compliance.

**C<sub>LT</sub>** total lung–thorax compliance.

**c** symbol, *centi*-.

**C aberration** chromosome aberration. An abnormal chromosome resulting from the loss, duplication or rearrangement of genetic material.

**C banding** production of one of the reproducible banding patterns on particular chromosomes by staining the heterochromatic regions with Giemsa following denaturation of DNA by alkali, acid, salt, or heat treatment.

**C-bands** bands produced in chromosomes after special fixing and staining techniques have been applied. The bands are produced by staining of DNA that has not been removed because it is protected by a nonhistone protein–DNA interaction at the centromere.

**C cell** a cell type of the thyroid gland, situated between or within the walls of follicles, with numerous small membrane-limited secretory granules in the cytoplasm. The source of calcitonin. Called also parafollicular cell.

**C c. tumors** (ultimobranchial) adenomas and carcinomas occur most frequently in aged bulls, associated with vertebral osteophytes, osteosclerosis, ankylosis, and spondylosis. Believed to be associated with the long-term intake of a diet high in calcium.

**C<sub>H</sub> domains** C<sub>H1</sub>, C<sub>H2</sub>, C<sub>H3</sub> regions of the heavy chain of immunoglobulins with amino acid sequences that are constant in different antibodies of the same class.

**CL domain** the region of light chain immunoglobulins that is constant in different antibodies of the same class.

**C effects** genetic speak for the common or shared environment, e.g., the milk supply to a litter of pigs.

**C fibers** nerve fibers with the slowest conduction speeds; are very slow-conducting, unmyelinated nerve fibers, principally postganglionic sympathetic fibers.

**C<sub>1</sub>-inactivator** one of the six major protease inhibitors of blood; it inhibits clotting factors XIa, XIIa, and plasma kallikrein, but not Xa and plasmin.

**C<sub>6</sub> oxidative pathway** see **glucuronate pathway**.

**C-peptide** the central connecting polypeptide that is part of the proinsulin molecule. It is released when the two chains of insulin are cleaved off of the single chain looped polypeptide of proinsulin.

**C protein** a skeletal muscle contractile protein involved in the assembly of myosin.

**C-reactive protein (CRP)** a serum protein produced by liver and fat cells in response to IL-6 released by macrophages due to inflammation, infection or tissue damage. It is immunosuppressive, promotes phagocytosis and complement binding to foreign or damaged cells. A biomarker of systemic inflammation. See also **acute phase proteins**.

**C region** see **constant domains**.

**C-terminal** the end of the peptide chain carrying the free alpha-carboxyl group of the last amino acid, conventionally written to the right.

**C-type particle** a crescent-shaped formation on the cell membrane of cells associated with the budding of so named C type retroviruses.

**C-type virus** a type of retrovirus, the oncoviruses.

**C value** amount of DNA in the haploid genome of a species.

**CA** cardiac arrest.

**CA-MRSA** community-associated methicillin-resistant *Staphylococcus aureus*.

**Ca** chemical symbol, *calcium*; cathode (cathodal); cancer.

**Ca-EDTA** calcium ethylenediaminetetraacetic acid. See **edetate**.

**CAER Companion Animal Eye Registry**.

**Ca<sup>2+</sup>** calcium ions.

**Ca<sup>2+</sup>-ATPase** [*a-te-pe'ās*] calcium pump involved in the transport of calcium ions against a concentration gradient across a membrane barrier. The transport requires energy from the hydrolysis of ATP. There are two types of Ca<sup>2+</sup>-ATPase. The plasma membrane enzyme acts to remove calcium from cells and is essential for the regulation of cellular calcium homeostasis, the enzyme found in the muscle sarcoplasmic reticulum functions in muscle relaxation.

**CAAHTT** Canadian Association of Animal Health Technologists and Technicians; now called the Registered Veterinary Technologists and Technicians of Canada (RVTTC).

**CAB 1.** circulation–airway–breathing. An alternate flow chart for cardiopulmonary **resuscitation 2.** Commonwealth Agricultural Bureaux; now named Centre for Agriculture and Bioscience International (CABI or **CAB International**).

**CABI CAB International.**

**Caballonema** a genus of the subfamily Cyathostominae of equine strongyles (nematodes). Distribution is limited to Russia and China.

**cabbage** *Brassica oleracea* var. *capitata*, a cultivated plant whose leaves contain SMCO and may cause hemolytic anemia if eaten in large quantities. The seeds contain the glucosinolate progoitrin that, on conversion to an active form (oxazolidone), causes growth inhibition in chickens. Called also drumhead cabbage.

**cabbage poison** *Velleia discophora*.

**CAB International (CABI)** Formerly the Commonwealth Agricultural Bureau (CAB). An international nonprofit organization; gathers information and applies scientific expertise to solve problems in agriculture and the environment through a global network of centers; produces CAB Abstracts, a widely used abstracting and indexing database in applied life sciences. The Veterinary Science Database covers all aspects of veterinary medicine and arthropod, helminth, protozoal and fungal diseases of domestic and wild animals.

**cabergoline** [*kā-bur'go-lēn*] an agonist of dopamine receptors that inhibits the synthesis of prolactin and has been used in the treatment of false pregnancy and also for pregnancy termination. Considering the requirement of the luteotrophic activity of prolactin in mid-pregnancy, cabergoline is used for pregnancy termination in combination with other drugs in the bitch and queen.

**cacao** [*kā-kā'ō*] see *Theobroma cacao*.

**Cacatua roseicapilla** see **galah**.

**cacesthesia** defective or disordered sensation. Now more correctly referred to as **paresthesia**.

**Cache Valley virus** in the family *Peribunyaviridae*, found throughout the US, Canada, and Mexico, inapparent infection in a wide variety of domestic and wild animals, and humans. Transmission occurs through bites of infected mosquitoes. see **Cache Valley virus disease**.

**Cache Valley virus disease** occurs in sheep when infection occurs during the first trimester of pregnancy. Manifest with embryonic death, mummification or fetal malformation, including arthrogryposis, torticollis, scoliosis, lordosis, hydranencephaly, microcephaly, porencephaly, and cerebellar and muscular hypoplasia. Infections that occur in the last two-thirds of pregnancy are clinically innocuous to the fetus.

**cachectin** [*kā-kek'tin*] tumor necrosis factor-alpha.

**cachet** [*kā-sha'*] [Fr.] a dish-shaped wafer or capsule enclosing a dose of medicine.

**cachexia** [*kā-kek'se-ə*] a profound and marked state of constitutional disorder; general ill health and malnutrition. See also **emaciation**.

**cancer c.** associated with the presence of neoplastic disease.

**cardiac c.** severe wasting that occurs in association with chronic cardiac insufficiency. The result of anorexia, malabsorption and poor tissue perfusion with cellular anoxia.

**pituitary c.** that due to diminution or absence of pituitary function. Manifested by progressive loss of body weight associated with muscle atrophy due to lack of protein anabolism in the absence of growth hormone.

**cac(o)-** word element. [Gr.] *bad, ill*.

**cadodylic acid** [kək'ō-dil'ik] pharmaceutical aliphatic organic arsenical; see also organic **arsenical**.

**acomelia** [kək'ō-me'le-ə] dysmelia.

**acomistle** (*Bassariscus sumichrasti*) an omnivorous, nocturnal arboreal member of the family Procyonidae, native to Central America; the coat is gray to brown and the bushy tail has black rings. Closely related to the ring-tailed cat, it inhabits tropical forests.

**cacosmia** [kək-oz'me-ə] foul odor; stench.

**actinomycin** [kək'ti-no-mi'sin] an antibiotic of the actinomycin complex produced by several species of *Streptomyces*. It is a combination of actinomycin D (dactinomycin), actinomycin C<sub>2</sub> and C<sub>3</sub>; used as an antineoplastic agent. Called also actinomycin C.

**Cadaba rotundifolia** African plant in the Capparaceae family; toxin unidentified; causes diarrhoea, salivation, dyspnea, liver, and kidney damage.

**cadastral map** shows the boundaries and ownership of land parcels, usually also having position of structures, details of land use, adjacent roads, etc. Usually constructed on a GIS and so can be overlaid with other data such as census data, topographical data, and hydrological data.

**cadastre** a public register showing the details of ownership and value of land owned at the county or shire level. Accurate and frequently updated as it is driven by tax revenue and the need for accuracy in tax assessment. Called also cadaster. See also **cadastral map**.

**cadaver** [kə-dav'ər] a dead body; generally applied to a body preserved for anatomical study.

**c. disposal** a serious problem in veterinary practice in the absence of a local government incinerator. Incineration and burial are the only satisfactory methods.

**cadaverine** [kə-dav'ər-in] a relatively nontoxic ptomaine, C<sub>5</sub>H<sub>14</sub>N<sub>2</sub>, formed by decarboxylation of lysine. Produced during putrefaction of animal tissue and in small quantities in living mammals. Foul smelling and partially responsible for the distinctive smell of urine and semen. Toxic in large doses.

**cadence** the rhythm of a horse's gait. The walk is a four beat cadence, the trot is two beat, the canter has three beats and the gallop has four.

**CADESI** Canine Atopic Dermatitis Extent and Severity Index. A means of objectively assessing the severity of clinical signs in canine atopic dermatitis. The severity of signs is scored on a scale of 0–3 at a large number of specified anatomic sites spanning the whole body.

**cadherins** [kad'hēr'ins] calcium-dependent cell-adhesion molecules. A superfamily of cell adhesion molecules that mediate cell-to-cell adhesion and play a crucial role in tissue morphogenesis and homeostasis.

**cadmium (Cd)** [kad'me-əm] chemical element, atomic number 48; its salts are poisonous. Poisoning in animals may be caused by aerial pollution of pastures or by accidental ingestion of fungicides or anthelmintics that contain the element. Nephropathy, anemia, bone demineralization and poor hair, skin, and hoof growth result.

**c. anthranilate** no longer widely used as an anthelmintic for pigs because of its toxicity.

**c. chloride** causes bleaching of teeth, anemia, cardiac hypertrophy and bone marrow hyperplasia.

**c. oxide** a toxic compound used at one time as an anthelmintic for pigs.

**caduceus** [kə-doo'shəs] the wand of Hermes or Mercury consisting of a winged staff with two serpents entwined; used as a symbol of the medical profession and as the emblem of most military Medical Corps. Another symbol of medicine is the staff of Æsculapius, which is the official insignia of the American Medical Association. The American Veterinary Medical Association uses a modification of the caduceus as an emblem. The staff is unwinged, there is a single serpent instead of two, and a large V is imprinted over the whole. An adaptation of the caduceus, with only one snake winding itself around the staff is the emblem of the Veterinary Corps of the US Army.

**CAE** caprine arthritis–encephalitis.

**caecal** cecal.

**caecilian** limbless, wormlike amphibian in the order Gymnophiona.

**caecum** [se'kəm] see **cecum**.

**caeruloplasmin** see **ceruloplasmin**.

**Caesalpinia** toxic plant genus in the legume family Caesalpiniaceae; contains tannins; causes vomiting, diarrhea. Includes *C. gilliesii*. Called also bird of paradise tree.

**caesarean** [sə-zə're-ən] **cesarean**.

**CAEV** caprine arthritis–encephalitis virus.

**café au lait** in dogs, a rich, light brown-colored coat. Found in the breed description of Poodles.

**caffeine** [kă-fēn'] a central nervous system stimulant found naturally in coffee, tea, guarana, and maté; it also acts as a mild diuretic.

**caffeineism** [kaf'ēn-iz-əm] an agitated state induced by excessive ingestion of caffeine.

**CAFO** see **AFO/CAFO**.

**cage** [kāj] an animal or bird enclosure with the walls made of rods or mesh to provide maximum restraint with greatest ventilation, reduction in weight, visibility, and access to the inhabitant.

**bagby c.** stainless steel cylinder with perforated walls used for interbody cervical fusion in the treatment of the “wobbler syndrome” in horses. Also known as a Bagby Basket.

**battery c.** a wire cage in which a number of laying hens are housed for egg laying. A husbandry method of concern for animal welfare.

**c. birds** companion birds that are customarily kept in cages to restrain and protect them.

**c. biter syndrome** damage caused to the teeth of caged exotic animals, particularly large cats, from aggressive biting on the cage wire or bars.

**c. furniture** accessories placed in a cage for birds, reptiles or other small pets. Some are decorative, but most should contribute to husbandry and to environmental enrichment. Includes perches, wheels and toys, baths, dishes, mirrors, shelters, and hiding places.

**c. layer fatigue** birds housed in cages may reach a stage where they are unable to stand up straight. They also develop very fragile bones. This problem is a common target for animal welfare complaints. It is a cause of wastage because of the rate of culling and because of splintering of bones and a resulting downgrading of carcasses at slaughter. Called also cage layer osteoporosis.

**c. layer osteoporosis** removal of medullary and cortical bone from laying hens being fed a diet deficient in calcium. See also cage layer fatigue (above).

**c. paralysis** see **thiamine** nutritional deficiency.

**c. rearing** pigs that are weaned very early, e.g., at 3 weeks, are reared artificially in cages.

**squeeze c.** cage with one wall capable of being moved inward, usually by mechanical means, so that the inhabitant can be restrained sufficiently to prevent its movement and to allow access to suitable sites for the administration of injections. An essential piece of equipment for veterinarians working at zoos, circuses, and game farms.

**cage-side tests** various clinicopathologic testing procedures that may be carried out at the location of the animal's cage; includes rapid semiquantitative tests of hemostatic disorders such as buccal mucosa bleeding time and activated coagulation time. The equivalent of bedside tests for human patients. Now more commonly called point-of-care tests.

**caiman** crocodilian reptile of the family Alligatoridae, very similar to alligators; native to Central and South America. Occasionally kept as pets, most commonly the spectacled caiman (*Caiman crocodilus*).

**c. poxvirus** causes typical pox lesions on the skin and in the mouth of young caimans and Nile crocodiles.

**Cairina moschata** see **Muscovy**.

**Cairn terrier** a small (13–14 lb) active terrier with medium-length shaggy, weather-resistant, double coat, short tail, erect ears, and dark eyes giving a foxy appearance. They can be any color except white. The breed is subject to inherited globoid cell leukodystrophy, craniomandibular osteopathy, haemophilia, and factor IX deficiency. Originally known as Shorthaired Skye terrier.



**C-01:** Cairn terrier.

**Cakala technique** see paravertebral **block**.

**cake** the residuum after extraction of oil from oil seeds, used extensively as a protein supplement to diets of all housed animal species.

**c. poisoning** varies with the seed, linseed cake may cause cyanide poisoning, cottonseed cake may cause gossypol poisoning.

**Cal** kilocalorie.

**cal** calorie.

**Caladium** cultivated, ornamental plant genus in the family Araceae; contains calcium oxalate raphide crystals, causing stomatitis and salivation. Includes *C. bicolor*.

**calamine** [kal'ə-mīn] a preparation of zinc carbonate with a small amount of ferric oxide; the lotion is used topically as a protectant, astringent, and soothing agent for minor skin irritations (e.g., insect bites and stings).

**calamus** [kal'ə-məs] in the shape of a reed or pen.

**c. scriptorius** pen-nib shaped portion of the floor of the fourth ventricle of the brain where the median sulcus and paired limiting sulci give the region a fountain-pen shaped appearance; a term mainly restricted to the human brain.

**Calandrinia** genus of the plant family Portulacaceae.

*C. balonensis*, *C. polyandra* used commonly as feed for cattle and sheep grazed extensively in arid and semi-arid areas of Australia, these plants have a high oxalate content and are suspected of causing deaths in wethers due to obstructive urolithiasis. Called also parakeelia, parakeelya.

**calbindin** a calcium-binding protein involved in facilitating the absorption of calcium from the intestine and its reabsorption from the glomerular filtrate in the renal tubules and the deposition of calcium in mineralized tissues; two identified forms of the protein are calbindin-D9k and calbindin-D28k.

**calcaneal** [kal-ka'ne-ə] arising from or pertaining to the calcaneus.

**c. epiphysis avulsion** occurs in young animals in association with avulsion of the gastrocnemius tendon of insertion.

**c. tendon** see **Achilles tendon**.

**calcaneopophysitis** [kal-ka'ne-o-ə-pof'ə-zi'tis] inflammation of the posterior part of the calcaneus, marked by pain and swelling.

**calcaneostragaloid** [kal-ka'ne-o-ə-strag'ə-loid] pertaining to the calcaneus and talus (astragalus).

**calcaneodynia** [kal-ka'ne-o-din'e-ə] pain in the heel.

**calcaneoquartal joint** the articulation of the calcaneus with the fourth tarsal bone.

**calcaneum** [kal-ka'ne-əm] see **calcaneus**.

**calcaneus, calcaneum** [kal-ka'ne-əs] the irregular quadrangular bone at the back of the tarsus. One of the two tarsal bones in the proximal row of bones of the hock joint and, because of its calcaneal tuber and the muscles attached to it, acts as a lever to extend the hock joint. Called also heel bone, os calcis, and fibular tarsal bone. See also Table 9.

**calcar** [kal'kær] a spur or spur-shaped structure.

**c. avis** the lower of two medial elevations in the lateral cerebral ventricle, produced by the lateral extension of the calcarine sulcus; called also hippocampus minor.

**c. metacarpale, c. metatarsale** see **ergot**<sup>2</sup>.

**calcareous** [kal-kär'e-əs] pertaining to or containing lime; chalky.

**calcarine** [kal'kær-in] **1.** spur-shaped. **2.** pertaining to the calcar avis.

**c. sulcus** a groove on the medial surface of the occipital lobe of the cerebrum, separating the cuneus from the lingual gyrus.

**calcarioria** [kal-ka're-u're-ə] the presence of lime (calcium) salts in the urine.

**calcemia** [kal-se'me-ə] excessive calcium in the blood; hypercalcemia.

**calcibilia** [kal'si-bil'e-ə] the presence of calcium in the bile.

**calcic** [kal'sik] of or pertaining to lime or calcium.

**calcifediol** [kal'sif-ə-di'ol] nonproprietary name for 25-hydroxycholecalciferol, or 25-hydroxyvitamin D (25-(OH)D), a prehormone produced in the liver by hydroxylation of vitamin D<sub>3</sub> (cholecalciferol) and then converted in the kidneys to calcitriol, the active form of vitamin D<sub>3</sub>. Also called calcidiol.

**calciferol** [kal-sif'ər-ol] **vitamin D**; may refer to vitamin D<sub>2</sub> (ergocalciferol) or vitamin D<sub>3</sub> (cholecalciferol)

**c.-25-hydroxylase** a hepatic microsomal enzyme that controls the conversion of cholecalciferol to 25-hydroxycholecalciferol.

**calcific** [kal-sif'ik] forming lime.

**calcification** [kal'si-fi-ka'shən] the deposit of calcium salts in a tissue. The normal absorption of calcium is facilitated by parathyroid hormone and by vitamin D. In poisoning with calcinogenic glycosides and when there are increased amounts of parathyroid hormone in the blood (as in **hyperparathyroidism**), there is deposition of calcium in the soft tissue. (In hyperparathyroidism secondary to renal disease there is deposition in the alveoli of the lungs, the renal tubules, beneath the parietal pleura,

the gastric mucosa, and the arterial walls.) Normally calcium is deposited in the bone matrix to insure stability and strength of the bone. In **osteomalacia**, there is an excess of unmineralized osteoid because the aged well-mineralized bone is replaced by a matrix that is inadequately mineralized.

**dystrophic c.** the deposition of calcium in abnormal tissue without abnormalities of blood calcium.

**metastatic c.** deposition of calcium in tissues as a result of abnormalities of calcium and phosphorus concentrations in the blood and tissue fluids. Seen in gastric mucosa, parietal pleura and other tissues in chronic renal failure. See also **uremia**.

**nutritional c.** calcification in soft tissues as a result of an increased intake of calcium.

**soft tissue c.** see metastatic calcification (above), dystrophic calcification (above).

**calcify** to mineralize by the deposition of calcium salts.

**calcifying** mineralized.

**c. aponeurotic fibroma** locally aggressive nodular masses that involve membranous bones, particularly those of the canine skull (zygomatic arch), and rarely metastasize. See also **multilobular** chondroma and osteoma.

**c. epithelial odontogenic tumor** rare lesion in dogs and cats; epithelial, gingival masses susceptible to surgical excision.

**c. epithelioma** see **pilomatrixoma**.

**c. epithelioma of Malherbe** see **pilomatrixoma**.

**calcined magnesite** the mineral magnesite that has been reduced to a powder by heating, i.e., calcined. It is used as a dietary supplement for cattle and sheep to prevent hypomagnesemia. Used for topdressing pasture with a similar objective. Contains about 90% magnesium oxide.

**calcinogenic** [kal'si-no-jen'ik] conducive to calcinosis.

**c. glycoside** toxic glycosides with their aglycone an analog of vitamin D<sub>3</sub>. Found in plants including *Solanum glaucophyllum* (*S. malacoxylon*), *S. linneanum* (*S. hermannii*, *S. sodomaeum*), *S. erianthum*, *S. torvum*, *Cestrum diurnum*, *Stenotaphrum secundatum*, *Trisetum flavescens*, *Nierembergia veitchii*.

**calcinosis** [kal'si-no'sis] a condition characterized by abnormal deposition of calcium salts in soft tissues.

**c. circumscripta** localized deposition of calcium in small nodules in subcutaneous tissues, tongue, or attached to tendons or joint capsules in dogs, usually in large breeds and most commonly in German shepherd dogs. In horses, circumscribed, hard swellings with granular radiopacity, usually immovable and located on the lateral aspect of the proximal tibia. Called also tumoral calcinosis.

**c. cutis** cutaneous mineralization, a characteristic lesion in dogs with hyperadrenocorticism. Lesions are commonest on the dorsal midline, ventral abdomen and inguinal region. The skin is usually thin and atrophic.

**enzootic c.** calcinosis occurring in larger numbers of animals in a local population than chance warrants. Usually a plant poisoning caused by the following calcinogenic plants: *Solanum glaucophyllum* (*S. malacoxylon*),



**C-02:** Radiograph of calcinosis circumscripta on the carpus of a dog.





**C-03:** Calcinosis cutis in a dog with Cushing's syndrome.

*S. linneanum* (*S. hermannii*, *S. sodomaicum*), *S. erianthum*, *S. torvum*, *Cestrum diurnum*, *Stenotaphrum secundatum*, *Trisetum flavescens*, *Nierembergia veitchii*. Manifested clinically by chronic wasting, reluctance to walk and constant shifting of weight from limb to limb. Called also enteque seco, Manchester wasting disease, espichamento, Naalehu disease, weidekrankheit.

**multicentric periarticular c.** described in Hungarian vizsla dogs in association with a renal tubular defect in phosphorus transport, causing progressive lameness.

**pulmonary c.** see **microlithiasis**.

**tumoral c.** see **calcinosis circumscripta** (above).

**c. universalis** widespread deposition of calcium in nodules or plaques in the dermis, panniculus, and muscles.

**calcipenia** [kal'si-pe'ne-ə] deficiency of calcium in the system.

**calcixesis, calcipexy** [kal'si-pek'sis, kal'si-pek'se] fixation of calcium in the tissues.

**calciphilia** [kal'si-fil'e-ə] condition in which the tissues show an unusual affinity for, and fixation of, calcium salts circulating in the blood.

**calciprivia** [kal'si-priv'e-ə] deprivation or loss of calcium.

**calcitonin** [kal'si-to'nin] a polypeptide hormone secreted by the parafollicular or C cells of the thyroid gland, which is involved in plasma calcium homeostasis. It acts to decrease the concentration of calcium in the blood by inhibiting osteoclast activity, intestinal absorption, and phosphate resorption in the kidney. Salmon calcitonin is used in the treatment of hypercalcemia. Called also thyrocalcitonin.

**c. gene-related peptides** potent vasodilators widely distributed in perivascular nerves of blood vessels, sinoatrial and atrioventricular nodes, sensory neurons, and the central nervous system generally.

**calcitriol** [kal'si-tri'ol] a nonproprietary name for 1,25-dihydroxycholecalciferol, or 1,25-dihydroxyvitamin D<sub>3</sub> (1,25-(OH)<sub>2</sub>D<sub>3</sub>), the active metabolite of vitamin D<sub>3</sub> (cholecalciferol). In concert with parathyroid hormone, calcitriol increases blood calcium concentrations by increasing the uptake of calcium (Ca<sup>++</sup>) from the gut, increasing renal resorption of Ca<sup>++</sup>, and when necessary stimulating the release of Ca<sup>++</sup> from bone. Pharmaceutically, calcitriol is used in the treatment of conditions leading to hypocalcemia and for osteopenia.

**calcium (Ca)** [kal'se-əm] a chemical element, atomic number 20, atomic weight 40.08. Calcium is the most abundant mineral in the body. In combination with phosphorus it forms calcium phosphate, the dense, hard material of the bones and teeth. It is an important cation in intra- and extracellular fluid and is essential to the normal clotting of blood, the maintenance of a normal heartbeat, and the initiation of neuromuscular and metabolic activities. Within the body fluids calcium exists in three forms. Protein-bound calcium accounts for about 47% of the calcium in plasma; most of it in this form is bound to albumin. Another 47% of plasma calcium is ionized. About 6% is complexed with phosphate, citrate, and other anions. Ionized calcium is physiologically active. One of its most important physiological functions is control of the permeability of cell membranes. Parathyroid hormone, which causes transfer of exchangeable calcium from bone into the bloodstream, and calcitriol maintain calcium homeostasis by preventing either calcium deficit or excess.

**avian c. poisoning** excess calcium in the avian diet, especially in diets low in phosphorus causes nephrosis, visceral gout, and urolithiasis.

**c. balance** the balance between calcium intake and losses in feces and urine.

**c. carbonate** an insoluble salt occurring naturally in bone, shells and chalk. A common form of supplementary calcium in dogs and cats on

meat-based diets, used because of its high concentration of calcium (40%) and absence of phosphorus.

**c. challenge test** an intravenous infusion of calcium will cause increased concentrations of gastrin in dogs with a gastrinoma. May be used in combination with a secretin stimulation test. Also called calcium stimulation test.

**c. channels** see **channel**.

**c. chloride** a salt used in solution to restore electrolyte balance, to treat hypocalcemia, and as an antidote to magnesium poisoning. Is highly irritating and has been discarded generally in favor of less irritating substances, e.g., calcium borogluconate.

**diffusible c.** see calcium (above).

**endogenous c.** calcium contributed to the feces by the intestinal secretions.

**excess c.** in all species may cause **hypercalcitonism** with decreased osteoclastic activity and skeletal remodeling. In dogs, disorders of endochondral ossification with curved radius and osteochondrosis have been demonstrated; secondary iron deficiency anemia occurs in piglets.

**c. fluoride** naturally occurring mineral. Called also fluorspar, fluorite.

**c. gel** contains a high concentration of calcium; given to cows as a drench or in the feed as a prophylaxis against bovine parturient hypocalcemia.

**c. gluconate** a calcium replenisher and antidote to fluoride or oxalate poisoning.

**c. homeostasis** maintenance of normal calcium metabolism by the combined effects of adequate alimentary intake, renal excretion, parathyroid hormone involvement, 1,25 dihydroxycholecalciferol (or calcitriol) and calcitonin, plasma protein binding, and deposition in tissues.

**c. hydroxide** an astringent compound used topically in solution or lotions; in dentistry used to encourage deposition of secondary dentin. Called also slaked lime. In solution, called lime water.

**idiopathic c. phosphate deposition** thought to be inherited as an autosomal dominant trait in Great Danes commencing in puppies about 5 weeks old, characterized by paraplegia and incoordination due to deformity and displacement of the seventh cervical vertebra; mineral deposits in the intervertebral joints, serous and synovial membranes; and mineralization in most other tissues.

**ionized c. (iCa)** serum calcium that is not bound to protein or complexed; free calcium.

**c. lactate** used for supplementing the diet with calcium; contains 18% calcium. As calcium sodium lactate, containing 8% calcium, it is more soluble and can be used in drinking water.

**c. levulinate** a calcium compound used parenterally in the treatment of hypocalcemia; contains 14.8% calcium.

**c. mandelate** administered orally and used as a urinary antiseptic.

**c. nitrate** used as an additive during cheese making to control fermentation. Whey from this cheese may cause nitrate poisoning when fed to cattle and bacterial conversion of nitrate to nitrite poisoning in pigs (rare).

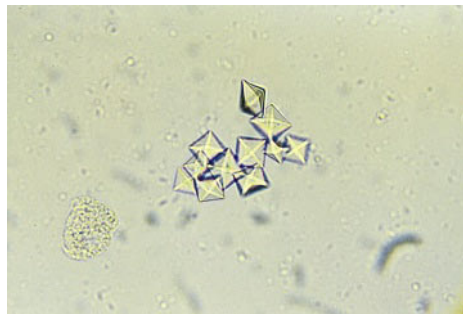
**nondiffusible c.** protein-bound fractions of plasma calcium.

**c. nutritional deficiency** nutritional deficiency of calcium is rarely primary except in carnivores on an all-meat diet. Secondary deficiency is usually the result of diets having too high a phosphorus content. The outcome of either deficiency may be nutritional **hyperparathyroidism**, **rickets**, **osteomalacia**, **osteodystrophy** in horses, pigs, and reptiles, and degenerative **arthropathy** of cattle, depending on the species, age of the animal and availability of vitamin D. Hypocalcemia may not occur because of the activity of parathyroid hormone, but classical tetany and recumbency can occur if the deficiency is prolonged or if they are precipitated by some other factor.

**c. oxalate** a compound occurring in the urine in crystals and in certain calculi. See also oxalate **urolith**.



**C-04:** Osteomalacia resulting from a diet of stored grain fed as the only food available for feeding during a drought that resulted in bare pastures.



**C-05:** Calcium oxalate dihydrate crystals in a dog's urine.

From Raskin, R.E., Meyer, D. *Canine and Feline Cytology*, 2nd Edition. Saunders 2010.

**c. oxide** alkaline and capable of causing gastroenteritis. There is a high concentration in **basic slag**, and this may contribute to that poisoning.

**c. pantothenate** a calcium salt of the dextrorotatory isomer of pantothenic acid; used as a growth-promoting vitamin.

**c. phosphate** one of three salts containing calcium and the phosphate radical: dibasic and tribasic calcium phosphate are used as sources of calcium; monobasic calcium phosphate is used in fertilizer and as a calcium and phosphorus supplement. An important constituent of **uroliths**.

**c.:phosphorus ratio** the ratio of calcium to phosphorus in the diet, 1:1 to 1:2 is usually considered to be adequate for proper calcium nutritional status in most animal species. Diets outside this range are likely to cause osteodystrophies. Animals grazing phosphorus-deficient pasture, and those being intensively fed on grain rations that have an abnormally high phosphorus content, are the principal subjects. Horses on heavy grain diets and dogs and cats on meat diets without calcium supplementation are also targets for the disease, as are pet reptiles fed inappropriate diets low in calcium or lacking in vitamin D such as chelonians and some lizard species.

**c. polycarbophil** a hydrophilic agent used as a bulk laxative in the treatment of constipation and diarrhea.

**c. polysulfide** see **lime-sulfur**.

**c. propionate** see **propionic acid**.

**protein bound c.** biologically inert fraction of plasma calcium; most is bound to albumin and globulins with a small fraction complexed to organic and inorganic acids.

**c. silicophosphate** crystals of this mineral are thought to contribute physically to the gastroenteritis caused by basic **slag** poisoning.

**c. sulfate** the main component of plaster of Paris; also used as a dietary source of calcium and inorganic sulfate sulfur.

**c. sulfide, c. polysulfide** see **lime-sulfur**.

**c. supplements** include calcium carbonate, gluconate, lactate and phosphate; bone flour, bone meal, ground limestone, and chalk.

**total c. (tCa)** the sum of serum ionized calcium, complexed calcium and protein-bound calcium.

**c. tungstate screens** intensifying screens coated with calcium tungstate crystals that emit blue light previously used in film screen radiology. Replaced by rare earth intensifying **screens**.

**urinary c.** calciuria.

**calcium-binding protein** see **calbindin**.

**calciophylaxis** [kal'ʹsi-fa-lak'sis] the formation of calcified tissue in response to administration of a challenging agent after induction of a hypersensitive state.

**calcium channel blocker** a drug that selectively blocks the influx of calcium ions through a specific ion channel (the slow channel or calcium channel) of cardiac muscle and smooth muscle cells; used in the treatment of cardiac arrhythmias. Calcium channel blockers act to control arrhythmias by slowing the rate of sinoatrial node discharge and the conduction velocity through the atrioventricular node. Examples include nifedipine and verapamil. Also called calcium blocker, calcium antagonist.

**calciuria** [kal'se-u're-a] calcium in the urine.

**calcofluor white stain** used to produce fluorescence of fungal elements for ultraviolet microscopy.

**calcospherite** one of the minute globular bodies formed during calcification by chemical union of calcium particles and albuminous matter of cells.

**calculogenesis** [kal'ku-lo-jen'ə-sis] the formation of calculi.

**calculolytic** [kal'ku-lo-lit'ik] lysis of calculi, usually in the urinary tract.

**c. diet** see **calculolytic diet**.

**calculus** [kal'ku-lo'sis] a condition characterized by the presence of calculi. Called also lithiasis.

**calculus** [kal'ku-ləs] pl. *calculi* [L.] an abnormal concretion, usually composed of mineral salts, occurring within the animal body, chiefly in the hollow organs or their passages. Called also stones, as in kidney stones (**urolithiasis**) and **gallstones**. See also **hippomanes**.

**biliary c.** a gallstone.

**bronchial c.** see **bronchial calculus**.

**dental c.** mineralized dental plaque; found commonly in dogs and cats, sometimes in horses, rarely in sheep. Plaque deposited on the surface is important in development of caries and periodontal disease.

**c. index** an assessment used in dental charting to record the extent of calculus on each tooth; ranges from none to heavy plaque accumulation at gingival margin and filling of the interdental space.

**lung c.** a concretion formed in the bronchi. See also **bronchial calculus**.

**pancreatic c.** very small (4–5 mm) calculi in pancreatic ducts, rare and of no pathogenic importance.

**prostatic c.** concretions of calcium phosphates and carbonates in the prostatic ducts are rare and of no clinical significance.

**renal c.** see **urolithiasis**.

**salivary c.** white, hard, laminated concretions in the salivary duct; a sialolith. Occurs most commonly in horses.

**urethral c.** a calculus lodged in the urethra causes obstruction of the urethra with a potential for causing rupture of the bladder or perforation of the urethra and leaking of urine into subcutaneous or retroperitoneal sites. See also **urolith, urolithiasis**.

**urinary c.** a calculus in any part of the urinary tract. See **urolithiasis**.

**vesical c.** a urolith in the urinary bladder.

**CALD** chronic active liver disease.

**calefacient** [kal'ə-fa'shənt] causing a sensation of warmth; an agent that so acts.

**calend charts** wall charts or wheels that are valuable management tools because they depict the reproductive and lactation status of each cow or sow in the herd at any given time.

**Calendula** [kə-len'du-lə] plant genus in the family Asteraceae; cause cyanide poisoning; include *C. cuneata*, *C. viscosa* (both = *Dimorphotheca cuneata*). In herbal medicine, *C. officinalis* is a source of flavonoids and saponins used topically for their anti-inflammatory, immunomodulatory, and wound-healing properties.

**calf** [kaf] **1.** bovine young less than 1 year old. **2.** young of other species including elephant, larger deer, e.g., red, Japanese sika, wapiti, elk, moose, reindeer, and also pinnipeds and cetaceans. **3.** in dogs, refers to the region of the hindlimb between the stifle and the hock.

**bull c.** male intact (entire) bovine under 1 year of age.

**c. crop** the group of calves born to a herd of cows during one breeding season.

**c. crop percentage** the percentage of calves born to the cows bred or exposed to breeding bulls.

**c. diarrhea** see calf scours (below).

**c. diphtheria** see calf diphtheria, *Fusobacterium necrophorum*.

**fetal c.** includes unborn and stillborn calves. Can be identified by the presence of atelectasis of the entire lungs, patency of the umbilical vessels that also contain unclotted blood, sodden quality of the skin, high water and nil fat content of the tissues, absence of milk from the gut. Called also slink. See also **slink calves**.

**c. lymphosarcoma** see **bovine viral leukosis**.

**c. pneumonia** a group of diseases of calves caused primarily by viruses, often complicated by secondary bacterial invasion. The viruses include parainfluenza-3 (PI-3), respiratory syncytial virus (RSV), an adenovirus, a reovirus, bovine herpesvirus 1 and bovine rhinovirus. *Chlamydia* and *Mycoplasma* spp. are also causative agents. The clinical syndrome is the same with any of the viruses: fever, increased respiratory rate, hacking cough, overloud breath sounds on auscultation of the lungs. The calves show remarkably little toxemia. If secondary bacterial pneumonia follows the additional signs are toxemia, gurgling or squeaky breath sounds, and a fatal outcome. See also **enzootic pneumonia**.

**c. puller** see **fetal extractor**.

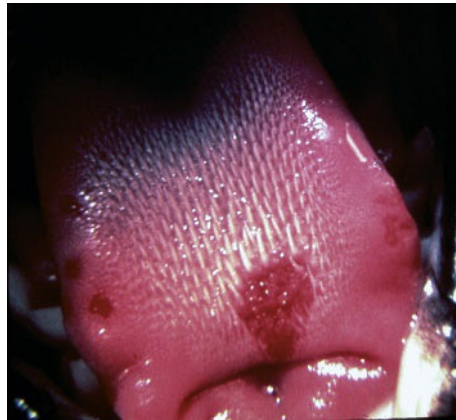
**c. scours** diarrhea of calves, of most importance in the newborn because of their susceptibility to dehydration and toxemia. See **colibacillosis, coccidiosis, cryptosporidiosis, Coronaviridae, Rotavirus, salmonellosis, dietary diarrhea**.

**c. starter** artificial feeding of calves includes liquid milk replacer and dry calf starter, the latter being provided from about 1 week of age. At 3–6 weeks, the calf is able to exist solely on starter and the milk replacer or milk can be discontinued. Calf starters vary a great deal in composition, quality, and price. They need to have a high digestibility coefficient, a high energy content and at least 18% crude protein.





**C-06:** Calf pen with three bucket holes, one for feeding calf starter, one for providing water all the time and one for the bucket used to feed milk replacer.



**C-07:** Tongue ulcers in a cat with feline calicivirus infection.

with **c.** a pregnant cow.

**calf-bed** uterus of a cow.

**calf-kneed** a defect of conformation in horses; the cannon is set back behind the line of the radius.

**calfeteria** farmyard equipment containing a tank, or tanks, for milk that supplies multiple teats on the exterior to provide sucking points for multiple calves.

**caliber** [kal'i-bēr] the diameter of the lumen of a canal or tube.

**calibration** [kal'i-brā'shən] determination of the accuracy of an instrument, usually by measurement of its variation from a standard, to ascertain necessary correction factors.

**caliectasis** [kal'i-sek'tā-sis] dilatation of a calix of the kidney.

**calicectomy** [kal'i-sek'tā-me] excision of a calix of the kidney.

**calices** [ka'li-sēz] plural of *calix*.

**Caliciviridae** [kə-lis'i-vir'i-de] a family of viruses that are about 35 nm in diameter, with a capsid, composed of a single major capsid protein of about 60 kilodaltons that carries 32 shallow, cup-like circular indentations and a single-stranded, plus sense RNA genome of about 8 kilobases. The family comprises five genera, Vesivirus that includes feline **calicivirus**, vesicular exanthema of swine virus, and **San Miguel** sea lion virus; Lagovirus that includes **rabbit hemorrhagic disease virus** and **European Brown hare syndrome virus**; Norovirus, which includes viruses that cause gastroenteritis, principally of humans; Sapovirus that comprise viruses that also cause diarrheic infections in humans; and Nebovirus, which includes viruses that cause diarrheic infections in calves. Noroviruses and sapoviruses may infect some other animal species.

**Calicivirus** [kə-lis'i-vi'rəs] a genus in the family *Caliciviridae*.

**calicivirus** [kə-lis'i-vi'rəs] a virus in the genus *Calicivirus*.

**canine c.** has been isolated from the feces of dogs with diarrhea; the significance is unknown.

**feline c. infection** a common cause of upper respiratory disease and ulcerative glossitis in cats. Affected cats show varying degrees of ocular and nasal discharge, coughing, and sneezing. Pneumonia sometimes occurs, mainly in young or debilitated cats. Ulceration of the tongue and palate is a regular feature of the disease, but lips, nares, and skin are also sometimes involved. Lameness, diarrhea, and seizures have also rarely been associated with calicivirus infection. Many recovered cats remain carriers of the virus, shedding infectious virus from the pharynx. Most of these cats are asymptomatic, but some may have chronic oral lesions. Feline calicivirus has also been associated with **feline** lower urinary tract disease, but its role in that disorder remains unclear. See also **feline** viral respiratory disease complex. A **virulent systemic** strain has been identified, which is capable of causing severe systemic disease with high fever, pulmonary edema, abdominal effusion, hepatic necrosis, disseminated intravascular coagulopathy (DIC), facial and limb edema, ulceration of the skin, and death.

**porcine c.** the cause of **vesicular** exanthema of swine.

**rabbit c.** the cause of **rabbit hemorrhagic disease**.

**calico bush** *Kalmia latifolia*.

**calico cat** see **tortoiseshell**.

**Calicophoron** [kal'i-kof'ə-rən] stomach flukes of ruminants. Species include *C. calicophorum*, *C. cauliorchis*, *C. ijimai*, and *C. raja*. See also **paramphistomiasis**, **paramphistomiasis**.

**caliculus** [ka-lik'u-ləs] a small cup or cup-shaped structure.

**c. gustatorius** see **taste**.

**California black-legged tick** see *Ixodes pacificus*.

**California disease** coccidioidomycosis.

**California encephalitis** an encephalitis of humans caused by the La Crosse virus, a California serogroup virus, in the genus *Bunyavirus*, isolated from mosquitoes in California. Occurs experimentally in small

laboratory rodents when the virus is injected intracerebrally. Suspected of natural passage through wild and domestic mammals. Called also La Crosse encephalitis.

**California encephalomyelitis virus group** mosquito-transmitted viruses of the family **Bunyavirales**; can cause acute encephalitis in horses. Type viruses are Snowshoe hare and Jamestown Canyon; associated viruses are Main Drain and Cache Valley.

**California eyeworm** see *Thelazia californiensis*.

**California mastitis test** an indirect test for bovine mastitis based on the presence of a high leukocyte count in mastitic milk. The test can be used in the milking shed or in the laboratory and as a test for individual quarters, or cows, or as a herd test. There is a good correlation between the results obtained and the actual leukocyte count and with the productivity of the quarter. It has faded in importance with the introduction of milk cell counts carried out electronically on automated equipment. See also **Brabant mastitis test**.

**California spangled** a recently developed breed of cats, derived from Siamese, Manx, and domestic cats. Its main feature is a short, spotted coat; meant to resemble a small leopard.

**Californian rabbit** popular as a fancy rabbit and for commercial purposes; it is large with large ears and the fur is white with black, chocolate, blue, or lilac-colored points, similar to the Himalayan. Called also California white.

**californium (Cf)** [kal'i-for'ne-əm] a chemical element, atomic number 98, atomic weight 249.

**calipers** [kal'i-pərz] instrument with two bent or curved legs used to measure thickness or diameter of a solid, or the internal dimensions of a hollow object.

**electronic c.** used in digital images to measure the distance between two points, circumference or cross-sectional area of an object.

**calix** [ka'liks] pl. *calices* [L.] a cuplike organ or cavity, e.g., one of the recesses of the kidney pelvis that enclose the tips of the pyramids.

**calkins** turned down portion of the heel of a horseshoe, designed to reduce slipping on worn stones or icy surfaces. Called also calks, frost studs.

**calks** see **calkins**.

**Call-Exner body** [kahl' eks'nər] histologic feature of **granulosa** cell tumors and occasionally **sertoli** cell tumors that is characterized by rosette-like formations of cells surrounding a central aggregation of eosinophilic material. Thought to be an abortive attempt of the tumor cells to produce a basement membrane.

**Callicarpa longifolia** Australian plant in the family Verbenaceae; an unidentified toxin causes hepatitis and photosensitization.

**calling** a lay term referring to the vocalization of a female cat in estrus and the associated, characteristic behavior that includes rolling, treading with the front feet and elevation of the hindquarters. Often misinterpreted by an inexperienced owner as signs of pain or illness.

**Calliphora** [kə-lif'o-rə] a genus of flies that includes *C. augur*, *C. australis*, *C. erythrocephala*, *C. fallax*, *C. hilli*, *C. novica*, *C. stygia*, and *C. vomitoria*. They may initiate blowfly strike in sheep but mainly assume importance in sheep that are already infested.

**calliphorid** [kə-lif'ə-rīd] pertaining to blowflies of the family Calliphoridae.

**Calliphoridae** [kal'i-for'i-de] the family containing most of the important blowflies, including *Calliphora*, *Chrysomya*, *Lucilia*, *Callitroga*, and *Phormia* spp.

**Calliphorinae** the blowfly subfamily.

**calliphorine myiasis** see cutaneous **myiasis**.

**Callitroga** [kal'i-tro'gə] a genus of screw-worms that includes *C. americana*, *C. hominivorax*, and *C. macellaria* (called also *Cochliomyia hominivorax* and *C. macellaria*). See also New World **screw-worm**, cutaneous **myiasis**.

**callitrichid** members of the primate family Callitrichidae; New World monkeys, includes marmosets and tamarins.

**callosity** [kə-los'i-te] a callus.

**callosum** [kə-lo'səm] corpus callosum.

**callous** [kal'əs] of the nature of a callus; hard.

**callus** [kal'əs] **1.** localized hyperplasia of the horny layer of the epidermis due to pressure or friction. In dogs, these often form over pressure points such as the elbow, hock, and (in some breeds) sternum, particularly if the animal is sleeping on a hard surface. **2.** an unorganized network of woven bone formed about the ends of a broken bone; it is absorbed as repair is completed (provisional callus), and ultimately replaced by true bone (definitive callus).

**bridging c.** bridging the callus gap.

**external c.** around the outside of a fracture, consisting of periosteal new bone.

**hard c.** fully mineralized.

**hypertrophic c.** a form of delayed healing in which fibrocartilage forms between fracture fragments, resulting in a false callus. Called also elephant's foot callus.

**internal c.** between the ends of fractured bones; endosteal new bone.

**periosteal c.** new bone formed by the proliferation of periosteal osteogenic cells.

**provisional c.** a subsequently remodeled callus.

**c. pyoderma** secondary bacterial infection, particularly of pressure point calluses in dogs; with time, can be extensive with deep pyogenic inflammation, ulceration, and draining fistulae.

**soft c.** the originating fibrocellular tissue before calcification.

**sternal c.** may develop over the prominent sternum in some breeds of dogs, particularly Dachshunds and deep-chested, shorthaired dog such as pointers, in response to pressure. See callus pyoderma (above).

**temporary c.** see provisional callus (above).

**calmative** [kahl'mə-tiv, kahl'mə-tiv] **1.** sedative; allaying excitement. **2.** an agent having such effects.

**Calmette-Guérin bacillus** [kahl-met' ga-rä'] see **BCG**.

**calmodulin** [kal-mod'u-lin] a calcium-binding protein concerned in the response of muscle fibers and other cells to calcium.

**calomel** see **mercurous chloride**.

**calor** [kal'or] [L.] *heat*; one of the cardinal signs of inflammation.

**caloric** [kə-lor'ik] pertaining to heat or to calories.

**c. density** measure of the energy contained in food, usually quantified as calories or joules, per unit mass of food.

**c. exhaustion** see **hypoglycemia**.

**c. homeostasis** process of regulation of energy intake from food to sustain energy balance.

**c. intake** measure of amount of food energy as calories eaten by an animal.

**c. requirements** see **energy requirements**.

**c. test** irrigation of the external ear canal with hot or very cold water will stimulate the flow of endolymph and will cause nystagmus if the vestibular system and brainstem are intact.

**calorie (cal)** [kal'ə-re] any of several units of heat defined as the amount of heat required to raise the temperature of 1 gram of water by 1 degree Celsius (1°C) at a specified temperature. The calorie used in chemistry and biochemistry is equal to 4.184 joules. In referring to the energy content of foods it is customary to use the 'large calorie', which is equal to 1 kilocalorie (kcal), 1000 cal. Every bodily process—the building up of cells, motion of the muscles, the maintenance of body temperature—requires energy, and the body derives this energy from the food it consumes. Digestive processes reduce food to usable fuel, which the body burns in the complex chemical reactions that sustain life.

**calorific** [kal'ə-rif'ik] generating heat measurable in calories.

**calorigenic effect** [kə-lor'i-jen'ik] see **specific dynamic action**.

**calorimeter** [kal'ə-rim'ə-tər] an instrument for measuring the amount of heat produced in any system or organism. The material is burned in the calorimeter and the heat energy produced is measured.

**calorimetry** [kal'ə-rim'ə-tre] measurement of the heat eliminated or stored in any system.

**direct c.** measurement of heat actually produced by the organism which is confined in a sealed chamber or calorimeter.

**indirect c.** estimation of the heat produced by means of the respiratory differences of oxygen and carbon dioxide in the inspired and expired air.

**Calotis scapigera** Australian plant in the family Asteraceae; contains cyanogenic glycosides and is capable of causing cyanide poisoning; called also tufted burr daisy.

**calotrope** *Calotropis procera*.

**Calotropis procera** a plant in the family Asclepiadaceae; contains cardiac glycosides. Keratoconjunctivitis has resulted from exposure to its irritant sap. Called also roostertree, caltrops.

**calsequestrin** [kal'sə-kwes'trin] a calcium ion binding protein effecting a sequestration of calcium ions within the smooth endoplasmic reticulum.

**Caltha palustris** a toxic plant in the family Ranunculaceae; contains a vesicant substance protoanemonin. Ingestion of the plant causes stomatitis, salivation, diarrhea, and abdominal pain. Called also yellow marsh marigold, cowslip, kingcup.

**caltrops** plants in the family Zygophyllaceae; see **Tribulus**, *Kallstroemia*. Includes hairy caltrops (*K. hirsutissima*), warty caltrops (*K. parvijlora*).

**calvaria, calvarium** [kal-var'e-ə, kal-var'e-əm] the domelike dorsal portion of the cranium, comprising the dorsal portions of the frontal, parietal and occipital bones.

**calve** act of parturition by a cow or other mammal producing a calf as offspring.

**Calvé-Perthes disease** [kahl-va' per'təz] see **Legg-Calvé-Perthes disease**.

**Calvin cycle** [kal'vin] see **dark reaction**.

**calving** act of parturition in a bovine female, and presumably in any animal that bears a calf as its newborn.

**block c.** a breeding management system in which all of the cows in a herd, or an area, are encouraged to calve at approximately the same time. Has the effect of concentrating all of the calving and puerperal problems at one time and having all of the cows begin and terminate their lactations together. Has the disadvantage that the herd's period of maximum productivity is also concentrated, making it subject to much greater risk of loss. Is the opposite of year-round calving. Called also seasonal calving.

**c.-to-conception interval** interval between calving and the next conception date. Called also "days open" or "number of days open."

**difficult c.** see **dystocia**.

**ease of c.** thought to be an inherited trait due to pelvic canal dimensions in the dam, and fetal size in the sire. See also **dystocia**.

**c. facilities** yards, crush, chute, hot and cold water, shelter, all the resources necessary for capturing and restraining a cow while helping her to deliver a calf.

**c.-to-first-estrus interval** interval between calving and the first observed estrus. Data used as a measure of reproductive performance, especially dairy herds where block mating needs to be completed in as brief an interval as possible.

**c.-to-first-service interval** alternative to calving-to-first-estrus interval but does not take into account any deferral of mating for managerial reasons.

**c. grounds** cows that are run on very extensive grazing may need to be under close surveillance by calving time. A small area of land can be enclosed or the herd herded into it—the calving ground.

**c. index** any method of expressing reproductive efficiency on the basis of the number of calves produced. May refer to the average calving interval or to the percentage of calves produced by the mated group of cows.

**c. induction** see **parturition induction**.

**c. injury** damage to the uterus, vagina, and vulva or surrounding tissues, especially obturator and sciatic nerves, caused by the parturition process.

**c. interval** the average time interval between successive calvings.

**median c. date** the number of days between the first calving in the herd and the 50th percentile calving; an excellent measure of fertility status of seasonally calving herds; in dairy herds the target is 18 days.

**c. pad** a small area specifically prepared with sand or limestone base and bedding of material such as rice hulls or sawdust, where all cows are located for calving. Allows intense supervision of periparturient and calving cows.

**c. paralysis** see maternal obstetric **paralysis**.

**c. pattern** of a herd is a chronological list of calving dates. In seasonally calving herds a compact list indicates high fertility, a stretched out list indicates an indifferent fertility level.

**c. percentage** see **calf crop percentage**.

**c. record** a record of the reproductive efficiency of each dam in the form of dates, events, and procedures related to reproductive function.

**c. season** season of the year at which the herd, or other population of cows, calves, e.g., spring calving.

**seasonal c.** when the cows in a herd calve at about the same time. Thus spring calving, autumn calving. Usually used as a management tool to take maximum advantage of seasonal feed supplies or climate.



**year-round c.** herd management system in which cows are mated so that some cows in the herd will calve at all times of the year thus maintaining a regular milk supply for a fresh milk supply.

**calx** [kalks] 1. lime or chalk. 2. heel.

**Calycanthus** a genus of plants in the family Calycanthaceae; contain indole (pyrrolidinoinoline) alkaloids including calycanthine that produce tetanic seizures in livestock. Includes *C. floridus* (eastern sweetshrub, Carolina allspice), *C. occidentalis* (western sweetshrub, California allspice). Called also strawberry shrub, spicebush.

*C. australiensis* see *Idiospermum australiense*.

**calyculus** caliculus.

**calystegines** polyhydroxy nortropane alkaloids with potent glycosidase inhibitory properties isolated from plants in families Convolvulaceae, Solanaceae, and Brassicaceae; suspect of neurotoxicity.

**calyx** [ka'lyks] calix.

**major c.** one of the primary branches of the renal pelvis that bear two or more minor calices; found in pigs, cattle and humans.

**minor c.** any one of the cup-shaped dilations of the renal pelvis into which renal papillae protrude.

**CAM 1.** complementary and alternative medicine. **2.** cell-adhesion molecule.

**CAMAL** see **Cornell** alternate-month accelerated lambing system.

**Camallanus** [kam''a-la'nəs] nematode genus which infests freshwater turtles and fish.

**camarillo** a part albino type of horse originating in California; has white hair, pink skin and black eyes.

**cambendazole** an efficient broad-spectrum anthelmintic. See also **albendazole**.

**Cambridge ventilator** a machine used in anesthetizing large animals. A hydraulically compressed bellows drives a 'bag-in-bottle' arrangement.

**camel** humped members of the Camelidae family of ruminants.

**Arabian c.** called also *Camelus dromedarius*, or single-humped camel or dromedary. Found in the Arabian peninsula, North and Central Africa, East Asia, and feral in Australia. There are different breeds for milk production, meat production, riding and draught work, and there is selection for racing.

**bactrian c.** two-humped camel. Called also *Camelus bactrianus*. Found in China, Russia, Mongolia, and Iran.

**c. bush** *Trichodesma zeylanica*.

**dromedary c.** one-humped camel. Called also *Camelus dromedarius*.

**c. poison** *Gyrostemon* spp., *Erythrophleum chlorostachys*, *Trichodesma zeylanica*.

**single-humped c.** see Arabian camel (above).

**c. thorn** *Acacia erioloba*.

**camel prion disease** recently recognised neurologic disease of dromedary camels apparently caused by a **prion**.

**camelid** members of the family Camelidae. Includes three species of Old World camels belonging to the genus *Camelus* (*C. bactrianus*, *C. ferus* and *C. dromedarius*), and four species of South American camelids, of the genera *Lama* (*L. guanicoe* and *L. glama*) and *Vicugna* (*V. vicugna* and *V. pacos*).

**Camelidae** Camelidae one of the ten families of ruminants in the order Artiodactyla (the other nine are Suidae, Tayassuidae, Hippopotamidae, Tragulidae, Moschidae, Cervidae, Bovidae, Antilocapridae, and Giraffidae). The Camelidae originated in North America, 40–50 million years ago. By the early Holocene camelids had become extinct in North America, but their migration to Asia ~7 million years ago gave rise to the dromedary and bactrian camels, and a later migration to South America across the Panama land bridge ~4 million years ago gave rise to the ancestors of the two modern wild South American Camelids, the **vicuña** and **guanaco**.

**Camellia** [ka-mel'e-a] plant genus in the family Theaceae; includes *C. japonica*, *C. susanqua*, *C. sinensis* (*Thea sinensis*, tea plant); plants known to reflect the fluorine content of the soil on which they grow. They may contain as much as 2000 ppm of fluorine.

**Camelostromylus** a genus of the family Trichostrongylidae of gastrointestinal nematodes. Includes *Camelostromylus mentulatus* (sheep, camels, and wild ruminants).

**camel pox** [kam'al-poks] a disease of camels caused by an **Orthopoxvirus**. Natural infections appear to be limited to the Old World camels. Pox lesions are usually restricted to exposed areas of the skin and mucous membranes, but in some cases can extend over the entire body and invade internal organs. The disease is transmissible to humans and notifiable to the OIE. (see Table 20).

**Camelus** genus of two-toed ungulates in the family Camelidae, distributed in central and south Asia, the Middle East, northern India,

and North Africa, with an introduced and largely feral population in Australia. Includes *C. bactrianus* (bactrian camel), *C. ferus* (wild bactrian camel), and *C. dromedarius* (dromedary, one-humped or Arabian camel).

**cameo** in some countries a recognized color variety of longhaired cats with copper-colored eyes and a coat color that is basically a silver, cream, or white undercoat with red tips that vary in intensity on different parts of the body.

**camera** [kam'ə-rə] pl. *camerae* a cavity or chamber.

**c. anterior bulbi** anterior chamber of the eye.

**c. posterior bulbi** posterior chamber of the eye; small annular space between the posterior surface of the iris and the anterior surface of the lens, and bounded peripherally by the ciliary processes.

**c. vitrea bulbi** vitreous chamber of the eye, between the crystalline lens and the retina, that contains the vitreous body.

**Cammerer rotation fork** an instrument used to rotate a fetus that is malpresented. Each arm of the fork carries a canvas cuff for fixation of the limbs to the crutch. The external end of the device is a long crossbar to facilitate the rotation.

**camomile** chamomile.

**cAMP** cyclic **adenosine** monophosphate.

**CAMP-CAP complex** a complex comprising two cAMP molecules bound to the dimeric DNA binding protein catabolite activator protein, found in *E. coli*. cAMP is an allosteric activator of CAP that increases its affinity for DNA, enabling it to activate or suppress the initiation of the transcription of genes for enzymes involved in the metabolism of sugars such as lactose and maltose.

**CAMP-dependent protein kinase** a tetrameric protein composed of two regulatory subunits that bind cAMP, and two catalytic subunits that catalyze the transfer of a phosphoryl group from ATP to a target enzyme.

**CAMP phenomenon** a cultural phenomenon produced by most streptococci in Lancefield Group B. Named after the originators Christie, Atkins, and Muench-Petersen. These streptococci hemolyze red cells in sheep blood agar plates but only in the presence of beta toxin of staphylococci. The phenomenon is used to presumptively identify *Streptococcus agalactiae* isolated from mastitic cow's milk. Similar synergism in hemolytic activity is observed between *Rhodococcus equi* and *Corynebacterium pseudotuberculosis*, beta toxin of staphylococci or *Listeria monocytogenes*, and can be used for presumptive identification of these species.

**Campanulotes** a genus of bird lice of the family Philopteridae. Includes *Campanulotes bidentatus compar* (small pigeon louse).

**camphechlor** [kam'fə-klor] see **toxaphene**.

**camphor** [kam'for] a ketone derived from the cinnamon tree, *Cinnamomum camphora*, or produced synthetically; used externally as an antipruritic and antiseptic; applied in liniments as a counterirritant; administered as a steam inhalant as an expectorant. Toxicity can follow absorption through the skin, but most products legally available contain very low concentrations of camphor.

**Campolino horse** bay, sorrel or chestnut light Brazilian horse, bred from native horse with imported breeds.

**Camponotus** ant genus, second intermediate host to the flukes *Dicrocoelium* spp. and to species of the cestode genus *Railletina*.

**camptodactyly** [kamp''to-dak'tə-le] permanent flexion of one or more digits.

**camptomelia** [kamp''to-me'le-a] bending of the limbs, producing permanent bowing or curving of the affected part.

**Campthoeca acuminata** Asian plant in the family Nyssaceae; contains an alkaloid camptothecin; causes diarrhea, dysentery.

**Campylobacter** [kam''pə-lo-bak'tər] a genus of bacteria, family *Spirillaceae*, made up of gram-negative, non-spore-forming, motile, comma-shaped rods, which are microaerophilic to anaerobic. Members of the genus were previously classified as *Vibrio* spp. and many of the diseases caused by these species are still referred to as vibriosis.

**C. coli** a commensal of the gastrointestinal tract of poultry, pigs and humans; can cause enteritis in pigs and humans.

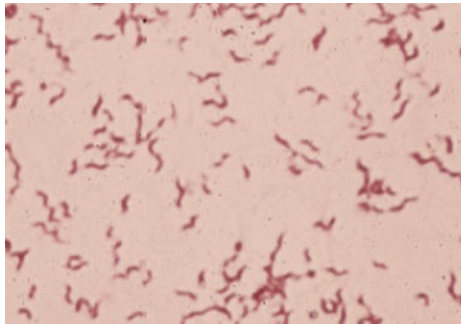
**C. fetus subsp. fetus** a cause of abortion in sheep and cattle.

**C. fetus subsp. venerealis** causes bovine genital campylobacteriosis (also known as vibriosis and epizootic bovine infertility).

**C. hepaticus** a thermophilic species responsible for spotty liver disease in laying chickens.

**C. hyointestinalis**, **C. mucosalis** associated with, but not the cause of, the porcine proliferative **enteropathy** complex, **proliferative hemorrhagic enteropathy**, **necrotic enteritis**. They are inhabitants of the intestine of normal pigs.

**C. jejuni** causes abortion in sheep and enteritis in dogs, cats, and other animals. An important food-borne cause of enteritis in humans, and the cause of avian vibriotic **hepatitis**.



**C-08:** Gram-stained cells of *Campylobacter fetus* ssp. *fetus*.

From Songer, J.G., *Veterinary Microbiology: Bacterial and Fungal Agents of Animal Disease*. Saunders 2005.

C

*C. sputorum* subsp. *bubulus*, *C. sputorum* biovar *fecalis* found in cattle and sheep, but not known to cause disease.

*C. upsaliensis* may be associated with diarrhea in dogs and humans.

*C. ureolyticus* microaerophilic species isolated from the genital tract of mares with endometritis. Formerly classified as *Bacteroides ureolyticus*.

**campylobacteriosis** [*kam* "pə-lo-bak-tēr" e-o'sis] disease caused by infection with *Campylobacter* spp.

**avian c.** caused by *Campylobacter coli*, *C. jejuni*, *C. laridis*, and characterized by depression and diarrhea.

**bovine genital c.** a venereal infection with *Campylobacter fetus* subsp. *venerealis* that causes early embryonic death, abortion and infertility in cattle and may be endemic in some areas. A disease notifiable to the OIE (see Table 20). *C. fetus* subsp. *fetus* may be associated with sporadic cases of bovine abortion. Previously called bovine vibriosis.

**canine c.** caused most frequently by *Campylobacter jejuni* and characterized by large-bowel diarrhea and sometimes vomiting. May be a source of infection for humans.

**gastrointestinal c.** infection by several *Campylobacter* species, particularly *C. jejuni*, is associated with diarrhea in many species, especially in the young. Organisms may be isolated from the feces of asymptomatic animals.

**ovine c.** abortion caused by *Campylobacter fetus* subsp. *fetus* or *C. jejuni*; previously called ovine vibriosis.

**campylognathia** curved jaw, a rare congenital defect in Vorderwald calves in Europe and red deer in South America.

**Canaan dog** a medium-sized (35–55 lb), spitz-type dog with a short, sandy to red brown, white or black coat, with white markings. The head is wedge-shaped, ears are erect, and the brush tail is curled over the body. Developed from the native pariah-type herding dogs of Palestine. The national dog of Israel.

**Canadian** [*kə-na'de-ən*] a black or brown breed of dairy cattle, bred in Canada from cattle imported from France in the late 17th century. Called also Quebec Jersey.

**Canadian bluegrass** see *Poa*.

**Canadian casting** a method for casting a horse. One front limb is tied up with a kneestraps. The hindlimbs are pulled from under the horse by a system of sidelines and hobblestraps.

**Canadian eskimo dog** a large (60–100 lb), powerful dog with a heavy, thick double coat in any color. The head is broad, ears short and erect, and tail large and bushy. Called also Husky, Esquimaux. In the US called the American eskimo dog, which also comes in miniature and toy varieties; always white or cream.

**Canadian hairless cat** see *Sphinx cat*.

**Canadian Kennel Club** the principal body for registration of purebred dogs in Canada, incorporated under the federal Animal Pedigree Act.

**Canadian Veterinary Medical Association (CVMA)** the professional organization representing the veterinary profession in Canada. It publishes the *Canadian Veterinary Journal* and the *Canadian Journal of Veterinary Research*.

**canal** [*kə-nāl*] a relatively narrow tubular passage or channel.

**accessory c.** see lateral canal (below).

**alar c.** the canal in the body of the basisphenoid bone that transmits the maxillary artery.

**alimentary c.** the digestive tube from mouth to anus. In the strict sense, it begins at the start of the esophagus and excludes the mouth. See also **alimentary canal**.

**anal c.** the terminal portion of the alimentary canal, from the rectum to the anus, demarcated by the ano-rectal line that separates the rectal mucosa from the stratified squamous epithelium of the anal canal.

**atrioventricular c.** the common canal connecting the primitive atrium and ventricle; it sometimes persists as a congenital anomaly.

**birth c.** the canal through which the fetus passes during birth; comprising the uterus, cervix, vagina, vestibule, and vulva.

**carpal c.** the passageway on the palmar surface of the carpus between the proximal row of carpal bones and the flexor retinaculum. In horses it occupies the space where the carpal groove is converted into a canal by the flexor retinaculum that stretches from the accessory carpal bone to the medial side of the carpus. It houses the flexor tendons, the median nerve and blood vessels.

**cervical c.** the part of the uterine cavity lying within the cervix.

**Cloquet's c.** an approximately cone-shaped tunnel extending through the vitreous from the optic disc to the posterior lens capsule (where it forms the arcuate line of Vogt). During embryological development, this canal surrounds the hyaloid artery.

**condyloid c.** an inconstant canal in the occipital bone that transmits the occipital emissary vein.

**c. of Corti** see **Corti's canal**.

**external ear c.** the canal from the external auditory meatus to the eardrum.

**facial c.** osseous tube in the temporal bone that transmits the facial nerve. **femoral c.** the fascia covered space in the groin on the medial aspect of the thigh; bounded by the gracilis, sartorius, adductor, and pectineus muscles that contains the femoral artery, vein, saphenous nerve, fat and lymphatics.

**c's of Gartner** the slender canals in the ventral wall of the vagina that are remnants of the mesonephric ducts and very variable in their occurrence. Called also ductus epoophori longitudinales.

**haversian c.** see **haversian canal**.

**c's of Hering** openings between the bile canaliculi and the cholangioles, the terminal ducts of the biliary duct system. Called also **cholangiole**.

**hyaloid c.** see **Cloquet's canal** (above).

**hypoglossal c.** the opening in the occipital bone, transmitting the hypoglossal nerve and a branch of the posterior meningeal artery; called also anterior condyloid foramen.

**infraorbital c.** the bony canal running obliquely from the front of the orbit to the side of the muzzle, transmitting the infraorbital vessels and nerve. In the horse, it passes through the maxillary sinus.

**inguinal c.** the oblique passage in the caudal abdominal wall on either side, through which passes the round ligament of the uterus in some females such as the bitch and the spermatic cord in the males.

**intestinal c.** small and large intestines.

**lacrimal c.** the nasolacrimal canal.

**lateral c.** a small canal in the root of a tooth that emerges on the side, rather than the apex. Called also accessory canal.

**mandibular c.** a passageway within the mandible for conduction of the inferior alveolar vessels and nerve; these structures enter the canal through the mandibular foramen and exit at the mental foramen supplying nerves to the lower cheek teeth in passing.

**medullary c.** 1. vertebral canal. 2. the cavity, containing marrow, in the diaphysis of a long bone; called also marrow or medullary cavity.

**metatarsal c.** the proximal and distal canals within the axis of the metatarsals of cattle that convey blood vessels between dorsal and plantar surfaces.

**modiolar c.** the canal within the modiolus of the cochlea of the internal ear that transmits blood vessels and nerves to the cochlea.

**nasolacrimal c.** the bony canal in the maxilla that transmits the nasolacrimal duct.

**nutrient c's** the vascular canals through the cortex of bones. There is usually a large one in the diaphysis of long bones, complemented by numerous smaller ones associated with the metaphyses and epiphyses. See also **haversian canal**.

**omasal c.** the direct passage through the omasum from the reticulum to the abomasum.

**optic c.** a passage for the optic nerve through the cranium into the orbit. **palatine c.** formed by the maxilla and the palatine bone; transmits the palatine artery and nerve.

**pterygoid c.** the canal in the basisphenoid bone that contains the pterygoid nerve.

**root c.** see **root canal**.

**sacral c.** the part of the vertebral canal within the sacrum.

**Schlemm's c.** a venous sinus of the sclera in the form of a circular canal at the junction of the sclera and cornea that receives the aqueous humor. Called also scleral venous plexus.

**semicircular c's** the canals (anterior, lateral and posterior) of the bony labyrinth of the ear. See also **semicircular canals**.

**spinal c., vertebral c.** the canal formed by the series of vertebral foramina together, enclosing the spinal cord and meninges.

**supraorbital c.** the canal in the frontal bone of pigs and ruminants that transmits the frontal vein and nerve, passing through the zygomatic process to the orbital cavity surrounded by the frontal sinus.

**tarsal c.** formed by the plantar annular ligament of the tarsus which bridges the tarsal groove and transmits the deep digital flexor tendon and plantar vessels.

**triosseus c.** the foramen at the junction of the coracoid, clavicle and scapula which transmits the tendon of a flight muscle, the supra-racoides, in the avian skeleton.

**vertebral c.** spinal canal.

**Volkman's c's** canals communicating with the haversian canals, for passage of blood vessels through bone from the periosteum. See also nutrient canals (above), **haversian canal**.

**canaliculops** a cystic structure of the lacrimal canaliculus containing fluid. See also **dacryops**.

**canaliculus** [kan''ə-lik''u-ləs] pl. *canaliculi* [L.] an extremely narrow tubular passage or channel.

**bile c.** fine tubular channels forming a three-dimensional network within the parenchyma of the liver. They join to form the bile ductules and eventually the hepatic duct.

**bone c.** branching tubular passages radiating like wheel spokes from each bone lacuna to connect with the canaliculi of adjacent lacunae, and with the haversian canal.

**dentinal c.** see **dentinal tubules**.

**intracellular c.** intracellular connection between apical plasmalemma and cytoplasm proper of the parietal cells in the gastric mucosa.

**lacrimal c.** the short epithelial cell-lined channel between the lacrimal punctum in the conjunctiva and the lacrimal sac; part of the lacrimal apparatus which drains tears from the ocular surface to the nose or mouth. See also **lacrimal apparatus**.

**mastoid c.** a small channel in the temporal bone transmitting the tympanic branch of the vagus nerve.

**secretory c.** small canals in serous glandular epithelial cells connecting the cells with the luminal surface.

**canalis** [kə-na''lis] pl. *canales* [L.] a canal or channel.

**canalization** [kan''ə-li-zə''shən] **1.** the formation of canals, natural or morbid. **2.** the surgical establishment of canals for drainage.

**canaloplasty** [kan''ə-lo-plas''te] plastic reconstruction of a passage, as of the external acoustic meatus.

**canary** [kə-na''re] see **Serinus canaria**.

**c. cholera** see avian **pseudotuberculosis**.

**c. stain** bright yellow stain in a wool fleece caused by bacterial growth. Not removable by usual industrial process.

**canary cholera** [kə-na''re kol''ər-ə] see avian **pseudotuberculosis**.

**canary grass** [kə-na''re gras] plants in the genus *Phalaris*. Includes blue canary grass, sunolgrass (*P. coerulescens*), gnawed canary grass, paradoxical canary grass, hood canary grass (*P. paradoxa*), reed canary grass (*P. arundinacea*), Toowoomba canary grass, bulbous canary grass (*P. aquatica*).

**canarypox** [kə-na''re-poks] a disease caused by a poxvirus in the genus *Avipoxvirus*; it spreads slowly amongst canaries, finches, and some other passerines. Characteristic pox lesions occur on eyelids, skin of the head, beak commissures, and sometimes on the oral and pharyngeal mucosae. There is blepharitis and pruritus of the eyelids. Morbidity and mortality are very high. A vaccine is available.

**Canavalia** [kan''ə-val''yə] a genus in the legume plant family Fabaceae; seeds can contain protease inhibitors (trypsin inhibitors). Called also jackbean.

**C. ensiformis** seeds of this plant are used as stock feed but are toxic if fed in amounts in excess of 4% of the animal's body weight. Signs include diarrhea, stiffness, and inability to eat or drink. Called also jack bean, sword bean, Jamician horse bean.

**canavalin** a storage protein found in jack beans (*Canavalia* spp).

see **arginase**.

**canavanine** [kə-nav''ə-nēn] toxic amino acid in *Canavalia* spp. Structural analogue of **arginine** in which the terminal methylene group is replaced by oxygen.

**cancellated** [kan''səl''āt''əd] having a lattice-like structure.

**cancellous** [kan''səl''əs] of a reticular, spongy or lattice-like structure; said mainly of bone tissue.

**cancellus** [kan''səl''əs] pl. *cancelli* [L.] the lattice-like structure in bone; any structure arranged like a lattice.

**cancer** [kan''sər] diseases in which abnormal cells divide without control, invade nearby tissues and may spread to other parts of the body through

the bloodstream and lymphatic system; any malignant neoplasm. See also **tumor, neoplasm**. For individual cancers, see under specific types.

**cancer eye** [kan''sər i] see ocular **squamous cell carcinoma**.

**canceremia** [kan''sər-e''me-ə] the presence of cancer cells in the blood.

**cancericidal** [kan''sər-i''sī''dəl] destructive to tumor cells; oncolytic.

**cancerigenic** [kan''sər-i''jen''ik] giving rise to a malignant tumor. See **carcinogenesis**.

**cancriform** [kan''kri''form] resembling cancer.

**cancroid** [kan''kroid] **1.** cancer-like. **2.** a skin cancer of a low grade of malignancy.

**candela (cd)** [kan''del''ə] the SI unit of luminous intensity.

**candelabra tree** *Euphorbia ingens*.

**candididin** [kan''dī''sī''dīn] a fungicidal or fungistatic antibiotic derived from *Streptomyces griseus* with activity against *Candida albicans* and other fungal infections.

**Candida** [kan''dī''də] a genus of yeast, commonly part of the normal flora of the mouth, skin, intestinal tract, and vagina, but can cause a variety of diseases. Most infections are associated with predisposing factors, particularly immune suppression. Only *C. albicans* is commonly associated with disease. See also **candidiasis**.

**C. albicans** causes thrush in the mouth, crop, proventriculus and the gizzard of birds, and stomatitis, pneumonia and miscellaneous infections in other species. See **candidiasis**. Previously called *Monilia albicans*.

**C. glabrata**, **C. guilliermondii** (now classified as *Meyerozyma guilliermondii*) **C. krusei**, **C. pseudotropicalis**, **C. rugosa** (now classified as *Diutina rugosa*), and **C. tropicalis** have been associated with mastitis in cattle.

**C. parapsilosis** associated with necrotizing placentitis and abortion in cattle.

**candidamycosis** [kan''dī''də-mi''ko''sis] see **candidiasis**.

**candidemia** [kan''dī''de''me-ə] the presence in the blood of fungi of the genus *Candida*.

**candidiasis** [kan''dī''dī''ə''sīs] infection by fungi of the genus *Candida*, generally *C. albicans*. Three specific syndromes are recorded as being caused by *C. albicans*: (1) mycotic stomatitis of baby pigs which can spread to the lower alimentary tract and cause fatal enteritis; (2) chronic pneumonia in cattle in feedlots; (3) thrush-like lesions in the mouth of many species, and esophagus, crop, proventriculus, and gizzard of birds. Many other secondary infections occur, e.g., keratoconjunctivitis, stomatitis, bovine mastitis, esophagitis and ulcerative dermatitis in dogs. *Candida* can be a pathogen in immunosuppressed dogs or cats, or secondary to other systemic disease such as diabetes mellitus, hypercortisolism, hypothyroidism, and neoplasia.

**candidin** [kan''dī''dīn] a skin test antigen derived from *Candida albicans*, used in testing for the development of delayed-type hypersensitivity to the microorganism. Little used in veterinary medicine.

**candidosis** [kan''dī''dō''sīs] candidiasis.

**candiduria** [kan''dī''dū''re-ə] the presence of *Candida* organisms in the urine.

**candl** the examination of the interior of eggs using a bright light in a dark room, to determine the interior quality, the presence of blood spots and meat spots and 1 week after being placed in incubator, to determine those that are fertile, and later to determine those where the embryo has stopped growing.

**candling** the examination of the interior of eggs using a bright light in a dark room, to determine the interior quality, the presence of blood spots and meat spots, and 1 week after being placed in incubator, to determine those that are fertile, and later to determine those in which the embryo has stopped growing. Also used to identify structures in the egg to allow inoculation for culture of viruses or intracellular bacteria and to assess the effects of inoculation on the development and viability of the embryo.

**candyup poison** *Stypantra glauca*.

**Cane Corso** an Italian breed of large (88–110 lb), mastiff-type Italian dog with a muscular body, broad head with ears that fold over or may be cropped, a tail that may be docked, and a short dense coat in black, gray, fawn or red. Called also Italian mastiff.

**candidate stem cell** a stem cell in the hemopoietic system whose function is only assumed.

**cane toad** [kən] *Rhinella marina*, the world's largest toad, native to South and Central America. Introduced into countries such as Australia and Hawaii to control insect pests. Regarded as an invasive species in some countries, causing species decline due to ingestion of the cane toad toxin (bufotoxin). Absorption of toxins through the oral mucosa of dogs, and rarely cats, results in varying degrees of salivation, pulmonary edema, cardiac arrhythmias, cyanosis, and seizures; may be fatal. See also **Bufo**.

**canecutter's disease, cane-cutter fever, canefield fever** see **leptospirosis**.

**canicola fever leptospirosis** in dogs caused by infection by *Leptospira canicola*.



**Canidae** [ka'ni-de] a family in the order Carnivora that includes 14 genera; the two most common are the dogs (*Canis* spp.) and the foxes (*Vulpes* spp.). Includes exotic Canidae, e.g., dingo.

**canine** [ka'nin] **1.** pertaining to or characteristic of dogs. **2.** pertaining to a canine tooth (cuspid). See also **teeth, dog**.

**c. erythrocyte antigen (CEA)** nomenclature revised to dog erythrocyte antigen (DEA).

**c. gastrointestinal hemorrhage syndrome** see acute hemorrhagic diarrhea syndrome.

**c. influenza** a highly contagious, mild to severe respiratory infection of dogs caused by influenza A H3N8 virus and H3N2. Other influenza subtypes have also been detected in dogs. Affected dogs have a mild to severe cough, which may persist for several weeks, purulent nasal discharge, fever, and lethargy; more severe cases develop pneumonia.

**c. laryngotracheitis** see **kennel cough**.

**c. respiratory disease** see canine **distemper, kennel cough**.

**c. tooth** see canine **teeth**.

**tropical c. pancytopenia (TCP)** see canine **ehrlichiosis**.

**c. venereal tumor** see canine transmissible **venereal tumor**.

**c. viral hepatitis** see infectious canine **hepatitis**.

**c. cognitive dysfunction** see **cognitive dysfunction syndrome**.

**Canine Eye Registry Foundation (CERF)** an organization of owners, breeders, and veterinary ophthalmologists concerned with elimination of heritable eye disease in purebred dogs. It maintains a centralized, national registry and a database on eye diseases.

**Canine Health Information Center (CHIC)** a centralized canine health database jointly sponsored by the AKC/Canine Health Foundation (ACK/CHF) and the Orthopedic Foundation for Animals (OFA) to provide a source of health information for owners, breeders, and scientists, that will assist in breeding healthy animals. The database collects health information on individual animals from multiple sources, with increasing use of genetic screening tests.

**Canine Health Schemes** canine health screening programs supported by the British Veterinary Association (BVA) and the Kennel Club (KC); includes the BVA/KC Hip Dysplasia Scheme, the BVA/KC Elbow Dysplasia Scheme; BVA/KC/ISDS Eye Scheme; and the BVA/KC Chiari-malformation/Syringomyelia Scheme. These programs enable breeders to screen for a range of inherited diseases.

**Canis** a genus in the animal family Canidae. Includes the domestic dog (*C. lupus familiaris*), wolf (*C. lupus*), red wolf (*C. rufus*), Oriental jackal (*C. aureus*), coyote (*C. latrans*), dingo (*C. antarcticus* syn. *C. dingo*).

**canker** [kang'kær] **1.** a slang term to describe ulceration, especially of the lip or oral mucosa. **2.** a lay term for otitis externa.

**avian c.** disease of birds caused by *Trichomonas gallinae* and characterized by accumulations of caseous material in the throat.

**ear c.** a lay term applied generally to **otitis** externa, but sometimes specifically to that caused by ear mites.

**equine c.** chronic hypertrophy and necrosis of the horn-producing tissues of the horse's foot, usually a hindfoot. The horn is shed or easily removed from a swollen and necrotic corium. There is lameness and a penetrating foul odor.

**lapine c.** inflammation of the ears of rabbits caused by the mites *Psoroptes communis* or *Chorioptes cuniculi*. The ear canal is filled with an accumulation of serum and sebaceous material.

**reptile c.** common, although outdated, lay term referring to oral stomatitis of reptiles.

**cannabidiol** [kan''ə-bi-di'ol] a physiologically inactive principle from *Cannabis* spp. its tetrahydro derivatives are active. Has been used as an anticonvulsant.

**cannabinoid** [kə-nab'i-noid] any of the active principles of cannabis, including tetrahydrocannabinol (THC), the main psychoactive compound, cannabidiol, cannabinol, and tetrahydrocannabivarin.

**cannabis** [kan'ə-bis] the dried flowering tops of *Cannabis sativa* plants which have euphoric principles (tetrahydrocannabinols) and alkaloids (cannabinoids); grown commercially for the production of cannabis; classified as a hallucinogen and prepared as bhang, ganja, hashish, and marihuana. It has excellent activity as a hypnotic and analgesic, but narcotic control regulations severely restrict use. Called also Indian hemp.

**c. poisoning** dogs that ingest cannabis (e.g., in baked goods) show incoordination, alternating somnolence and hyperactivity, salivation, and muscular weakness.

**Cannabis sativa** Asian plant in the family Cannabidaceae; illicit drug in many jurisdictions; contains the hallucinogen tetrahydrocannabinol (THC); poisoning of dogs and cats produces mostly incontinence, ataxia, and somnolence; dried leaves and flowers are called marijuana, Indian hemp, hemp, 'grass', 'pot'; the resin extracted from the plant is called hashish or bhang. Cultivars that produce little THC (industrial hemp) are used for textile fiber production.

**cannibalism** the eating of part or all of another individual of the same or similar species. It is common only in farmed pigs and chickens, due partly to boredom from the confined space in which the animals are kept. See also **infantophagia**.

**cannon atrial waves** waves seen on venous pressure tracings that can be evident on examination of the jugular veins. They occur when the atria contract against a closed atrioventricular valve and a large pressure wave transcends up the vein. Called also cannon A waves.

**cannon bone** the third metapodial (metacarpal or metatarsal) of the horse, or the third and fourth metapodials (metacarpals or metatarsals) of ruminants.

**cannon keratosis** generic descriptive term referring to the clinical appearance of bilateral areas of alopecia, scaling, and crusting on the anterior surface of the hind cannons. A persistent lesion in mares and stallions.

**cannula** [kan'u-lə] a tube for insertion into a duct or cavity; during insertion its lumen may be occupied by a trocar.

**nasal c.** a means of delivering oxygen to dogs or cats over a long period.

**cannulate** [kan'u-lāt] to introduce a cannula, which may be left in place.

**cannulation** [kan''u-la'shən] introduction of a cannula into a tubelike organ or body cavity.

**umbilical vein c.** a technique used especially for neonatal collapsed primates that need long-term fluid therapy.

**canola** see *Brassica napus*.

**Canpak system** continuous, conveyerized system of line-slaughtering for use in a modern abattoir developed by Canada Packers in Toronto.

**canter** a gallop at an easy pace. The rhythm is three-time, first one hind, then the opposite hind with the diagonal fore, then the opposite fore, the leading limb.

**collected c.** the same action as a canter or gallop but at a very slow pace usually with the head carried high, with almost exaggerated movements but little forward progress, ideal for the show ring.

**canthal ligament** [kan'thəl] broad band of fibrous tissue at the medial and lateral canthus of the eye which loosely anchor the eyelids to the skull and provide tension points against which the orbicularis oculi muscle can cause eyelid closure; contribute to palpebral fissure size and shape; deficient function of the lateral canthal ligament in many broad-skulled dog breeds contributes to ectropion and entropion requiring surgical repair.

**cantharides, cantharidin** [kan-thar'i-dēz] toxic substance obtained from dried blister beetles (*Cantharis vesicatoria*). The toxin can cause severe irritation of the digestive tract and even death when consumed by livestock. African cattle have been poisoned by drinking water contaminated by the beetles. In North America, poisoning of horses occurs when they consume hay made from alfalfa infested with blister beetles. Clinical signs include excitement, diarrhea, nephritis, and vesiculation of the oral mucosa. Cantharides has been used topically as a counterirritant.

**cantharidin** [kan-thar'i-din] see **cantharides**.

**Cantharis vesicatoria** [kan'thə-ris] the source of commercial cantharides. Called also Spanish fly, *Lytta vesicatoria*, blister fly.

**canthaxanthin** a carotenoid pigment, widely distributed in nature, used as a coloring agent; for birds such as flamingos in zoos, or canaries



**C-09:** Severe canker in the frog of a horse's hoof.

From Hinchcliff, K.W., Kaneps, A.J., Geor, R.J., Equine Sports Medicine and Surgery, Saunders, 2004.

carrying the red factor to produce a stronger red color; added to farmed poultry and fish feed in some countries; also administered orally to humans to produce artificial suntan.

**canthi** [kan'thi] plural of **canthus**.

**canthitis** [kan-thi'tis] inflammation of a canthus.

**cantholysis** [kan-thol'i-sis] surgical section of a canthus or a canthal ligament.

**canthoplasty** [kan'tho-plas'te] plastic surgery of a canthus; usually to reduce palpebral fissure size, resect trichiasis or correct entropion/ectropion.

**canthorrhaphy** [kan-thor'a-fe] the suturing of the palpebral fissure at either canthus.

**canthotomy** [kan-thot'a-me] incision of a canthus.

**canthus** [kan'thas] the angular junction of the upper and lower eyelids at their medial and lateral ends, the angles of the palpebral fissure, the medial and lateral canthi.

**medial c.** the medial angle formed by the junction of the upper and lower eyelids.

**recessed medial c. syndrome** in many brachycephalic breeds, a deeply recessed medial canthus leads to medial entropion.

**cantle** the back-most part of the saddle seat.

**Cantonese pig** black and white, meat and lard pig.

**canvassing** making personal representation to individual persons to solicit their custom. Usually used in a political sense but also used in the sense of soliciting for professional patronage, considered to be an unethical practice in most countries.

**CAP 1.** chloroacetophenone; a gas used for riot control in humans. Causes weeping, the so-called tear-gas. Animals exposed to this lacrimator will also be affected. **2.** catabolite gene activator protein; called also cAMP receptor protein; a bacterial gene regulatory protein.

**cap** [kap] **1.** the top, to top. **2.** an oval or thumbnail-shaped area of light-colored feathers covering the crown of lizard canaries.

**dental c. 1.** residual deciduous teeth sitting on top of erupting permanent teeth. **2.** a crown prosthesis.

**dental c. stage** a condensation of the oral epithelium of the embryo's dental lamina establishes the cap stage of the developing tooth.

**spermatozoal c.** invests the head of the spermatozoa. Called also acrosomal cap, head cap.

**CAP binding protein** catabolite activator protein, a regulatory protein in the switch from glucose to lactose metabolism in *Escherichia coli* that binds to the same sequence recognition site, located immediately in front of the *lac* operator sequence, as RNA polymerase.

**Cap-Chur** one of the original capture darts which inject medicament explosively and are retained in tissue by a barbed needle; have the difficulty of failure to recover the dart.

**cap structures of RNA** a distinctive formation at the 5' terminus of mature eukaryotic mRNA, consisting of an 7-methylguanosine base attached via 5'-phosphate-5'-phosphate bonds rather than the usual internucleotide 3',5'-phosphodiester linkages between adjacent riboses. The cap recruits cellular proteins and mediates pre-mRNA processing, cap-dependent protein synthesis, and nuclear export.

**capacitance** [kə-pas'i-təns] **1.** the property of being able to store an electric charge. **2.** the ratio of charge to potential in a conductor. Previously called capacity. Measured in the SI unit, **farad**.

**capacitation** [kə-pas'i-ta'shən] the physiological changes the spermatozoa must undergo in the female tract or in vitro before being capable of penetrating the ovum.

**capacitor** [kə-pas'i-tər] a device for holding and storing charges of electricity.

**capacity** [kə-pas'i-te] the power to hold, retain, or contain, or the ability to absorb; usually expressed numerically as the measure of such ability.

**carrying c.** see **carrying capacity**.

**closing c. (CC)** the volume of gas in the lungs at the time of airway closure. See also **closing volume**.

**forced vital c.** the maximal volume of gas that can be exhaled from full inspiration exhaling as forcefully and rapidly as possible. See also **pulmonary function tests**.

**heat c.** thermal capacity.

**inspiratory c.** the volume of gas that can be taken into the lungs in a full inspiration, starting from the resting inspiratory position; equal to the tidal volume plus the inspiratory reserve volume.

**maximal breathing c.** maximal voluntary ventilation.

**thermal c.** the amount of heat absorbed by a body in being raised 1°C.

**total lung c.** the amount of gas contained in the lung at the end of a maximal inspiration.

**virus neutralizing c.** the ability of a serum to inhibit the infectivity of a virus.

**vital c.** the volume of gas that can be expelled from the lungs from a position of full inspiration, with no limit to duration of expiration. The sum of tidal volume, expiratory reserve volume and inspiratory reserve volume.

**Cape Barren goose** (*Cereopsis novaehollandiae*) large gray and white southern Australian goose with a green cere.

**Cape honey flower** *Melianthus comosus*.

**cape tulip** *Moraea*.

**capeweed** see *Arctotheca calendula*.

**capillarectasia** [kap'i-lar'ək-ta'zhə] dilatation of capillaries.

**Capillaria** [kap'i-lar'e-ə] a genus of parasitic nematodes of the subfamily Capillariinae and most commonly parasitic in birds. They cause capillariasis. Recently, the genus has been split into a number of genera, including *Eucoleus*, *Hepaticola*, and *Calodium*. Those found in birds include *C. anatis*, *C. annulata* (*C. contorta*), *C. caudinflata*, and *C. obsignata*. Those found in mammals include *C. aerophila*, *C. bilobata*, *C. bovis*, *C. brevipes*, *C. didelphis*, *C. entomelas*, *C. erinacea*, *C. feliscati* (in cats), *Calodium hepaticum*, *C. megrellica*, *C. mucronata*, *C. philippinensis*, *C. plica*, and *C. putorii*. There are others that occur in small rodents and in fish.

**capillariasis** [kap'i-lar'i-ə-sis] infection with nematodes of the genus *Capillaria*. In birds, the disease is manifested by chronic gastroenteritis and affected birds are emaciated. The disease in mammals may be enteritis with diarrhea (*C. bovis*, *C. entomelas*), cystitis (*C. felis cati*, *C. plica*), hepatitis (*C. hepatica*), or bronchopneumonia (*C. aerophila*, *C. didelphis*).

**capillariomotor** [kap'i-lar'e-o-mo'tər] pertaining to the functional activity of the capillaries.

**capillaritis** [kap'i-lar-i'tis] inflammation of the capillaries.

**capillarity** [kap'i-lar'i-te] the action by which the surface of a liquid where it is in contact with a solid, as in a capillary tube, is elevated or depressed.

**capillary** [kap'i-lar'e] **1.** pertaining to or resembling a hair. **2.** one of the minute vessels connecting arterioles and venules, the walls of which act as a membrane for interchange of various substances between the blood and tissue fluid. (See **circulatory system**.) The walls consist of thin endothelial cells through which dissolved substances and fluids can pass. At the arterial end, the blood pressure within the capillary is generally higher than the pressure in the surrounding tissues, and the blood fluid and some dissolved solid substances pass outward through the capillary wall. At the venous end of the capillary, the pressure within the tissues is generally higher, and waste material and fluids from the tissues pass into the capillary, to be carried away for disposal. See **Starling's hypothesis**.

**continuous c.** a capillary with no pores or other interruptions in the endothelial walls, e.g., in muscle, lung, nervous system.

**fenestrated c's** capillaries with pores scattered throughout the endothelial walls, as those in endocrine glands, intestines, kidneys, and other tissues.

**c. fragility** see capillary **fragility**.

**lymph c.** the smallest lymphatic vessel. Consists of an endothelial tube embedded in connective tissue.

**perforated c.** see fenestrated capillary (above).

**c. permeability** ability of large molecules to pass out of the capillary lumen into surrounding tissue spaces; inflammation, allergy, poisoning, burns cause increased permeability resulting in plasma leakage and edema in surrounding tissues.

**c. refill time (CRT)** the time required for mucosa (oral in horse or dog, vaginal in cow, sheep) that has been blanched by finger pressure to return to a normal pink color. Failure to return promptly is an indication of peripheral circulatory failure, due for example to dehydration or hypovolemic shock.

**sinus c's** part of the vasculature of avian skin. Occur together with standard capillaries but they are larger in diameter and may have some smooth muscle cells associated with the endothelial cells.

**sinusoidal c's** large and irregularly shaped; occur in endocrine glands, aortic and carotid bodies, and liver.

**capilli** [kə-pil'əs] pl. *capilli* [L.] a hair; used in the plural to designate an aggregation of hairs.

**capital** [kap'i-təl] pertaining to the head.

**c. femoral epiphysis** epiphysis of the head of the femur; its detachment represents a specific syndrome in pigs.

**capitation** [kap'i-ta'shən] the annual fee paid to a professional person of any sort as payment for providing services on a continuous basis. The fee paid is based on the number of animal participants in the scheme—the capitation fee.





**C-10:** Fracture of the capital epiphysis of the right femur in a 6-month-old Collie.

**capitular** [kə-pit'ū-lār] pertaining to a capitulum or the head of a bone.

**capitulum** [kə-pit'ū-lām] pl. *capitula* [L.] a small eminence on a bone such as the rounded one on the distal end of the humerus, by which it articulates with the head of the radius.

**costal c.** see **caput** costae.

**c. humeri** the articular part of the lateral distal end of the humerus that articulates with the head of the radius.

**capn(o)-** word element. [Gr.] pertaining to carbon dioxide.

**Capnocytophaga canimorsus** [kap'no-si-tof'ə-gə] small, microaerophilic, gram-negative, rod-shaped bacteria that are commensals of the mouth and nasopharynx of dogs and cats and have been implicated in septicemia, meningitis, endocarditis and have been isolated from dog and cat bite wounds in humans; they closely resemble *Bacteroides ochraceus*. Formerly called DF-2 and DF-2-like.

**capnogram** [kap'no-gram"] continuous measurement of carbon dioxide partial pressures in exhaled gas especially of anesthetized animals.

**capnography** [kap'nog'rə-fē] the technique of monitoring carbon dioxide in exhaled gases by use of capnograms.

**mainstream c.** uses an in-line infrared CO<sub>2</sub> sensor connected directly to the airway, between the endotracheal tube and the breathing circuit.

**sidestream c.** airway gas samples are collected from the breathing circuit; the infrared sensor is located in a remote monitor.

**capnometer** [kap-nom'ə-tər] an instrument for monitoring breathing rate and adequacy of ventilation. It attaches to the endotracheal tube and measures the partial pressure of carbon dioxide in expired gases.

**capon** [ka'pon] castrated male fowl, larger than broiler, weighing up to 7 lb. Previously produced either by administration of estrogenic substances or by surgical excision of the testicles.

**caponization** technique of creating a **capon**.

**caponizing** castration by surgical removal of testicles. Term usually refers to chickens, with the caponized bird called a capon. Chemical castration is also practiced, usually by hormonal implants.

**capotement** [Fr.] a splashing sound heard in dilatation of the stomach.

**Capparis tomentosa** African plant in the family Capparaceae; contains an unidentified hepatotoxin; causes hepatic insufficiency, jaundice, photosensitization and encephalopathy. Called also hekkabit, gulum, haujeri.

**capped elbow** [kapt] see elbow **hygroma**.

**capped hock** [kapt] see hock **hygroma**.

**cappi** [kap'e] see **double scalp**.

**capping** [kap'ing] **1.** the provision of a protective or obstructive covering. **2.** posttranscriptional modification of eukaryotic mRNA by addition of a 5' m<sup>7</sup>G cap. The cap serves a crucial function in cap-dependent initiation of protein-synthesis, and it protects mRNA from 5' to 3' exonuclease cleavage. It also serves as an identifier for recruiting host cell proteins for pre-mRNA splicing, polyadenylation and nuclear export.

**c. phenomenon** the movement of antibody-induced clustering of plasma membrane molecules (patching) to a single pole of the cell.

**pulp c.** the covering of an exposed dental pulp with some material to provide protection against external influences and to encourage healing.

**Capra** the genus of goats and ibexes in the family Bovidae, subfamily Caprinae; includes the **markhor** (*C. falconeri*), domestic **goat** (*C. aegagrus hircus*), wild goat (*C. aegagrus*), and **ibex** (*C. ibex* spp.).

**capreomycin sulfate** [kap're-o-mi'sin] a polypeptide antibiotic produced by *Streptomyces capreolus*, active against human strains of *Mycobacterium tuberculosis* and sometimes considered for the treatment of mycobacterial infections in animals.

**capric acid, n-capric acid** [kap'rik] a 10-carbon saturated fatty acid that occurs in coconut and palm kernel oils and in the milk of some mammals. Called also decanoic acid.

**Caprinae** a subfamily in the family Bovidae; as well as sheep and goats, it includes the **takins**, **serows**, **tahrs**, **gorals**, and **chamois**.

**caprine** [kap'rin] pertaining to or emanating from goats.

**c. arthritis–encephalitis (CAE)** a multisystem disease of goats involving synovial lined connective tissue, caused by a member of the family *Retroviridae*, subfamily *Lentivirinae*. There is a high degree of relatedness with the lentivirus associated with maedi-visna (ovine progressive pneumonia) in sheep. It causes chronic arthritis in adults and leukoencephalomyelitis, characterized by ataxia, proprioceptive loss and paralysis, in young kids. Indurative mastitis, and less commonly chronic pneumonia and chronic encephalomyelitis, occur in older goats. The primary mode of transmission is through the colostrum and milk. A disease notifiable to the OIE (see Table 21). Called also big knee, caprine leukoencephalomyelitis, and the indurative mastitis—hardbag.

**c. encephalomyelitis** see caprine arthritis–encephalitis (above).

**c. enzootic nasal granuloma** see **enzootic nasal tumor**.

**c. herpesvirus-1 (CpHV-1)** an alphaherpesvirus within the family *Herpesviridae*. Restriction endonuclease analysis indicates that there are different strains but these are not geographically clustered. Causes abortion, neonatal disease, vulvovaginitis and balanoposthitis and may cause abortion.

**c. herpesvirus-2 (CpHV-2)** a gammaherpesvirus isolated from goats that is closely related antigenically to ovine herpesvirus-2 (OvHV-2), the sheep associated malignant catarrhal fever virus. Another, also closely related virus, called deer herpesvirus (DHSV), has been isolated. The pathogenicity of these newly recognized viruses is not known.

**caprinized vaccine** see **caprinized vaccine**.

**Capripoxvirus** [kap'ri-poks'vi-rəs] a genus in the order Poxvirales, family Poxviridae members of which cause **sheeppox** and **goatpox** and **lumpy skin disease** of cattle.

**caproate** [kap'ro-āt] any salt or ester of caproic acid (hexanoic acid).

**caprolactum** see **Vetafil**.

**Capromyces** see *Mycoplasma*.

**caprylic acid** [kə-pril'ik] an eight-carbon saturated fatty acid found in milk. Called also octanoic acid.

**capsaicin** [kap-sa'i-sin] the active ingredient in chili peppers, it is an inhibitor of substance P. Used topically as an anti-inflammatory, analgesic and antipruritic to treat acral lick granulomas in dogs.

**capsid** [kap'sid] the shell of protein that protects the nucleic acid of a virus; it is composed of individual morphological units called capsomers. For icosahedral viruses, there are two kinds of capsomers called pentamers, which occupy the 12 corner positions of the icosahedral shell, and hexamers, which occupy the face and edges. The number of hexamers varies between different viruses. The capsomers of helical viruses are composed of a single polypeptide and are also called protomers. All viruses of animals, except for poxviruses that have a complex structure, are minimally composed of a nucleocapsid that is the capsid surrounding the nucleic acid. In addition, some viruses have a lipid bilayer envelope surrounding the nucleocapsid.

**capsomer, capsomere** [kap'so-mər, kap'so-mēr] a morphological unit of the capsid of a virus.

**capsula** [kap'su-lə] [L.] capsule.

**capsulation** [kap'su-lə-shən] containment of medicine in a capsule.

**capsule** [kap'səl] **1.** an enclosing structure, as a soluble container enclosing a dose of medicine. **2.** a cartilaginous, fatty, fibrous, or membranous structure enveloping another structure, organ, or part.

**adipose renal c.** the investment of fat surrounding the fibrous capsule of the kidney, continuous at the hilus with the fat in the renal sinus. In cattle this forms a thick hard layer of fat known as suet.

**articular c.** the saclike envelope that encloses the cavity of a synovial joint by attaching circumferentially to the articular ends of the participating bones. Called also joint capsule.

**bacterial c.** a coating of polysaccharide, polypeptide, or proteoglycan produced by certain types of bacteria; it inhibits phagocytosis and can be associated with the virulence of pathogenic bacteria.

**Bowman's c.** glomerular capsule.



**brain c's** three layers of white matter in the substance of the brain. See external capsule, internal capsule, and extreme capsule (below).

**external c.** the layer of white fibers between the putamen and claustrum in the white matter of the brain.

**extreme c.** the thin lamina of white fibers separating the claustrum from the cortex of the insula in the white matter of the brain. See also internal capsule (below).

**fibrous renal c.** the connective tissue investment of the kidney, which continues through the hilus to line the renal sinus.

**Glisson's c.** a sheath of connective tissue accompanying the hepatic ducts and vessels within the liver.

**glomerular c.** the globular dilatation forming the beginning of a uriniferous tubule within the kidney, and surrounding the glomerulus. Called also Bowman's capsule and malpighian capsule.

**heart c.** outmoded term for the pericardium.

**internal c.** the major mass of nerve fibers in the white matter by which the cerebral cortex is connected with the brainstem and spinal cord. It consists of a thick, fanlike mass of white fibers that separate the lentiform nucleus laterally from the head of the caudate nucleus, the dorsal thalamus, and the tail of the caudate nucleus medially; it is continuous laterally and dorsally with the corona radiata, while caudally and medially it becomes smaller and continues as the crus cerebri.

**joint c.** see articular capsule (above).

**lens c.** the elastic sac enclosing the lens of the eye.

**malpighian c.** see glomerular capsule (above).

**Tenon's c.** the connective tissue enveloping the sclera of the eye, from which it is separated by a narrow cleft-like episcleral space; it is attached near the corneoscleral junction. Called also vagina bulbi.

**capsulectomy** [kap'su-lek'tə-mē] excision (partial or complete) of a capsule, especially a joint capsule, or prostate gland.

**capsulolenticular** [kap'su-lo-len-tik'u-lər] pertaining to the lens of the eye and its capsule.

**capsuloma** [kap'su-lo'mə] a capsular or subcapsular tumor of the kidney.

**capsuloplasty** [kap'su-lo-plas'tē] plastic repair of a joint capsule.

**capsulorrhaphy** [kap'su-lor'ə-fē] suture of a joint capsule.

**capsulorrhexis** [kap'su-lo-rek'sis] tearing of the lens capsule; performed during cataract surgery to permit removal of the lens fibers.

**capsulotomy** [kap'su-lot'ə-mē] incision of a capsule, as that of the lens or of a joint.

**captan** group of organic sulfur compounds used as fungicides, including topical treatment of dermatophytosis. Poisoning of birds causes loss of egg production, anorexia, and slow growth.

**captive** said of naturally wild or feral animals kept in captivity for educational and scientific investigation with no attempt being made to domesticate them.

**captive bolt pistol** a handheld weapon used for euthanasia of large animals. The muzzle is placed against the subject's forehead. When the trigger is pulled, or the firing pin struck a sharp blow, a 3-cm rod, 1-cm diameter exits sharply from the muzzle and pierces the skull and damages the brain. The rod does not leave the weapon and there is no possible risk of injuring a bystander.

**captive breeding** mating programs designed for use with animals kept in captivity. See also hand mating.

**captopril** [kap'to-pril] an angiotensin-converting enzyme (ACE) inhibitor used as a vasodilator in the treatment of congestive heart failure, mitral regurgitation and hypertension. Now often replaced by other ACE inhibitors such as enalapril, benazepril.

**capture** [kap'chər] the snaring and restraint of an escaped domesticated animal or a feral animal. It requires safety for the captor and the subject. Includes physical means of trap cages, the thrown lariat, a handheld net for small companion animals. Thrownets for birds are still favored by lay persons. Veterinarians are more inclined to use immobilizing agents delivered by darts from bows and arrows or from dart guns. See also restraint.

**c.-mark-release-recapture** technique for establishing the nature of animal movements and the size of populations.

**c. shock syndrome** in recently captured animals with death 1–6 hours after capture. Signs include shallow, rapid respiration, tachycardia, physical collapse, hyperthermia, small pulse, elevated CPK concentrations, general vascular congestion at necropsy.

**c. stress syndrome** stress syndrome in wild animals in captivity.

**capture myopathy** see exertional rhabdomyolysis.

**capture-recapture method** a method of estimating the prevalence of a condition in a population. Initially used in populations of wild animals, which were captured, marked, released, and recaptured, but the same

statistical process is now used in other types of population. See also **Lincoln-Petersen method**.

**caput** [kap'ət] pl. *capita* the head; a general term applied to the expanded or chief extremity of an organ or part.

**c. mallei** head of the malleus in the middle ear; it articulates with the incus.

**c. costae** the head of a rib; it characteristically bears one or two articular facets that articulate with the adjacent costal foveae of contiguous vertebrae and their intervening fibrocartilage.

**c. mandibulae** the head of the mandible that articulates with the squamous part of the temporal bone.

**c. stapedis** the head of the stapes; it articulates with the incus through the interposed minute ossicle, the os lenticulare.

**capybara** (*Hydrochoerus hydrochaeris*) in the family Caviidae, which includes guinea pigs, which it resembles except in its much larger size. Native to South America, it is the largest rodent (over 100 lb) with a barrel-shaped body, short legs, and no tail. It is largely aquatic. Hunted for its meat and pelt and sometimes kept as a pet. Called also carpincho.

**CAR** congenital articular rigidity.

**car sickness** see motion sickness.

**caracachada** [Port.] swollen or enlarged face; a purulent periodontitis, halitosis, progressive loss of premolar teeth, mainly of the upper jaw, and emaciation in young cattle grazing new pastures sown in ground of recently cleared forest areas in Brazil. The cause is unknown but *Trueperella pyogenes* and *Bacterioides melaninogenicus* have been isolated from periodontal lesions.

**carabao** (*Bubalus bubalis*) a domesticated subspecies of water buffalo found in the Philippines and elsewhere in Southeast Asia. The national animal of the Philippines.

**caracal** (*Caracal caracal*) a long-legged desert cat, native to Africa, India, Central Asia and the Middle East, with distinctive elongated, black-tufted ears. A highly secretive nocturnal carnivore.

**caracara** a group of predatory birds in the family Falconidae characterized by long legs and reddish skin on the cheeks and throat. Found throughout the Americas, called also carrion hawks.

**caracul** see Karakul.

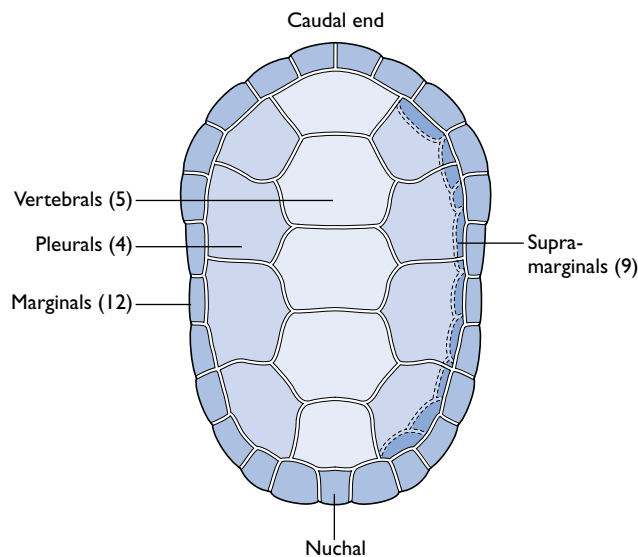
**caramiphen ethanedisulfonate** [kə-ram'ī-fen] an anticholinergic and antitussive agent.

**carapace** the dorsal shell of turtles and tortoises. Abnormalities are caused by trauma, dietary deficiencies (particularly nutritional hyperparathyroidism), infections, environmental factors and tumors.

**Carassius** a genus of fish in the family Cyprinidae, generally referred to as Crucian carps.

**C. auratus** see goldfish.

**C. carassius** farmed finfish in family Cyprinidae; called also Crucian carp.



**C-11:** Carapace.

Aspinall, V., Cappello, M. Introduction to Veterinary Anatomy and Physiology Textbook, 3rd Edition. Butterworth-Heinemann, 2015.

**carazolol** a non specific  $\beta$ -adrenergic receptor blocking agent; used to prevent stress or facilitate parturition and placental expulsion in pigs.  
**carbachol** [kahr'ba-kol] a potent choline ester with muscarinic and nicotinic effects. Used mainly in ophthalmology to produce miosis and increase aqueous outflow and thus decrease intraocular pressure, in patients with glaucoma. Also called carbamylcholine.

**carbadox** [kahr'ba-doks] a substituted quinoxaline antibiotic used as feed additive in the prevention of swine dysentery and growth promotant. Its use is strictly controlled and subject to withdrawal periods in many countries and banned altogether in the European Union and Canada and its use in the US is under review.

**carbamates** [kahr'ba-mats] effective insecticides and fungicides which exert their effect by temporarily inhibiting cholinesterase activity. They are also capable of poisoning. Clinical signs are pupillary constriction, muscle tremor, salivation, ataxia, and dyspnea. Widely used in homes, gardens, and agriculture.

**carbamazepine** [kahr'ba-maz'epēn] an anticonvulsant and analgesic used in the treatment of pain and for control of partial or generalized tonic-clonic seizures, often in combination with other drugs; rarely effective as a sole agent in the control of seizures in dogs or cats.

**carbamide** [kahr'ba-mid] urea in anhydrous, lyophilized, sterile powder form; administered intravenously in dextrose or invert sugar solution to induce an osmotic diuresis in the treatment of cerebral edema and glaucoma. Now largely superseded by more effective agents.

**c. peroxide** urea hydrogen peroxide; a ceruminolytic agent used in cleaning the external ear canal.

**carbamino-hemoglobin** [kahr-bam'no-he'mo-glo'bin] a combination of carbon dioxide and hemoglobin,  $\text{CO}_2\text{HHb}$ , being one of the forms in which carbon dioxide exists in the blood.

**carbamoyl** [kahr-bam'o-əl] the radical  $\text{NH}_2\text{-CO-}$ .

**c. phosphate synthetases** enzymes catalyzing the synthesis of carbamoyl phosphate. Carbamoyl-phosphate synthetase I is the starting enzyme of the urea cycle. Carbamoyl-phosphate synthetase II is the starting enzyme of pyrimidine synthesis.

**carbamoyltransferase** [kahr-bam'o-əl-trans'fēr-ās] see ornithine carbamoyl transferase.

**carbamylcholine chloride** [kahr'ba-məl-ko'lēn klor'id] see **carbachol**.

**carbamylmethylcholine** [kahr'ba-məl-meth'əl-ko'lēn] see **bethan-echol**.

**carbanilides** drugs, e.g., imidocarb, with therapeutic efficiency against *Babesia* spp.

**carbapenems** [kahr'ba-pen'amz] a class of  $\beta$ -lactam antibiotics with a wider range of antibacterial activity than the penicillins and cephalosporins, particularly against gram-negative bacteria; includes **imipenem**, **meropenem**, **doripenem**, and **thienamycin**. To slow the development of drug resistance in both human and animal pathogens, use of carbapenems in veterinary medicine is generally reserved for documented infections with multidrug-resistant (MDR) pathogens that are known to be sensitive to a carbapenem and resistant to all other available antibiotic options.

**carbarson** an arsenical compound once used as a feed additive for the prevention of histomoniasis in chickens and turkeys.

**carbaryl** [kahr'ba-rəl] carbamate insecticide used widely in companion animals to control ectoparasites.

**carbenicillin** [kahr'ban-ē-sil'in] an extended-spectrum penicillin, prepared as both the disodium and the potassium salt, particularly effective against gram-negative bacteria, including some strains of *Pseudomonas aeruginosa* and *Proteus* spp. Carbenicillin indanyl is suitable for oral administration.

**carbimazole** an antithyroid drug, metabolized to **methimazole**; used in the treatment of feline hyperthyroidism.

**carbofuran** a carbamate acaricide and nematocide; banned in many countries because of toxicity.

**carbohydrase** [kahr'bo-hi'drās] any of a group of enzymes that catalyze the hydrolysis of higher carbohydrates to lower forms.

**carbohydrate** [kahr'bo-hi'drāt] a compound of carbon, hydrogen and oxygen, the latter two usually in the proportions of water ( $\text{CH}_2\text{O}$ )<sub>n</sub>. They are classified into mono-, di-, tri-, poly-, and heterosaccharides. Carbohydrates in food are an important and immediate source of energy for the body; 1 gram of carbohydrate yields 3.75 calories (16 kilojoules). They are present, at least in small quantities, in most foods, but the chief sources are the sugars and starches of plants. Herbivores are able to utilize the insoluble polysaccharides (crude fiber) because of bacterial conversion to volatile fatty acids by fermentation in the rumen and cecum. Carbohydrates may be stored in the body as glycogen for future use. If they are eaten in excessive amounts they are converted to and

stored as fat. Rapid ingestion of very large amounts in ruminants and horses causes **carbohydrate engorgement**.

**complex c.** polysaccharides containing either  $\alpha$ - and  $\beta$ -type glycosidic bonds. Usually occurring in mixtures in food.

**dietary c.** the carbohydrate components of food.

**c. loading** depletion/repletion means of maximally loading glycogen into type II muscle for increased power of muscle contraction.

**c. loss** glucose loss in urine due to diabetes mellitus or chronic renal disease.

**c. metabolism** series of related enzymic reactions involved in the synthesis and catabolism of carbohydrates.

**c. tolerance test** see **glucose tolerance test**.

**carbohydrate engorgement** [kahr'bo-hi'drāt en-gorj'mənt] engorgement by ruminants and horses on carbohydrate-rich food that results in fermentation in the rumen, or stomach in the case of horses, with the production of large amounts of lactic acid. Absorption of the acid results in the development of a lactic acidemia. Retention in the alimentary tract causes osmotic withdrawal of fluid from the body tissues and severe dehydration. The resulting clinical syndrome includes abdominal enlargement, hypovolemic shock, ruminal stasis, severe toxemia, weakness, recumbency, and a very high mortality rate. The pH of the ruminal contents is usually less than 5. Absorption causes severe systemic acidosis. Horses also suffer dehydration and lactic acidosis after engorgement on grain. Laminitis is an additional sequel. Called also grain engorgement, rumen overload, grape engorgement.

**carbohydraturia** [kahr'bo-hi'drāt-u're-ə] excess of carbohydrates in the urine.

**carbolic acid** [kahr-bəl'ik] the common name for phenol a caustic poison obtained by distillation of coal tar or produced synthetically; used as an antiseptic and stable floor disinfectant.

**carbasalate calcium** an analgesic and antipyretic, metabolized to aspirin with similar effects.

**carbolineum** a coal-tar disinfectant used as a spray for poultry houses. Excessive use causes damage and irritation to the wattles and comb, and acute hepatic inefficiency.

**carbolicism** [kahr'bəl-iz-əm] **phenol** (carbolic acid) poisoning.

**carbomycin** a macrolide antibiotic used as a feed additive and growth promotant.

**carbon (C)** [kahr'bən] a chemical element, atomic number 6, atomic weight 12.011.

**asymmetric c. atom** one bonded to four different atoms. See also **isomer**.

**c. fiber** made by the pyrolyzation of polymer fibers at very high temperatures and used in various forms as soft tissue implants, particularly in tendon and ligament repair.

**c. fixation** see **dark reaction**.

**carbon dioxide** [kahr'bən di-ok'sid] an odorless, colorless gas,  $\text{CO}_2$ , resulting from oxidation of carbons, formed in the tissues and eliminated by the lungs; used with oxygen to stimulate respiration and in solid form (carbon dioxide snow—see below) as an escharotic, as a gas to euthanize laboratory rabbits and rodents.

**c. d. anesthesia** exposure to atmospheres of 60–70% carbon dioxide in air has been used to cause narcosis and anesthesia in pigs and chickens prior to slaughter.

**c. d. combining power** the ability of blood plasma to combine with carbon dioxide; indicative of the alkali reserve and a measure of the acid–base balance of the blood.

**c. d. content** the amount of carbonic acid and bicarbonate in the blood; reported in millimoles per liter.

**c. d. dissociation curve** a graph demonstrating the relationship between the blood content of  $\text{CO}_2$  and the  $P_{\text{CO}_2}$ .

**c. d. narcosis** a sleep-like state caused by increases in the arterial partial pressure of carbon dioxide (hypercapnea).

**c. d. snow** solid carbon dioxide, formed by rapid evaporation of liquid carbon dioxide; it gives a temperature of about  $-110^\circ\text{F}$  ( $-79^\circ\text{C}$ ), and is used as an escharotic in various skin diseases. Called also dry ice.

**c. d. tension** the partial pressure of carbon dioxide in the blood; noted as  $P_{\text{CO}_2}$  in **blood gas analysis**. See also **respiration**.

**c. d. transport** carbon dioxide passes from tissues to blood by diffusion, in the blood by solution and via reactions within plasma and erythrocytes, from blood to pulmonary alveoli by diffusion.

**carbon dioxide–bicarbonate buffer system** major body buffering system for acid–base balance.

**carbon dioxide–oxygen therapy** administration of a mixture of carbon dioxide and oxygen (commonly 5%  $\text{CO}_2$  and 95%  $\text{O}_2$ , or 10%  $\text{CO}_2$  and 90%  $\text{O}_2$ ); used for improvement of cerebral blood flow or stimulation

of deep breathing. Carbon dioxide acts by stimulating the respiratory center; it also increases heart rate and blood pressure.

**carbon disulfide** an inflammable, volatile liquid used for treatment of bot fly larvae in the stomach of horses. Administered by stomach tube. Mixed with air, it is dangerously explosive. Excess doses cause excitement, weakness and collapse.

**carbon monoxide** a colorless, odorless, tasteless gas, CO, formed by burning carbon or organic fuels with a scanty supply of oxygen; inhalation causes central nervous system damage and asphyxiation. Carbon monoxide is present in the exhaust of petrol engines, in the smoke of wood and coal fires, in manufactured gas such as that used in the household, and wherever carbon burns without a sufficient supply of oxygen.

**c. m. poisoning** poisoning by carbon monoxide; one of the most common types of gas poisoning. When carbon monoxide is inhaled, it comes in contact with the blood and combines with hemoglobin. Since carbon monoxide combines more readily with hemoglobin than does oxygen, it takes the place of oxygen in the erythrocytes, and the tissues are thus deprived of their normal oxygen supply. Death from asphyxia results if a large enough quantity of carbon monoxide is inhaled. Because death is very sudden, carbon monoxide has been used as a euthanizing agent for dogs in large numbers, but is not widely accepted as a humane method.

**carbon tetrachloride** a clear, colorless, mobile liquid; the inhalation of its vapors can depress central nervous system activity and cause degeneration of the liver and kidneys. It is no longer used as a fasciolicide so poisoning is rare. It is a potent hepatotoxin especially in sheep, in which it can cause serious losses at dose rates that on most occasions are innocuous, and in cattle when it is administered by mouth instead of by injection.

**carbonate** [kahr'ba-nāt] a salt of carbonic acid with the formula  $\text{HCO}_3^-$ .

**c. calculi** see carbonate **urolith**.

**carbonic acid** [kahr-bon'ik] acid with the formula  $\text{H}_2\text{CO}_3$ . Also refers to an aqueous solution of carbon dioxide, which contains a small amount of  $\text{H}_2\text{CO}_3$ .

**c. a. anhydrase** see **carbonic anhydrase**.

**carbonic anhydrase** [kahr-bon'ik an-hi'drās] an enzyme that catalyzes the reversible conversion of carbon dioxide to bicarbonate ions and thus facilitates the transport and elimination of carbon dioxide from tissues. The enzyme is also important in making adequate calcium available for the deposition of shells on birds' eggs. See also **carbonic anhydrase diuretics**.

**carbonuria** the presence in the urine of carbon dioxide or other carbon compounds.

**carbonyl** [kahr'ba-nəl] the bivalent organic radical, C=O or C:O, characteristic of aldehydes, ketones, carboxylic acid and esters.

**carbophenothion** an organophosphorus cholinesterase inhibiting insecticide used on plants and animals; it is effective but has the usual potential toxicity of this group. In some countries, its use is not permitted on food producing animals.

**carboplatin** [kahr'bo-plat'in] a chemotherapeutic agent that is a **cisplatin** analog, but with fewer side effects and safer for use in cats.

**γ-carboxy glutamic acid-containing protein** [kahr-bok'se-gloo-tam'ik] protein containing the unusual amino acid γ-carboxy-glutamate. Several blood clotting factors and osteocalcin found in bone are of this type of protein.

**carboxy-lyase** [kahr-bok'se-li'ās] any of a group of lyases that catalyze the removal of a carboxyl group; it includes the carboxylases and decarboxylases.

**carboxyatractyloside** hepatic toxin in the cotyledons of *Xanthium* spp. and in *Cestrum*, *Wedelia* spp.

**carboxyhemoglobin** [kahr-bok'se-he'mo-glo'bin] hemoglobin combined with carbon monoxide, which occupies the sites on the hemoglobin molecule that normally bind with oxygen and is not readily displaced from the molecule; exposure to carbon monoxide thus results in cellular anoxia. See also **hemoglobin**.

**carboxyhemoglobinemia** [kahr-bok'se-he'mo-glo'bin-e'me-ə] excessive concentrations of carbon monoxide in the blood.

**carboxyl** [kahr-bok'səl] the monovalent radical,  $-\text{COOH}$ , found in those organic acids termed carboxylic acids.

**carboxylase** [kahr-bok'sə-lās] an enzyme that catalyzes the addition of a carboxylic acid to a substrate.

**carboxylation** [kahr-bok'sə-la'shən] the addition of a carboxyl group, as to pyruvate to form oxaloacetate.

**carboxylesterase** [kahr-bok'sə-les'ter-ās] an enzyme that catalyzes the hydrolysis of the esters of carboxylic acids.

**carboxylic acid** an organic compound containing the carboxy group ( $-\text{COOH}$ ), which is weakly ionized in solution forming a carboxylate ion ( $-\text{COO}^-$ ).

**carboxyltransferase** [kahr-bok'sal-trans'fēr-ās] any enzyme that catalyzes the transfer of a carboxyl group from one compound to another.

**carboxymethylcellulose sodium** [kahr-bok'se-meth'al-sel'u-lōs] a hygroscopic powder that forms an emollient gel; used as a bulk laxative, and intraperitoneally during abdominal surgery (e.g., colic surgery in horses) to minimize the postoperative development of serosal-serosal and serosal-peritoneal adhesions. See also **methycellulose**.

**carboxymyoglobin** [kahr-bok'se-mi'o-glo'bin] a compound formed from myoglobin on exposure to carbon monoxide.

**carboxypeptidase** [kahr-bok'se-pep'ti-dās] an exopeptidase enzyme secreted by the pancreas that acts only on the peptide linkage of a terminal amino acid containing a free carboxyl group; includes carboxypeptidases A and B.

**Carbozoo** historic anthrax vaccine to which saponin was added as an adjuvant.

**carbuncle** [kahr'bəng-kəl] focal area of deep pyoderma caused by coalescing furuncles; may include draining tracts.

**carcase** carcass.

**carcass** [kahr'kās] **1.** the body of an animal killed for meat. The head, the legs below the knees and hocks, the tail, the skin and most of the viscera are removed. The kidneys are left in, and in most instances the body is split down the middle through the sternum and the vertebral bodies. Pig carcasses are dehaired (see below). Bird carcasses are not split; the feathers are removed after scalding but the skin is not removed and no viscera are left in place. In New York dressed poultry, the viscera are left in. **2.** the body of any dead animal.

**c. condemnation** meat inspection is carried out on the live animal and on viscera but the principal activity is during the carcass stage. If specific abnormalities are found which indicate that the carcass, or part of it, is unfit for human consumption it is condemned. It may be used for other purposes, e.g., after special processing for fertilizer.

**c. contamination** bacterial contamination of the carcass is a serious cause of deterioration of meat during storage. It is contributed to by having the animal come onto the abattoir floor with the hair and hide badly contaminated, by dust from contaminated hides, by careless handling of the hide and the viscera, especially the alimentary tract, contamination of the water in scalding tanks for birds and pigs, and by lack of personal hygiene on the part of abattoir workers.

**c. cutability** estimate of the percentage of saleable meat from a carcass versus percentage of waste fat. USDA prediction evaluation allows an estimate the percentage of retail yield of carcass weight based on hot carcass weight, ribeye area, fat thickness, and estimated percent of kidney, pelvic, and heart fat. Measurements of carcass cutability are categorized into numerical categories, called yield grade, with 1 being the leanest and 5 being the fattest.

**c. dehairing** pig carcasses are not skinned. They are scalded and the bristles and superficial layers of skin scraped off. The scalding vat can be a source of serious contamination.

**c. differentiation** identification of the species, sex and age of a carcass is an important function of meat hygiene because of the need to guarantee the authenticity of the description of meat at the retail point. Much of this can be done on gross examination but final determination may require laboratory tests, especially in cases where fraudulent substitution is suspected.

**c. disposal** is necessary in an abattoir for condemned carcasses. Complete incineration is necessary in cases of highly infectious disease. Heat treatment sufficient to sterilize the tissues is carried out on less dangerous materials, leading to the preparation of agricultural fertilizer. At practice premises, the problem is a serious one if local government provisions do not include incineration of animal material. On site incineration may be prohibited by local legislation and the need to avoid unpleasant smells. Burial is satisfactory but tedious.

**c. dressing** removal of the hide, appendages and viscera.

**c. drip** see **weeping**.

**c. electrical stimulation** a method of tenderizing meat by the application of electrical stimulation so as to cause muscle contraction, lowering of pH and faster autolysis.

**fevered c.** congestion of the vessels so that the surfaces of tissues have a redder appearance, and individual vessels are more readily seen.

**c. merit** scale used in assessing carcass traits.

**c. setting** rigor mortis. The muscles are hard, the joints fixed, muscle tissue loses its translucence. Proper setting is an indication of satisfactory preparation for storage of the meat without deterioration.



**c. traits** criteria used in assessing quality of a carcass. Important in determining price, suitability of breeding program, value of sire. Includes length, weight, proportion of fat and lean, distribution of fat, relative size of valuable cuts.

**c. yield** proportion of the animal's liveweight salvaged at carcass point. Called also dressed weight, killing out percentage.

**carcin(o)-** word element. [Gr.] relationship to cancer.

**carcinoembryonic antigen** [kahr''si-no-em''bre-on''ik] an oncofetal glycoprotein antigen found in colonic adenocarcinoma and other cancers and in certain nonmalignant conditions. See also oncofetal **antigen**. Called also CEA.

**carcinogen** [kahr''sin''ə-jen] a substance that causes cancer. Classified into groups by the WHO IARC with Group 1, carcinogenic to humans; Group 2A, probably carcinogenic to humans; Group 2B, possibly carcinogenic to humans; Group 3, not classifiable as to carcinogenicity in humans; and Group 4, probably not carcinogenic to humans.

**primary c's.** substances that react directly with a specific biological group in living tissue resulting in the development of a neoplasm. They are mostly synthetic compounds or metals.

**secondary c's.** relatively inert substances that are converted by a host-mediated reaction to an active carcinogen, e.g., nitrosamines, pyrrolizidine alkaloids.

**carcinogenesis** [kahr''si-no-jen''ə-sis] literally, the production of cancer. See also **oncogenesis**

**biological c.** viruses and some parasites are capable of initiating neoplasia. See viral **oncogenesis**, *Spirocerca lupi*.

**chemical c.** numerous chemicals have been identified as carcinogenic.

**physical c.** includes ultraviolet radiation, ionizing radiation and asbestos.

**carcinogenic** [kahr''sin-o-jen''ik] having a capacity for carcinogenesis.

**carcinogenicity** [kahr''si-no-jə-nis''i-te] the ability or tendency to produce cancer.

**carcinoid** [kahr''si-noid] a tumor of the gastrointestinal tract formed from the endocrine (argentaffin, APUD) cells of the mucosal lining of a variety of organs including the stomach and intestine. In dogs they occur in the duodenum, colon and rectum. Rarely, they may produce the so-called carcinoid syndrome. Called also argentaffinoma, argentaffin tumor.

**goblet-cell c.** a rare tumor recorded in a dog; more common in human appendix; has characteristics of carcinoid and adenocarcinoma. Called also adenocarcinoid.

**hepatic c.** a rare tumor originating from neuroectodermal tissue in the liver.

**pulmonary c.** seen sporadically in dogs.

**carcinolysis** [kahr''si-nol''ə-sis] destruction of tumor cells; oncolytic.

**carcinoma** [kahr''si-no''mə] a malignant neoplasm made up of epithelial cells tending to infiltrate surrounding tissues and to give rise to metastases. Carcinomas make up the majority of malignancies of the mammary gland, uterus, intestinal tract, skin and tongue.

**acinic cell c.** locally invasive salivary gland tumors of dogs, and rarely other species, composed of glandular epithelium in an acinar pattern.

**adenocystic c., adenoid cystic c.** carcinoma marked by cylinders or bands of hyaline or mucinous stroma separated or surrounded by nests or cords of small epithelial cells, occurring in the mammary and salivary glands, and mucous glands of the respiratory tract. Called also cylindroma.

**alveolar c.** alveolar adenocarcinoma.

**apocrine c.** see **apocrine** tumors.

**basal cell c.** an epithelial tumor of the skin that seldom metastasizes but has potential for local invasion and destruction. Common in dogs and cats.

**basosquamous c.** carcinoma that histologically exhibits both basal and squamous elements.

**bronchogenic c.** carcinoma of the lung, so called because it arises from the epithelium of the bronchial tree.

**cholangiocellular c.** primary carcinoma of the liver originating in bile duct cells.

**chorionic c.** choriocarcinoma.

**colloid c.** mucinous carcinoma.

**cylindrical cell c.** carcinoma in which the cells are cylindrical or nearly so.

**embryonal c.** a highly malignant primitive form of carcinoma, probably of germinal cell or teratomatous derivation, usually arising in a gonad.

**epidermoid c.** that in which the cells tend to differentiate in the same way as those of the epidermis; i.e., they tend to form prickle cells and undergo cornification.

**giant cell c.** carcinoma containing many giant cells.

**hepatocellular c.** primary carcinoma of the liver cells. See **hepatocellular** carcinoma.

**Hürthle cell c.** see **Hürthle cell** tumor.

**c. in situ** a neoplastic entity wherein the tumor cells have not invaded the basement membrane but are still confined to the epithelium of origin; often applied to such cells in the uterine cervix.

**large-cell c.** a bronchogenic tumor of undifferentiated (anaplastic) cells of large size.

**medullary c.** thyroid carcinoma derived from parafollicular cells (C-cells).

**mucinous c.** adenocarcinoma producing significant amounts of mucin.

**oat-cell c.** highly malignant neoplasm, rare in animals, possibly arising from APUD cells in many tissues, but usually associated with lung. Called also small-cell carcinoma.

**papillary c.** carcinoma in which there are papillary excrescences; called also papillocarcinoma.

**scirrhous c.** carcinoma with a hard structure owing to the formation of dense connective tissue in the stroma.

**c. simplex** an undifferentiated carcinoma.

**c. of skin** squamous cell carcinomas occur on the third eyelid, cornea or the eyelid of cattle and horses, on the penis and prepuce of horses, from the mucosa of the frontal sinus to invade the horn core of cattle (called also horn cancer), on the ears and nose of white-faced sheep in high radiant sunlight areas of the world, on the vulva of ewes when the tail is docked too short. In goats the ears, udder, base of the horn and perineum are also susceptible sites. The tumors grow rapidly, show considerable invasiveness and often metastasize to local lymph nodes. In dogs and cats, squamous cell carcinomas are common, particularly on the face and pinnae of white cats. See also **squamous** cell carcinoma.

**small-cell c.** see oat-cell carcinoma (above).

**spindle cell c.** squamous cell carcinoma marked by fusiform development or rapidly proliferating cells.

**stomach c.** squamous cell carcinomas occur in the stomach of the horse and the bovine rumen. The associated clinical syndrome in the horse is one of indigestion and weight loss. Metastasis occurs commonly. In cows, there may be vagus indigestion or chronic tympany of the rumen.

**transitional cell c.** occurs in the urinary bladder or urethra and derives from the transitional epithelium. Several structural types may be observed: papillary, polypoid, fungoid or sessile. In dogs, the tumor usually invasive and metastasize to regional lymph nodes and to lung, bone, and skin is common. Called also urothelial carcinoma.

**udder c.** occurs rarely in mares and doe goats.

**carcinomatosis** [kahr''si-no-mə-to''sis] the condition of widespread dissemination of cancer throughout the body. Sometimes used to refer to widespread neoplastic involvement of a body cavity or organ, e.g., abdominal carcinomatosis.



**C-12:** Carcinoma on the nose of a whiteface sheep.

**carcinomatous** [kahr''sī-nom'ə-təs] pertaining to or of the nature of cancer; malignant.

**cardinophilia** [kahr''sī-no-fil'e-ə] special affinity for tumor tissue.

**carcinosarcoma** [kahr''sī-no-sahr-ko'mə] a malignant tumor composed of carcinomatous and sarcomatous tissues.

**embryonal c.** a rapidly developing, malignant mixed tumor of the kidneys, made up of embryonal elements.

**carcinosis** carcinomatosis.

**miliary c.** that marked by development of numerous nodules.

**card test** a test in which the reagent or antigen, usually dyed, is impregnated into absorbent paper. The subject specimen of urine, blood, plasma or serum is placed on the impregnated card and a color or similarly easily seen change is recorded.

**brucellosis c. t.** an agglutination test for antibody in serum performed using a dyed whole-cell suspension of *Brucella abortus* as antigen. Only a positive or negative result is recorded.

**cardenolide** one of the two groups of naturally occurring cardiac glycosides; found in plants including *Digitalis*, *Nerium*, *Cascabela*, *Thevetia*, *Cryptostegia*, *Euonymus*, *Gomphocarpus*, *Asclepias*, *Corchorus*, *Convallaria*, *Gerbera*, *Adonis*, *Acokanthera* spp. Those from *Digitalis* spp. are used medicinally.

**carder** a grooming device consisting of a small, flat board with multiple, fine wire teeth on one side, and a short handle. It is used to comb out hair mats from the coats of dogs. Called also slicker brush.

**cardia** [kahr'de-ə] **1.** the cardiac opening of the esophagus into the stomach. **2.** the cardiac part of the stomach; that part of the stomach surrounding the esophagogastric junction, distinguished by the presence of cardiac glands.

**cardiac** [kahr'de-ak] **1.** pertaining to the heart. See also **heart**. **2.** pertaining to the gastric cardia.

**c. afterload** the impedance to ventricular emptying presented by the arterial circulation.

**c. area** see **precordium**.

**c. biopsy** an uncommon clinical procedure. Can be performed via thoracotomy or with a biopsy catheter introduced intravenously or intra-arterially.

**c. catheterization** the insertion of a catheter into a vein or artery and guiding it into the interior of the heart for purposes of measuring cardiac output, determining the oxygen content of blood in the heart chambers, surgery, and evaluating the structural components of the heart.

**c. compensation** in cardiac disease the compensation for the inefficiency of the heart's pump action by enlisting the various reserves of the heart such as hypertrophy, enlargement, increase in rate, so as to maintain circulatory equilibrium and prevent the appearance of signs of congestive heart failure.

**c. compression** an emergency measure to empty the ventricles of the heart in an effort to circulate the blood, and also to stimulate the heart so that it will resume its pumping action. Involves the application of pressure through the thoracic wall. More commonly used in animals than other forms of cardiac massage.

**c. conducting cells** specialized cardiac fibers modified to conduct impulses from the A-V node via the septum to the ventricles. Called also Purkinje fibers.

**c. conducting system** the cardiac tissue responsible for electrical conduction, made up of the sinoatrial node, the atrioventricular node, and the atrioventricular bundle and cardiac conducting fibers.

**c. depressor nerve** a branch of the vagus nerve composed of afferent nerve fibers that arise around the base of the heart and aortic arch; its stimulation elicits a brainstem reflex that slows the heart, dilates the peripheral vessels and lowers blood pressure. Called also aortic nerve, depressor nerve of Ludwig.

**c. dilatation** the heart volume is increased but the effective mass of cardiac muscle is not. A dilated heart has lost some of its reserve.

**c. dullness** the area of the chest wall over which a dull sound, indicating the position of the heart, can be elicited by percussion.

**c. failure** see **heart failure**.

**c. fibrillation** see **ventricular fibrillation**.

**c. fibrosis** see **cardiac cirrhosis**.

**c. flow load** the work required of the heart can be increased by a need for an increased flow rate of blood, e.g., when there is an anastomosis, congenital arteriovenous defect, portosystemic shunt.

**c. function curves** statistical curves used in depicting the cardiovascular function by described by right atrial pressure (abscissa) plotted against cardiac output (ordinate). Starling curves.

**c. glands** in the cardiac region of the gastric wall; branched, tubular, coiled, mucus-secreting.

**c. horse sickness** see **African horse sickness**.

**c. hypertrophy** enlargement of the heart coincident with an increase in muscle mass; an indication of response to an increase in load which may or may not be associated with disease. It is an expression of cardiac compensation but some of the cardiac reserve has been lost.

**c. impulse** see **cardiac impulse**. Called also apex beat.

**c. index** cardiac output divided by the animal's body surface area in m<sup>2</sup>. The normal range for dogs is 1.8–3.5 L/m<sup>2</sup>. In horses, the usual measure for body size is body weight in kilograms and the range for the adult horse is 7.2–8.8 L/kg/min.

**left-sided c. enlargement** may involve either the left ventricle or atrium, or both, and can be demonstrated on radiographs and electrocardiography. Seen most commonly in mitral valvular disease in dogs.

**c. massage** manual massage of the heart or stimulation with an electrical current through an open thoracic wall. The term is sometimes used interchangeably with cardiac compression.

**c. mucosa** the most cranial of the gastric mucosa; secretes only mucus, except in pigs, in which the area covered by this mucosa is much larger than in the other species and bicarbonate is also secreted.

**c. murmur** see **heart murmur**.

**c. output** the volume of blood pumped per unit of time. May be calculated by oxygen consumption measurement, carbon dioxide excretion (Fick methods), indicator dilution (indocyanine green or lithium), thermidilution (cold saline). These require invasive methods such as cardiac catheterization and are done in experimental studies but very seldom in the clinical setting. Doppler **echocardiography** is a noninvasive ultrasound-based technique that offers potential. In the clinical setting, cardiac output, and the hemodynamic status is determined by heart rate, peripheral pulse quality, temperature of extremities, and mucous membrane color and capillary refill time. Ancillary diagnostics, such as indirect blood pressure, hemoglobin saturation by pulse oximetry or blood gas analysis, and blood lactate may be used. See also **Fick principle**.

**c. pacing** employing cardiac pacemakers to control heart rate where there are bradyarrhythmias. Temporary pacing, using transcutaneous or transvenous pacing, can be used to stabilize the patient until normal rhythm is re-established or a permanent pacemaker can be implanted.

**c. preload** ventricular end-diastolic volume.

**c. pressure load** the stress of working against an elevated blood pressure in the arterial circuit; one of the two major groups of causes of heart disease; the other is flow load.

**c. racing syndrome** a disease of companion birds manifested by a sudden increase in heart rate, up to 1000/min, in the period immediately after being restrained. Death occurs within a few seconds.

**c. reserve** the reserve mechanisms in the heart to compensate for defects which could make the heart's pumping action ineffective. The reserve mechanisms include hypertrophy, enlargement, increase in heart rate, and an increase in stroke volume, a result of the increase in muscle mass and the enlargement of the ventricles.

**right-sided c. enlargement** involves either the right ventricle or atrium.

**c. rupture** penetration of the myocardium by a reticular foreign body in cows, or rupture of a patch of chronic fibrotic myocarditis in horses, causes cardiac tamponade, and sudden death.

**c. size** may increase as a result of hypertrophy, dilatation or a combination of the two. A common belief with some scientific support is that performance of horses in sprint races is closely related to heart size.

**c. stroke volume** the amount of blood ejected with each systole.

**c. tamponade** see **cardiac tamponade**.

**c. thrill** see **thrill**.

**c. troponin proteins** see **troponins**.

**c. valve fenestration** the valve surface is incomplete, creating a lattice effect; mostly congenital defects in foals.

**c. valve hematoceysts** congenital, blood-filled cysts on the atrioventricular valves considered to be of no pathogenic significance.

**c. valve laceration** tearing of the valve tissue or attachment to myocardium may occur spontaneously or as a sequel to endocarditis; adds a significant additional flow load to the heart.

**c. valve rupture** see **cardiac valve laceration** (above).

**c. valves** heart valves formed by evaginations of the cardiac and vascular endothelium supported by connective tissue; includes atrioventricular and semilunar valves on both sides of the heart.

**c. valvular disease** see **valvular disease**.

**c. vascular shunts** includes patent foramen ovale, ventricular septal defect, tetralogy of Fallot, patent ductus arteriosus.

**c. work** includes **effective work**—that needed for the onward propulsion of blood through the correct channels against arterial pressure, **total work**—includes all of the work performed by the heart including some involved in moving blood in the wrong direction.

**Cardigan Welsh corgi** see **Welsh corgi**.



**cardinal signs** [kahr'di-nəl] the major clinical sign or cluster of signs that indicate a specific disease or syndrome.

**carding** [kahr'ding] industrial process which flattens wool, draws fibers into a continuous sliver.

**c. wool** see carding **wool**.

**cardi(o)-** word element. [Gr.] relationship to the heart.

**cardioaccelerator** [kahr'de-o-ak-sel'er-a-tər] quickening the heart action; an agent that so acts.

**cardioactive** [kahr'de-o-ak'tiv] having an effect on the heart.

**cardioangiography** [kahr'de-o-an'je-og'rə-fe] contrast imaging of the heart and blood vessels. Called also angiocardiography.

**cardioangiology** [kahr'de-o-an'je-ol'ə-je] the study of the diseases of the heart and blood vessels.

**cardiocele** [kahr'de-o-sēl'] hernial protrusion of the heart through a fissure of the diaphragm or through a wound.

**cardiocentesis** [kahr'de-o-sen-te'sis] surgical puncture into the pericardial space and aspiration of fluid for therapeutic or diagnostic purposes. Therapeutically, the procedure is used as an emergency measure to relieve life-threatening cardiac tamponade. Other clinical situations in which cardiocentesis can be employed include pericardial effusion, traumatic perforation or rupture of the myocardium, and effusion secondary to a tumor or thoracic injury. See **pericardiocentesis**.

**cardiochalsia** [kahr'de-o-kə-la'zhə] relaxation or incompetence of the sphincter action of the cardiac opening of the stomach.

**cardiocirculatory** [kahr'de-o-sur'ku-lə-tor'e] pertaining to blood flow through the heart and vascular system.

**cardiodiaphragmatic** [kahr'de-o-di'ə-frag-mat'ik] pertaining to the heart and the diaphragm.

**cardiodilator** [kahr'de-o-di'la-tər] an instrument for dilating the **cardia**.

**cardiodiosis** dilatation of the cardiac opening of the stomach.

**cardiodynamics** [kahr'de-o-di-nam'iks] study of the forces involved in the heart's action.

**cardioesophageal** [kahr'de-o-ə-səf'ə-je'ə] pertaining to the cardia of the stomach and the esophagus, as the cardioesophageal junction or sphincter.

**Cardiofilaria pavlovsky** a tissue-invading filarioid worm found in many birds but appearing to cause little if any disease.

**cardiogenesis** [kahr'de-o-jen'ə-sis] development of the heart in the embryo.

**cardiogenic** [kahr'de-o-jen'ik] originating in the heart.

**c. plate** the mesodermal primordium of the heart.

**cardiogram** [kahr'de-o-gram'] a tracing of a cardiac event produced by cardiography. See also **electrocardiogram**.

**apex c.** graphic recording of the apex beat.

**cardiograph** [kahr'de-o-graf'] an instrument for recording some element of the heartbeat.

**cardiography** [kahr'de-og'rə-fe] the graphic recording of a physical or functional aspect of the heart, e.g., echocardiography, electrocardiography, kinecardiography, phonocardiography, vibrocardiography.

**apex c.** graphic recording of low-frequency pulsations at the chest wall over the apex of the heart.

**ultrasonic c.** echocardiography.

**vector c.** see **vectorcardiography**.

**cardiohepatic** [kahr'de-o-hə-pat'ik] pertaining to the heart and liver.

**c. syndrome** see **round heart disease** of turkeys.

**cardioinhibitor** [kahr'de-o-in-hib'it-tər] an agent that restrains the heart's action.

**cardiokinetic** [kahr'de-o-ki-net'ik] **1.** exciting or stimulating the heart. **2.** an agent that excites or stimulates the heart.

**cardiokymography** [kahr'de-o-ki-mog'rə-fe] the recording of the motion of the heart by means of the electrokymograph.

**cardiolipin** a **phospholipid** found only in mitochondria in mammalian cells; essential for mitochondrial function. Disturbances in cardiolipin metabolism are causally linked to pathologies including heart failure, hypothyroidism, and cardioskeletal myopathy (Barth syndrome).

**cardiologist** [kahr'de-ol'ə-jist] a veterinarian who specializes in the diagnosis and treatment of heart disease.

**cardiology** [kahr'de-ol'ə-je] study of the heart and its functions.

**interventional c.** see **transcatheter**, **balloon valvuloplasty**.

**cardiolysis** [kahr'de-ol'ə-sis] the operation of freeing the heart from its adhesions to the sternal periosteum.

**cardiomalacia** [kahr'de-o-mə-la'shə] morbid softening of the muscular substance of the heart.

**cardiomegaly** [kahr'de-o-meg'ə-le] enlargement of the heart.

**cardiomelanosis** [kahr'de-o-mel'ə-no'sis] melanosis of the heart.

**cardiomotility** [kahr'de-o-mo-till'it-e] the movement of the heart; motility of the heart.

**cardiomyoliposis** [kahr'de-o-mi'o-li-po'sis] fatty degeneration of the heart muscle.

**cardiomyopathy** [kahr'de-o-mi-op'ə-the] a general diagnostic term designating disease of the myocardium, cardiomyocyte, and supporting collagen and interstitial matrix; may be idiopathic or primary, or secondary other disease. Common in dogs and cats.

**arrhythmogenic right ventricular c.** a familial disease in Boxers characterized by syncope, typically occurring with exercise or excitement, ventricular arrhythmias, and sudden death. Many affected dogs are normal on clinical examination and thorough cardiac investigation, including electrocardiogram and echocardiography, may be required to diagnose the condition. Called also Boxer cardiomyopathy.

**Boxer c.** generally a reference to arrhythmogenic right ventricular cardiomyopathy (above), but Boxers also develop dilated cardiomyopathy (below).

**congestive c.** see dilated cardiomyopathy (below).

**dilated c. 1.** characterized by cardiac enlargement and poor myocardial contractility, especially of the left ventricle, and associated with cardiac arrhythmias, congestive heart failure, and often sudden death. Occurs most commonly in young to middle-aged dogs of the large and giant breeds with rapidly developing signs of biventricular failure, atrial fibrillation, and occasionally systolic murmurs. An inherited juvenile dilated cardiomyopathy occurs in Manchester terriers. In cats, associated with taurine deficiency. Called also congestive cardiomyopathy. **2. round heart disease** of turkeys.

**Doberman c.** a distinctive cardiomyopathy is seen in Doberman pinscher dogs, often presenting as an acute pulmonary edema, cardiogenic shock, and sometimes sudden death.

**hypertrophic c.** occurs most commonly in cats, sometimes secondary to **hyperthyroidism**, occasionally in dogs and rarely in cattle in association with generalized **glycogenosis**. There is myocardial hypertrophy, primarily in the left ventricle and ventricular septum, resulting in increased resistance to filling and sometimes an outflow obstruction. In cats, there is often an associated aortic thromboembolism. Inherited in Maine Coon and Ragdoll cats, due to mutations in the cardiac myosin binding protein C gene (*MYBPC3*).

**infiltrative c.** myocardial disease secondary to deposition in the heart tissue of abnormal substances such as amyloid or neoplastic infiltration.

**inherited c.** occurs in calves and probably in the other species. In calves it causes death due to acute heart failure up to the age of 3 months. Recorded in polled Hereford and Japanese black cattle. There may be a brief period of dyspnea and blood-stained frothy nasal discharge before death. Myocardial degeneration is obvious at necropsy. See also **woolly haircoat syndrome**.

**obliterative c.** see restrictive cardiomyopathy (below).

**occult c.** in the subclinical stage, but detectable with echocardiography and ambulatory electrocardiographic recording methods.

**ovine c.** fatal primary dilated cardiomyopathy of sheep, possibly familial; reported in Switzerland.

**primary c.** disease originating in the myocardium and not secondary to other cardiopulmonary or systemic disease.



**C-13:** Cross section of the heart from a cat with hypertrophic cardiomyopathy showing gross thickening of the left ventricular wall and papillary muscles. From Kittleson, M.D., Kienle, R.D., *Small Animal Cardiovascular Medicine*, Mosby, 1998.



**restrictive c.** impaired left ventricular compliance reduces ventricular filling. Uncommon in animals but seen most often in cats, caused by endomyocardial fibrosis or abnormal left ventricular moderator bands. Called also obliterative cardiomyopathy.

**spontaneous c.** a dilated cardiomyopathy that causes heart failure and death in young turkeys. See **round heart disease**.

**cardiomyopexy** surgical removal of the epicardium and application of a pedicled flap of adjacent muscle to the denuded myocardium and pericardium, as a means of supplying collateral circulation to the heart.

**cardionatrin** see **atrial natriuretic peptide**.

**cardionector** the conduction system of the heart, comprising the sinoatrial node, bundle of His and atrioventricular node.

**cardionephric** [kahr''de-o-nef''rik] pertaining to the heart and kidney.

**cardioneural** [kahr''de-o-nöð''räl] pertaining to the heart and nervous system.

**cardio-omentopexy** suture of a portion of the omentum to the heart.

**cardiopathy** [kahr''de-op''ä-the] any disorder or disease of the heart.

**cardiopericardiopexy** [kahr''de-o-per''i-kahr''de-o-pek''se] surgical establishment of adhesive pericarditis, to provide ancillary blood supply to the myocardium.

**cardiopericarditis** [kahr''de-o-per''i-kahr-di'tis] inflammation of the heart and pericardium.

**cardiophrenic** [kahr''de-o-fren''ik] pertaining to the heart and diaphragm.

**c. angle** viewed on radiographs as the angle formed by the diaphragm and the heart. Alterations may be used to assess changes in the size and position of the heart.

**c. ligament** see **phrenicocardial ligament**.

**cardioplasty** [kahr''de-o-plas''te] plastic surgery of the distal esophagus and cardiac sphincter of the stomach. Sometimes performed in the management of megaesophagus in dogs.

**cardioplegia** [kahr''de-o-ple''jä] arrest of myocardial contraction, as by use of chemical compounds or cold in cardiac surgery.

**cardiopneumatic** [kahr''de-o-noo-mat''ik] pertaining to the heart and respiration.

**cardiopneumograph** [kahr''de-o-noo''mo-graf] an apparatus for registering cardiopneumatic movements.

**cardioptosis** [kahr''de-op-to'sis, kahr''de-o-to'sis] downward displacement of the heart.

**cardiopulmonary** [kahr''de-o-pool'mä-nar-e] pertaining to the heart and lungs.

**c. arrest (CPA)** cessation of effective external respiration and beating of the heart. The common causes in animals are inadequate ventilation, caused by general anesthetic, thoracic trauma, airway obstruction, and impediments to movement of the lung, thoracic wall or diaphragm, acidemia, hypotension, electrolyte imbalance, or extreme changes in body temperature (hypothermia, hyperthermia).

**c. resuscitation (CPR)** the re-establishment of heart and lung action. The basic steps are: Airway, Breathing, Circulation. A patent airway must be established and maintained; any obstruction is relieved and an endotracheal or tracheostomy tube inserted. Adequate ventilation with oxygen is provided by intermittent positive pressure and, if required, cardiac (chest) compression or massage is commenced.

**cardiopuncture** [kahr''de-o-pungk''chär] cardiocentesis.

**cardiopyloric** [kahr''de-o-pi-lor''ik] pertaining to the cardiac opening of the stomach and the pylorus.

**cardiorenal** [kahr''de-o-re'näl] pertaining to the heart and kidneys.

**cardiorrhaphy** [kahr''de-or''ä-fe] suture of the heart muscle.

**cardiorrhexis** [kahr''de-o-rek''sis] rupture of the heart.

**cardiosclerosis** [kahr''de-o-sklä-ro'sis] fibrous induration of the heart.

**cardioselective** [kahr''de-o-sä-lek'tiv] having greater activity on heart tissue than on other tissue.

**cardiospasm** [kahr''de-o-spaz''äm] see **achalasia**.

**cardiosphygmograph** [kahr''de-o-sfig'mo-graf] a combination of the cardiograph and sphygmograph for recording the movements of the heart and an arterial pulse.

**cardiosplenopexy** suture of the parenchyma of the spleen to the denuded surface of the heart for revascularization of the myocardium.

**cardiotachometer** [kahr''de-o-tä-kom''ä-tär] an instrument for continuously portraying or recording the heart rate.

**cardiotachometry** [kahr''de-o-tä-kom''ä-tre] continuous recording of the heart rate for long periods.

**cardiotherapy** [kahr''de-o-ther''ä-pe] the treatment of diseases of the heart.

**cardiotomy** [kahr''de-ot''ä-mä] 1. surgical incision of the heart. 2. surgical incision into the cardia.

**cardiotonic** [kahr''de-o-ton''ik] having a tonic effect on the heart; an agent that so acts, e.g., positive inotropic drugs.

**cardiotoxic** [kahr''de-o-tok''sik] having a poisonous or deleterious effect upon the heart.

**c. glycosides** see **cardiac glycosides**.

**cardiovalvular** [kahr''de-o-val''vu-lär] pertaining to the valves of the heart.

**cardiovalvulotome** [kahr''de-o-val''vu-lä-töm''i] an instrument for incising a heart valve.

**cardiovascular** [kahr''de-o-vas''ku-lär] pertaining to the heart and blood vessels.

**c. accident** includes **aortic rupture**, **Marfan's syndrome**, acute **heart failure**, **cardiac valve rupture**, **cardiac tamponade**.

**c. collapse** see **circulatory collapse**.

**c. reserve** see **cardiac reserve**.

**c. system** see **circulatory system**.

**cardioversion** [kahr''de-o-vur''zhän] the delivery of a direct current shock synchronized with the **QRS complex** to the myocardium as an elective treatment to end tachydysrhythmias; called also countershock and precordial shock. Used in humans, it has also been effectively used in dogs with atrial fibrillation and ventricular tachycardias.

**cardioverter** [kahr''de-o-vur''tär] an energy-storage capacitor-discharge type of condenser that is discharged with an inductance; it delivers a direct-current shock which restores normal rhythm of the heart.

**Cardiovirus** [kahr''de-o-vi''räs] a genus in the family *Picornaviridae* that includes encephalomyocarditis (EMC) virus which causes disease in rodents, pigs, humans and some exotic species.

**carditis** [kahr-di'tis] inflammation of the heart; **myocarditis**.

**cardivalvulitis** [kahr''de-val''vu-li'tis] inflammation of the heart valves.

**Carduus** a genus of thistles in the plant family Asteraceae (Compositae); has a high nitrate content, causing nitrate/nitrite poisoning in ruminants. Includes *C. pycnocephalus*, *C. tenuifloris* (slender or winged thistle).

**careless weed** *Amaranthus* spp.

**caret** the symbol ^ above a number indicating the expected value or expected frequency.

**Carex vulpina** European plant in family Cyperaceae of sedges; contains cyanogenic glucosides.

**carfentanil** an opioid analgesic; a derivative of fentanyl used mainly in the capture of wild animals with a potency 100 times that of fentanyl.

**caribou** (*Rangifer tarandus caribou*) an Arctic and subarctic deer in the family Cervicidae; known as the reindeer outside North America. See **reindeer**.

**Carica papaya** [kar''i-kä] pawpaw tree, source of the proteolytic enzyme papain.

**caries** [kar''éz] decay, as of bone or teeth.

**dental c.** plaque-induced demineralization and loss of substance of the hard tissues of the teeth, leading to continued destruction of enamel and dentin, and cavitation of the tooth. Deep occlusal pits or fissures, deep periodontal pockets and tight contact between teeth predispose to the formation of caries. Infrequently diagnosed in dogs; occurs occasionally in sheep. Called also a cavity.

**infundibular c.** see **infundibular necrosis**.

**carina** [kä-ri'nä] pl. *carinae* [L.] a ridgelike structure.

**c. apex** the most cranial point of the keel of the sternum of birds.

**sternal c.** the keel of the sternum, as in birds and horses.

**c. tracheae** a ridge between the openings of the right and left principal bronchi.

**carinate** [kar''i-nät] said of birds having a carina or keeled sternum; cf. **ratite**.

**Carmalt forceps** conventional ratcheted, box-jointed hemostat forceps with grooves on the blade surfaces that run in the same direction as the length of the blades. Also known as the **Rochester-Carmalt** forcep. Frequently referred to as **pedicle** forceps used to hold pedicles of tissue eg. ovarian pedicle during ovariectomy.

**carminative** [kahr''min''ä-tiv] an agent that relieves flatulence.

**carmustine (BCNU)** [kahr''mus'tën] a nitrosourea, used as an antineoplastic agent; rapidly pass the blood-brain barrier and used as adjunct therapy for brain tumors.

**Carmyerius** a genus of rumen (digenetic trematode) flukes found in Asia; member of the family Paramphistomatidae. Includes *C. gregarius* and *C. spatiosus* (small rumen flukes of Asia).

**carnassial tooth** [kahr''nas''e-ä] a large, shearing cheek tooth; the maxillary fourth premolar or mandibular first molar in carnivores. Called also sectorial tooth.

**carnification** [kahr''ni-fi-ka'shän] development of fleshy fibrous tissue in the lung due to unresolved pneumonia.

**carnitine** [kahr''ni-tën] compound required for the transport of fatty acyl groups into the matrix of the mitochondria where they undergo  $\beta$ -oxidation; also participates in acetyl transfer reactions in alanine and

aspartate metabolism; often designated vitamin B<sub>12</sub>, due to its vitamin role in *Tenebrio* sp. Present in high concentrations (5% dry weight) in meat extracts. Has been incorporated into low-calorie diets for obese dogs to maintain muscle mass while promoting loss of fat and weight reduction.

**c. acetyltransferase** enzyme associated with buffering of acetyl groups from acetyl CoA.

**c. deficiency** associated with primary myocardial disease in a number of species and lipid storage myopathies in dogs.

**carnivore** [kahr'ni-vor] any animal, particularly mammals of the order Carnivora, that eats primarily flesh. Includes cats, dogs.

**carnosinase** [kahr'no-si-nās'] an enzyme that hydrolyzes carnosine (amino-acyl-l-histidine) and other dipeptides containing l-histidine into their constituent amino acids.

**carnosine** [kahr'no-sēn] a dipeptide composed of beta-alanine and histidine, found in skeletal muscle of vertebrates.

**Caroli syndrome** rare congenital cystic dilation of the bile ducts and renal cysts (Caroli disease) with secondary liver fibrosis and portal hypertension; young dogs typically present with excessive thirst and urination, vomiting, and ascites. Sporadic and inherited forms are recognized in people.

**carotenase** an enzyme that converts provitamin A carotenoids into vitamin A; not present in cats. Also called carotenoid oxygenase.

**carotene** [kar'ə-tēn] a yellow or red pigment from carrots, sweet potatoes, milk and body fat, egg yolk, etc.; it is a chromolipoid hydrocarbon existing in several forms. α-, β-, and γ-carotene are provitamins that can be converted into vitamin A in the body by all animals except cats. β-carotene is the most important because of a quantitatively greater activity.

**β-carotene** see **carotene**.

**carotenemia** [kar'ə-tē-ne'me-ə] the presence of high concentrations of carotene in the blood.

**carotenodermia** [kə-rot'ə-no-dur'me-ə] yellowness of the skin due to carotenemia.

**carotenoid** [kə-rot'ə-noid] **1.** any member of a group of red, orange or yellow pigmented polyisoprenoid lipids found in carrots, sweet potatoes, green leaves and some animal tissues; examples are the carotenes, lycopene and xanthophyll. α-carotene, β-carotene, and β-cryptoxanthin are provitamin A carotenoids and can be converted by mammals to retinol. **2.** marked by yellow color. **3.** lipochrome.

**c. pigments** contribute to the yellow staining of fatty tissues especially in horses, Channel Island breeds of cattle and old cats.

**carotenosis** [kar'o-tə-no'sis] deposition of carotene in tissues, especially the skin.

**caroticotympanic** [kə-rot'i-ko-tim-pan'ik] pertaining to the carotid canal and the tympanum of the middle ear.

**carotid** [kə-rot'id] relating to the carotid artery, the principal artery of the neck. See Table 8.

**c. body** a small neurovascular structure lying in the bifurcation of the common carotid arteries, containing chemoreceptors that monitor oxygen content in blood and help to regulate respiration. Called also *glomus caroticum*.

**c. body tumors** usually unilateral nonfunctional adenoma, chemodectoma, nonchromaffin paraganglioma, or locally invasive carcinoma which may cause deviation of the trachea.

**c. canal** the canal in the tympanic part of the temporal bone of carnivores that transmits the internal carotid artery to the cranial cavity.

**c. sheath** contains the common carotid artery, internal jugular vein and vagosympathetic trunk.

**c. sinus** a dilatation of the proximal portion of the internal carotid or distal portion of the common carotid artery at its bifurcation into external and internal carotids, containing in its wall baroreceptors which when are stimulated by changes in blood pressure slow the heart, cause vasodilation, and lower blood pressure; innervated mainly by the glossopharyngeal nerve.

**c. sinus reflex** slowing of the heart rate when pressure is applied over the carotid sinus.

**c. sinus syndrome** syncope sometimes associated with convulsive seizures due to overactivity of the carotid sinus reflex.

**carotidynia** [kə-rot'o-din'e-ə] tenderness along the course of the carotid artery.

**carp** [kahrp] a freshwater fish used extensively for human food in some countries, a pest in others. There are many varieties, including decorative ones. See also *Carassius*, *Ctenopharyngodon idella*. Called also *Cyprinus carpio*, *C. cyprinus*.

**bighead c.** *Hypophthalmichthys nobilis*.

**common c.** see *Cyprinus carpio*.



**C-14:** Carpal instability/flexion syndrome. Bilateral contracture of the flexor carpi ulnaris muscle in a 10-week-old puppy. Posture is due to flexion of both carpi.

Johnston, S.A., Tobias, K. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set*, 2nd Edition. Saunders, 2017.

**crucian c.** see *Carassius carassius*.

**c. erythrodermatitis** see **erythrodermatitis**.

**grass c.** see *Ctenopharyngodon idella*.

**c. pox** an infectious disease caused by Cyprinid herpes virus 1 (CyHV-1) that causes unsightly, wart-like lumps on the skin, mouth, and fins. Lesions may persist for life, but the mortality rate is low. Stress and low water temperatures may predispose to infection.

**silver c.** *Hypophthalmichthys molitrix*.

**carpal** [kahr'pəl] pertaining to the carpus.

**c. bones** are located between the radius and ulna and metacarpals. Typically, there are six to eight bones, depending on the species, arranged in two rows and numbered from medial to lateral. See Table 9.

**c. canal syndrome** see carpal tunnel syndrome (below).

**c. flexion posture** at parturition the fetus is presented with the carpal joints flexed, thus increasing the diameter of initial parts entering the pelvic canal, resulting in dystocia in some patients.

**c. fracture** see **chip fractures**, **slab fracture**.

**c. instability/flexion syndrome** idiopathic and self-limiting condition seen in young puppies, particularly Doberman pinschers and Shar peis; the carpi remain slightly flexed when standing and the paws are deviated inward. Called also carpal flexural deformity.

**c. necrosis** necrosis of skin on the anterior aspect of the carpus of piglets due to abrasion from rough floors or floors disinfected with caustic chemicals. Necrosis may also be present on the posterior aspect of the hocks.

**c. organ** a group of tactile, sinus hairs located on the posterior aspect of the forelimbs of cats, sensitive to touch. See also **tactile** hair organ.

**c. pad** the footpad of carnivores found on the palmar surface of the carpus, just distal to the accessory carpal bone that it may serve to protect; also called (in greyhounds and some other dogs) the 'stopper' pad. Its remnant in horses is thought to be the 'chestnut'. See also **footpad**.

**c. sheath** common synovial sheath in the forelimb of the horse, shared by the superficial and deep flexor tendons as they pass through the carpal canal.

**c. tunnel** the osseofibrous passage for the flexor tendons and median nerve, formed by the flexor retinaculum and the carpal bones.

**c. tunnel syndrome** a complex of signs resulting from compression of the median nerve in the carpal tunnel. In horses, there is lameness with pain on extreme carpal flexion. There are no lesions on the anterior carpal bones.

**carpal joint** [kahr'pəl joint] a series of joints that includes the antebrachio-carpal, formed by the distal ends of the radius/ulna and the proximal carpal row, the intercarpal joint between the two rows of carpal bones, the carpometacarpal joint(s) between the distal row of carpal bones and the metacarpal bone(s). Called also (in ungulates) the knee. See also **carpus**.



**c. j. luxation** a major injury in horses while racing, usually involving fractures of carpal bones and rupture of ligaments. The animal is unable to bear weight on the leg and there is excessive mobility and crepitus. In dogs and cats, violent hyperextension of the carpus damages soft tissue support for the joint so that the animal walks with the carpus on or near the ground.

**c. j. subluxation** may occur in the dog as a result of trauma but is also recorded as a familial disease associated with the simultaneous occurrence of hemophilia A due to close localization of the responsible genes on the X-chromosome.

**Carpathian brown cattle** dark brown to gray dual-purpose cattle from Ukraine.

**carpectomy** [kahr-pek'tə-me] excision of a carpal bone.

**Carpetmaster** a New Zealand carpetwool sheep derived by mutation from the Perendale. It has a white face, dark hooves, and wool of 35–45 microns.

**carpetwool** see carpet wool.

**carpetwool sheep** breeds used extensively for the production of wool for carpet manufacture include Carpetmaster, Elliotdale, fat-tailed breeds generally, Scottish blackface, Swaledale, Tukidale.

**carpincho** see capybara.

**carpitis** [kahr-pi'tis] common acute or chronic inflammation of the joint capsule of the carpus and the associated structures in horses. There is pain and swelling, and there may be exostoses in chronic cases. Called also popped knee in horses.

**Carpoglyphus** [kahr'po-gli'fəs] a genus of the insect family of Acaridae. Includes *Carpoglyphus lactis* (the cause of dried fruit mite dermatitis).

**carpometacarpal** [kahr'po-met'ə-kahr'pəl] pertaining to the carpus and metacarpus.

**c. joint** the articulation between the distal row of carpal bones and the metacarpals in which there commonly is very limited movement.

**carpopedal** [kahr'po-ped'əl] affecting the carpus and foot.

**carphalangeal** [kahr'po-fā-lan'je-əl] pertaining to the carpus and phalanges.

**carprofen** a propionic acid derivative, nonsteroidal anti-inflammatory agent used as an analgesic in dogs and cats.

**carpus** [kahr'pəs] the segment of the limb between the radius and ulna and metacarpus, made up of six to eight bones, depending on the animal species, arranged in two rows and numbered from medial to lateral. Called also the knee in horses and cattle and the wrist in dogs and cats. See also Table 9 and entries under **carpal**.

**dropped c., broken-down c.** hyperextension injury in the dog or cat that results in weight-bearing on the carpus and metacarpals.

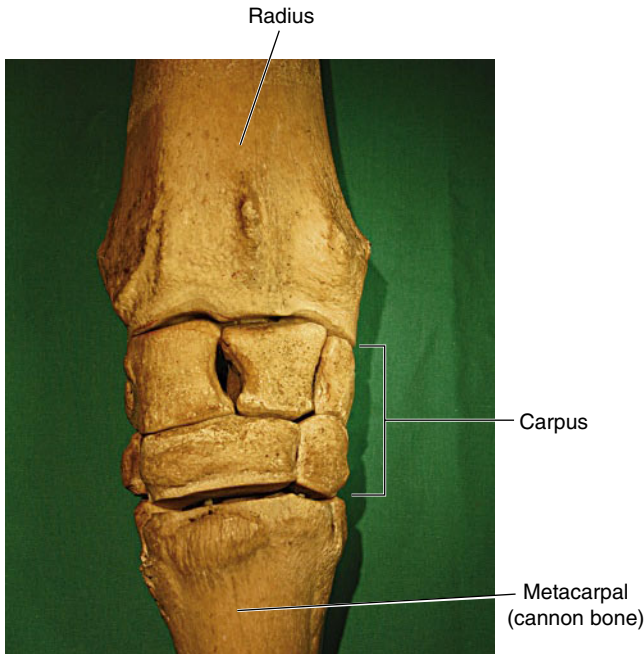


**C-16:** Carpal hyperextension injury.

Johnston, S.A., Tobias, K. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set, 2nd Edition.* Saunders, 2017.



**C-17:** Many infectious agents are carried by animals at sites not associated with overt disease, but these carriage sites provide the source for overt infection when risk factors that allow overt disease to occur. *Dermatophilus congolensis* is present in this minor lesion but can be spread by flies from this to other regions of the skin to result in clinical dermatophilosis when excessive skin moisture or trauma allows infection.



**C-15:** Equine left carpus. Cranial view.

Colville, T., Bassett, J. *Clinical Anatomy and Physiology for Veterinary Technicians, 3rd Edition.* Mosby, 2015.

**Carré's disease** see canine distemper.

**carriage dog** see Dalmatian.

**carrier** [kar'e-ər] **1.** an animal that harbors a disease organism in its body without manifest signs, thus acting as a carrier or distributor of infection. A carrier may be one with a latent infection and which appears healthy or a persistently infected animal. Other types of carriers are the incubatory carrier, when the animal is not yet showing clinical signs, or a convalescent carrier when it has passed the clinical stage. **2.** a heterozygote, i.e., an animal that carries a recessive gene, autosomal or sex-linked, together with its normal allele. **3.** an edible material used in the formulation of processed feeds. The carrier is used to absorb or attach other ingredients by impregnation or coating so that they are evenly mixed throughout the feed. **4.** a component of a vaccine that is more immunogenic than the primary antigen and included in order to elicit a greater immunologic response by the recipient.

**c. detection** in genetic terms the detection of a heterozygote that carries the gene that is under investigation.

**c. effect** use of a hapten conjugated to a carrier protein in a primary immune response will result in a secondary immune response to the same combination, but not to the hapten alone or the hapten in association with a different carrier protein.

**obligate c.** the subject is always available as a carrier of the infection.



**c. protein** membrane proteins that have a high affinity for particular solutes, e.g., glucose, and that facilitate the passage of these solutes through membrane barriers. See also **carrier-mediated transport**.

**c. register** in genetic terms is a list of all the animals that have produced an affected offspring.

**c. state** the state of being a carrier of an infectious disease or of a genetic defect.

**c. test herd** a herd consisting entirely of known carriers of a gene that is under investigation; a definition that could be extended to include a herd comprising only individuals known to carry a specific infectious agent.

**carrier-free** [*kar'e-ər-frē*] a term denoting a radioisotope of an element in pure form, i.e., essentially undiluted with a stable isotope carrier.

**carrier-mediated transport** movement that occurs across membranes, such as the blood–brain barrier and the gastrointestinal mucosa. Inherent in the mechanism is a rapidly reversible reaction between the substance being transported and components of the membrane. The membrane component is the ‘carrier’. The mechanism is also characterized by (1) being saturable; (2) like substances being able to compete for the services of the carrier so that competitive inhibition occurs. There are two forms of carrier-mediated transport, active transport and facilitated diffusion. The rapid transfer of drug metabolites into urine is by active transport. Entry of glucose into most cells is by facilitated diffusion, but its passage across the gastrointestinal mucosa is by active transport. Active transport requires a direct expenditure of energy, whereas facilitated diffusion is not energy dependent. Active transport can move substances against a concentration gradient, facilitated diffusion cannot.

**carrion eating** chewing of bones or other carcass material; a species trait, or a sign of nutritional deficiency, usually phosphorus.

**Carrion's disease** [*kah-re-ōn'*] see **Bartonella**.

**carrot bush** [*kar'ət*] **Eremophila deserti**.

**carrying capacity** the number of animal units that a farm or area will carry on a year round basis, including that needed for conservation of winter feed. The concept is used mainly with arid and semi-arid lands. Usually stated as dry cows or dry sheep equivalents per acre or hectare.

**CARS** compensatory **anti-inflammatory** response syndrome.

**cartilage** [*kahr'ti-ləj*] a specialized, gristly connective tissue present in both mature animals and embryos, providing a model in which most of the bones develop, and constituting an important part of the organism's growth mechanism; the three most important types are hyaline cartilage, elastic cartilage and fibrocartilage. Also, a general term for a mass of such tissue in a particular site in the body.

**alar c's** the cartilages of the wings of the nose.

**annular ear c.** a ring of cartilage interposed between the rolled-up auricular cartilage and the skull.

**arthrodial c., articular c.** the hyaline cartilage, and rarely the fibrocartilage, clothing the articular surfaces of synovial joints.

**arytenoid c's** two pyramid-shaped cartilages of the larynx.

**auricular c.** cartilage of the pinna and much of the external ear canal.

**c. canals** tunnels containing blood vessels incorporated in developing cartilage.

**connecting c.** that connecting the surfaces of an immovable joint.

**costal c.** a bar of hyaline cartilage that attaches a rib to the sternum in the case of true ribs, or to the immediately cranial rib in the case of the more cranial false ribs, or tapers to a point to end in the musculature in floating ribs. They are broadest dorsally where they form costochondral joints with the bony ribs.

**cricoid c.** a ringlike cartilage forming the caudal part of the larynx.

**diarthrodial c.** articular cartilage.

**elastic c.** cartilage that is more opaque, flexible, and elastic than hyaline cartilage, and is further distinguished by its yellow color. The ground substance is penetrated in all directions by frequently branching fibers that give all of the reactions for elastin.

**c. emboli** see fibrocartilaginous embolic **myelopathy**.

**ensiform c.** xiphoid process.

**fibrous c.** fibrocartilage.

**floating c.** a detached portion of semilunar cartilage in the stifle joint.

**hoof c.** see ungal cartilage (below).

**hyaline c.** flexible, somewhat elastic, semitransparent cartilage with an opalescent bluish tint, composed of a basophilic fibril-containing substance with cavities in which the chondrocytes occur.

**interarytenoid c.** an occasional cartilage located between the two arytenoid cartilages.

**lateral c.** see ungal cartilage (below).

**nasal c.** rostral end to the internasal septum, separating the nasal cavities and anchoring the other cartilages around the nostrils. Called also septal cartilage.

**parapatellar c.** cartilaginous plates medial and lateral to the patella in some species, e.g., dogs.

**permenent c.** cartilage that does not normally become ossified.

**retained enchondral c. cores** occur in ulnar metaphysis and lateral femoral condyles of young, giant breed dogs. Visible radiographically as radiolucent inverted cones, extending into the metaphysis, they are often associated with growth deformities such as forelimb valgus and genu valgum.

**reticular c.** elastic cartilage.

**scapular c.** dorsal extension of the blade of the scapula, mainly in ungulates; tends to calcify with age.

**c. scissors** used for ear cropping in dogs.

**semilunar c.** one of the two intra-articular cartilages of the stifle joint.

**temporary c.** cartilage that is normally destined to be replaced by bone.

**thyroid c.** the unpaired cartilage of the larynx to which the vocal folds attach.

**tibial c.** the bed of cartilage located on the caudal surface of the intertarsal joint of birds; the tendons of the digital flexors pass through it.

**ungual c's.** the medial or lateral cartilage of the hoof of horses born on the palmar processes of the distal phalanx. These flat or L-shaped plates of hyaline cartilage lie mainly against the inner wall of the hoof with their proximal borders being free, subcutaneous, and palpable on each side of the pastern joint. They are clad with venous plexuses on their superficial and deep surfaces and are significant contributors to the vascular pump. Calcification of the cartilages results in **sidebone**. Called also lateral cartilages.

**vomer nasal c.** either of the two narrow strips of cartilage, one on each side, of the nasal septum supporting the vomeronasal organ.

**xiphoid c.** posterior continuation of the sternum; supports the anterior abdominal wall, especially the linea alba.

**yellow c.** elastic cartilage.

**cartilage-forming tumor** tumors containing principally cartilage (chondroma, chondrosarcoma); some contain bone. Only a small proportion of skeletal neoplasms, except in sheep, are cartilaginous.

**cartilaginiform** [*kahr'ti-lə-jin'i-form*] resembling cartilage.

**cartilaginous** [*kahr'ti-ləj'i-nəs*] consisting of, or of the nature of, cartilage.

**c. joint** the bones of the joint are joined together by fibrocartilage or hyaline cartilage. See **synchondrosis**, **symphysis**.

**c. metaplasia** abnormal change of a tissue to cartilaginous tissue. Can occur in normal tendons; is classified as abnormal only when the metaplasia is bony.

**multiple c. exostosis** see multiple cartilaginous **exostosis**.

**c. osteoid** degenerate cartilage that has lost its basophilic quality and stains like osteoid.

**c. tumor** see **cartilage-forming tumor**.

**cartogram** a map showing the distribution of a population by area.

**cartography** map making.

**epidemiological c.** making maps that show epidemiological data about distribution of disease or its causes by land area.

**cartwheel flower plant** see **Heracleum mantegazzianum**.

**carumonam** a monobactam antibiotic, very resistant to  $\beta$ -lactamase, with activity against gram-negative bacteria, including most *Pseudomonas aeruginosa*.

**caruncle** [*kar'əng-kəl*] **1.** a small fleshy eminence, often abnormal. **2.** one of the fleshy protuberances on the head, face, and neck of a Muscovy duck.

**hymenal c's** small elevations of mucous membrane around the vaginal opening, being relics of the ruptured hymen, especially of women.

**lacrimal c.** small rounded piece of modified skin at the medial canthus of the eye from which hairs often protrude; sometimes called the medial caruncle.

**maternal c.** see uterine caruncle (below).

**medial c.** see lacrimal caruncle (above).

**sublingual c.** an eminence on either side of the frenulum of the tongue (frenulum linguae), on which the major duct of the sublingual gland and the duct of the submandibular gland open.

**uterine c.** fleshy masses on the wall of the uterus of ruminants. The placenta is attached only at these points, to the corresponding fetal cotyledon. There are about 100 of them, and they are very much smaller in the nonpregnant female.

**caruncula** [*kə-rung'ku-lə*] [L.] caruncle.

**carunculitis** inflammation of the uterine caruncles in ruminants.

**carvedilol** a third-generation beta-adrenergic blocker used in the treatment of heart disease in dogs.

**Cary-Blair medium** a transport medium particularly used for *Salmonella* spp.

**cary(o)-** see karyo-.

**Caryophanon** see *Simonsiella muelleri*.

**Caryophyllaeus** a genus of the family of cestodes Caryophyllaeidae, found in the intestines of freshwater fishes. Includes *C. fimbriceps*, *C. laticeps* (carp).

**Caryospora** apicomplexan protozoan parasites affecting mostly reptiles and raptors.

**C. bigenetica** an occasional cause of pyogranulomatous dermatitis in puppies.

**caryosporiosis** infection by a protozoan of the genus *Caryospora*.

**CASRN** Chemical Abstracts Service Registry Number.

**casantranol** [kə-sən'thrā-nōl] cascara.

**Cascabela** South American shrub genus in the plant family Apocynaceae. Contains cardiac glycosides, e.g., thevetin. Causes sudden death in animals eating any part of the plant. Includes *C. thevetia* (*Thevetia peruviana*). Called also *T. nereifolia*, luckynut, yellow oleander, cook tree, daffodil tree, be-still tree.

**cascade** [kas-kād'] a series of steps or stages (as of a physiological process) that, once initiated, continues to the final step by virtue of each step being triggered by the preceding one, sometimes with cumulative effect. For example, the **coagulation** cascade or **arachidonic acid** cascade.

**cascado** [Indonesian] a bovine dermatitis caused by *Stephanofilaria dedoisi*.

**cascara** [kas-kah'rā] dried bark of *Rhamnus purshiana*, used as an irritant cathartic. Called also cascara sagrada.

**case** [kās] in epidemiology, an animal that has the specified disease or condition that is under investigation.

**c. abstract** a structured summary of a case report suitable for computer entry; permits machine sorting and retrieval and leads an investigator to the original paper records on which detailed descriptions must be based.

**primary c.** the patient that brings the disease into the population.

**c.-control sampling** selection of cases as a sample to use in a case-control study (below).

**c.-control study** a retrospective, analytical, epidemiological study. A group of pre-existing cases of the disease are matched with a selected group of control animals that do not have the disease so that the presence or otherwise of an hypothesized disease determinant can be ascertained in both groups.

**c. definition** the determination of the set of criteria (individual clinical signs, postmortem, laboratory findings) that define the characteristics of an animal, or herd, to be chosen as a case for a case-control study.

**c. fatality rate** the proportion of cases with a specified condition that die within a specified time.

**c. finding** the strategy of surveying a population to find the sick animals that are the foci of infection; an essential early step in the eradication of any disease.

**c. history** the collected data concerning an individual, contact and related animals, environment and management procedures, including any past medical history and any other information that may be useful in analyzing and diagnosing the case or for instructional or research purposes.

**index c.** the first case recorded in an outbreak.

**c. management** care of a sick animal including specific and supportive medication, surgical intervention, housing, bedding, nutrition, restraint, collection of specimens for submission to laboratory, or stall-side tests.

**c. population** the group of animals in the total population that are sick or infected, as distinct from the control population, that are not sick or infected.

**c. recording** entry in records of the clinical findings of individual sick animals. May be structured or unstructured, paper or electronic, with or without the accounting record for the case.

**caseation** [ka'se-a'shān] **1.** the precipitation of casein. **2.** a form of necrosis in which tissue is changed into a crumbly, amorphous mass resembling cheese. See also caseous **necrosis**.

**casein** [ka'sēn] a phosphoprotein, the principal protein of milk, the basis of curd and of cheese. Found in milk in colloidal suspension and precipitated by acid and by rennet. Called also caseinogen.

**c. clot** the insoluble form of caseinogen produced by the action of rennin in the presence of calcium.

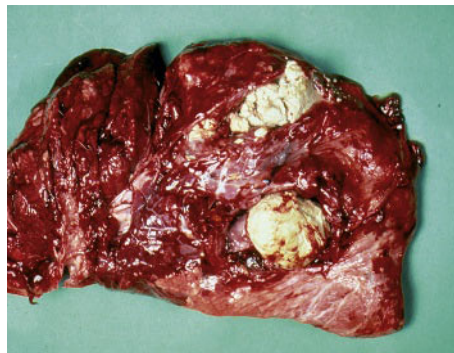
**c. digestion** an identification test for bacteria assessed by inoculation of milk agar.

**caseinogen** [ka-sēn'o-jen] outside North America, the term for casein.

**caseopurulent** the lesion is partly caseous, partly purulent, or consistently of a consistency midway between the two.

**caseous** [ka'se-ās] resembling cheese or curd; cheesy.

**caseous lymphadenitis** [ka'se-ās lim-fad'ə-ni'tis] a chronic disease of sheep and goats caused by *Corynebacterium pseudotuberculosis*.



**C-18:** Caseous lymphadenitis. Abscesses in lung of sheep, which when ruptured into a bronchus these provide a source of infection to other sheep through infected nasal discharges.

The source of infection is discharge from pulmonary or skin abscesses with infection through intact skin or skin wounds. Characterized by caseopurulent abscesses in lymph nodes but with little effect on general health, except respiratory or wasting disease associated with internal abscesses.

**cashmere, cashmere wool** fine, downy hair fiber from the Kashmiri goat.

**cashmere goat** see **Central Asiatic Pashmina**.

**Caslick** E.A. Caslick, a veterinarian who pioneered in the field of equine reproduction in the early 20th century.

**C. operation** a means of reducing the mucocutaneous cleft of the vulva to prevent the aspiration of air and thus reduce the amount of infection and inflammation in the urogenital tract. The simplest version of the operation is the suturing together of the lips of the vulva, after removal of a narrow strip of mucosa, over most of their length.

**Casoni's test** [kə-so'ne] a traditional test for hydatid infection (echinococcosis) used in humans. The production of a wheal and flare reaction at the site of intradermal injection was indicative of infection.

**caspsases** [kas'pās] cysteine-aspartic acid proteases; a family of proteins that are essential in the process of apoptosis.

**caspofungin** [kas'po-fun'jin] a  $\beta$ -glucan synthase inhibitor used as a broad spectrum antifungal agent.

**cassaine** cardiotoxic diterpenoid alkaloid in the bark of *Erythrophloeum guineense* tree. Causes anorexia, defective vision, increased heart sounds and dyspnea.

**cassava** [kə-sah'və] see *Manihot*.

**cassette** [kə-set'] **1.** a light-proof housing for x-ray film, containing front and back intensifying screens, between which the film is placed and held during exposure. Although it is usual to have two screens, there may be only one where there is a special need for a high detail picture. **2.** a magazine for film or magnetic tape.

**computed radiography c.** lightproof housing for a computed radiography imaging plate.

**c. grid** composed of alternating strips of lead and radiotranslucent material such as aluminum. Placed on top of the cassette it permits the passage only of the x-rays that are passing directly to the film. Scattered rays are absorbed by the lead and this reduces the effect of scatter on the film thus increasing image contrast.

**c. holder** a radiolucent holder, into which the cassette fits, on a long handle permitting the person holding the cassette to stay well clear of the x-ray beam. Commonly used with large animals.

**c. tunnel** a cassette holder that protects the cassette when patient such as a horse stands on the cassette for the acquisition of a radiograph.

**Cassia** legume genus of the Caesalpinaceae family of plants; can contain anthraquinone glycosides that causes diarrhea and an unidentified toxin causing myopathy. Most species in the genus have been reclassified as *Senna* spp.

**Cassine buchanani** African plant in the family Celastraceae; an unknown toxin causes nephrosis. Called also *Elaeodendron buchanani*.

**Cassou artificial insemination gun** an instrument used for artificial insemination and embryo transfer. Consists of a very narrow diameter stainless steel plunger with a knob handle. The plunger is fitted into a plastic straw from which the semen or embryo is expelled.

**cassowary** a large omnivorous ratite bird native to Australia and New Guinea region, with a brightly colored head and neck and a bony helmet on top of its head. Includes southern cassowary (*Casuarus casuarus*), dwarf cassowary (*C. bennetti*), and northern cassowary (*C. unappendiculatus*). Can be aggressive.

**CAST Council for Agricultural Science and Technology.**

**cast** [kast] **1.** a positive copy of an object, e.g., a mold of a hollow organ (a renal tubule, bronchiole, etc.), formed of effused plastic matter and extruded from the body, as a urinary cast; named according to constituents, as epithelial, fatty, waxy, etc. **2.** a restraint procedure used in horses and cattle, and occasionally in large beasts such as elephants, to pull them to the ground so that surgical procedures can be performed. Used less nowadays than previously because of the advent of new anesthetic techniques. There are many techniques and special harnesses for special purposes. **3.** an animal lies down but is unable to right itself into a position of sternal recumbency so that it can rise, e.g., a horse in a loose box when it is lying too close to a wall, a sheep in heavy fleece in wet weather. When helped to the sternal posture, the animal is able to rise. **4.** to form an object in a mold, as a replica of teeth made in an impression. **5.** a custom-made, external coaptation device, stiff dressing or casing, usually made of plaster of Paris impregnated dressing, used to immobilize body parts. More modern, lightweight casts are made of thermomoldable and fiberglass or polyurethane resins. **6.** culled, e.g., cast for age. **7.** shedding of velvet by deer stags and bucks.

**full leg c.** see long-leg cast (below).

**bivalve c.** one that is cut into two parts, longitudinally, to allow frequent cast changes, particularly to allow access to a wound.

**half c.** see walking cast (below).

**hyaline c.** see urinary casts (below).

**long-leg c.** a rigid material, usually plaster of Paris, is applied from the toes to as high as possible over the humerus or femur. Used for immobilization of fractures of the radius, ulna or tibia.

**renal c's (1)** see urinary casts (below).

**stone c.** a reproduction of the jaw and dentition made from powdered gypsum stone and water in an impression mold.

**urinary c's** precipitates of mucoprotein or plasma protein in the shape of the renal tubular laminae in which they form, often with cellular elements. Observed in the examination of urinary sediment, they indicate renal tubular or epithelial damage. Hyaline casts are composed of mucoproteins or plasma proteins without formed cellular elements and are considered normal in low numbers. Waxy, granular, epithelial, erythrocyte, and leukocyte casts may occur, each representing a type of cellular reaction or stage of degeneration within the cast. Fatty casts are formed from degenerating tubular epithelial cells and, particularly in cats, lipid in these cells. Casts may dissolve in alkaline urine. Called also cylindroids.

**walking c.** one that does not extend above the elbow or stifle, thereby permitting movement of those joints so that the animal can walk on the leg. Suitable for fractures of the metacarpus or metatarsus.

**follicular c.** a sheath of keratin debris, often enclosing a group of hairs, that causes the hairs to clump or mat. A feature of primary keratinization defects as seen in sebaceous adenitis, primary seborrhea and vitamin A-responsive dermatosis in dogs.

**Castalis spectabilis** African member of the plant family Asteraceae; causes cyanide poisoning. Called also *Dimorphotheca spectabilis*, blue bitou, Transvaal bitou.

**castanospermine** polyhydroxylated indolizidine alkaloid in the ripe seeds of *Castanospermum australe*. Powerful inhibitor of mononuclear cell beta-glucosidase that is, however, not the cause of the seeds' toxicity.

**Castanospermum australe** Australian tree in the legume family Fabaceae; contains **castanospermine**; an unidentified toxin in ripe seeds (not castanospermine) causes severe enteritis in livestock, but only if eaten in large numbers. Humans can be severely affected by less than one seed. Called also Moreton Bay chestnut, black bean.

**casters** the small rubber wheels on surgical trolleys, patient stretchers, mobile equipment.

**conductive c.** the casters are impregnated with carbon to facilitate the dispersal of static electricity from equipment. This is enhanced if the floor also has a conductive covering.

**Castilleja** a North American genus of the plant family Scrophulariaceae; selenium converter plants that selectively absorb selenium from the soil. Called also paintbrushes.

**casting** [kast'ing] the technique of using a rope or a special harness designed for the purpose to make an animal fall to the ground or onto a specially prepared area. Used for large animals especially horses and cattle.

**c. bed** the area designated for a cast animal to fall. It is usually cushioned with straw or, in the case of a permanent facility, rubber or other synthetic padding.

**Burley c. method** one that uses a rope centered over the shoulders, crossed between the front legs, crossed over the back and then passed between the hindlegs, avoiding the scrotum or udder and with traction backward. Used in cattle.

**half hitches c. method** suitable only for cattle; a nonslip knot is applied around the neck and half-hitches are placed behind the front legs and around the flanks. Traction is applied backward.

**c. harness** an arrangement of leather or webbing straps, ropes and rings is applied to the hindlegs below the pasterns with ropes running forward through a shoulder harness. Traction on the ropes pulls the legs forward and the horse falls to one side. The ropes are used to tie the legs in a convenient position. Not suitable for use with cattle.

**c. injury** may be injury or even fracture of a limb bone, or injury to a nerve, especially facial or radial nerves.

**London c.** a complicated technique for casting a horse using two ropes and three hobbles. It is very easy on the horse and gives excellent exposure of the inguinal region.

**Parker c.** a method of casting a horse using two ropes, one of which pulls the feet of two limbs on one side together while the other pulls the horse over.

**c. pen** used at abattoirs to restrain animals that are to be slaughtered according to the Jewish law. It is a restraint cage or cradle that enables the operator to tip the animal onto its back so that it can be slaughtered while it is still conscious.

**Reuff c.** using a single rope, a loop is passed around the horns, followed by three half hitches, one around the neck, one around the chest behind the elbows and one just in front of the udder.

**castor bean** see *Ricinus communis*.

**castor bean tick** see *Ixodes ricinus*.

**castor oil** a fixed oil obtained from the seed of the castor bean plant (*Ricinus communis*); it has an irritant effect on the intestines and acts as a powerful purgative. Castor oil is also used externally as an emollient in seborrheic dermatitis and other skin diseases. It does not contain significant amounts of ricin.

**c. o. plant** *Ricinus communis*.

**false c. o. plant** *Datura stramonium*, *D. ferox*.

**Castor Rex** see **Rex (2)**.

**castrate** [kas'trat] **1.** to deprive of the gonads, rendering the animal incapable of reproduction. **2.** a castrated animal. The strictly correct usage of the word is to apply it to animals of both sexes. Common usage is to restrict its use to the male.

**castration** [kas-tra'shan] excision of the gonads, or their destruction, as by causing avascular necrosis, radiation or parasites.

**Burdizzo c.** see **Burdizzo emasculatome**.

**closed c.** the scrotal sac is incised and the testicle released still enclosed in its tunica vaginalis. The cord is ligated and the testicle and its enveloping tunic removed in toto. Preferred for adult stallions or when the inguinal canal is considered to be sufficiently enlarged to permit eventration. Called also covered castration (below).

**covered c.** Called also covered castration. (see above).

**elastic ring c.** see **elastrator**.

**elastrator c.** see **elastrator**.

**female c.** removal of the ovaries, or bilateral **oophorectomy**; spaying.

**male c.** removal of the testes, or bilateral **orchectomy**.

**open c.** incision through the tunica vaginalis and direct ligation of the spermatic vessels and vas deferens. Compare with covered castration (above).

**prepubertal c.** in sheep, castration of males before puberty may result in a greater risk of subsequent obstructive urolithiasis because of failure of the urethra to fully develop its potential for dilatation. In companion animals, practiced most commonly in animal shelters prior to rehoming stray animals.

C



**C-19:** Red cell cast in urine sediment.

From Raskin, R.E., Meyer, D., Atlas of Canine and Feline Cytology, Saunders, 2001.



**c.-responsive dermatosis** an alternate name **alopecia X**, based on the observation that hair regrowth occurs in some dogs after castration.

**standing c.** one performed under sedation with local anesthetic while the animal is standing. Most commonly performed in horses, llamas, and camels.

**Castroviejo** pertaining to Ramon Castroviejo, a Spanish/American ophthalmologist (1904–1987) whose name is applied to a range of ophthalmic surgical instruments including corneal scissors, forceps and trephines, razor blade holder, eyelid speculum, and needle holder.

**casualty** [*kazh'oo-əl-te*] an accident; an accidental wound; death or disablement from an accident; also the animal so injured.

**c. slaughter** abattoir slaughtering of injured or sick animals. Rarely done these days because of the difficulty of getting cattle with fractured or dislocated limbs onto the abattoir floor. The modern, highly automated meat packing plant is not geared to such interruptions. Prohibited in some countries because of animal welfare concerns.

**Casuaris** see **cassowary**.

**CAT** computerized axial tomography. See computed **tomography**.

**cat** [*kat*] any member of the family Felidae, including the domestic cat, *Felis catus*, and many exotic (here taken to mean nondomestic or zoological, rather than extraterritorial) species. See also **feline**.

**c.-bite abscess** a common sequela to a frequent injury. Particularly during the mating season, but also at other times, cats are likely to inflict or be subjected to bites or scratches during fighting or even vigorous play with each other. These contaminated puncture wounds, which are prone to abscessation, can be located anywhere on the body, but most often occur at the tail base, lower limbs, and around the head and neck. *Pasteurella* spp., *Prevotella* spp., *Porphyromonas* spp., fusiform bacilli, and  $\beta$ -hemolytic streptococci are commonly involved.

**c. breeds** are generally of two groups, the longhair and shorthair types. Within these, there are numerous specific breeds whose differences may be great, in conformation, color and certain distinctive features, or slight, on the basis of coat and/or eye coloring. The longhaired breeds, also called Persians, are of short, stocky (cobby) build with broad, short heads, small ears, large round eyes, and short, thick legs. One variety, the **Peke-faced**, has an extremely short nose. There are some specific breed types, but in general, they are divided on the basis of coat color, sometimes qualified by pattern of pigmentation or eye color, and the list is very long. The major groups are: solid colors (black, blue-eyed white, orange-eyed white, odd-eyed white, blue, chocolate, lilac, red, cream), broken colors (tabbies, **tortoiseshell**, cream, bicolors and harlequin), shaded colors (**smoke**, **Chinchilla**, silver and **cameo**), **Himalayan** (1)/**Colorpoint** (various colors). Additional longhaired breeds are the **Angora**, **Birman**, **Balinese**, **Cymric**, **Javanese**, **Maine coon**, **Ragdoll** and **Turkish van**. The shorthaired breeds include: **Abyssinian**, **American curl**, **Bengal**, **Bombay**, **British shorthair**, **Burmese**, **California spangled**, **Exotic shorthair**, **Havana brown**, **Korat**, **Manx** (may be longhair or shorthair), **Oriental** (many different color groups), **Rex**, **Russian blue**, **Siamese** (further divided on the basis of color in their points), **Singapura**, **Somali**, and **Tonkinese**. In addition, there is the **Sphinx** cat, or Canadian hairless.

**c. fancy** a term used in reference to breeders, registration bodies, clubs and societies, and any other groups sharing a common interest in cats (cat fanciers).

**c. flu** see **feline** viral respiratory disease complex, feline *Calicivirus* infection, feline viral **rhinotracheitis**.

**c. foot** in dog conformation describes a round, compact foot with tightly bunched, arched toes.

**c. plague** see **feline** panleukopenia.

**pouting c.** see **fat-chin**.

**c. pox** see feline **cowpox**.

**scabby c. disease** feline miliary **dermatitis**.

**c. scratch fever** see **cat-scratch disease**.

**swimming c.** see **Turkish van**.

**cat-scratch disease** a benign, subacute, regional lymphadenitis of humans caused by *Bartonella henselae* carried by cats and their fleas; more serious illness occurs rarely, but particularly in severely immunosuppressed individuals. Usually associated with a scratch or bite of a cat or a scratch from a surface contaminated by a cat. Called also benign lymphoreticulosis.

**cat(a)-** word element. [Gr.] down, lower, under, against, along with, very.

**catabasis** the stage of decline of a disease.

**catabiosis** the natural senescence of cells.

**catabolic** [*kat'ə-bol'ik*] see **catabolism**.

**fractional c. rate** the percentage of an available pool of body component, e.g., protein, iron, which is replaced, transferred or lost per unit of time. Takes account of the size of the pool of available metabolite in

determining the absolute amount of it that is lost or transferred. Same principle applies in fractional transfer rate.

**catabolin** one of the monokine group of substances which stimulates bone resorption but only in the presence of osteoblasts. Called also IL-1, interleukin-1.

**catabolism** [*kə-tab'o-liz-əm*] any destructive process by which complex substances are converted by living cells into simpler compounds, with release of energy. See also **metabolism**.

**catabolite** [*kə-tab'o-lit*] a compound produced in catabolism.

**catacrotism** [*kə-tak'ro-tiz-əm*] a pulse anomaly in which a small additional wave or notch appears in the descending limb of the pulse tracing.

**catadicrotism** [*kat'ə-di'kro-tiz-əm*] a pulse anomaly in which two small additional waves or notches appear in the descending limb of the pulse tracing.

**catadromous** fish living most of their lives in fresh water, but entering marine waters to spawn. Compare with **anadromous**.

**catadromy** migration of fish, as subadults or adults, from fresh to sea water.

**catagen** [*kat'ə-jən*] a period of regression in the cycle of hair growth from active growth (anagen) to resting (telogen).

**Catahoula leopard dog** an American dog breed, named after a parish in Louisiana where it was used to herd hogs, but is now used for cattle. It is a large dog (50–90 lb) with a distinctive short, merled black, red, or brown coat, which can be coarse, smooth or woolly. Heterochromia is common and congenital deafness occurs. Called also Catahoula hog dog, Catahoula cur. The state dog of Louisiana.

**Catalan ass** a Spanish black, dark gray or brown donkey with paler underline.

**Catalan sheepdog** a medium-sized (44 lb) dog with a rough, long, flat or wavy, fawn, sable or gray coat covering the body and face. A breed recognized by the Kennel Club UK.

**catalase** [*kat'ə-lās*] a heme-containing enzyme, found in most living organisms; specifically catalyzes the decomposition of hydrogen peroxide. Catalase deficiency (acatalasemia, hypocatalasemia) is an inherited trait, found in Beagles and American foxhounds; causes oral ulceration and other organ and metabolic dysfunction.

**c. test** the reaction is used as a test in the identification of bacteria as catalase-positive or catalase-negative.

**cataplexy** [*kat'ə-lep'se*] a condition of diminished responsiveness usually characterized by a trancelike state and constantly maintained immobility, often with flexibilitas cerea (a waxy rigidity of muscles). In humans, the patient with cataplexy may remain in one position for minutes, days, or even longer.

**cataleptiform** resembling cataplexy.

**catalysis** [*kə-tal'ə-sis*] increase in the velocity of a chemical reaction or process produced by the presence of a substance that is not consumed in the net chemical reaction or process; negative catalysis denotes the slowing down or inhibition of a reaction or process by the presence of such a substance.

**covalent c.** one type of enzyme reaction with substrates forming very unstable, covalently joined enzyme–substrate complexes that undergo further reaction.

**catalyst** [*kat'ə-list*] any substance that brings about catalysis.

**catalytic constant** [*kat'ə-lit'ik*] first-order rate constant ( $k_{cat}$ ) reflecting the turnover number of the enzyme, or the number of molecules of substrate converted to product per unit time, when the enzyme is working at maximum efficiency. Called also turnover number.

**catalyze** [*kat'ə-liz*] to cause or produce catalysis.

**catamnesis** [*kat'am-ne'sis*] the follow-up history of a patient after discharge from treatment or a hospital; seldom used in veterinary medicine.

**cataphora** semicomma or somnolence punctuated by periods of partial consciousness.

**cataphoresis** [*kat'ə-fə-re'sis*] in **electrophoresis**, the movement of charged particles toward the cathode, or negative pole.

**cataphoria** [*kat'ə-for'e-ə*] a downward turning of the visual axes of both eyes after visual functional stimuli have been removed.

**cataphylaxis** [*kat'ə-fə-lak'sis*] deterioration of the body's natural defense caused by an infection

**cataplasia** [*kat'ə-pla'zhə*] atrophy with tissues reverting to earlier, or more embryonic conditions.

**cataplasm** [*kat'ə-plaz'əm*] see **poultice**.

**cataplexy** [*kat'ə-plek'se*] a condition, often associated with **narcolepsy**; marked by abrupt attacks of a loss of voluntary muscular function (flaccid paralysis), except those controlling respiration and eye movement. Observed in dogs, cats, and horses, especially Shetland ponies. In dogs,



**C-20:** Congenital cataract in a foal. From McAuliffe, S.B., Slovis, N.M., *Color Atlas of Diseases and Disorders of the Foal*, Saunders, 2008.

C

these have been precipitated by extreme excitement, vigorous physical or sexual activity. Usually of short duration. Most cases are idiopathic, but can be associated with lesions of the brainstem.

**food-elicited c. test** used to diagnose catalepsy in which 10 small pieces of food are placed 30 cm apart in a line on the floor. Normal dogs will eat all pieces in less than 1 minute while cataleptic dogs take longer than this due to one or more attacks of catalepsy.

**cataract** [*kat'ə-rakt*] opacity of the ocular lens or its capsule or both. May affect the entire lens or be localized, e.g., posterior polar cataract. May result from ocular injuries, exposure to great heat or radiation, diabetes mellitus, chronic uveitis or inherited factors. Rare in cattle and swine, common in dogs. Treatment consists of surgical removal of the lens (lens extraction or cataract extraction).

**acquired c.** any noncongenital cataract; usually inherited or the result of trauma, diabetes mellitus, or chronic uveitis.

**after-c.** any membrane over the pupillary area after extraction of the lens, due to posterior capsule wrinkling and lens fiber regrowth. More notable in young animals. See secondary cataract (below).

**capsular c.** cataract involving the lens capsule.

**congenital c.** present at birth; sometimes non progressive, not always inherited.

**cortical c.** a cataract involving the posterior or anterior lens cortex. Relatively common in dogs; inherited in many breeds. Posterior cortical cataracts are often associated with progressive **retinal** atrophy.

**developmental c.** one that occurs at any age before the animal becomes an adult.

**diabetic c.** one associated with diabetes mellitus.

**electric c.** one caused by electrical current as in electrocution.

**embryonal c.** one caused by prenatal influences.

**galactosemic c.** see **galactosemia**.

**hyaloid c.** a focal opacity at the point where the hyaloid artery meets the posterior lens capsule. See also **Mittendorf's dot**.

**hypermature c.** one in which the lens has begun to mineralize and resorb with subsequent leakage of lens proteins. This, in turn, is associated with lens-induced uveitis.

**immature c.** cataract occupying less than 100% of the lens.

**incipient c.** a very small cataract causing no detectable impairment of vision.

**inherited c.** cataract proven or suspected to have a genetic basis; occurs in a number of breeds of all common domestic species, sometimes in combination with other abnormalities of the eye. Inherited cataracts can be congenital or acquired.

**intumescent c.** a mature cataract that has become swollen; typical of the rapid-onset cataracts seen with diabetes mellitus in dogs.

**juvenile c.** one developing in very young animals, for example dogs less than 6 months of age.

**mature c.** one involving 100% of the lens.

**Morgagnian c.** advanced stage of cataract progression seen in some cataracts and in which liquefaction of the cortical lens fibers permits the nucleus to drop to the bottom of the lens capsule, shrinkage of the lens capsule, and usually lens-induced uveitis due to leakage of lens proteins.

**nuclear c.** one involving the nucleus of the lens; commonly congenital or nutritional in origin.

**nutritional c.** cataract occurring as a result of a nutritional cause such as arginine deficiency. See also **galactosemia**.

**polar c.** cortical cataract involving the anterior or posterior pole of the lens.

**radiation c.** one caused by radiation, as in radiotherapy.

**secondary c. 1.** a membrane over the pupillary area after surgical extraction of the lens, due to posterior capsule wrinkling and lens fiber regrowth. More notable in young animals. **2.** noninherited cataract.

**senile c.** cataract that occurs as a result of normal aging in all species, typically accompanied by nuclear **sclerosis**.

**subcapsular c.** cataract occurring immediately beneath the lens capsule; may be anterior or posterior.

**suture-line c.** cataract involving the "Y" suture lines where lens fibers meet. Can be in the anterior or posterior lens cortex or nucleus.

**toxic c.** one caused by exposure to a toxic substance.

**traumatic c.** one caused by trauma.

**cataracta** [*kat'ə-rak'tə*] [L.] *cataract*.

**cataractogenic** [*kat'ə-rak'to-jen'ik*] tending to induce cataract formation.

**catarrh** [*kə-tahr'*] inflammation of a mucous membrane (particularly of the head and throat), with free discharge.

**bovine malignant c.** see **malignant catarrhal fever**.

**catarrhal** [*kə-tahr'əl*] having the characteristic of catarrh.

**bovine c. fever** see **malignant catarrhal fever**.

**ovine c. fever** see **bluetongue**.

**catarrhine** [*kat'ə-rīn*] a member of the parvorder Catarrhini of **primates**. The Old World monkeys and apes, native to Africa and Asia, all have down-facing nostrils and lack prehensile tails.

**catastrope theory** the mathematical basis for the study of large changes in a total system which may result from small changes in a critical variable in the system.

**catatricotism** [*kat'ə-tri'kro-tiz-əm*] a pulse anomaly in which three small additional waves or notches appear in the descending limb of the pulse tracing.

**Catatropis** a genus of intestinal flukes (digenetic trematodes) of the family Notocotylidae. Includes *Catatropis verrucosa* (avian ceca).

**catching pens** small enclosures in the shearing shed from which the sheep are dragged onto the shearing floor to be shorn.

**catchment area 1.** the geographical area drained by a river and its tributaries. **2.** the region from which the data in a particular study are drawn. More commonly called study area.

**catechol** [*kat'ə-kol*] a compound, *o*-dehydroxybenzene, used as a reagent and comprising the aromatic portion in the synthesis of catecholamines. Previously known as pyrocatechol.

**catecholamine** [*kat'ə-kol'ə-mēn*] any of a group of sympathomimetic amines (including dopamine, epinephrine (adrenaline), and norepinephrine (noradrenaline)), the aromatic portion of whose molecule is catechol. The catecholamines play an important role in the body's physiological response to stress. Their release at sympathetic nerve endings increases the rate and force of muscular contraction of the heart, thereby increasing cardiac output; constricts peripheral blood vessels, resulting in elevated blood pressure; elevates blood glucose concentrations by hepatic and skeletal muscle glycogenolysis; and promotes an increase in blood lipids by increasing the catabolism of fats.

**c.-depleting agents** cause depletion of neuronal stores of norepinephrine (noradrenaline), thereby reducing adrenergic responses, e.g., reserpine.

**catecholaminergic** [*kat'ə-kol-əm'in-ur'jik*] activated by or secreting catecholamines.

**c. receptor** there are a variety of receptors that react differently with each of the catecholamine agonists and antagonists. It is therefore possible to blockade these receptors selectively.

**catechu** [*kat'ə-ku*] a powerful astringent formerly used internally for the treatment of diarrhea. Contains 25% to 35% catechutannic acid. Prepared from the heartwood of the leguminous tree *Acacia catechu*.

**categorical data** data relating to category such as qualitative data, e.g., dog, cat, female. It may be nominal when a name is used, e.g., location, breed, or ordinal when a range of categories is used, e.g., calf, yearling, cow.

**caterpillar** [*kat'ər-pil'ər*] the larval stage of insects of the Lepidoptera family. Contact with caterpillars, their nests or airborne bristles can cause intense skin irritation; in dogs, particularly on the lips, muzzle and tongue.

**army c.** see *Pseudoleitia separata*.

**c. cell** see **Anitschkow cell**.

**Eastern tent c.** (*Malacosoma americanum*) is the suspected cause of **mare reproductive loss syndrome**. Eggs overwinter on branches in large egg masses and hatch to form larvae that live as social insects in 'tents' from which they emerge to feed on leaves until approximately 2 inches in 4 to 6 weeks, after which they pupate to form a moth. Larvae (caterpillars) are hairy and black with a white stripe on the back and yellow stripes on the sides. Moths are red/brown with two diagonal stripes on each wing.



**hairy c.** elongated mucosal erosions occur in mouths of horses grazing pasture infested with hairy caterpillars. See also **erosive stomatitis**.

**Processionary c.** *Ochrogaster lunifer* (bag shelter moth). Cause of equine **amniotitis** and fetal loss syndrome in Australia; Grey and hairy with a brown head; so called because they commonly walk in processions.

**catfish** [*kat'fish*] primitive, eel-like, freshwater fish; naked or covered with spines or plates but not scales, and with characteristic barbels, the slender, whisker-like structures around the mouth ('cat's whiskers'). Members of the suborder *Siluriformes*, catfish are divided into many families, genera and species, including the blue catfish (*Ictalurus furcatus*) and channel catfish (*I. punctatus*), important in aquaculture, and *Corydoras* spp., which are popular as aquarium fish. See also *Ictalurus* and *Ameiurus* (the bullheads).

**ghost c.** see *Kryptopterus*.

**glass c.** *Kryptopterus* spp.

**catgut** [*kat'gut*] an absorbable sterile strand derived from the intestinal submucosa of sheep and fixed in formalin, used as a surgical ligature and suture.

**chromic c.** treated with basic chromate salts; the suture does not absorb as much water as ordinary catgut and has a longer life and is stronger than the untreated product.

**Catha edulis** [*kath'ə*] small, rare African tree of the family Celastraceae. Contains an unidentified toxin which causes depression, muscle spasms and dysentery. The leaves are chewed by humans for their narcotic effect. Called also khat, gat, coffa.

**Cathaemasiidae** a family of alimentary tract flukes (digenetic trematodes) of birds.

**Catharanthus** a genus of the plant family of Apocynaceae; contains an unidentified toxin that causes incoordination and convulsions; includes *C. pusillus* (*Vinca pusilla*, *lochnera pusilla*, milagaipoondu), *C. roseus*.

**C. roseus** source of vincine alkaloids used in cancer chemotherapy; called also Madagascan periwinkle, *Vinca rosea*.

**catharsis** [*kə-thahr'sis*] a cleansing or purgation.

**Cathartes aura** turkey vulture, or turkey buzzard, a large New World Vulture, widespread in the Americas. See **vulture**.

**cathartic** [*kə-thahr'tik*] an agent that stimulates bowel evacuation.

**bulk c.** one stimulating bowel evacuation by increasing fecal volume.

**irritant c.** a contact irritant that directly or indirectly causes diarrhea. May cause potentially fatal colitis and laminitis in horses, so the use of these cathartic agents should be avoided in horses.

**lubricant c.** one that acts by softening the feces and lubricating the exterior of the fecal mass, thereby reducing friction between the feces and the intestinal wall.

**osmotic c.** agent that retains or attracts water into the intestinal lumen, thereby producing softer feces; may also indirectly stimulate intestinal motor activity; includes saline cathartic (below).

**saline c.** one that increases fluidity of intestinal contents by retention of water by osmotic forces and indirectly increases motor activity.

**stimulant c.** one that directly increases motor activity of the intestinal tract.

**cathepsin** [*kə-thep'sin*] any of a group of proteinases (cathepsins A-G) found in most cells, which takes part in cell autolysis and self-digestion of tissues. Includes serine, aspartic, and cysteine proteases.

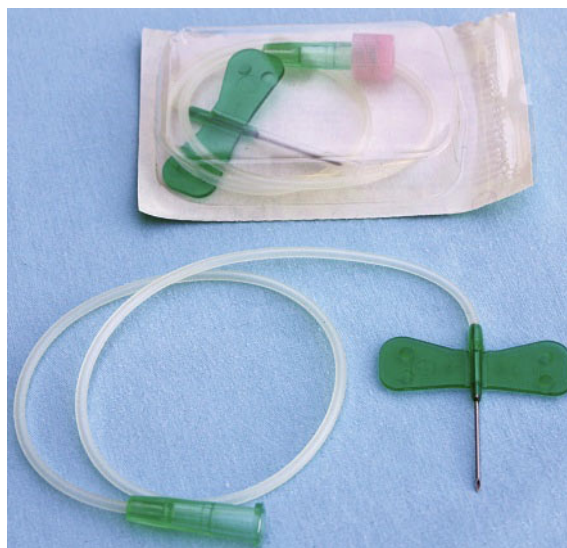
**c. D** an acid hydrolase isolated from cartilage that plays a part in the endogenous degradation of proteoglycans in degenerative diseases of joints.

**catheter** [*kath'ə-tēr*] a tubular, usually flexible, instrument, passed through body channels or inserted through the skin for withdrawal of fluids from or introduction of fluids into a body cavity or blood vessel.

**angiographic c.** a long catheter via which a contrast medium is injected for visualization of the vascular system. Such catheters may have preformed ends to facilitate selective locating (as in a renal or coronary vessel) from a remote entry site. They may be named according to the site of entry and destination, such as *femoral-renal* and *brachial-coronary*.

**arterial c.** one inserted into an artery and utilized as part of a catheter-transducer-monitor system to continuously observe the **blood pressure** of critically ill patients. An arterial catheter also may be inserted for x-ray studies of the arterial system and for delivery of chemotherapeutic agents directly into the arterial supply of malignant tumors.

**balloon tipped c.** a type of catheter incorporating a small balloon that may be introduced into a canal, duct, or blood vessel and then inflated in order to clear an obstruction or dilate a narrowed region eg., pulmonary stenosis **valvuloplasty**. Balloon-tipped catheters may also be used to retain a catheter within a hollow viscus for the purpose of drainage or introduction of therapeutics or nutrition. See **Foley catheter** below.



**C-21:**  
**Butterfly catheter.**  
Sonsthagen,  
T. Veterinary  
Instruments  
and  
Equipment: A  
Pocket Guide,  
3rd Edition.  
Mosby, 2013.

C

**butterfly c.** a metal needle with flexible plastic 'wings' and a short length of tubing. The 'wings' assist in placement and facilitate fixation with tape.

**cardiac c.** a long, fine catheter especially designed for passage, usually through a peripheral blood vessel, into the chambers of a heart under fluoroscopic guidance. See also **cardiac catheterization**. used interchangeably with angiographic c.

**cardiac biopsy c.** introduced intravenously under the direction of fluoroscopy, can be positioned in the right or left ventricle and an endocardial biopsy obtained.

**central venous c.** a long, fine catheter inserted into a vein and advance until its tip reaches the right atrium in order to administer parenteral fluids through a large blood vessel (as in parenteral **nutrition**), antibiotics and other therapeutic agents. This type of catheter is also used in the measurement of central venous pressure. See also **central venous catheterization**.

**column disk c.** an indwelling device for continuous peritoneal dialysis. It is implanted within the peritoneal cavity, resting against the body wall. The attached Silastic tubing is used for infusing and draining the dialysate at intervals.

**double-lumen c.** one having two channels

**c. drainage** a catheter left in place to keep the bladder or other structure drained. Preferably should have a one-way valve to avoid aspiration of air and infection.

**elbowed c.** a catheter bent at an angle near the beak.

**Foley c.** a thin, sterile tube made from rubber or silicone with a balloon tip. Frequently inserted into the bladder to drain urine, or used as a feeding (**enterostomy**) tube. Because it can be left in place in the bladder or gastrointestinal tract for a period of time, it is also called an indwelling catheter.

**indwelling c.** one especially designed so that it is held in place in the urethra for the purpose of draining urine from the bladder.

**nasal c.** placed in the nasal cavity through a nostril; a means of delivering oxygen therapy.

**over-the-needle c.** a type of catheter where a large-bore sharp needle (stilette) is contained within the lumen of the catheter with the needle tip extending farther than the catheter tip to facilitate placement. Typically, the catheter is inserted into a vascular space and advanced and the stilette withdrawn, leaving the plastic cannula *in situ*.

**self-retaining c.** one constructed to remain in the bladder or other hollow organ, effecting constant drainage. The catheter tip is usually shaped as a pigtail or has a balloon tip.

**through-the-needle** the catheter is housed within the needle that is used to enter the blood vessel. After insertion, the needle may be removed by withdrawing, but leaving the catheter in place. A protective housing may be provided to cover the needle.

**tracheal c.** one with small holes at the terminal 1 inch, especially designed for removal of secretions during tracheal **suctioning**.

**ureteral c.** a long, extremely small gauge catheter designed for insertion directly into a ureter.

**urethral c.** any of various types of catheters designed for insertion via the urethra into the urinary bladder. See also **catheterization**.



**catheterization** [*kath''ə-tur''ī-zə'shən*] passage of a catheter into a body channel or cavity. Common usage of the term is in reference to the introduction of a catheter via the urethra into the urinary bladder (transurethral catheterization) or placement of a catheter in a peripheral vein. See also **cardiac** catheterization and **central** venous catheterization.

**balloon c.** see **balloon valvuloplasty**.

**catheterize** [*kath''ə-tər-ī-z*] to introduce a catheter into a body cavity, usually into the urinary bladder for the withdrawal of urine.

**cathode** [*kath''ōd*] the negative electrode, from which electrons are emitted and to which positive ions are attracted.

**c. beam, c. ray** the beam of electrons, accompanied by high electrical potential that flows from the cathode to the anode in the x-ray tube and interacts with the tungsten target to produce x-rays.

**c. filament** the source of electrons in the cathode tube. The electrons interact with the anode target to produce x-rays.

**cathomycin** [*kath''o-mī''sin*] see **novobiocin**.

**cation** [*kat''i-on*] an ion carrying a positive charge. In serum and in calculation of **anion gap**, the measured major cations are  $\text{Na}^+$  and  $\text{K}^+$ ; the minor anions, (usually unmeasured) include  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$ .

**c.-anion balance** the balance in serum or plasma between the anions and cations must equilibrate near to the concentration of 155 mEq/L. Estimation of any imbalance, usually by chloride and bicarbonate measurement, is basic to any determination of acid-base abnormality. See also **anion gap**.

**c. channels** channels through selectively permeable membranes via which only cations can migrate.

**c.-exchange resin** ion-exchange resin.

**cation-exchange chromatography** see ion-exchange **chromatography**.

**cationic** [*kat''i-on''ik*] related to or being a cation; having a positive charge.

**c. detergents** are wetting agents that disrupt or damage cell membranes, denature proteins and inactivate enzymes. Examples are the quaternary ammonium compounds.

**catnip** [*kat''nip*] a plant in the mint family (*Nepeta cataria*) that contains the volatile terpenoid, nepetalactone. It has distinctive aromatic qualities that are particularly attractive to cats, inducing behavior that is variously described as sexual, playful, and sometimes as hallucinatory. Often included in stuffed toys marketed for the domestic cat. Used as a tea in Western herbal medicine.

**Catostomus commersoni** the common sucker fish (North America), a secondary host for *Metorchis conjunctus*, a fluke of cats and dogs.

**catpox** [*kat''poks*] see feline **cowpox** infection.

**cat's ear** *Hypochaeris radicata*.

**catshead, catshead burr** see **catshead burr**.

**cattalo** produced in Canada by mating British beef bulls to bison cows. See also **beefalo**.

**cattery** a housing facility for cats; usually for boarding or breeding.

**cattle** members of the family Bovidae. There are wild cattle (*Bibos* spp.) including Banteng, Gaur, and Gayal. They resemble domestic cattle but have a hump on their back. Domestic cattle are all members of the *Bos* genus. There are two species: *Bos taurus* or European or British breeds of cattle, and *Bos indicus*, the Zebu or oriental domestic cattle. The common breeds of each are set out below. Interbreeding between the species is common, the offspring being called taurindicus or zeboid cattle.

**beef c.** breeds of cattle bred especially for the economic production of meat. See **beef** breeds.

**c. breeding herds** commercial cattle herds that produce beef calves for sale to fatteners.

**fat c.** a class of beef cattle of any age but usually greater than 1 year, well-covered and judged ready for slaughter to provide prime cuts of beef.

**commercial c.** cattle used to produce milk or meat for the general market.

**company c.** feedlot term for cattle are owned and fed by the feedlot as opposed to custom fed cattle where the feedlot feeds, manages and markets cattle for customers for a fee.

**conditioned c.** see **preconditioning**.

**c. cycle** increase and decrease in herd size over time as a result of cow-calf producers' response to high or low cattle prices. The cycle usually lasts between 8 and 12 years.

**dairy c.** cattle used solely for the production of dairy products. Called also milk or milch cows. See **dairy** breeds.

**c. dog** dogs used to herd and work cattle. See **Australian** cattle dog, **Stumpy-tail cattle dog**, **working dogs**.

**dual-purpose c.** most breeds of cattle in continental Europe are of this type. They produce heavy yields of milk and are also good carcass cattle. See **dual-purpose**.

**eared c.** cattle with Brahman blood; refers to the length of the ears but usually used as a term of reference to their heat resistance.

**feeder c.** steers or heifers mature enough to be placed in a feedlot to be fattened prior to slaughter; usually 600–900 lb at entry.

**grade c.** purebred cattle that are not registered. For example, most dairy herds are comprised of purebred cattle, but they are not registered.

**grass c.** feedlot term for cattle grown on grass prior to placement in the feedlot and not backgrounded.

**green c.** cattle with low condition.

**high-risk c.** term for cattle expected to experience significant disease when accepted into the feedlot and in which morbidity and death loss in excess of 20% and 1.5%, respectively, may occur. Usually because of young age, long transport, and risk factor predisposition to respiratory diseases.

**light c.** store class cattle off range and destined for movement onto irrigated pasture or into feedlot for fattening.

**low risk c.** cattle expected to experience minimal health problems at the feedlot because of their age, background or preconditioning.

**c. on feed** US survey census term for cattle at the time of the survey that are being fed a ration of grain, silage, hay and/or protein supplement and that will be shipped from their current location directly to slaughter market.

**pedigree c.** cattle that are registered in a recognized stud book.

**purebred c.** cattle produced by matings between members of the same breed, not necessarily pedigreed cattle.

**put together c.** feedlot term for a group of cattle assembled from various sources rather than one single ranch; at greater risk for disease.

**retained c.** calves retained on a farm after weaning as stockers.

**stud c.** pedigree cattle maintained as a separate herd, whose offspring are often sold as breeders, forming a major source of income for the enterprise.

**young c.** farmers' term for weaned calves, yearlings and 2-year-old cattle.

**cattle grid** see **stock guard**.

**cattle plague** see **rinderpest**.

**cattle tick fever** see **babesiosis**. Called also Texas fever, redwater fever.

**cat cavities** cat cavities; see feline **odontoclastic** resorptive lesions.

**Caucasian brown cattle** brown with dark markings, dual-purpose cattle from Russia.

**cauda** [*kaw''də*] pl. *caudae* [L.] a tail or tail-like appendage.

**c. equina** the collection of spinal roots that stream caudally from the end of the spinal cord and occupy the vertebral canal.

**c. equina compression** see **lumbosacral** stenosis.

**c. equina syndrome** see **cauda equina neuritis**.

**c. helix** caudal process of the helix of the ear of the dog.

**cauda equina neuritis** [*kaw''də*] a syndrome of nonsuppurative inflammation of the nerve trunks of the cauda equina in horses. It is characterized by paralysis of the tail, flaccidity of the anus and rectum which can lead to fecal incontinence, paralysis of the bladder sometimes with urinary incontinence, paresthesia or anesthesia of the tail and perineum, and incoordination of the hindlimbs. There can also be involvement of isolated cranial nerves. Called also polyneuritis equi.

**caudad** [*kaw''dad*] directed toward the tail or distal end; opposite of cephalad.

**caudal** [*kaw''də*] **1.** pertaining to a cauda. **2.** situated more toward the cauda, or tail, than some specified reference point; toward the inferior (in humans) or hinder (in animals) end of the body. See also **posterior**.

**c. anesthesia** a type of regional anesthesia in which an anesthetic is injected into the caudal area of the spinal canal through the sacrococcygeal intervertebral space or between the first and second coccygeal vertebrae. It affects the caudal nerve roots, and renders the cervix, vagina and perineum insensitive to pain. See also epidural **anesthesia**.

**c. cervical instability** see **cervical** spondylomyelopathy (wobbler syndrome).

**c. cervical malformation/malarticulation** see **cervical** spondylomyelopathy (wobbler syndrome).

**c. fold test** the single intradermal (SID) fold **tuberculin** test for tuberculosis.

**c. impression of liver** the renal impression.

**c. sheath** part of the maturation process of spermatid to spermatozoa; a caudal sheath of microtubules develops at the caudal edge of the head cap. Called also manchette.

**c. tailfold** when the cow's tail is lifted there are two, rarely a single central, folds of skin from the edges of the ventral surface of the tail to beside the anus. The site of injection and a control for the single intradermal test. See also caudal fold test (above).

**c. tract** usually refers to the tubular part of the female genital tract.

**c. vena caval thrombosis** in cattle, thrombosis of the caudal vena cava arises from a hepatic abscess. The commonest result is the subsequent

shedding of emboli and the development of a chronic pulmonary disease often terminated by massive pulmonary hemorrhage and bleeding to death through the mouth and nostrils. Others suffer a chronic course with anemia, dyspnea, and persistent cough and are euthanatized because of cachexia and prolonged distress.

**caudate** [*kaw'dāt*] having a tail.

**caudatum** the caudate nucleus.

**caudectomy** [*kaw-dek'tā-me*] removal of a tail; sophisticated terminology for tail docking as practiced in dogs.

**cosmetic c.** done to conform with breed standards.

**epididymal c.** see **epididymectomy**.

**therapeutic c.** done for medical reasons, usually traumatic injury, infection or neoplasm.

**caul, caul fat** [*kawf*] meat hygiene term for the omentum and its contained fat depots.

**Caucasian Ovcharka** a large (102–160 lb), powerful, heavy-boned working dog with a bear-like appearance. The head is large, the ears may be cropped and the tail is long and plumed. There is thick, long or short coat in gray, fawn or red with a dark mask. Called also Caucasian sheep dog, Caucasian shepherd.

**cauliflower** *Brassica oleracea* var. *botrytis*.

**c. saltwort** *Salsola tuberculiformis*.

**causal** [*kaw'zəl*] relating to or emanating from cause. The combination of necessary and sufficient factors, that is attributes and exposures, which alone or in combination, at some time during an individual's life, inevitably result in disease in that individual.

**c. association** a noxious agent is said to have a causal association with a particular disease when it can be shown that it plays some role in producing the occurrence of the disease. Generally, strength of association, biological information, biologic plausibility, and statistical information are combined to infer causal associations. In a **direct causal association**, the factor exerts its effect in the absence of intermediary risk factors. This is uncommon. In an **indirect causal relationship**, the factor exerts its effect via intermediary risk factors.

**c. inference** preliminary diagnosis.

**c. modeling** construction of models that set out the various relationships between causal agents and the initiation of a disease.

**causality** the relationship between cause and effects.

**principle of c.** the postulate that every phenomenon has a cause or causes, i.e., that events do not occur at random but in accordance with physical laws so that, in principle, causes can be found for each effect.

**causation** [*kaw'zā'shən*] the relation of cause to effect.

**c. analysis** comparison of the rate of occurrence of the disease in animals that were exposed to the suspected agent to the occurrence rate in animals that were not so exposed.

**multiple c.** a disease in which a combination, or alternative combinations, of causes, are required to produce it. Called also multifactorial etiology.

**cause** [*kawz*] an event, condition or characteristics that plays an essential role in producing an occurrence of the disease.

**constitutional c.** an inherent characteristic of the patient. Usually a systemic defect, e.g., protoporphyria.

**direct c.** there must be no known variable intervening between the suspect factor and the disease.

**endogenous c.** the cause comes from within the patient. See also constitutional cause (above).

**exogenous c.** the cause comes from outside the patient, e.g., a virus infection.

**indirect c.** all causes other than the direct cause (see above).

**host c.** see endogenous cause (above).

**necessary c.** a minimal combination of risk factors that may be associated with the agent, the host, and the environment that produce disease. There can be a different set of sufficient causes for the same disease. An example would be respiratory disease in housed calves.

**precipitating c.** the trigger mechanism that initiates the commencement of the disease state.

**predisposing c.** a mechanism that makes a patient more susceptible to the precipitating cause.

**primary c.** the principal factor in causing the disease.

**secondary c.** a factor that assists the primary cause. A cause of secondary importance.

**specific c.** the single cause in a single cause–single disease relationship.

**sufficient c.** a risk factor essential for the cause of a disease, although its occurrence does not necessarily cause disease. An example would be the clostridial enterotoxemias.

**caustic** [*kaws'tik*] **1.** burning or corrosive; destructive to tissue. **2.** having a burning taste. **3.** a corrosive or escharotic agent.

**c. bush** *Sarcostemma* spp.

**bottle tree c.** *Eremophila* spp.

**c. creeper** *Euphorbia drummondii*, *Sarcostemma* spp.

**lunar c.** toughened silver nitrate.

**c. pencil** see **silver nitrate** (toughened).

**c. plant** *Sarcostemma* spp.

**c. potash** potassium hydroxide.

**c. soda** sodium hydroxide.

**c. treated grain** grain treated with caustic agent to improve its digestibility; can cause abomasal ulcer and interstitial nephritis in cattle.

**c. treated roughage** roughage treated with caustic to improve its digestibility; can cause interstitial nephritis when fed to cows over long periods.

**c. vine** *Sarcostemma* spp. Called also caustic bush.

**c. weed** *Euphorbia drummondii*.

**cauterant** [*kaw'tār-ənt*] any caustic material or application.

**cauterization** [*kaw'tār-ē-zā'shən*] destruction of tissue with a **cautery**.

**cautery** [*kaw'tār-ē*] **1.** the application of a caustic agent, a hot instrument, an electric current, or other agent to destroy tissue. **2.** an agent so used.

**cold c.** cauterization by carbon dioxide, called also cryocautery.

**CAV** canine adenovirus.

**CAV-1** canine adenovirus type 1; the cause of infectious canine hepatitis.

**CAV-2** canine adenovirus type 2; a cause of canine respiratory disease.

**cava** [*ka'və*] [*L.*] **1.** plural of *cavum*. **2.** a vena cava.

**cavagram** contrast imaging of a vena cava.

**caval syndrome** [*ka'vəl sin'drōm*] syndrome caused by the presence of large number of heartworms (*Dirofilaria immitis*) in the posterior vena cava that can lead to the sudden onset of signs of hemolytic anemia and liver failure, often without preceding cardiopulmonary signs. Disseminated intravascular coagulopathy is a common complication, and the case fatality rate is high. Called also vena caval syndrome.

**caval vessels** [*ka'vəl ves'əls*] the principal vessels draining blood to the right atrium of the heart from the body; the cranial and caudal caval vessels drain blood of quadrupeds, the superior and inferior caval vessels drain the blood of bipeds. See also **vena cava** and Table 14.

**cavaletti** **1.** a small, portable jump for schooling horses. Constructed of light poles, 4–6 ft long, resting on a cross of timber at each end so that the pole is 12–18 inches above the ground. **2.** parallel rails placed as obstacles used in physical therapy of small animals.

**Cavalier King Charles spaniel** a small (13–18 lb) dog with prominent eyes, short nose, and floppy ears. The haircoat is long and silky. Several colors or combinations are recognized: black and tan, ruby (rich chestnut red), Blenheim (white with chestnut red patches), and tricolor (called Prince Charles in the US) (white with black patches and tan markings). Similar to, but larger than, the King Charles spaniel, and with a longer nose (at least 1.5 inches long). The breed suffers from mitral valvular disease, **syringomyelia**, **Chiari-like malformation** and the neurological condition known as episodic falling. Called also Cavi.

**cave sickness** [*kāv*] histoplasmosis.

**caveola** [*ka-ve-o'lə*] pl. *caveolae* [*L.*] one of the minute pits or incupings of the cell membrane formed during pinocytosis.

**caveolae** membrane-lined cavities.

**caveolated cell** flask-shaped cells characterized by an apical tubulovesicular system or tuft that are scattered through the epithelial cells of the intestines and respiratory tract. Called also tuft cells.

**caverna** [*ka-vur'nə*] pl. *cavernae* [*L.*] a cavity.

**cavernitis** [*kav'ər-nī'tis*] inflammation of the corpora cavernosa or corpus spongiosum of the penis.

**cavernoma** [*kav'ər-no'mə*] cavernous hemangioma. See also **hemangioma**.

**cavernosal venal shunt** [*kav'ər-no'səl*] vascular shunt between the corpus cavernosum penis and the exterior circulation of the penis. Too many of them results in inability to erect the penis.

**cavernositis** [*kav'ər-no-sī'tis*] cavernitis; inflammation of the corpus cavernosum penis.

**cavernosogram** a radiographic image of the vascular system in a penis. Radiopaque contrast material is injected into the corpus cavernosum penis and a series of radiographs taken.

**cavernostomy** [*kav'ər-nos'tā-me*] operative drainage of a pulmonary abscess of the lung.

**cavernous** [*kav'ər-nəs*] pertaining to a hollow, or containing hollow spaces. **c. hemangioma** histological variant of cutaneous hemangioma, comprised of large blood-filled chambers.

**c. sinus** see cavernous **sinus**.

**cavesson** a leather head harness including a cheek strap that goes over the poll and supports a noseband that usually goes right around the head, and a brow band. Used as a point of attachment for a martingale or a leading shank. See also **noseband**.

**Cavia** [ka've-ə] a genus of the rodent of the subfamily Caviidae, the guinea pigs or cavies.

**C. porcellus** see **guinea pig**.

**Caviacoptes caviae** see **Trixacarus caviae**.

**cavitary** [kav'i-tar'e] characterized by the presence of a cavity or cavities.

**cavitas** [kav'i-tās] pl. **cavitates** [L.] cavity.

**cavitate** formation of cavities.

**cavitation** [kav'i-ta'shən] the formation of cavities; also, a cavity.

**cavitis** [ka-vi'tis] inflammation of a vena cava.

**cavity** [kav'i-te] **1.** a hollow or space, or a potential space, within the body (e.g., abdominal cavity) or one of its organs (e.g., cranial cavity). **2.** in teeth, either the space occupied by dental pulp and surrounded by developing dentin or the lesion produced by dental caries. See also dental cavity (below).

**absorption c's** cavities in developing compact bone due to osteoclastic erosion, usually occurring in the areas laid down first.

**amniotic c.** the closed sac between the embryo and the amnion, containing the amniotic fluid.

**cranial c.** the space enclosed by the bones of the cranium.

**dental c.** **1.** the central space, often branched or multiple in compound teeth, of each tooth; carries the nerve and blood supplies to the teeth. **2.** the defect caused by decay on a tooth surface. Called also **caries**.

**glenoid c.** the shallow, socket-like depression in the ventral angle of the scapula for articulation with the head of the humerus.

**infraglottic c.** the space in the larynx caudal to the vocal folds and rima glottides; reflects the shape of the cricoid cartilage.

**medullary (marrow) c.** the cavity, containing marrow, in the diaphysis of a long bone; called also medullary canal.

**nasal c.** the proximal part of the respiratory tract, within the nose, bisected by the nasal septum and extending from the nares to the pharynx. Much of the cavity is occupied by the turbinate bones or conchae that also divide it into dorsal, medial, and ventral meatuses. The common meatus is the narrow, vertical passage close to the nasal septum. The rostral end of the cavity just inside the nostril is the nasal vestibule, and the caudal part opening into the pharynx is the nasopharyngeal meatus.

**oral c.** the cavity of the mouth, made up of a vestibule and oral cavity proper. See also **mouth**.

**pelvic c.** the space within the walls of the pelvis.

**pericardial c.** the potential space between the epicardium and the parietal layer of the serous pericardium.

**peritoneal c.** the potential space between the parietal and the visceral peritoneum.

**pleural c.** the potential space between the parietal and the visceral pleura.

**pulp c.** the pulp-filled central chamber in a tooth; called also dental cavity.

**serous c.** a celomic cavity, like that enclosed by the pericardium, peritoneum or pleura, not communicating with the outside of the body and lined with a serous membrane, i.e., one that secretes a serous fluid.

**tension c.** cavities of the lung in which the air pressure is greater than that of the atmosphere.

**thoracic c.** the space within the thoracic walls cranial to the diaphragm and caudal to the base of the neck. Called also **cavitas thoracica**.

**tympenic c.** an air chamber in the tympanic bone medial to the tympanic membrane that contains the ear ossicles; it is lined with mucous membrane and continuous with the auditory tube; called also the cavity of the middle ear, **cavum tympani**, **cavitas tympani**.

**uterine c.** the Y-shaped potential space (lumen) within the uterus communicating cranially on either side with the uterine tubes and caudally with the vagina. Called also **cavum uteri**.

**CAVM** complementary and alternative veterinary medicine.

**cavography** [ka-vog'ra-fe] contrast radiography of the vena cava.

**cavoodles** a hybrid name used to describe dogs produced from crossing Cavalier King Charles spaniels and Poodles. Called also cavapoo. Not a recognized breed. See **designer dogs**.

**cavum** [ka'vəm] [L.] cavity.

**c. conchae** that part of the external ear canal supported by the deeper, conchal part of the auricular cartilage.

**c. tympani** see **tympanic cavity**.

**c. uteri** see **uterine cavity**.

**cavus** [ka'vəs] [L.] hollow.

**cavy, cavy** the group of saddle horses on a cattle ranch used to work cattle. Called also remuda.

**cavy** [ka've] **guinea pig**, *Cavia porcellus*.

**spotted c.** see **paca**.

**cayenne tick** see *Amblyomma cajennense*.

**cayuse** the strong, hardy pony used by American Indians.

**CBC** complete blood (cell) count.

**CBG** corticosteroid-binding globulin.

**CBH** cutaneous basophil hypersensitivity.

**CBP** competitive protein binding.

**CBPP** see **contagious bovine pleuropneumonia**.

**Cb<sub>5</sub>R** cytochrome-*b<sub>5</sub>* reductase. This enzyme is responsible for the conversion of Hgb-Fe<sup>3+</sup> to Hgb in erythrocytes. A deficiency disorder is noted in dogs and cats causing methemoglobinemia.

**CC** medical record abbreviation for chief complaint.

**cc** cubic centimeter, the volume contained in a cube of 1 cm on each side. Equal volume to one milliliter; not recommended for handwritten medication-related documentation as it is prone to error and can be misinterpreted as 'u' (units); mL or cm<sup>3</sup> preferred.

**CCD** **1. colony collapse disorder. 2. charge-coupled device.**

**CCK, CCK-PZ** see **cholecystokinin**.

**CCL** cranial cruciate ligament.

**CCl<sub>4</sub>** see **carbon tetrachloride**.

**CCNU** see **lomustine**.

**CCoV** canine coronavirus.

**CCPP** contagious caprine pleuropneumonia.

**CCS** canine **Cushing's syndrome**.

**CCT** craniocerebral trauma.

**CCU** critical care unit.

**CD<sup>1</sup>** **1.** canine distemper. **2.** curative dose; that which is sufficient to restore normal health. **3.** Companion Dog; the first level title earned in obedience trials.

**CD** cluster of differentiation or cell differentiation proteins; serve as cell surface markers that define cell lineages or functions.

**CD antigen** a group of cell surface molecules that act as markers on leukocytes.

**CD3** cell marker present on both helper (Th) and cytotoxic (Tc) T lymphocytes; a component of the T cell receptor complex.

**CD4** cell marker found on monocytes, macrophages, dendritic cells and helper (Th) and regulatory (Treg) T lymphocytes; interacts with class II MHC molecules on antigen presenting cells to assist in T cell activation.

**CD8** found on T cytotoxic and variably on NK lymphocytes; an adhesion molecule that interacts with class I MHC molecules to assist Tc cell activation.

**CD<sub>50</sub>** median curative dose; the dose at which signs of the disease were resolved in 50% of the test group.

**Cd** **1.** chemical symbol, *cadmium*. **2.** caudal or coccygeal in a vertebral formula.

**cd** candela.

**CD virus** canine distemper virus.

**CDA** allidochlor.

**CDC** Centers for Disease Control and Prevention.

**CDEC** sulfallate.

**Cdk** cyclin-dependent protein kinase. A family of protein kinases that require cyclin as a separate subunit for activity.

**cDNA** complementary DNA; copy DNA; a DNA copy synthesized from a single-stranded RNA template (e.g., mRNA, viral RNA) by use of the enzyme reverse transcriptase; the cDNA can then be cloned and amplified and introduced into an expression vector (e.g., plasmid).

**cDNA library** a collection of cloned, double-stranded, complementary DNA molecules obtained by reverse transcription of mRNA.

**CDP** **1. cytidine diphosphate. 2.** a cancer chemotherapy protocol that utilizes chlorambucil, dactinomycin, and prednisone. A modification of the COP protocol with less severe side effects and lower costs.

**CDR** complementarity-determining regions of a T-cell receptor or antibody.

**CDS method** calibrated dichotomous sensitivity test; a form of the disk diffusion antimicrobial sensitivity test.

**CDV** canine distemper virus.

**CDX** Companion Dog Excellent; the second level title, after CD (Companion Dog), earned in obedience trials. The next level award is Utility Dog (**UD**).

**CE** **1.** continuing education. **2.** client education.

**Ce** chemical symbol, *cerium*.

**CEA** carcinoembryonic antigen; collie eye anomaly; previously, canine erythrocyte antigen, which is now replaced by dog erythrocyte antigen (DEA).

**CEAH** Centers for Epidemiology and Animal Health.

**Cebalges** members of the mange mite family Pseuralgidae. Includes *Cebalges gaudi* (primates).

**ceca** [se'ka] plural of **cecum**.

**cecal** [se'ka] arising from or pertaining to the **cecum**.

**c. blackhead** see *Histomonas meleagridis*.



**chicken c. worms** *Heterakis*, *Subulura* spp., *Strongyloides avium*, *Trichostrongylus tenuis*, *Aulonocephalus lindquisti*.

**c. coccidiosis** see **coccidiosis**.

**c. coliform granuloma** a nodular condition of the intestines, liver and cecum.

**c. dilatation** a disease of cows that occurs soon after calving characterized by moderate abdominal pain, reduction in fecal volume, and a distended viscus in the upper right flank detectable externally or by rectal examination. Called also cecal dilatation and torsion but the circulation of the organ is rarely compromised. In horses, it is usually part of tympany of the large intestine. See flatulent **colic**.

**c. dilatation and torsion** see cecal dilatation (above).

**c. impaction** occurs in horses. Often first manifest as acute colic with cecal rupture and death. Can occur as low-grade colic or be clinically inapparent. Predisposed to by hospitalization. A feature of mucoid enteropathy in rabbits.

**c. inflammation** see **typhlitis**.

**c. intussusception** see intestinal obstruction **colic**, **intussusception**.

**c. inversion** see cecocolic **intussusception**.

**c. rupture** is a specific entity in horses because it occurs during the act of foaling. Death occurs very quickly due to toxic shock.

**c. torsion** in cows is part of the syndrome of cecal dilatation. In horses constitutes a very serious threat to life. See also intestinal obstruction **colic**, **red gut syndrome**.

**c. tympany** see cecal dilatation (above), flatulent **colic**.

**cecectomy** [*se-sek'tə-me*] excision of the cecum.

**cecitis** [*se-si'tis*] see **typhlitis**.

**cec(o)-** word element. [L.] relationship to cecum.

**cecocele** [*se'ko-sēl*] a hernia containing part of the cecum.

**cecolic** [*se''ko-kol'ik*] pertaining to the cecum and the colon.

**c. intussusception** see cecocolic **intussusception**.

**c. ostium** opening between cecum and colon.

**c. volvulus** a rare occurrence in dogs and cats requiring aggressive supportive treatment and surgery.

**cecolopexy** [*se''ko-ko'lə-pek'se*] an operation for fixation or suspension of the cecum and ascending colon.

**cecolostomy** [*se''ko-kə-lōs'tə-me*] surgical anastomosis of the cecum and the colon.

**cecoileostomy** [*se''ko-il'e-os'tə-me*] ileocecostomy; surgical anastomosis of the ileum to the cecum.

**cecopexy** [*se'ko-pek'se*] fixation or suspension of the cecum to correct excessive mobility.

**cecoplication** [*se''ko-pli-ka'shən*] plication of the cecal wall to correct ptosis or dilatation. An inverting stitch, e.g., Lembert, will also plicate the cecum. This could be used over a weakened wall that is still viable, e.g., needle decompression site.

**cecorrhaply** [*se-kor'ə-fē*] suture or repair of the cecum.

**cecostomy** [*se-kos'tə-me*] surgical creation of an artificial opening or fistula into the cecum.

**cecotomy** [*se-kot'ə-me*] incision of the cecum.

**cecotrope** soft, nutrient-dense fecal pellets that are produced by fermentation in the cecum of rabbits and reingested directly from the anus; a process known as cecotrophy. Called also night feces. See also **coprophagia**.

**cecum** [*se'kəm*] **1.** the first or proximal part of the large intestine, forming a dilated pouch distal to the ileum and proximal to the colon. There is a great deal of variation in the relative size between species. The dog's cecum is a small, coiled organ. In the horse, it is a very large fermentation chamber stretching from the upper right flank to the xiphoid process of the sternum. Birds are different again. They have a double cecum that appears to compensate digestively for the absence of a significant colon. **2.** any blind pouch. See also **cecal**.

**c. cupulare** one of the blind ends of the cochlear duct of the inner ear; associated with the cupula of the cochlea.

**c. vestibulare** the other blind end of the cochlear duct of the inner ear; associated with its origin in the cochlear recess of the vestibule of the osseous labyrinth.

**cecum-colon** appertaining to the cecum and colon together.

**c.-c. rupture** rupture of the dorsal sac of the cecum or the colon in mares at foaling.

**c.-c. tympany** idiopathic in foals.

**cefacertrile** a first-generation or Group I **cephalosporin** antibiotic used in cattle for the treatment of mastitis.

**cefactor** [*sef'ə-ktor*] a second-generation, orally active cephalosporin antibiotic; see **cephalosporins**.

**cefadroxil** [*sef'ə-droks'il*] a first-generation, orally active cephalosporin antibiotic; see **cephalosporins**.

**cefalexin** cephalixin

**cefaloridine** cephaloridine.

**cefalotin** cephalothin.

**cefapirin** cephapirin.

**cefazolin** a first-generation or Group I cephalosporin antibiotic. Also called cephalazolin; see **cephalosporins**.

**cefdinir** [*sef'di-nir*] a third-generation, orally administered **cephalosporin** effective against gram-negative and gram-positive bacteria.

**cefepime** [*sef'ə-pēm*] a fourth-generation **cephalosporin** antibiotic with greater resistance to  $\beta$ -lactamases.

**cefexime** [*sə-fik'sēm*] a third-generation, orally active cephalosporin antibiotic; see **cephalosporins**.

**cefmetazole** [*sef-met'ə-zōl*] a second-generation or Group IV cephalosporin antibiotic that is relatively resistant to  $\beta$ -lactamase; see **cephalosporins**.

**cefoperazone** [*sef'o-per'ə-zōn*] a third-generation or Group III cephalosporin antibiotic, active against *Pseudomonas aeruginosa*; see **cephalosporins**.

**cefpodoxime** a third-generation, orally active cephalosporin antibiotic, active against most gram-positive and gram-negative bacteria (excluding *Pseudomonas aeruginosa*). Used orally as the prodrug, cefpodoxime proxetil, for the treatment of pyoderma in dogs.

**cefotaxime** [*sef'o-tak'sēm*] a third-generation, or Group II, **cephalosporin** antibiotic.

**cefotetan** [*sef'o-te'tən*] a second-generation or Group IV cephalosporin antibiotic that is relatively resistant to  $\beta$ -lactamase; see **cephalosporins**.

**cefovecin** a semi-synthetic broad-spectrum injectable cephalosporin antibiotic used to treat skin infections in dogs and wounds and abscesses in cats.

**cefodoxin** [*sə-fok'si-tin*] a second-generation or Group IV cephalosporin antibiotic, especially effective against gram-negative organisms, with strong resistance to degradation by  $\beta$ -lactamase; see **cephalosporins**.

**cefpodoxime proxetil** [*sef'po-dok'sēm prok'sə-til*] a third-generation, orally active cephalosporin antibiotic, effective against gram-positive and gram-negative bacteria (except *Pseudomonas aeruginosa*); see **cefpodoxime**.

**cefquinome** a fourth-generation cephalosporin antibiotic licensed for veterinary use in Europe and the UK, but not in the US. It is used in cattle, pigs, and horses.

**cefazidime** [*sef'ta-zī-dēm*] a third-generation or Group III **cephalosporin** antibiotic, active mainly against gram-negative bacteria and particularly *Pseudomonas*.

**ceftiofur** [*sef-ti'o-foor*] a third-generation or Group II **cephalosporin** antibiotic, active against many gram-positive and gram-negative bacteria and widely used in large animal species.

**ceftizoxime** [*sef'ti-zok'sēm*] a third-generation or Group IV cephalosporin antibiotic; see **cephalosporins**.

**ceftriaxone** [*sef'tri-ak'sōn*] a third-generation or Group II cephalosporin antibiotic; see **cephalosporins**.

**cefuroxime** [*sef'u-rok'sēm*] a second-generation, orally administered **cephalosporin** antibiotic.

**cegadaera** see *Heterophyllaea pustulata*.

**celandine** a common name applied to plants in several genera.

**greater c.** see *Chelidonium majus*.

**lesser c.** *Ranunculus ficaria*.

**c. poppy** *Stylophorum diphyllum*

**-cele** **1.** word element. [Gr.] tumor, hernia. **2.** hollow, cavity. See also **-coele**.

**celery** *Apium graveolens*.

**celiac** [*se'le-ak*] pertaining to the abdomen.

**c. disease** a malabsorption syndrome in humans due to gluten sensitivity, characterized by marked atrophy and loss of function of the villi of the jejunum (and rarely, the cecum). Called also celiac sprue, gluten-induced enteropathy, nontropical sprue, and adult, childhood or infantile celiac disease. See also gluten-sensitive **enteropathy** of Irish setters.

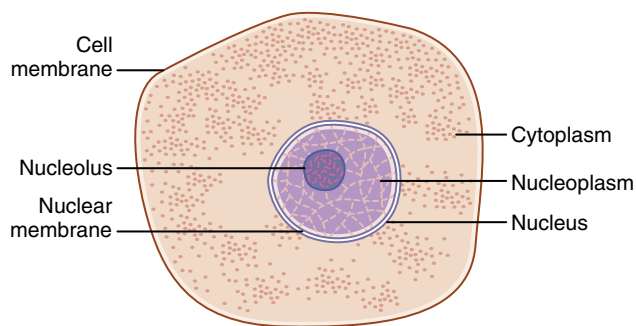
**celiacomesenteric ganglion** the autonomic ganglion enmeshed in the celiacomesenteric plexus; located at origins of celiac and cranial mesenteric arteries.

**celiectomy** **1.** excision of the celiac branches of the vagus nerve. **2.** excision of an abdominal organ.

**celio-** word element. [Gr.] abdomen, through the abdominal wall, cavity, hollow.

**celiocentesis** puncture into the abdominal cavity.

**celicolpotomy** [*se''le-o-kol-pot'ə-me*] incision into the abdomen through the vagina.



**C-22:** Structure of the cell as seen with the light microscope.

Hall, J. Guyton and Hall Textbook of Medical Physiology, 13th Edition. Saunders.

**celioenterotomy** [*se''le-o-en-tar-ot'a-me*] incision through the abdominal wall into the intestine.

**celiogastroty** [*se''le-o-gas-trot'a-me*] incision through the abdominal wall into the stomach.

**celiography** [*se''le-o'gra-fe*] radiography of the abdomen.

**celiomyectomy** [*se''le-o-mi''o-mek'ta-me*] **myomectomy** by abdominal incision.

**celiomyositis** [*se''le-o-mi''o-si'tis*] inflammation of the abdominal muscles.

**celioparacentesis** [*se''le-o-par''a-sen-te'sis*] paracentesis of the abdominal cavity; more often the term abdominocentesis is used.

**celiopathy** [*se''le-op'a-the*] any abdominal disease.

**celiorrhaphy** [*se''le-or'a-fe*] suture of the abdominal wall.

**celiotomy** [*se''le-ot'a-me*] incision into the abdominal cavity.

**vaginal c.** incision into the abdominal cavity through the vagina.

**cell** [*sel*] the basic structural unit of living organisms. All living cells arise from other cells, either by division of one cell to make two, as in mitosis and meiosis, or by fusion of two cells to make one, as in the union of the sperm and ovum to make the zygote in sexual reproduction. Cells are bounded by cell membrane or plasma **membrane**, which is a lipid bilayer composed of two layers of phospholipids. Each layer is one molecule thick with the charged, hydrophilic end of the lipid molecules on the surface of the membrane and the uncharged hydrophobic fatty acid tails in the interior of the membrane. Cells are divided into two classes, **eukaryote(s)**, which have a true nucleus and are found in higher plants and animals, fungi, protozoa and most algae, and **prokaryote(s)**, which are without a nucleus and found in bacteria. The lipid bilayer of eukaryotic cells is impermeable to many substances, such as ions, sugars and amino acids; however, membrane proteins selectively move specific substances through the cell membrane by active or passive transport. Water, gases such as oxygen and carbon dioxide, and nonpolar compounds pass through the cell membrane by **diffusion**. Materials can also be engulfed and taken into the cell enclosed in a portion of the cell membrane. This is called **phagocytosis** when solids are ingested and **pinocytosis** when liquids are ingested. The reverse process is called **exocytosis**. All of these processes permit the cell to maintain an internal environment different from its exterior. See also **body**. See also **body fluid**. The cells of the body differentiate during development into many specialized types with specific tasks to perform. Cells are organized into tissues and tissues into organs. See also **APUD cells**, **Betz cells**, **Clara cell**, **Gaucher's cells**, **Golgi's cells**, **HeLa cells**, **Hürthle cell**, **Kupffer's cells**, **Langerhans' cell**, **Leydig's cell**, **Merkel cell**, **mesangial cell**, **neuroendocrine cell**, **Reed-Sternberg cell**, **Schwann cell**, **Sertoli cell**, **Türk cell**, **Vero cell**.

**011A c.** suggested common progenitor cell for type 2 astrocyte and the oligodendrocyte.

**accessory c's** an antigen presenting cell; such as a dendritic cell or macrophage presenting an antigen on its surface in the context of the appropriate MHC antigen, capable of being recognized by the T-cell receptor.

**acinar c., acinous c.** any of the cells lining an acinus, especially applied to the zymogen-secreting cells of the pancreatic acini.

**adherent c.** one that adheres to the glass or plastic container in cell cultures, to form the monolayer. See also **cell culture** (below).

**alpha c's** 1. cells in the islets of Langerhans that secrete glucagon. 2. acidophilic cells of the anterior pituitary.

**argentaffin c's** enterochromaffin cells containing cytoplasmic granules capable of reducing silver compounds, located throughout the gastrointestinal tract, chiefly in the basilar portions of the gastric glands and the crypts of Lieberkühn. They secrete serotonin.

**band c.** an immature neutrophil in which the nucleus is not lobulated but is in the form of a continuous band or horseshoe shaped. Called also band-form granulocyte, band neutrophil and stab neutrophil.

**basal c.** an early keratinocyte, present in the basal layer of the epidermis.

**basket c's** 1. cells in the cerebellar cortex whose axons carry basket-like groups of fibrils that enclose the cell body of each Purkinje cell. 2. a ruptured erythrocyte seen in a blood smear.

**beta c's** 1. basophilic cells in the pancreas that secrete insulin and make up most of the bulk of the islets of Langerhans; they contain granules that are soluble in alcohol. 2. basophilic cells of the anterior pituitary.

**blood c.** one of the formed elements of the blood. See also **blood**.

**c. body** primarily used in reference to neurons; the central part of the cell that contains the nucleus and adjacent cytoplasm, excluding the axon and dendrites.

**bone c.** a nucleated cell in the lacunae of bone. Called also osteocyte.

**cartilage c.** chondrocyte.

**chromaffin c's** cells whose cytoplasm shows fine brown granules when stained with potassium bichromate, occurring in the adrenal medulla and in scattered groups in various organs and throughout the body.

**cleavage c.** any of the cells derived from the fertilized ovum by mitosis; a blastomere.

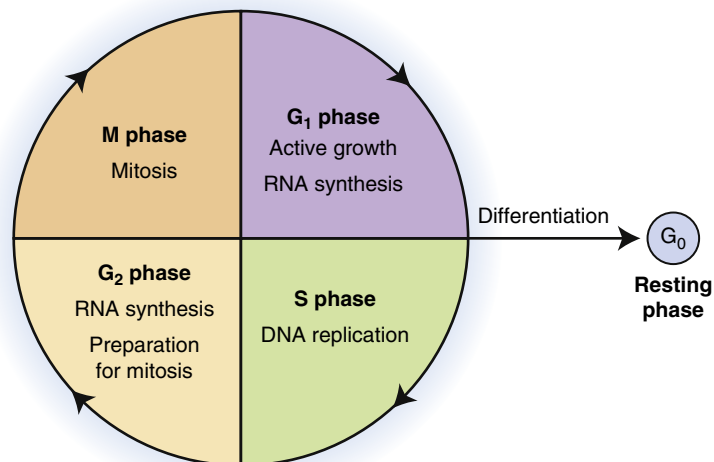
**c. count** see **erythrocyte, leukocyte, somatic cell counts**.

**c. culture** [*sel kul'char*] the artificial culture of living cells outside a living body. Animal cells were originally grown in culture as **explant cultures**, i.e., small pieces of tissue. If pieces of tissue are treated with enzymes such as trypsin, single cell suspensions can be obtained which will settle onto glass or plastic surfaces and grow to form a **monolayer cell culture**. **Primary cell cultures** can be passaged to form **secondary cell cultures**. Cells in culture can be passaged a finite number of times before reaching a crisis which can be compared with aging. The number of passages, before reaching crisis, has been termed the Hayflick limit and is related to the longevity of the species from which the tissue was originally derived. Within the Hayflick limit the cells are referred to as a **cell strain**. Cells that survive the crisis and continue to grow are referred to as a **cell line**. Cell lines can also be derived directly from cancer cells. There are many properties that distinguish cell lines from cell strains, including altered chromosome number, changes at the cell membrane, and reduced requirement for certain growth factors.

**c. cycle** the cycle of biochemical and morphological events occurring in a dividing cell population; it consists of the S phase, occurring toward the end of interphase, in which DNA is synthesized; the G<sub>2</sub> phase, for gap 2, the interval between S and M; the M phase, for mitosis, consisting of the four phases of mitosis; and the G<sub>1</sub> phase, which lasts from the end of M until the start of S phase of the next cycle. Fully differentiated cells are nondividing and are said to be in G<sub>0</sub>.

**daughter c.** a cell formed by division of a mother cell.

**c. dehydration** fluid loss from cells due to elevation of the osmotic pressure of blood and tissue fluid; a potent stimulus to thirst.



**C-23:** The cell cycle.

Wanamaker, B., Massey, K. Applied Pharmacology for Veterinary Technicians, 5th Edition. W.B. Saunders Company, 2014.

**dendritic c.** immune system cell located in skin and other tissues near external environments, whose primary function is trapping, processing and presenting antigens to lymphocytes. See also **Langerhans' cell**.

**c. differentiation** the process whereby a less specialized cell becomes specialized and reaches its mature form and function.

**doughnut c.** see **torocyte**.

**embryonic stem c.** a stem cell of fetal origin. See stem cell (below).

**epithelioid c.** enlarged activated macrophage that resemble epithelial cells due to their expanded cytoplasm.

**epsilon c.** one of the groups of acidophilic cells in the adenohypophysis. Contains granules that stain with azocarmine dye.

**foam c.** macrophages with a vacuolated cytoplasm that have a foamy appearance due to the presence of phagocytosed lipids; seen in xanthomas and atheromas.

**c. fusion** see **syncytial** giant cell.

**ganglion c.** a large nerve cell, especially one of those of the spinal ganglia.  
**germ c.** direct descendants of the primordial cells that originate from the yolk sac endoderm and migrate to the gonadal ridges of the embryo, where they give rise to either ova or spermatozoa. Called also gonocytes, sex cells.

**gitter cells** microglial phagocytic cells of the central nervous system that are laden with degenerating myelin. The cells are spherical with a bubbly margin and with a reduced nucleus. Called also compound granular corpuscles, scavenger cells, Hortege cells, fat-granule cell.

**glial c's** neuroglial cells.

**goblet c.** a mucous secreting cell found in the epithelium of various mucous membranes, especially that of the respiratory passages and intestines.

**granular c.** one containing granules, such as a keratinocyte in the stratum granulosum of the epidermis, when it contains a dense collection of darkly staining granules.

**granulosa c.** cell lining ovarian follicles, critical for normal oocyte development and hormone production.

**gustatory c.** see **taste bud**.

**heart failure c's, heart lesion c's** iron-containing, rust-colored macrophages found in the pulmonary alveoli in chronic pulmonary congestion such as congestive heart failure.

**helmet c.** schizocyte or keratocyte.

**helper c.** Th cells; a subset of T lymphocytes that interacts with B lymphocytes, cytotoxic T lymphocytes and macrophages to enhance immune responses; they play an integral role in immunoregulation.

**hybrid c.** a mononucleate cell produced from a binucleate heterokaryon after the latter undergoes mitosis. Such cells are initially unstable, tending to lose randomly some of the double complement of chromosomes. Used for mapping genes to particular chromosomes. See also **heterokaryon**, **hybridoma**.

**immunologically competent c.** see **immunocyte**.

**inner c. mass** cells of early conceptus (blastocyst) that will develop into fetus itself, in contrast to trophoblast or trophoctoderm, that contribute to fetal membrane (placental) development.

**interstitial c's** the cells of the connective tissue of the ovary or of the testis (Leydig's cells) that furnish the internal secretion of those structures, i.e., testosterone.

**islet c's** cells composing the islets of Langerhans in the pancreas. See alpha cells, beta cells (above).

**juxtaglomerular c's** specialized cells, containing secretory granules, located in the tunica media of the afferent glomerular arterioles. They cause aldosterone production by secreting the enzyme renin and play a role in the regulation of blood pressure and fluid balance.

**K c's, killer c's** T lymphocytes or null lymphocytes capable of cytotoxic activity against target cells after activation by cytokines induced by viral infection, cells coated with specific IgG antibody (antibody-dependent cell-mediated cytotoxicity or ADCC) or other regulatory signals.

**lacis c.** accumulation of cells between the arterioles at the glomerular hilus. Called also granular cell.

**lacunar c.** also known as Reed-Sternberg cells. Enlarged B-cells present in T-cell-rich-B-cell (Hodgkin-like) lymphoma.

**LE c.** a mature neutrophilic polymorphonuclear leukocyte characteristic of lupus erythematosus that contains engulfed nuclear antigen-antibody complexes within its cytoplasm. See also **lupus erythematosus**.

**Leydig's c's** interstitial cells of the testis, which secrete testosterone.

**c. line** see cell culture (above).

**luteal c's., lutein c's** the plump, pale-staining, polyhedral cells of the corpus luteum.

**lymph c.** lymphocyte.

**lymphoid c's** lymphocytes and plasma cells.

**mast c.** a connective tissue cell that has basophilic, metachromatic cytoplasmic granules that contain histamine, heparin, hyaluronan,

slow-reacting substance of anaphylaxis (SRS-A), and, in some species, serotonin. Express Fc receptors specific for IgE on their cell surface.

**c.-mediated immune reaction** see cellular immunity.

**memory c.** an expanded clone of small lymphocytes derived from stimulated antigen-sensitized B and T lymphocytes. They have antigen receptors of the same specificity as the parent cell. Important in the secondary immune response.

**mesenchymal c.** see **mesenchyme**.

**microglial c.** see **microglia**. See also neuroglia cells (below).

**c. migration** movement of cells from their place of origin to other tissues; one of the fundamental processes of development.

**milk c. count** see **somatic** cell counts.

**mother c.** a cell that divides to form new, or daughter, cells.

**Mott c.** a plasma cell with large, clear cytoplasmic pockets.

**natural killer c's, NK c's** null lymphocytes capable of cytotoxic activity against target cells after activation by cytokines induced by viral infection, cells coated with specific IgG antibody (antibody-dependent cell-mediated cytotoxicity or ADCC) or other regulatory signals.

**nerve c.** any cell of the nervous system; a **neuron**.

**c. nests** see **isogenous groups**.

**neuroglia c's, neuroglial c's** see **neuroglia**.

**null c's** lymphocyte-like cells that lack specific antigen receptors and other surface markers characteristic of B and T lymphocytes; they include K and NK cells; their numbers are elevated in active systemic lupus erythematosus and other disease states.

**olfactory c's** a set of specialized cells of the mucous membrane of the nose; the receptors for smell.

**P c's.** found in the sinoatrial and atrioventricular nodes. May be a source of electrical impulses.

**parafollicular c's** see **C cell**.

**Pick's c's** round, oval or polyhedral cells with foamy, lipid-containing cytoplasm found in the nervous and reticuloendothelial system in **Niemann-Pick disease**.

**plasma c.** a spherical or ellipsoidal cell with a single, eccentrically placed nucleus containing dense masses of chromatin in a wheel-spoke arrangement, an area of perinuclear clearing that contains the Golgi apparatus, and generally abundant cytoplasm. Plasma cells are produced by cell division of B lymphocytes following antigen stimulation and are involved in the synthesis and release of antibody. Called also plasmacyte and plasmocyte.

**prickle c.** a dividing keratinocyte of the prickle-cell layer of the epidermis, with delicate radiating process connecting with other similar cells.

**prokaryotic c.** see **prokaryote**.

**Purkinje's c's** large branching cells of the middle layer of the cerebellar cortex.

**red c., red blood c.** erythrocyte.

**reticular c's** the cells forming the reticular fibers of connective tissue; those forming the framework of lymph nodes, bone marrow and spleen. They are weakly phagocytic, stromal in origin, and distinct from the monocyte-macrophage system.

**reticuloendothelial c.** a cell of the **reticuloendothelial system**.

**scavenger c.** see gitter cell (above).

**Sertoli c.** Cell lining seminiferous tubule, supporting and critical to all stages of spermatogenesis.

**sickle c.** a crescent or sickle-shaped erythrocyte seen in some humans and deer. The abnormal shape caused by the presence of varying proportions of hemoglobin S.

**c. signaling** communicating system between and within cells that regulates and coordinates cellular responses; enables cells to perceive and respond appropriately to changes in their environment.

**signet-ring c.** a cell in which the nucleus has been pressed to one side by an accumulation of intracytoplasmic mucin.

**somatic c's** the cells of the body other than the germ cells.

**c. sorting** see **fluorescence-activated cell sorting**.

**c. specialization** conversion of a simple cell type into a specialized cell type capable of a special function, e.g., a secretory cell; a major part of the growth of an embryo and the differentiation of basic mesenchymal tissue into specialized organs.

**spindle c.** spindle shaped cells that are usually mesenchymal in origin.

**spur c.** spiculed mature erythrocyte. See also **acanthocyte**.

**squamous c's** flat, scale-like epithelial cells.

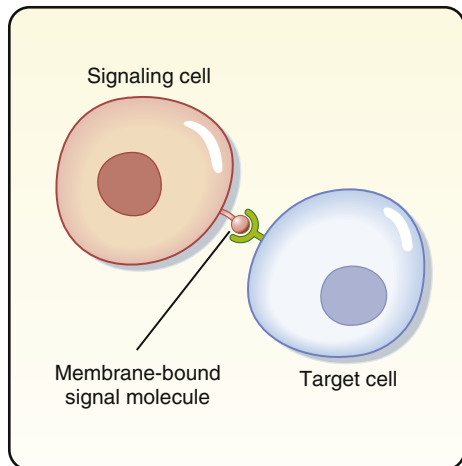
**stab c.** see band cell (above).

**stellate c.** any star-shaped cell, as a Kupffer cell or astrocyte, having many filaments extending in all directions.

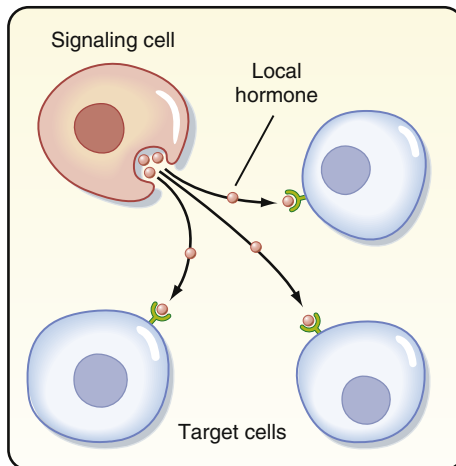
**stem c. 1.** a cell that is able to proliferate into identical copies (daughter cells) the same as itself and can also make daughter cells that are not identical and that can differentiate into more than one type of



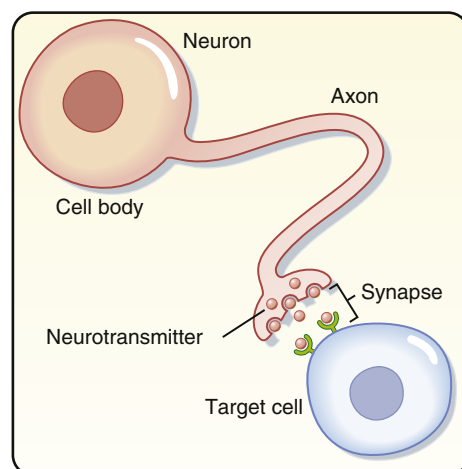
C



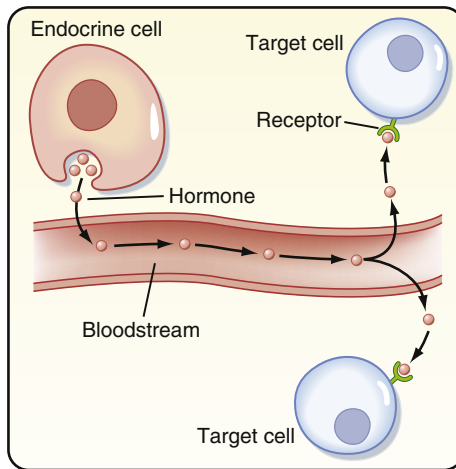
A Contact-dependent



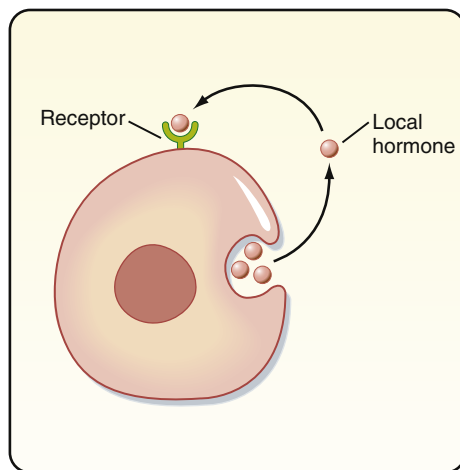
B Paracrine



C Synaptic



D Endocrine



E Autocrine

**C-24: Cell to cell communication.**

From Koeppen, B.M., Stanton, B.A., Berne & Levy Physiology, 6th ed, Mosby, 2008.

specialized cell. See also **stem cell. 2.** a primitive hematopoietic cell that is capable of self-replicating or differentiating into precursor cells of erythrocytes or any of the leukocytes.

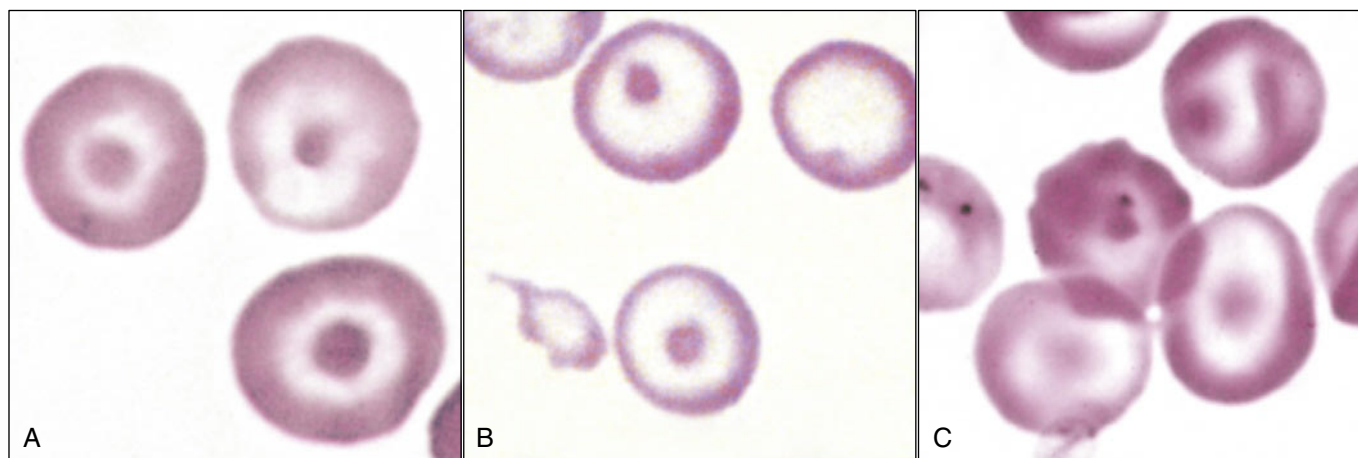
**stipple c.** an erythrocyte containing granules that take a basic or bluish stain with Wright's stain.

**c. suicide apoptosis.**

**suppressor c's** a subset of T lymphocytes that act to suppress activation of both antibody and cell-mediated immune responses. They play a role

in immunoregulation, suppressing active immune responses after clearance of antigens, and suppression of anti-self-immune responses. See also T lymphocytes.

**target c. 1.** an abnormally thin erythrocyte showing, when stained, a dark center and a peripheral ring of hemoglobin, separated by a pale, unstained zone containing less hemoglobin; seen in regenerative anemia and hypochromic states such as iron deficiency. Called also codocyte, Mexican hat cell. **2.** any cell selectively affected by a particular agent,



**C-25:** Target cells (codocytes) in blood from a Cairn terrier dog with a regenerative anemia and hepatic hemochromatosis secondary to pyruvate kinase deficiency.

Harvey, J.W. *Veterinary Hematology*. W.B. Saunders Company, 2011.

such as a hormone or drug. **3.** cell expressing surface non-self-antigens that induce nonimmune and immune cytolysis, e.g., a virus-infected or tumor cell.

**taste c's** cells in the taste buds associated with the nerves of taste.

**c. therapy** see **glandular therapy**.

**totipotential c.** an embryonic cell that is capable of developing into any type of body cell.

**white c., white blood c.** leukocyte.

**cell-adhesion molecule** transmembrane proteins with an extracellular binding domain and intracellular functional domain that are expressed on the cell surface and mediate adhesion of cells to one another and to insoluble matrix and also function in the regulation of cell signaling, cell motility, migration, sorting, and differentiation. Cell-adhesion molecules are classified into at least six molecular families including the immunoglobulin superfamily, the cadherins, the integrins, the receptor protein tyrosine phosphatases, the selectins, and the hyaluronate receptors.

**cell-mediated** effected by cellular elements.

**c.-m. hypersensitivity** see delayed **hypersensitivity**.

**c.-m. immunity** see cellular **immunity**.

**cellobiase** an enzyme associated with bacteria and protozoa (particularly in ruminants) catalyzing the hydrolysis of  $\beta 1 \rightarrow 4$  glycosidic bonds of the disaccharide, cellobiose. See also **glucosidase**.

**cellobiose** [sel''lo-bi''ōs] a simple polysaccharide composed of two molecules of glucose and formed by the digestion of cellulose by cellulase.

**cellophane band** [sel''o-fān] used to occlude blood flow in extrahepatic portosystemic shunts by gradual fibrotic narrowing of the vessel.

**cellular** pertaining to, or made up of, cells.

**c. genetics** see **cytogenetics**.

**cellularity** [sel''u-lar''ī-te] the state of a tissue or other mass as regards the number of its constituent cells.

**cellules claveleuses** [sel''ūlz] mononuclear cells that accumulate in the dermis in lesions of sheeppox. They are virus-infected cells and their cytoplasm contains one or more eosinophilic inclusion bodies.

**cellulicidal** [sel''u-lis''ī-də] destroying cells.

**cellulitis** [sel''u-li''tis] a diffuse inflammatory process within solid tissues, characterized by edema, redness, pain and interference with function. It may be caused by infection with streptococci, staphylococci, or other organisms. Cellulitis usually occurs in the loose tissues beneath the skin, but may also occur in tissues beneath mucous membranes or around muscle bundles or surrounding organs.

**anaerobic c.** see **malignant edema**.

**canine juvenile c.** see juvenile **pyoderma**.

**epidemic equine c.** see **equine viral arteritis**, **equine influenza**.

**periapical c.** see **apical abscess**.

**periesophageal c.** caused by perforation of the esophagus and establishment of a mixed infection into the tissues surrounding the esophagus.

**cellulofibrous** [sel''u-lo-fi''brəs] partly cellular and partly fibrous.

**celluloneuritis** [sel''u-lo-nōō-ri''tis] inflammation of neurons.

**cellulose** [sel''u-lōs] a polysaccharide containing  $\beta 1 \rightarrow 4$  linked glucose carbohydrate forming the skeleton of most plant structures and plant cells.

In herbivores, digested by bacteria in the rumen or cecum, primarily to volatile fatty acids that can be used as a source of energy.

**absorbable c.** an absorbable oxidation product of cellulose; used as a specially treated form of surgical sponge that promotes blood clotting and can be used as a temporary dressing. Called also oxidized cellulose.

**oxidized c.** see absorbable cellulose (above).

**cellulytic** breakdown of cellulose, e.g., by hydrolysis. Occurs at a sufficient level to provide a source of energy only in ruminants and species with a large intestine adapted to fermentation.

**c. bacteria** bacteria in the rumen which digest cellulose to volatile fatty acids, especially acetic, butyric, and propionic.

**celo-** cavity. [Gr.] *cavity*.

**CELO virus** chicken embryo lethal orphan virus. See **quail bronchitis**.

**celoblastula** the common type of blastula, consisting of a hollow sphere composed of blastomeres.

**celom** [se''lām] coelom.

**celoschisis** [se''los''kī-sis] congenital fissure of the abdominal wall.

**celoscope** an endoscope used to perform celoscopy.

**celoscopy** [sə''los''kə-pe] endoscopic examination of a body cavity, especially the abdominal cavity, for which the term **laparoscopy** is most often used.

**celosomia** [se''lo-so''me-ə] congenital fissure or absence of the sternum, with hernial protrusion of the viscera.

**celothelioma** abdominal mesothelioma.

**Celsius** [sel''se-əs] pertaining to Anders Celsius, Swedish astronomer (1701–1744).

**C. scale** a temperature scale with the ice point at 0 and the normal boiling point of water at 100 degrees (100°C). For equivalents of Celsius and Fahrenheit temperatures, see Tables 4 and 17.

**C. thermometer** a centigrade thermometer employing the Celsius scale. The abbreviation 100°C should be read as 'one hundred degrees Celsius'.

**Celtic pony** group of pony breeds including **Connemara**, **Icelandic**, **Shetland**.

**Celtic red** see **brachyceros**.

**CEM** contagious equine metritis. Sexually transmitted disease of horses caused by *Taylorella equigenitalis*.

**CEM selective medium** chocolate agar made with Eugon Agar and 5% horse blood; used to cultivate *Taylorella equigenitalis*.

**cement** [sə''ment'] a substance that produces a solid union between two surfaces.

**bone c.** usually an acrylic compound used in fracture repair and positioning of bone pins.

**dental c.** materials used to affix dental restorations and to fill prepared defects. See **gutta-percha**.

**glass ionomer c.** a mixture of polyacrylic acid and fluoroaluminosilicate glass used for restorative dentistry.

**c. lines** basophilic lines in histological sections of bone that represent highly mineralized connective tissue that binds the elements of the bone together.

**cementasome** see **keratinosome**.

**cementicle** [sə-men'ti-kəl] a small, spherical or ovoid calcified mass embedded within or attached to the cementum layer on the root surface of a tooth, or lying free within the periodontal ligament.

**cementoblast** [sə-men'to-blast] a large cuboidal cell, found between fibers on the surface of cementum, which is active in the formation of cementum.

**cementoblastoma** [sə-men'to-blas-to'mə] an odontogenic fibroma whose cells are developing into cementoblasts and in which there is only a small proportion of calcified tissue.

**cementocyte** [sə-men'to-sīt] a cell found in lacunae of cellular cementum, frequently having long processes radiating from the cell body toward the periodontal surface of the cementum.

**cementoenamel junction** [sə-men'to-ə-nam'ə] a line on the surface of a tooth where the enamel on the crown meets the cementum on the root.

**cementogenesis** [sə-men'to-jen'ə-sis] development of cementum.

**cementoma** [se'mən-to'mə] a benign odontogenic neoplasm of mesenchymal origin, consisting of cementum-like tissue deposited by cells resembling cementoblasts.

**cementosome** see **keratinosome**.

**cementum** [sə-men'təm] the bone-like connective tissue covering the roots of teeth in dogs and cats and prior to wear the entire tooth in equines.

**Cenchrus ciliaris** see **Pennisetum ciliare** (buffel grass, African foxtail).

**cenosis** a morbid discharge.

**cenosite** [se'no-sīt] a facultative commensal organism that can live away from its host. Called also coinosite.

**censoring** in epidemiology, a loss of information from a study, whether by subjects dropping out of the study or because of infrequent measurement.

**census** measurement of a parameter of population by total counts of individuals.

**centaur** a mythological race of savage men who lived in Greece. They were depicted as men from the head to the loins and horses from there back. A common emblem for veterinary organizations.

**Centaurea** [sen-taw're-ə] a genus of thistles of the Asteraceae family of plants; some contain sesquiterpene lactones that cause **nigropallidal encephalomalacia** in horses. Includes *C. solstitialis* (yellow star or St. Barnaby's thistle), *C. repens* (*C. picris*, Russian or creeping knapweed, hard heads).

**Centaureum** a genus of plants in family Gentianaceae. Contain an unidentified toxin that causes diarrhea, hepatic damage and nephrosis. Includes *C. beyrichii* (quinine weed, mountain pink, rock centaur), *C. calycosum* (Arizona centaur, mountain pink).

**centaury** common name for plants in the genus **Centaureum**.

**Arizona c.** *Centaureum calycosum*.

**rock c.** *Centaureum beyrichii*.

**Centella uniflora** New Zealand plant member of the family Apiaceae; suspected on one occasion of causing convulsions, recumbency, and liver and kidney damage in sheep. Called also centella.

**center** [sen'tər] a point from which a process starts, especially a plexus or ganglion giving off nerves that control a function.

**accelerating c.** one in the brainstem involved in acceleration of heart action.

**appetite c.** located in the hypothalamus; controls appetite.

**auditory c.** the center for hearing, in the more anterior of the transverse temporal gyri.

**cardioinhibitory c.** one in the medulla oblongata that exerts an inhibitory influence on the heart.

**deglutition c.** a nerve center in the medulla oblongata that controls swallowing.

**diaphragmatic c.** see **diaphragmatic tendon**.

**emetic c.** located in the reticular formation of the brainstem, this center controls vomiting.

**eructation c.** controls eructation in ruminants; located in the medulla oblongata.

**germinal c.** the collection of mitotically active stem cells and lymphoblasts that forms the center of a lymphoid follicle within a lymph node or spleen.

**gustatory c.** the cerebral center supposed to control taste.

**lymph node germinal c.** centers in lymph nodes where lymphocytes are produced.

**medullary respiratory c.** the center in the medulla oblongata that coordinates respiratory movements.

**motor c.** any center that originates, controls, inhibits or maintains motor impulses.

**nerve c.** a collection of nerve cells in the central nervous system that are associated together in the performance of some particular function.

**perineal c.** see **perineal body**.

**reflex c.** any nerve center at which afferent sensory information is converted into efferent motor impulses.

**respiratory c's** a series of the centers (the apneustic, pneumotoxic and medullary respiratory centers) in the medulla and pons that coordinate respiratory movements.

**c-surround retinal organization** the arrangement of cells in the receptive field of the retina; the sensitivity of a certain spot in the retina is affected by what is occurring in adjacent areas.

**swallowing c.** deglutition center.

**thermoregulatory c's** hypothalamic centers regulating the conservation and dissipation of heat.

**vasomotor c.** a combination of two centers in the reticular formation of the brainstem; includes a pressor and a depressor center.

**vomiting c.** see emetic center (above).

**Center for Veterinary Medicine (CVM)** a body within the Food and Drug Administration of the US Food and Drug Administration; regulates the manufacture and distribution of food additives and drugs that will be given to animals. These include animals from which human foods are derived, as well as food additives and drugs for pet (or companion) animals.

**center-tie** a method for tethering cows in fixed stalls in barns. A chain is fixed overhead and to the center of the front edge of the feed trough. The cow is attached to this by a curved yoke that slides up and down the chain.

**centerencephalic** pertaining to the center of the encephalon.

**centering aid** a device used when radiographing a part to ensure that the center of the beam of the x-ray will pass through the part at the correct angle and that the part will be in the center of the beam. Modern machines must all have a light beam diaphragm that acts as the centering aid and the beam collimator.

**Centers for Disease Control and Prevention (CDC)** an agency of the US Department of Health and Human Services, located in Atlanta, Georgia, which serves as a center for the control, prevention and investigation of diseases.

**Centers for Epidemiology and Animal Health (CEAH)** a grouping within the USDA formed to explore and analyze animal health and related agricultural issues to facilitate informed decision making in government and industry. Includes the Center for Animal Health Information and Analysis, the National Animal Health Monitoring System (NAHMS), the National Surveillance Unit (NSU) and the Office for International Collaboration and Coordination (OICC).

**centesimal scale** [sen-tes'i-məl] in homeopathy, the scale of dilution of a remedy. Each dilution is one in a hundred.

**-centesis** word element. [Gr.] puncture and aspiration of.

**centi- (c)** [L.] *hundred*; prefix used in the metric system of naming units of measurement to indicate one-hundredth ( $10^{-2}$ ) of the unit, e.g., centigram.

**centigrade (C)** [sen'ti-grād] having 100 gradations (steps or degrees), as the Celsius scale. For equivalents of Celsius and Fahrenheit temperatures, see Tables 4 and 17.

**centigram (cg)** [sen'ti-gram] one-hundredth of a gram.

**centiliter (cL, cl)** [sen'ti-le'tər] one-hundredth of a liter.

**centimeter (cm)** [sen'ti-me'tər] one-hundredth of a meter, or approximately 0.3937 inch.

**cubic c.** a unit of capacity, being that of a cube 1 cm on a side; abbreviated  $\text{cm}^3$ , cu.cm. or cc.

**centimorgan** [sen'ti-mor'gən] a unit used to express genetic distances between loci determined by the frequency with which recombination events occur between the genes. One cM corresponds to a recombination



**C-26:** *Centaurea solstitialis*.

From McAuliffe, S. Knottenbelt and Pascoe's Color Atlas of Diseases and Disorders of the Horse, 2nd Edition, Elsevier, 2014.



frequency of 1%. Named after T.H. Morgan (1886–1945), American geneticist. See also **genetic map**.

**centipedes** [sen'ti-pēdz] many-legged arthropods in the class Chilopoda. They are relatively harmless, but they can inflict a painful bite.

**centrad** [sen'trad] toward a center.

**central** [sen'trəl] pertaining to a center; located at the midpoint.

**c. artery** the vessel within some or most of the optic nerve that becomes visible with an ophthalmoscope after it emerges from the optic disc to radiate in part or whole over the fundus of the eye. The vessel gives rise to the embryonic hyaloid artery that nourishes the developing lens. Formally called *arteria centralis retinae*. See Table 8.

**c. channel** the fast-flowing channel through the capillary bed, the rate controlled by the metarterioles that exert a sphincter-like action on the system.

**c. cord syndrome** injury to the central portion of the cervical spinal cord resulting in disproportionately more weakness or paralysis in the forelimbs than in the hindlimbs; pathological change is caused by hemorrhage or edema.

**c. layer** central of the three layers of gray matter in the cerebellum; the principal cell type is piriform.

**c. nervous system** see central **nervous system**.

**c. progressive retinal degeneration** see **retinal**.

**c. respiratory oscillator** pool of nerve cells in the pons and medulla oblongata that are responsible for the rhythmic to-and-fro movements of respiration.

**c. tendon of diaphragm** see **diaphragmatic tendon**.

**c. vein** the centrally placed drainage vessel of each hepatic lobule, receiving blood from the hepatic sinusoids.

**c. venous catheterization** insertion of an indwelling catheter into a central vein for the purpose of administering fluid and medications and for the measurement of central venous pressure (see below).

**c. venous pressure (CVP)** the intravascular pressure of blood within the thoracic vena cava, measured by an in situ catheter positioned in the intrathoracic cranial (introduced via the jugular vein) or caudal vena cava (introduced via the lateral saphenous or femoral vein). Measurements of pressure are made using a calibrated manometer or an electronic pressure transducer. The technique is used mainly in dogs and cats.

**Central and Upper Belgian** a white, blue pied or blue breed of dairy cattle produced in Belgium by crossing Shorthorn and Friesian with local red cattle.

**Central Asiatic Pashmina** a white or black-and-white goat, maintained for its haircoat, which produces cashmere fiber. Called also cashmere or Kashmiri goat.

**Central Europe tickborne fever** see Russian spring–summer **encephalitis**.

**central pattern generator** a biological neurological circuit that produces a rhythmic output in the absence of an input. These circuits are composed of neurons and interneurons that are located in various parts of the central nervous system including the spinal cord and are responsible for rhythmic movements such as walking, breathing and chewing. Central pattern generator dysfunction has also been proposed as the cause of tremors in various conditions such as Huntington's Disease.

**central ray** the center of the x-ray beam. As the x-ray beam travels from the x-ray tube the beam diverges. The divergence of the beam leads to distortion of the edge of the image. The central point is the point of minimum distortion. This is most important when imaging the spine and assessing intervertebral disc spaces. Intervertebral disc spaces at the edge of the image will appear artifactually narrow.

**Centre for Agriculture and Bioscience International (CABI)** see **CAB International (CABI)**.

**centri-, centro-** word element. [L., Gr.] center, central location.

**centric** [sen'trik] pertaining to a center.

**chromosome c. fusion** replacement of two chromosomes by one produced by fusion of the centromeres of two acrocentric chromosomes. Called also Robertsonian translocation.

**centriciput** [sən'tris'ī-pət] the central part of the upper surface of the head, located between the occiput and sinciput.

**centrifugal** [sen'trif'ə-gəl] moving away from a center.

**centrifugate** [sən'trif'ū-gāt] material subjected to centrifugation.

**centrifugation** [sen'trif'ū-ga'shən] the process of separating elements of a solution, mixture or suspension from the heavier portions by centrifugal force.

**density gradient c.** a procedure for separating particles such as viruses or ribosomes or molecules such as DNA in which the sample is placed on a

preformed density gradient such as sucrose or cesium chloride. Upon centrifugation either by rate zonal or equilibrium procedures, the macromolecules are 'banded' in the gradient and can be collected as a pure fraction.

**centrifuge** [sen'trif'ūj] **1.** to rotate, in a suitable container, at extremely high speed, to cause the deposition of solids in solution, or to separate substances on the basis of their density. **2.** a laboratory device for subjecting substances in solution to relative centrifugal force up to 25,000 times gravity. See also **cyto-centrifuge**.

**centrilobular** [sen'tri-lob'u-lər] pertaining to the central portion of a lobule, usually with reference to liver parenchyma. Corresponds to 'peri-acinar' when the **acinar** concept of liver structure is used.

**c. necrosis** necrosis restricted to the hepatocytes immediately surrounding the central (hepatic) venule. Called also peri-acinar necrosis.

**centriole** [sen'tre-ōl] either of the two cylindrical organelles located in the centrosome and containing nine triplets of microtubules arrayed around their edges; centrioles migrate to opposite poles of the cell during cell division and serve to organize the spindles. They are capable of independent replication and of migrating to form basal bodies.

**centripetal** [sən'trip'ə-təl] moving toward a center.

**centrodistal joint** [sen'tro-dis'təl] formed between the central tarsal bone and the first, second and third tarsal bones.

**centrokinesia** [sen'tro-kī-ne'zhā] movement originating from central stimulation.

**centromere** [sen'tro-mēr] the clear constricted portion of the chromosome at which the chromatids are joined and by which the chromosome is attached to the spindle during cell division.

**Centrorhynchus** thorny-headed (acanthocephalan) parasites of birds. See also **Macracanthorhynchus**.

**centrosclerosis** [sen'tro-sklo-ro'sis] osteosclerosis of the marrow cavity of a bone.

**centrosome** [sen'tro-sōm] a specialized area of condensed cytoplasm containing the centrioles and playing an important part in mitosis.

**centrosphere** [sen'tro-sfēr] centrosome.

**centrum** [sen'trəm] pl. *centra* [L.] **1.** a center. **2.** the body of a vertebra.

**c. commune** the solar plexus.

**Centruroides** [sen'tro-ro'i'dēz] genus of bark **scorpions**.

**century plant** see **Agave americana**.

**cenuriasis** see **coenurosis**.

**Cephaelis** [sef'ə-e'lis] see **Psychotria**.

**cephalad** [sef'ə-lad] toward the head.

**cephaledema** [sef'ə-lə-de'mə] edema of the head.

**cephalexin** [sef'ə-lek'sin] a first-generation, orally active **cephalosporin** antibiotic. It is widely used in bacterial infections of the skin in dogs and cats. Called also cefalexin (INN).

**cephalhematocele** [sef'ə-l-he-mat'o-sēl] a hematocele under the pericranium, communicating with the venous sinuses of the dura mater.

**cephalhematoma** [sef'ə-l-he'mə-to'mə] a localized effusion of blood beneath the periosteum of the skull of the newborn, due to disruption of the vessels during parturition.

**cephalic** [sə-fal'ik] pertaining to the head, or to the head end of the body.

**c. vein** the vein on the cranial aspect of the forearm of most domestic mammals; much favored for intravenous injection in dogs; see Table 14.

**cephalin** [sef'ə-lin''] a group of phospholipids found particularly in the brain and other nerve tissue.

**cephalitis** [sef'ə-li'tis] encephalitis.

**cephal(o)-** word element. [Gr.] head.

**cephalocele** [sef'ə-lo-sēl''] protrusion of a part of the cranial contents. See also **encephalocele**.

**cephalocentesis** [sef'ə-lo-sen-te'sis] surgical puncture of the head.

**cephalodactyly** [sef'ə-lo-dak'tə-lē] malformation of the head and digits.

**cephalohyctic** [sef'ə-lo-jī'rik] pertaining to turning motions of the head.

**cephalohematoma** [sef'ə-lo-he'mə-to'mə] cephalhematoma.

**cephalomelus** [sef'ə-lom'ə-ləs] a fetus with an accessory limb growing from the head.

**cephalomotor** [sef'ə-lo-mo'tər] moving the head; pertaining to motions of the head.

**Cephalomyia** see **Rhinoestrus**.

**cephalonia** [sef'ə-lo'ne-ə] a condition in which the head is abnormally enlarged, with sclerotic hyperplasia of the brain.

**cephalonium** a first-generation **cephalosporin**, used in intramammary and topical preparations. Called also cefalonium.

**cephalopagus** [sef'ə-lop'ə-gəs] craniopagus.

**cephalopathy** [sef'ə-lop'ə-thē] any disease of the head.

**cephalopelvic** [sef"ə-lo-pel'vik] pertaining to the head of the fetus and the pelvis of the dam.

**c. disproportion** the head of the fetus is disproportionately large and will not pass through the pelvis of the dam. Caused usually by hydrocephalus.

**Cephalopina titillator** the nasal bot of camels.

**cephalopods** [sef"ə-lo-podz"] members of the class Cephalopoda, including cuttle fish, squid and octopus.

**Cephalopsis** a member of the genus of flies in the family Oestridae. Current name is *Cephalopina titillator*.

**C. titillator** nasal bot fly of camels. The larvae inhabit the nasal sinuses.

**cephaloridine** a first-generation or Group I cephalosporin antibiotic; see **cephalosporins**.

**cephalosporinase** [sef"ə-lo-spor'in-ās] an enzyme that hydrolyzes the –CO–NH– bond in the lactam ring of cephalosporin, converting it to an inactive product.

**cephalosporins** [sef"ə-lo-spor'inz] a group of broad-spectrum, semisynthetic antibiotics derived from *Acremonium* (previously *Cephalosporium*), a genus of soil-inhabiting fungi, which share the nucleus 7-aminocephalosporanic acid. Cephalosporins named before 1975 are spelled with 'ph', while those named later are spelled with 'f'. **First-generation** cephalosporins (e.g., cefaclor, cephalozin, cefadroxil, cephalixin, cephaloridine, cephalothin, cephapirin, cephradine) are active mainly against gram-positive bacteria. **Second-generation** cephalosporins (e.g., cefmetazol, cefoxitin) have a broader spectrum of activity; and **third-generation** cephalosporins (e.g., cefoperazone, cefotaxime, moxalactam) are active mainly against gram-negative organisms, including *Pseudomonas aeruginosa*. **Fourth-generation** cephalosporins (e.g., ceftipime) have an extended spectrum and increased resistance to hydrolysis by  $\beta$ -lactamases. In a more recent system of classification, cephalosporins are grouped according to their route of administration and antimicrobial activity. The orally active cephalosporins, with fair activity against gram-positive bacteria and modest activity against gram-negative bacteria (except *Pseudomonas*), form one group; they include cephalixin, cephradine, cefadroxil, cefaclor, cefdinir, cefixime, cefpodoxime, and cephaloglycin. Those active by parenteral administration are placed into four groups: Group I has high activity against gram-positive bacteria and moderate activity against gram-negative (except *Pseudomonas*); it includes cefapirin, cefacetil, cephaloridine, cephalothin, and cephalozin. Group II has high activity against Enterobacteriaceae; it includes cefamandole, cefmenoxime, cefotaxime, cefotiam, ceftiofur, cefuroxime, and ceftriaxone. Group III has high activity against *Pseudomonas* and other gram-negative bacteria; it includes cefsulodin, ceftazidime, and cefoperazone. Group IV is resistant to  $\beta$ -lactamase; it includes cefoxitin, moxalactam, cefmetazole, ceftipime, and cefotetan.

**Cephalosporium species** [sef"ə-lo-spor'e-əm] the fungal genus that produces the naturally occurring cephalosporin antibiotics. Now classified as *Acremonium* species.

**cephalothin** [sə-fal'o-thin] a first-generation or Group I **cephalosporin** antibiotic with an antibacterial spectrum similar to cefazolin and cephalixin. Called also cefalothin (INN).

**cephalothoracic** [sef"ə-lo-thə-ras'ik] pertaining to the head and thorax.

**cephalothoracopagus** [sef"ə-lo-thor"ə-kop'ə-gəs] conjoined twins united at the head, neck, and thorax.

**cephalotomy** [sef"ə-lot'ə-me] **1.** the cutting up of the fetal head to facilitate delivery. **2.** dissection of the fetal head.

**cephalotrypsis** trephination of the skull.

**cephamycins** [sef"ə-mi'sins] semisynthetic,  $\beta$ -lactam antibiotics produced by *Streptomyces* spp.; includes **cefoxitin sodium**, **cefmetazole** and **cefotetan**.

**cephapirin** [sef-ə-pi'rin] a first-generation or Group I **cephalosporin** antibiotic. Most commonly used as an intramammary infusion in cows for treatment of mastitis. Called also cefapirin (INN).

**cephazolin** cefazolin.

**Cephenemyia** a genus of bot flies in the family Oestridae. Includes *Cephenemyia apicata*, *C. auribarbis*, *C. jellisoni*, *C. phobifer*, *C. pratti*, *C. stimulator*, *C. trompe*, and *C. ulrichi* (nasal cavities of wild mammals).

**cephradine** [sef'rā-dēn] a first-generation, orally active **cephalosporin** antibiotic with a spectrum of activity similar to cephalixin.

**cera** [L.] wax.

**ceramidase** [sə-ram'ī-dās] an enzyme occurring in most mammalian tissue that catalyzes the reversible conversion of ceramides to sphingosine and free fatty acids by acylation–deacylation.

**ceramide** [ser'ə-mid] any of a group of naturally occurring sphingolipids in which the NH<sub>2</sub> group of sphingosine is acylated with a fatty acyl CoA derivative to form *N*-acylsphingosine.

**c. glucoside** the major sphingolipid accumulated in **Gaucher's disease**. Called also glucocerebroside.

**c. lactosidosis** a sphingolipidosis in which ceramide lactoside accumulates in neural and visceral tissues owing to a deficiency of a  $\beta$ -galactosidase.

**cerate** a medicinal preparation for external use, compounded of fat or wax, or both, intermediate in consistency between an ointment and a plaster.

**cerat(o)-** see kerato-.

**Ceratocephalus testiculatus** see **Ranunculus**.

**ceratohyoid** short rods of the hyoid bone that connect the body of the hyoid bone to the epihyoid (dog, cat, ruminants, pig) or stylohyoid (horse).

**Ceratomyxa** a genus of protozoa in the class Myxosporea.

**C. shasta** important parasite of young salmonids limited in occurrence to the Pacific Northwest of the US. It causes severe losses in young fish in culture ponds. Signs include swelling at vent, distended abdomen, and subcutaneous boils. The parasite uses polychaetes, such as *Manayunkia speciosa*, as its intermediate host to complete its life cycle.

**Ceratophyllus** [ser"ə-to-fil'əs] a genus of fleas in the order Siphonaptera. Includes *Ceratophyllus columbae*, *C. (Nosopsyllus) fasciatus*, *C. gallinae*, *C. garei*, and *C. niger* (Western chicken flea—rodents and wild birds).

**Ceratopogonidae** [ser"ə-to-po-gon'i-de] a family of biting midges of the order Diptera; the most important genus is **Culicoides**.

**Ceratostomella fimbriata** a fungus that grows on green celery stalks; induces production of a furocoumarin that causes primary photosensitization.

**Cerbera** plant genus in the family Apocynaceae; contain a cardenolide cardiac glycosides in seed kernels that can cause sudden death. Includes *C. manghas* (sea mango), *C. floribunda* (kameduangel, gray milkwood), *C. dilatata*, *C. odollam* (pink-eyed cerbera, odallum).

**cercaria** [sər-kar'e-ə] pl. *cercariae* [Gr.] the final, free-swimming larval stage of a trematode parasite.

**cercarial** pertaining to or emanating from cercariae.

**c. dermatitis** see **Trichobilharzia**.

**cerclage** [ser-klahzh'] [Fr.] encircling of a part with a wire ring or loop, as for fixation of fragments in a fractured bone. Also used to prevent rotation of oblique fractures managed by intramedullary pin fixation. See also **hemicerclage**.

**cable and crimp c.** multifilament cable secured with a crimp.

**Cercocarpus** a North American genus of the Rosaceae plant family; includes *C. breviflorus*, *C. montanus*; contains cyanogenic glycosides and may cause cyanide poisoning. Called also mountain mahogany.

**cercus** [sər'kəs] a bristle-like appendages on the rear of most insects and some arthropods.

**cere** the firm, fleshy bond lying across the base of the beak of some birds. Prominent in parrots and birds of prey.

**c. hypertrophy** occurs in psittacine birds, particularly budgerigars; overgrowth may occlude the nares. Called also brown hypertrophy of the cere.

**cereal** [sēr'e-ə] cultivated grain crops of barley, wheat, rye, and oats, members of the plant family Poaceae (Graminae). See also **barley**, **wheat**, **rye**, **oat**.

**c. crop** oats, wheat, barley, rye crops used as grazing when immature or failed and short. Usually used when other feed is short and livestock are



**C-27:** Hypertrophy of the cere and overgrowth of the beak in a budgerigar.

hungry. Hypomagnesemia, nitrate/nitrite poisoning and photosensitization may occur on immature green crops and lactic acid indigestion due to ingestion of grain on stunted mature crops.

**cerebellar** [ser"ə-bel'ə] pertaining to the cerebellum.

**c. agenesis** absence of the cerebellum due to its non appearance in the embryo.

**c. aplasia** see cerebellar atrophy (below).

**c. ataxia** the incoordination of gait characterized by exaggerated movements. There is no paresis. There is exaggerated strength and distance of movement—hypermetria. Caused usually by damage to the cerebellum or to the spinocerebellar tracts. May be congenital due to cerebellar atrophy or acquired due to inflammation or malacia of the cerebellum.

**c. atrophy** degeneration and loss of cells of the cerebellum as a result of in utero viral infection. Purkinje cells are most predominantly affected, leading to abnormal migration of other cell types within the developing cerebellum of the fetus. Clinical signs of cerebellar disease are present at birth and stabilize or improve subsequently. Commonly affects cattle and cats infected with bovine virus diarrhea virus or feline panleukopenia virus. Distinguished from cerebellar abiotrophy in which the cerebellum forms normally but undergoes premature degeneration after birth. In the latter, the animals are normal at birth but develop progressive signs of cerebellar dysfunction later. Segmental atrophy occurs in pigs but is asymptomatic.

**c. coning** see cerebellar lipping (below), **brain** herniation.

**c. cortex** the superficial gray matter of the cerebellum.

**c. dysfunctio** see cerebellar ataxia (above).

**c. dysmelinogenesis** recorded in Chow Chow dogs; characterized by congenital head tremor.

**feline c. ataxia** see **feline** panleukopenia; cerebellar atrophy (above).

**c. hypomyelinogenesis** abnormally reduced myelination in the cerebellum; characterized clinically by severe neonatal tremor.

**c. hypoplasia** deficiency of cells of the cerebellum, the degree and distribution of which is variable. See cerebellar atrophy (above).

**inherited c. defects** includes cerebellar abiotrophy, atrophy, agenesis, hypoplasia, neuraxonal dystrophy.

**c. lipping** caused by diffuse cerebral edema. The vermis of the cerebellum protrudes through the foramen magnum and lies like a tongue over the medulla.

**c. neuronal abiotrophy** see cerebellar abiotrophy (above).

**c. neuraxonal dystrophy** reported in collie sheepdogs. The lesion is limited to axons, and there are no lesions in the cerebellar folial neurons.

**c. syndrome** clinical signs related to cerebellar dysfunction, namely hypermetria, trunkal sway, intention tremors (particularly of the head and neck). Rarely, absent menace response (with intact vision) or decerebellate rigidity may also be seen.

**cerebellitis** [ser"ə-bel-i'tis] inflammation of the cerebellum.

**idiopathic c.** see **shaker dog disease**. Also referred to as corticosteroid responsive tremor syndrome.

**cerebello-olivary** [ser"ə-bel"o-ol'i-var"ə] conducting or passing from the cerebellum to the olivary nucleus.

**Ceratocystis** an obsolete name for the perfect state of the fungus *Sporothrix schenckii*. See *Ophiostoma stenoceras*.

**cerebellomedullary cistern** [ser"ə-bel"o-med'ə-lar"ə] see **cisterna** cerebello-medullaris.

**cerebellopontine** [ser"ə-bel"o-pon'tēn] conducting or passing from the cerebellum to the pons varolii.

**c. abscess** usually complications of otitis media generated by pharyngeal infection. See also **brain** abscess.

**cerebelloreticular tract** [ser"ə-bel"o-rə-tik'u-lər] part of the reticular formation, matched by a reverse pathway of reticulocerebellar tract, and therefore of the modulating mechanism of the integration centers in the brain.



**C-28:** Cerebellar hypoplasia (right).

**cerebellum** [ser"ə-bel'am] the part of the metencephalon situated on the back of the brainstem, to which it is attached by three cerebellar peduncles on each side; it consists of a median lobe (vermis) and two lateral lobes (the hemispheres). Structures in the cerebellum include cingulum, cerebellar **cortex**, **culmen**, **pyramid** of cerebellum, **arbor vitae**, **folia cerebelli**, dentate **nucleus**, **uvula**, and **vermis**. See also **brain**. **vestibular c.** see **archicerebellum**.

**cerebral** [sə-re'brəl] pertaining to the cerebrum. See also **brain**.

**c. circulation** arterial blood supply reaches the anterior, middle and posterior cerebral arteries via the circle of Willis, in some species originating directly from the internal carotid and basilar arteries, in others via an interposed *rete mirabile*. See also **blood-brain barrier**, **blood-CSF barrier**, **cerebrospinal fluid**.

**c. contusion** contusion of the brain following a head injury. See also cerebral **contusion**, **brain** trauma.

**c. cortex** the convoluted layer of gray matter covering the cerebral hemispheres, which governs thought, memory, sensation, and voluntary movement. See also **brain**, **pyramidal** tracts, **extrapyramidal** system.

**c. cortical dysplasia** encompasses a range of disorders including neuronal heterotopia, microgyria, ulegyria, lissencephaly, pachygyria.

**c. diencephalic syndrome** the clinical signs associated with lesions of the cerebral cortex and diencephalon. They include seizures, behavioral or mental change, abnormal movements such as circling and head pressing, deficits in contralateral postural responses and sometimes visual impairment.

**c. dura mater** the membranous cover around the brain. Endosteal and meningeal layers are separated only by the cranial venous sinuses. Continuous with the spinal cord dura and the sheaths of the spinal nerves. Has three internal folds that separate sections of the brain. See **falx cerebri**, **tentorium cerebelli**, **sella turcica**.

**c. edema** abnormal accumulation of fluid within the brain. Can be subdivided into *vasogenic* edema (below), *cytotoxic* edema (below), *hydrostatic* edema (below), and *interstitial* edema (below).

**cytotoxic c. edema** caused by the intracellular accumulation of water due to energy failure within neurons and glia. Occurs in both gray and white matter and is most commonly the result of ischemia or hypoxia.

**c. flush** the congestion of the cerebral vessels causing a pink coloration; of infections by *Babesia bovis* and *B. bigemina*, it is the former in which the cerebral flush occurs.

**c. gyri** convolutions on the surface of the cerebrum.

**c. hemisphere** symmetrical right and left halves of the cerebrum divided by the longitudinal fissure.

**hydrostatic c. edema** caused by the sudden flooding of capillary beds with extracellular accumulation of protein-poor fluid due to a sudden increase in intravascular pressure. Occurs most commonly in areas of the brain following removal of mass lesions such as tumors.

**interstitial c. edema** caused by accumulation of water in periventricular white matter due to a sudden increase in intraventricular pressure as a result of acute obstructive hydrocephalus.

**c. peduncle** see cerebral **peduncle**.

**c. pia mater** thin connective tissue membrane that lies closely against the cerebral surface and carries blood vessels into the tissues of the brain.

**c. piriform lobe** on the floor of the brain medial to the lateral olfactory tract.

**c. pole** frontal (rostral) and occipital (caudal) poles of the cerebrum.

**c. substantia nigra** occupies the interior of the cerebral peduncles.

**c. syndrome** characterized by abnormal mental state, abnormal movements such as pacing or head pressing, visual impairment and seizures.

**c. vascular accident (CVA)** see **cerebrovascular** accident.

**vasogenic c. edema** that characterized by increased permeability of capillary endothelial cells; the most common form of brain edema.

**c. ventriculography** see **ventriculography**.

**cerebration** [ser"ə-brə'shən] functional activity of the brain.

**cerebritis** inflammation of the cerebrum.

**cerebroangiography** [ser"ə-bro-an"je-og'rə-fē] see cerebral **arteriography**.

**cerebrocerebellar** [ser"ə-bro-ser"ə-bel'ər] pertaining to the cerebrum and the cerebellum.

**cerebrocortical** [ser"ə-bro-kor'ti-kəl] pertaining to the cerebral cortex.

**c. malacia**, **c. necrosis** see **polioencephalomalacia**.

**cerebroid** [ser"ə-broid] resembling brain substance.

**cerebroma** any abnormal mass of brain substance.

**cerebromalacia** [ser"ə-bro-mə-la'shə] abnormal softening of the substance of the cerebrum. See also **leukoencephalomalacia**, **polioencephalomalacia**.

**cerebromeningitis** [ser"ə-bro-men"i-j'i'tis] meningoencephalitis.



**cerebronic acid** [ser''ə-bron'ik] a very long chain fatty acid derived from sphingomyelin, which is the principal hydroxy saturated acid from the brain. Unique to nervous tissue.

**cerebroathy** [ser''ə-brɒp'ə-thə] any brain disorder.

**cerebrophysiology** [ser''ə-brɒ-fiz''e-ol''ə-je] the physiology of the brain.

**cerebropontile** [ser''ə-brɒ-pon'til] pertaining to the cerebrum and pons.

**cerebro sclerosis** [ser''ə-brɒ'sklə-ro'sis] hardening of the cerebrum.

**cerebroside** [sə-re'brɒ-sid''] a general designation for sphingolipids in which sphingosine is combined with galactose or glucose; found chiefly in nervous tissue.

**cerebrosis** [ser''ə-brɒ'sis] any disease of the cerebrum.

**cerebrospinal** [ser''ə-brɒ-spi'næl] pertaining to the brain and spinal cord.

**c. abscess** see **brain abscess**.

**c. angiopathy** is thought to be a sequel to subclinical edema disease due to an *Escherichia coli* toxemia of pigs. The disease is sporadic within a group and is characterized by incoordination, apathy, aimless walking, and circling. Emaciation occurs rapidly and most affected animals are euthanized on humanitarian grounds.

**c. dysmyelinogenesis** a characteristic lesion in the brain of newborn piglets affected by congenital tremor caused by swine fever infection of the dam during early pregnancy. See also **congenital tremor syndrome** of piglets.

**c. embolism** see fibrocartilaginous **embolism**.

**c. fluid (CSF)** the fluid within the subarachnoid space, the central canal of the spinal cord, and the four ventricles of the brain. The fluid is formed continuously by arachnoid granulations as well as the choroid plexus in the ventricles, and is reabsorbed into the blood by the arachnoid villi at approximately the same rate at which it is produced. Examination of the CSF for the presence of abnormal or excessive numbers of cells, protein content, pressure is an important source of information about the nervous system.

**c. fluid–blood barrier** CSF passes into the CSF system (brain ventricles, the central canal of the spinal cord and the subarachnoid space) at the choroid plexus and passes out of the subarachnoid space into the sagittal sinus. The confining membranes of the system control selectively the passage of certain materials between it and the brain tissue (CSF–brain barrier) and between it and the blood (CSF–blood barrier).

**c. fluid–brain barrier** see cerebrospinal fluid–blood barrier (above).

**c. nematodiasis** invasion of the central nervous system by the microfilaria of *Setaria labiatopapillosa* (*S. digitata*) in most species causes an acute focal encephalomyelomalacia. The clinical picture is one of incoordination, then paralysis of the limbs, especially the hind. Parasites that have been identified in the brain or spinal cord of horses include rhabditid nematodes (*Halicephalobus gingivalis*), strongyloid nematodes (*Strongylus vulgaris*, *S. equinus*, *Angiostrongylus cantonensis*, *P. arelaphostrongylustenuis*), spiruroid nematodes (*Draschia megastoma*), filarid nematodes (*Setaria spp.*), and warble fly larvae (*Hypoderma spp.*). Also known as verminous **myelitis**.

**c. thrombosis** see fibrocartilaginous **embolism**.

**c. vasculitis** see **vasculitis**.

**cerebrovascular** [ser''ə-brɒ-vas'ku-lər] pertaining to the blood vessels of the cerebrum or brain.

**c. accident (CVA)** failure of blood supply to part of the brain, also called infarction. Infarction can occur either as the result of hemorrhage from a vessel (hemorrhagic infarct) or occlusion of a vessel (ischemic infarct). In both cases, disruption of the blood supply leads to failure of oxygen and hence energy supply to brain tissue within the associated vascular territory. Cerebrovascular accidents occur more commonly in dogs than in cats, and common sites of infarction include the cerebral hemispheres, thalamus, and cerebellum. Underlying conditions that may be associated with CVA include hypertension, endocrine disease, kidney disease, heart disease, and metastatic disease. See also feline ischemic **encephalopathy**.

**cerebrum** [sə-re'brəm] the main portion of the brain, occupying the front part of the cranial cavity; its two cerebral hemispheres are united by the corpus callosum. The term is sometimes applied to the postembryonic forebrain and midbrain together or to the entire brain. See also **brain**.

**Cereopsis novaehollandiae** see **Cape Barren goose**.

**CERF** Canine Eye Registry Foundation.

**cerium (Ce)** [sēr'e-əm] a chemical element, atomic number 58, atomic weight 140.12.

**ceroid** an insoluble polymer of oxidized lipid and protein; an acid-fast, accumulative, pigment found in the liver, the nervous system and muscle. Accumulates in pathological conditions including liver **cirrhosis** and **lysosomal** disorders. See also ceroid **lipofuscinosis**.

**certain safety factor** margin of safety of a drug measured from the ratio of the median lethal dose (LD<sub>50</sub>) and the median effective dose (ED<sub>50</sub>). Called also therapeutic index, LD<sub>50</sub>/ED<sub>50</sub>.

**certainty** confidence in a certain event or outcome occurring; a subjective judgment by a decision maker. The sure thing, the guaranteed happening, the certain winner.

**c. required** refers to the making of a diagnosis. The criterion on which a decision can be made about how far to go in the investigation of a case is the degree of certainty required.

**certificate** written certification of an examination, treatment, necropsy carried out by a veterinarian.

**health c.** certificate provided by a licensed veterinarian attesting to the health status of the animal or group of animals.

**title c.** a state or municipal-issued document that identifies the owner or owners of personal or real property.

**ceruletide** a cholecystokinin-like decapeptide, originally isolated from the skin of an Australian frog. It causes contraction of the gallbladder and relaxation of the sphincter of Oddi. Used in humans to treat paralytic ileus and in radiography during cholecystography.

**ceruloplasmin** [sə-roo''lɒ-plaz'min] an alpha<sub>2</sub>-globulin of the plasma, being the form in which most of the plasma copper is transported. Used as a measure of the copper status of animals.

**cerumen** [sə-roo'mən] a waxy secretion of the glands of the external acoustic meatus; ear wax.

**c. glands** modified sweat glands in the epithelial lining of the external auditory meatus. The wax serves to maintain the microenvironment of the ear canal, especially its relative humidity; the accumulated wax gradually migrates outward from the eardrum carrying debris with it.

**ceruminolysis** [sə-roo'mi-nol''ə-sis] dissolution or disintegration of cerumen (ear wax) in the external acoustic meatus (external ear canal). Also used to describe the therapeutic effect of some medications used in the treatment of otitis externa.

**ceruminosis** [sə-roo'mi-no'sis] excessive or disordered secretion of cerumen.

**cervical** [sur'vi-kəl] pertaining to the neck or to the cervix. See also **cervical spine**.

**c. ankylosis** ankylosis (fusion) of the intervertebral joints in the neck. See **hypervitaminosis A**.

**c. aplasia** segmental aplasia of the genital tract may be manifested by the absence or deformity of the cervix. Infertility is absolute. Diagnosis in large animals can be performed by transrectal palpation; small animals may require surgical exploration.

**c. cirrhosis** caused by severe laceration at parturition; a rare cause of dystocia.

**c. curve** one of the vertebral curves of the body.

**c. dislocation** a physical method of euthanasia for laboratory mice, immature rats, and poultry. Must be performed by an experienced person in order to achieve rapid and humane death.

**c. fixation** suturing of the cervix through the vaginal floor to the prepubic tendon. Used in the treatment of vaginal prolapse in cows.

**c. incompetence** damage to the cervix during parturition in the mare may cause its deformity and render it incapable of effectively closing off the uterus from the vagina. Infection of the uterus and infertility result.

**incomplete c. dilation** incomplete dilation of the cervix during parturition in adult cows, less commonly in heifers, may necessitate obstetrical, even cesarean, assistance; thought to be hormonal. See also **ringwomb** in ewes.

**c. inflammation** see **cervicitis**.

**c. instability, c. malformation, c. malarticulation** see cervical spondylomyelopathy (below).

**c. line lesions** of the tooth neck characterized by progressive, subgingival, osteoclastic resorption. These occur commonly in cats. See feline **odontoclastic** resorptive lesions.

**c. lymphadenitis** infection with abscessation of cervical lymph nodes in guinea pigs; usually caused by *Streptococcus zooepidemicus*.

**c. malarticulation** see cervical spondylomyelopathy (below).

**c. malformation** see cervical spondylomyelopathy (below).

**c. massage** suitable for use only in cows. The fetus is pulled up into the cervix and light traction maintained while a well-lubricated hand is pushed gently between the cervix and the fetus. This is done repeatedly and continued if there is no evidence of trauma. The cervix may dilate sufficiently to allow normal delivery of the calf.

**c. mucus** from the cervix. Its presence in liberal amounts is used as an indication of estrus.

**c. paralysis** inability to lift the head, usually accompanied by paralysis of all four limbs.

**c. plexus** see cervical plexus.

**c. rib** see cervical rib.

**c. spinal cord lesion** any lesion affecting the spinal cord between the first and eighth spinal cord segments. Includes fracture–dislocation, cervical vertebral abscess, compression due to exostosis, spinal myelitis and myelomalacia, congenital lesions including spinal canal stenosis.

**c. spondylolisthesis** see cervical spondylomyelopathy (below).

**c. spondylomyelopathy** compression of the cervical spinal cord in dogs caused by either soft tissue or bony changes affecting the surrounding structures. Seen most commonly in large and giant breed dogs, particularly Great Danes and Dobermans. Compression of the spinal cord may occur as the result of hypertrophy of the dorsal annulus fibrosus of affected intervertebral discs, hypertrophy of the ligamentum flavum, enlargement of articular facet joints, stenosis of the spinal canal and tipping or dorsal angulation of vertebral bodies. Changes are thought to be degenerative in nature and have been proposed to be the result of subclinical instability, possibly related to the breed conformation. Affected dogs show signs related to the level of compression—commonly an ataxia of the hindlimbs with a base-wide hindlimb stance, together with a short stride, stiff forelimb gait. As a result of the uncertain etiology of the condition a large number of names have been used to describe the condition, including canine wobbler syndrome, cervical instability, cervical malformation, cervical malarticulation syndrome, disc-associated wobbler syndrome and cervical stenotic myelopathy, amongst others. Cervical spondylomyelopathy seems to be the most widely accepted terminology currently, although this may change in the future.

**c. spondylopathy** see cervical spondylomyelopathy (above).

**c. static stenosis** one of the two syndromes listed under cervical vertebral stenotic myelopathy; characterized by compression of the cord at C5–C7 in large male horses 1–4 years of age; the position of the neck is immaterial; the resulting syndrome is characterized by an insidious onset of ataxia. See also **enzootic** equine incoordination.

**c. stenotic myelopathy** focal **myelopathy** caused by compression of the spinal cord by excessive flexion of the neck in patients, especially dogs, in which there is a pre-existing narrowing of one of the two vertebral foramina in one or more vertebrae, especially cervical vertebrae. See also degenerative **myeloencephalopathy**.

**c. swab** swab of the os cervix for bacterial and virological examination for pathogens likely to affect fertility adversely. Used in fertility examination of cases of prolonged infertility in ruminants. See also **uterine swab**.

**c. syndrome** clinical signs caused by a lesion of the spinal cord between C1 and C5. They include tetraparesis to tetraplegia or hemiparesis to hemiplegia, hyperreflexia, hypertonia, depressed postural responses, and sometimes cervical pain.

**c. trauma** most common are lacerations during parturition; resulting adhesions and fibrosis may cause subsequent dystocia.

**c. vertebrae** the skeleton of the neck, in most mammals comprising seven vertebrae, in birds up to 25.

**c. vertebra fracture** in horses occurs as a result of head-on collisions at speed; causes recumbency and inability to move limbs voluntarily, but there is little consciousness and patient can eat and drink if assisted.

**c. vertebral malformation malarticulation syndrome** see cervical spondylomyelopathy (above).

**c. vertebral stenotic myelopathy** one of the causes of incoordination in young horses. See **enzootic** equine incoordination.

**cervical abscess of pigs** streptococcal abscess of the lymph nodes of the throat; a specific disease of pigs that exerts its importance at slaughter because of the rejection of affected parts. The cause is infection with beta-hemolytic streptococci of Lancefield Group E.

**cervicectomy** [*sur'vi-sek'ta-me*] excision of the cervix uteri.

**cervicitis** [*sur'vi-si'tis*] inflammation of the cervix uteri.

**cervic(o)-** word element. [L.] pertaining to a neck, or the cervix.

**cervicobrachialgia** [*sur'vi-ko-bra'ke-al'jā*] pain in the neck radiating to the forelimb, due to compression of nerve roots of the cervical spinal cord. Called also root signature.

**cervicocolpitis** [*sur'vi-ko-kol-pi'tis*] inflammation of the cervix uteri and cranial vagina.

**cervicofacial** [*sur'vi-ko-fa'shāl*] pertaining to the neck and face.

**cervicofemoral angle** [*sur'vi-ko-fem'or-əl*] the angle at which the neck of the femur joins the shaft. Called also the angle of inclination. Important in assessment for hip dysplasia in dogs.

**cervicopexy** [*sur'vi-ko-pek'se*] suture of the uterine cervix, or paracervical tissue, to aid in the retention of a prolapsed cervix and, or, uterus.

**cervicoplasty** [*sur'vi-ko-plas'te*] plastic surgery on the neck.

**cervicospinal arthropathy** [*sur'vi-ko-spi'nāl*] see **cervical** vertebral stenotic myelopathy.

**cervicothoracic ganglia** [*sur'vi-ko-thā-ras'ik*] the staging post for most sympathetic nerve impulses going to the heart; called also stellate ganglia.

**cervicothoracic syndrome** [*sur'vi-ko-thā-ras'ik*] clinical signs associated with lesions of the spinal cord segments from C6 to T2. Includes tetraparesis to tetraplegia or hemiparesis to hemiplegia, neurogenic muscle atrophy in the forelimbs, depressed postural responses, and hypalgesia to analgesia caudal to the level of the lesion. Horner's syndrome is sometimes present.

**cervicotomy** [*sə'vi-kot'ə-me*] incision of the circular muscle layers of the cervix to permit the passage of a normal-sized fetus through a stenosed cervix. Performed only in the cow and not conducive to subsequent fertility.

**cervicovaginal** [*sə'vi-ko-vaj'i-nāl*] pertaining to the cervix and the vagina.

**cervicovesical** [*sur'vi-ko-ves'i-kāl*] relating to the cervix uteri and urinary bladder.

**cervid** a member of the family Cervidae; deer, elk, reindeer, moose, wapiti, muntjacs, and sikas.

**Cervidae** [*sur'viks*] the family of the order Artiodactyla, ruminants; contains the true deer, elk, moose, chital, muntjacs, and caribou (reindeer).

**cervix** pl. *cervices* neck; the front portion of the neck (collum), or a constricted part of an organ (e.g., cervix uteri, see below).

**double c.** incomplete fusion of the müllerian ducts leads to duplication of all or parts of the female genital tract. In cows one of these is a duplication of the cervix but with only one uterus. More common is a double external os but a single internal os. Both represent an inconvenience at artificial insemination and are detectable on transrectal or vaginal examination.

**c. uteri** the narrow caudal end of the uterus that opens into the vagina.

**c. vesicae** the caudal constricted part of the urinary bladder, proximal to the opening of the urethra.

**Cervus** a genus of deer in the family Cervidae mostly found in Eurasia. The taxonomy of this genus is in flux. Includes *C. albirostris* (White-lipped deer), *C. alfredi* (Philippine spotted deer), *C. canadensis* (elk or wapiti), *C. duvaucelii* (Barasinga), *C. elaphus* (European red deer), *C. eldii* (Eld's deer), *C. mariannus* (Philippine Sambar), *C. nippon* (Sitka deer), *C. schomburgki* (Schomburgk's deer; extinct), *C. timorensis* (Rusa deer), *C. wallichii* (Central Asian red deer), *C. unicolor* (Sambar).

**cesarean section** [*sə-zar'e-an*] delivery of a fetus by incision through the abdominal wall and uterus. The procedure takes its name from the Latin word *caedere*, to cut, and has no relation to the birth of Caesar as is sometimes believed. Called also C-section.

**cesarotomy** see **cesarean section**.

**cesium (Cs)** a chemical element, atomic number 55, atomic weight 132.905.

**c.-137** a product of atomic fission by explosion or breakdown of a reactor. It is feared as a pollutant because of its very long half-life.

**Cesky terrier** a long, short-legged terrier with pendulous ears, long tail and wavy, silky coat of gray clipped to a short length, except on the upper part of the head, lower legs, over the rib and the belly. A Czechoslovakian breed, developed from Scottish and Sealyham terriers. Called also Bohemian terrier, Czech terrier.

**cesspit** a pit to retain the sediment, usually fecal, of a drain.

**cestoidal** destructive to cestodes.

**cestocide** an agent that destroys cestodes.

**cestodal cysts** the larval (metacystode) stage of cestodes in mammal hosts, e.g., *Echinococcus* spp. cysts in humans, *Cysticercus tenuicollis* cysts in sheep.

**cestode** [*ses'tōd*] **1.** any individual of the class Eucestoda. **2.** cestoid.

**cestodiasis** [*ses'tō-di'ə-sis*] infestation with tapeworms.

**cestodology** [*ses'tō-dol'ə-jē*] the scientific study of cestodes.

**cestoid** [*ses'tōid*] resembling a tapeworm.

**Cestrum** [*ses'trum*] a genus of shrubs in the family Solanaceae. *C. aurantiacum* (orange-flowered cestrum), *C. corymbosum* var. *hirsutum*, *C. elegans* (purple cestrum) *C. fasciculatum* (red cestrum), *C. hartwegii*, *C. axillare* (*laevigatum*) (inkberry bush), *C. nocturnum* (night-flowering cestrum), *C. parqui* (Chilean jessamine, green cestrum) cause liver necrosis. The toxins are diterpenoid (kaurene) glycosides parquin and carboxyparquin allied to carboxyatractyloside. *C. diurnum* (jasmine, wild jasmine) causes generalized calcinosis through a calcinogenic glycoside. See also **enzootic** calcinosis.

**cestrum** [*ses'trum*] common name for plants in the genus *Cestrum*.

**Cetacaine** [*se'ta-kān*] trademark for a combination local anesthetic containing tetracaine hydrochloride, benzocaine, and butamben used topically on mucous membranes.

**cetacean** marine mammals of the order Cetacea that includes whales, dolphins, and porpoises.



**cetalkonium chloride** [sət-əl-koʹne-əm] a cationic quaternary ammonium surfactant, used as a topical antiseptic against a variety of bacteria and fungi.

**cetirizine** [sə-tirʹi-zēn] a histamine type 1 (H<sub>1</sub>)-receptor antagonist (antihistamine) used in treating allergic conditions.

**Cetonia aurata** see *Macroductylus subspinosus*.

**cetrimonium bromide** [seʹn-moʹne-əm] a quaternary ammonium antiseptic and detergent, applied topically to the skin to cleanse wounds, as a preoperative disinfectant; also used to cleanse utensils and to store surgical instruments.

**cetylpyridinium chloride** [seʹtəl-pirʹi-dinʹe-əm] a cationic disinfectant used as a local anti-infective applied topically to intact skin or mucous membrane.

**cevadine** one of the alkaloids of *Veratrum californicum* but not one known to be implicated in the production of congenital defects that occur in sheep fed on this plant.

**cevitamic acid** [se-vi-tamʹik] see **ascorbic acid**.

**Ceylonocotyle** a genus of flukes (digenetic trematodes) in the family Paramphistomatidae. Includes *Ceylonocotyle scoliocoelium*, *C. streptocoelium* (rumen, reticulum). See under **paramphistomosis**.

**Cf** chemical symbol, *californium*.

**CFT** complement fixation test.

**CFU** see **colony-forming units**.

**cg** centigram.

**CGIAR** Consultative Group for International Agricultural Research.

**cGMP** 3'5' cyclic guanosine monophosphate; a common cellular regulator; mediates vasodilation of blood vessels; essential in regulation of sodium channels of the retina. Decrease in cGMP concentration leads to hyperpolarization of the retinal membrane.

**CGS, cgs** centimeter–gram–second (system), a system of measurements based on the centimeter as the unit of length, the gram as the unit of mass, and the second as the unit of time.

**Ch** a title denoting Champion; used for dogs to designate one that has accrued the specified number of points in competitions.

**CH<sub>50</sub>** the dose of complement that lyses 50% of a red cell suspension.

**Chabertia** [shah-berʹte-ə] a genus of nematodes in the superfamily Strongyloidea. *Chabertia ovina* (colon of ruminants). See **chabertiasis**.

**chabertiasis** [shah-bər-tiʹə-sis] infestation with *Chabertia ovina*. Characterized by weight loss and the passage of soft feces containing much mucus. Called also chabertiosis.

**chabertiosis** see **chabertiasis**.

**Chabrador** a hybrid name applied to dogs resulting from crossing Chow chows and Labrador retrievers. See also **designer dogs**.

**chacu** see **chaku**.

**chaerophyllin** toxic principle in *Chaerophyllum*.

**Chaerophyllum** a genus in the plant family Apiaceae. Contains a toxin chaerophyllin capable of causing diarrhea and incoordination. Includes *C. sylvestre*, *C. temulum* (rough or wild chervil, ass's parsley).

**chaeta** see **seta**.

**chafe** [chāf] inflammation of the skin cause caused by rubbing or friction, e.g., skin against a harness or skin to skin contact.

**chaff 1.** chaffed hay; called also chop. **2.** the winnowings from a threshing, consisting of awns, husks, glumes, and other relatively indigestible materials.

**Chagas' disease, Chagas-Cruz disease** [chahʹgəz] see *Trypanosoma cruzi*, American **trypanosomiasis**.

**chagoma** [chə-goʹmə] skin tumor in trypanosomiasis due to *Trypanosoma cruzi*.

**chain** [chān] a collection of objects linked together in linear fashion, or end to end, as the assemblage of atoms or radicals in a chemical compound, or an assemblage of individual bacterial cells.

**c. binomial model** model of an outbreak of an infectious disease in which the outbreak is depicted as a series of steps with a binomial statement of the probability of an outcome at each step.

**branched c.** an open chain of atoms, usually carbon, with one or more side chains attached to it.

**heavy c.** any of the large polypeptide chains of five classes that, paired with the light chains in most vertebrate species, make up the antibody molecule. Heavy chains bear the antigenic determinants that differentiate the immunoglobulin classes. See also **heavy-chain disease**.

**heavy c. switch** see **class switching**.

**J c.** a polypeptide component of polymeric IgM and IgA molecules.

**kappa c.** one of the two light chains types that are a component of **immunoglobulin**. The other is lambda (λ).

**lambda c.** one of the two light chain types that are a component of **immunoglobulins**; the other is kappa (κ).



**C-29:** Lip chain.

**light c.** either of the two small polypeptide chains (molecular weight 22,000) that, when linked to heavy chains by disulfide bonds, make up the antibody molecule; they are of two types, kappa and lambda, which are unrelated to immunoglobulin class differences.

**light c. disease** the overproduction of immunoglobulin light chain molecules by certain B cell tumors (plasmacytomas). See **monoclonal gammopathy**.

**lip c.** a chain run through the lower left side ring of the halter of a horse, under the upper lip tight against the gum, through the right-side ring, and attached to the upper right cheek ring. Used to achieve greater control. Can cause significant injury if used improperly. Banned by some show horse organizations.

**nose c.** a chain run through the lower left side ring of the halter of a horse, over the nose, through the right-side ring, and attached to the upper right cheek ring. Designed to encourage a horse to lower his head and become more responsive when pressure is applied to the shank.

**obstetric c.** used in obstetrics in cattle and horses to snare extremities and for traction. Made of rustproof metal with links designed not to kink or to jam. They have a loop link at each end to facilitate single-handed formation of a loop. The links are shaped so that the ring-grip handles used for traction will grip at any point and stay put with the strongest pull.

**c. shank** a leather lead with a short section of chain at the proximal end. It can be placed over the horse's nose, through the mouth or across the upper gum for greater control.

**side c.** a chain of atoms attached to a larger chain or to a ring.

**stallion c.** strong chain, 1–2 ft (0.5 m) long, at the end of a solid lead. For leading a stallion with little chance of his biting through the lead.

**c. termination method** See **Sanger-Coulson method**.

**chaku** a system of corralling vicuñas in which large numbers of individuals drive the scattered population into a broad funnel, at the end of which is a capture corral where the vicuñas are caught, sheared, and released. The chaku system was perfected by the Inka but was a long-standing tradition in the Andean Altiplano.

**Ch'aku** a variety of llama characterized by high follicular density on the body and face. This woolly llama is less common than the non woolly kara variety in Bolivia and Peru, but abundant in northwest Argentina.

**chaku llama** see **Ch'aku**.

**chaliasia** [kə-ləʹzhə] relaxation of a bodily opening, such as the cardiac sphincter. See also **megaesophagus**.

**chalazae** strands of albumen that come from each pole of a bird or reptile egg and suspend the yolk in the approximate center of the egg. The chalazae are often twisted because of rotation of the yolk.

**chalazion** [kə-ləʹze-on] eyelid mass resulting from obstruction and inflammation of a meibomian gland.

**chalcosis** [kal-koʹsis] copper deposits in tissue.

**chalk bones** [chawk] see **osteopetrosis**.

**challenge feeding** [chalʹənj] a system of feeding dairy cows that provides more feed than is justified by the level of the individual cow's milk production. In the early part of the lactation, the cow is challenged to produce more milk and in many instances does so. If the cow does not respond, the level of feeding is reduced. Called also lead feeding because the cow is led to produce more heavily.





**C-30:** Chalazion on the upper eyelid of a dog. From Maggs, D.J., Slatter's Fundamentals of Veterinary Ophthalmology, 6th Ed, Elsevier, 2018.

**chalone** [kal'ōn] a group of tissue-specific, water-soluble substances that are produced within a tissue and that inhibit mitosis of the cells of that tissue and whose action is reversible.

**chalybeate** containing or charged with iron.

**Chamaecytisus proliferus** a tree legume in the family Fabaceae used as a browse plant for ruminant nutrition; rarely, an unidentified toxin is associated with congenital leucoencephalopathy of calves and a staggers syndrome in cattle. Called also *Cytisus proliferus*, tagasaste, tree lucerne, escobon.

**chamber** [chām'bər] an enclosed space.

**anterior c.** that part of the aqueous humor-containing space of the globe between the cornea and anterior iris face.

**posterior c.** that part of the aqueous humor-containing space of the globe between the posterior iris and the lens.

**vitreous c.** the vitreous humor-containing space in the globe, bounded anteriorly by the lens and ciliary body and posteriorly by the retina and optic nerve.

**chambering** [chām'bər-ing] a technique of modifying the padding in harness over a gall or other sore spot. The stuffing is worked away with an awl or needle and stitched to the felt to stop it from working back into the cavity.

**chameleon** lizard in the family Chamaeleonidae, they have a very long tongue, independently mobile eyes and feet with two toes pointing forward and three backward; many species have a prehensile tail. Best known for their ability to change color to blend with their surroundings as well as communication with conspecifics. Over 200 species, with the veiled chameleon (*Chamaeleo calyptrotus*) the most commonly kept captive species.

**chamois** 1. sheepskin specially impregnated with fish oil to make it pliable; used for cleaning. 2. (*Rupicapra rupicapra*) a high altitude, medium-sized, East European goat-antelope, with short, slightly-curved horns; also introduced into New Zealand for recreational hunting.



**C-31:** A panther chameleon.

Bassett, J.M. McCurnin's Clinical Textbook for Veterinary Technicians, 9th Edition. Saunders, 042017. VitalBook file.

**chamomile** [kam'ə-mēl] a medicinal herb derived from flowerheads of two species of the Asteraceae family, the more common being *Matricaria chamomilla*; used for its anti-inflammatory, antiseborrheic, and calmativ properties. Also spelled camomile.

**champignon** a mushroom-like swelling that forms in **scirrhus** cord.

**chancr** [shang'kər] the 2- to 4- in, hard, hot, painful lesion that develops at the site of tsetse-fly bites when the fly is a transmitter of trypanosomiasis. In human medicine, refers to the primary lesion of syphilis.

**chandelier plant** see *Bryophyllum delagoense*.

**Chandipura virus (CHPV)** a vesicular virus closely related to Vesicular stomatitis virus. Associated with sporadic encephalitis outbreaks in humans in India but does not cause vesicular stomatitis in livestock.

**Chandlerella** a nematode parasite genus belonging to the family Onchocercidae, found in birds.

**channel** [chan'əl] in biophysical terms these are the 'pores' in semipermeable membranes through which specific physicochemical units, e.g., cations, calcium ions, can pass; the rate of passage of some channels may be much slower than others, hence there is an expansive nomenclature, e.g., slow calcium channel, fast calcium channel.

**water c.** see **aquaporins**.

**channel aeration** a modification of the activated **sludge** method of disposing of sewage. The sewage is aerated in a long channel rather than in a lagoon.

**Channel Island breeds** usually used in reference to the Jersey and Guernsey breeds of dairy cattle.

**channelopathy** [chan'nəl-op'ə-the] dysfunction of ion channels affecting excitability of cell membranes in neurons and skeletal myocytes; includes myotonia, **hyperkalemic periodic paralysis**.

**Chanos chanos** an important food fish in Southeast Asia. Called also milkfish.

**Chantilly/Tiffany** a semi-longhaired, North American breed of cat, similar to the **Tiffanie**, which is recognized in the UK. Although originally chocolate, many coat colors are seen.

**chaperone** [shap'ər-ōn] a family of proteins that aid in the folding of target proteins.

**chaperonin** [shap'ər-o'nin] a class of **chaperone** proteins.

**char** salmonid fish in the genus *Salvelinus*. Includes the Arctic char (*S. alpinus*).

**character** [kar'ak-tər] a quality or attribute indicative of the nature of an object or an organism. 1. in genetics, the expression of a gene or group of genes as seen in a phenotype. 2. in wool the evenness of the crimp.

**acquired c.** a noninheritable modification produced in an animal as a result of its own activities or of environmental influences.

**dominant c.** a mendelian character that is expressed when it is transmitted by a single gene.

**mendelian c's** in genetics, the separate and distinct traits exhibited by an animal or plant and dependent on the genetic constitution of the organism.

**primary sex c's** those characters of the male and female directly concerned in reproduction.

**recessive c.** a mendelian character that is expressed only when transmitted by both genes (one from each parent) determining the trait.

**secondary sex c's** those characters specific to the male and female but not directly concerned in reproduction.

**sex-conditioned c., sex-influenced c.** an autosomal trait whose full expression is conditioned by the sex of the individual, e.g., cryptorchism.

**sex-linked c.** one transmitted consistently to individuals of one sex only, being carried in the sex chromosome.

**Charadriiformes** a large group of aquatic shorebirds and coastal diving birds, worldwide in distribution. Found along seacoasts and inland waters. Includes sandpipers, plovers, gulls, auks, and their relatives

**charbon** [Fr.] see **anthrax**.

**Charbray** a taurindicus breed of beef cattle, white to light red in color, produced by crossing Brahman and Charolais.

**Charchesium polysinum** a protozoan that parasitizes the skin of tadpoles. Lesions may cover the gills and cause asphyxia.

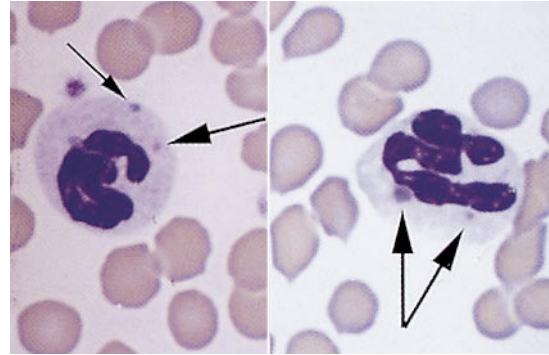
**charcoal** [chahr'kōl] carbon prepared by charring wood or other organic material.

**activated c.** the residue of destructive distillation of various organic materials, treated to increase its adsorptive capacity; used orally as a general-purpose antidote (specifically, as an adsorbent) for ingested toxins and bacterial enterotoxins.

**Charcot–Bottcher crystals** characteristic intracellular cytoplasmic crystals that occur in normal canine Sertoli cells, but do not occur in Sertoli cell tumors.



**C-32:** Charolais beef bull.  
From Sambras, H.H.,  
Livestock Breeds, Mosby,  
1992.



**C-33:** Blood film from a cat with Chediak-Higashi syndrome showing large pink granules in neutrophils (arrows).  
Sirois, M. Laboratory Procedures for Veterinary Technicians, 6th Edition. Mosby, 2014.

**Charcot triad** [*shahr-ko'*] biliary colic, jaundice, and fever, three signs associated with acute cholecystitis.

**charge-coupled device (CCD)** [*chahrj*] photosensitive computer chip made of crystalline silicone; used to record light images and generate computer graphic image files. Various imaging applications including digital photography and digital radiography.

**charlatan** a pretender to knowledge or skills not possessed; see also **quack**.

**Charles' law** [*shahrلز*] at a constant pressure the volume of a given mass of gas varies directly with the absolute temperature.

**charlock** *Sinapis arvensis*.

**jointed c.** see *Raphanus raphanistrum*. Called also wild radish.

**Charolais** a white or cream breed of cattle with pink mucosae, produced in central France and used for dairy, beef, or draft purposes.

**Charollaise sheep** meat and wool polled sheep, originated from Leicester longwool plus local breed.

**charque** South American dried salted beef.

**chart** [*chahr*] a record of data in graphic or tabular form.

**pedigree c.** a graph showing various descendants of a common ancestor, used to indicate those affected by genetically determined disease.

**time c.** a graph on which the values of a variable are plotted on one axis and time on the other.

**veterinary medicine c.** the written or digital record of communication, presenting complaint, examination, diagnostic testing, and treatment occurring between a veterinarian, client, and patient. also called record, medical record, or veterinary medical record.

**technique c.** in radiography, a table of kVP, mA, and sec (mAs) values to enable the selection of the correct settings on an x-ray machine for a particular body part thickness.

**charting** [*chahr'ting*] the keeping of a clinical record of the important facts about a patient and the progress of its illness. The patient's chart most often contains a medical history, a nursing history, results of physical examinations, laboratory reports, results of special diagnostic tests, and the observations of the nursing staff. See also problem-oriented **medical record**.

**Chartreux** an old French breed of cats; it has a blue-gray, medium-length, double coat and gold- to copper-colored eyes.

**chase** pursuit of a lure on a racetrack or of a dragged hare in a field by a Greyhound.

**chaser** a secondary or follow-up breeding male put in with a herd of cows or ewes when the fertility of the first stud is suspect.

**Chastek paralysis** a condition of **thiamine** (Vitamin B1) deficiency in farmed foxes and mink induced by the consumption of certain species of raw fish that are known to contain thiaminases. When ingested, thiaminases cleave the thiamine molecule rendering it inactive, and therefore unusable, by the body. Because thiamine plays an integral role in energy utilization, this condition manifests as muscular weakness, paralysis, and ultimately death. B1 deficiency of foxes was originally described as Chastek paralysis following an outbreak on the Chastek Farm in Minnesota in 1936.

**chauffage** [Fr.] treatment with a low-heated cautery that is passed to and fro close to the tissue.

**CHD** canine **hip dysplasia**.

**check ligament** one of the two ligamentous accessory heads to the digital flexors of the horse. The superior (proximal) check ligament connects the superficial flexor tendon to the caudal aspect of the radius, while the inferior (distal) check ligament connects the deep digital flexor tendon to the palmar aspect of the third metacarpal (cannon) bone). See also **suspensory ligament**.

**c. l. desmotomy** surgical division of the ligament for treatment of contracted flexor tendons, certain cases of flexor tendonitis or desmitis of the affected ligament in horses.

**checkerboard** [*chek'ar-board*] the pattern of a chess or draft board; used in many circumstances to display the results of mixing a specific number of variables. The variables are listed in columns designated along the horizontal border and the same or different variables in lines along the vertical border; the results of each mixing are recorded in the box where the columns and lines carrying the ingredients of the mix intersect.

**checkered giant rabbit** large show rabbits that come in white with defined black or blue (gray) markings. In the UK, called the Giant Papillon.

**checkpoint** [*chek'point*"] points in the cell cycle of eukaryotic cells which prevent progress until each stage is satisfactorily completed.

**Chediak-Higashi syndrome** [*cha'de-ahk he-gah'she*] an inherited disease in humans, cattle, cats, Aleutian mink, white tigers, and Orca whales. There is dilution of color in the hair and ciliary processes of the eye, with abnormally large secretory granules, caused by mutations in the lysosomal trafficking regulator *LYST* gene, in all cell types and particularly noticeable in circulating neutrophils and eosinophils. Leukocytes are defective in chemotaxis and intracellular killing. Affected individuals suffer from an increased susceptibility to infection and bleeding tendencies caused by a platelet storage defect.

**chek** [*chek*] the fleshy portion of either side of the face, forming the sides of the mouth and continuing rostrally to the lips. Attached to alveolar borders of maxillae and mandibles. Called also bucca.

**cleft c.** facial cleft caused by developmental failure of union between the maxillary and primitive frontonasal processes.

**c. pouches** fur-lined evaginations of the oral cavity extending alongside the head and neck, as far as the scapulae, in hamsters. Used to transport food.

**c. swelling** caused usually by osteomyelitis of the jaw bones, local neoplasia, packing of food in a chronically malfunctioning cheek or a large foreign body stuck in the cheek space (buccal vestibule).

**c. teeth** molars and premolars.

**cheese** a food produced industrially by the precipitation of milk protein and capable of acting as a vector of animal disease caused by resistant bacteria but especially by viruses, especially foot-and-mouth disease.

**c. fly** infests cheese but of esthetic importance only. Called also **cheese skipper**, *Piophilha casei*.

**c. mite** *Tyroglyphus siro*.

**cheese-washer's lung** a hypersensitivity pneumonitis of humans caused by inhalation of *Penicillium casei* spores present in cheese casings.

**cheeseweed** *Malva parviflora*.

**cheesewood** *Alstonia scholaris*.

**cheesy gland** [*che'ze*] chronic disease characterized by hard swelling of one or more peripheral lymph nodes containing semiliquid to caseous pus; may rupture spontaneously or be lacerated during shearing and discharge pus to the exterior; colloquial for **caseous lymphadenitis** in sheep and goats.

**cheetah** (*Acinonyx jubatus*) a spotted, long-legged, non climbing, diurnal big cat; the fastest of land animals. Easily trained and used for hunting; some are illegally placed in private collections. Because of loss of habitat and prey, it is considered a vulnerable species. Originally widespread in Africa and Asia, its distribution has markedly reduced, now occurring in eastern and southern Africa with small numbers in isolated regions of Asia, such as Iran. Called also hunting leopard.



**Cheilanthes** [*ki-lan'thēz*] a fern member of the family Sinopteridaceae; known toxic components include ptaquiloside and thiaminase. Called also cloak ferns, rock ferns.

**C. distans**, **C. tenuifolia** a rock fern that causes incoordination and somnolence in sheep.

**C. sieberi** has caused hemorrhagic disease and enzootic hematuria in cattle through ptaquiloside, and polioencephalomalacia in sheep. Called also rock or mulga fern.

**C. sinuata** causes polioencephalomalacia ('jimmies') in grazing ruminants. Called also jimmy fern.

**cheilectropion** [*ki'lek-tro'pe-on*] eversion of the lip.

**cheilitis** [*ki-li'tis*] inflammation of the lips.

**cheil(o)-** word element. [Gr.] pertaining to a lip.

**cheilognathopalatoschisis** [*ki'lo-na'tho-pal'ə-tos'ki-sis*] cleft of the lip, upper jaw, and hard and soft palates.

**cheilognathoschisis** [*ki'lo-na-thos'ki-sis*] cleft of the upper lip and jaw.

**cheiloplasty** surgical repair of a lip defect.

**anti-drool c.** suspension of the lower lip to the inside of the upper cheek by a mucosal flap to reduce the leakage of saliva and food in dogs with excessive lip folds or denervated lower lip.

**cheilorrhaphy** [*ki-lor'ə-fe*] suture of the lip; surgical repair of a harelip.

**cheiloschisis** [*ki-los'ki-sis*] see **cleft lip**.

**cheilosis** [*ki-lo'sis*] fissuring and dry scaling of the lips and angles of the mouth.

**Cheilospirura** a genus of nematodes of the family Acuariidae.

**C. hamulosa** found in the gizzard of fowls and turkeys. Heavy infestations cause emaciation, weakness and anemia. Called also *Acuaria*.

**cheilotomy** [*ki-lot'ə-me*] incision of the lip.

**chelate** [*ke'lāt*] to combine with a metal in complexes in which the metal is part of a ring; by extension, a chemical compound in which a metallic ion is sequestered and firmly bound into a ring within the chelating molecule. Chelates are used in treatment of metal poisoning.

**chelating agent** a substance which combines with a metallic ion to produce an inert chelate, e.g., ethylenediamine tetra-acetic acid, penicillamine.

**chelyerythrine** a toxic alkaloid found in the plant *Chelidonium majus*.

**chelicerae** pair of movable oral appendages adapted for cutting carried by acarids, including ticks.

**chelidonine** a toxic alkaloid found in the plant *Chelidonium majus*.

**Chelidonium majus** temperate zone plant of the family Papaveraceae; contains the isoquinoline alkaloid chelidonine; causes vomiting, colic and diarrhea, possibly somnolence. Called also greater celandine, celandine poppy.

**Chelonia** sea turtles in the family Cheloniidae; with flat, rounded shells and flipper-like forelimbs.

**C. mydas** **1.** green turtle. **2.** large endangered sea turtle, only species in genus *Chelonia*. Also known as black sea turtle, Pacific green turtle or green sea turtle.

**chelonian** generally refers to members of the superorder Chelonia that includes tortoises, terrapins, turtles, and sea turtles. More specifically, refers to sea turtles in the family *Cheloniidae* or superfamily *Cheloniodea*.

**Chelepistes** a genus of lice in the superfamily Ischnocera. Includes *C. meleagridis* (turkeys).

**chemical** [*kem'i-kəl*] **1.** pertaining to chemistry. **2.** a substance composed of chemical elements, or obtained by chemical processes.

**agricultural c.** chemical used in agriculture. Includes pesticides, anthelmintics, fertilizers, algacides, herbicides, and soil fumigants.

**c. environment** that part of the animals' environment that is composed of chemicals. For farm livestock, this includes fertilizers, defoliant, worm drenches, insect sprays, and adjuvants to feed. For companion animals see household chemical (below).

**household c.** the roster of chemicals that one can expect to find in the average household. Includes insect sprays and repellents, snail bait, rodenticide, garden sprays, human medicines, and the like.

**c. senses** see **olfaction (2)**, **taste**.

**Chemical Abstracts Service Registry Number (CASRN)** a unique number for every drug in all its forms.

**chemiosmosis** movement of ions across a selectively permeable membrane along an electrochemical gradient.

**chemist** [*kem'ist*] **1.** an expert in chemistry. **2.** sometimes used as an abbreviation for pharmaceutical chemist or pharmacist.

**chemistry** [*kem'is-tre*] the science dealing with the identification of the substances composing matter, the investigation of their properties, interactions and the way in which they combine and change to form new substances.

**colloid c.** chemistry dealing with the nature and composition of colloids.

**inorganic c.** that branch of chemistry that deals with inorganic compounds, those not containing carbon and also carbides, oxides of carbon, and carbonates.

**organic c.** the branch of chemistry dealing with organic compounds, those characterized by carbon-carbon bonds, i.e., all compounds containing carbon except oxides of carbon, carbides, and carbonates.

**Chem(o)-** word element. [Gr.] chemical, chemistry.

**chemoattractant** [*ke'mo-ə-trak'tənt*] a chemical (chemotactic) agent that induces an organism or a cell, a leukocyte, to migrate toward it.

**chemoautotroph** [*ke'mo-aw'to-trōf*] organism (typically a bacterium or a protozoan) which obtains energy from chemical reactions and is able to synthesize all the organic compounds it requires from carbon dioxide.

**chemocautery** [*ke'mo-kaw'tər-ē*] cauterization by application of a caustic substance.

**chemodectoma** [*ke'mo-dek-to'mə*] nonchromaffin paraganglionoma; any tumor of the chemoreceptor system, e.g., a carotid body tumor, **aortic body tumor**. Brachycephalic breeds of dogs are predisposed, possibly due to genetic factors and chronic hypoxia.

**chemohormonal** [*ke'mo-hor-mo'nəl*] pertaining to drugs having hormone-like activity.

**chemoimmunization** used in the control of protozoal diseases; consists of simultaneous administration of virulent protozoa and an appropriate babesicide.

**chemokines** [*ke'mo-kīnz*] a large family of *chemotactic cytokines* which stimulate cell movements with roles in inflammation, immune responses, and angiogenesis.

**chemokinesis** [*ke'mo-kī-ne'sis*] the movement of cells in response to chemokines.

**cheminosis** [*kem'e-os-mo'sis*] any disease due to chemical agents.

**chemolithotroph** [*ke'mo-lith'o-trōf*] an organism that derives its energy from oxidation of inorganic compounds and its carbon from carbon dioxide.

**chemolithotrophic** [*ke'mo-lith'o-trō'fīk*] deriving energy from the oxidation of reduced inorganic compounds such as ferrous iron, ammonia, nitrite, phosphite, hydrogen sulfide or hydrogen; said of bacteria.

**chemoluminescence** [*ke'mo-loo'mi-nes'əns*] the emission of light by chemical reactions, most commonly oxidation. (1) Used as a measure of metabolic activity of phagocytic cells, e.g., neutrophils, monocytes and macrophages. (2) A developing technique for marking the state of preservation of food. As the food deteriorates, it begins to emit fluorescent light.

**chemolysis** [*ke-mol'i-sis*] chemical decomposition.

**chemonucleolysis** [*ke'mo-noo'kle-ol'ə-sis*] dissolution of a portion of the nucleus pulposus of an intervertebral disk by injection of a chemolytic agent for treatment of a herniated intervertebral disk.

**chemo-organotroph** [*ke'mo-or'gə-no-trōf*] an organism that derives its energy and carbon from organic compounds.

**chemo-organotrophic** [*ke'mo-or'gə-no-trō'fīk*] deriving energy from the oxidation of organic compounds; said of bacteria. Called also chemoheterotrophic.

**chemopallidectomy** [*ke'mo-pal'i-dek'tə-mē*] destruction of tissue of the globus pallidus by a chemical agent.

**chemoprophylaxis** [*ke'mo-pro'fā-lak'sis*] prevention of disease by chemical means.

**chemoreception** [*ke'mo-re-sep'shən*] the physiological reception of chemical stimuli.

**chemoreceptor** [*ke'mo-re-sep'tər*] any of the special cells or organs adapted for excitation by chemical substances and located outside the central nervous system. There are chemoreceptors in the large arteries of the thorax and the neck; called carotid and aortic bodies. These receptors are responsive to changes in the oxygen, carbon dioxide and hydrogen ion concentration in the blood. When oxygen concentration falls below normal in the arterial blood, the chemoreceptors send impulses to stimulate the respiratory center so that there will be an increase in alveolar ventilation, and consequently, an increase in the intake of oxygen by the lungs. Other chemoreceptors are the taste buds, which are sensitive to chemicals in the mouth, and the olfactory cells of the nose, which detect certain chemicals in the air.

**c. trigger zone (CTZ)** located in the floor of the fourth ventricle; sensitive to motion, uremia, apomorphine. Activation stimulates neurons of the emetic center.

**c. tumors** see **chemodectoma**.

**chemoreflex** [*ke'mo-re'fleks*] a physiological reflex initiated by a chemical substance.





**C-34:** Severe chemosis of the right eye of a goat.

From Stummer, P. Fuchs-Baumgartinger, A., Franz, S., Nell, B. Severe chemosis caused by nephrotic syndrome in a goat: A case report. *Vet J* 175:141-143, 2008. Elsevier.



**C-35:** 'Cherry eye' in a Bulldog.

Johnston, S.A., Tobias, K. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set*, 2nd Edition. Saunders, 2017.

C

**chemosensitive** [ke''mo-sen'si-tiv] sensitive to changes in chemical composition. In the case of cancer cells, sensitive to therapeutic agents.

**chemosensory** [ke''mo-sen'sar-e] relating to the perception of chemical substances, as in odor detection.

**chemosis** [ke-mo'sis] edema of the conjunctiva.

**chemostat** [ke'mo-stat] a vessel that provides constant growth conditions for bacteria.

**chemosterilants** [ke''mo-ster'i-lants] chemicals used to render an animal sterile (infertile). For example, creating sterile male insects in the control of single mating insects such as screw-worm.

**chemosurgery** [ke''mo-sur'jər-e] the destruction of tissue by chemical agents for therapeutic purposes; originally applied to chemical fixation of malignant, gangrenous or infected tissue, with use of frozen sections to facilitate systematic microscopic control of its excision.

**chemosynthesis** [ke''mo-sin'thə-sis] the building up of chemical compounds under the influence of chemical stimulation, specifically the formation of carbohydrates from carbon dioxide and water as a result of energy derived from chemical reactions.

**chemotactic factor** [ke''mo-tak'tik] soluble molecules that attract and guide the movement of cells such as bacteria, sperm cells, embryonic cells, and phagocytes.

**chemotaxin** [ke''mo-tak'sin] a substance that induces chemotaxis.

**chemotaxis** [ke''mo-tak'sis] taxis or directional movement of cells in response to a chemical signal.

**leukocyte c.** the response of leukocytes to products formed in immunological reactions, wherein leukocytes are attracted to and accumulate at the site of the reaction; a part of the inflammatory response. See also **inflammation**.

**chemotherapy** [ke''mo-ther'ə-pe] the treatment of illness by chemical means; that is, by medication.

**adjuvant c.** given after surgical removal or radiation therapy of a primary tumor, to slow growth of metastases or in some cases to cure.

**cancer c.** the use of antineoplastic agents in the treatment of malignant growths; the primary choice for hematopoietic tumors and also employed where the preferred treatment by other means, such as surgical removal, is not possible. A variety of malignancies in dogs and cats have been successfully managed with some of the chemotherapeutic agents used in the treatment of cancer in humans. See also **protocol** (2).

**combination c.** several drugs are used in parallel or in sequence. See also **COP** (2), **DMAC**, **MOPP**, **VAC**, **VMC**.

**metronomic c.** small doses of chemotherapy given daily instead of maximally tolerated doses given at longer intervals, targeting the tumor blood supply and modulating the immune response to the tumor rather than killing the cancer cells directly.

**multimodal c.** chemotherapy combined with other forms of treatment, e.g., surgical excision.

**neoadjuvant c.** given prior to surgery or radiotherapy, generally to reduce tumor size.

**c. protocol** see **protocol** (2).

**rescue c.** single drugs or drug combinations that typically are not found in standard protocols and are reserved for use in the setting of drug resistance.

**chemotic** [ke-mot'ik] pertaining to or affected with chemosis.

**chemotrophic** [ke''mo-tro'fik] deriving energy from the oxidation of organic (chemo-organotrophic) or inorganic (chemolithotrophic) compounds; said of bacteria.

**chemotropism** [ke-mot'ro-piz-əm] tropism in response to the influence of chemical stimulation.

**chenodeoxycholic acid** [ke''no-de-ok''se-kol'ik] a primary bile acid, C<sub>24</sub>H<sub>40</sub>O<sub>4</sub>, administered as an anticholelithogenic agent. Called also **chenodiol**.

**chenodiol** [ke''no-di'ol] see **chenodeoxycholic acid**.

**Chenopodium** [ke''no-po'de-əm] a plant genus of the Chenopodiaceae family; many plants in the genus contain soluble oxalates and can cause acute oxalate poisoning. Includes *C. album* (fat hen, lambsquarters, white goosefoot), *C. atriplicinum* (*Scleroblitum atriplicinum*, lambstongue). Other plants can cause cyanide poisoning, e.g., *C. carinatum* (green crumbweed, Boggabri), *C. glaucum* (oak-leaved goosefoot), *C. melanocarpum* (black crumbweed), *C. rhadinostachyum* (*Dysphania radinos-tachya*, *C. chenostachyum*, mouse-tailed crumbweed).

**C. ambrosioides** contains wormseed oil; previously used as an anthelmintic. Capable of causing gastroenteritis; oil of chenopodium has caused deafness in dogs and cats at the therapeutic doses if not given with a purgative. Called also *Dysphania ambrosioides*, *C. antheminticum* var. *ambrosioides*, wormseed.

**Cherax** a genus of crayfish found in Australia.

**cherry** [cher'e] common name for many plants, mostly in the genera *Prunus* and *Physalis*, but also in the name of plants of other genera. Includes bird, fire, pin and wild red cherry (*Prunus pennsylvanica*, *P. padus*), black cherry (*Prunus serotina*), finger cherry (*Rhodomyrtus macrocarpa*), Jerusalem, madeira winter, and winter cherry (*Solanum pseudocapsicum*), wild cherry (*Prunus serotina*), wild ground cherry (*Physalis*).

**cherry eye** [cher'e i] lay term for eversion of the nictitating membrane (third eyelid) caused by hypertrophy and prolapse of the gland of the third eyelid, over the free margin of the membrane.

**chervil** see *Chaerophyllum*.

**Chesapeake Bay retriever** a medium-sized (55–80 lb), muscular dog with short, thick, slightly wavy, water-repellent coat and woolly undercoat. The color is distinctive: shades of brown, sedge (yellow to chestnut) and 'deadgrass' (faded tan to dull straw color). The eyes are yellow-amber. Hereditary cataracts occur in the breed. Called also Chessie. The official state dog of Maryland.

**chest** [chest] see **thorax**, **thoracic**, **flail chest**.

**c. compression** a means of external cardiac massage; most likely to be effective in small dogs and cats, but very difficult in large animals.

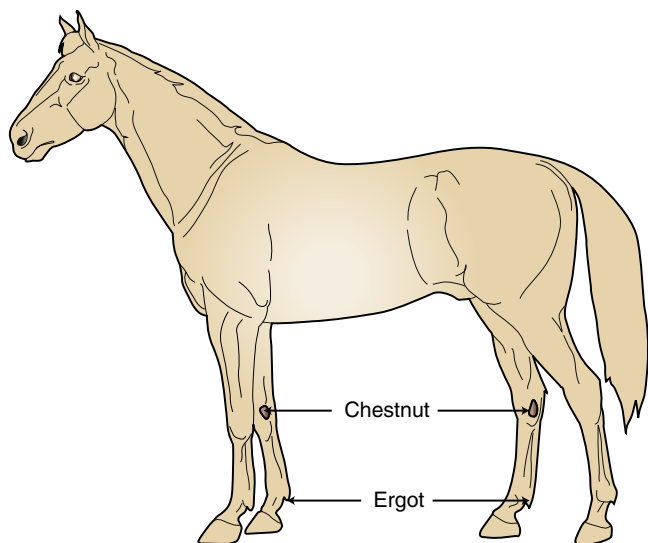
**c. wound** common in horses and cattle, damage to the underlying chest wall with communication to the pleural cavity and pneumothorax being the main danger.

**Chester White pig** a fat, white breed of meat pigs developed in the US. Known originally as Chester County White, and subsequently as Ohio Improved Chester.

**chestnut** [chest'nət] **1.** flattened, oval masses of horn on the medial surface of the forearm and the hock of the horse. Those on the forelimb are just proximal to the carpus, those on the hindlimb are at the distal end of the tarsus. In donkeys the hindlimb chestnut is very small, in mules it is absent. They are regarded as being vestiges of the carpal and tarsal pads. **2.** fruit of the chestnut tree *Castanea sativa*. **3.** a popular coat color in horses. A deep reddish brown varying from a red dominance or light chestnut, to a heavier brown tone, liver or deep chestnut. Mixed with white hairs is a chestnut roan.

**c. rule** mating two chestnut horses will not produce offspring with black, gray, brown or bay coat colors.

**c. slough** occurs in cattle when limb badly swollen or injured in grass fire.



**C-36:** Location of ergots and chestnuts in horses.

Colville, T., Bassett, J. *Clinical Anatomy and Physiology for Veterinary Technicians*, 3rd Edition. Mosby, 2015.



**C-37:** An adult *Cheyletiella* mite.  
From Kummel, B.A., *Color Atlas of Small Animal Dermatology*, Mosby, 1989.

**Cheviot** long-wooled, meat sheep from the UK, characterized by a prominent Roman nose, woolless face, polled head, and medium-quality wool.

**chevrotain** mammals in the family Tragulidae in the infraorder Artiodactyla. They are very small (6–15 inches high), hornless ungulates and have protruding canine teeth that serve as tusks. Known also as mouse-deer. The water chevrotain (*Hyemoschus aquaticus*) is the only African species and also known as the fanged deer, with the other species native to Asia.

**chewing** see **mastication**.

**c. disease** see **nigropallidal encephalomalacia**.

**chewing the cud** see **rumination**.

**Cheyletiella** [*ki''lā-te-el''ā*] a genus of mites in the family Cheyletidae. Host specificity is not certain; in general *C. blakei* infests cats, *C. parasitovorax* infests rabbits and hares, and *C. yasguri* infests dogs. Cause **cheyletiellosis**.

**cheyletiellosis** [*ki''lā-te''el-o''sis*] infestation by *Cheyletiella* spp. Causes a mild, scaling dermatitis in dogs and cats with variable pruritus; a more severe, pruritic dermatitis, mainly on the back of rabbits, and intensely pruritic vesicles in humans. Called also cheyletiella dermatitis, “walking” dandruff.

**Cheyletoides uncinata** *Syringophilus uncinatus*.

**Cheyletus eruditus** house dust mite capable of causing dermatitis in indoor companion animals.

**Cheyne–Stokes respiration** [*chān stōks''*] abnormal breathing pattern characterized by rhythmic waxing and waning of the depth of respiration; the animal breathes deeply for a short time and then breathes very slightly or stops breathing altogether (apnea).

**CHF** abbreviation for congestive heart failure.

**chi** [*kī*] [X, χ] the twenty-second letter of the Greek alphabet.

**chi'** see **Qi**.

**chi-square distribution** in statistical terms this is said of a variable with K degrees of freedom if it is distributed like the sum of the squares of K independent random variables each of which has a normal distribution with mean zero and variance of 1.



**C-38:** Cheyletiellosis in a cat with diffuse scaling and erythema.

From Hnilica, K.A., *Small Animal Dermatology: A Color Atlas and Therapeutic Guide*, 4th ed, Elsevier, 2017.



**C-39:** Chianina dual-purpose bull.

From Sambras, H.H., *Livestock Breeds*, Mosby, 1992.

**chi-squared test** one of the statistical techniques for determining (1) if there are significant differences between two or more series of frequencies or proportions and (2) whether one series of proportions is significantly different from a control series. Pearson’s chi-square is used for unmatched data and McNemar’s chi-square for matched data.

**Chiana** a very tall, white with black points and mucosae, breed of dairy cattle, used also for draft. Called also Chianina.

**Chiangus** a black, polled beef breed of cattle produced by crossing Chianina and Angus cattle.

**Chianina cattle** Italian spelling for the **Chiana** breed of white with black points, meat cattle.

**Chiari-like malformation** [*ke-ah''rē*] in humans, a congenital abnormality of the brain in which the cerebellar tonsils descend through the foramen magnum and may be associated with abnormal flow of cerebrospinal fluid. A similar, but not identical, condition most like the Chiari-type 1 malformation of humans, is found in Cavalier King Charles spaniels, and possibly Brussels griffon dogs, with hypoplasia of the occipital fossa, cerebellar herniation, and **syringomyelia**. Called also caudal occipital malformation.

**chiasm** [*ki''az-əm*] a decussation or X-shaped crossing.

**optic c.** a structure in the forebrain formed by the decussation of fibers of the optic nerves from the left and right retina, the degree of **decussation** depending on the species.

**chiasma** [*ki-az''mā*] pl. *chiasmata* [L., Gr.] chiasm; in genetics, the points at which members of a chromosome pair are in contact during the prophase of meiosis and because of which recombination, or crossing over, occurs on separation.

**c. formation** the process by which a chiasma is formed; it is the cytological basis of genetic recombination, or crossing over.

**chibata** *Arrabidaea bilabiata*.

**CHIC** Canine Health Information Center.

**Chicago disease** **blastomycosis**.

**chick** [*chik*] abbreviation for **chicken** (1). The term is usually used for recently hatched chickens until their yellow down feathers are replaced with white ones.

**chicken** [*chik''ən*] a young domestic fowl up to the age at which the bird can survive without supplementary heat and feed. In some poultry industries that is about 4 weeks. However, the endpoint varies with the type of husbandry practiced. Called also chicks. In the North American poultry industry, a chicken is any domestic fowl up to about 20 weeks of age.

**c. anemia** bone marrow hypoplasia with thymic and bursal atrophy with concomitant immunosuppression in young chickens caused by a Gyrovirus. The disease is characterized by weakness, pallor and a high mortality rate. Secondary bacterial, viral, and fungal infections are commonplace including hemorrhagic syndrome, anemia, dermatitis, and



blue wing disease. Growth retardation and mortality rate can pose a significant threat to industry.

**c. body louse** *Menacanthus stramineus*.

**c. bronchitis** see avian infectious **bronchitis**.

**day old c's** newly hatched chicks are delivered in large flat cardboard boxes from the multiplier to the broiler grower—the universal means of shipping live chickens.

**c. edema disease** a disease of broiler chickens fed on a diet containing fat contaminated by one of several toxic factors which cause hepatic necrosis. It is manifested clinically by drooping, dyspnea, death. At necropsy there are large accumulations of fluid in body cavities and a swollen liver and kidneys. The disease is caused by a toxic fat containing dioxin added to the ration of the birds. Called also toxic fat disease.

**c. embryo chondrodystrophy** caused by nutritional deficiency of manganese. Characterized by short, thick legs, short wings, parrot beak, retarded down and body growth.

**c. embryo lethal organ (CELO) virus** see **quail bronchitis**.

**c. hemorrhagic syndrome** see **inclusion body hepatitis**.

**c. pox** see *Avipoxvirus*.

**sticky c.** sticky, edematous chickens caused by hatching at too low or too high humidities.

**chickpea** [*chik'pe*] a drought-resistant legume with a 20% protein content in the seeds. Used for livestock and human consumption. Called also *Cicer arietinum*, gram, garbanzo.

**chickweed** common name for a number of plants, e.g., *Stellaria media*.

**tropical c.** *Drymaria diandra*.

**chiclero ulcer** leishmaniasis, particularly *L. eishmania braziliensis*.

**chicory** common chicory, see *Cichorium intybus*.

**California c.** see *Rafinesquia californica*.

**chief cells** the zymogenic or peptic cells of the gastric mucosa that secrete pepsinogen.

**chief complaint** the most apparent clinical sign in a patient's illness, generally viewed by the owner as the main reason for seeking veterinary advice. Called also cardinal sign, key sign. Sometimes abbreviated as CC.

**chigger** [*chig'ər*] the six-legged larva of mites of the family Trombiculidae. See *Trombicula*, **trombiculosis**. Some species are vectors of the rickettsiae of scrub typhus of humans. Called also chigger mite, harvest mite and red bug.

**North American c.** see *Eutrombicula alfreddugesi*.

**chigoe** [*chig'o*] the sand flea, *Tunga penetrans*, of tropical and subtropical America and Africa. Called also chigger or chigoe flea. Not to be confused with chigger mites. See also **chigger**.

**Chihuahua** a very small (1–6 lb) dog originating in Mexico. It has a prominent, "apple dome" skull, large eyes, large erect ears and medium-length tail carried over the back. There are long coat and smooth coat varieties in many colors. The breed is predisposed to hydrocephalus, and the presence of an open fontanelle (molera) is allowed for in the breed standard.

**chill** [*chil*] see **rigor**, **hypothermia**.

**Chillagoe horse disease** esophageal ulceration caused by *Crotalaria aridicola* or *C. medicaginea* (in Australia).

**chilled meat** meat preserved by chilling to and maintaining at no more than 45°F (7°C) or 37°F (3°C) for offal, immediately after slaughter. Quick chilling has many advantages and maintenance of a low humidity is favored because of the prevention of mold growth.

**Chilodonella** [*ki'lō-dā-nel'ə*] a genus of protozoa; *C. piscicola* and *C. hexasticha* are pathogenic for fish. See **chilodonellosis**.

**chilodonellosis** disease of freshwater fish caused by the protozoa *Chilodenella* spp. Characterized by hyperplasia of the epithelium of the gill and difficult respiration, and infection of the skin.

**Chilomastix** [*ki'lō-mas'tiks*] a genus of parasitic protozoa found in the intestines of vertebrates. Members of the order Trichomonadida.

*C. bettencourti*, *C. caprae*, *C. cuniculi*, *C. equi*, *C. gallinarum*, *C. intestinalis*, *C. wenrichi* non pathogenic protozoa found in the ceca of, respectively, rodents, goats, rabbits, horses, chickens, turkeys, and guinea pigs.

**Chilomitus** non pathogenic protozoa of the order Trichomonadida.

*C. caviae*, *C. connexus* found in the cecum of the guinea pig.

**Chilopoda** [*ki-lōp'ə-də*] a class of the phylum Arthropoda embracing the centipedes. See also **Myriapoda**.

**chimaera** [*ki-mēr'ə*] chimera.

**chimera** [*ki-mir'ə*] **1.** a mythological, fire-spouting monster with a lion's head, goat's body and serpent's tail. **2.** an animal whose body contains different cell populations derived from different zygotes of the same or different species, occurring spontaneously or produced artificially; i.e., an individual composed of a mixture of genetically different cells.



**C-40:** "Fat-chin" in a cat.

**c. protein** see **fusion protein**.

**chimerism** [*ki-mēr'iz-əm*] the state of being a chimera; the presence in an animal of cells of different origin, e.g., XX/XY chimerism.

**blood c.** twins that have a common placental circulation develop immune tolerance. Each of them is then a chimera. When the twins are of opposite sex, the female twin may be a **freemartin**. Sterilization of the female is brought about by the transfer of H-Y antigen to the female gonad.

**Chimonanthus praecox** contains the alkaloid calycanthine, a central nervous system toxin, recorded as causing ataxia, convulsions and recumbency in goats.

**chimpanzee** [*chim-pan-ze'*] (*Pan troglodytes*) a primate in the family Hominidae (great apes and humans); closely related to the **bonobo**, native to sub-Saharan Africa. A large anthropoid ape with a highly developed brain. Dark colored, 5–6 ft high, with large out-turned ears, they are arboreal and live in families. Used widely in biomedical research.

**chin** [*chin*] the anterior prominence of the lower jaw; the mentum.

**fat-c., c. edema** lower lip swelling or nodules; part of the feline **eosinophilic granuloma complex**.

**stripped c.** see **labial avulsion**.

**chin-ball** a ball worn in a harness fitted to a ram at mating time; it rotates through a reservoir of brightly colored paste which is smeared onto the rump of ewes that stand for the ram in its early seeking activity of resting its chin on the ewe just prior to mounting.

**China clay** see **kaolin**.

**chinaberry** [*chi'nə-ber'ry*] *Melia azederach*.

**chinchilla** small South American rodent valued for its silver-gray fur, stocky and crepuscular, they are native to the Andes. Includes long-tailed chinchilla (*Chinchilla lanigera*), of which the descendant is popular as a pet, and the short-tailed chinchilla (*C. chinchilla*), both species endangered.

**Chinchilla cat** a coat color variety of longhaired cats that is white with black tips.

**Chinchilla laniger** member of the Chinchillidae family of rodents. See **chinchilla**.

**Chinchilla rabbit** a rabbit whose silky coat closely resembles that of the real *Chinchilla laniger*; popular for fur and meat, as well as exhibition. There are three sizes or varieties recognized as separate breeds: American Chinchilla, Standard Chinchilla, and Giant Chinchilla.

**Chinchilla Rex** see **Rex (2) rabbit**.

**chine** the animal's backline.

**c. bone** butcher's term for parts or all of the vertebral column.

**Chinese black and white cattle** black and white, Chinese, dual-purpose cattle, originated from Dutch Holstein.

**Chinese blistering beetle** see *Mylabris phalerata*.

**Chinese crested** a very small (6–12 lb), fine-boned dog with a hairless body. Small numbers of long hairs are present on the lower legs (socks), tail (plume) and the head (crest). The hairlessness is a dominant trait and specimens of the breed are heterozygotes, the homozygous dominant state being lethal prenatally. The completely haired offspring of crosses (homozygous recessive) are called 'powderpuffs'.

**Chinese evergreen** see *Aglaonema*.

**Chinese Shar pei** see **Shar-Pei**.

**Chinese traditional medicine** see **traditional Chinese medicine**.

**Chinese yellow** Chinese draft cattle of zebu origin. Usually yellow, also brown, red or black in color.

**chinkerinchee, chincerinchee** see *Ornithogalum thrysoides*, *Ornithogalum* spp.





**C-41:** Chinese crested dog. A normally hairless breed.

From Hnilica, K.A., *Small Animal Dermatology: A Color Atlas and Therapeutic Guide*, 4th ed, Elsevier, 2017.

**Transvaal c.** *Ornithogalum saundersiae*.

**vlei c.** *Ornithogalum ornithogalooides*.

**Chinook** a medium-sized (55–90 lb) rare breed of sled dog originating in the Northeast of the US. The tawny coat is medium length, but unlike that of spitz-type dogs. The numbers are small. The official state dog of New Hampshire.

**chintz cat** see **tortoishshell**.

**chip fractures** [*chip*] small fragments of bone, or bone and cartilage (osteochondral fragments), removed from the parent bone. Usually resulting from a traumatic event, the degree of initial pain can be variable but may result in significant lameness, pain, and swelling. In sport horses, usually involve one of the carpal bones.

**chipmunk** a small, omnivorous rodent in the genus *Tamias*, of the Sciuridae (squirrel) family. Native to North America, with exception of the Siberian chipmunk (*Eutamias sibiricus*), they have longitudinal stripes along the back, but lacking the bushy tail, silky coat, and tufted ears; omnivorous, they mostly forage on the ground, climb trees for nuts, and make burrows for sleeping and to store food; commonly kept as pets.

**Chippendale legs, front** a term used in dogs to describe front legs that turn out at the elbows and feet, but with the carpi close together, resembling Chippendale-style furniture legs.

**Chirodiscooides** cutaneous mite of the suborder Sarcoptiformes. Includes *Chirodiscooides caviae* (guinea pigs).

**chiropractic, chiropracty** [*ki'ro-prak'tik*] a system of treating disease by manipulation of the vertebral column. Chiropractic is based on the theory that spinal pain and some diseases are caused by pressure on the nerves because of faulty alignment of the bones, especially the vertebrae, and that the nerves are thus prevented from transmitting to various organs of the body the neural impulses for proper functioning. Acting on the theory that the pinching of nerves is the critical factor in the pathogenesis of disease, the chiropractor manipulates various parts of the spine in treating the complaint. If the patient is suffering from a subluxated vertebra, the manipulation may bring pain relief.

**chiropracty** [*ki'ro-prak'te*] see **chiropractic**.

**Chiroptera** [*ki-rop'tə-rə*] the order of **bats**; mammals with frontlimbs modified into wings that enables true flight. There are two suborders: Megachiroptera (fruit bats, flying foxes) and the more numerous Microchiroptera, which are usually insectivorous and have poor vision, relying on echolocation.

**chirurgical** arising as a result of a surgical procedure.

**chirurgery** see **surgery**.

**chisel** [*chis'əl*] an instrument designed to be driven by a hammer to pare away at a surface. It has a cutting edge across the distal end with a bevel on one of its sides.

**army c.** a heavyweight steel chisel used for paring of the surface of bones.

**dental c.** see **dental hoe**.

**obstetric c's** have been largely discarded because of the danger associated with their use in fetotomy. A semisharp spatula may be used for the same purposes.

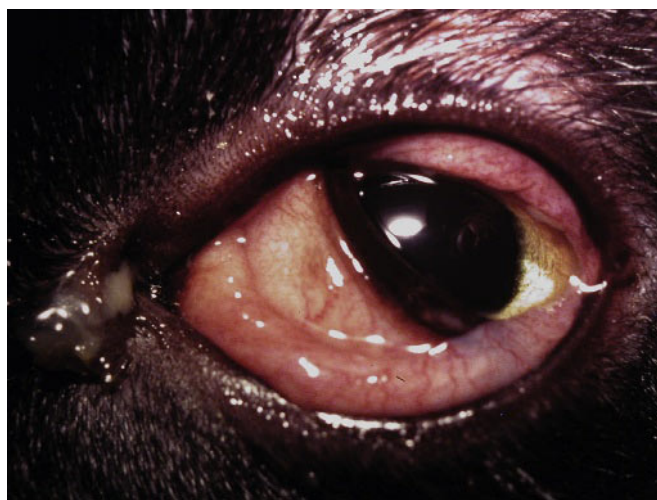
**symphysiotomy c.** used to divide the pubis at the pubic symphysis in immature heifers carrying large calves. The chisel point is angled inward toward the center of the blade so that the cutting surface will stay on the bone when it disappears from view.

**chitin** [*ki'tin*] a polysaccharide of *N*-acetylglucosamine, the principal constituent of shells (exoskeleton) of arthropods and found in certain fungi.

**c. synthase inhibitors** used as antifungals and for control of flea infestation. See also **lufenuron**.

**chitinoclastic** destructive of chitin.

**chitinous** [*ki'tin-əs*] made of **chitin**.



**C-42:** Acute chlamydial conjunctivitis in a cat. Marked hyperemia and chemosis are present, as well as serous to mucopurulent ocular discharge. Sykes, *Canine and Feline Infectious Diseases*. Elsevier, 2014.

**chitterlings** cross-sectional rings of the large intestine of the pig; usually deepfried quickly to a crackling, crisp delicacy.

**chlamydemia** [*klam'i-de'me-ə*] the presence of chlamydiae in the blood.

**Chlamydia** [*klam'i-de'me-ə*] a genus of obligately intracellular bacteria in the family *Chlamydiaceae*. Now includes species that were classified in the genus *Chlamydophylia*.

**C. abortus** causes **enzootic** abortion of ewes. Previously called *Chlamydia psittaci* and *Chlamydophila abortus*.

**C. caviae** causes conjunctivitis in guinea pigs. Previously called *Chlamydia psittaci* and *Chlamydophila caviae*.

**C. felis** cause of upper respiratory tract disease, principally involving conjunctivitis, in cats. Also recovered from the reproductive tract, where its pathogenic significance is uncertain. Previously called *Chlamydia psittaci* and *Chlamydophila felis*.

**C. muridarum** associated with respiratory tract infections in mice and hamsters. Previously classified as *C. psittaci*.

**C. pecorum** causes sporadic bovine **encephalomyelitis**, but also associated with enteritis, polyarthritis, pneumonia, and conjunctivitis in ruminants, and reproductive tract disease and conjunctivitis in koalas. Previously classified as *Chlamydia psittaci* and *Chlamydophila pecorum*. Also causes conjunctivitis in sheep, where it was previously called *Colesiota conjunctivae*.

**C. pneumoniae** different biovars infect horses, koalas, and humans. Pathogenic significance in koalas and horses is uncertain, but in humans it is a significant cause of pneumonia. Previously classified as *Chlamydia psittaci* and *Chlamydophila pneumoniae*.

**C. psittaci** cause of psittacosis and ornithosis, systemic disease of psittacine and other avian species, including domestic poultry. Also associated with abortion in mares. Zoonotic. Previously called *Chlamydia psittaci*.

**C. suis** associated with enteritis, pneumonia, and conjunctivitis in pigs. Previously classified as *C. psittaci*.

**chlamydia** [*klə-mid'e-ə*] pl. *chlamydiae* any member of the family *Chlamydia*

**Chlamydiaceae** [*klə-mid'e-a'se-e*] a family of obligately intracellular gram-negative bacterial pathogens that parasitize the host cell for ATP. Outside the host cell they exist as elementary bodies, which are 200–300 nm in diameter, have a rigid cell wall and adhere to host cells and are phagocytosed. Inside the host cell phagosome, they form larger reticulate bodies, which replicate, then form elementary bodies, which are released by cell lysis. Cultivable in cell cultures and the yolk sacs of chick embryos. Contains one genus, *Chlamydia*. Species formerly classified in the genus *Chlamydophila* have been returned to the genus *Chlamydia*.

**chlamydial** [*klə-mid'e-ə*] pertaining to members of the family *Chlamydiaceae*.

**c. abortion** abortion in cows, ewes, sows, and goat does caused by *Chlamydia abortus* and *C. pecorum*. See **enzootic** abortion of ewes.

**Chlamydiales** [*klə-mid'e-a'lez*] an order of bacteria in the phylum *Chlamydiae*. There are four families, *Chlamydiaceae*, *Parachlamydiaceae*, *Waddliaceae*, and *Simkaniaceae*.

**chlamydiosis** [*kla-mid''e-o'sis*] any disease or infection caused by members of the family *Chlamydiaceae*; takes many forms including: **psittacosis** and **ornithosis** in birds, placentopathy manifested by abortion in **enzootic** abortion of ewes, sporadic bovine encephalomyelitis, pneumonitis in all species except pig, conjunctivitis in sheep, cats and laboratory rodents, **polyarthritis** in sheep, cattle, horse, enteritis in cattle and lagomorphs, and septicemia in **epizootic** chlamydiosis in lagomorphs.

**Chlamydonema** see *Physaloptera praeputialis*.

**Chlamydotheca** [*kla-m''i-dof''i-la*] a genus of obligately intracellular bacteria in the family *Chlamydiaceae*. Now assigned to the genus *Chlamydia*.

**chital deer** (*Axis axis*) medium-sized deer native to India, light brown to golden colored, dorsal body covered in white spots, with white abdomen and throat. Antlers, present only on males are three-pronged and large. Chital were introduced to several Hawaiian islands for hunting, where they are abundant; low numbers present in other countries, including Australia.

**chlamydospore** [*kla-m''i-do-spor''*] a thick-walled intercalary or terminal, usually asexual, fungal spore formed by the rounding-up of a cell; it is not shed. Formed by differentiation of hyphae; seen in *Candida* and *Histoplasma* spp.

**chloasma** [*klo-az''ma*] see **melasma**.

**chloral** [*klor''al*] **1.** an oily liquid with a pungent, irritating odor, prepared by the mutual action of alcohol and chlorine; used in the manufacture of chloral hydrate and DDT. **2.** vernacular contraction of the term chloral hydrate.

**c. betaine** formed by the reaction of chloral hydrate with betaine; used as a sedative.

**c. hydrate** a hypnotic and anesthetic agent not commonly used. Chloral hydrate may be administered orally but is erratic and slow-acting in its effects by this route. Intravenously the effects are immediate; injection outside the vein causes a severe cellulitis usually terminating in an extensive slough of tissue. Chloral hydrate is a poor analgesic and severe depressant of respiratory and vasomotor centers in the medulla.

**c. hydrate and guaiacol glyceryl ether** an anesthetic combination not commonly used in horses; combines muscular relaxation with hypnotic effect.

**c. hydrate and magnesium sulfate** an anesthetic preparation not commonly used in horses. Combines the hypnotic effect of chloral and the neuromuscular blocking effect of magnesium.

**c. hydrate, magnesium sulfate and pentobarbital sodium** see **Equithesin**.

**$\alpha$ -chloralose** a derivative of chloral hydrate that was used as a sedative but has been replaced by safer and more effective drugs.

**chloramben** a hormonal selective herbicide, relatively nontoxic if used correctly. Massive doses cause anorexia, weight loss, limb weakness and recumbency.

**chlorambucil** [*klor-am''bu-sil*] a nitrogen mustard alkylating agent used mainly in dogs and cats for treating leukemias and lymphomas. Adverse effects include bone marrow suppression.

**chloramine** [*klor''a-men*] a chlorine disinfectant, used for wound treatment, in drinking water. Called also chloramine T.

**chloramine B** [*klor''a-men*] sodium benzenesulfochloramine.

**chloramphenicol** [*klor''am-fen''i-ko*] a broad-spectrum antibiotic with extensive therapeutic activity against aerobic and anaerobic gram-positive and gram-negative bacteria, rickettsiae, chlamydia, and anaplasmae. Side effects in animals are uncommon, but its use in food-producing animals is discouraged or prohibited because of the danger of residues in meat or milk intended for humans. Chloramphenicol palmitate is an orally administered suspension and chloramphenicol sodium succinate is water soluble for parenteral use.

**chlorate** [*klor''at*] as sodium or potassium chlorate, one of the original chemical herbicides but now largely superseded. Animals may be poisoned if they eat pasture or plant contaminated by the spray or the dry powder. It may also be administered accidentally because of its similarity to sodium chloride. Causes gastroenteritis with diarrhea and methemoglobinemia in ruminants similar to nitrate/nitrite poisoning.

**chlorazanyl** an aminouracil diuretic.

**chlorazepate dipotassium** see **chlorazepate**.

**chlorbenside** an acaricide used to spray trees and crops; has low toxicity but heavy, continued use may cause hepatic insufficiency.

**chlorbutol** [*klor-bu''tol*] chlorobutanol.

**chlorcyclizine** [*klor-si''kli-zen*] a histamine type 1 ( $H_1$ )-receptor antagonist (antihistamine) used in the treatment of allergic conditions.

**chlordan** [*klor''dan*] see **chlorinated hydrocarbons**.

**chlordiazepoxide** [*klor''di-az''e-pok''sid*] an early benzodiazepine derivative; used as a tranquilizer with activity similar to diazepam.

**Chlorella** [*klo-rel''e*] a green alga, thought to be the origin of the achloric alga *Prototheca* spp., occasionally an animal pathogen. See *Prototheca*.

**chloremia** [*klor-e''me-e*] **hyperchloremia**.

**chlorfenethol** an acaricide used on agricultural crops and trees. It has a low toxicity but can cause depression, diarrhea, dyspnea, salivation, and lacrimation.

**chlorfenvinphos** [*klor-heks''i-den*] see **organophosphorus compound**.

**chlorhexidine** a bisbiguanide antiseptic with antibacterial, antifungal and some antiviral activity; used in skin cleansers for surgical scrub, preoperative skin preparation, cleansing skin wounds and teat dips. Used as the acetate, gluconate or hydrochloride salts. Familiar proprietary names are Hibitane, Nolvasan.

**c. digluconate** used as a sclerosing agent for chemical contraception in dogs and cats by injection into the testes, epididymides or deferent ducts.

**c. teat dip** 0.5%–1.0% chlorhexidine in polyvinylpyrrolidone or as 0.3% solution in water.

**chlorhydria** [*klor-hi''dre-e*] an excess of hydrochloric acid in the stomach.

**chloride** [*klor''id*] **1.** a salt of hydrochloric acid; any binary compound of chlorine. **2.** the principal anion in extracellular fluid and gastric juice. Because of its domination of the anions in extracellular and intravascular fluid, it has profound importance for acid–base balance and for the regulation of osmotic pressure in these fluid compartments.

**c. shift** diffusion of chloride ions from the plasma into the erythrocytes to compensate for the loss of bicarbonate ions from the cells as a result of carbon dioxide metabolism. Called also Hamburger shift.

**chloridorrhea** [*klor''i-dor''e-e*] diarrhea with an excess of chlorides in the stool.

**chloriduria** [*klor''i-du''re-e*] **chloruria**.

**chlorinated hydrocarbons** [*klor''i-nat''ed*] insecticidal and fungicidal substances, of great value in the past, but most are no longer allowed for use in agriculture and food production or companion animals because of their persistence in animal tissues, entry into the human food chain, and their persistence in the environment. Some still find industrial, garden, companion animals, and non food animal use, and poisoning of animals can occur. Poisoning is manifested by nervous excitement, tremor, convulsions, and death. Members of this chemical group banned from use in the UDA include aldrin, benzene hexachloride, dieldrin, DDT, heptachlor, endrin, endosulfan, isodrin, methoxychlor, mirex, chlordecone, and chlordane.

**chlorinated naphthalenes** [*klor''i-nat''ed*] additives to lubricants, fire-retardants and insulants. They are poisonous and on low-level intake over long periods cause hypovitaminosis A manifested by cutaneous hyperkeratosis, emaciation and death. See also **hyperkeratosis**.

**chlorine (Cl)** [*klor''en*] a gaseous chemical element, atomic number 17, atomic weight 35.453. It is a disinfectant, decolorizer, and irritant chemical. It is used for disinfecting, fumigating, and bleaching, either in an aqueous solution or in the form of chlorinated lime. See also **hypochlorite**, **chloramine T**.

**c. dioxide** used in the aging of flour to make it more suitable for baking. Process does not produce toxic amino acid derivatives as other agents do. See also **agene process**.

**c. disinfectants** compounds that have a high content of free chlorine and exert a disinfectant effect by releasing the chlorine.

**c. gas** liberated from chlorine disinfectants and in factory effluents. Causes irritation to respiratory mucosa up to the point of pulmonary edema.

**Chloriopsoroptes** a genus of mange mites in the family Psoroptidae. Includes *C. kenyensis* (African buffalo).

**Chloris** a genus of grasses in the family Poaceae; some contain cyanogenic glycosides but have not caused cyanide poisoning. Includes *C. distichophylla* (weeping fingergrass), *C. truncata*, *C. ventricosa* (windmill grass).

**C. gayana** rarely contains potentially toxic amounts of nitrate and causes nitrite poisoning of ruminants if lush. Called also Rhodes grass. **C. truncata** causes photosensitization, possibly through steroidal saponins. Called also fingergrass, windmillgrass.

**chlorite** [*klor''it*] a salt of chlorous acid; disinfectant and bleaching agent.

**chlorleukemia** [*klor-loo-ke''me-e*] see **chloroma**.

**chlormadinone acetate** [*klor-mad''i-non*] a progestagen with antigonadotropic, antiestrogenic and antiandrogenic activity. Used for prevention of estrus in small animals.

**chlormequat chloride** a low toxicity plant growth regulator.

**chlormerodrin** [*klor-mer''o-drin*] a mercurial diuretic. Labeled with  $Hg^{-197}$  or  $Hg^{-203}$  it was previously used to assess renal function.

**chlormezanone** a nonbarbiturate sedative, used as a muscle relaxant and tranquilizer.

**chloro-acetoluidine (2-chloro-4-acetoluidine) poisoning** used commercially to poison bird pests.



**chloro-p-toluidine (3-chloro-p-toluidine) poisoning** used commercially to poison bird pests, particularly starlings and gulls.

**chloroanisoles** substances liberated from wood preservatives by bacteria when shavings of the wood are used in deep litter. They taint meat of animals housed on the litter.

**chloroazodin** a chlorine-releasing antiseptic and disinfectant, similar to chloramine T.

**chlorobenzilate** an organochlorine insecticide used on agricultural crops and plants. It has a high half-life and toxicity to aquatic life. No longer used in the US.

**chlorobenzoic acid** [klor-ben-zo'ik] a hormonal herbicide, safe for animals if used according to instructions. Heavy dosing may cause anorexia, weight loss, and muscle weakness.

**chlorobutanol**. [klor'o-bu'tə-nol] an antimicrobial preservative used in pharmaceutical preparations. Called also chlorbutol.

**chlorodyne** an antiquated remedy for diarrhea in humans and dogs. Similar to tinct. chlor. et morphinae co. Contains liquid opium extract, chloroform, proof spirit, glycerine, and capsicum.

**1-(2-chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU)** see **lomustine**.

**chloroform** [klor'ə-form] CHCl<sub>3</sub>; a liquid with an ethereal odor and sweet taste, used as a solvent; once used widely as an inhalation anesthetic and analgesic, and as an antitussive, carminative, and counterirritant. An effective but dangerous anesthetic used commonly at one time especially in horses. Requires a proper mask. Prolonged anesthesia often results in severe liver damage.

**chlorolabe** the pigment in retinal cones that is more sensitive to the green portion of the spectrum than are the other pigments (cyanolabe and erythrolabe).

**chloroleukemia** [klor'o-loo-ke'me-ə] see **chloroma**.

**chloroma, chlorolymphosarcoma** [klor-o'mə] a malignant, green-colored tumor arising from myeloid tissue, associated with myelogenous leukemia, and occurring anywhere in the body. See also **granulocytic sarcoma, eosinophilic leukemia**.

**Chloromycetin** [klor'o-mi-se'tin] a trademarked preparation of **chloramphenicol**, a broad-spectrum antibiotic.

**chloromyeloma** [klor'o-mi'ə-lo'mə] chloroma with multiple growths in bone marrow.

**chloropexia** [klor'o-pek'se-ə] the fixation of chlorine in body tissues.

**chlorophacinone** an anticoagulant rodenticide. Restricted use pesticide in the US.

**chlorophenols** [klor'o-fe'nolz] compounds used as fungicides, including timber preservation, as herbicides and in termite control. They are quite poisonous. See **trichlorophenol, pentachlorophenol**.

**chlorophyll** [klor'o-fə] any of a group of green pigments, containing a magnesium-porphyrin complex, that are involved in oxygen-producing photosynthesis in plants. Preparations of water-soluble chlorophyll derivatives are applied topically for deodorization of skin lesions and to stimulate healing. It is also administered orally to deodorize ulcerative lesions and the urine and feces. a chlorophyll metabolite, **phylloerythrin**, generated by intestinal bacteria, is the common photodynamic agent in pastured animals with liver damage. The phylloerythrin accumulates because its excretory pathway is the biliary system.

**chloropicrin** a soil disinfectant/fumigant. Can cause intense lacrimation if inhaled. Taken orally it causes vomiting, colic, and diarrhea. Called also trichloronitromethane.

**chloroprivic** [klor'o-priv'ik] deprived of chlorides; due to loss of chlorides.

**chloroprocaine** [klor'o-pro'kän] a short-acting ester local anesthetic, used as the hydrochloride salt.

**chloroquine** [klor'o-kwin] an antiprotozoal agent, used in the treatment of avian malaria, anaplasmosis, and theileriosis in cattle, and amebiasis in nonhuman primates.

**c. poisoning** the drug has an affinity for melanin and ocular tissues with melanin; causes a drug-induced retinopathy.

**chlorothiazide** [klor'o-thi'ə-zid] a thiazide diuretic.

**chloroxylenol** [klor'o-zi'lə-nol] a chlorinated phenolic antiseptic, used in presurgical skin preparation, cleaning wounds, and in the topical treatment of bacterial, fungal, and yeast infections of the skin and claws.

**chlorphenesin carbamate** [klor-fen'ə-sin] a centrally acting skeletal muscle relaxant, similar in action to mephenesin, used in the treatment of skeletal muscle spasms and trauma to tendons and ligaments.

**chlorpheniramine** [klor'fən-ir'ə-mēn] a histamine type 1 (H<sub>1</sub>)-receptor antagonist (antihistamine), used as the maleate salt in the treatment of hypersensitivity reactions and as an antipruritic drug.

**chlorphenoxy herbicide** includes 2,4-D, 2,4,5-T. MCPA and mecoprop. Can cause gastrointestinal problems in orally exposed animals; myotonia has been reported in dogs. Their use is regulated in several countries, and 2,4,5-T is banned from use in the US.

**chlorpromazine** [klor-pro'mə-zēn] a phenothiazine derivative used as an antipsychotic agent and antiemetic. It has been largely superseded in veterinary medicine by acepromazine. Its principal use was as a premedication for anesthesia. It is still sometimes used as an antiemetic in dogs and cats.

**chlorpropamide** [klor-pro'pə-mid] a first-generation sulfonylurea derivative, used as an oral hypoglycemic drug in the treatment of diabetes mellitus. Also stimulates antidiuretic hormone (ADH) release and potentiates ADH action; used in the treatment of central diabetes insipidus.

**chlorpropham** a thiocarbamate herbicide (does not inhibit cholinesterase activity) of low toxicity for animals if used according to instructions. Can cause muscle weakness, anorexia, weight loss, and hair loss.

**chlorprothixene** [klor'pro-thik'sēn] a thioxanthene derivative, related to the phenothiazine tranquilizers. Used as a tranquilizer, especially in pigs. Used as an anti-psychotic in humans.

**chlorpyrifos, chlorpyrifos** [klor-pi'ri-fos] see **organophosphorus compound**

**chlortetracycline** [klor'tet-rə-si'klēn] a broad-spectrum antibiotic obtained from *Streptomyces aureofaciens*, used in the form of the hydrochloride salt as an antibacterial (effective against both gram-positive and gram-negative bacteria) and as a feed additive to promote growth in calves, pigs, and poultry. See also **tetracycline**.

**chloruresis** [klor'u-re'sis] excretion of chlorides in the urine.

**chloruria** [klor-u're-ə] an excess of chlorides in the urine. Called also chloriduria.

**chlorzoxazone** [klor-zok'sə-zōn] a skeletal muscle relaxant.

**chloxylye** see **hexachloroparaxylyene**.

**choana** [ko'ə-nə] pl. *choanae* [L.] **1.** any funnel-shaped cavity or infundibulum. **2.** *choanae*, the paired openings between the nasal cavity and the nasopharynx.

**choanal** [ko'ə-nəl] pertaining to or arising from the choanae.

**c. atresia** see imperforate **buccopharyngeal** membrane.

**c. slit** the sagittal slit in the hard palate of the normal bird.

**c. stenosis** choanal atresia.

**Choanotaenia** [ko-a'no-te'ne-ə] a genus of nonpathogenic tapeworms in the family Dilepididae. Includes *C. infundibulum* (fowl and turkey intestine).

**chocolate** [chok'ə-lət] a medium-brown (milk chocolate) coat color described for some dog breeds, most commonly the Labrador retriever; in cats where it occurs on the extremities of chocolate-pointed Siamese and Colorpoints and as a variety of Burmese; and in some rabbits.

**chocolate-point** [chok'ə-lət] see **points**.

**chocolate toxicity** [chok'ə-lət] dogs commonly ingest chocolate and they may show signs of methylxanthine toxicity, which include vomiting, diarrhea, tachycardia, tachypnea, polyuria, and ataxia, tremors, and seizures. Death may occur. Dark chocolate and baking chocolate have much higher concentrations of methylxanthines than milk chocolate; white chocolate has none. See also **theobromine** poisoning. Called also **cacao** poisoning.

**Choix fever** Rocky Mountain spotted fever.



**C-43:** The glottis (yellow arrow) opens from the floor of the snake's oral cavity into the choana (red arrow) on the dorsal surface of the mouth. From Mader, D.R., *Reptile Medicine and Surgery*, 2nd Edition. Saunders, 2006.





**C-44:** Ingesta at the nostrils of a foal with choke.

From McAuliffe, S.B., Slovis, N.M., *Color Atlas of Diseases and Disorders of the Foal*, Saunders, 2008.

C

**choke** [*chōk*] to interrupt respiration by obstruction or compression, or the condition resulting from such interruption. Term used in equine medicine to describe signs of esophageal obstruction caused by intraluminal or extraluminal obstruction of the esophagus or constriction of the esophagus due to injury and subsequent and consequent scarring, development of fibrosis, and contracture of the scar. Intraluminal obstruction usually caused by ingestion of dry feed material or foreign bodies. Extraluminal can be associated with intrathoracic lymphadenopathy. Clinical signs include drooling, presence of food material regurgitated through the nares especially after eating or drinking.

**c. chain** a string of metal links that, when looped through an end link, forms a noose. It is commonly used as a collar for dogs, particularly in training or for control of large, strong or unruly dogs as tension on the attached lead tightens the noose around the dog's neck giving great control.

**c. chain injury** soft tissue injury and fracture or luxation of the hyoid apparatus can occur with excessive force. Choke chains may also become embedded in the tissues of growing dogs.

**chokecherry** [*chōk'cher'e*] *Prunus virginiana*.

**western c.** *Prunus virginiana* var. *demissa*.

**choking** [*chōk'ing*] **1.** pertaining to choke. Used to describe a syndrome in horses which might make a characteristic noise during exercise. Caused by intermittent dorsal **soft palate** displacement. **2.** **esophageal** obstruction in horses.

**cholagogue** [*ko'lā-gog*] an agent that stimulates gallbladder contraction to promote bile flow; also called **cholecystagogue**.

**cholangiectasis** [*ko-lan'je-ek'tā-sis*] dilatation of a bile duct.

**cholangiocarcinoma** [*ko-lan'je-o-kahr'si-no'mā*] see **cholangiocellular carcinoma**.

**cholangiocellular** [*ko-lan'je-o-sel'u-lār*] pertaining to the bile ducts.

**c. adenoma** benign, solid, or cystic neoplasm arising from the bile duct epithelium.

**c. carcinoma** malignant tumor arising from the bile duct epithelium. Often presents as multiple, firm, white, umbilicated tumors on the serosal surface and parenchyma of the liver. Usually occurs in dogs and cats. Metastatic spread is common. Called also bile duct carcinoma. **c. cystadenoma** a variety of bile duct adenoma in which the tumor is composed of multilocular cystic structures lined with epithelium resembling that of bile ducts.

**cholangioenterostomy** [*ko-lan'je-o-en'tar-os'tā-me*] surgical anastomosis of a bile duct to the intestine.

**cholangiogastrostomy** [*ko-lan'je-o-gas-tros'tā-me*] surgical anastomosis of a bile duct to the stomach.

**cholangiogram** [*ko-lan'je-o-gram*] the image obtained by cholangiography.

**cholangiography** [*ko-lan'je-og'rā-fe*] contrast imaging of the bile ducts.

**cholangiohepatitis** [*ko-lan'je-o-hep'ā-ti'tis*] inflammation of the biliary system and, by extension, of the periportal hepatic parenchyma. In large

animals, can be the result of parasitic infestation (such as liver **fluke**), sometimes complicated by the presence of bacteria; sporidiesmin, the toxin of *Pithomyces chartarum*, causes a specific cholangiohepatitis. Crystal-associated cholangiohepatopathy has a similar pathogenesis. Primary bacterial cholangiohepatitis is uncommon in animals. See also feline **cholangitis**.

**cholangiohepatoma** [*ko-lan'je-o-hep'ā-to'mā*] primary carcinoma of the liver of mixed liver cell and bile duct cell origin.

**cholangiohepatopathy** [*ko-lan'je-o-hep'ā-top'ā-the*] disease of the liver parenchyma associated with and probably derived from disease of the biliary system.

**crystal-associated c.** hepatopathy characterized by crystals in the biliary system; always a plant poisoning due to steroidal sapogenins always present in some plants (e.g., *Agave lecheguilla*) and sometimes sporadically in others (e.g., *Panicum* spp.).

**cholangiolar** [*ko'lan-je'o-lār*] pertaining to or emanating from the tissues of the biliary system.

**cholangiole** [*ko-lan'je-ōl*] one of the fine terminal elements of the bile duct system.

**cholangiolitis** [*ko-lan'je-o-li'tis*] inflammation of the cholangioles.

**cholangioma** [*ko-lan'je-o'mā*] a neoplasm of bile duct origin. Can be benign (cholangiocellular adenoma) or malignant (cholangiocellular carcinoma).

**cholangiostomy** [*ko'lan-je-os'tā-me*] fistulization of a bile duct.

**cholangiotomy** [*ko'lan-je-ot'ā-me*] incision into a bile duct.

**cholangitis** [*ko'lan-ji'tis*] inflammation of a bile duct.

**feline c.** previously called cholangiohepatitis; occurs mainly in cats, often in association with pancreatitis and gastrointestinal disorders. Three main forms occur: neutrophilic cholangitis, arising from ascending infection from the gastrointestinal tract; lymphocytic cholangitis, a slowly progressive disease with bile duct proliferation and possibly progressive fibrosis; and chronic cholangitis, associated with liver flukes from the *Dicrocoeliidae* and *Opisthorchiidae* families.

**hyperplastic c.** see **fascioliasis**.

**cholanopoesis** [*ko'lā-no-poi-e'sis*] the synthesis of bile acids or of their conjugates and salts by the liver.

**cholanopoeitic** [*ko'lā-no-poi-et'ik*] **1.** promoting synthesis of bile (cholanopoesis). **2.** an agent that promotes bile synthesis (cholanopoesis).

**cholate** [*ko'lāt*] a salt or ester of **cholic acid**.

**chole- chol(o)-** word element. [Gr.] relationship to bile.

**cholecalciferol** [*ko'lā-kal-sif'ār-ol*] vitamin D<sub>3</sub>, an fat-soluble antirachitic vitamin. It is used commercially as a rodenticide, which in poisoned animals leads to multiple systemic effects associated with a persistent hypercalcemia and hyperphosphatemia. See also **hypervitaminosis D**.

**cholecystagogue** [*ko'lā-sis'tā-gog*] an agent that promotes evacuation of the gallbladder; also called **cholagogue**.

**cholecystalgia** [*ko'lā-sis-tal'jā*] biliary colic.

**cholecystectasia** [*ko'lā-sis'tek-tā'zhā*] distention of the gallbladder.

**cholecystectomy** [*ko'lā-sis-tek'tā-me*] excision of the gallbladder.

**cholecystenterostomy** [*ko'lā-sis'ten-tār-os'tā-me*] see **cholecystoenterostomy**.

**cholecyctic** [*ko'lā-sis'tik*] pertaining to the gallbladder.

**cholecystitis** [*ko'lā-sis-ti'tis*] inflammation of the **gallbladder**.

**cholecystoduodenostomy** [*ko'lā-sis'to-doo'o-dā-nos'tā-me*] surgical anastomosis of the gallbladder and the duodenum.

**cholecystoenterostomy** [*ko'lā-sis'to-en'tar-os'tā-me*] surgical anastomosis of the gallbladder and intestinal tract, usually indicated if the common bile duct has been disrupted by injury or neoplasia and, as is the case in dogs and cats, repair or **cholechoenterostomy** is technically impractical. See also **cholecystoduodenostomy**, **cholecystojejunostomy**.

**cholecystogram** [*ko'lā-sis'to-gram*] contrast imaging of the gallbladder.

**cholecystography** [*ko'lā-sis-tog'rā-fe*] contrast imaging of the gallbladder and bile ducts.

**cholecystojejunostomy** [*ko'lā-sis'to-jā-joo-nos'tā-me*] surgical anastomosis of the gallbladder and jejunum.

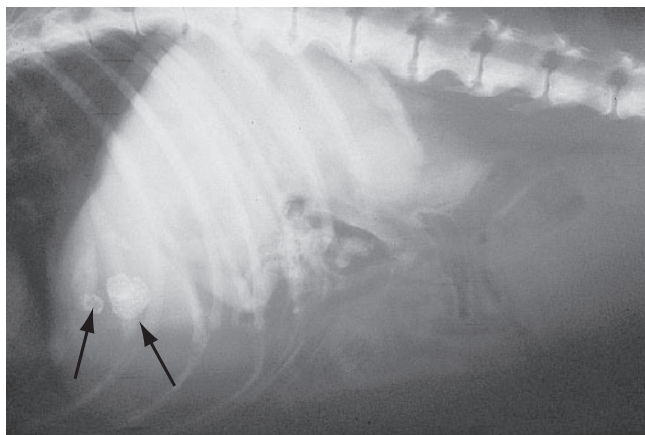
**cholecystokinin (CCK)** [*ko'lā-sis'to-ki'nin*] a gastrointestinal hormone liberated from the intestinal mucosa in response to arrival of the products of digestion from the stomach. It stimulates secretion of pancreatic enzymes and gallbladder contraction. Sometimes abbreviated CCK-PZ. Called also cholecystokinin-pancreozymin, pancreozymin.

**cholecystokinin-pancreozymin** [*ko'lā-sis'to-ki'nin pan'kre-o-zī'min*] see **cholecystokinin**.

**cholecystolithiasis** [*ko'lā-sis'to-li-thi'ā-sis*] **cholelithiasis**.

**cholecystotomy** [*ko'lā-sis-tot'ā-me*] incision of the gallbladder.

**choledochal** [*ko-led'ā-kāl*] pertaining to the bile duct.



**C-45:** Lateral abdominal radiograph of a dog with radiopaque choleliths (arrows).

Fossum, T. Small Animal Surgery, 5th Edition. Elsevier, 2018.

**choledochitis** [ko"lā-dō-ki'tis] inflammation of the common bile duct.

**choledoch(o)-** word element. [Gr.] pertaining to the common bile duct.

**choledochoduodenostomy** [ko-led"ā-ko-doo"ō-dā-nos'tā-me] surgical anastomosis of the bile duct and the duodenum. Not commonly performed in animals.

**choledochointerostomy** [ko-led"ā-ko-en"tār-os'tā-me] surgical anastomosis of the common bile duct to the intestine.

**choledochogastrostomy** [ko-led"ā-ko-gas-tros'tā-me] surgical anastomosis of the common bile duct to the stomach.

**choledochography** [ko-led"ā-kog'rā-fe] contrast imaging of the common bile duct. More often, replaced by ultrasonography.

**choledocholithiasis** [ko-led"ā-ko-li-thi'ā-sis] calculi in the common bile duct.

**choledochoplasty** [ko-led"ā-ko-plas'te] plastic repair of the common bile duct.

**choledochotomy** [ko-led"ā-kot'ā-me] incision into the common bile duct.

**choledochus** [ko-led'ā-kās] the ductus choledochus, or bile duct.

**choleic** [ko-le'ik] pertaining to the bile.

**cholejejunoduodenostomy** [ko-le-jā-joo"no-doo"ō-dā-nos'tā-me] surgical anastomosis of the gallbladder via an isolated segment of the jejunum to the duodenum.

**cholelith** [ko'lā-lith] see **gallstone**.

**cholelithiasis** [ko"lā-li-thi'ā-sis] the presence or formation of gallstones. Uncommon in animals, they are found in the gallbladder or bile ducts. Usually asymptomatic, can cause obstruction of bile ducts or lead to erosion and perforation of the gallbladder with peritonitis. Calcereous stones may form in the bile ducts of cattle with **distomiasis**.

**obstructive c.** blockage of the common bile duct by a gallstone; characterized clinically by severe jaundice, abdominal pain.

**cholelithotomy** [ko"lā-li-thot'ā-me] incision of the biliary tract for removal of gallstones.

**cholelithotripsy, cholelithotripsy** [ko"lā-lith'ō-trip-se] crushing of a gallstone.

**cholemesis** [ko-lem'ā-sis] vomiting of bile.

**cholemia** [ko-le'me-ā] bile or bile pigment in the blood.

**cholemic** [ko-le'mik] pertaining to or emanating from the bile.

**c. nephrosis** renal tubular nephrosis caused by a high concentration of bilirubin in the urine and subsequently in the tubular epithelium.

**choleperitoneum** [ko"lā-per"i-tā-ne'am] the presence of bile in the peritoneum.

**cholepoiesis** [ko"lā-poi-e'sis] the formation of bile in the liver.

**choleporis** [ko-ler'ā-sis] the secretion of bile by the liver.

**choleric** [ko"lār-et'ik] 1. stimulating bile production by the liver. 2. an agent that stimulates bile production.

**cholestasis** [ko"lā-stā'sis] stoppage or suppression of bile flow; inadequate bile drainage. See also **jaundice**.

**canalicular c.** engorgement of the interhepatocellular bile canaliculi with bile as a result of overproduction, as in hemolytic disease, or downstream, as in bile duct obstruction.

**intrahepatic primary c.** any obstruction of bile flow by pathological changes in the liver parenchyma, including fibrosis, that causes cholestasis.

**intrahepatocellular c., hepatocellular c.** failure of bile excretion into canaliculi by hepatocytes due to an intoxication (eg *Lantana* poisoning in ruminants) or to a heritable defect in bilirubin conjugation.

**cholesteatoma** [ko"lā-ste"ā-to'mā] a cystlike mass with a lining of stratified squamous epithelium, filled with desquamating debris frequently including cholesterol, which occurs in the meninges, central nervous system and bones of the skull, but most commonly in the choroid plexus of the ventricles, and especially in horses and other Equidae. Causes signs of increased intracranial pressure, initial excitement followed by somnolence and apathy. Hydrocephalus may be the end-stage.

**cholesteatosis** [ko"lā-ste"ā-to'sis] fatty degeneration due to cholesterol esters.

**cholesteremia hypercholesterolemia.**

**cholesterol** [kā-les'tār-ol"] a steroid alcohol found in animal fats and oils, bile, blood, brain tissue, milk, egg yolk, myelin sheaths of nerve fibers, liver, kidneys, and adrenal glands. It is a necessary component of all cell plasma and intracellular membranes in animals and a constituent of myelin in nervous tissue; it is a precursor of bile acids and steroid hormones, and it occurs in the most common type of gallstone, in atheroma of the arteries, in various cysts, and in carcinomatous tissue. More than half of the body's cholesterol is synthesized, and the remainder is obtained from the diet. The importance in human medicine of the relationship between cholesterol and the development of atheromatous plaques in the coronary arteries is not reflected in veterinary medicine. The importance of cholesterol to the veterinarian is limited to the measurement of blood cholesterol concentration as an indicator of organic disease, particularly in hypothyroidism, hyperlipidemias, nephrotic syndrome, and liver disease, but increased concentrations can also be seen in diabetes mellitus, hyperadrenocorticism, and necrotizing pancreatitis. Decreased concentration (hypocholesterolemia) is most commonly associated with portosystemic shunts.

**c. pneumonia** see endogenous-lipid pneumonia.

**cholesterolemia** [kā-les'tār-ol-e'me-ā] **hypercholesterolemia.**

**cholesterolosis** [kā-les'tār-ol-o'sis] a condition in which cholesterol is deposited in tissues in abnormal amounts.

**c. bulbi** see **synchysis scintillans**.

**cholesteroluria** [kā-les'tār-ol-u're-ā] the presence of cholesterol in the urine.

**cholesterosis** [kā-les'tār-o'sis] cholesterolosis.

**cholestiastosis** see **cholesteatoma**.

**cholestyramine** [ko"lā-sti'rā-mēn] a bile-acid binding resin used to treat hyperlipidemia and as an absorbent to prevent intestinal absorption of toxins.

**choleuria** [ko"le-u're-ā] **choluria.**

**cholic acid** [ko'lik] a major bile acid formed in the liver from cholesterol that plays, with other bile acids, an important role in digestion.

**choline** [ko'lēn] a quaternary amine that occurs in the phospholipid phosphatidylcholine and the neurotransmitter acetylcholine, and is an important methyl donor in intermediary metabolism. It was formerly considered to be a B-vitamin and was used to treat fatty degeneration of the liver.

**c. acetylase, c. acetyltransferase** an enzyme that brings about the synthesis of acetylcholine.

**c. esters** choline has some of the activity of a cholinergic drug but the effect is multiplied many times over by combining it with an acid, e.g., acetic acid, to form an ester, e.g., acetylcholine. Other choline esters with important pharmacological activity are **carbachol**, **bethanechol**, **methacholine**.

**c. nutritional deficiency** requirements for choline are largely dependent on the amount of methionine in the diet. In dogs and cats, under normal circumstances, deficiency is unlikely, but choline is a dietary essential for pigs and young calves. Incoordination, weakness, dyspnea and hock swelling occur in experimental deficiency, but there is little evidence of naturally occurring disease. Poultry fed diets deficient in choline develop **perosis**.

**c. salicylate** the choline salt of salicylic acid, which has analgesic, antipyretic and anti-inflammatory properties.

**c. theophyllinate** a theophylline derivative used as a bronchodilator. Called also oxtriphylline.

**cholinergic** [ko"lin-ur'jik] 1. parasympathomimetic; activated or transmitted by acetylcholine; said of nerve fibers that liberate acetylcholine at a synapse when a nerve impulse passes, i.e., the parasympathetic fibers. 2. an agent that resembles acetylcholine or simulates its action.

**c. blockade** selective inhibition of cholinergic nerve impulses at autonomic ganglionic synapses, postganglionic parasympathetic effectors, or neuromuscular junctions.

**c. antagonist** see **anticholinergic**.



**c. neurotransmission** that form of neurotransmission which depends on the production of acetylcholine at synapses.

**c. receptors** receptor sites on effector organs or at nerve synapses that are stimulated by acetylcholine released by the nerve terminal. There are two types: muscarinic receptors, present primarily on autonomic effector cells, and nicotinic receptors, present primarily on autonomic ganglion cells and on the motor end plates of skeletal muscle.

**cholinesterase** [ko<sup>u</sup>lin-es'ter-ās] an enzyme that splits acetylcholine into acetic acid and choline. Called also acetylcholinesterase. This enzyme is present throughout the body, but is particularly important at the neuromuscular junction, where the nerve fibers terminate. Acetylcholine is released when a nerve impulse reaches a neuromuscular junction. It diffuses across the synaptic cleft and binds to cholinergic receptors on the muscle fibers, causing them to contract. Cholinesterase splits acetylcholine into its components, thus stopping stimulation of the muscle fibers. The end products of the metabolism of acetylcholine are taken up by nerve fibers and resynthesized into acetylcholine.

**c. inhibitor** the drugs neostigmine, physostigmine and pyridostigmine inhibit cholinesterase. These drugs are used to treat **myasthenia gravis**, a disease in which the cholinergic receptors are attacked by autoantibodies. The drugs extend the effect of acetylcholine on the muscle fiber.

**c. reactivator** choline-reactivating oximes are effective antidotes in organophosphorus insecticide poisoning, a state of acetylcholine excess because of cholinesterase inhibition. 2-PAM (2-pyridine aldoxime methchloride) is the most popular oxime for this purpose.

**cholinceptive** [ko<sup>u</sup>lin-o-sep'tiv] pertaining to the sites on effector organs that are acted upon by cholinergic transmitters.

**cholinceptor** [ko<sup>u</sup>lin-o-sep'tər] cholinergic receptor.

**cholinolytic** [ko<sup>u</sup>lin-o-lit'ik] **1.** blocking the action of acetylcholine, or of cholinergic agents. **2.** an agent that blocks the action of acetylcholine or other cholinergic agents in cholinergically controlled sites, such as voluntary muscles and the tissues supplied by parasympathetic nerves.

**cholinomimetic** [ko<sup>u</sup>lin-o-mi-met'ik] having an action similar to that of acetylcholine; called also **parasympathomimetic**.

**c. alkaloids** naturally occurring plant alkaloids that have cholinomimetic actions, such as **arecoline**, **pilocarpine**, and **muscarine**.

**choloemthorax** [kol'o-he'mo-thor'aks] the presence of bile and blood in the thorax.

**chololithiasis** [kol'o-li-thi'ā-sis] **cholelithiasis**.

**cholothorax** [kol'o-thor'aks] **choloemthorax**.

**choloria** [kol-u're-ā] the presence of bile in the urine; discoloration of the urine with bile pigments.

**chondral** [kon'drāl] pertaining to cartilage.

**chondralgia** [kon'drāl'jā] pain in a cartilage.

**chondrectomy** [kon'drek'tə-me] excision of a cartilage.

**chondrification** [kon'dri-fi-ka'shən] conversion into cartilage.

**chondri(o)-** word element. [Gr.] cartilage, granule.

**chondritis** [kon'dri'tis] inflammation of cartilage.

**auricular c.** an immune-mediated inflammation and eventual collapse of auricular cartilage; affected cats are usually young and have a history of swollen, painful ears which eventually become deformed. Rarely, other sites such as the eyes, heart, nose, trachea, and joints may be affected; this is more common in people and their disease is called relapsing polycondritis. Dogs are very rarely affected.

**chondr(o)-** word element. [Gr.] cartilage.

**chondroadenoma** [kon'dro-ad'ə-no'mə] **adenochondroma**.

**chondroangioma** [kon'dro-an'je-o'mə] a benign mesenchymoma containing chondromatous and angiomatous elements.

**chondroblast** [kon'dro-blast] an immature cartilage-producing cell.

**chondroblastoma** [kon'dro-blas-to'mə] a benign tumor arising from young chondroblasts in the epiphysis of a bone.

**chondrocalcin** [kon'dro-kal'sin] a calcium-binding protein found in the parts of the skeleton where bone proliferation or remodeling are taking place.

**chondrocalcinosis** [kon'dro-kal'si-no'sis] deposition of calcium salts in the cartilage of joints.

**chondroclast** [kon'dro-klast] a giant cell believed to be concerned in absorption of cartilage.

**chondrocostal** [kon'dro-kos'təl] pertaining to the ribs and costal cartilages.

**chondrocranium** [kon'dro-kra'ne-əm] the cartilaginous cranial structure of the embryo in early pregnancy when it is a unified cartilaginous mass without clear boundaries indicating the limits of future bones.

**chondrocyte** [kon'dro-sīt] a mature cartilage cell embedded in a lacuna within the cartilage matrix.

**Chondrodendron** plant genus in the family Menispermaceae from which **curare** is extracted.



**C-46:** Texel lamb with chondrodysplasia. Note the short legs and wide-based stance.

From Thompson KG, Piripi SA, Dittmer KE: Inherited abnormalities of skeletal development in sheep. *Vet J* 177:324-333, 2008. Elsevier.

**chondrodynia** [kon'dro-din'e-ā] pain in a cartilage.

**chondrodysplasia** [kon'dro-dis-pla'zhā] congenital anomaly related to defects of the genes that control the chondrogenesis resulting in abnormal growth of cartilage; may be used to include achondroplasia. Causes disproportionate dwarfism and occurs as an inherited recessive trait in cattle (several breeds but notably Dexter, Telemark lethal and Hereford 'snorter dwarf'), sheep (Texel, Ançon and Cheviot) and dogs (Alaskan malamute, miniature poodles and Norwegian elkhound). This type of dwarfism has been eliminated in most breeds of cattle by selective breeding or elimination of breeding lines. See also **achondroplasia**, **enchondromatosis**.

**deforming hereditary c.** inherited chondrodysplastic defects characterized by skeletal deformity, e.g., chondrodysplastic dwarfism.

**chondrodysplastic dwarf** [kon'dro-dis-plas'tik] see **chondro-dysplasia**.

**chondrodystrophia, chondrodystrophy** [kon'dro-dis'trə-fe] a disorder of cartilage formation.

**c. fetalis** see **epiphyseal dysplasia**.

**chondrodystrophia** having chondrodystrophy as a characteristic.

**c. breeds** in dogs, e.g., Dachshund, Bulldog, Bassett hound, the features of chondrodystrophy are established as the breed type, generally involving shortened limbs in relation to the length of the spine. Angular deformities of the limbs and degeneration of the mucinous nucleus pulposus of the intervertebral disk at an early age are unfortunate accompaniments of this trait. See **achondroplasia**.

**chondrodystrophy** any disorder of cartilage formation. See also **chondrodysplasia**.

**chicken embryo c.** see **chicken embryo chondrodystrophy**.

**chondroendothelioma** [kon'dro-en'do-the'le-o'mə] an endothelioma containing cartilage tissue.

**chondroepiphyseal** [kon'dro-ep'i-fiz'e-ā] pertaining to epiphyseal cartilage.

**chondroepiphysitis** [kon'dro-ep'i-fiz-i'tis] inflammation of the epiphyseal cartilages.

**chondrofibroma** [kon'dro-fi-bro'mə] a fibroma with cartilaginous elements.

**chondrogenesis** [kon'dro-jen'ə-sis] formation of cartilage.

**chondrogenic** [kon'dro-jen'ik] giving rise to or forming cartilage.

**chondroid** [kon'droid] **1.** resembling cartilage. **2.** The name given to oval masses of inspissated pus in the guttural pouch of horses with guttural pouch empyema.

**chondroitin sulfate** [kon'dro'i-tin] a sulfated glycosaminoglycan (mucopolysaccharide) which is widespread in connective tissue, particularly cartilage, where it acts as an important structural component, and in the cornea. Usually part of a proteoglycan.

**chondrolipoma** [kon'dro-li-po'mə] a tumor containing cartilaginous and fatty tissue.

**chondroma** [kon'dro'mə] a tumor or tumor-like growth of cartilage cells. It may remain in the interior arising from the cartilage of the medullary cavity (true chondroma, or enchondroma), or may develop on the surface of a cartilage and project under the periosteum of a bone (echondroma, or echondrosis).

**c. rodens** see **multilobular chondroma** and **osteoma**.

**chondromalacia** [kon'dro-mə-la'shā] abnormal softening of cartilage.

**chondromatosis** [kon'dro-mə-to'sis] formation of multiple chondromas.

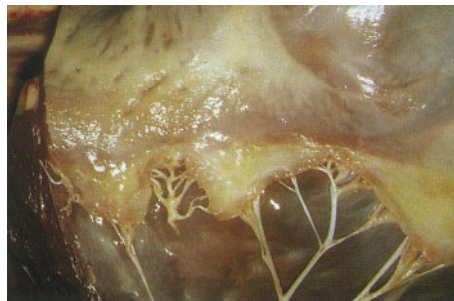
**synovial c.** a rare condition in which cartilage is formed in the synovial membrane of joints, tendon sheaths or bursae, sometimes becoming detached and producing a number of loose bodies.

**chondromatous** [kon'dro-mə-təs] pertaining to or of the nature of cartilage. More correctly, chondroid.





**C-47:** Simmental cow with swelling at the proximocranial aspect of the right scapula due to a chondrosarcoma. From Martinek B, Bago Z, Flöck M, Hochsteiner W, Schilcher F, Kofler J: Chondrosarcoma in a simmental cow: Clinical, ultrasonographic, radiographic and pathological findings. *Vet J* 172:181-184, 2006. Elsevier.



**C-48:** Ruptured chorda tendineae in a horse heart at necropsy. From Knottenbelt DC, Pascoe RR, Diseases and Disorders of the Horse, Saunders, 2003.

**c. hamartoma** a congenital anomaly of the lung. See also **hamartoma**.  
**chondromere** [kon'dro-mēr] a cartilaginous vertebra of the fetal vertebral column.  
**chondrometaplasia** [kon'dro-met'ə-pla'zhə] chondroid **metaplasia**.  
**chondromyoma** [kon'dro-mi-o'mə] a benign tumor with myomatous and cartilaginous elements.  
**chondromyxoma** [kon'dro-mik-so'mə] myxoma with cartilaginous elements.  
**chondromyxosarcoma** [kon'dro-mik'so-sahr-ko'mə] a sarcoma containing cartilaginous and mucous tissue.  
**chondronectin** a glycoprotein found in plasma and cartilage. Thought to act as an adhesion factor between chondrocytes and type II collagen.  
**chondro-osseous** [kon'dro-os'e-əs] composed of cartilage and bone.  
**chondroplasia** [kon'dro-pla'zhə] the formation of cartilage by specialized cells (chondrocytes).  
**chondroplast** [kon'dro-plast] chondroblast.  
**chondroplasty** [kon'dro-plas'te] plastic repair of cartilage.  
**chondroporosis** [kon'dro-po-ro'sis] the formation of sinuses or spaces in cartilage.  
**chondroprotectants** [kon'dro-pro-tek'tiv] agent or action that retards the degradation of articular cartilage and may upregulate chondrocyte metabolism; used in the treatment and prevention of osteoarthritis. Examples include **pentosan polysulfate** and **glycosaminoglycan polysulfate**.  
**chondrosarcoma** [kon'dro-sahr-ko'mə] a malignant tumor derived from cartilage cells or their precursors.  
**chondrosis** [kon-dro'sis] the formation of cartilage.  
**chondrosteoma** [kon-dros'te-o'mə] a cartilage capped by knobby projection of the sternal surface of endochondral bone. They may recur singly or multicentrically (multiple cartilaginous **exostoses**). Inherited as an autosomal dominant trait in horses, dogs and humans.  
**chondrosternal** [kon'dro-stur'nəl] pertaining to the costal cartilages and sternum.  
**c. depression** see **pectus excavatum**.  
**chondrotomy** [kon-drot'ə-me] the dissection or the surgical division of cartilage.  
**chondroxiphoid** [kon'dro-zif'oid] pertaining to the xiphoid cartilage.  
**Choniangium** a genus of roundworms of the family Strongylidae. Includes *Choniangium epistomum*, *C. magnostomum* (Indian elephant cecum).  
**chook** an Australian colloquialism for chicken or fowl.  
**CHOP** a cancer chemotherapy protocol that utilizes cyclophosphamide, doxorubicin (hydroxydaunomycin), vincristine, and prednisone. Used in the treatment of lymphomas in dogs and cats.  
**chop** chopped hay; used extensively when pastured animals need supplementary roughage and are required to eat the meal provided in a short time. Housed animals receive the same supply in the form of hay in a rack or net. Called also chaff.  
**green c.** green feed that has been put through a chopper or forage harvester.  
**chops** the jowls or flesh of lips and jaw in dogs.  
**chord** [kord] cord.  
**chorda** [kor'də] pl. *chordae* [L.] a cord or sinew.  
**c. magna Achilles tendon**.  
**c. tendineae** tendinous cords connecting adjacent cusps of each of the two atrioventricular valves to the appropriate papillary muscles in the heart ventricles.

**c. tendineae rupture** of mitral value chordae and causing acute, massive, cardiac insufficiency leading to fulminant congestive heart failure and death; called also detachment.  
**c. tympani** a nerve originating from the facial nerve, distributed to the submandibular, sublingual and lingual glands and the anterior two-thirds of the tongue that gets its name from coursing over the handle of the malleus in the tympanic cavity; it is both a parasympathetic and a special sensory nerve.  
**c. umbilicalis umbilical cord**.  
**c. vocalis vocal cord**.  
**chordal tissue** [kor'dəl] the tissue of the notochord.  
**Chordata** [kor-da'tə] a phylum of the animal kingdom comprising all animals having a notochord during some developmental stage.  
**chordate** [kor'dāt] 1. an animal of the Chordata. 2. having a notochord.  
**chordectomy** [kor-dek'tə-me] excision of a vocal cord.  
**chordee** [kor'de] downward deflection of the penis, due to a congenital anomaly (hypospadias) or to urethral infection. Term not used in veterinary medicine.  
**choroiditis** [kor-di'tis] inflammation of vocal or spermatic cords.  
**chordoma** [kor-do'mə] a tumor arising from embryonic remains of the notochord, most commonly affecting the cranial or caudal limits of the axial skeleton.  
**Chordopoxvirinae** [kor'do-poks'vir-i'ne] subfamily in the order *Poxvirales* that includes viruses that infect vertebrate animals.  
**chordotomy** [kor-dot'ə-me] **cordotomy** (2).  
**chorea** [kə-re'ə] in humans the ceaseless occurrence of rapid, jerky involuntary movements, as is seen commonly in patients with Huntington's disease. In dogs, the term is usually applied to the **myoclonus** seen in dogs associated with infection by distemper virus.  
**choreiform** [ko-re'i-form] resembling chorea.  
**chorioadenoma** [kor'e-o-ad'ə-no'mə] adenoma of the chorion.  
**chorioallantoic vesicle** [kor'e-o-al'an-to'ik] the vesicle formed in early pregnancy around the embryo by the chorion; contains the allantoic sac, the yolk sac, the allantoic fluid and the embryo. Palpation of the sac is used for early manual pregnancy diagnosis in cows and mares.  
**chorioallantois** [kor'e-o-al'an-to'is] an extraembryonic structure formed by union of the chorion and allantois, which by means of vessels in the associated mesoderm serves in gas exchange; in many mammals, it forms the placenta.  
**chorioamnionitis** [kor'e-o-am'ne-o-ni'tis] inflammation of the fetal membranes.  
**chorioamniotic folds** [kor'e-o-am'ne-ot'ik] a pair of folds consisting of extraembryonic somatopleure which grow out from the vitelline membrane and meet over the top of the embryo, fusing to complete the chorion and the amnion.  
**chorioangioma** [kor'e-o-an'je-o'mə] an angioma of the chorion.  
**choriocapillaris** [kor'e-o-kap'i-lar'is] innermost layer of choroid; composed of a fine network of capillaries and separated from the retinal pigment epithelium by Bruch's membrane.  
**choriocarcinoma** [kor'e-o-kahr'si-no'mə] a malignant neoplasm of trophoblastic cells formed by abnormal proliferation of the placental epithelium, without production of chorionic villi.  
**choriocele** [kor'e-o-sē'l'] protrusion of the chorion through an aperture.  
**chorioepithelioma** [kor'e-o-ep'i-the'le-o'mə] choriocarcinoma.  
**choriogenezis** [kor'e-o-jen'ə-sis] the development of the chorion.  
**chorioid** [kor'e-oid] choroid.  
**chorioma** [kor'e-o'mə] any trophoblastic proliferation, benign or malignant.  
**choriomeningitis** [kor'e-o-men'in-ji'tis] cerebral meningitis with inflammation of the choroid plexus.  
**lymphocytic c.** see **lymphocytic choriomeningitis**.

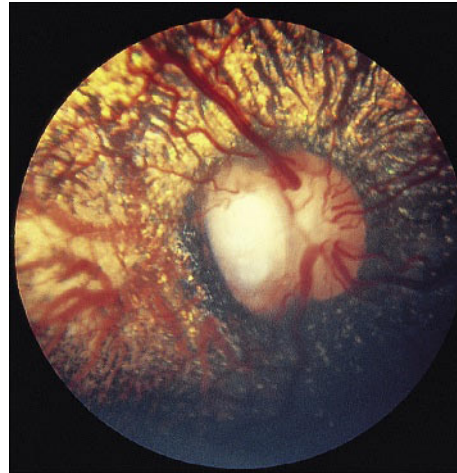




**C-49a:** Lesions of chorioptic mange on the escutcheon of a Jersey cow, a common site for infestation.



**C-49b:** Infestation of the poll of a ram with sheep-adapted *Chorioptes bovis* (poll mites).



**C-50:** Choroidal hypoplasia and coloboma of the optic nerve head in a Collie.  
From Peiffer R, Petersen-Jones S, Small Animal Ophthalmology, 4th ed, Saunders, 2009.

**chorion** [*kor'e-on*] the outermost of the fetal membranes, composed of trophoblast lined with mesoderm.

**avascular c.** the normally avascular and villous tips of the chorioallantoic membranes in pig, sheep and cattle placentas; colored white to brown, wrinkled; called also the necrotic tips.

**c. laeve** the nonvillous, membranous part of the chorion.

**chorionic** [*kor'e-on'ik*] pertaining to the chorion.

**c. girdle** a circular band of cells of placental origin that invade the endometrium and form the endometrial cups in the mare.

**c. girdle cells** see chorionic girdle (above).

**c. gonadotropin** a hormone with properties similar to those of luteinizing hormone; it is secreted in large amounts by the placenta during gestation. It stimulates the formation of interstitial cells in the testes of the fetus and causes the secretion of testosterone. In mares, pregnant mare serum gonadotropin-PMSG (called also equine chorionic gonadotropin or eCG) is found in high concentration in serum and is used primarily for stimulation of ovaries (superovulation) in ruminants. It has much more FSH than LH activity. In women (human chorionic gonadotropin - hCG) is found in high concentration in urine. It is used for induction of ovulation because of its high LH activity.

**c. somatomammotropin** see **placental lactogen**.

**c. vesicle** the early embryonic vesicle before the allantois has developed and encircled the embryo to form the chorioallantoic vesicle and supplant it.

**chorioplasmia** see **avian malaria**.

**Chorioptes** [*kor'e-op'tēz*] a genus of mange mites of the family Psoroptidae.

**C. bovis** found on the pasterns of horses and cattle, on the scrotum of sheep and on the perineal region of cattle. Causes **chorioptic mange**.

**C. texanus** occurs on goats and reindeer.

**chorioptic mange** [*kor'e-op'tik*] the common form of mite infestation in cattle, sheep, goats and horses caused by *Chorioptes bovis*. Cattle show small scabs on the perineum, tailhead and back of the udder without irritation, the legs and on the scrotum of the ram, and may suffer from infertility. Called also leg mange, tail mange, symbiotic mange. Horses show severe dermatitis behind the pastern with severe itching at first and then soreness. Sheep show a scaly dermatitis on the poll (poll mites)

**chorioretinal** [*kor'e-o-ret'i-nāl*] pertaining to the choroid and retina.

**c. dysplasia** abnormal development of the choroid and retina; occurs in **collie** eye anomaly and other conditions/breeds.

**chorioretinitis** [*kor'e-o-ret'i-ni'tis*] inflammation of the choroid and retina. Occurs with numerous infectious and non-infectious diseases in all species. Can be seen as a distinct ocular entity or as part of a broader systemic disease.

**chorioretinopathy** [*kor'e-o-ret'i-nop'ə-the*] a pathologic process involving both the choroid and retina.

**chorista** defective development due to, or marked by, displacement of the primordium, the earliest sign of development of an organ.

**choristoma** [*kor'is-to'mā*] a mass of histologically normal tissue in an abnormal location.

**choroid** [*kor'oid*] the posterior portion of the middle, vascular (uveal) tunic of the eye, located between the sclera and the retina. It contains an abundant supply of blood vessels and (in all but albino and subalbinotic individuals) melanin which reduces reflection and scattering of light not absorbed by the retinal photoreceptors. Responsible for outer retinal nutrition. See also **tapetum**, **vascular lamina**.

**c. plexus** see **choroid plexus**.

**choroidal** [*kor'oid'əl*] pertaining to or emanating from the choroid.

**c. hypoplasia** genetically determined relative lack of choroid formation leading to funduscopically visible sclera and sometimes overlying retinal detachment; a hallmark sign of **Collie** eye anomaly, and also seen in association with inherited coat color dilution characteristics, e.g., blue merles and harlequins.

**c. inflammation** see **choroiditis**.

**choroidea** [*kor'oid'e-ə*] choroid.

**choroiditis** [*kor'oid-i'tis*] inflammation of the choroid.

**choroidocapillary layer** [*kor-oi'do-kap'i-lar'e*] one of the five laminae in the choroid coat of the eye.

**choroidocyclitis** [*kor-oi'do-sik-li'tis*] inflammation of the choroid and ciliary body.

**choroidoiritis** [*kor-oi'do-i-ri'tis*] inflammation of the choroid and iris.

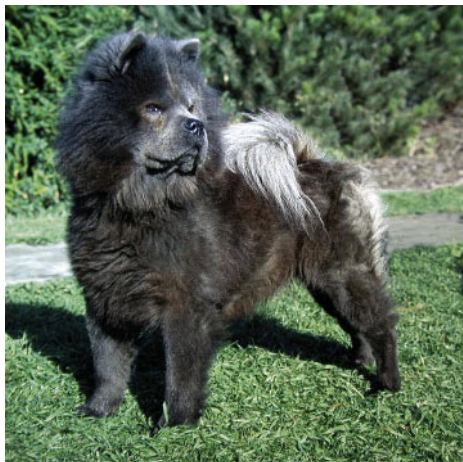
**choroidoretinitis** [*kor-oi'do-ret'i-ni'tis*] chorioretinitis.

**chou moellier** *Brassica oleracea* var. *acephala*.

**Chow Chow** a medium-sized dog with a distinctive short-coupled body, erect ears and typically very thick, medium length coat; there is also a smooth, short-coated variety. It has a distinctive shorter, "stilted" gait, related to its very straight hindlegs. The breed is distinguished by a blue-black coloring on the tongue and much of the mouth. It is subject to myotonia congenita, believed to be inherited as an autosomal recessive trait, dysmyelinogenesis and a tyrosinase deficiency, and is predisposed to malignant melanomas and entropion.

**Christmas disease** [*kris'məs*] (hemophilia B) a hereditary hemorrhagic diathesis clinically similar to, but less common than, hemophilia A (classic hemophilia), caused by deficiency of clotting factor IX (Christmas factor, plasma **thromboplastin** component). It is an X chromosome-linked recessive trait in humans, several dog breeds and a family of British shorthair cats. Mixed breed dogs and rarely domestic breed cats can be affected. It is a mild to moderate disease in the Cairn





C-51: Chow chow.

terrier, American Cocker spaniel and French bulldog, and a severe disease in Coonhounds, St. Bernards and Alaskan malamutes. Carrier females can have normal factor IX activity but genetic testing is available to identify carriers in some breeds.

**Christmas factor** [*kris'mæs*] clotting factor IX; deficiency is the cause of **Christmas disease** (hemophilia B). See also plasma **thromboplastin** component.

**Christmas rose** [*kris'mæs*] *Helleborus niger*.

**chromaffin** [*kro-maf'in*] taking up and staining strongly with chromium salts.

**c. reaction** application of Zenker's solution to the flat cut surface of freshly excised chromaffin tumor forms a dark pigment within 20 minutes.

**c. tissue** a tissue composed largely of chromaffin cells, well supplied with nerves and vessels; it occurs in the adrenal medulla and also forms the paraganglia of the body, e.g., the carotid bodies, along with the sympathetic nerves, and in other organs.

**chromaffinoma** [*kro-maf'i-no'mæ*] **1.** any tumor containing chromaffin cells. **2.** pheochromocytoma.

**chromaphilic substance** granular cytoplasmic reticulum and ribosomes found in nerve cell bodies; called also Nissl bodies or substance.

**chromate** any salt of chromic acid.

**c. poisoning** occurs accidentally as a result of exposure to chromate residues. Signs are abdominal pain, diarrhea and severe dehydration.

**chromated copper arsenate** a once popular wood preservative. Treated pine is also a very popular material for the construction of horse yards. It is virtually nonpoisonous; horses with pica cannot nibble enough of the soft timber to be poisoned. However, ash piles resulting from burning treated lumber can be a risk for animals (from the arsenic).

**chromatic** [*kro-mat'ik*] **1.** pertaining to color; stainable with dyes. **2.** pertaining to chromatin.

**chromatid** [*kro'mæ-tid*] either of two parallel filaments joined at the centromere which make up a chromosome, and which divide in cell division, each going to a different pole of the dividing cell and each becoming a chromosome of one of the two daughter cells.

**sister c.** a chromatid formed by a replicating chromosome during interphase; because they are derived from the one homolog and joined at the center they are exact copies of each other.

**chromatin** [*kro'mæ-tin*] the substance of the chromosomes, composed of nucleic acids and basic proteins (histones), the material in the nucleus that stains with basic dyes.

**sex c.** Barr body; the condensed mass of the material of the inactivated X chromosome in cells of normal females. See also **drumstick**.

**chromatin-negative** [*kro'mæ-tin-neg'ə-tiv*] lacking sex chromatin; characteristic of the nuclei of cells in a normal male.

**chromatin-positive** [*kro'mæ-tin-poz'iv-tiv*] containing sex chromatin; characteristic of the nuclei of cells in a normal female.

**chromat(o)-** word element. [Gr.] color, chromatin.

**chromatogenous** [*kro'mæ-toj'ə-nəs*] producing color or coloring matter.

**chromatogram** [*kro-mat'o-gram*] the record produced by chromatography.

**chromatograph** [*kro-mat'o-graf*] **1.** to analyze by chromatography; the product of chromatographic separation. **2.** the apparatus used in chromatography.

**chromatography** [*kro'mæ-tog'rə-fe*] a technique for analysis of chemical substances. The term *chromatography* literally means color writing, and originally referred to a method by which the substance to be analyzed is

poured into a vertical glass tube containing an adsorbent, the various components of the substance moving through the adsorbent at different rates, according to their degree of attraction to it, and producing bands of color at different levels of the adsorption column. The term now includes other methods utilizing the same principle, although no colors are produced and the stationary phase may be paper, a thin layer coated on a flat plate or packed in a column. The mobile phase of chromatography refers to the fluid that carries the mixture of substances in the sample through the adsorptive material. The stationary phase (or adsorbent) refers to the solid material that takes up the particles of the substance passing through it. Kaolin, alumina, silica and activated charcoal have been used as adsorbing substances or stationary phases. Classification of chromatographic techniques tends to be confusing because it may be based on the type of stationary phase, the nature of the adsorptive force, the nature of the mobile phase, or the method by which the mobile phase is introduced. The technique is a valuable tool for the research biochemist and is readily adaptable to investigations conducted in the clinical laboratory. For example, chromatography is used to detect and identify in body fluids certain sugars and amino acids associated with inborn errors of metabolism.

**adsorption c.** that in which the stationary phase is an adsorbent.

**affinity c.** a method of chromatography that utilizes the biologically important binding interactions that occur on protein surfaces. For example, an enzyme substrate is covalently coupled to an inert matrix such as a polysaccharide bead. The enzyme binds to the substrate when passed through a column of such beads while other macromolecules pass through. The enzyme can then be eluted from the column, enabling separation when present in very low concentration in a very complex mixture of other macromolecules.

**column c.** the technique in which the various solutes of a solution are allowed to travel down a column, the individual components being adsorbed by the stationary phase. The most strongly adsorbed component will remain near the top of the column; the other components will pass to positions farther and farther down the column according to their affinity for the adsorbent. If the individual components are naturally colored, they will form a series of colored bands or zones. Column chromatography has been employed to separate vitamins, steroids, hormones and alkaloids and to determine the amount of these substances in samples of body fluids.

**exclusion c.** that in which the stationary phase is a gel having a closely controlled pore size. Molecules are separated based on molecular size and shape, those which are larger than the exclusion size pass through while smaller molecules are temporarily retained in the pores.

**gas c.** a type of chromatography in which the mobile phase is an inert gas. Volatile components of the sample are separated in the column and measured by a detector. The method has been applied in the clinical laboratory to separate and quantify steroids, barbiturates and lipids.

**gas-liquid c.** gas chromatography in which the substances to be separated are moved by an inert gas along a tube filled with a finely divided inert solid coated with a nonvolatile substance; each component migrates at a rate determined by its solubility in the stationary phase and its vapor pressure.

**gel-filtration c., gel-permeation chromatography** exclusion chromatography.

**high performance liquid c. (HPLC)** a miniaturized method in which the solution to be analyzed is passed, under high pressure, through a long, thin column packed with tiny beads such that analyses are completed in minutes rather than hours and with improved resolution.

**ion-exchange c.** that utilizing resins to which are coupled either cations or anions that will exchange with other cations or anions in the material passed through their meshwork.

**molecular sieve c.** exclusion chromatography.

**paper c.** a form of chromatography in which a sheet of special paper is substituted for the adsorption column. After separation of the components as a consequence of their differential migratory velocities, they are stained to make the chromatogram visible. In the clinical laboratory paper chromatography is employed to detect and identify sugars and amino acids.

**partition c.** a form of separation of solutes utilizing the partition of the solutes between two liquid phases, namely the original solvent and the film of solvent on the adsorption column.

**thin-layer c.** that in which the stationary phase is a thin layer of an adsorbent such as silica gel coated on a flat plate. It is otherwise similar to paper chromatography, but is more useful for the separation of lipids.

**chromatolysis** [*kro'mæ-tol'ə-sis*] **1.** the dissolution and disintegration of the chromatin of cell nuclei. **2.** disintegration and redistribution of the Nissl bodies of a neuron as a result of injury, fatigue or exhaustion.

**chromatophil** [*kro'mæ-to-fil'*] a cell or structure that stains easily.



**chromatophore** [kro-mat'ō-for'] any pigmentary cell or color-producing plastid.

**chromatophoroma** see malignant **melanoma**.

**chromatosome** [kro-mat'ō-sōm'] the basic nucleoprotein structural unit which consists of 166 base pairs of DNA in association with core and linker histones.

**chromaturia** [kro'mā-tu're-ə] abnormal coloration of the urine.

**chromhidrosis** [kro'mi-dro'sis] secretion of colored sweat.

**chromic acid** **1.** a dibasic acid, H<sub>2</sub>CrO<sub>4</sub>; its salts are called chromates. **2.** chromium trioxide.

**chromidium** [kro'me-əm] pl. *chromidia* a granule of extranuclear chromatin in the cytoplasm of a cell.

**chromidrosis** see **chromhidrosis**.

**chromium (Cr)** a chemical element, atomic number 24, atomic weight 51.996.

**c.-51 (<sup>51</sup>Cr)** a radioisotope of chromium having a half-life of 27.8 days; used to label red blood cells to determine red cell volume and red cell survival time. See also **Cr<sup>51</sup> EDTA**.

**c. nutritional deficiency** possibly causally related to the onset of diabetes mellitus in primates.

**c. poisoning** characterized by severe gastroenteritis, diarrhea and dehydration.

**c. trioxide** possibly carcinogenic in humans. See also **chromate**.

**chrom(o)-** word element. [Gr.] relationship to color.

**chromo body** large, sclerotic bodies seen in subcutaneous microabscesses in chromoblastomycosis.

**Chromobacterium violaceum** [kro'mo-bak-tēr'e-əm] a gram-negative bacterium normally found in soil in tropical and subtropical areas. It is associated with pneumonia and other infections in several species.

**chromoblast** [kro'mo-blast] an embryonic cell that develops into a pigment cell.

**chromoblastomycosis** [kro'mo-blas'to-mi-ko'sis] infections of skin and subcutaneous tissues caused by **dematiaceous** fungi.

**chromoclastogenic** [kro'mo-klas'to-jen'ik] giving rise to or inducing chromosomal disruption or damage.

**chromocystoscopy** [kro'mo-sis-tos'kə-pe] cystoscopy of the ureteral orifices after oral, or intravenous, administration of a dye which is excreted in the urine. Using a cystoscope, the ureteral orifices are observed for the passage of dye-stained urine into the bladder; absence of dye flow suggests ureteral obstruction or renal disease.

**chromocyte** [kro'mo-sīt] any colored cell or pigmented corpuscle.

**chromodacryorrhea** [kro'mo-dak're-o-re'ə] blood-stained tears; seen with marked ulcerative conjunctivitis or obstruction or disease of the nasolacrimal apparatus in any species. This term has also been applied to **sialodacryoadenitis** in rodents, when excessive porphyrins rather than blood are secreted with tears.

**chromogen** [kro'mo-jen] any substance giving origin to a coloring matter.

**chromogenesis** [kro'mo-jen'ə-sis] the formation of color or pigment.

**chromogenic** [kro'mo-jen'ik] producing color or pigment.

**chromogranin A** [kro'mo-gran'in] see **parathyroid** secretory protein.

**chromolysis** see **chromatolysis**.

**chromomere** [kro'mo-mēr] **1.** the bead-like granules, consisting of condensed chromatin, occurring in series along the chromosomes of eukaryotes. **2.** granulomere.

**chromomycosis** [kro'mo-mi-ko'sis] a subcutaneous mycotic infection caused by a deeply pigmented fungus, e.g., *Curvularia* and *Phialophora*.

**chromonema** [kro'mo-ne'mə] pl. *chromonemata* [Gr.] the coiled central thread of a chromatid along which lie the chromomeres.

**chromophil** [kro'mo-fil] any easily stainable structure.

**chromophobe** [kro'mo-fōb] any cell, structure or tissue that does not stain readily; applied especially to the chromophobe cells (ACTH-secreting) of the anterior lobe of the pituitary gland.

**c. adenoma** a benign neoplasm derived from chromophobe cells of the pars distalis of the pituitary gland. May be functional, producing excess ACTH and pituitary-dependent hyperadrenocorticism. Nonfunctional tumors of the pars distalis usually cause clinical signs by compression of the pituitary gland and other nearby structures. Clinical signs include incoordination, weakness and exercise intolerance, muscle atrophy, sexual inactivity, blindness and dilatation and fixation of the pupils.

**c. carcinoma** rare, typically nonfunctional pituitary tumors are usually large and invasive causing destruction of the pars distalis leading to panhypopituitarism and diabetes insipidus. There is extensive invasion of the brain and cranial bones, and metastases to spleen and liver and to regional lymph nodes may occur.

**chromophobia** [kro'mo-fō-be-ə] the quality of staining poorly with dyes.

**chromophore** [kro'mo-for] any chemical group whose presence gives a decided color to a compound and which unites with certain other groups (auxochromes) to form dyes; called also color radical.

**chromophoric** [kro'mo-for'ik] **1.** bearing color. **2.** pertaining to a chromophore.

**chromoprotein** [kro'mo-pro'tēn] a protein combined with a pigment, e.g., hemoglobin.

**chromoscopy** [kro-mos'kə-pe] the diagnosis of renal function by the color of urine following the administration of dyes.

**gastric c.** diagnosis of gastric function by the color of the gastric contents.

**chromosomal** [kro'mo-sōm'əl] emanating from or pertaining to chromosome.

**c. aberration** see chromosomal abnormality (below).

**c. abnormality** abnormal karyotype; abnormalities can be detected before birth by means of amniocentesis, or after birth, but many are probably never observed because they cause death and disposal of the fetus. The abnormalities are either of number, or of composition of the individual chromosomes. Monosomy and trisomy are examples of numerical abnormalities. Translocations are examples of abnormalities of structure where parts of one chromosome have been transferred to another. The cause of these abnormalities is not known. Their importance is that many of them are linked with structural or functional defects of the animal body. The best known ones in veterinary medicine are those that are related to infertility, e.g., translocation 1/29, translocation 27/29.

**c. analysis** fetal cells obtained by **amniocentesis** or lymphocytes from a blood sample can be cultured in the laboratory until they divide. Cell division is arrested in mid-metaphase by the drug Colcemid, a derivative of colchicine. The chromosomes can be stained by one of several techniques that produce a distinct pattern of light and dark bands along the chromosomes, and each chromosome can be recognized by its size and banding pattern. The chromosomal characteristics of an animal are referred to as its *karyotype*. This also refers to a photomicrograph of a cell nucleus that is cut apart and rearranged so that the individual chromosomes are in order and labeled. The autosomes are numbered roughly in order of decreasing length. The sex chromosomes are labeled X and Y. Karyotyping is useful in determining the presence of chromosome defects.

**c. banding** see **banding** (2).

**c. chimerism** see **chimera**.

**c. crossover** see **crossover**.

**c. deletion** in genetics, loss from a chromosome of genetic material.

**c. inversion** see **inversion** (2).

**c. linkage** see **linkage** (2).

**c. mapping** see **genetic map**.

**c. non-disjunction** failure of the chromatids or chromosomes to separate (disjoin) during meiosis.

**c. replication** see **replication**.

**c. walking** a technique for identification and isolation of contiguous sequences of genomic DNA.

**c. X inactivation** only one of a pair of female (X) chromosomes in the one cell is active, the other is inactivated.

**chromosome** [kro'mo-sōm] in animal cells, a structure in the nucleus, containing a linear thread of **deoxyribonucleic acid** (DNA), which carries genetic information and is associated with **ribonucleic acid** and histones. During cell division the material composing the chromosome is compactly coiled, making it visible with appropriate staining and permitting its movement in the cell with minimal entanglement. Each organism of a species is normally characterized by the same number of chromosomes in its somatic cells. The diploid numbers (number of total chromosomes per cell) are cattle—60, sheep—54, horse—64, donkey—62, pig—38, dog—78, cat—38, human—46. The chromosomes are arranged in pairs and one of the pairs is the sex chromosomes (XX or XY), which determines the sex of the organism. See also **heredity**.

**compound c.** a genetic engineering procedure which produces two chromosomes in which the homologous arms (e.g., two right arms of the original chromosomes) are joined at the centromere; used in genetic control of insect populations.

**homologous c's** the chromosomes of a matching pair in the diploid complement that contain alleles of specific genes.

**lampbrush c.** transcriptionally active chromosomes found in growing oocytes of a number of vertebrate (e.g., birds, reptiles) and some invertebrate animals. So named because of the bristling appearance given them by many open loops of chromatin along the extended chromosome.

**ring c.** a chromosome in which both ends have been lost (deletion) and the two broken ends have reunited to form a ring-shaped figure.

**sex c's** the chromosomes responsible for determination of the sex of the individual that develops from a zygote, in mammals constituting an unequal pair, the X and the Y chromosome.

**somatic c.** autosome.

**submetacentric c.** see **submetacentric**.

**telocentric c.** having the centromere at one end of the chromosome (terminal centromere) so that the chromosome has only one arm.

**W c.** sex chromosome in animals, such as poultry in which the female is the heterogametic state, the male has the ZZ genotype and the female the ZW genotype.

**X c.** the female sex chromosome, being carried by half the male gametes and all female gametes; female diploid cells have two X chromosomes, the male has the XY genotype.

**Y c.** the male sex chromosome, being carried by half the male gametes and none of the female gametes; male diploid cells have an X and a Y chromosome; females carry the XX genotype.

**Z c.** sex chromosome in animals, such as poultry, in which the female is the heterogametic sex; the male has the ZZ genotype and the female the ZW genotype.

**chronaxie, chronaxy** [*kro'nak-se*] the minimum time at which an electric current must flow at a voltage twice the rheobase to cause a muscle to contract.

**chronic** [*kron'ik*] persisting for a long time; the period is undefined and varies with circumstances; usually more than one week. US National Center for Health Statistics defines it as a condition of 3 months duration or longer. Also has the sense of the disease showing little change or very slow progression over a long period.

**c. obstructive pulmonary disease (COPD)** see **chronic obstructive pulmonary disease**.

**c. respiratory disease** a disease of chickens caused by infection with *Mycoplasma gallisepticum*. It is characterized by coughing, nasal discharge, respiratory rales, a long course and the complication of airsacculitis. There is a loss of egg production and wastage by culling of carcasses at the abattoir but mortality is low.

**chronics** [*kron'iks*] a feedlot term for cattle that were sick, treated and never fully recovered and do poorly and periodically relapse. Commonly, they have a significant proportion of the lung affected with consolidating bronchopneumonia and if so they may be called lungers.

**chron(o)-** word element. [Gr.] pertaining to time.

**chronobiology** [*kron'o-bi-ol'ə-je*] the scientific study of the effect of time on living systems and of biological rhythms.

**chronograph** [*kron'o-graf*] an instrument for recording small intervals of time.

**chronological tactics** [*kron'o-loj'ŋ-kəl*] techniques of planning experiments or analyzing retrospective data in order to make the most use of the passage of time, e.g., analysis of the relationship between a prior disease and a subsequent outcome.

**chronotropic** [*kron'o-tro'pik*] affecting the time or rate.

**chronotropism** [*kro-not'ro-piz-əm*] interference with regularity of a periodical movement, such as the heart's action.

**chronotropy** affecting a time or rate, as in heart rate.

**Chrosperma muscaetoxicum** see **Amianthium muscaetoxicum**.

**Chrosophora plicata** African plant in the family Euphorbiaceae; contains an unidentified toxin; causes dyspnea, diarrhea and fatal pulmonary edema. Called also *terba*.

**Chrysanthemum** [*kri-san'thə-məm*] plant genus in the family Asteraceae; contains sesquiterpene lactones; causes contact dermatitis.

**C. cinerariaefolium** the plant from which pyrethrum is extracted. Called also *Pyrethrum cinerarifolia*.

**chrysanthemum-faced dog** [*kri-san'thə-məm*] an early name for the **Shih tzu**.

**Chryseobacterium scophthalmum** an orange-pigmented, gram-negative rod-shaped bacterium that causes significant disease in turbot.

**chrys(o)-** word element. [Gr.] pertaining to gold.

**Chrysocoma ciliata** Southern African plant in the Asteraceae family; contains an unidentified toxin causing diarrhea, dermatitis, intestinal obstruction, myelomalacia in three syndromes, kaalsiekte (in lambs), lakseersiekte (adults), valsiekte. Called also *C. tenuifolia*, bitterbush, beesbossie, beeskaroo, bitterkaroo, bitterbos. See also **lakseersiekte**, **kaalsiekte**, **valsiekte**.

**Chrysolina quadrigemina** a beetle used in the biological control of St. Johns wort—*Hypericum perforatum*.

**Chrysolophus** the genus of pheasants; includes *C. amherstiae* (Lady Amherst's pheasant), *C. pictus* (golden pheasant).

**Chrysomya** a genus of flies of the family Calliphoridae. See also **screw-worm**.

**C. albiceps, C. bezziana** (Old world screw-worm).

**C. chloropyga, C. mallochii, C. ruffifacies** cause cutaneous **myiasis**. See also **Lucilia, Callitroga** and **Phormia**.

**Chrysops** [*kris'ops*] a genus of blood-sucking tropical flies of the family Tabanidae. **C. discalis** (deer fly), a vector of tularemia in the western USA, and **C. silacea**, an intermediate host of *Loa loa*, a filarial parasite. Called also **chrysops flies**.

**C. discalis, C. dimidiata, C. silacea** these flies cause painful bites and 'worry' livestock when they are about. They also mechanically transmit anthrax, anaplasmosis, the virus of infectious equine anemia, tularemia and the larvae of the filariid parasite *Loa loa*. A number of trypanosome species are also transmitted mechanically by this important means.

**Chryso sporium** [*kris'o-spor'e-əm*] saprophytic soil fungi in the phylum Ascomycota, which when inhaled have been the cause of granulomatous inflammation of the lungs (adiaspiromycosis). Also referred to as *Emmonsia*. The main species are *C. parvum* var. *parvum* (*E. parva*) and *C. parvum* var. *creescens* (*E. creescens*).

**C. guarroi** a cause of dermatomycosis in pet green iguanas (*Iguana iguana*). Now classified as *Nannizziopsis guarroi*.

**chrysotherapy** [*kris'o-ther'a-pe*] the use of gold salts in the treatment of disease, e.g., autoimmune skin diseases and rheumatoid arthritis in dogs. Gold salts have antimicrobial, anti-inflammatory, anti-immunological and antienzymatic activity. Called also **aurotherapy**.

**chthonophagia** the habit of eating clay or earth; geophagia.

**chuck** a hand grip tool to be attached to intramedullary pins to enable the surgeon to rotate or drive them into bone. See also **Jacob's hand chuck**.

**chuckering** form of restraint for South American camelids. With the camelid in a kush position, a loop of rope is tied around the lumbar area and the hind limbs are tucked into the loop, which is then tightened. As a restraint, chuckering can be used to transport alpacas safely, or for teeth trimming, oral administration of substances, or other husbandry interventions.

**chukka, chukker** a term used in polo; a polo match is divided into six chukkas of 7 minutes each.

**chun** see **cun**.

**churrido equino** [Port.] equine **neorickettsiosis**. Called also **churrio**.

**chute 1.** a device used to restrain large animals especially cattle and horses. It is a small stall into which the animal is encouraged to walk. The head is fixed, in cattle by a head bail, the back is closed and the animal can then be examined or treated. The quality of the chute depends on its freedom from injury to the animal and the operator and the accessibility of the animal for the procedures to be conducted. Speed of throughput is also an important consideration when large numbers are to be handled in repetitive treatments and quick-release gates are an essential part of the unit. Called also **stocks**, **crush**.

**2.** a similar crate or stall at a rodeo in which a wild animal can be saddled and mounted before being released to buck with the rider.

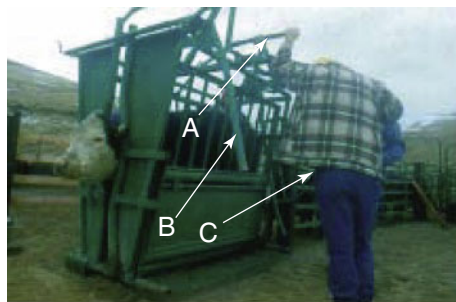
**hydraulic c.** one where the functions of closing the head catch, closing the tail gate and applying the side-squeeze are done hydraulically using separate controls for each function. Installed on operations where large numbers of cattle are being handled to relieve the manual labor associated with hand operated levers.

**drop c.** uses a "V" shaped side squeeze mechanism combined with a drop floor to hold deer.

**c. charge** fee charged by some feedlots each time cattle are worked through the chute.

**specialist c's** other special chutes are available including those which include tilt tables, hoof repair platforms, and mobile chutes.

**squeeze c.** one in which the sides of the chute can be moved inwards by a lever to squeeze and restrain the animal from moving. Common chutes used for beef cattle.



**C-52:** Cow restrained in squeeze chute. Head catch is controlled by lever A, side squeeze by lever B and tail gate C by a lever hidden behind operator in this picture.



**CHV** canine herpesvirus.

**chylangioma** [ki-lan''je-o'mə] a tumor of intestinal lymph vessels filled with chyle.

**chyle** [kiil] the milky fluid taken up by the lacteals from the intestine during digestion, consisting of lymph and triglyceride fat (chylomicrons) in a stable emulsion, and conveyed by the thoracic duct to empty into the venous system.

**chylemia** [ki-le''me-ə] the presence of chyle in the blood.

**chylifaction, chylification** the formation of chyle. Called also chylipoiesis.

**chyliform** [ki''li-form] resembling chyle.

**chyl(o)-** word element. [Gr.] relationship to chyle.

**chyloabdomen** [ki''lo-ab''da-mən] **chyloperitoneum.**

**chylocele** [ki''lo-seē] distention of the tunica vaginalis testis with effused chyle.

**chylofibrosis** [ki''lo-fi-bro'sis] pleural fibrosis resulting from chylothorax.

**chyloid** [ki''loid] resembling chyle.

**c. effusion** effusions, usually pleural, with a milky appearance, containing cholesterol or protein-lectin compounds but not chylomicron globules, may be mistaken as chylous by their gross appearance. Seen in cats with cardiomyopathy or cardiac disease. Called also pseudo-chylous effusion.

**chylomediastinum** [ki''lo-me''de-əs-ti-nəm] the presence of effused chyle in the mediastinum.

**chylomicron** [ki''lo-mi''kron] a stable droplet containing principally triglyceride fat, but also cholesterol, phospholipids and protein; found in intestinal lymphatics (lacteals) and blood during and after meals.

**c. remnant** lipoprotein particle formed by the action of lipoprotein lipase on chylomicrons; carries lipids of dietary origin to the liver for processing.

**c. test** in chilled serum, chylomicrons rise to form a creamy top layer and the serum clears; very low-density lipoproteins remain dispersed and the serum is turbid. See also **lipemia** refrigeration test.

**chylomicronemia** [ki''lo-mi''kro-ne''me-ə] **hyperchylomicronemia.**

**chylopericardium** [ki''lo-per''i-kahr''de-əm] the presence of effused chyle in the pericardium.

**chyloperitoneum** [ki''lo-per''i-to-ne''əm] the presence of effused chyle in the peritoneal cavity.

**chylopleura** [ki''lo-ploor''ə] chylothorax.

**chylopleurothorax** [ki''lo-ploor''ə-thor''aks] the presence of effused chyle and air in the pleural cavity.

**chylopoiesis** [ki''lo-poi-e''sis] production of chyle.

**chylothorax** [ki''lo-thor''aks] the presence of effused chyle in the pleural cavity. Occurs most commonly in dogs and cats, caused by traumatic injury to the thoracic duct, neoplasms in the cranial mediastinum, or a congenital abnormality of the duct, but often the cause is not known. Clinical signs are attributed to the pleural effusion. When withdrawn, the chylous fluid is characteristic.

**chylous** [ki''lʊs] pertaining to, mingled with, or of the nature of chyle.

**c. ascites** distention of the abdomen with chyle.

**c. effusion** accumulation of chyle, usually in a cavity, e.g., pleural cavity.

**c. hydrothorax** see **chylothorax.**

**chyluria** [ki-l''u-re-ə] the presence of chyle in the urine, giving it a milky appearance, due to obstruction of lymph flow, which causes rupture of lymph vessels into the renal pelvis, ureters, bladder or urethra.

**chyme** [kiim] the semifluid, homogeneous, creamy or gruel-like material produced by action of the gastric juice on ingested food and discharged through the pylorus into the duodenum.

**chymification** [ki''mi-fi-ka''shən] conversion of food into chyme; gastric digestion.

**chymodenin** a polypeptide secreted by the duodenum that specifically stimulates pancreatic secretion of chymotrypsinogen.

**chymopapain** [ki''mo-pə-pān'] a proteolytic enzyme (a sulfhydryl proteinase) from the tropical tree *Carica papaya*, commonly known as papaya or pawpaw, used in **chemonucleolysis** for the treatment of intervertebral disc disease.

**chymosin** [ki''mo-sin] the milk-curdling enzyme found in the abomasal juice of preweaned calves (before pepsin formation); a preparation from the stomach of the calf is used to coagulate milk protein in the preparation of junket and thus to facilitate its digestion. Catalyzes the conversion of caseinogen from a soluble to an insoluble form (casein or curd). Called also rennin. See also **rennet.**

**chymotrypsin** [ki''mo-trip''sin] an endopeptidase with action similar to that of trypsin, produced in the intestine by activation of chymotrypsinogen from the exocrine pancreas; a product crystallized from an extract of the pancreas of the ox has been used clinically as an anti-inflammatory agent and for enzymatic zonulolysis and débridement.

**c. test** see **BT-PABA test.**

**chymotrypsinogen** [ki''mo-trip''sin''o-jən] the inactive precursor of chymotrypsin, the form in which it is secreted by the pancreas.

**chytridiomycosis** infectious disease of amphibians worldwide caused by the chytrid fungus *Batrachochytrium dendrobatidis*. This disease has had a significant impact on the diversity of wild amphibian populations, resulting in extinctions or threatened extinction and mass die-offs of species. The fungus invades and damages the keratinised areas of the frog's skin, disrupting fluid balance. The disease is notifiable to the OIE (see Table 20).

**Ci** curie. See **becquerel.**

**CI 634** see **tiletamine.**

**cib.** [L.] *cibus* (food); used in prescription writing, e.g., post cib. indicates after meals.

**cicatrectomy** [sik''ə-trek''tə-me] excision of a **cicatrix.**

**cicatricial** [sik''ə-trish''ə] pertaining to a cicatrix.

**c. tissue** the dense fibrous tissue forming a cicatrix, derived directly from granulation tissue. Called also scar tissue.

**cicatrix** [sik-a''triks] pl. *cicatrices* [L.] the fibrous tissue left after the healing of a wound; a scar.

**cicatrization** [sik''ə-tri-za''shən] the formation of a cicatrix or scar; scarring.

**Cicer arietinum** [si'sə] see **chickpea.**

**Cicherelli rongeur** a rongeur with tapered jaws and a sharp tip; used in neurosurgery.

**cichlid** fish of the family Cichlidae encompassing more than 1,000 species from Africa and South America. Some species are important in aquaculture and others are kept as aquarium fish.

**Cichorium intybus** member of the Asteraceae plant family; the roots contain an unidentified toxin that causes salivation, diarrhea in cattle. Called also chicory.

**ciclacillin** cyclacillin.

**ciclopirox** [si''klo-pēr''oks] a broad-spectrum antifungal drug used topically to treat *Candida* and fungal infections of the skin.

**ciclosporine** see **cyclosporine.**

**Ciconiphilus pectiniventris** a species of louse (family Menoponidae) found on ducks and geese.

**Cicuta** [sik''u-tə] a genus of the plant family Apiaceae; these plants contain a toxic polyalkyne, cicutoxin, which causes hypersalivation, muscle weakness, violent convulsions and sudden death from respiratory arrest in grazing livestock, often within minutes of being eaten. Roots and tubers are most toxic. Includes *C. bolander*, *C. bulbifera*, *C. curtisii*, *C. douglasii* (*C. vagans*, *C. californica*), *C. maculata* (*C. occidentalis*), *C. virosa* (*C. mackenziana*). Called also poison hemlock, spotted water hemlock, cowbane.

**cicutoxin** [sik''u-toks''in] toxic polyalkyne (highly unsaturated aliphatic alcohol) separable from plant material of *Cicuta*.

**CID** combined immune deficiency; cytomegalic inclusion body disease.

**-cide** word element. [L.] *destruction or killing.*

**CIDR** controlled-intravaginal drug releasing devices; contain primarily progesterone and are used for the synchronization of estrus in cattle, sheep and goats.

**CIE** counter immunoelectrophoresis.

**ciguatera** [se''gwə-tə''rə] poisoning by consumption of the flesh or viscera of tropical predatory fish of a wide range of species. The causative heat-stable toxins (ciguatoxin, maitotoxin and others) originate in the dinoflagellate (*Gambierdiscus toxicus*) and possibly others or from associated bacterial microflora. The toxins are subject to bioaccumulation in fish which eat the dinoflagellates, and subsequently in the predators. Growth of the dinoflagellates is promoted by the destruction of their coral



**C-53:** Chylous effusion. Pleural. Cat. A pink tint is found in this chylous effusion, indicating some degree of hemorrhage is present. From Raskin RE, Meyer D, Canine and Feline Cytology, 2nd Edition. Saunders 2010.

reef habitat. Poisoning characterized by vomiting, diarrhea and paresis in cats, dogs, humans. See also *Lyngbya*.

**cilastatin** [sil'ē-stāt'in] an inhibitor of dehydropeptidase I, an enzyme found in renal tubules. Used in association with the antibiotic, imipenem (imipenem-cilastatin), to prevent its inactivation.

**cilia** [sil'e-ə] [L.] plural of *cilium*. **1.** the eyelashes. **2.** minute hair-like processes that extend from a cell surface, composed of nine pairs of microtubules around a core of two microtubules. They beat rhythmically to move the cell or to move fluid or mucus over the surface. Of particular importance in the respiratory epithelium, contributing greatly to the **mucociliary** escalator.

**c-associated respiratory (CAR) bacillus** now classified as *Filobacterium rodentium*

**ectopic c.** misdirected cilia emerging through the palpebral conjunctival surface and usually causing corneal irritation.

**eyelid c.** the eyelashes; absent on the lower lids of most domestic species. There are also longer tactile hairs (vibrissae) on the external surface of the eyelids.

**immotile c. syndrome** see **immotile cilia syndrome**.

**ciliariscope** [sil'e-ar'i-skōp] an instrument for examining the ciliary region of the eye.

**ciliotomy** [sil'e-ə-rot'ə-me] surgical division of the ciliary zone of the iris for the treatment of glaucoma. Not done in veterinary ophthalmology.

**ciliary** [sil'e-ar'e] pertaining to or resembling cilia; used particularly in reference to certain eye structures, such as the ciliary body or muscles.

**c. adenoma** tumor arising from the ciliary body epithelium; evident as an intraocular mass or due to signs of secondary uveitis or glaucoma.

**c. body** that section of the vascular tunic of the eye (uvea), connecting choroid and iris, made up of the ciliary muscle and the ciliary processes. The processes radiate from the ciliary muscle and give attachments to zonules supporting the lens of the eye. The ciliary muscles modify accommodation and aqueous humor outflow.

**c. body inflammation** cyclitis.

**c. epithelium** a double layer of epithelium lining the inner ciliary body. The innermost layer is non-pigmented, the outermost typically is pigmented. They continue anteriorly as the iris epithelium and dilator muscle, respectively; and posteriorly as the neurosensory retina and retinal pigment epithelium, respectively

**c. flush** dilation and hyperemia of episcleral blood vessels causing perilimbal redness. Associated with keratitis, anterior uveitis and glaucoma; not simply conjunctivitis. Called also ciliary hyperemia or injection.

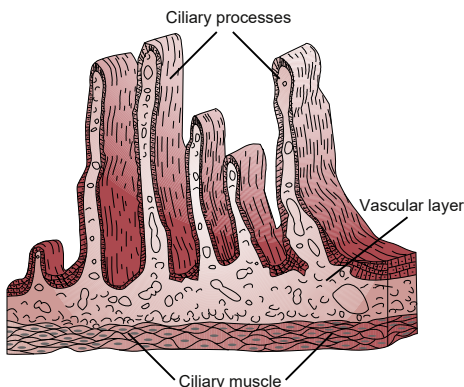
**c. glands** modified sweat glands situated at the edge of the eyelids. Called also glands of Moll.

**c. muscle** the smooth (mammals) or striated (birds and reptiles) muscle that forms the pars muscularis of the ciliary body and functions in accommodation of the eye and modification of aqueous humor outflow.

**primary c. dyskinesia** a group of rare inherited abnormalities in ciliary ultrastructure and function, leading to chronic diseases of the respiratory and reproductive tracts including sinusitis, recurrent bronchopneumonia, bronchiectasis and asthenospermia. May be associated with left-right transposition of the viscera. Humans and numerous pure dog breeds can be affected. A genetic test is available for the causative mutation in old English sheepdogs. See also **Kartagener's syndrome**.

**c. process** folded structures on the inner aspect of the ciliary body, responsible for aqueous humor production, and stabilization of the lens via the lens zonules.

**c. reflex** constriction of the pupil that occurs as part of the accommodation **reflex**.



**C-54:** Anatomy of the ciliary processes.

From Guyton AC, Hall JE, Textbook of Medical Physiology, 10th ed, Saunders, 2000.

**c. sulcus** poorly defined transition point between the posterior surface of the iris and the anterior surface of the ciliary body.

**c. zone** one of the three regions of the iris. the ciliary zone forms the outermost region of the iris (sometimes called the iris root). See also **pupillary zone** and **iris collarette**.

**c. zonules** fibrous extensions from the ciliary processes of the ciliary body connecting it to the lens and responsible for transferring accommodative forces from the ciliary body muscles to the lens. Called also lens zonules.

**Ciliata** [sil'e-a'tā] a class of protozoa (subphylum Ciliophora) whose members possess cilia during their life cycle; a few species are parasitic.

**ciliate** [sil'e-āt] **1.** having cilia. **2.** any member of the class Ciliata; in veterinary medicine the important group is the ciliate protozoa.

**ciliated** [sil'e-āt'əd] provided with cilia.

**ciliectomy** [sil'e-ek'tā-me] **1.** excision of a portion of the ciliary body. **2.** excision of the portion of the eyelid containing the roots of the eyelashes.

**cili(o)-** word element. [L.] relationship to cilia or ciliary (body).

**Ciliophora** [sil'e-of'ə-rā] a subphylum of Protozoa, including two major groups, the ciliates and suctorians, distinguished from the other subphyla by the presence of cilia at some stage during the life cycle.

**ciliovitreolenticular** pertaining to the ciliary body, vitreous and lens of the eye.

**c. block** obstruction to normal anterior flow of aqueous humor at the ciliary body and lens equator causing aqueous humor to be misdirected into the vitreous body, resulting in forward pressure on the lens, iris and ciliary body and impairment of aqueous humor outflow. Causes a form of glaucoma seen most commonly in aged cats. See **aqueous** misdirection.

**cilium** [sil'e-əm] pl. *cilia* [L.] an eyelash; see **cilia**.

**collosis** [sil-o'sis] spasmodic quivering of the eyelid.

**cilofungin** an antifungal agent, effective against yeasts, especially *Candida albicans*.

**cimetidine** [si-met'ī-dēn] a histamine type 2 (H<sub>2</sub>)-receptor antagonist that blocks the action of histamine at cell surface receptors of the gastric parietal cells and thereby reduces basal gastric acid secretion and secretion stimulated by food, histamine, gastrin and insulin. It is used for the treatment and prevention of gastric ulcers, although it has largely been replaced by more effective or long-acting H<sub>2</sub> blockers such as ranitidine and famotidine. Unlike these other antacids, cimetidine has also been used in the treatment of melanomas in horses, with varied results.

**Cimex** [si'mæks] a genus of the insect family Cimicidae.

**C. hemipterus (C. rotundatus)** parasitic bugs of poultry.

**C. lectularius** blood-sucking insects parasitizing humans for the most part, but can affect pigeons and poultry causing anemia, ill thrift and reduced production. Called also bed bugs.

**cinch** [sɪnʃ] a saddle girth on an American stock saddle. Tightens with a knot on a ring instead of with straps and buckles.

**cinchocaine** [sɪn'ko-kān'] see **dibucaine**.

**cinchona bark** [sɪn'ko-nə] dried bark of the stem or root of various South American trees of the genus *Cinchona*. It is the source of quinine, cinchonine and cinchonidine. Used as a 'bitter' and an antipyretic agent.

**cine-** word element. [Gr.] movement; see also words beginning *kine-*.

**cinéangiocardigraphy** [sɪn'ə-an''je-og'rā-fe] the photographic recording of image intensification fluoroscopy of the heart and great vessels by motion picture techniques.

**cinéangiography** [sɪn'ə-an''je-og'rā-fe] the photographic recording of fluoroscopic images of the blood vessels by motion picture techniques.

**cinéfluorography** [sɪn'ə-flōo''or-og'rā-fe] see **cineradiography**.

**cinemicrography** [sɪn'ə-mi-krog'rā-fe] the making of motion pictures of a small object through the lens system of a microscope.

**cineole** [sɪn'e-ol] see **eucalyptol**.

**cineradiography** [sɪn'ə-rā''de-og'rā-fe] the making of a motion picture record of successive images appearing in image intensification fluoroscopy.

**ciliospinal** [sil'e-o-spi'nāl] pertaining to the ciliary body and the spinal cord.

**c. reflex** ipsilateral pupil dilatation when the skin of the neck is stimulated, especially painfully. Not recognized in veterinary medicine.

**cinerea** [sɪ-nēr'e-ə] the gray matter of the nervous system.

**cinerolone** one of the ketoalcohols in *Chrysanthemum cinerariaefolium* that combines with carboxylic acids to produce pyrethrins.

**cinési-** see **kinesi-**.

**cinet(o)-** see **kinet(o)-**.

**cingulate gyrus** [sɪng'gu-lāt] the gyrus running dorsal and parallel to the corpus callosum. Called also *gyrus cinguli*.

**cingulum** [sɪng'gu-ləm] pl. *cingula* [L.] **1.** an encircling part or structure; a girdle. **2.** a bundle of association fibers partly encircling the corpus



callosum not far from the median plane, interrelating the cingulate and hippocampal gyri. **3.** the ridge at the base of the crown of some teeth.

**4.** an annular band at the vestibulovaginal junction in the female genital tract; may be the site of a vestigial hymen.

**c. membri pelvini** see pelvic **girdle**.

**c. membri thoracici** see pectoral **girdle**.

**Cinnamomum camphora** [*sin'ə-mə'məm*] see **camphor**.

**cinnamon** [*sin'ə-mən*] a herbal preparation obtained from the bark of *Cinnamomum* spp. It is used as an astringent in the treatment of diarrhea and flatulence. Cinnamon oil, sometimes used as a name for Cassia Oil, has similar activity, but contains cinnamaldehyde, which has been associated with hypersensitivity reactions.

**Cinnamon rabbit** a breed of domestic rabbit characterized by its rust or cinnamon color with gray ticking across the back, sides and underbelly.

**cinoxacin** [*sin-ok'sə-sin*] a quinolone antibiotic with activity similar to nalidixic acid. Used in urinary tract infections and bacterial prostatitis in dogs.

**ciodrin** an organophosphorus insecticide for use on animals as a powder or spray.

**Cionella lubrica** [*si'o-nəl'ə*] a terrestrial snail, the first intermediate host of *Dicrocoelium dendriticum*.

**ciprofloxacin** [*sip'ro-floks'ə-sin*] a fluoroquinolone antibiotic with particularly good activity against gram-negative bacteria, including *Enterobacteriaceae* and *Pseudomonas aeruginosa*. It is used mainly in urinary tract infections.

**circadian** [*sər-ka'de-ən*] denoting a period of about 24 hours.

**c. clock** the daily rhythm of physiological activity as expressed by the Chinese circadian clock. This explains the flow of energy or *Qi* through the body, via the meridians, each meridian having two hours of maximum and two of minimum function in every day.

**c. rhythm** the regular recurrence of certain phenomena in cycles of approximately 24 hours, e.g., biological activities that occur at about the same time each day (or night) regardless of constant darkness or other conditions of illumination.

**circannual** [*sər-kan'u-əl*] occurring rhythmically every year.

**circchoral** pertaining to biological rhythms.

**circinate** [*sur'si-nāi*] resembling a ring or circle.

**circle** [*sur'kəl*] a round figure, structure or part.

**cerebral arterial c.** anastomotic ring of vessels near the base of the brain. Called also *circulus arteriosus cerebri*. See cerebral **arterial circle** and Table 8.

**ciliary arterial c.** the ring of arteries within the ciliary muscle formed from the anterior ciliary arteries.

**iridal arterial c.** the major ring of arteries near the ciliary border of the iris formed from the posterior long ciliary arteries and supplying blood to the iris; this ring gives off radial branches that supply the minor ring near the papillary margin. Called also *circulus arteriosus iridis major* and *circulus arteriosus iridis minor*. See Table 8.

**iridal vascular c.** a ring of vessels formed by the anterior ciliary arteries; provide fine branches to the iris and ciliary body. See also ciliary arterial circle, iridal arterial circle (above).

**c. of safety** see flight **distance**.

**c. system** see breathing **circuit**.

**c. test** walking a horse in a small circle, first one direction then the other, is used in a neurological examination to detect ataxia and abnormalities in proprioception.

**c. of Willis** anastomotic ring of vessels near the base of the brain. See cerebral **arterial circle**, Table 8.

**circling** [*sur'kling*] persistent walking in circles; a sign of unilateral vestibular disease or a lesion affecting one cerebral hemisphere or one side of the diencephalon (circling occurs towards the side of the lesion; adverse syndrome).

**c. disease** see **listeriosis**.

**circomyarian** arrangement of the longitudinal somatic muscles of nematodes in which the contractile elements completely surround the sarcoplasm.

**Circoviridae** a virus family that comprises two genera, Circovirus that includes porcine circoviruses, pigeon circovirus, and psittacine beak and feather disease virus, and Gyrovirus (now placed in family *Anelloviridae*) that includes chicken anemia virus. They are the smallest animal viruses, 17 to 24 nm in diameter, contain a single-stranded circular DNA genome composed of about 2500 nucleotides and replicate in the nucleus of cells and are assumed to be dependent on the host cell for many functions required for viral replication and probably, like parvoviruses, replicate in cells that are in the S-phase of the cell cycle.

**circovirus** virus in the family Circoviridae. See also **porcine circovirus**, **psittacine beak and feather disease**, **chicken anemia**, **pigeon circovirus**, postweaning multisystem **wasting syndrome**.

**circuit** [*sur'kət*] a round course, or course followed by, for example, electrical current or an anesthetic gas.

**Bain coaxial c.** a variant of a T-piece nonrebreathing circuit for delivery of inhalant anesthetics in which the fresh gas passes up a central tube and the expired gas passes out through the outer sleeve.

**breathing c.** of an anesthetic machine is the pathway by which the inhalant anesthetic agent and oxygen are conveyed to the patient and carbon dioxide is removed. The two methods for removal of carbon dioxide are venting expired gases to the exterior ( see non-rebreathing circuit) or absorbing CO<sub>2</sub> chemically (see rebreathing circuit). See also Bain coaxial circuit (above), circle breathing circuit (below)

**circle breathing c.** of an anesthetic machine; components include corrugated tubing for connection to the patient via a Y piece, a pair of unidirectional valves, a port for the inflow of fresh gases (oxygen and inhalant anesthetic), a canister containing CO<sub>2</sub> absorbent, a reservoir bag to increase system compliance, and a pressure relief valve for venting excess gases.

**coaxial c.** see Bain coaxial circuit (above).

**Magill c.** a non-rebreathing anesthetic circuit (modification of a Mapleson A) that is efficient during spontaneous ventilation, but not during assisted or controlled ventilation

**Mapleson c.** a system for the classification of anesthetic breathing circuits (Mapleson A,B,C,D, E, and F) based on the presence or absence and positioning of components including valves and reservoir bags. Mapleson circuits are typically used as non-rebreathing or partial rebreathing circuits based on their construction and the flow rate of fresh gases used.

**non-rebreathing c.** anesthetic breathing circuits in which the exhaled gases are discharged and do not pass back to the patient.

**rebreathing c.** anesthetic breathing circuits in which the exhaled gas is recirculated to the patient with CO<sub>2</sub> removed.

**T-piece c.** a valveless, non-rebreathing circuit used to deliver inhalant anesthetics. Shaped like a T.

**Universal F-c.** a breathing circuit shaped like an F. A portion of the circuit is coaxial, externally reducing the number of tubes extending to the patient. Operation is similar to a circle breathing circuit.

**circulation** [*sur'ku-la'shən*] movement in a regular or circuitous course, returning to the point of origin, as the circulation of the blood through the heart and blood vessels. See also **circulatory system**.

**antegrade c.** circulation in the normal direction of flow.

**artificial c.** is maintained in cardiopulmonary arrest by cardiac compression.

**collateral c.** circulation carried on through secondary channels after obstruction of the principal channel supplying the part. See also **collateral vessel**.

**coronary c.** that within the coronary vessels, which supply the muscle of the heart.

**cutaneous c.** cutaneous vessels are innervated by sympathetic adrenergic vasoconstrictor fibers; vasodilation is an important mechanism for losing heat after the body has been warmed.

**enterohepatic c.** the cycle in which bile salts and other substances excreted by the liver in the bile are absorbed by the intestinal mucosa and returned to the liver via the portal circulation.

**extracorporeal c.** circulation of blood outside the body, as through a **hemodialyzer** or an **extracorporeal** circulatory support unit.

**fetal c.** circulation of blood through the body of the fetus and to and from the placenta through the umbilical cord. See also **fetal circulation**.

**hepatic c.** includes the hepatic arterial blood supply and the supply from the portal vein; drainage is via the hepatic veins to the caudal vena cava.

**lymph c.** see **lymph**.

**maternal c.** the circulation of the dam during pregnancy, including especially that of the uterus.

**micro-c.** see **microcirculation**.

**neonatal c.** circulation in the newborn immediately after birth; the umbilical vessels contract forcing blood into the fetal veins; the foramen ovale closes, the ductus arteriosus narrows and eventually closes at day 1 to 2 after birth.

**ocular c.** consists of the uveal and retinal blood vessels supported by the aqueous humor and vitreous body.

**placental c.** consists of the umbilical arteries, the vessels of the placenta proper and the umbilical veins; approximates the fetal corporeal circulation in volume.

**portal c.** a general term denoting the circulation of blood through larger vessels from the capillaries of one organ to those of another; applied especially to the passage of blood from the gastrointestinal tract, pancreas and spleen through the portal vein to the liver.

**pulmonary c.** the flow of blood from the right ventricle through the pulmonary artery to the lungs, where carbon dioxide is exchanged for oxygen, and back through the pulmonary vein to the left atrium. See also **pulmonary circulation**.

**splenic c.** flow of blood through the splenic artery and arterioles to either the capillaries, e. g. white pulp, or the highly permeable sinuses of the red pulp. Splenic venous blood drains into the portal vein and passes through the liver before re-entering the general circulation.

**systemic c.** the flow of blood from the left ventricle through the aorta, carrying oxygen and nutrient material to all the tissues of the body, and returning through the superior and inferior venae cavae to the right atrium.

**c. time** the time required for blood to flow between two given points. It is determined by injecting a substance into a vein and then measuring the time required for it to reach a specific site.

**circulatory** [sur'ku-lə-tor'e] pertaining to circulation.

**c. arrest** see **cardiac arrest**.

**c. collapse shock;** circulatory insufficiency without congestive heart failure.

**c. failure** includes cardiac or central circulatory failure and peripheral circulatory failure. Although the mechanisms, causes and clinical syndromes are different the pathogenesis is the same, the circulatory system fails to maintain the supply of oxygen and other nutrients to the tissues and to remove the carbon dioxide and other metabolites from them. The failure can be hypovolemic or maldistributive.

**c. response** changes in the cardiac and vascular functions in response to such factors as emotional stress, physical exercise, temperature change.

**c. shock** see **shock**.

**c. support** see **extracorporeal circulation**.

**c. system** the major system concerned with the movement of blood and lymph; it consists of the heart and blood vessels. The circulatory system transports to the tissues and organs of the body the oxygen, nutritive substances, immune substances, hormones and chemicals necessary for normal function and activities; it also conducts by-products of metabolism, including carbon dioxide. It helps to regulate body temperature and helps maintain normal water and electrolyte balance. The rate of blood flow through the vessels depends upon several factors: force of the heartbeat, rate of the heartbeat, venous return and control of the arterioles and capillaries by chemical, neural and thermal stimuli.

**circulus** [sur'ku-ləs] see **circle**.

**c. arteriosus cerebri** the ring of arteries which serves as the major source of blood supply to the brain; a circle around the stalk of the pituitary gland ventral to thalamus; previously called circle of Willis. See **cerebral arterial circle**.

**circum-** word element. [L.] around, encircling.

**circumanal gland** [sur'kəm-a'nəl] sebaceous glands in the skin around the anus of dogs and other carnivores. See **perianal gland**.

**circumcise** [sur'kəm-sīz] to perform circumcision. See also **preputial prolapse**.

**circumcision** [sur'kəm-sīz'hən] surgical removal of part of the prepuce. Performed to repair a prolapse of the prepuce in all species (especially in *Bos indicus* cattle), and to remove masses from the internal preputial lamina. Also called a posthioplasty, and in horses specifically, a reefing.

**circumclusion** [sur'kəm-kloo'zhən] **1.** compression of an artery by a wire and pin. **2.** the act of closing from all sides.

**circumduction** [sur'kəm-duk'shən] circular movement of a limb or of the eye.

**circumflex** [sur'kəm-fleks] curved like a bow.

**circumscribed** [sur'kəm-skribd'] bounded or limited; confined to a limited space, e.g., a circumscribed lesion.

**circumvallate** [sur'kəm-val'vāt] surrounded by a ridge or trench, as the vallate (circumvallate) papillae.

**Circus** see **harrier**.

**Cirneco dell'Etna** a small (17-26 lb) Italian hound with slender build and a fine, short tan coat. The ears are large and erect and the tail long and tapered.

**cirrhosis** [sī-ro'sis] chronic liver disease characterized by atrophy and fibrosis combined with focal attempts at regeneration that produce nodules of various sizes in a matrix of scar tissue. It results in marked remodeling of gross and microscopic hepatic structure. Usually there is also enough fatty change in surviving hepatocytes to impart some pallor (*kirrhos* [Gr.] "tawny yellow"). Can be caused by nearly any agent capable of causing chronic liver disease.



**C-55:** Macronodular cirrhosis of the liver in a dog.

From van Dijk JE, Gruys E, Mouwen JMVM, Color Atlas of Veterinary Pathology, 2nd ed, Saunders, 2007.

C

**cardiac c.** fibrosis of the liver resulting from the anoxia and centrilobular (periacinar) necrosis associated with the passive congestion of congestive heart failure. There is no nodular degeneration, however, so this is an inappropriate term for this condition.

**cirrus** [sə'rʊs] coarse hairs, longer than those in the normal coat and less coarse than tactile hairs.

**c. capitis** hairs of the forehead.

**c. caudae** hairs of the tail.

**c. metacarpeus** the tuft of long hairs around the fetlock of the forelimb of horses; also called the forelimb feather.

**c. metatarsus** the tuft of long hairs around the fetlock of the hindlimb of horses; also called the hindlimb feather.

**Cirsium arvense** plant member of the family Asteraceae; may cause nitrate–nitrite poisoning. Called also Canada thistle.

**cis** [L.] the same side as. in organic chemistry, having certain atoms or radicals on the same side; in genetics, having the two mutant genes of a pseudoallele on the same chromosome; in molecular biology, two genes encoded in proximity on the same DNA molecule. Compare *trans*. See also *cis-trans test*.

**c.-acting element** a regulatory sequence that has an effect (e.g., regulates transcription) on a gene that is located on the same DNA molecule. Called also *c.-regulatory element*. See also *trans* acting.

**c.-acting mutation** in the lactose operon a mutation in the attenuator region that disrupts base pairing in the double-stranded portion of the termination hair pin and permits the RNA polymerase to 'read through' the termination signal.

**c.-dominant mutation** occurs in a regulatory sequence that affect a gene encoded on the same DNA molecule.

**cis-active** [sɪs] a DNA sequence that controls a gene on the same chromosome.

**cis face** the proximal (or forming) face of the Golgi apparatus. The side of the Golgi apparatus facing the endoplasmic reticulum (ER) that receives the proteins originating from the ER.

**cisapride** [sɪs'ə-prɪd] a substituted benzamide, similar to metoclopramide, which stimulates gastrointestinal motility. Used as an antiemetic by promoting gastric emptying. Withdrawn from the market

**cisplatin, cis-platinum** [sɪs'plət-in] a platinum-containing complex whose main mode of action as a chemotherapy drug resembles that of alkylating agents—production of cross-links between the two strands of DNA in the double helix so that DNA cannot be replicated and the cells cannot divide. Used in the treatment of osteosarcomas and transitional cell carcinomas in dogs. Contraindicated in cats.

**Cissus quadrangularis** African plant in family Vitaceae; contains unidentified toxin causing gastroenteritis.

**cistern** a closed space serving as a reservoir for lymph or other body fluids, especially one of the enlarged subarachnoid spaces containing cerebrospinal fluid.

**cisterna** [sɪs-tur'nə] pl. *cisternae* cistern.

**c. cerebellomedullaris, c. magna** the enlarged subarachnoid space between the caudal surface of the cerebellum and the dorsal surface of the medulla oblongata.

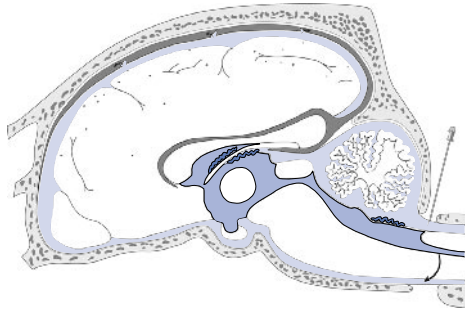
**c. chyli** the dilated portion of the thoracic duct at its origin in the lumbar region. Called also receptaculum chyli.

**c. magna** see *cisterna cerebellomedullaris* (above).

**cisternal** [sɪs-tur'nəl] pertaining to a cistern, especially the *cisterna cerebellomedullaris*.

**c. puncture** puncture of the *cisterna cerebellomedullaris* (*magna*) with a hollow needle inserted through the aperture between the occipital crest and the anterior border of the atlas. A sample of CSF may be collected, contrast medium injected or pressure measured. See also **spinal puncture**.





**C-56:** Cisternal puncture.  
From Silverstein D, Small Animal Critical Care Medicine. Saunders, 2009.

**c. space** a channel between opposing layers of a highly convoluted single membrane in the endoplasmic reticulum of all cells.

**c. tap** see cisternal puncture (above).

**cisternography** [*sis'tər-nog'rə-fe*] imaging of the basal cistern of the brain after subarachnoid injection of a contrast medium.

**cistron** [*sis'trɒn*] a DNA segment corresponding to one polypeptide chain plus the start-and-stop codon. The smallest unit of genetic material that must be intact to function as a transmitter of genetic information; as traditionally construed, approximately synonymous with gene.

**citrate** [*sit'rāt*] any salt of citric acid. Citrate is the first intermediate of the citric acid cycle (tricarboxylic acid (TCA) cycle). It also plays an important role in fatty acid synthesis which takes place in the cytoplasm. It is an allosteric activator of the pathway and it also acts to transport the substrate, acetyl-CoA, out of the mitochondria into the cytosol. The movement is assisted by two enzymes, citrate-condensing enzyme, which catalyzes the condensation of the acetyl unit with oxaloacetate in the mitochondria, and citrate-cleavage enzyme (citrate lyase), which catalyzes the release of the acetyl radical in the cytoplasm of the cell. Ruminants lack citrate lyase, as acetate derived from the rumen is converted to acetyl CoA outside mitochondria in these species.

**c. cleavage enzyme** important enzyme in fatty acid synthesis from glucose; catalyzes the split of citrate to acetyl CoA and oxaloacetate. Called also citrate lyase or ATP-citrate lyase.

**c. synthase** first enzyme of the TCA cycle catalyzing the formation of citrate from acetyl CoA and oxaloacetate.

**citreoiviridin** [*si'tre-o-vir'i-din*] the metabolite of *Penicillium citreoiviride* thought to be the cause of yellow rice poisoning, manifested in humans and experimental animals by respiratory and circulatory failure, paralysis, convulsions and death. Identical to beriberi, originally considered to be a thiamine nutritional deficiency. Also implicated in Keshan disease, a cardiomyopathy of children in China

**citric acid** [*sit'rik*] a tricarboxylic acid occurring in citrus fruits and acting as an antiscorbutic and diuretic. It functions as an anticoagulant in the blood preservatives, acid citrate dextrose and citrate phosphate dextrose. An intermediate in the tricarboxylic acid cycle. See also **citrate**.

**c. a. cycle** see **tricarboxylic acid cycle**.

**citrinin** [*sit'ri-nin*] mycotoxin produced by the fungi *Penicillium viridicatum*, *P. palitans* and *Aspergillus ochraceus*; causes tremor, recumbency, convulsions and nephrosis.

**Citrobacter** [*sit'ro-bak'tər*] a genus of gram-negative, lactose fermenting rods, members of the *Enterobacteriaceae*. Found in water, feces and urine. Opportunistic pathogens causing mastitis and septicemia.

**C. freundii** an occasional cause of septicemia in dogs and have been identified as the cause of **septicemic** cutaneous ulcerative disease of turtles. The disease is characterized by cutaneous hemorrhage and ulceration, loss of claws and digits, flaccidity and paralysis.

**C. rodentium** the cause of **transmissible** murine colonic hyperplasia.

**citronella oil** [*sit'ron-el'ə*] a volatile oil obtained from the grass *Cymbopogon nardus* or *C. winterianus*. Used as an insect repellent.

**citrovorum factor** see **folinic acid**.

**citruilline** [*sit'rə-lēn*] an alpha amino acid involved in the urea cycle.

**c. phosphorylase** see ornithine carbamoyl **transferase**.

**citruillinemia** [*sit-rul'in-e'me-ə*] a disease caused by a defect of urea metabolism resulting in a marked low concentration of citruilline. Caused by an inherited deficiency of arginosuccinate synthetase; reported in dogs and cattle. In cattle, it is characterized clinically by a sudden onset of depression, recumbency, opisthotonos and seizures in previously normal calves of up to 7 days of age.

**citruillinuria** [*sit-rul'in-u're-ə*] the presence in the urine of large amounts of citruilline, with increased concentrations also in both plasma and cerebrospinal fluid.

**Citrullus** [*sī-trul'əs*] genus of plants in family Cucurbitaceae; contains cucurbitacin, colocynthin, tetracyclic terpenes causing diarrhea; includes *C. colocynthis* (thorn apple, colocynth).

**Citrus** [*sit'rəs*] plant genus in the family Rutaceae; contains furanocoumarins and can cause primary photosensitization. Includes *C. aurantiifolia* (lime), *C. x limon* (lemon), *C. x bergamia* (bergamot).

**citrus oil** [*sit'rəs*] an extract of citrus peel; the source of **D-limonene** and **linalool**, topical insecticides. Some preparations are toxic for cats.

**cittosis** see **pica**.

**Cittotaenia** a tapeworm genus of the family Anoplocephalidae.

**C. denticulata** heavy infestations cause digestive disturbances, emaciation and some deaths in rabbits and hares.

**Civatte body** [*se-vaht'*] see **apoptotic body**, **colloidal body**.

**civet** arboreal carnivore in the family Viverridae, native to Africa, southern China and Southeast Asia. Most are nocturnal and prefer tropical forest habitats. Consists of several species in different genera, most are small cat-like animals with short legs and a long muzzle; some have a spotted coat and claws that may be non-, semi-, or retractable. They have anal or perineal glands used for territorial marking, but also harvested for making perfumes (musk). The masked palm civet (*Paguma larvata*) gained notoriety in 2003 when it was identified as a carrier of the coronavirus that was causing **severe acute respiratory syndrome** (SARS) in the human population.

**c. cat** a term used for any of several civets and for animals that are not civets, including in the US the spotted skunk (*Spilogale* spp.) and the ring-tailed cat (*Bassariscus astutus*). Not a correct name for any of them.

**CJD** Creutzfeldt-Jakob disease.

**CK** creatine kinase.

**Cl** chemical symbol, *chlorine*.

**cl** centiliter.

**Cl/HCO<sub>3</sub> exchanger** transport of anions, particularly in erythrocytes by facilitated diffusion carried out by anion exchanger 1 (band-3 protein), catalyzing the exchange of bicarbonate anion from inside the cell for a chloride anion outside the cell.

**CLAD** canine **leukocyte** adhesion deficiency.

**Cladophialophora** a genus of dematiaceae (dark-walled) fungi in the phylum **Ascomycota**.

**C. bantiana** previously *Cladosporium trichoides* and *Xylohypha bantiana*. A cause of phaeohyphomycosis.

**C. carrionii** previously *Cladosporium carrionii*. A cause of hyphomycosis in animals.

**Cladophora** a genus of freshwater green algae which have been associated with blooms

**cladosporiosis** [*klad'o-spor'e-o'sis*] any infection with the fungus *Cladosporium* spp.

**Cladosporium** [*klad'o-spor'e-əm*] a genus of dematiaceous fungi in the phylum **Ascomycota**.

**C. carrionii** see *Cladophialophora carrionii*.

**C. herbarum** causes black spot on meat in cold storage, growing at a temperature of 18°F (−8°C); spores are a common allergen.

**C. trichoides** see *Cladophialophora bantiana*.

**Cladotaenia** a genus of cestodes found in accipitiform birds; larval stages in the livers of rodents.

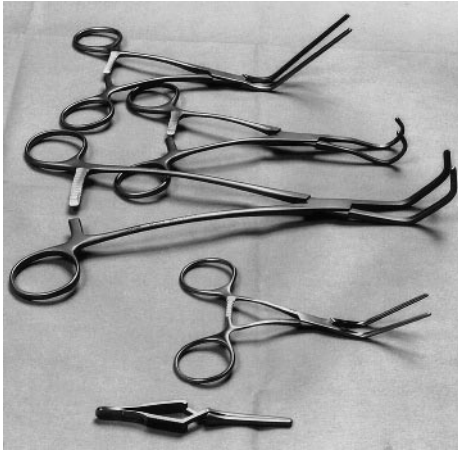
**clam digger's itch** **schistosome** dermatitis.

**clamp** [*klamp*] a device for compressing a part or structure.

**beam c.** a scissors-like instrument originally used to pick up large blocks of ice. Consists of two inward pointing, sharp pointed hooks, pivoting around a pin at their middle, like scissors, and connected to each other at their blunt ends by a short chain. As beam hooks the points of the



**C-57:** Umbilical clamp on the umbilicus of a newborn foal.  
From McAuliffe SB, Slovis NM, Color Atlas of Diseases and Disorders of the Foal, Saunders, 2008.



**C-58:** Atraumatic vascular clamps. From Slatter D, *Textbook of Small Animal Surgery*, 3rd ed, Saunders, 2002.

two blades are hooked into an overhead beam and a weight such as an animal's limb hung from the connecting chain. The animal's weight ensures that the clamp bites deeply.

**silage c.** a mass of ensilage held together at the sides between solid walls but open at the ends.

**surgical c.** a surgical instrument designed to compress a part, e.g., umbilicus.

**vascular occluding c.** used to completely or partially occlude the flow of blood in vessels.

**vulvar c.** various designs are available but all have as their objective the physical prevention of a prolapse of the vagina or uterus.

**Claoxylon australe** plant member of the family Euphorbiaceae; may cause nitrate–nitrite poisoning.

**clapotement** [klah-pawt-maw'] [Fr.] a splashing sound, as in succussion.

**Clara cell** [klah'rah] nonciliated, secretory bronchiolar epithelial cells; function as stem cells for repair in the bronchioles and can divide into ciliated or nonciliated bronchiolar cells.

**clarificant** [klar-if't-kənt] a substance that clears a liquid of turbidity.

**clarithromycin** [klə-rith'ro-mi'sin] a macrolide antibiotic derived from erythromycin, with similar properties; active against atypical mycobacteria and used to treat mycobacteriosis in dogs and cats.

**clasp-knife release** sudden release of extensor rigidity in a limb when passive flexion is attempted.

**class** [klas] **1.** a group of similar objects or values selected as a part of a classification. **2.** a taxonomic category subordinate to a phylum and superior to an order. **3.** a group of variables all of which show a value falling between certain limits.

**c. limits** the highest and lowest values eligible to be included in a class when data are being classified or grouped.

**c. mark** the value selected to represent all of the values in a class. It may be the median or average value.

**c. midpoint** the average of the upper and lower limits of a class.

**c. switching** when a B lymphocyte changes over from producing one immunoglobulin class (isotype) to another.

**classic, classical** [klas'ik-əl, klas'ik] the first recognized form of the item; serving as a standard model or guide.

**classic hemophilia** [klas'ik] see **hemophilia A**.

**classical swine fever** now the universally accepted name for hog cholera and different from African swine fever (ASF). A highly infectious disease of pigs caused by a pestivirus and characterized in its classical form by high fever, lassitude, purple discoloration of abdominal skin, conjunctivitis and nervous signs including circling, incoordination, tremor and convulsions. Most affected pigs die at 5 to 7 days with a characteristic petechiation under the kidney capsule—turkey egg kidney. There is a second form, characterized by nervous signs and caused by a strain of virus of lower virulence. Other syndromes caused by low virulence strains are reproductive inefficiency and congenital defects including myotonia congenita. One cause of **congenital tremor syndrome**. A disease notifiable to the OIE (see Table 20).

**classification** [klas'ifi-ka'shən] division of diagnoses, diseases, pathological findings, microbiological findings into categories or classes. See also **nomenclature**.

**classing** [klas'ing] categorizing according to quality, usually relative to a prestated set of rules, e.g., wool classing, sheep classing, cow classing. In some breed stud books animals may have to pass specific tests to be admitted to a special register of superior animals.

**bulk wool c.** small amounts of wool from small flocks are mixed together in a wool store to make a useful sized lot, then classed lines.

**sheep c.** classifying sheep and drafting into classes on the basis of wool yield, wool quality and conformation. Carried out as a basis for making up mating groups or groups of sheep for sale when even lines are required by purchasers.

**wool c.** grading of the wool into even lines based on type, fiber diameter, yield after cleaning, and eventual commercial value.

**clastic** [klas'tik] **1.** undergoing or causing division. **2.** separable into parts.

**clastogenic** [klas'to-jen'ik] giving rise to or inducing disruption or breakages, as of chromosomes.

**clathrate** having the shape or appearance of a lattice; pertaining to clathrate compounds.

**c. compounds** inclusion complexes in which molecules of one type are trapped within cavities of the crystalline lattice of another substance.

**clathrin** [klath'rin] a highly conserved, fibrous protein with a molecular weight of approximately 180 kDa, which forms a characteristic polyhedral coat on the surface of coated pits and coated vesicles.

**Clathrocystis** now classified within **Microcystis**.

**claudication** [klaw'di-ka'shən] limping or lameness.

**intermittent c.** a complex of signs characterized by absence of pain or discomfort in a limb when at rest, the commencement of pain, tension and weakness after walking is begun, intensification of the condition until walking is impossible, and the disappearance of signs after the limb has been at rest. It is seen in occlusive arterial disease of the limbs, e.g., iliac thrombosis.

**venous c.** intermittent claudication caused by venous stasis.

**claustrum** [claws'trəm] pl. **claustra** [L.] the thin layer of gray matter lateral to the external capsule of the brain, separating it from the white matter of the insula.

**clavate** [kla'vāt] club-shaped, as in the microconidia of *Nannizzia nana* (*Microsporum nanum*).

**Clavibacter toxicus** now classified as *Rathayibacter toxicus*.

**Claviceps** [klav'is-seps] the ergot fungi, members of the Ascomycetes class. Parasites of seedheads of grasses including cereal grains.

**C. cinerea** this ergot causes the same poisoning syndrome as paspalum ergot. See **paspalum ergot**.

**C. fusiformis** this ergot grows on bulrush millet (*Pennisetum typhoides*) and causes agalactia in sows fed on it. Called also millet ergot.

**C. paspali** see **paspalum ergot** and **paspalum stagers**.

**C. purpurea** the cause of rye **ergot**<sup>1</sup>, but also the common ergot capable of infecting most grass species.

**Claviceptaceous** emanating from or pertaining to *Claviceps* spp. fungi.

**Clavicipitaceae** [klav'isip'iti-ta'se-e] a family of fungi to which *Claviceps* spp. belong. Members have long tubular asci and threadlike ascospores.

**clavicipitaceous** belonging to the fungal family *Clavicipitaceae*.

**clavicle** [klav'ik-əl] the collar bone; reduced or absent from many domestic animals but present in animals that can grasp with their forelimbs such as the cat, many rodents, and primates. See also **clavicular intersection**.

**clavicular intersection** [klə-vik'u-lər] a vestigial clavicle. A small tendinous band embedded in the brachiocephalic muscle near the point of the shoulder in animals such as the horse and dog.

**clavulanic acid, clavulanate** a β-lactam product of *Streptomyces* spp. It binds irreversibly and inhibits β-lactamase produced by many organisms. Used commonly in combination with **amoxicillin** (amoxicillin-clavulanate).

**clavus** [kla'vəs] a corn or callus.

**claw** [klaw] **1.** integumentary appendages at the extremities of the digits of carnivores and some other animals. Because of their sharp ends they are effective in their role of holding and tearing prey. They are sheathed by the action of elastic ligaments unless the flexor muscles are tensed, but can be actively retracted in Felidae, except the cheetah. **2.** an alternative name for a digit in cloven-footed animals such as cattle, sheep, goats and pigs. **3.** metal manifold in a milking machine cluster which connects the teat cups and the milk line; carries the air admission hole which allows the controlled entry of air from the environment to the vacuum unit of the milking machine.

**c. amputation** a surgical procedure that removes one digit of cattle, usually as a salvage procedure in septic pedal arthritis.

**curved c.** see **corkscrew claw**.

**dew c.** see **dewclaw**.

**c. fold** the skin fold covering the base of the nail in dogs and cats.

**c. fracture** fractures of the third phalanx in cattle occur uncommonly, usually due to trauma, nutritional disease and penetrating wounds.

**ingrown c.** likely to develop in Felidae denied the opportunity to rake with their claws, and in Canidae, especially dewclaws.



**overgrown c.** common in old inactive birds. Causes difficulty in moving.  
**clay pigeon** target used at gun clubs. The coal tar pitch used as a binder causes severe hepatic necrosis. See also **coal tar pitch**.

**clay pipestem fibrosis** fibrosis of portal triads, sometimes with mineralization, associated with chronic parasitic irritation by *Schistosoma* spp. or *Fasciola hepatica* in the portal triads.

**Clayia theresae** guinea fowl lice.

**Cl<sub>e</sub>** elimination clearance.

**clean pasture** pasture that has been rested from grazing by the same, or parasitologically similar, species for a long, but variable period, the time depending on the parasite concerned and the climate. The pasture rarely if ever becomes completely clean, but it should be relatively so in terms of being a source of infection.

**Clavaria** a genus of mushrooms in the phylum Basidiomycota. Thought to be the cause of fatal poisoning in cattle manifested clinically by mucosal erosions, ocular lesions and abortion. Loss of hair and hooves and nervous signs are also attributed to them.

**clean shadowing** an ultrasound artifact due to the absorption of sound by a structure, leading to a clear, dark shadow distal (deep) to the structure. Commonly seen arising from cystic calculi and gastrointestinal foreign bodies.

**cleaning 1.** a major part of sanitation procedures in veterinary clinics and farms because of the heavy contamination of animal accommodation by feces and urine, and in slaughterhouses because of the rapid accumulation of fat. Requires facilities constructed with materials that are easily cleanable, that clean and unclean processes and products do not mix and a well-planned, well-executed and controlled cleaning and sanitation program for rooms, machines and equipment. High pressure cleaning with hot water and detergents is the only practicable procedure but brings its own attendant problems of disposal of effluent. **2.** colloquial term for placenta of mare or cow.

**cleanings** see **placenta**.

**clear canary** [klēr] one with no dark colored feathering seen on the surface as the bird stands normally on its perch. Regarded as a desirable trait in classifying canary features.

**clear cells** [klēr] cells with vacuolated cytoplasm and only the basal nucleus and cytoplasmic outline visible which are found in renal carcinoma.

**clear layer** [klēr] **stratum lucidum**.

**clearance (Cl)** [klēr'əns] the act of clearing; in pharmacokinetics, the complete and irreversible elimination of a drug from the body; expressed as the volume of blood cleared of drug per unit time.

**blood-urea c.** the volume of the blood cleared of urea per minute by renal elimination.

**Bromsulphalein c.** see **sulfobromophthalein** clearance test.

**creatinine c.** see **creatinine**.

**elimination c. (Cl<sub>e</sub>)** in pharmacology, the elimination (e) clearance (Cl), or the volume of plasma cleared of the drug per unit of time.

**free water c.** the capacity to excrete urine of lower osmolality than plasma, thus avoiding depletion of salt reserves.

**inulin c.** an expression of the renal efficiency in eliminating inulin from the blood, a measure of glomerular function.

**phenolsulfonphthalein (PSP) c. test** after an injection of the dye, urine samples are collected at timed intervals and the amount of excreted dye is determined and plotted against time as an indicator of renal function, particularly renal blood flow, tubular excretion, and to some extent glomerular filtration.

**c. time** the time required for a drug to be eliminated after administration. Eliminated means to the point where it can no longer be detected. Of most importance in avoiding drug residues in food animals and charges of doping in sports animals.

**urea c.** see **blood-urea clearance** (above).

**clearing** [klēr'ing] clarification.

**c. agent** added to skin scrapings to digest keratin and permit better visualization of ectoparasites or fungal hyphae and spores. Potassium hydroxide is used most commonly.

**c. time** in radiographic film-screen processing is the time required for the fixative to dissolve away the 'milkiness' of developed halides on the film.

**cleat, cleave** [klēt, klēv] claw of any cloven-footed animal.

**cleavage** [kle'vəj] **1.** division into distinct parts, e.g., the double helix. **2.** the early successive splitting of a fertilized ovum into smaller cells (blastomeres) by mitosis. See also **holoblastic**, **meroblastic**.

**c. line** tension line.

**c. site** the places on a strand of DNA where the restriction enzyme cleaves the DNA.

**cleave<sup>1</sup>** [klēv] in molecular biology, to break bonds in DNA or protein.



**C-59:** Cleft lip (harelip) in a calf.

From Blowey RW, Weaver AD, Diseases and Disorders of Cattle, Mosby, 1997.

**cleave<sup>2</sup>** see **cleat**.

**cleft** [klēft] a fissure or longitudinal opening, especially one occurring during embryonic development.

**branchial c's** the slit-like openings in the gills of fish between the branchial arches; also, the homologous branchial grooves between the branchial arches of mammalian embryos.

**c. chin** occasionally seen in cattle particularly Herefords. There is a notch at the mandibular symphysis and the central incisors may be directed centrally.

**frog c.** the sagittal cleft in the frog of the horse's foot. Called also *sulcus cunealis centralis*.

**glottic c.** entrance to the larynx; called also rima glottidis.

**infundibular c.** common opening of the auditory tubes in birds.

**interdigital c.** separates the hooves of ruminants.

**c. lip** a defect in fusion between the central prolabium and one or both lateral mesodermal masses. Most common in dogs of the brachycephalic breeds and Persian and Siamese cats; may be inherited or caused by environmental factors. Also, known to be inherited in some breeds of cattle. Often combined with defects in the palate. Supplementation with folic acid has been shown to reduce, but not eliminate, the risks of cleft palate in some dog breeds. Called also primary cleft palate, harelip, cheiloschisis. Congenital fissure, or split, may involve the hard or soft palate. A common cause of nasal regurgitation in neonates, especially foals. Called also secondary cleft palate, palatoschisis. **c. palate** see cleft lip (above). Also occurs commonly as a defect without cleft lip in diseases manifest with arthrogryposis, both hereditary as in Charolais cattle and with lupine-induced crooked calf, where it may occur with or without arthrogryposis. In the latter, teratogenic alkaloids reduce fetal movement and, if acting on the bovine fetus between 40 and 50 days gestational age, result in persistent head flexion keeping the tongue between closing palate shelves which results in a cleft palate.

**Rathke c.** see **Rathke's pouch**.

**c. tongue** the anterior portion is divided by a longitudinal cleft.

**Cleiodiscus** a genus of the family Dactylogyridae of monogenetic flukes which infest the gills of fish.



**C-60:** Cleft palate in a newborn puppy.

**clemastine fumarate** [*klem'əs-tēn*] a histamine type 1 (H<sub>1</sub>)-receptor antagonist (antihistamine) used in the treatment of allergic disorders.

**clenbuterol** [*klen-bu'tər-ol*] a long-acting, β<sub>2</sub>-adrenergic agonist. Causes bronchodilation, decreases bronchial secretion, inhibits uterine contraction and, with prolonged administration, increases fat free mass of animals. Used in the treatment of equine asthma. Used to promote muscle growth in horses and cattle. People consuming contaminated meat and liver can become intoxicated.

**clenches** the turned down portions of the nails used to keep horseshoes in place. Where the nails come out of the hoof wall they are twisted off and turned down as clenches to prevent the nails from working out. Called also clinches.

**Cleome serrulata** toxic plant in the family Capparaceae; may cause nitrate–nitrite poisoning; called also Rocky Mountain bee plant.

**Clethra arborea** toxic plant in family Clethraceae; contains grayanotoxin (andromedotoxin); causes diarrhea and sudden death. Called also lily-of-the-valley tree.

**Cleveland Bay** English coach horse used for driving. Bay the only color, 16 to 16.2 hands high.

**click–murmur syndrome** mitral valve prolapse.

**clicking** [*klik'ing*] the sound made by a horse when the shoe of the hindfoot hits the shoe of the front foot while it is trotting. Called also forging.

**Clidemia hirta** plant in family Melastomataceae; contains toxic hydrolysable tannins; causes hepatitis, nephrosis and weight loss. Called also harendong.

**clidinium bromide** [*kli-din'e-əm*] a quaternary ammonium compound with anticholinergic activity. Used in the treatment of irritable bowel syndrome in dogs.

**client** the animal's owner, owner's agent or other person responsible for the animal and whose animal(s) the veterinarian in question has had in his/her care during a finite period. See **Veterinarian-Client-Patient-Relationship (VCPR)**.

**climate** [*kli'mæt*] the total environmental effect of ambient temperature, barometric pressure, radiation, oxygen concentration, water precipitation, humidity, wind speed, wind direction and sunlight hours or cloud cover. Called also weather. See also **macroclimate**.

**c. envelope** the range of climatic variation in which a species can persist in the face of competitors, predators and disease.

**ground-level c.** the microclimate at the ground surface; critical to the welfare of insect intermediate stages, helminth larvae and fungal spores.

**c. impact** includes overall statements of total effect of climate such as **wind chill index**, **temperature–humidity index**, **effective temperature**.

**climatic** pertaining to or emanating from climate.

**c. stress** deleterious physical effects of climate on animals.

**climatogram** the elements of the climate, e.g., temperature, rainfall, are plotted against each other graphically. Establishes the type of climate such as winter rainfall. See also **bioclimatogram**.

**climatological sheath** an enclosed climatic area, e.g., a calf barn which is protected against the variations in the external climate. May be man-made or naturally occurring.

**climatotherapy** [*kli'mæt-to-ther'ə-pe*] treatment of disease by means of a favorable climate, e.g., moving horses with anhidrosis from tropical climates, cattle with altitude sickness to lower altitudes.

**climax** [*kli'maks*] the period of greatest intensity, as in the course of a disease.

**climazolam** a potent benzodiazepine used as an anxiolytic, sedative and immobilizing agent.

**climbazole** a topical antifungal agent used in shampoos to treat skin infections caused by dermatophytes and *Malassezia* spp.

**clinches** see **clenches**.

**clindamycin** [*klin'dā-mi'sin*] a semisynthetic bacteriostatic antibiotic derivative of lincomycin with improved activity against gram-positive bacteria and anaerobes. It also has some antiprotozoal activity; has been used in the treatment of toxoplasmosis in dogs and cats.

**clinic** [*klin'ik*] **1.** historically—a clinical lecture; examination of patients before a class of students or at the side of the patient **2.** classically—an establishment where patients are admitted for special study and treatment by a group of practitioners. **3.** realistically—is used in most veterinary contexts to describe an establishment conducted by a veterinarian or veterinarians at which patients are examined and treated as outpatients, in contrast to a hospital where patients are admitted for treatment.

**clinical** [*klin'ik-əl*] **1.** pertaining to a clinic or to the bedside and therefore carried out on the living animal. **2.** pertaining to or founded on actual observation and treatment of patients, as distinguished from theoretical or experimental. **3.** productive of clinical signs; thus clinical disease as distinct from subclinical.

**c. assessment** an overall statement on the patient's state of health.

**c. decision analysis** the application of clinical, epidemiological and other data to influence outcome probability and alternative decisions in such areas as surgery and pharmaceutical treatment.

**c. examination** an examination of a patient including taking the history, physical examination by palpation, auscultation and percussion, clinicopathological examination and examination of the environment.

**c. judgment** exerted while the patient is still alive; the critical decisions made on the basis of scientific observations but with the added skill provided by long experience of similar cases. To this must be added an innate ability to make balanced judgments based not only on the state of the animal and its predictable future but also on some consideration for the patient's overall well-being and the client's financial status and degree of psychological, or in some cases actual, dependence on the patient.

**c. nomenclature** a catalog of the names given to diseases and problems of animals; usually alphabetical, may be numerical. Should contain keywords (including key diagnoses and key signs) and synonyms with each list related to the other. Because of the need to sort banks of clinical data into categories it is essential that recording be accurate and that the catalog be limited—a policy of limited vocabulary.

**c. pathologist** a veterinarian skilled in clinical pathology.

**c. pathology** the examination of diseased tissues, fluids or other materials from a living patient, using all of the techniques available including chemistry, hematology, enzymology, cytology, microbiology, parasitology, protozoology, immunology and histopathology.

**c. pharmacology** the study of the actions and metabolism of drugs in living animals.

**c. policies** professional rules of thumb which are used to decide on the management of a case when there are no research results on which to base decisions. They are policies originated by the senior members of the profession, especially those in academic posts.

**c. propedeutics** preliminary training in the clinical sciences; the introduction to veterinary medicine, surgery and animal reproduction.

**c. qualifiers** adjectives used to qualify diagnoses using terms from within a group of standard variables, e.g., chronic or acute, ovine or bovine, benign or malignant, clinical or latent.

**c. record** the record, made at the time, of clinical examinations, treatments and advice given, complete with dates, names of individuals concerned and drugs or tests used. The record is desirable for the purpose of evaluating the patient's progress, and essential from the legal point of view if arguments should arise about competence or justness of charges made.

**c. signs** the abnormalities of structure or function observed in the patient by the veterinarian or the client. These are customarily graded according to severity, e.g., severe, moderate, mild, and according to speed of onset and progress, e.g., peracute, acute, subacute, chronic, intermittent.

**clinically** in terms used to express the results of a clinical examination.

**c. dead** as far as can be ascertained by a clinical examination the patient is dead. There is no pulse, no respiratory movement and no corneal reflex.

**c. normal** the patient is normal in all clinical parameters.

**clinician** [*kli-nish'ən*] a veterinarian skilled in working at first hand with sick animals in clinical surroundings, which may be in a closed environment such as a hospital, or in a field environment.

**clinicopathological** pertaining to clinical pathology, i.e., to both signs of disease and its pathology.

**clinodactyly** [*kli'no-dak'tə-le*] permanent deviation or deflection of one or more digits.

**Clinostomum complanatum, C. marginatum** flukes in the family Clinostomidae. Parasitize piscivorous birds. The first hosts are snails, the second are fish which infest the birds when they are eaten.

**clioquinol** [*kli'o-kwin'ol*] a topical antifungal and antiprotozoal agent. Called also iodochlorhydroxyquin.

**clioxanide** an anthelmintic used specifically as a flukicide. Because of its large dose size and greater variability in efficacy depending on whether the dose goes into the rumen or not, it has been largely superseded.

**CLIP** corticotropin-like intermediary peptide.

**clip** [*kli:p*] **1.** a metallic device for approximating the edges of a wound or for the prevention of bleeding from small individual blood vessels. **2.** the small, upturned flange on the front of the front shoe, on the sides of the hind shoe of a set of horseshoes, which helps to prevent lateral movement of the attached shoe. **3.** to remove the wool of a sheep by cutting with shears, usually hand shears. **4.** the total wool produced by a flock or a farm at one shearing.

**c. suture** see **Michel clip**.

**Versa c.** a hemostatic clip or staple applied with a special forceps.



**clipping** [*kliˈpɪŋ*] cutting of the hair or wool coat with clippers which may be equipped with blades of different sizes, depending on the purpose and degree of hair removal required. Fine-toothed blades are used in surgical preparation of the skin; coarse blades give various cosmetic results.

**c. machine** usually refers to electric clippers.

**clition** [*kliˈtʰe-on*] the midpoint of the anterior border of the clivus.

**Clitocybe** [*kli-tosˈɪ-be*] genus of toxic mushrooms in the phylum Basidiomycota; contain high concentrations of the toxin muscarine; causes diarrhea, vomiting. Includes *C. discolor*, *C. rivulosa*.

**clitoral** [*kli-torˈəl*] pertaining to or emanating from the clitoris.

**c. hypertrophy** may occur in Cushing's syndrome as a result of increased androgens produced by a hyperplastic or neoplastic adrenal cortex.

**c. sinus** three to five of these cavities invade the glans of the clitoris in the mare; are the site of infection in contagious metritis in this species and require the excision of the clitoris for importation into some countries.

**c. sinusectomy** ablation of the clitoral sinus, e.g., of mares as a treatment or for prevention of carrier status of contagious equine metritis. No longer recommended.

**clitorectomy** [*kliˈtʰe-ɾekˈtə-me*] clitoridectomy.

**clitoridectomy** [*kliˈtʰe-ɾi-dekˈtə-me*] excision of the clitoris.

**clitoriditis** [*kliˈtʰe-ɾi-diˈtis*] clitoritis, inflammation of the clitoris.

**clitoridotomy** [*kliˈtʰe-ɾi-dotˈə-me*] incision of the clitoris.

**clitorimegaly** [*kliˈtʰe-ɾi-megˈə-le*] enlargement of the clitoris.

**clitoris** [*kliˈtʰe-ɾis*] the small, elongated, erectile body in the female; it consists of a body (*corpus clitoridis*) composed of fused corpora cavernosa that bear (except in the queen) a superficial glans clitoridis that occupies the clitoral fossa in the ventral commissure of the vulva; it is attached to the ischial arch by two crura. It is homologous with the penis in the male.

**enlarged c.** as seen in masculinized patients.

**clitorism** [*kliˈtʰe-ɾizˈəm*] **1.** hypertrophy of the clitoris. **2.** persistent erection of the clitoris.

**clitoritis** [*kliˈtʰe-ɾiˈtis*] inflammation of the clitoris.

**clitoromegaly** [*kliˈtʰe-ɾo-megˈə-le*] enlargement of the clitoris.

**clitoroplasty** [*kliˈtʰe-ɾo-plasˈte*] plastic surgery of the clitoris.

**CLIVE** Computer-aided Learning in Veterinary Education. A consortium of six veterinary schools in the United Kingdom providing computer based learning in veterinary undergraduates courses. No longer in active development.

**Clivia miniata** African plant in the family Liliaceae; the leaves and rhizomes of the plant contain toxic isoquinoline alkaloids including lycorine.

**clivus** [*kliˈvəs*] pl. *clivi* [L.] a sloping bony surface in the posterior cranial fossa made up of part of the basisphenoid and basal part of the occipital bone; it slopes forwards and upwards from the foramen magnum to the dorsum sellae.

**CLL** chronic lymphocytic leukemia.

**cloaca** [*klo-aˈkə*] pl. *cloacae* [L.] **1.** a common passage for fecal, urinary and reproductive discharge in most lower vertebrates. See also **coprodeum**, **proctodeum**, and **urodeum**. **2.** the terminal end of the hindgut before division into rectum, bladder and genital primordia, a normal stage of mammalian development, persisting into postnatal life in birds, reptiles, amphibians, fish and other species. **3.** an opening in the involucre of a necrosed bone.

**avian c.** in birds the cloaca is divided into three poorly defined compartments: a coprodeum or a continuation of the rectum, a urodeum into which the urogenital ducts open (in the female the left genital duct is the oviduct) and the proctodeum which carries the cloacal bursa and the proctodeal glands.

**common c.** the urorectal septum fails to develop; defecation and urination share a common cavity. Seen in Manx cat.

**cloacal** [*klo-aˈkəl*] emanating from or pertaining to **cloaca**.

**c. kiss** the contact which occurs during insemination in birds when the vent of the female is everted exposing the cloacal mucosa against which the phallus of the male is pressed.

**c. membrane** caudal boundary of the cloaca; membranous in the embryo, ruptured during organogenesis.

**c. prolapse** occurs secondary to chronic straining in egg-laying or abdominal masses.

**cloacitis** [*kloˈa-siˈtis*] inflammation of the cloaca.

**cloacogenic** [*kloˈa-ko-jenˈik*] originating from the cloaca or from persisting cloacal remnants; said of a group of rare transitional-cell nonkeratinizing epidermoid anal cancers.

**cloacolithiasis** [*kloˈa-ko-li-thiˈsis*] presence of uric-acid calculi in the cloaca, typically the coprodeum. In birds and reptiles; may result from previous egg binding, malnutrition, dehydration (reptiles) or infectious causes.

**cloacopexy** surgical treatment for chronically prolapsed **cloaca**. The repositioned cloaca is fixed to surrounding tissues, typically the last rib or sternum in birds, so it can form adhesions.

**clofazimine** [*klo-fazˈɪ-mēn*] an antibacterial used to treat human leprosy; used to treat mycobacterial infections, such as feline leprosy.

**clofibrate** [*klo-fiˈbrāt*] an antihyperlipidemic drug.

**cloisonne kidney** a nonclinical condition of the kidney in goats in which the cortices are brown or black due to ferritin and hemosiderin deposits in the basement membranes of tubular epithelium.

**clomiphene citrate** [*kloˈmi-fēn*] a selective estrogen receptor modulator that blocks estrogen receptors in the pituitary and hypothalamus and stimulates ovulation.

**clomipramine** [*klo-mipˈrə-mēn*] a tricyclic antidepressant that blocks neuronal reuptake of serotonin and norepinephrine. Used in the treatment of behavioural disorders in dogs and cats.

**clonal** [*kloˈnəl*] referring to a clone.

**c. expansion** occurs, for example, when antigen specific B cells, with Th lymphocyte help, are triggered to proliferate.

**clonal selection theory** a onetime theory now accepted as an established part of immunological dogma. Each lymphocyte during its development is committed to respond to one antigenic determinant. Accordingly each lymphocyte has a single type of antigen-specific receptor on its surface. Following contact with antigen, a single lymphocyte expands to form a clone of cells with the identical specificity.

**clonality** [*klo-nalˈɪ-te*] the ability to form clones.

**clonazepam** [*klo-nazˈə-pam*] a benzodiazepine derivative used as an anticonvulsant in dogs and cats.

**clone** [*klon*] **1.** the genetically identical or closely similar progeny produced by the natural or artificial asexual reproduction of a single organism, cell or gene, e.g., plant cuttings, a cell culture descended from a single cell, or genes reproduced by recombinant DNA technology. **2.** to establish or produce such a line of progeny.

**c. bank** see **gene bank**.

**c. site** the site on a cloning vector engineered to permit ready insertion of DNA segment of interest.

**clonic** [*klonˈik*] pertaining to or characterized by clonus, e.g., clonic seizures.

**c.-tonic seizures** a seizure in which there are clonic and tonic phases with jerking and flexing of muscles alternating with relaxation.

**clonicity** [*klo-nisˈɪ-te*] the condition of being clonic.

**clonicotonic** [*klonˈɪ-ko-tonˈik*] both clonic and tonic.

**clonidine** [*kloˈni-dēn*] a centrally acting,  $\alpha$ -adrenergic, antihypertensive agent; known to stimulate growth hormone release in dogs.

**c. stimulation test** used in the diagnosis of pituitary dwarfism. Administration of clonidine causes a marked increase in blood concentrations of growth hormone in normal dogs.

**c. suppression test** used in the diagnosis of pheochromocytoma in humans. Normally, clonidine suppresses the release of catecholamines, but it does not have this effect on tumor function.

**cloning** [*klonˈɪŋ*] creating an exact copy of some biological entity (a gene, organism or cell). In domestic animal reproduction, a laboratory process of reconstruction of an embryo from an embryonic or somatic cell (somatic cell nuclear transfer). See also **recombinant DNA technology**.

**directional c.** the insertion of a segment of foreign DNA which has a defined polarity, e.g., different restriction enzyme sites at each end, into a plasmid vector.

**clonism** [*klonˈɪz-əm*] a succession of clonic spasms.

**clonogenic** [*kloˈno-jenˈik*] giving rise to a clone of cells.

**clonograph** [*klonˈo-graf*] an instrument for recording spasmodic movements of parts and tendon reflexes.

**clonorchiasis** [*kloˈnor-kiˈə-sis*] see **opisthorchiasis**.

**Clonorchis** [*kloˈnorˈkis*] a genus of liver flukes in the family Opisthorchiidae.

**C. sinensis** (syn. *Opisthorchis sinensis*) found in bile ducts, sometimes pancreatic ducts and duodenum of dogs, cats, pigs, some small wild mammals and humans. Causes diarrhea, abdominal pain, jaundice and ascites in humans. Called also oriental or Chinese liver fluke.

**clonuspasm** [*klonˈo-spazˈəm*] clonic spasm.

**clonotype** [*kloˈno-tɪp*] the phenotype of a clone of cells.

**clonus** [*kloˈnəs*] alternate involuntary muscular contraction and relaxation in rapid succession. A sign of upper motor neuron disease.

**clonidogrel** [*klo-pidˈə-grel*] a platelet inhibitor; in cats, used to prevent cardiogenic arterial thromboembolism and in dogs to prevent embolism caused by heartworm disease.

**clonidol** [*kloˈpi-dol*] a pyridinol coccidiostat used in poultry.

**cloprostenol** [*klo-pros'tə-nol*] a prostaglandin F<sub>2α</sub> analog used in several species to destroy the corpus luteum in the treatment of misalliance, termination of pregnancy, treatment of pyometra and fetal mummification, females with retained corpora lutea which are failing to come into estrus, and for estrus synchronization.

**Cloquet's canal** [*klo-ka'*] a tubular to conical virtual space containing remnants of the primary vitreous, located between the posterior aspect of the lens and the retina in the vicinity of the optic disk. See also **Mittendorf's dot** and **Bergmeister's papilla**.

**clorazepate** [*klor-az'ə-pāit*] a benzodiazepine compound with a longer half-life than diazepam; used in dogs and cats for antiseizure action, sedation and treatment of some behavioral disorders.

**clorsulon** [*klor'su-lon*] a benzenesulfonamide anthelmintic and flukacide used in cattle and sheep.

**closantel** [*klo'sən-təl*] an anthelmintic effective against *Fasciola hepatica*, *Haemonchus contortus* and nasal bots. Binds to plasma proteins and has a residual effect for *H. contortus*.

**close-coupled** a characteristic of conformation, used usually to refer to a horse, meaning that the body is short and compact with no weakness in the loin; the costal arch to stifle distance is short and the flank region well muscled.

**close junction** one of the complex structural alterations between adjacent cells. In contradistinction from a tight junction, the two cells are separated by 20 nm of intercellular space; composed of hexagonal subunits, the connexons.

**close-up dry cow** see **dry cow**.

**closed-circle anesthesia** see **circle breathing circuit**.

**closed nucleus breeding schemes** genetic programs in which no genetic material is introduced to the breeding population.

**closeout, closure** the finalization of a feeding program in a feedlot. The cattle are sold and a balance sheet is struck which includes the costs of feeding and housing or confining them.

**closing volume (CV)** the volume of gas in the lungs in excess of the residual volume (RV) at the time when small airways in the dependent portions of the lungs close during maximal exhalation. The closing capacity (CC) is equal to CV plus RV. Limited applicability to animals because of inability to force a maximal exhalation.

**clostridia** members of the genus *Clostridium*.

**enterotoxigenic c.** produce enterotoxins. See also **enterotoxemia**.

**histotoxic c.** cause extensive destruction of tissue characterized by the formation of gas. Include *C. chauvoei*, *C. colinum*, *C. haemolyticum*, *C. novyi*, *C. perfringens* type A and C, *C. septicum* and *Paenoclostridium* (previously *Clostridium*) *sordellii*.

**neurotoxic c.** produce neurotoxins. Include *C. botulinum*, *C. tetani*.

**clostridial** [*klos-trid'e-ə*] pertaining to or emanating from infection by *Clostridium* spp.

**c. dermatomyositis** see **malignant edema**.

**c. enteritis** see **enterotoxemia**.

**c. food poisoning** diarrhea in humans caused by ingestion of preformed toxin produced by *C. perfringens* type A.

**c. gangrenous dermatitis** see **blue wing disease**.

**c. gas gangrene** see **histotoxic clostridia**.

**c. hemoglobinuria** see **bacillary hemoglobinuria**.

**c. intestinal hemorrhage syndrome of dogs** see **acute hemorrhagic diarrhea syndrome**

**c. myositis** see **blackleg**.

**c. necrotic enteritis** **1.** caused in birds by *Clostridium perfringens* types A and C. Characterized by short course with severe depression, diarrhea and high mortality and necropsy findings of pseudomembranous enteritis. **2.** an alternate name for enterotoxemia in piglets caused by *Clostridium perfringens* type C.

**c. swelled head** see **ovine bighead**.

**c. ulcerative enteritis** a disease of quail caused by *Clostridium colinum*. Characterized in young quail by acute hemorrhagic enteritis and very high case fatality and morbidity rates. Necrosis and ulceration of the intestinal wall occur in birds which survive for several days.

**Clostridioides difficile** anaerobic spore forming bacteria causing antibiotic-associated **colitis**. Previously classified as *Clostridium difficile*.

**clostridiosis** [*klos-trid'ē-ō'sis*] any disease caused by *Clostridium* spp.

**intestinal c.** a disease of the horse manifested by an acute, highly fatal diarrhea associated with the presence in the gut of large numbers of *Clostridium perfringens* type A and *Clostridioides difficile* (*Clostridium difficile*). See also antibiotic-associated **colitis**.

**Clostridium** [*klos-trid'e-əm*] a genus of anaerobic spore-forming bacteria of the family *Clostridiaceae*. Most are gram-positive rods.

**C. bifermentans**, **C. sordelli** see **malignant edema**. **C. bifermentans** now classified as *Paraclostridium bifermentans*.

**C. botulinum** causes botulism from neurotoxin produced during vegetative growth. *C. botulinum* types B, C and D are associated with disease in animals but the type prevalence varies geographically. See **botulism**.

**C. butyricum** involved in the spoilage of meat.

**C. cadaveris** may be associated with colitis X in horses.

**C. chauvoei** formerly called *C. fesceri*; the cause of **blackleg**.

**C. colinum** cause of ulcerative enteritis and liver necrosis in quail, turkeys, grouse, partridge and chickens.

**C. difficile** see antibiotic-associated **colitis**. Now classified as *Clostridioides difficile*.

**C. fesceri** now called *C. chauvoei* (above).

**C. haemolyticum** formerly called *C. novyi* type D. See **bacillary hemoglobinuria**.

**C. histolyticum** a species found in feces, soil and sometimes wound infections. An important cause of meat spoilage. Now classified as *Hathewayia histolytica*.

**C. nigrificans** a thermophilic spoiler of canned meat producing hydrogen sulfide gas and causing purple staining of the inside of the can. Now called *Desulfotomaculum nigrificans*.

**C. novyi** see **infectious necrotic hepatitis**. See also *C. haemolyticum* (above). Previously called *C. oedematiens*. Type A causes **malignant edema** in cattle and sheep, and big head in rams, type B causes **infectious necrotic hepatitis** (black disease), and type C has been associated with osteomyelitis in buffalo.

**C. overgrowth** see **bacterial overgrowth**.

**C. parabotulinum** a proteolytic subgroup of *C. botulinum*; not a valid species.

**C. perfringens** cause of **enterotoxemia**. Type A causes **malignant edema** and **necrotic enteritis**, type B causes dysentery in lambs and enterotoxemia, type C causes struck in sheep and necrotic enteritis in piglets, type D causes enterotoxemia and type E causes necrotic enteritis. Previously called *C. welchii*.

**C. piliforme** the cause of Tyzzer's disease.

**C. putrefaciens** causes deep bone taint in hams. See also *C. putrificum* (below).

**C. putrificum** a cause of bone taint in cured hams. There is no detectable abnormality on the surface of the ham.

**C. septicum** formerly called *C. septicum*. See **malignant edema, braxy**.

**C. sordelli** cause of a small proportion of cases of gas gangrene in ruminants. See also **abomasitis**.

**C. spiroforme** associated with enteritis and enterocolitis in rabbits, guinea pigs and foals.

**C. sporogenes** an apathogenic clostridium often found in lesions of gas gangrene.

**C. tetani** a common inhabitant of soil and human and horse intestines, and the cause of **tetanus** in humans and domestic animals.

**C. villosum** found in fight abscesses and pleurisy in cats. Now classified as *Filifactor villosus*.

**C. welchii** see *C. perfringens* (above).

**clostridium** [*klos-trid'e-əm*] pl. *clostridia* [Gr.] any individual of the genus

**closure** [*klo'zhər*] usually refers to suturing of a surgical incision.

**clot** [*klot*] **1.** a semisolidified mass, as of blood or lymph. **2.** to form such a mass.

**dilute whole blood c. retraction test** an indirect measure of fibrinolytic activity. Whole blood is diluted with saline, chilled, then warmed. The time for clot retraction, and later clot lysis, is measured.

**chicken-fat c.** clots that develop after death; largely devoid of red blood cells. More common in animals that have had anemia or in which blood sedimentation was increased. Seen more often in horses than in other species.

**currant-jelly c.** the blood clot in the heart at post mortem that contains erythrocytes. Is indicative of clotting before sedimentation of the cells has occurred.

**c. formation** see **clotting**.

**c. lysis** the time required for a clot to lyse at 98.6°F (37°C) is a reflection of the plasmin content of the blood. Clot retraction and fibrinogen content of the blood sample are also influential.

**c. retraction** the drawing away of a blood clot from a vessel wall, a function of thrombosthenin, released by blood platelets.

**c. retraction test** a test for platelet numbers and function. Clotted whole blood should retract away from the sides of a glass tube in 1 to 2 hours.

**cloth chewing** a vice, usually of cats and Siamese in particular. Believed to be an abnormal extension of sucking behavior. See also **wool sucking**.

**clothing** artificial covering for protection or decoration or as a livery. **animal c.** includes rugs for cattle and horses and for Sharlea sheep in sheds. For dogs there is a great variety of decorative clothing limited only



by the imagination of the owner. Pleasure horses are also likely to have a wardrobe of rugs including a lightweight cooling-off rug and a waterproof mackintosh, a hood to cover the head and neck, a cap to cover the head only, hoof boots of various sorts, protective leg bandages, a tail sock and eye goggles.

**protective c.** for the veterinarian; this includes coveralls, rubber knee boots, rubber or plastic sleeves and gloves, obstetric gowns, surgical gowns, caps, masks and overshoes.

**clotrimazole** [*klo-trim'ə-zōl*] a synthetic imidazole derivative with antifungal activity, similar to ketoconazole; applied topically in the treatment of diseases caused by dermatophytes and yeasts.

**clotting** [*klot'ing*] the formation of a jellylike substance over the ends or within the walls of a blood vessel, with resultant stoppage of the blood flow. Clotting is one of the natural defense mechanisms of the body when injury occurs. A clot will usually form within 5 minutes after a blood vessel wall has been damaged. The clotting mechanism is triggered by the platelets, which disintegrate as they pass over rough places in the injured surface. As they disintegrate they release serotonin and thromboplastin. Serotonin causes constriction of the blood vessels and reduction of local blood pressure. Thromboplastin unites with calcium ions and other substances which promote the formation of fibrin. When examined under a microscope, a clot consists of a mesh of fine threads of fibrin in which are embedded erythrocytes and leukocytes, small amounts of fluid (serum), and platelets.

**c. defects** see **coagulopathy**.

**c. factors** a series of plasma proteins which are related through a complex cascade of enzyme-catalyzed reactions involving the sequential cleavage of large protein molecules to produce peptides, each of which converts an inactive zymogen precursor (factor II) into an active enzyme (IIa) leading to the formation of a fibrin clot. They are designated by Roman numerals, and an additional 'a' to indicate the activated state. They are: factor I (**fibrinogen**), factor II (**prothrombin**), factor III (tissue factor, tissue **thromboplastin**), factor IV (**calcium**), factor V (proaccelerin), factor VI (no longer considered active in hemostasis), factor VII (**proconvertin**), factor VIII (**antihemophilic factor**), factor IX (plasma **thromboplastin** component; Christmas factor), factor X (**Stuart factor**), factor XI (plasma **thromboplastin** antecedent), factor XII (**Hageman factor**), factor XIII (fibrin stabilizing **factor**).

**c. time** see **activated clotting time**.

**tissue c. factor** clotting factor III; tissue **thromboplastin**.

**cloudburst** [*cloud'burst*] a problem in doe goats. Pseudopregnancy is terminated by the sudden evacuation of a large volume of fluid from the uterus. Abdominal distention subsides and the doe begins an indifferent lactation.

**cloudy swelling** [*clou'de*] a term which has been discarded. It was used to describe an early stage of toxic degenerative changes, especially in protein constituents of organs in infectious diseases, in which the tissues appear swollen, parboiled and opaque but revert to normal when the cause is removed. Called also albuminoid, or albuminous, degeneration.

**clove hitch** [*klōv*] see **Miller's suture tie**.

**cloven hoofed** a two-toed ungulate. Found on members within the mammalian order **Artiodactyla**.

**clover** [*klo'vər*] members of plant family Fabaceae; essential legume component of improved and irrigated pastures, and highly adapted to haymaking. Some annuals, e.g., sweet clover, are used as forage crops. They provide a large bulk of fiber and energy and a high content of protein and calcium. They play a part in preventing hypomagnesemia in cattle on pasture. Common varieties, including species and cultivars, are: *Trifolium alpestre* (alpestrine), *T. fragiferum* (strawberry), *T. hybridum* (alsike), *T. pratense* (red), *T. repens* (ladino, white), *T. subterraneum* (subterranean), *Melilotus alba* (sweet, moldy sweet, white sweet, Bokhara), *M. officinalis* (yellow sweet), *Medicago minima* (burr).

**c. disease** see **estrogenism**.

**c. poisoning** clovers can cause poisoning in a number of ways. They are important in their contribution to the occurrence of ruminal tympany, of urolithiasis, and chronic copper poisoning. Individual poisonous plant species are sweet clover, not poisonous when grazed green, but which contains coumarins that in mouldy sweet clover hay can be metabolized to the anticoagulant dicoumarol, alsike clover which is reputed to be hepatotoxic, and white clover, ladino, red and particularly subterranean clovers which contain estrogenic substances.

**c. stone** see clover **uroliths**.

**c. tree** *Goodia lotifolia*.

**Cloward technique** a human surgical approach to the removal of ruptured cervical discs and fusion of the intervertebral space. A modification of this technique is used in horses to treat vertebral body

malformations and spinal cord trauma which cause compression of the cervical spinal cord.

**clownfish** (*Amphiprion* spp.) a small, colorful tropical fish with distinctive orange, white and black stripes or patches. Made popular with the blockbuster movie "Nemo". They live symbiotically with sea anemones, being unaffected by its poison. Very popular as aquarium fish.

**cloxacillin** [*klok'sə-sil'in*] a semisynthetic penicillin, resistant to  $\beta$ -lactamase and active against gram-positive bacteria.

**club colony** so-called sulfur granules in lesions of actinomycosis, actinobacillosis and botryomycosis which consist of central colonies of *Actinomyces bovis*, *Actinobacillus lignierisii*, or *Staphylococcus aureus* surrounded by club-shaped structures of reactive protein.

**club lamb fungus** a recently described dermatophyte (ringworm) infection of lambs in the US, usually recently shorn, caused by *Trichophyton* spp. Occurs over the body with circular areas of matting and loss of the wool staple. Infection of human handlers is common. One cause of rejection from admission to shows.

**clubbed down** a condition in chickens suffering from a nutritional deficiency of riboflavin: the erupting feathers do not rupture the feather sheaths properly, causing the feathers to have a coiled structure. There is also an apparently infectious form of the disease, relating to probable viral infections in the parent breeding chickens

**clubfoot** [*klub'foot*] see **dactylomegaly**.

**Clumber spaniel** a heavy (55-85 lb), powerfully built dog with long body, short legs and very large head. The tail may be docked or natural. The coat is flat, silky and white with small lemon-colored markings mainly around the head. It has a distinctive slow, rolling gait. Identified as a Vulnerable Native Breed by the Kennel Club UK.

**clumping** [*klump'ing*] the aggregation of particles, such as bacteria or other cells, into irregular masses.

**Clun Forest sheep** English shortwool, meat sheep with brown face and legs.

**cluneal** [*kloo'ne-əl*] pertaining to the buttocks.

**clunus** [*kloo'nis*] pl. *clunes* [L.] buttock.

**cluster** [*klus'tər*] **1.** in epidemiological terms a naturally occurring group of similar units, e.g., animals which resemble each other, with respect to one or more variables, more than animals in different groups do, or a group of cases of a single disease in time or space. **2.** assembly of claw and teat cups, as part of a milking machine.

**c. analysis** **1.** statistical methods used to group variables or observations into strongly interrelated subgroups. **2.** a statistical analysis of the relationships between clusters in time and/or space.

**c. sampling** see cluster **sampling**.

**time c.** a cluster of cases at particular points along a time axis.

**clustering** [*klus'tər-ing*] the gathering together of disease events. The clustering may be in space, geographical clustering, or in time, temporal clustering. See also **cluster**.

**clutch** **1.** the number of eggs laid by a hen on consecutive days in an uninterrupted series. Clutch lengths vary from 2 to 6 days but may be as many as 360. **2.** a setting of eggs. **3.** a group of chickens hatched by a hen from a setting of eggs.

**Clydesdale** Scottish medium to heavy draft horse, bay, brown or black in color, usually with white on the face and limbs, about 16.2 hands high. Very well behaved and showy because of eager action, white points and long leg feather.

**clysis** [*kli'sis*] the parenteral administration of any of several different types of solution or suspension to replace lost body fluid, supply nourishment, or raise blood pressure.

**clyster** [*kli'stər*] an enema.

**Cm** chemical symbol, *curium*.

**cm** centimorgan.

**cm** centimeter.

**cm<sup>2</sup>** square centimeter.

**cm<sup>3</sup>** cubic centimeter; equivalent of 1 milliliter. Also abbreviated cc.

**C<sub>max</sub>** term used in pharmacokinetics to indicate the maximum plasma concentration (C) of the drug.

**cmH<sub>2</sub>O** centimeters of water; a unit of pressure. Used in measurement of central venous pressure and intracranial pressure.

**CMI** cell-mediated immunity.

**CML** cell-mediated lympholysis.

**CMM** cervical malformation and malarticulation. See **cervical spondylomyelopathy**.

**c mm** cubic millimeter; mm<sup>3</sup>

**CMO** craniomandibular **osteopathy**.

**CMP** cytidine monophosphate.

**CMPAF** cattle material prohibited in animal feed.

**CMR** canine multi-focal **retinopathy**.



**C-61:** *Cnemidocoptes* a budgerigar.

Hnilica K, Small Animal Dermatology: A Color Atlas and Therapeutic Guide, 4th Edition. Saunders, 2016

**CMT** California mastitis test.

**CMV** cytomegalovirus.

**CMVI** chronic mitral valve insufficiency.

**Cnemidocoptes** a genus of mites of the family Sarcoptidae. Called also *Knemidocoptes*.

*C. jamaicensis* causes scaly leg in Jamaican wild birds.

*C. laevis gallinae* causes depulming itch of fowl, pheasants and geese.

*C. laevis laevis* causes depulming scabies in pigeons.

*C. mutans* causes scaly leg in fowls and turkeys.

*C. pilae* causes scaly leg and a crumbly, honeycomb-like mass at the cere of the budgerigar or parakeet, called scaly face.

**cnemidocoptic mange** a series of diseases of birds, including scaly leg of poultry (*Cnemidocoptes mutans*), depulming itch of poultry (*C. gallinae*) and scaly face and tassel foot of cage birds (*C. pilae*).

**Cnephia** a genus of flies of the family Simuliidae which cause intense livestock 'worry'. Called also black flies. Includes *C. pecuarum*, a significant pest of livestock along the Mississippi River.

**cnidia** see **nematocysts**.

**CNS** central nervous system.

**Co** chemical symbol, *cobalt*.

**CO<sub>2</sub>** see **carbon dioxide**.

**CO<sub>2</sub> content** see **carbon dioxide** content.

**CO<sub>2</sub> pistol** a weapon for firing darts containing immobilizing agents at animals. Powered by compressed CO<sub>2</sub> and effective only at very short ranges—ranges at which cordite powered projectiles would cause trauma.

**CoA** coenzyme A.

**coadaptation** [*ko-ad''ap-ta'shən*] the mutual, correlated, adaptive changes in two interdependent organs.

**coagglutination** [*ko''a-gloo''ti-na'shən*] the aggregation of particulate antigens with multiple surface agglutinins.

**coagglutinin** [*ko''a-gloo''ti-nin*] partial agglutinin.

**coagulability** [*ko-ag''u-lə-bil'i-te*] the state of being capable of forming or of being formed into clots.

**coagulant** [*ko-ag''u-lənt*] promoting, accelerating, or making possible coagulation of blood; also, an agent that so acts.

**coagulase** [*ko-ag''u-lās*] an enzyme produced by pathogenic species of staphylococci that induces clotting of plasma and protects the bacteria from clearance from the site of infection.

**c. test** enzymatic conversion of fibrinogen in plasma to fibrin is used as a means of identifying pathogenic species of staphylococci. The test is performed overnight in a tube. Most coagulase-positive staphylococci are pathogenic; coagulase-negative staphylococci are less likely to be pathogenic. Correlated with production of clumping or bound coagulase, which can be tested for rapidly on a slide.

**coagulate** [*ko-ag''u-lāi*] **1.** to cause to clot. **2.** to become clotted.

**coagulation** [*ko-ag''u-lā'shən*] **1.** formation of a clot. **2.** in surgery, the disruption of tissue by physical means to form an amorphous residuum, as in **electrocoagulation** and **photocoagulation**.

**activated c. time (ACT)** see **activated** clotting time.

**bipolar c.** the use of tissue forceps as the active electrodes to produce electrocoagulation of tissues.

**biterminal c.** see monopolar **electrocoagulation**.

**c. cascade** the sequence of enzymatic reactions leading to the formation of a blood clot. Each is initiated by the preceding and, in turn, produces the enzyme that catalyzes the next with an amplification of the process as it progresses.

**cerebrospinal c.** normal cerebrospinal fluid does not coagulate. Inflammation of the meninges or contamination of the fluid by blood, possibly during collection, can cause coagulation in a sample.

**c. defects** see **coagulopathy**.

**disseminated intravascular c. (DIC)** widespread formation of thromboses in the microcirculation, mainly within the capillaries. It is a secondary complication of a wide variety of disorders all of which activate in some way the intrinsic coagulation sequence. Paradoxically, the intravascular clotting ultimately produces hemorrhage because of rapid consumption of fibrinogen, platelets, prothrombin, and clotting factors V, VIII and X. Because of this pathology, DIC is sometimes called defibrination syndrome or consumption coagulopathy. Called also diffuse intravascular coagulation. Called also consumption coagulopathy, defibrination syndrome, defibrinogenation syndrome.

**c. factors** see **clotting** factors, **platelet** factors.

**c. inhibitors** these systems prevent widescale intravascular coagulation as a result of minor injury. The important systems are **C<sub>1</sub>-inactivator**, **antithrombin III**, **alpha<sub>1</sub>-antitrypsin**, **α<sub>2</sub>-macroglobulin**, factor XIa inhibitor, **lipoprotein** factor Xa inhibitor.

**c. necrosis** see **coagulative necrosis**.

**c. pathways** the classical view is that the coagulation cascade can follow alternative routes depending on the initiating factor. The *extrinsic* pathway is initiated by tissue thromboplastin (factor III) and involves calcium ions and factor VII. In the *intrinsic* pathway, factors XII, XI, IX and VIII are activated by exposure to subendothelial collagen or foreign surfaces. Both pathways lead to the activation of factor X and proceed along the common pathway, involving factors V, II, I and XIII, to the formation of a fibrin clot. A more contemporary view is that the mechanisms of clotting are much more interrelated than depicted by the classical model of two pathways.

**c. proteins** see **clotting** factors.

**synovial c.** normal synovial fluid does not clot, but gels on standing (thixotropism). It contains no fibrinogen, nor any of the coagulation factors. Clotting is an indication of damage to the synovial membrane.

**c. tests** are used to determine the integrity of the coagulation pathways, and platelet function. In general, the common tests for the intrinsic or common pathways are the activated partial thromboplastin time (APTT) and activated clotting time (ACT). One-stage prothrombin time (OSPT) is usually used to evaluate the extrinsic or common pathways, and platelet count, clot retraction and buccal mucosal bleeding time reflect platelet numbers and function.

**three stage model of c.** a theory of coagulation, alternative to that of the coagulation cascade (above); consists of *initiation*, which involves primarily the extrinsic system and the production of thrombin; *amplification*, which involves thrombin activating platelets and coagulation factors; and *propagation*, in which fibrin is formed.

**c. time** see **clotting** time.

**unipolar c.** see **bipolar electrocoagulation**.

**coagulative necrosis** [*ko-ag''u-lə-tiv*] necrotic tissue which is firm, retains its architectural pattern and is dense in comparison to surrounding tissue. See also **liquefactive necrosis**, **Zenker's necrosis**.

**coagulopathy** [*ko-ag''u-ləp''ə-the*] any disorder of blood coagulation. See also **hemophilia**.

**consumption c.** a bleeding tendency due to a reduction in clotting factors caused by their utilization. See also **disseminated intravascular coagulation**.

**disseminated intravascular c. (DIC)** see **disseminated intravascular coagulation**.

**hepatic c.** impaired synthesis of most clotting factors, including factors I, II, V, VII, IX and X, as well as other substances involved in the fibrinolytic system, in severe liver disease. Can cause significant abnormalities in coagulation.

**coagulum** [*ko-ag''u-ləm*] pl. *coagula* [L.] a clot.

**coal dust** [*kol*] causes black discoloration in lungs and bronchial lymph nodes in animals living in urban areas where coal is used for energy. Called **anthracosis**.

**coal gas** [*kol*] a cause of poisoning where coal gas is still used because of its carbon monoxide content. Other heating gases are less poisonous and produce carbon monoxide only if they are burned in an inadequate oxygen supply. See also **carbon monoxide**.

**coal tar** [*kol*] a by-product obtained in destructive distillation of bituminous coal or wood; used for its keratolytic, keratoplastic and



antiseborrheic effects in ointments and shampoos for the treatment of skin diseases.

**coal tar creosote** [kol] see **creosote**.

**coal tar pitch** [kol] a thick, black, viscid liquid which is the residuum formed following the distillation of coal. Used as a wood preservative and to make tarmac flooring and tar roofing felt. Because of carcinogenicity and other concerns its use is banned in some localities. A cause of severe hepatic necrosis in pigs that nibble at pitch-coated pens and floors. The syndrome includes anemia, jaundice and emaciation.

**coalescence** [ko'ə-les'əns] a fusion or blending of parts.

**COAP** a cancer chemotherapy protocol that utilizes cyclophosphamide, vincristine (Oncovin®), cytosine arabinoside, and prednisone. Used in the treatment of lymphomas in dogs and cats.

**coapt** [ko-apt'] to approximate, as the edges of a wound.

**coaptation** [ko-apt-'shən] having been coapted.

**external c.** for fractures by the use of external appliances, e.g., various splints, and casts.

**coarctate** [ko-ahrk'tāt] **1.** to press close together; contract. **2.** pressed close together; restrained.

**coarctation** [ko'ahrk-ta'shən] stricture or narrowing.

**c. of aorta** a localized malformation characterized by deformity of the tunica media of the aorta, causing narrowing, usually severe, of the lumen of the vessel. See also **aortic coarctation**.

**reversed c.** causes a lower blood pressure in the thoracic limbs compared to the pelvic limbs. It is caused by abnormalities and narrowing of the aortic arch, altering normal pulsatile blood flow. Congenital or acquired in humans. Appears to be exclusively acquired (thrombosis, neoplasia) in animals.

**coast disease** a combination of copper and cobalt nutritional deficiencies. See **copper, cobalt**.

**coastal fever** see **East Coast fever**.

**coat** [kōt] **1.** haircoat—the overall coating of hair on all our species of domestic animals. **2.** a membrane or other tissue covering or lining an organ; in anatomic nomenclature called also tunica.

**bristle c. (1)** in dogs, a short, stiff wire-haired coat.

**broken c. (1)** in dogs, a harsh, wiry outer layer with a softer undercoat. See also **wirehair**.

**brush c. (1)** a short, straight stiff coat.

**corded c. (1)** in dogs, a coat that forms ringlets or dreadlocks. Seen in Komondors and Pulis.

**dry c. (1) syndrome** see **anhidrosis**.

**c. licking (1)** excessive self-grooming in farm animals, commonly a manifestation of nutritional deficiency, e.g., salt deficiency.

**smooth c. (1)** usually short hair that lies flat and close to the body.

**stand-off c. (1)** one that projects out from the body, generally supported by a thick undercoat, giving a bushy appearance; seen in spitz-type dogs.

**winter c.** longer and less lustrous coat that is grown by cattle and horses housed outside in cold climates and shed in the spring.

**wire c. (1)** see broken coat (above).

**rough c. (1)** harsh; not smooth. May be a characteristic in some species and breeds, but can also be a sign of ill health when it occurs as a change from the previous norm.

**coat color** the overall or main color of the animal. If the points are distinctively colored that is also noted, e.g., black with white points. DNA testing for coat color genotypes is available for dogs of some breeds.

**cat c. c.** besides the conventional black, white, gray, orange, there are **blue, lilac, seal (2), chocolate, tortoiseshell (tortie), bicolor, Chinchilla cat, smoke, cameo, pewter**.

**c. c. change** diets deficient in tyrosine have been associated with a coat color change from black to reddish brown in cats. Restoring normal dietary concentrations reversed the color change.



**C-62:** Winter coat (arrows) now largely shed by this bull in Spring.

**dog c. c.** besides the conventional black, brown, white, gray, there are **badger (1), belton, blanket, blue, brindle, deadgrass, dapple, grizzle, harlequin, merle, roan, liver (2), pied, sable (1), saddle (2), ticking, tricolor, wheaten**.

**horse c. c.** see **bay, chestnut, cremello, brown, black, gray, palomino, cream (3), dun, piebald, skewbald, roan**.

**coat funk** the name given to **alopecia X** in Alaskan Malamutes.

**coated pits** regions of the cell membrane which are coated with bristle-like structures on their cytoplasmic surface and are involved in endocytosis. The coated pit is pinched off to form a coated vesicle, which is involved in intracellular vesicle transport between the cell's organelles.

**coati** member of the raccoon family Procyonidae of two genera, *Nasua* and *Nasuella*; native to Central and South America, and south-western North America. They resemble their close procyonid relatives, raccoons and kinkajous; small to medium-sized with a long snout, long body and a long, bushy, non-prehensile tail, about the size of a large domestic cat. They are commonly kept as pets with health care requirements similar to those of dogs and cats, including vaccination against canine distemper and feline parvovirus. Literally, the term coatimundi refers to a lone, male coati; it is often misused as a synonym for coati; also known as the hog-nosed coon.

**eastern mountain c. (Nasuella meridensis)** native to the Andes, endangered; also called eastern dwarf coati

**South American c. (Nasua nasua)** widespread in tropical and subtropical South America; also known as ring-tailed coati

**western mountain c. (Nasuella olivacea)**

**white-nosed c. (Nasua narica)**

**coatimundi** see **coati**.

**coaxial circuit** see **coaxial circuit**.

**cob 1.** a short-legged, thickset, strong type of horse, usually 13.2 to 14.2 hands high but not more than 15.2. Useful as a light cart horse or for riding as a means of transportation and for heavyweight riders wanting a steady rather than a flashy ride. Produced by mating polo pony stallions to carriage or light draft horses. **2.** the central stem of a cob of corn (3); common as a cause of esophageal and intestinal obstruction in dogs. **3.** male swan.

**cobalamin** [ko-bal'ə-min] a cobalt-containing complex common to all members of the vitamin B<sub>12</sub> group. Intestinal absorption occurs in the distal small intestine. Decreased serum concentrations are found in diseases of the small intestine and exocrine pancreas in dogs and cats and cobalt deficiency in cattle.

**cobalt (Co)** [ko'bawlt] a chemical element, atomic number 27, atomic weight 58.933. A component of vitamin B<sub>12</sub>.

**c.-57 (<sup>57</sup>Co)** a radioisotope of cobalt having a half-life of 270 days; used as a label for cyanocobalamin.

**c.-60 (<sup>60</sup>Co)** a radioisotope of cobalt having a half-life of 5.27 years and a principal gamma ray energy of 1.33 MeV; used as a radiation therapy source.

**c. nutritional deficiency** causes anorexia and poor weight gain. Identification of the disease is based on chemical analysis of pasture and soil and biochemical analysis of animal tissues and fluids. Called also enzootic marasmus, Grand Traverse disease and other regional names.

**c. poisoning** accidental overdosing with cobalt causes listlessness, weight loss and incoordination.

**Cobboldia** a genus of parasitic flies whose maggots inhabit the alimentary tract or tissues of mammalian hosts; members of the family Gasterophilidae. Includes *C. elephantis* (Indian elephant), *C. loxodontis* (African elephant, rhinoceros).

**cobby** in conformation, a short and sturdy build; said of horses, dogs and cats.

**cobra** [ko'brə] a venomous snake of the family Elapidae. There are a number of genera and types of cobras, but the best known is *Naja naja* (Indian cobra) characterized by their defensive display in which they rear up and flatten their neck into a 'hood'.

**c. venom** a component, cobra venom factor, causes depletion of complement and is used experimentally to reproduce genetic complement deficiencies. Pharmaceutical preparations have been used intralesionally in acral lick dermatitis to cause a local hypalgesia.

**coca** [ko'kə] see **cocaine**.

**cocaine** [ko-kān'] an alkaloid obtained from the leaves of various species of *Erythroxylon* (coca plants) or produced synthetically; used as an indirect-acting sympathomimetic, as a short-acting topical anesthetic for surgery of mucous membranes, and for controlling bleeding during nasal surgery. Also called coca. Almost entirely replaced by synthetic analgesics because of the problems that arise through human addiction to cocaine. It is a controlled substance of the highest priority in most countries. Accidental or deliberate exposure in animals results in

restlessness, hyperactivity, tremors, tachycardia, hypotension, tachypnea, and seizures.

**carcinogen** [ko-kahr-sin'ə-jən] an agent that increases the effect of a carcinogen by direct concurrent local effect on the tissue.

**carcinogenesis** [ko-kahr'si-no-jen'ə-sis] the development, according to one theory, of cancer only in preconditioned cells as a result of conditions favorable to its growth.

**cocci** [kok'si] [L.] plural of *coccus*.

**Coccidia** [kok-sid'e-ə] a group of sporozoa in the family Eimeriidae commonly parasitic in epithelial cells of the intestinal tract, but also found in the liver and other organs; it includes three genera, *Eimeria*, *Isospora* and *Cystoisospora*.

**coccidia** [kok-sid'e-ə] plural of coccidium.

**coccidial** [kok-sid'e-ə] of, pertaining to, or caused by Coccidia.

**coccidian** [kok-sid'e-ən] 1. pertaining to Coccidia. 2. any member of the Coccidia; coccidium.

**coccidioid** [kok-sid'e-oi'də] pertaining to or emanating from *Coccidioides*.

**c. granuloma** the lesions of the generalized disease, **coccidioidomycosis**, are granulomas, occurring mostly in the lung, but also bone and skin.

**Coccidioides** [kok-sid'e-oi'dēz] a genus of pathogenic fungi.

**C. immitis** the etiologic agent of **coccidioidomycosis**. A common infection in desert rats, the feces of which act as the vehicle for spread of organism.

**coccidioidin** [kok-sid'e-oi'din] a sterile preparation containing growth by-products of *Coccidioides immitis*, injected intradermally as a test for coccidioidomycosis.

**coccidioidoma** [kok-sid'e-oi-do'mə] residual pulmonary granuloma or granulomas seen on imaging as solid round foci in coccidioidomycosis.

**coccidioidomycosis** [kok-sid'e-oi'do-mi-ko'sis] a fungal disease of humans and animals caused by infection with *Coccidioides immitis* or *C. posadasii*. This fungus grows in hot, dry areas, especially in the southwestern USA, Mexico, and parts of Central and South America. It is characterized by granulomatous lesions, especially in the respiratory system and bones, which resemble tuberculosis in cattle and caseous lymphadenitis in sheep. In dogs, young large breeds are most commonly affected and the predominant lesions are in bone, lungs and skin. In endemic areas, many people and animals experience asymptomatic or mild, undiagnosed respiratory infection. Disseminated disease is less common. Called also San Joaquin Valley fever, valley fever, desert fever.

**coccidioidosis** [kok-sid'e-oi-do'sis] **coccidiomycosis** [kok'sid'e-o-mi-ko'sis] coccidioidomycosis.

**coccidiosis** [kok'sid'e-o'sis] infection by coccidia causes predominantly enteritis and sometimes hepatitis. The clinical picture varies among species. In calves causes serious diarrhea and dysentery, and death may occur because of the blood and protein loss and dehydration. In sheep the effects are poor production and poor weight gain, although diarrhea and dysentery can occur. The clinical disease is rare in pigs and horses, but outbreaks, similar clinically to those in cattle, may occur in young animals. In dogs and cats, infection is most common in young puppies and kittens where it can be the cause of severe diarrhea and even death. In rabbits, infections can be intestinal or hepatic. Adult animals usually experience only mild and self-limiting infections. All poultry species can suffer severe outbreaks of the disease, characterized by diarrhea and dysentery. Subclinical infections causing reduced productivity are a feature of the disease in birds. Affected fish are cachectic and trail long mucoid fecal casts. The disease in all species except fish is caused by *Eimeria*, *Isospora* or *Cystoisospora*. The species infecting fish include *Eimeria* (*Epieimeria*) and *Goussia*.

**disseminated visceral c. of cranes** causes granulomatous nodules in many organs in sandhill cranes; caused by *Eimeria* spp. penetrating the blood or lymphatic system from the intestine and dissemination results.

**hepatic c.** infection of the bile ducts of lagomorphs (rabbits and hares) with *Eimeria stiedai*; reported in goats and rarely in calves.

**nervous c.** a small number of calves in an outbreak of classical coccidiosis may develop severe nervous signs including hyperesthesia, nystagmus, tremor, orthotonus and convulsions and can die within a few hours. There is no detectable lesion in the brain.

**coccidiostatic drugs** [kok-sid'i-o-stat'ik] drugs which control coccidiosis. The greatest importance of coccidiosis is in the chicken industry and many agents have been developed in an attempt to reduce losses. The important drugs or groups of drugs for this purpose include **clopidol**, **quinolones**, **monensin**, **maduramicin**, **lasalocid**, **salinomycin**, **robenidine**, **amprolium**, **dinitolmide**, **nicarbazin**, **narasin**, **sulfonamides** and **halofuginone**. **coccidiostats** [kok-sid'i-o-stats'] see **coccidiostatic** or **anticoccidial** drugs.



**C-63:** Disseminated coccidioidomycosis in the radius and ulna of a dog.

From Ettinger SJ, Feldman E, Textbook of Veterinary Internal Medicine, 6th ed, Saunders, 2004.



**C-64:** Lesions of coccidiosis in the mucosa of the small intestine of a goat.

From van Dijk JE, Gruys E, Mouwen JMVM, Color Atlas of Veterinary Pathology, 2nd ed, Saunders, 2007

**Coccidium** [kok-sid'e-əm] see *Eimeria*, *Isospora*, *Sarcocystis*, *Toxoplasma*, *Hammondia*, *Besnoitia*, *Cryptosporidium*.

**coccobacilliform bodies** bacterial cells with the physical characteristics of coccobacilli often associated with cultures of mycoplasmas.

**coccobacillus** [kok'o-bə-sil'əs] an oval bacterial cell with morphology intermediate between the coccus and bacillus forms.

**coccioid** [kok'oid] resembling a coccus.

**coccus** [kok'əs] pl. *cocci* [L.] a spherical bacterium, usually slightly less than 1 μm in diameter. One of the three basic forms of bacteria, the other two being bacillus (rod-shaped) and spirillum (spiral-shaped).

**coccyge-** pertaining to coccyx or tail.

**coccygeal** [kok-sij'e-əl] pertaining to or located in the region of the tail.

**c. muscle** see Table 12.2.

**c. vertebrae** called also caudal vertebrae; see Table 9.

**coccygectomy** [kok'si-jek'tə-me] excision of the tail.

**coccygeus** [kok-sij'e-əs] pertaining to the tail.

**c. muscle** forms part of the pelvic diaphragm; important in the cause and surgical repair of perineal hernia in dogs.

**coccygodynia** [kok'si-go-din'e-ə] pain in the tail.

**coccygotomy** [kok'si-got'ə-me] incision of the tail.

**coccyx** [kok'siks] collection of fused coccygeal vertebrae found in humans and apes.

**Cochin** heavy Asiatic breed of poultry; black, white or buff; yellow beak and legs, heavy leg feathers. Weighs up to 13 lb. Called also Cochin-China.



**Cochinchina** see **Cochin**.

**cochlea** [kɒk'le-ə] a spiral tube of three and a quarter turns (n dogs) forming part of the inner ear, shaped like a snail shell, which is the essential organ of hearing.

**tibial c.** articular surface of the distal extremity of the tibia, characteristically set at an oblique angle in horses. Called also *cochlea tibiae*.

**cochlear** [kɒk'le-ə] pertaining to or emanating from the cochlea.

**c. duct** the coiled portion of the membranous labyrinth located inside the cochlea; contains endolymph and the organ of Corti. See also *scala media*.

**c. nerve** see Table 13.

**Cochlearia armoracia** [kɒk'le-ar'e-ə] see *Armoracia rusticans*, horseradish

**cochleariform** [kɒk'le-ar'i-form] spoon-shaped.

**cochleitis** [kɒk'le-i'tis] inflammation of the cochlea.

**cochleosaccular** [kɒk'le-o-sak'u-lər] pertaining to the cochlear duct and sacculle.

**c. degeneration** degeneration of the membranous cochlea including the organ of Corti, the saccular macula, and the walls of the cochlear and saccular membranous labyrinth, and degeneration of the neurons in the spiral ganglion. The defect is inherited as deafness associated with incomplete pigmentation of the haircoat and the ocular uvea and occurs in cats, dogs and probably cattle. See also **Waardenburg's syndrome**.

**cochleotopic** [kɒk'le-o-top'ik] relating to the organization of the auditory pathways and auditory area of the brain.

**cochleovestibular** [kɒk'le-o-ves-tib'u-lər] pertaining to the cochlea and vestibule of the ear.

**Cochliomyia** [kɒk'le-o-mi'yə] a genus of the fly family of insects Calliphoridae. See **Callitroga**. Includes *C. hominivorax* (New World screw-worm), *C. macellaria*.

**Cochlosoma** a protozoan parasite of the family Cochlosomatidae.

**C. anatis** found in the large intestine of domestic and wild ducks and turkeys. May cause a catarrhal enteritis and diarrhea.

**cock** [kɒk] male bird.

**c. fighting** contests, usually with wagering riding on them, between adult male birds of fighting stock; banned in many countries because the fights are to the death.

**cock-throttled** heavy-jowled giving the head a heavy appearance.

**Cockapoo** a non-recognized dog breed, popular in the USA, produced by crossing a Cocker spaniel and a Poodle. See also **designer dogs**.

**cockatiel** small, canary-sized Australian cockatoo, crested and brown with a yellow head. Very popular as cage pets because of their speed in learning to converse with humans and engaging personalities. Called also quarran, *Nymphicus hollandicus*.

**cockatoo** a group of parrots in the family Cacatuidae, characterized by a topknot of erectile feathers. Includes the **galah** (*Eolophus roseicapilla*), Sulphur-crested cockatoo (*Cacatua galerita*) and Palm cockatoo (*Probosciger aterrimus*). Distributed mainly in Australasia, over 20 species, with different colors.

**c. beak and feather disease** see **psittacine beak and feather disease**.

**Cocker spaniel** a popular small to medium-sized dog with silky long hair, particularly under the body and from behind the legs, a short, docked tail, and low set, long ears. There are two varieties, usually regarded as distinct breeds: The *English Cocker spaniel* is larger and taller (15 to 17 inches), and a longer muzzle, somewhat like that of a setter. The *American Cocker spaniel* is smaller (14 to 15 inches tall), has a short muzzle, large, prominent eyes and profuse coat. The breeds are, among other things, affected by an inherited renal cortical dysplasia, seborrhea, glaucoma, progressive retinal atrophy, cataracts, neuronal ceroid lipofuscinosis, hemophilia A, factor X deficiency, patent ductus arteriosus and intervertebral disk disease.

**cockerel** young male domestic fowl, older than 4 weeks, up to sexual maturity at about 5 months. Older males can still be called this but rooster is the usual name for more mature cockerels

**cockle** [kɒkəl] **1.** a dermatitis of sheep consisting of inflammatory nodules, especially on the neck and shoulders. Due to skin parasitic infestations such as with the body louse (*Bovicola ovis*) that leads to an allergic dermatitis. Devalues pelts from lambs. **2.** see **Agrostemma**.

**corn c. (2)** *Agrostemma githago*.

**cocklebur** [kɒk'əl-bər] see **Xanthium**.

**cockroaches** [kɒk'rɔch] insects which may carry *Salmonella* spp. in their gut and play a part in the spread of the disease.

**cocksfoot** see **Dactylis glomerata**.

**coconut** [kə'kə-nət] fruit of the coconut palm.

**c. meal** residue after the extraction of coconut oil and used as a protein supplement in livestock diets.



**C-65:** English cocker spaniel.

**c. oil** a natural source of fatty acids of short and medium length.

**cod** [kɒd] scrotum and contents.

**c. fat** a mass of fat around the inguinal part of the spermatic cord; reaches its greatest development in castrated ruminants.

**c. lock** wool from the scrotum; usually heavily stained with yolk.

**COD** cystic ovarian degeneration; cystic ovarian disease.

**cod liver oil** an oil pressed from the fresh liver of the cod and purified. Contains high concentrations of omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), and is a rich source of vitamins A and D. It is one of the best-known natural sources of vitamin D, and a rich source of vitamin A. Because cod liver oil is more easily absorbed than other oils, it was formerly widely used as a nutrient and tonic, but it is rarely used today since more efficient sources are available. The oil has a fishy odor, especially in pork, when the animals are fed on cheap grades of the oil before slaughter. The fat is most tainted and is discolored yellow brown. The oil gives its name to a form of aspiration or lipid pneumonia caused by overzealous and inefficient oral dosing of cats with the oil.

**c. l. o. poisoning** premixed animal feeds in which cod liver oil has been incorporated are damaged if they are exposed to air. The oil rancidifies and the oxidation destroys the vitamin E in the feed. Cod liver oil also contains a muscle damage agent. Excessive supplementation in young puppies and kittens can also lead to hypervitaminosis A and D.

**code** [kɒd] **1.** a set of rules governing one's conduct. Called also ethical code. **2.** a system by which information can be communicated. **3.** a set of alphabetical or numerical markers which are an index to a much larger bank of information.

**c. of practice/conduct** a document produced by an authoritative body to provide a guide to people in their conduct relative to, for example, animal welfare, or their practice, for example, in the housing and feeding of pigs. It is the sort of document that is used when testing in a practical situation rules which are planned to be included in subsequent legislation.

**c. of veterinary regulations** veterinary practice laws established by each US state government generally include provisions of licensing requirements, laws concerning the state veterinary board, veterinary records laws, and the laws governing disciplinary actions for impaired or incompetent practitioners.

**codeine** [kə'di:n] an alkaloid obtained from opium or prepared from morphine by methylation; used as the phosphate or sulfate salt for analgesia and as an antitussive.

**Codex Alimentarius** [kə'deks] a collection of international food standards that have been adopted by the Codex Alimentarius Commission. The WHO and FAO have been the international sources of scientific advice on matters related to the safety of food. Codex provisions concern the hygienic and nutritional quality of food, including microbiological norms, food additives, pesticide and veterinary drug residues, contaminants, labeling and presentation, and methods of sampling and risk analysis. They cover all the main foods, whether processed, semi-processed or raw and include materials used in the further processing of food products.

**Codex Alimentarius Commission** [kə'deks] an intergovernmental body established to implement the FAO/WHO food standards with the aim of protecting the health of consumers and to facilitate the trade of food by setting international standards.

**coding strand** the strand of double stranded DNA that is transcribed. Called also sense strand.

**Codiostomum** a genus of nematodes of the family Strongylidae.

**C. struthionis** strongylid nematode found in the large intestine of the ostrich. Heavy infestations may cause pathogenic effects.

**Codman's spur** [kɒd'mən] see **Codman triangle**.

**Codman triangle** a localized, triangular ridge of new bone formed where periosteum is elevated. Associated with neoplasms, particularly osteosarcoma and with osteomyelitis lesions. Previously called Codman's triangle and Codman's spur.

**codocyte** see target cell.

**codominance** [ko-dom'i-nəns] codominance: where both alleles of a gene pair are fully expressed in the heterozygote; for example, the A and B alleles in human blood typing can both be simultaneously expressed and are codominant.

**codominant gene action** [ko-dom'i-nənt] see **codominance**.

**codon** [ko'don] a triplet in a chain of nucleic acids in mRNA that specifies a specific amino acid to be added to a polypeptide. The codon triplet pairs with a sequence of three complementary nucleotides, called the anticodon, present in the anticodon arm of tRNA. Called also triplet. See also **deoxyribonucleic acid**.

**start c.** see **initiation codon**.

**stop c's** three codons, UAG, UAA and UGA, also referred to as amber, ochre and opal codons, in mRNA which terminate translation.

**termination c.** see stop codons (above).

**coefficient** [ko''ə-fish'ənt] **1.** an expression of the change or effect produced by the variation in certain factors, or of the ratio between two different quantities. **2.** in chemistry, a number or figure put before a chemical formula to indicate how many times the formula is to be multiplied.

**absorption c. 1.** the fraction of a beam of radiation that is absorbed in passing through a unit length of absorbing material. **2.** a number indicating the volume of a gas absorbed by a unit volume of a liquid at 32°F (0°C) and at a pressure of 760 mmHg.

**alienation c.** a measure of the *lack* of association between two variables. Called also the coefficient of nondetermination.

**Bunsen c.** see absorption coefficient (2) (above).

**contingency c.** a measure of association between qualitative assessments of two variables.

**correlation c.** a measure of association which indicates the degree to which two or more sets of observations fit a linear relationship. Denoted by 'ρ' (rho), it can vary from -1.0 to 1.0.

**determination c.** the coefficient of determination is the square of the correlation coefficient rho (r<sup>2</sup>). It describes the proportion of the variation of one of the correlated variables, explainable by the variation of the other variable. The value of the coefficient must lie between 0 and 1.

**digestibility c.** percentage of the food ingested that is absorbed.

**disarray c.** the measure of the degree of discord between two variables.

**c. of nondetermination** see alienation coefficient (above).

**phenol c.** a measure of the bactericidal activity of a chemical compound in relation to phenol. The activity of the compound is expressed as the ratio of dilution at which it kills in 10 minutes under specified conditions. It can be determined in the absence of organic matter, or in the presence of a standard amount of added organic matter.

**sedimentation c.** the ratio of a particles sedimentation velocity to the centrifugal acceleration force applied; is usually expressed in Svedberg (S) units.

**solubility c.** in anesthetics, a measure of the distribution of anesthetic agent between equilibrating phases such as blood and gas, oil and gas, or blood and tissue. The greater the solubility, the greater the uptake of anesthetic agent by blood and the slower the period of induction and recovery.

**-coele** word element. [Gr.] hollow; cavity or space; see also -cele.

**coelenteron** the digestive cavity of coelenterates (jellyfishes, corals, and sea anemones). Has a single opening into which all food is taken and through which all waste products are ejected.

**coeli(o)-** word element. See **celio-**.

**coel(o)-** word element. [Gr.] relationship to a cavity or space; see also words beginning *cel(o)-*.

**coelom** [se'lom] body cavity, especially the original cavity in the mammalian embryo between the somatopleure and splanchnopleure, which is both intra- and extraembryonic; the principal cavities of the trunk, the pericardial, pleural and peritoneal sacs, arise from the intraembryonic portion.

**c. partitioning** separation of the pleural and pericardial sacs in the embryo is established by the pleuropericardial septum formed by the fusion and extension of the pleuropericardial folds.

**coelomyarian** the longitudinal somatic muscles of nematodes in which the contractile elements extend up the sides of the muscle cell and are arranged in a U-shape.

**coeloscope** celoscope.

**coeloscopy** British spelling for celoscopy.

**Coelosphaerium** genus of spherical cyanobacteria that can cause algal blooms; produce the toxic cyclic heptapeptide **microcystins**, which can cause hepatic necrosis and sudden death.

**coelozoic** [e''lo-zo'ik] a parasite inhabiting the cavities of the body.

**coenurosis** [se''nu-ro'sis] infection with the metacestode (larval) stage of *Taenia multiceps* which invades the brain and spinal cord of sheep and causes a variety of syndromes characteristic of slowly developing space-occupying lesions of the nervous system. Ataxia, head-pressing, compulsive circling, somnolence and occasional convulsions are common signs of brain involvement. Paralysis and recumbency are the usual signs in spinal cord involvement. Called also gid or sturdy.

**Coenurus** [se-nu'rəs] a metacestode, a larval stage (metacestode) of a tapeworm belonging to the genus *Taenia* (*Multiceps*).

**C. cerebralis** metacestode of *Taenia multiceps* found in the brain and/or spinal cord of sheep and other ruminants, but sometimes in other organs of goats. See also **coenurosis**.

**C. serialis** metacestode of the tapeworm *Taenia serialis* of dogs and foxes found in the subcutaneous tissues and muscles of the intermediate host, a lagomorph.

**coenzyme** [ko-en'zim] an organic molecule, usually containing phosphorus and some vitamins, often separable from the enzyme protein but essential as a cosubstrate in catalysis; a coenzyme and an apoenzyme must unite in order to function (as a holoenzyme).

**c. A (CoA)** essential for carbohydrate and fat metabolism; among its constituents are pantothenic acid and a terminal SH group, which forms thioester linkages with various acids, e.g., acetic acid (acetyl-CoA) and fatty acids (acyl-CoA).

**c. A acetoacetyl** see **acetoacetyl CoA**.

**c. A acetyl** see **acetyl CoA**.

**c. Q** any of a group of related quinones with isoprenoid units in the side chains (the ubiquinones), occurring in the lipid fraction of mitochondria and serving, along with the cytochromes, as an intermediate in electron transport; they are similar in structure to vitamin K<sub>1</sub>. It is marketed as a support for cardiovascular function in dogs and cats.

**c. R** see **biotin**.

**coerulein** a decapeptide; a potent stimulator of pancreatic and other exocrine secretions.

**cofactor** [ko'fak-tər] an element or principle, e.g., a coenzyme, with which an enzyme must unite in order to function.

**coffee** [kof'e] a number of plants incorporate the word coffee into their common name. Coffee itself is a product of *Coffea* spp. plants and contains the xanthine alkaloid caffeine.

**c. bean** *Sesbania*.

**c. bush** *Breynia oblongifolia*.

**c. tree** *Gymnocladus dioica*.

**c. weed** *Sesbania* spp.; called also coffee bean, rattlebrush.

**wild c.** *Senna occidentalis*.

**coffee grounds** a term used to describe vomited blood. See **hematemesis**.

**coffin** [kof'in] pertaining to the coffin bone.

**c. bone** distal phalanx in the horse. See **navicular** bone. Called also pedal bone.

**c. joint** distal interphalangeal joint, between the second and third phalanges, in the horse.

**cog-wheel respiration** jerky auscultation sounds, with a clicking sound on inspiration; due to swelling of the bronchial mucosa.

**cogener** [ko'jə-nər] congener.

**cogenic** genetic differences between individuals at a locus.

**Coggins test** the agar-gel, double diffusion immunodiffusion test for detection of antibodies to **equine** infectious anemia virus.

**cognate** describes two biomolecules that normally interact such as an enzyme and its normal substrate or a receptor and its normal ligand.

**cognitive dysfunction syndrome** [kog'ni-tiv] a neurodegenerative disorder of senior dogs and cats causing deterioration of cognitive functions and characterized by multiple behavioral changes; primarily disorientation, reduced level of interaction with others, sleep-wake cycle alterations, loss of housetraining and altered activity level. Called also "old dog syndrome".

**cohesion** [ko-he'zhən] the force causing various particles to unite; cohesive forces are responsible for surface tension.

**cohesive end** [ko-he'siv] single-strand extension on each end of a duplex DNA molecule that is usually produced by restriction endonuclease digestion and which facilitates ligation of two similarly cut DNA molecules due to complementarity of the extensions. Called also sticky ends.

**Cohnheim's theory** [kōn'hīm] **1.** the emigration of leukocytes is the essential feature of inflammation. **2.** tumors develop from embryonic rests which do not participate in the formation of normal surrounding tissue.



**cohort** [ko'hɔrt] in epidemiology a group of individuals who share a characteristic acquired at the same time. The term usually refers to a birth cohort, which contains animals born in a specified time period.

**c. studies** a prospective or follow-up, analytical, epidemiological study. The investigation identifies a group of animals which have the hypothesized cause and which are free of the disease of interest, and a comparison group of animals which are free of the hypothesized cause. Both groups, the cohorts, are followed over time to determine the incidence rates of the disease in question in each of the two groups.

**coil** [kɔil] a winding structure or spiral; called also helix.

**coiled-c.** a protein structure motif marked by amphipathic  $\alpha$ -helical regions that can self-associate to form stable, rod-like oligomeric proteins; commonly found in fibrous proteins and some transcription factors.

**coin test** an auscultatory test for pulmonary consolidation in which a coin is used as a pleximeter. A sound is produced by striking the coin with a hard object such as a screwdriver used as a plexor. The coin is placed over the area to be examined. If the lung below is consolidated the sound produced by striking the coin is transmitted with greater clarity than if it were filled with air.

**coital exanthema** [ko'ɪ-tə] see infectious pustular **vulvovaginitis**. Called also coital vesicular exanthema.

**bovine c. vesicular exanthema** see infectious pustular **vulvovaginitis**.

**equine c. e.** venereal disease of the skin of the genitalia and perineum in stallions and mares caused by equine herpesvirus 3. Characterized by discomfort and discharge locally and the presence of vesicopustular lesions on the penis, prepuce, vulva and vaginal mucosa, and sometimes on the mare's teats and the lips of the foal at foot.

**coition** [ko-ish'ən] coitus.

**coitus** [ko'ɪ-təs] sexual union by vagina between male and female. See also **mating**.

**Coix lachryma-jobi** a robust, tropical grass with shiny grains like tears. Perennial grass in the family Poaceae. Grown as a fodder crop. Called also adlay, Job's tears.

**col** [kol] the interdental connection between the junctional epithelia of any two adjacent teeth.

**colation** [ko-la'shən] the process of straining or filtration, or the product of such a process.

**Colbred** a crossbred meat sheep produced by crossing the European East Friesland breed with three British breeds, Border Leicester, Dorset Horn and Clun Forest. The characteristics of the breed are a high twinning rate and a high milk yield.

**colcemid** a microtubule-depolymerizing compound related in structure and function to **colchicine**. Called also demecolcine.

**colchicine** one of the two poisonous alkaloids in *Colchicum autumnale*. See also **colchicine**.

**colchicine** [kol'chi-sēn] a water-soluble antimetabolic drug that blocks the addition of tubulin subunits to the ends of existing microtubules, preventing spindle formation. It is a poisonous alkaloid from *Colchicum*

*autumnale* which causes violent purgation, abdominal pain and is often fatal. In research, it is used to induce polyploidy by delaying mitosis. In humans, it is used in the treatment of gout and familial Mediterranean fever. In veterinary medicine, it is used in the treatment of amyloidosis and as an antifibrotic agent. See also **colchicine**.

**Colchicum autumnale** [kol'chi-kəm] toxic plant in the family Liliaceae; a cultivated plant that does survive also in the wild. Causes severe, often fatal, enteritis, characterized by diarrhea and abdominal pain. It contains two poisonous alkaloids, colchicine and colchicine. Called also meadow saffron, saffron, autumn crocus.

**cold** [kɔld] 1. an acute disease of the upper respiratory tract characterized by cough, sneezing, running at the eyes and nose and mild fever, similar to the common cold of humans, occurring in captive primates. Not generally applied to respiratory infections in other animal species. 2. a relatively low temperature; the lack of heat. A total absence of heat is absolute zero, at which all molecular motion ceases. See also **hypothermia**.

**c. acclimation** short-term adjustments to carbohydrate and fat metabolism in response to exposure to low environmental temperatures.

**c. acclimatization** heat production is not increased, but heat loss is reduced by changes in haircoat and vascular supply to the skin.

**c. applications** the primary effect of cold on the surface of the body is constriction of the blood vessels. Cold also causes contraction of the involuntary muscles of the skin. These actions result in a reduced blood supply to the skin and produce a marked pallor. If cold is prolonged there may be damage to the tissues because of the decreased blood supply. The secondary effects of cold are the opposite of its primary action. There is increased cell activity, dilatation of the blood vessels, and increased sensitivity of the nerve endings.

**c. barn** see cold housing (below).

**c. cow syndrome** see **shock**.

**c.-enrichment** a procedure that promotes growth of some bacteria during laboratory isolation. Suspensions of specimens are held at refrigerator temperatures for extended periods before being cultured. Used for recovery of *Listeria monocytogenes* from neural listeriosis and also *Yersinia* spp.

**c. exposure** see **hypothermia**.

**c. housing** thin-walled, uninsulated barns with no central heating.

**c. injury** includes **hypothermia** and **frostbite**.

**c.-nosed** refers to a hound which is able to follow a cold (very old) scent.

**c. receptors** receptors in the skin which are sensitive to low temperatures.

**c. rooms** walk-in refrigerator; temperature used varies with material stored, e.g., meat needs 32°F to 45°F (0°C to 7°C), offal needs less than 28°F (−2°C).

**c. shortening** shrinkage of meat when temperature is excessively low in early stages of chilling.

**c. steel surgery** that using unheated cutting instruments; the normal surgical procedure in contrast to electrosurgery or cryosurgery.

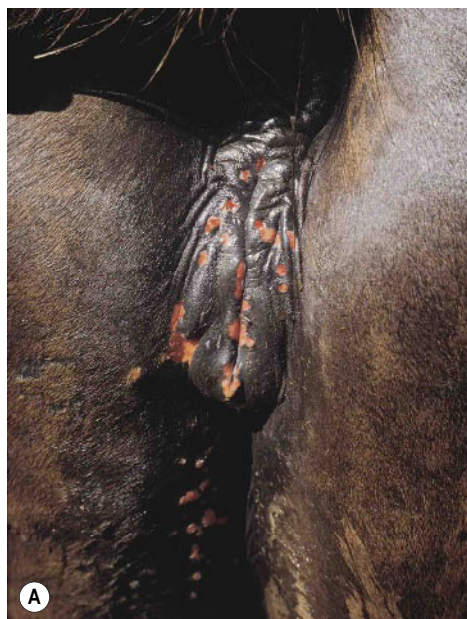
**c. sterilization** The use of chemicals such as aldehydes in a cold solution to sterilize instruments and equipment that cannot be steam sterilized.

**c. storage** for meat to be stored for more than 72 hours the chilling temperature should be between 30°F and 23°F (−1 and −5°C) and the humidity less than 90%.

**c. stress** occurs at temperatures less than 50°F (10°C), varying with chill factor, wetness, protection from wind.

**c. therapy** see **cryosurgery**, therapeutic **hypothermia**.

**c. tray** the container used for immersion of instruments in a cold sterilization solution, usually with a rack that allows instruments to be lifted above the fluid level to drain before use.



**C-66:** Equine herpes virus-3 infection. Coital exanthema.

McAuliffe, Siobhan. Knottenbelt and Pascoe's Color Atlas of Diseases and Disorders of the Horse, 2nd Edition. Elsevier Health Sciences, 2013.

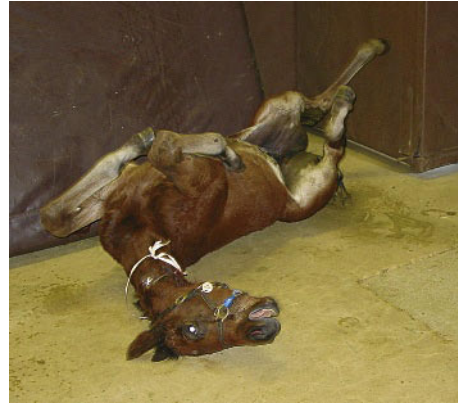


**C-67:** Cold sterilization tray.

From Bassett JM, McCurmin's Clinical Textbook for Veterinary Technicians, 9th Edition. Elsevier, 2018.



**C-68:** South-German coldblood horse.  
From Sambraus HH, *Livestock Breeds*, Mosby, 1992.



**C-69:** A horse with colic, rolling.  
From McAuliffe SB, Slovis NM, *Color Atlas of Diseases and Disorders of the Foal*, Saunders, 2008.

**c. water hemolytic anemia** see **cold anemia**.

**cold-blooded** poikilothermic.

**cold-insoluble globulin** see **fibronectin**.

**coldblood** horses with no Arab blood in their ancestry; generally the draft breeds, Clydesdale, Shire, Percheron, Rhenish, Black Forest, Schleswig, South German.

**coldwater disease** a disease of fish kept in temperate water caused by the bacteria *Flavobacterium psychrophilum*.

**Cole infant tube** [kōl] a very small diameter uncuffed endotracheal tube in which the patient end has a small diameter than the rest of the tube. Suitable for use in a small animal.

**colectomy** [ko-lek'tə-me] excision of the colon or of a portion of it.

**Coleoptera** [kol'e-op'tər-ə] an order in the class Insecta—the beetles.

**Colesiota conjunctivae** see **Chlamydia pecorum**.

**colibacillary enterotoxemia** see **colibacillosis**.

**colibacillemia** the presence of *Escherichia coli* in the blood.

**colibacillosis** [ko'li-bas-ī-lo'sis] infection with *Escherichia coli*; takes many forms, some of them septicemic, some toxemic due to absorption of the enterotoxin and some locally toxigenic. See also **coliform mastitis**, **mastitis-metritis-agalactia** of sows, neonatal colibacillosis (below), coliform gastroenteritis of weaned pigs, **edema** disease, **cerebrospinal** angiopathy, **coligranuloma**.

**enteric c.** the form of colibacillosis characterized by varying degrees of diarrhea. It occurs in all species, especially in the very young less than one week old. In pigs it occurs also immediately after weaning. Specific serotypes, distinct from those that cause septicemia, cause this enteric form of the disease. They have two virulence factors: 1. fibril (pilus) attachment antigens that allow them to attach to the enterocyte. the ability to produce enterotoxins that alter fluid absorption and excretion in the small intestine. The cardinal sign is diarrhea, varying from pasty to profuse and watery, foul smelling and pale in color. Most affected calves continue to feed and recover spontaneously in a few days. The others become anorectic, dehydrated and weak and die in 3 to 5 days. In newborn pigs the disease is much more serious and the majority of piglets may die. In weaned pigs the situation is the same with many pigs dying quickly before other signs become evident. The critical clinical sign is a profuse diarrhea with death due to dehydration and electrolyte losses. The enteric form of the disease is uncommon in foals and lambs where the septicemic form prevails.

**enterotoxemic c.** toxin produced by a specific serotype is absorbed from the gut and exerts its toxicity on remote tissues. See also **edema** disease. Called also enterotoxic colibacillosis.

**neonatal c.** a highly fatal form of colibacillosis which can occur in the young of all species during the first 48 hours of life. A high prevalence is usually associated with a low intake of colostrum and colostral antibodies and the presence of pathogenic serotypes. The disease may take the form of a septicemia or a profound endotoxemia or be limited to the gut lumen and cause severe diarrhea.

**post-weaning c.** post-weaning **coliform** gastroenteritis.

**septicemic c.** invasion of the systemic circulation, with the probability of infection of all tissues, with *Escherichia coli*. The source of infection may be mastitis, metritis, cystitis, omphalophlebitis or enteritis. Characterized clinically by toxic shock, cardiovascular collapse, hypothermia, coma, a short course and a high mortality rate. Survivors may develop disease due to localization in joints, meninges, etc. Commonest in foals, calves and piglets.

**colibacilluria** [ko'li-bas'ī-l-u're-ə] the presence of *Escherichia coli* in the urine.

**colibacillus** [ko'li-bə-sil'əs] see **Escherichia coli**.

**Colibri forceps** corneal forceps with very narrow blades and fine points which may be straight or angled.

**colic** [ko'lik] **1.** pertaining to the colon. **2.** a syndrome caused by severe paroxysmal pain due to disease of an abdominal organ. Usually due to alimentary tract disease, and rarely to infection or calculus in the urinary tract involving the renal pelvis, ureter, bladder or urethra.

**bovine c.** is characterized mainly by recurrent bouts of downwards arching of the back, restless walking, looking at the flank, lying down, rolling, and getting up again. Colic is evident for a few hours only and is followed by spontaneous recovery in many cases. These cases are probably caused by intestinal spasm. The next most common cause is intestinal obstruction by **phytobezoar**, **volvulus**, **strangulation** (2), or **intussusception**. In these the colic varies but no feces are passed. Rectal examination reveals scant, pasty gray or blood-stained feces, and possibly the presence of distended loops of intestine. Enterotomy or enterectomy is essential for survival. Rare cases also occur due to renal infarction or to ureteric obstruction.

**functional c.** colic in the absence of a structural fault, e.g., spasmodic colic, paralytic ileus.

**colon impaction c.** impaction of the colon on a diet high in tough fiber is common in horses and pigs. There is mild abdominal pain and hard fecal masses are passed. See also **meconium** ileus, **impaction colic** (below).

**equine c.** most cases are due to intestinal disease. Characteristic signs are bouts of pain marked by pawing, looking at the flank, lying down and getting up restlessly, rolling; the gut sounds are either absent or excessive. Mild cases recover spontaneously or after medical treatment for gut spasm or impaction with dry feed. Life-threatened cases have shock, circulatory collapse and usually positive findings on abdominal paracentesis. Surgery is often obligatory. Acute colic is also an important part of the syndrome in acute enteritis and colitis in which diarrhea is a paramount sign. Peritonitis is usually manifested as subacute colic.

**flatulent c.** of horses is due to gas accumulation in the large intestine when grazing on lush pasture. There is severe pain, obvious distention of the abdomen, and the rectum is obstructed by distended loops of bowel. Sporadic cases occur as a result of partial obstruction of the intestine by fibrous adhesions. Trocarization through the flank or rectum is often necessary. Called also tympanitic colic. Previously called intestinal meteorismus.

**gastric dilatation c.** of horses due to gastric dilatation is a severe acute disease due to gorging on hay or grain, especially immediately after racing, or due to lipoma causing strangulation at the pylorus. Regurgitation through the nostrils or the discharge of large quantities of fluid gastric contents through a nasal tube is a frequent sign. Death is common as a result of gastric rupture.

**impaction c.** in horses is due to dry or indigestible feed, or bad teeth, or in foals by the retention of meconium. Subacute pain bouts occur at long intervals and over several days; death in untreated cases is due to exhaustion. Effective treatment is large oral doses of mineral oil (paraffin) administered by nasal tube. See also **colon impaction colic** (above).

**intestinal obstruction c.** in horses is caused by intestinal obstruction consisting mostly of acute life-threatening cases due to intussusception, strangulation or volvulus, usually affecting the small intestine, although sometimes it is the cecum or colon. Typical signs are shock, absence of gut sounds, very severe pain, short course, positive findings of blood-stained fluid on paracentesis, distended loops of gut on rectal examination and death due to shock and dehydration unless the blockage is relieved by surgery. Less severe cases are caused by impaction of the ileocecal valve by undigested fine fiber or grain, by sand accumulation, obstruction by



phyto bezoars, enteroliths or linear foreign bodies, usually in the small colon. See also under **enterolith**, **phyto bezoar**, linear **foreign body**, **volvulus**, **intussusception**, **strangulation**.

**lead c.** colic due to lead poisoning.

**neurogenic c.** colic in the horse, caused by stimulation of nerve supply to intestine by verminous aneurysm. Colic is spasmodic.

**recurrent c.** equine colic that recurs at intervals of weeks or months. Due usually to repeated dietary indiscretions or to a persisting defect, e.g., bad teeth, verminous aneurysm.

**renal c.** intermittent and acute pain usually resulting from the presence of one or more calculi in the kidney or ureter.

**sand c.** is caused by the ingestion of soil or sand and can be an acute syndrome due to ileocecal valve impaction or chronic mild pain with diarrhea for a period of months.

**spasmodic c.** cause of this form of colic in horses is unknown, but suggestions include excitement or drinking cold water. Bouts of sharp pain are accompanied by loud, frequent gut sounds, and spontaneous recovery is usual within an hour. Occasional cases develop volvulus during bouts of rolling.

**thromboembolic c.** is caused by infarction of a section of gut wall or by stimulation by migrating strongyle larvae and may appear as intermittent spasmodic colic or subacute colic for a number of days followed by development of peritonitis. See also **strongylosis**.

**tympantitic c.** see flatulent **colic**.

**colicky** [kol'ik-e] pertaining to or affected by colic.

**coliform** [kol'i-form] pertaining to fermentative gram-negative enteric bacilli, sometimes restricted to those fermenting lactose, i.e., *Escherichia*, *Klebsiella*, *Enterobacter* and *Citrobacter*.

**avian c. septicemia** a disease of chickens, ducklings and young turkeys causing high mortality. Characterized at autopsy by fibrinous exudates on the surface of all viscera and *E. scherichia coli* in all organs. The route of infection is generally via the respiratory tract.

**c. gastroenteritis** a disease of recently weaned pigs characterized by sudden death or severe diarrhea and caused by enterotoxigenic *E. scherichia coli*. The pigs often die of dehydration. Those that survive have lost a lot of condition. Called also post-weaning diarrhea.

**c. mastitis** peracute bovine mastitis caused by *E. scherichia coli* and other members of the *Enterobacteriaceae* and characterized by minor enlargement and inflammation of the udder, thin serous milk containing small flakes. There is profound shock, the mortality rate is high and the quarter is lost. See also environmental **mastitis** and **mastitis-metritis-agalactia** of sows.

**c. pyometra** the more severe form of pyometra in bitches and queens, characterized by severe toxemia and a fetid, viscous, red-brown uterine exudate.

**c. septicemia** in ducks, manifested by moist granular to curd-like exudate in the pericardial sac, pleural and peritoneal cavities and air sacs. See also septicemic **colibacillosis**.

**coligranuloma** [ko'li-gran'u-lo'mə] a disease of birds, particularly poultry, caused by *Escherichia coli* and characterized by granulomas in the intestinal wall, liver and lungs. Called also Hjærre's disease.

**Colinus virginianus** see **quail**.

**coliplication** the use of sutures to narrow the diameter of the colon.

**colipuncture colocentesis**.

**colisepsis** infection with *Escherichia coli*.

**colisepticemia** [ko'li-sep'ti-se'me-ə] septicemia due to *Escherichia coli*.

**colistimethate** [ko-lis'ti-meth'at] an antibiotic prepared of **colistin**.

**colistin** [ko-lis'tin] a polymyxin antibiotic, active against gram-negative organisms and used in the treatment of urinary tract infections. Available in two forms, colistin sulfate and colistimethate sodium. Called also polymyxin E.

**colitis** [ko-li'tis] pl. *colitides* inflammation of the colon. There are many types of colitis, each having different etiologies. The differential diagnosis involves the clinical history, fecal examinations, proctoscopy, radiological studies such as barium enemas, and sometimes biopsy.

**acute c.** sudden onset and usually self-limiting colonic inflammation characterized by mucoid diarrhea with blood, increased fecal frequency and straining to defecate. Common in dogs due to dietary indiscretion; infectious causes occur but often the cause is not identified.

**antibiotic-associated c.** colitis associated with antimicrobial therapy occurs in humans and animals. It can range from mild nonspecific colitis and diarrhea to severe fulminant pseudomembranous colitis (see below) with profuse watery diarrhea. The inflammation may be caused by a toxin produced by *Clostridioides difficile*, a microorganism that is not normally present in the resident bowel flora. Presumably, the disruption of the normal flora allows the growth of *C. difficile*. There is developing evidence that, in foals and adult horses, *C. difficile* can be associated with

diarrheal disease that can vary from mild to self-limiting to an acute and fatal enterocolitis. Evidence for this association is the biological plausibility, some evidence that this syndrome can be reproduced experimentally, and the ability to demonstrate the organism or its toxin in the feces of horses with the enterocolitis in comparison with the low prevalence and absence of toxin in the feces of non-diarrheic horses. This syndrome commonly occurs in horses following antimicrobial therapy and/or hospitalization. It is possible that enterotoxin from intestinal *C. perfringens* may also contribute in horses and the syndrome has been called equine clostridiosis.

**ciliate c.** colitis in primates caused by *Troglodytella* spp. and characterized by diarrhea.

**c. cystica profunda** dilated, grossly visible colonic glands protrude through the muscularis mucosae into the submucosa; no specific cause attributed; an incidental necropsy finding, especially in pigs.

**eosinophilic c.** occurs in humans, cats and dogs as a primary disease, part of an eosinophilic gastroenteritis or part of a systemic hypereosinophilic syndrome. Characterized histologically by eosinophilic infiltration of the lamina propria and submucosa. May be idiopathic (see **inflammatory bowel disease**) or due to food hypersensitivity, parasitic infection or a paraneoplastic response to lymphoma or mast cell tumors.

**granulomatous c.** a chronic, debilitating inflammation of the colon occurring predominantly in young Boxer dogs and French bulldogs, caused by an intracellular *Escherichia coli* infection that is responsive to enrofloxacin. Affected dogs have a chronic hemorrhagic diarrhea with tenesmus, occasionally vomiting, inappetence and weight loss. PAS-positive macrophages in the mucosa and submucosa are virtually diagnostic and specific testing for the infection is now available. Previously called histiocytic ulcerative colitis and considered idiopathic for many years. It has some similarities to Crohn's disease, ulcerative colitis, and Whipple's disease of humans.

**histiocytic ulcerative c.** see granulomatous colitis (above)

**idiopathic c.** a chronic, idiopathic inflammation of the colon in dogs and cats with lymphocytic and plasmacytic mucosal infiltrates usually predominating. A loss of immune tolerance to luminal bacteria and/or food antigens is thought to be the basis of the disease. May be isolated or part of a wider enteritis or gastroenteritis. See also **inflammatory bowel disease**.

**mucous c.** see **irritable bowel syndrome**.

**nonspecific c.** diarrheic disease of growing pigs resembling a mild form of swine dysentery; associated with infection by *Serpulina innocens*. Called also grower pig scours.

**plasmacytic-lymphocytic c.** see idiopathic colitis (above).

**pseudomembranous c.** a severe acute inflammation of the bowel mucosa, with the formation of pseudomembranous plaques. It is most commonly associated with antimicrobial therapy in people, and is less reliably documented in dogs (see antibiotic-associated colitis (above)). Called also pseudomembranous enterocolitis.

**psychologically induced c.** see **irritable bowel syndrome**.

**uremic c.** an outstanding lesion in cattle dying of uremia.

**c.-X** a peracute colitis of horses, sometimes occurring as outbreaks, characterized by a short course of about 24 hours, profuse diarrhea, sometimes with colic and dysentery, profound dehydration and a high mortality rate. The cause is unknown, but it may be due to factors described under colitis (above).

**colitoxicosis** [ko'li-tok'si-ko'sis] toxemia caused by absorption of *Escherichia coli* toxin from the intestine; it affects newborn animals within the first week of life and pigs after weaning. Older animals are affected from other sites such as mammary gland or uterus. The common syndrome, especially in calves, is collapse with circulatory failure, hypothermia and death within about 6 hours. In weaning pigs the outstanding feature is edema of the eyelids and other sites. A high morbidity and mortality are usual in a group of pigs which also show incoordination, weakness and paralysis. The course of the disease is about 24 hours. See also **mastitis-metritis-agalactia**, **coliform mastitis**.

**colitoxin** [ko'li-tok'sin] a toxin from *Escherichia coli*.

**coluria** [ko'li-u're-ə] the presence of *Escherichia coli* in the urine.

**collagen** [kol'ə-jən] an extracellular fibrous structural protein that constitutes the protein of the white fibers (collagenous fibers) of skin, tendon, bone, cartilage, blood vessel wall, and all other connective tissues. It is the most abundant protein in mammals. It also occurs dispersed in a gel to provide stiffening, as in the vitreous humor of the eye and intra-articular synovial fluid. It is made of monomers of tropocollagen. At least 28 types of collagen (numbered type I, II, III, etc.) have been identified in animals. These are broadly grouped into fibrillar and non-fibrillar collagen, occur in different tissues and have different chemical compositions, physical characteristics and specific functions.

**c. diseases** a group of diseases with common clinical and histological features that are dysfunctions of **connective tissue**, secondary to defects in collagen. They are malfunctions of those tissues that provide the supportive framework (musculoskeletal and connective tissue structures) and protective covering (skin and mucous membranes and vessel linings) for the body. The basic components of connective tissue are cells and extracellular protein fibers embedded in a matrix or ground substance of large carbohydrate molecules and carbohydrate–protein complexes called mucopolysaccharides. For the sake of clarity and organization, collagen diseases may be divided into two major groups: (1) those that are genetically determined and are a result of structural and biochemical defects, and (2) those that are acquired and in which immunological and inflammatory reactions are taking place within the tissues. Among the first group are those diseases caused by a lack of a specific enzyme necessary for proper storage and excretion of one or more mucopolysaccharides, such as **Ehlers–Danlos syndrome**. These disorders are distinguished by structural defects affecting the formation of collagen. Acquired connective tissue diseases are believed to develop as a result of at least two causative factors: a genetic factor and an abnormal immunological response. Examples of collagen diseases that are most probably the result of an aberration of the immunological reactions that mitigate injury and inflammation of connective tissues are systemic **lupus erythematosus**, rheumatoid arthritis, **polymyositis** and **dermatomyositis**.

**c. dysplasia** see **hereditary collagen dysplasia**.

**c. fascicles** interspersed with patches of cartilage in fibrous cartilage (fibrocartilage).

**c. fibers** the principal component of connective tissue, providing strength and resisting stretching; a structural protein in fiber form.

**c. fibrils** collagen fibers are composed of fibrils visible only by electron microscope.

**c. footpad disorder** footpads in young German shepherd dogs become soft, tender, depigmented and ulcerated. Some dogs later develop renal amyloidosis. The cause is unknown.

**microcrystalline c.** a surface hemostatic agent.

**c. nevus** see **nevus**.

**c. shield** form of corneal protection in the shape of a contact lens, but manufactured from collagen rather than plastic; used in the treatment of ulcerative and nonulcerative keratitis. Ultimately these dissolve in the tear film.

**c. sponge** surgical sponge made of collagen; used to fill surgical space and to control hemorrhage. Is not absorbable but has enormous fluid absorption capacity and has excellent wet strength and is very pliable and easy to use.

**c. suture** an absorbable suture of natural material; made from bovine flexor tendon. May be plain or chromic.

**collagenase** [kə-laj'ə-nās] an enzyme that catalyzes the degradation of collagen. Synthesized and released by host cells, especially leukocytes, and various infectious organisms, especially gram-negative bacteria. Of particular importance in the cornea where, unopposed by serum anticollagenases, they can cause rapid malacia and even corneal perforation. See also collagenase **ulcer**.

**c. ulceration** a rapidly spreading ulceration of the cornea triggered by the liberation of collagenase from necrotic cells, bacteria or invading leucocytes. See collagenase **ulcer**.

**collagenation** [kə-laj'ə-na'shən] the appearance of collagen in developing cartilage.

**collagenic** [kol'ə-jen'ik] **1.** producing collagen. **2.** pertaining to collagen.

**collagenitis** inflammatory involvement of collagen fibers in the fibrous component of connective tissue.

**collagenoblast** [kə-laj'ə-no-bləst] a cell arising from a fibroblast and which, as it matures, is associated with collagen production; it may also form cartilage and bone by metaplasia.

**collagenocyte** [kə-laj'ə-no-sit'ē] a mature collagen-producing cell.

**collagenogenic** [kə-laj'ə-no-jen'ik] pertaining to or characterized by collagen production; forming collagen or collagen fibers. See also **collagenic**.

**collagenolysis** [kol'ə-jən-ol'ə-sis] dissolution or digestion of collagen.

**collagenosis** [kol'ə-jē-no'sis] see **collagen diseases**.

**collagenous** [kə-laj'ə-nəs] made of collagen.

**c. nevus** see **nevus**.

**c. tissue** composed of collagen, reticular and elastic fibers; may be loose or dense; the latter may be regular or irregular.

**collapse** [kə-laps'] **1.** a state of extreme prostration and depression, with failure of circulation. **2.** abnormal falling in of the walls of a part or organ.

**circulatory c. shock**; circulatory insufficiency without congestive heart failure.

**lung c.** see **atelectasis**.

**collar** [kol'ər] a decoration or harness worn around the neck. The primary means of restraint for domestic dogs. Used in cats as ornaments or to carry identification. See also **Elizabethan collar**.

**choke c.** see **choke chain**.

**buster c.** see **Elizabethan collar**.

**flea c.** see **flea collar**.

**c. galls** friction sores caused by rubbing of a saddlery collar on a horse's shoulder.

**horse c.** part of draft, cart or buggy harness. Made of leather, stuffed and lined with felt, they are fitted to the neck of the horse. They carry the metal hames to which plow chains or leather traces are attached.

**tube c.** a rigid cylinder applied around the neck to prevent the animal or bird from turning around to traumatize parts of the body with their mouth or beak.

**collarette** [kol'ər-et'] a small collar; see **epidermal collarette**, **iris**<sup>1</sup> collarette.

**collateral** [ko-lat'ər-əl] **1.** secondary or accessory; not direct or immediate.

**2.** a side branch, as of a blood vessel or nerve.

**c. circulation** see **collateral vessel**, **collateral circulation**.

**c. recruitment** the utilization of many small arterial–capillary units in pulmonary tissue during exercise and increased cardiac output, for increased exchange of gases.

**c. relationship** where two individuals have a common ancestor.

**collected** a term describing the balance of a horse and rider, or a horse alone, while moving; smooth coordination of all parts working in unison.

**collecting duct system** part of the urinary drainage that includes collecting tubules, both straight and arched, and papillary ducts.

**c. tubule** see **collecting tubule**.

**colliculectomy** [kə-lik'u-lek'tə-me] excision of the seminal colliculus.

**colliculitis** [kə-lik'u-li'tis] inflammation about the seminal colliculus.

**colliculus** [kə-lik'u-ləs] pl. **colliculi** a small elevation.

**caudal c.** see **midbrain colliculus** (below).

**midbrain c.** one of the four colliculi in the tectum of the midbrain, two caudal (inferior) and two rostral (superior) containing the visual and auditory reflex centers. Called also **corpora quadrigemina**.

**seminal c., c. seminalis** a prominent portion of the male urethral crest, on either side of which, depending on the species, are the openings of the vasa deferentia or ejaculatory ducts; called also **verumontanum**.

**superior c.** see **midbrain colliculus** (above).

**Collie** a large dog with a distinctive elongated, flat head and nose. There are two varieties, the rough-coated (longhaired) and the smooth-coated (shorthaired), which are regarded as separate breeds in the United Kingdom. In the more common rough Collie, a thick, long coat forms a ruff or mane around the neck and front of the chest. The breed originated in Scotland as shepherd's dog and the rough-coated variety is also called a Scotch collie. The breed is affected by group of inherited abnormalities in ocular development, collectively called **collie eye anomaly**, inherited epilepsy, hemophilia A, patent ductus arteriosus, cerebellar degeneration and cyclic hematopoiesis. It is also predisposed to nasal solar dermatitis ("collie nose").

**C. ectasia syndrome** see **collie eye anomaly** (below).

**C. eye anomaly** a congenital inherited ocular syndrome with a wide range of defects in the posterior vascular, neural, and fibrous tunics of the eye, presumably due to failed mesodermal differentiation and development. The hallmark sign is choroidal hypoplasia (often limited to the area lateral to the optic disc). This can be associated with any



**C-70:** Collies (smooth), blue merle color.





C-71: Collie nose.

combination of scleral ectasia, optic nerve coloboma, retinal detachment and microphthalmia. Although this appears to be an autosomal recessive trait, there is much pleomorphism in the phenotypic appearance. Seen almost exclusively in Collies, Border collies and Shetland sheepdogs. Formerly called also collie ectasia syndrome.

**C. granuloma** see nodular granulomatous episcleritis.

**miniature C.** see **Shetland sheepdog**.

**C. nose** a depigmenting, crusting dermatitis of the planum nasale, adjacent skin on the dorsum of the nose, and sometimes lip and eyelid margins. Occurs most commonly in sunny climates and in individual dogs with the greatest exposure to sunlight. Once believed to be a breed-specific disorder related to the long nose of collies, it is now known that several diseases produce similar clinical features and in many breeds. These include discoid and systemic **lupus erythematosus**, pemphigus erythematosus and pemphigus foliaceus, as well as solar dermatitis.

**silver C. syndrome** see canine cyclic **hematopoiesis**.

**collie** a general term referring to collie type dogs, or sheep herding dogs, although it may have specific meaning in some locations, such as in North America where it refers to the Collie breed, or in the UK where it usually refers to Border collies.

**collimation** [kol'i-ma'shən] in microscopy, the process of making light rays parallel; the adjustment of two or more optical axes with respect to each other. In radiology, the restriction of the x-ray beam size to the area under investigation. This reduces the scattered radiation reaching the x-ray film and the exposure of attendants.

**collimator** [kol'i-ma'tər] **1.** a device, sometimes a diaphragm, or series of diaphragms, which control the direction and the dimensions of the x-ray beam. **2.** in nuclear scintigraphy, a perforated lead plate mounted on a scintillation camera to absorb gamma rays not aligned perpendicular to the surface of the camera.

**collinearity** very high correlation between variables.

**colligative** [kə-lik'wə-tiv] characterized by excessive liquid discharge, or by liquefaction of tissue.

**collisional interactions** collisions which occur when an electronic target is bombarded with high energy electrons as in x-rays. The collisions result in heat loss.

**collodiaphyseal** [kol'o-di''ə-fiz'e-əl] pertaining to the neck and shaft of a long bone, especially the femur.

**collodion** [ko-lo'de-on] a highly flammable syrupy liquid compounded of pyroxylin dissolved in ether and alcohol, which dries to a clear tenacious film; used as a topical protectant applied to the skin to close small wounds, abrasions and cuts, to hold surgical dressings in place, and to keep medications in contact with the skin.

**flexible c.** a mixture of collodion, camphor and castor oil; used topically as a protectant.

**salicylic acid c.** flexible collodion containing salicylic acid, used topically as a keratolytic.

**colloid** [kol'oid] **1.** glue-like. **2.** the translucent, yellowish, gelatinous substance resulting from colloid degeneration. **3.** a chemical system composed of a continuous medium (continuous phase, usually a liquid or gel) throughout which are distributed small particles, 1 to 1000 nm in size (disperse phase), which do not settle out under the influence of gravity, hence the alternative name, colloid dispersions. The aqueous

phase of milk is a colloid, where the particles are casein. Colloidal particles do not pass through a semipermeable membrane, as in dialysis.

**c. solution** a crystalloid-based solution containing large molecules too large to freely cross the semipermeable membrane defining the intravascular space. Used in the resuscitation and maintenance of intravascular volume and systemic blood flow, typically in conjunction with **crystalloid** solutions to restore interstitial fluid volume; used in the treatment of various conditions in which there is intravascular volume depletion and poor tissue perfusion. Includes whole blood, plasma, hetastarch, pentastarch and dextran 70.

**stannous sulfur c.** a sulfur colloid containing stannous ions formed by reacting sodium thiosulfate with hydrochloric acid, then adding stannous ions; used in bone, liver and spleen scintigraphy.

**colloidal** [ko-loid'əl] of the nature of a colloid.

**c. bath** a bath prepared by adding soothing agents, such as gelatin, starch, bran or similar substances, to the bath water, for the purpose of relieving skin irritation and pruritus.

**c. body** a homogeneous, eosinophilic apoptotic keratinocyte found in the basal or parabasal epidermis in systemic or discoid lupus erythematosus and any other skin disease in which there is damage to the basal cells. Also called Civatte body, hyaline body.

**c. degeneration** the assumption by the tissues of a gumlike or gelatinous character.

**c. osmotic pressure** largely the osmotic pressure exerted by plasma proteins; see also oncotic **pressure**.

**colloidin** [ko-loid'in] a jelly-like principle produced in colloid degeneration.

**collum** [kol'əm] pl. *colla* [L.] the neck, or a necklike part such as the part just below the head of the humerus, penis, malleus, stapes or mandible. The collum of the omasum is its narrow fusion with the reticulum.

**c. distortum** torticollis.

**c. valgum** coxa valga.

**collunarium** a nosewash or a nasal douche.

**collutorium** a mouthwash. Called also collutory.

**collutory** [kol'u-tor'e] collutorium.

**collyria** eye wash.

**Collyricium** a trematode genus of the family Troglotrematidae. Includes *Collyricium faba* (subcutaneous cysts in fowls, turkeys and wild birds).

**collyrium** [kə-lir'e-əm] an eyewash; a lotion for the eyes.

**col(o)-** word element. [Gr.] colon.

**coloboma** [kol'o-bo'mə] pl. *colobomata*; an absence or "notch-type" defect of ocular tissue(s), usually due to failure of a part of the fetal fissure to close; it may affect the choroid, ciliary body, eyelid (palpebral coloboma, coloboma palpebrale), iris (coloboma iridis, iridodiastasis), lens (coloboma lentis), optic nerve or retina (coloboma retinae). Can occur uni- or bi-laterally and cause minimal to severe visual impairment depending on location, severity, and secondary complications. Inherited in many domestic animal species, especially several breeds of cattle and Collie dogs as part of **Collie** eye anomaly.

**atypical c.** one occurring at a location other than the fetal fissure (ventrally on the vertical meridian).

**typical c.** one occurring in or near to the fetal cleft (ventrally on the vertical meridian).

**colobomatous** pertaining to or emanating from a coloboma.

**Colocasias** a plant genus in the family Araceae. Rhizomes may cause cyanide poisoning; leaves also oral irritation on ingestion because of presence of calcium oxalate raphide crystals. Includes *C. esculenta* (*C. antiquorum*). Called also taro, elephant ears, dasheen.

**colocecostomy** the surgical development of a permanent opening between the cecum and colon. See also **ceccocolostomy**.

**colocentesis** [kol'o-sen-te'sis] surgical puncture of the colon, usually with a needle to aspirate a sample of contents, or relieve gaseous distension.

**Coloceras** a genus of feather-eating lice of the family Philopteridae which infest pigeons and doves. Includes *Coloceras damicorne* (pigeons).

**coloclysis** [kol'ok'li-sis] irrigation of the colon.

**coloclyster** an enema introduced into the colon through the rectum.

**colocolostomy** [kol'o-kə-los'tə-mē] surgical formation of an anastomosis between two portions of the colon.

**colocutaneous** [kol'o-ku-tə-ne-əs] pertaining to the colon and skin, or communicating with the colon and the cutaneous surface of the body.

**colocynth** [kol'o-sinth] *Citrullus colocynthis*.

**colocynthin** [kol'o-sin'thin] plant toxin in *Citrullus* spp., causes diarrhea, enteritis.

**Colocynthis vulgaris** *Citrullus colocynthis*.

**coloeenteritis** [kol'o-en'tər-i'tis] **enterocolitis**.

**colofixation** [kol'o-fik-sə'shən] the fixation of the colon in cases of ptosis.

**coloileal** [kol'o-il'e-əl] ileocolic.

**colon** [ko'lon] the part of the large intestine extending from the cecum to the rectum. It has the same basic design in all mammalian species. There is an ascending colon which begins at the cecum, passes forward to the cranial part of the abdominal cavity then crosses to the left side as the transverse colon. It then turns caudally again to become the descending colon. In the caudal abdomen the colon curves to the midline and joins the rectum. See also **colonic**. In herbivores and omnivores there is a variation on this general plan in that the ascending colon is greatly lengthened. In the ruminants and the pig this takes the form of a spiral colon of centrifugal and centripetal loops which occupy the right side of the abdomen. In the horse the ascending colon forms an uncoiled loop reflexed upon itself, beginning at the cecum as the right ventral colon, passing to the left ventral, to the left dorsal at the pelvic flexure, then to the right dorsal, then back into the standard pattern at the transverse colon. In the horse there is the additional oddity of a significant reduction in diameter at the small colon, the terminal part which joins the rectum.

**ascending c.** the first segment of the colon which is either a short, cranially directed segment, as in the dog, or is greatly expanded to form the spiral colon in ruminants or a cone-shaped mass in pigs, or the great colon of horses (right ventral, sternal flexure, left ventral, pelvic flexure, left dorsal, diaphragmatic flexure, right dorsal colons).

**coiled c.** see spiral colon (below).

**descending c.** the third and last of the three main divisions of the colon which runs caudally and terminates in the rectum. It is not extensive in the horse, in which it has an unusually long mesentery and is known as the small colon.

**floating c.** small or descending colon in horses.

**irritable c. syndrome** See **irritable** bowel syndrome. See also **spasmodic colic**.

**large c.** the ascending colon of the horse.

**left c. displacement colic** forward displacement of the left dorsal colon over the **nephrosplenic** ligament is a cause of colic in the horse. Characteristic findings include a palpable medial displacement of the spleen, absence of the pelvic flexure of the colon from its usual site in the caudal abdomen, and evidence of displacement of the spleen on ultrasonographic examination. Treatment by administration of **phenylephrine** and rolling of the horse or laparotomy and manual replacement of the colon.

**short c.** see descending colon (above).

**redundant c.** extra bends in the descending colon. Seen on radiographs, especially in large breed dogs. Of no clinical significance.

**right dorsal c. displacement** displacement of the right dorsal colon in the horse to the area between the right body wall and the cecum, in an anterior direction so that the pelvic flexure comes to lie against the diaphragm.

**small c.** the terminal colon in the horse between the transverse colon and the rectum. Because of its small diameter it is a common site for obstruction by phytobezoars and similar bodies.

**spiral c.** the coiled ascending colon of ruminants, made up of two centripetal gyri, a central flexure and two centrifugal gyri.

**colonic** [ko-lon'ik] pertaining to or arising from the colon.

**c. aganglionosis** see colonic **aganglionosis**.

**c. atony** see **megacolon**.

**c. atresia** affected neonates appear normal at birth but develop abdominal distention quickly. No feces are passed and death occurs at about one week unless surgical repair is effected. The defect occurs sporadically in most species. In horses and cattle it can be inherited, in cattle it can result from palpation of the fetus between 35 and 41 days gestation at pregnancy diagnosis, but the cause is not determined in most cases.

**c. bands** see **tenia coli**.

**c. constriction** due to contraction of peritoneal adhesions in horses; causes chronic or intermittent colic.

**c. contraction** permanent inability of colon to dilate due to congenital **aganglionosis**.

**c. entrapment** see left **colon** displacement.

**c. foreign body** foreign bodies, e.g., halter shanks, are found in the colon in horses, having passed the gastric sphincter and the ileocecal valve; quickly encrusted with salts.

**c. impaction** intractable constipation occurs in dogs and cats, primarily with obstruction by foreign material and secondarily when there is an obstruction to the normal passage of feces, including retention because of pain at defecation. See also colon impaction **colic** of horses.

**c. infarction** see thromboembolic **colic**.

**c. ischemia** deprivation of blood supply to all or part of the colon. See also **intestinal** torsion, **intestinal** strangulation, **intestinal** obstruction **colic**.

**c. obstruction** see colonic impaction (above), **intestinal** obstruction.

**c. rupture** occurs, apparently spontaneously, in mares at foaling, death occurring soon afterwards.

**c. torsion** in horses, see under equine **colic**. In cattle, torsion of the coiled colon is an acute obstruction with coils of gas-distended colon visible in the right flank and palpable per rectum.

**c. wash** fecal samples can be collected from reptiles by flushing the colon with saline through a catheter inserted through the cloaca and into the colon.

**colonitis** inflammation of the colon; colitis.

**colonoileoscope** an elongated flexible endoscope which permits visual examination of the lumen of the colon and ileum.

**colonoileoscopy** endoscopic examination of the lumen of the colon and ileum.

**colonopathy** [ko'lo-nop'ə-the] any disease or disorder of the colon.

**colonorrhagia** hemorrhage from the colon.

**colonorrhoea** mucous colitis.

**colonoscope** [ko-lon'o-skōp] an elongated flexible endoscope which permits visual examination of the lumen of the colon.

**colonoscopy** [ko'lon-os'kə-pe] endoscopic examination of the colon, either transabdominally during laparoscopy, or transanally by means of a colonoscope.

**colony** [kol'ə-ne] a discrete group of organisms, as a single cluster of bacteria in a culture that was produced from a single starting bacterium.

**c.-forming units 1.** a unit of measurement of the number of viable bacteria in a liquid. **2.** Colonies of pluripotent stem cells located and quantified in the spleen. Colonies grown in vitro interact with erythropoietin to give rise to morphologically identifiable erythroid cells.

**c.-stimulating factors** cytokines produced by a variety of tissues, which stimulate the growth and differentiation of hematopoietic cells. Includes granulocyte-macrophage colony-stimulating factor, monocyte-macrophage colony-stimulating factor and granulocyte colony-stimulating factor.

**colony collapse disorder (CCD)** a syndrome of sudden die-off of honey bee colonies characterized by a lack of adult bees in the hive, the presence of a queen bee and some recently emerged young bees, little to no build-up of dead bees, and abundant honey and pollen stored within the nest. A global problem for beekeepers and for the crops that depend on bee pollination. Parasitic disease and newer systemic agricultural insecticides are considered part of the cocktail of factors responsible but a cause has not been identified.

**colopexy** [ko'lo-pek'se] surgical fixation or suspension of the colon, usually to the dorsolateral abdominal wall to prevent recurring rectal prolapse.

**coloplication** [ko'lo-pli-ka'shən] the operation of taking a reef or fold in the colon. An inverting stitch, e.g., Lambert, will also plicate the colon. This could be used over a weakened wall which is still viable, e.g., needle decompression site.

**coloproctectomy** [ko'lo-prok-tek'tə-me] surgical removal of the colon and rectum.

**coloproctitis** [ko'lo-prok-ti'tis] inflammation of the colon and rectum; colorectitis.

**coloproctostomy** [ko'lo-prok-tos'tə-me] anastomosis of the colon to the rectum.

**coloptosis** [ko'lo-to'sis] caudal displacement of the colon.

**colopuncture** [ko'lo-pungk'chər] colocentesis.

**color** [kul'ər] **1.** a property of a surface or substance due to absorption of certain light rays and reflection of others within the range of wavelengths (roughly 370 to 760 nm) adequate to excite the retinal receptors. **2.** radiant energy within the range of adequate chromatic stimuli of the retina, i.e., between the infrared and ultraviolet. **3.** a sensory impression of one of the rainbow hues.

**broken c.** in describing coat color, a solid color broken up by another color, usually white.

**c. dilution** reduction of the concentration of the color pigment in tissue; most important in hair and other fiber coats, in the skin and in the ocular iris.

**c. dilution alopecia** see color dilution **alopecia**.

**c. pigments** the pigments influencing skin color are melanin, melanoid, oxygenated hemoglobin, reduced hemoglobin, carotene.

**c. radical** see **chromophore**.

**solid c.** said of animal haircoats; the same color all over the animal.

**c. therapy** in complementary medicine, the use of colors to affect mood and the immune system. Called also chromatherapy.

**color-marking bulls** bulls fitted with chin-ball marking harness for the detection of cows in estrus.

**Colorado rubber tree** *Hymenoxys richardsonii*, Colorado rubberweed. **colorectal** [ko'lo-rek'təl] pertaining to or of the nature of the colon and the rectum.



**c. polyp** benign or malignant; most commonly occurs at the anorectal junction in middle-aged dogs, causing diarrhea, dyschezia and rectal bleeding.

**colorectitis** [ko"lo-rek-ti'tis] inflammation of the colon and rectum; coloproctitis.

**colorectostomy** [ko"lo-rek-tos'tā-me] see **coloproctostomy**.

**colorectum** [ko"lo-rek'tām] the distal portion of the colon and the rectum, regarded as a unit.

**colorimetry** a system for determining the concentration of a substance in solution by its absorbance of light of specified wavelengths.

**Colorpoint, Colourpoint** in cats, a light-colored body with darker pigmentation on the ears, face, legs and tail (**points**), as seen in Siamese cats from which this was genetically derived. It has been developed in shorthair and longhair varieties. The colors and patterns developed by selective breeding appear to be endless.

**C. longhair** generally regarded as a color variation of the Persian cat. See **Himalayan**.

**C. shorthair** essentially a Siamese cat with colored points other than the classic seal, chocolate, blue and lilac. In North America these are regarded as a separate breed, the Colorpoint shorthair, but in Britain they are regarded as separate varieties of Siamese.

**colorrhaphy** [ko-lor'ə-fe] suture of the colon.

**colored** said of cattle of any breed that have head, back and underline, tail and legs of one, or a mixture of other colors and sides that are differently marked and colored, e.g., Banteng, Telemark.

**coloscope** [kol'o-skōp] see **colonoscope**.

**coloscopy** [kol-os'ko-pe] see **colonoscopy**.

**colostomy** [kə-lōs'tā-me] an artificial opening (stoma) created in the large intestine and brought to the surface of the abdomen for the purpose of evacuating the bowels; also the opening (stoma) so created. Has been used successfully in the treatment of rectal tears in horses.

**end-on c.** the colon is transected and the distal portion is removed.

**loop c.** the colon remains intact; usually temporary.

**colostral supplement** products such as an ultrafiltrate of whey containing significant quantities of immunoglobulins are available for oral use as colostral supplements.

**colostrogenesis** secretion of colostrum.

**colostrometer** a hydrometer calibrated to read the immunoglobulin concentration in a sample of colostrum.12

**colostrum** [kə-lōs'trām] the thick, yellow secretion present in the mammary gland in increasing amounts for several days or weeks, depending on the species, before parturition. It is very rich in maternal antibodies and is essential in providing passive immunity to the neonate. An adequate amount of colostrum must be ingested during the first few hours after birth while the intestinal epithelium is still permeable to the large molecules of the immunoglobulins. Immunoglobulin concentrations in colostrum vary between species and are much higher than those found later in the milk. The predominant immunoglobulin in the colostrum of

all major domestic animals is IgG. Swine have, in addition, high concentrations of IgA. See also colostral **immunoglobulins**. Called also **beestings**.

**c.-induced anemia** occurs in lambs fed cow colostrum; thought to be an immune-mediated hemolytic anemia.

**bloody c.** see **hemolactia**.

**cross species c.** preserved colostrum fed to a young animal from other than a dam of the same species. There is a risk for anemia in lambs and kids fed cow colostrum.

**c. replacements** commercially available products containing immunoglobulins derived from the processing of serum collected at cattle slaughter or second-milking colostrum purchased from dairies. The majority have sub-optimal concentrations of immunoglobulin to replace natural colostrum. Some are labeled as colostrum supplements but marketed as colostrum replacements.

**synthetic c.** although referred to as colostrum, formulas can only attempt to duplicate milk of a particular species since they are lacking in immunoglobulins. See **milk replacer**.

**c. vacuoles** eosinophilic colostrum present in vacuoles in cytoplasm of intestinal epithelial cells in newborn animals.

**colotomy** [ko-lot'ə-me] incision of the colon.

**colovaginal** [ko"lo-vaj'i-nəl] pertaining to or communicating with the colon and vagina.

**colovesical** [ko"lo-ves'ī-kəl] pertaining to or communicating with the colon and urinary bladder.

**colpalgia** [kol-pal'jə] pain in the vagina.

**colpatresia** [kol'pə-tre'zhə] atresia, or occlusion of the vagina.

**colpectasia** [kol'pek-tā'zhə] distention or dilation of the vagina.

**colpectomy** [kol-pek'tā-me] excision of the vagina.

**colpeuryisis** [kol-pu'ri-sis] operative dilatation of the vagina.

**colpitis** [kol-pi'tis] inflammation of the vaginal mucosa; vaginitis.

**colp(o)-** word element. [Gr.] relationship to the vagina.

**colpocele** [kol'po-sē] see vaginal **hernia**.

**Colpocephalum** a genus of lice of the family Menoponidae. Includes *C. tauri* (turkey) and *C. turbinatum* (pigeons).

**colpocleisis** [kol'po-kli'sis] surgical closure of the vaginal canal.

**colpocystitis** [kol'po-sis-ti'tis] inflammation of the vagina and bladder.

**colpocystocele** [kol'po-sis'to-sē] hernia of the bladder into the vagina via ruptured vaginal wall.

**colpocytogram** [kol'po-si'to-gram] a differential listing of the cells observed in smears from the vaginal mucosa.

**colpocytology** [kol'po-si-tol'ə-jē] the quantitative and differential study of cells exfoliated from the epithelium of the vagina.

**colpoperineoplasty** [kol'po-per'i-ne'o-plas'te] plastic repair of the vagina and perineum.

**colpoperineorrhaphy** [kol'po-per'i-ne-or'ə-fe] surgical repair of a lacerated vagina and perineum.

**colpopexy** [kol'po-pek'se] surgical repair of recurrent vaginal prolapse.

**colpoplasty** [kol'po-plas'te] plastic surgery involving the vagina.

**colpoptosis** [kol'po-to'sis] prolapse of the vagina.

**colporrhaphy** [kol-por'ə-fe] a surgical procedure to repair, or reinforce, the fascial support layer between the bladder and the vagina.

**colporrhexis** [kol'po-rek'sis] laceration of the vagina.

**colposcope** [kol'po-skōp] a speculum for examining the vagina and cervix by means of a magnifying lens.

**colpospasm** [kol'po-spaz'am] vaginal spasm.

**colpostenosis** [kol'po-stə-no'sis] contraction or narrowing of the vagina.

**colpostenotomy** [kol'po-stə-not'ə-me] a surgical correction for stricture of the vagina.

**colposuspension** [kol'po-səs-pen'shən] a surgical procedure used in the treatment of urinary incontinence caused by urethral sphincter mechanism incompetence in female dogs. The procedure aims to move an intrapelvic bladder neck to an intra-abdominal position by suturing the vaginal wall to the prepubic tendon each side of the neck of the urinary bladder. Called also vaginal advancement.

**colpotomy** [kol-pot'ə-me] incision made near the fornix of the vagina to gain access to the abdominal cavity. Used for ovariectomy in mares and cows.

**colpoxerosis** [kol'po-ze-ro'sis] abnormal dryness of the vulva and vagina.

**colt** a young entire male horse up to 4 years of age; may be qualified, e.g., yearling colt; used also as an adjective, e.g., colt foal.

**colt's foot** *Tussilago farfara*

**Cultivirus** [kol'ti-vi'rās] a genus in the family *Reoviridae* with the human pathogens Colorado tick fever virus, Eyach virus and Tarumizu virus:

**Colubridae** [kol-u'brī-de] a large family of snakes in the class Reptilia with a number of subfamilies; members are called colubrids.



**C-72:** Colostrometer. A commercially available hygrometer for measurement of immunoglobulin concentration in colostrum. Commonly used for this purpose but there are limitations to its accuracy for this purpose.

**Columbia sheep** medium wool, mutton type of polled American sheep. Produced using Lincoln rams on Rambouillet ewes. Common breed on western range in the USA.

**Columbia SK virus** a picornavirus in the genus *Cardiovirus* which causes encephalomyocarditis in zoo animals.

**Columbicola** a genus of lice in the superfamily Ischnocera. Includes *Columbicola columbae* (pigeons).

**columbiformes** see **pigeon**.

**columbine** see *Aquilegia vulgaris*.

**Columbus fancy** an American breed of canaries, derived from several English varieties. A medium to large-sized bird with either a smooth or crested head.

**Columbus grass** *Sorghum x alnum*.

**columella** [kol''u-mel''ə] pl. *columellae* [L.] a little column.

**c. auris** a connecting rod between the avian eardrum and the perilymph of the inner ear via the rod's footplate.

**c. nasi** the ridge of tissue separating the two nostrils and usually divided by a furrow (the filtrum).

**column** [kol''əm] an anatomical part in the form of a pillar-like structure; anything resembling a pillar.

**anal c's** longitudinal folds of mucous membrane at the cranial half of the anal canal; called also rectal columns.

**c. of Bertin** extensions of renal cortex between the renal pyramids.

**dorsal c.** the sensory tracts in the dorsal funiculus of the spinal cord, consisting of the fasciculus gracilis and fasciculus cuneatus. In transverse section, seen as a horn.

**gray c.** the longitudinally oriented parts of the spinal cord in which the nerve cell bodies are found, comprising the gray matter of the spinal cord.

**lateral c.** the lateral portion of the gray substance of the spinal cord, in transverse section seen as a horn; present only in the thoracic and anterior lumbar regions and especially associated with the sympathetic nervous system.

**rectal c's** anal columns.

**spinal c.** the rigid structure in the midline of the back, composed of the vertebrae. Called also vertebral column. See also **spine**.

**ventral c.** the ventral portion of the gray substance of the spinal cord, in transverse section seen as a horn.

**columna** [ko-lum''nə] pl. *columnae* [L.] column.

**columnaris disease** an important disease of fish caused by infection with the bacteria *Flavobacterium columnare* (*Cytophaga columnaris*). It is characterized by circumscribed gray-white lesions on the skin about the head, gills and fins and on the body. Called also saddlepatch disease.

**false c.d.** similar to columnaris disease but caused by infection with the bacteria *Flavobacterium psychrophilium*. Characterized by skin erosion especially at the fins and jaws.

**colza** *Brassica rapa* var. *silvestris*.

**coma** [ko''mə] a state of unconsciousness from which the patient cannot be aroused, even by powerful stimuli, but reflex activity is still present.

**alpha c.** coma in which there are electroencephalographic findings of dominant alpha-wave activity.

**diabetic c.** the coma of severe diabetic **acidosis**. See also **diabetes mellitus**.

**hepatic c.** results from reversible biochemical abnormalities of the cerebrum, caused by elevated blood concentrations of toxic substances such as ammonia, amino acids, short-chain fatty acids and beta hydroxylated biogenic amines that accumulate in severe liver disease. Causes diffuse cerebrocortical dysfunction with abnormal mentation. See also hepatic **encephalopathy**.

**irreversible c.** coma in which for a period of 24 hours there is complete nonreceptivity and nonresponsivity even to the most intensely painful stimuli, no spontaneous movement or breathing, absence of elicitable reflexes, and a flat electroencephalogram. See also **brain dead**.

**myxedema c.** the mental stupor caused by severe hypothyroidism; seen most often in Doberman pinchers, it is associated with hypoventilation, hypothermia, hypotension and bradycardia. Death may occur.

**c. scale** see **coma scale**.

**Comandra pallida** North American plant in the family Santalaceae; a facultative selenium converter plant; a selenocompound causes poisoning in livestock. Called also bastard toadflax.

**comatose** [ko''mə-tōs] pertaining to or affected with coma.

**comb 1.** a vascular, red cutaneous structure attached in a sagittal plane to the dorsum of the skull of domestic fowl. It consists of a base attached to the skull, a central mass called the body, a backward projecting blade and upward projecting points. Called also cockscomb. **2.** see **ctenidium**.

**buttercup c. (1)** has no blade and is divided sagittally with a cup shape and with points arranged around the cup.

**cushion c. (1)** a low, small, oval, smooth body with no points.

**nasal c. (1)** the red, vascular structure across the base of the beak in the turkey. Called also snood, frontal process.

**pea c. (1)** has three blades with a row of points arising from each.

**rose c. (1)** a low elongated comb from which many small points arise. There is a backward projecting spike in lieu of a blade.

**Silkie c. (1)** similar to the V-comb but without points.

**single c. (1)** has all of the components without variation; the standard comb.

**strawberry c. (1)** a small, oval, flattened comb with a wrinkled surface.

**V-c. (1)** two large, conical points that diverge from a sizeable body. Usually accompanies a crest of feathers.

**combinatorial library** in immunology, the ligation of cDNAs of light and heavy chains of immunoglobulins, each in a separate bacteriophage vector.

**combined immune deficiency syndrome (disease)** an inherited defect of immunity resulting in completely deficient humoral and cellular immunity. Autosomal recessive inheritance in foals of Arabian and part-Arabian breeding, Jack Russell terriers, some breeds of pigs and mice. Mutation in horses is a five-base-pair deletion (frameshift mutation) at codon 9480 in the gene that codes for DNA-dependent protein kinase. Clinically the foal is normal at birth but as passive immunity acquired from the mare declines the foal ultimately dies from infectious disease. Called also CID and PSCID for primary severe CID and lethal combined immune deficiency syndrome.

**combined movements** involuntary movements of the head and limbs in which the components of the movement always occur in the same sequence and with the same force.

**Combretum glaucocarpa** cause of death in cattle in Brazil. Manifest with renal and hepatic damage.

**Combretum platypetalum** African plant in the family Combretaceae; the seeds cause vomiting, incoordination and paralysis in the pig. Called also red wings.

**combustion** [kəm-bus''chən] rapid oxidation with emission of heat.

**Comeback** Australian breed of wool sheep, bred by crossing Merino with Corriedale, Polwarth or Zenith sheep; wool is 21 to 25 microns. It is a registered breed, but the term is more commonly used in the sense of a type of sheep produced by crossbreeding a crossbred Merino back to Merino.

**comedo** [kom''ə-do] pl. *comedones* a skin lesion consisting of a plug of keratin and sebum within the dilated orifice of a hair follicle frequently containing bacteria; a blackhead. Found in feline and canine **acne**, **hyperadrenocorticism**, Schnauzer comedo syndrome (see below).

**Schnauzer c. syndrome** a condition in which numerous comedones form in the skin over the back of some predisposed miniature Schnauzer dogs. The cause is unknown but believed to be an inherited developmental dysplasia of hair follicles.

**comes** [ko''mēz] pl. *comites* [L.] an artery or vein accompanying another vessel or nerve.

**comet-tail** in ultrasonography, a type of reverberation artifact, caused by a number of small, highly reflective interfaces, such as gas bubbles.

**comfrey** [kom''fre] see **Symphytum**.

**rough c.** *Symphytum asperum*.

**Russian c.** *Symphytum x uplandicum*.

**command points** in acupuncture, specific points on each meridian which correspond to each of the five phases of the five elements.

**COMMD1** copper metabolism MURR1 containing domain 1, formerly called MURR1, is a protein critical for copper excretion; a deletion in part of the gene encoding this protein causes inherited copper toxicosis of **Bedlington terriers**.

**commensal** [ko-men''səl] **1.** living on or within another organism, and deriving benefit without harming or benefiting the host individual. **2.** a parasitic organism that causes no harm to the host.

**commensalism** [ko-men''səl-iz''əm] symbiosis in which one population or individual is benefited and the other is neither benefited nor harmed.

**commingle** to mingle together, e.g., cattle mingling with deer.

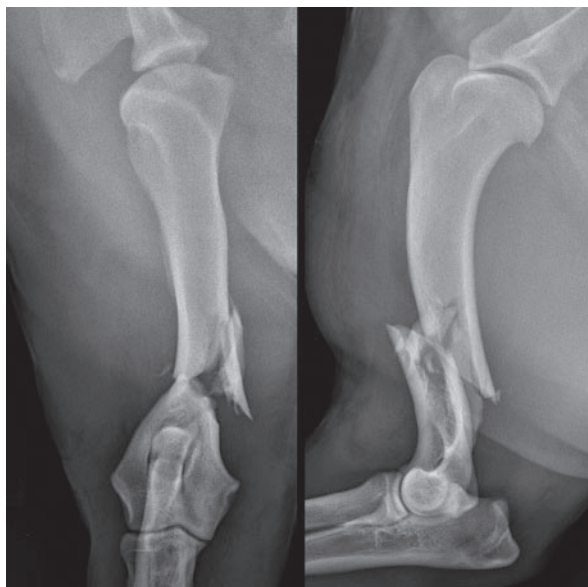
**comminuted** [kom''i-'əd] broken or crushed into small pieces, as a comminuted bone fracture.

**comminution** [kom''i-noo''shən] the act of breaking, or condition of being broken, into small fragments.

**commissure, commissura** [kom''i-shər, kom''i-su''rə] a site of union of corresponding parts, as the angle of the lips or eyelids; used also with specific reference to the sites of junction between adjacent cusps of the heart valves, cerebral hemispheres, etc.

**brain c.** the bands of fibers connecting the parts of the two cerebral hemispheres. They include the **corpus callosum**, the largest commissure,





**C-73:** Craniocaudal and mediolateral radiographs demonstrating a comminuted fracture of the distal part of the diaphysis of the humerus. Johnston, Spencer A., VMD, DACVS and Karen Tobias, DVM, MS, DACVS. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set*, 2nd Edition. Saunders, 2017.

a rostral commissure which is part of the paleopallium and the fornical commissure which is related to the archipallium, the caudal collicular commissure which connects the caudal colliculi (corpora quadrigemina). Called also cerebral commissure.

**cerebral c.** see brain commissure (above).

**fornical c.** interconnection between the right and left hippocampi. Called also fornical commissure.

**habenular c.** interconnection between the right and left habenular nuclei.

**middle c.** a band of gray matter joining the optic thalami; it develops as a secondary adhesion and may be absent.

**posterior c.** a large fiber bundle crossing from one side of the cerebrum to the other dorsal to where the aqueduct opens into the third ventricle.

**spinal cord c.** the gray and white commissures which connect the two sides of the spinal cord.

**commissurorrhaphy** [*kom''i-shar-or'ə-fe*] surgical closure of the components of a commissure, to lessen the size of the orifice.

**commissurotomy** [*kom''i-shar-ot'ə-me*] surgical incision or digital disruption of the components of a commissure to increase the size of the orifice.

**mitral c.** the breaking apart of the adherent leaves (commissure) of the mitral valve.

**commodities** in cattle feeding, a term used for feedstuffs such as cotton seed hulls, brewers grains, etc. that are usually by-products from other food industries.

**common** [*kom'an*] a shared structure, function, disease. See also under specific name of the item, e.g., atrioventricular **canal**.

**c. pathway** see **coagulation** pathways.

**c. source** a point from which a number of animals are infected or affected. The point from which a common source or point epidemic begins.

**c. stoncrop** see *Sedum acre*.

**c. sucker** a fish. See *Catostomus commersoni*.

**Commonwealth Agriculture Bureaux (CAB)** see **CAB International (CABI)**

**communicability** transmissibility; ability to spread from infected to susceptible hosts.

**c. period** the time during which the patient is infectious to others.

**communication** communication between animals depends on sight and hearing and, especially in dogs, on the sense of smell. The matters about which animals communicate include (1) for recognition between dam and newborn; (2) for mating; (3) for initiating aggression or welcome; (4) for signaling danger or safety. Dogs have several skills that allow them to respond to different signals given by humans and use human pointing, body posture, gaze direction, touching or marking as cues. See also **vocalization**.

**auditory c.** communication by all kinds of vocalization.

**chemical c.** communication by smell, especially by pheromones.

**visual c.** besides size and color other modes of visual communication which are of great importance in animal life include stance, demeanor, behavior, and the synthesis of all of these in 'body language'.

**community** [*kə-mu'ni-te*] a group of individuals living in an area, having a common interest, or belonging to the same organization.

**c. adoption curve** graphic display of the rate at which persons in a community adopt new techniques and strategies.

**compact cattle** [*kom'pakt, kəm-pakt'*] dwarf cattle.

**compaction** [*kəm-pak'shən*] packing together as in twin births when both fetuses engage the pelvis at the same time, in prolonged constipation in dogs, and in compaction of endochondral bone as a part of normal bone modeling.

**companion animal** dogs, cats, pleasure horses, birds, mice, guinea pigs and more exotic species kept by humans for company, amusement, psychological support, extrovert display and all of the other functions that humans need to share with animals of other species; companions who will not take emotional or psychological advantage of the person and will, for the most part, stay faithful.

**Companion Animal Eye Registry (CAER)** in this program, board certified (ACVO) veterinary ophthalmologists (specialists) perform screening examinations, certify dogs free of eye disease, and collect data, in conjunction with the OFA. Called also the OFA Companion Animal Eye Registry.

**companionship** the faculty possessed by most truly domesticated animals. They are social creatures and have a great need for the companionship of other animals. Animals in groups are quieter and more productive as a rule.

**comparative** a study based on the use of comparison.

**c. economic analysis** comparison of the performance of an enterprise such as a farm with the performance of a peer group of enterprises.

**c. medicine** the study of human disease by comparison with the diseases of animals, depending largely on work with naturally occurring diseases of animals that are models for human diseases. May be confined to specialty areas, such as dermatology or ophthalmology. The reverse attitude also applies but not in the same positive sense that humans can be used as experimental animals.

**comparison** the basis of analytical epidemiology, the statistical comparison between groups.

**c. groups** the groups between which a statistical comparison is to be made.

**c. population** the population in which a comparison between groups is to be conducted. All of the groups to be used comprise the population.

**compartment** [*kəm-pahr't'mənt*] a part of the body as a whole and divided from the rest by a physical partition.

**fluid c.** that liquid part of the body excluded by cell membranes. Includes intravascular and intercellular compartments.

**stomach c's.** components of the camelid stomach; see **stomach compartments**.

**c. syndrome** muscles which are contained in an aponeurotic sheath may be subjected to ischemic myonecrosis when they increase in the size as a result of vigorous muscular activity or damage to the muscle such as can occur with prolonged recumbency and external pressure on the muscle.

**compartmental muscle compression syndrome** see **compartment syndrome**.

**compatible** [kəm-pat'ɪ-bəl] capable of existing together without adverse reaction. In therapeutics drugs that can be administered together without reacting together so as to reduce or block the other's effectiveness.

**compensation** [kəm'pən-sə'shən] the counterbalancing of any defect of structure or function. **1.** in cardiology, the maintenance of an adequate blood flow without distressing signs. **2.** in preventive medicine the payment of farmers for losses incurred by the destruction of their livestock when controlling an infectious disease.

**depth-gain c.** see **time gain compensation** (below).

**time gain c. (TGC)** in ultrasonography, electronic amplification of returning sound waves. Echoes from deeper tissues are weaker due to attenuation, these are amplified to achieve a uniform image intensity.

**compensatory** [kəm-pen'sə-tor'ē] pertaining to or emanating from compensation.

**c. hypertrophy** impaired function of one organ in a paired organ system or of part of an organ in a single organ system is followed by enlargement of the surviving organ or tissue so that functional capacity is maintained.

**competent** [kəm'pə-tənt] able.

**c. bacterial cells** able to take up DNA.

**competitive** the relationship in which two or more entities contend for association with another.

**c. exclusion** the feeding of non-pathogenic bacteria to food animals and poultry in order to reduce colonization of pathogenic bacteria in the gastrointestinal tract through bacterial antagonism and competitive exclusion. Basis of **probiotics**

**c. inhibitors** compounds, often structural analogs of the substrate, that bind reversibly to an enzyme denying the substrates access to the active site and slowing the rate of the reaction.

**complement** [kəm'plə-mənt] a complex of enzymatic proteins occurring in normal serum that are triggered in a cascade manner by, and interact with, antibody-antigen complexes, producing lysis when the antigen is an intact cell. Complement comprises 25 to 30 discrete proteins, labeled numerically as C1 to C9, and by letters, i.e., B, D, P, etc., and with C1 being divided into subcomponents C1q, C1r and C1s. Components C3 and C5 are involved in the generation of anaphylatoxin and in the promotion of leukocyte chemotaxis, the result of these two activities being the inflammatory response. C1 and C4 are involved in the neutralization of viruses. The components also combine in various sequences to participate in other biological activities, including antibody-mediated immune lysis, phagocytosis, opsonization and anaphylaxis. The complement system is known to be activated by the **immunoglobulins** IgM and IgG.

**alternate c. pathway, alternative c. pathway** the sequence in which complement components C3 and C5 to C9 are activated without participation by C1, C2 and C4 or the presence of an antibody-antigen complex.

**c. cascade** the sequence of reactions, each being the catalyst for the next, that leads to the terminal complement pathway and cell lysis. There are two pathways for activation of C3, the 'classical' (below) and the 'alternate' (above).

**classical c. pathway** the complement activation pathway in which all of the complement components C1 to C9 participate and is triggered by antibody-antigen complexes.

**c. deficiency** various complement components may be deficient without serious effects on the host. C3 deficiency is most severe and occurs in humans, Brittany spaniels and Finnish-Landrace lambs. Increased susceptibility to infections results.

**c. fixation tests** utilize complement and specific antigen-antibody reactions to determine the presence of specific antibodies in the blood by detection of hemolysis. Involves two stages. In the first, also referred to as the test system, antigen is mixed usually with serial dilutions of a test serum in the presence of complement. If the serum contains antibody, i.e., is positive, an antibody-antigen complex is formed which also activates (fixes) complement. In the second stage, also called the indicator system, sheep red blood cells coated with specific, usually rabbit anti-sheep red blood cell antibody are added. The red blood cells are said to be sensitized. If antibody was not present in stage 1, then the free complement lyses the sensitized sheep red blood cells. The basis of many serological tests including those for glanders, tuberculosis and contagious bovine pleuropneumonia. Called also Bordet-Gengou phenomenon. See also **immunity**.

**c. regulatory proteins** a set of at least seven proteins that are present in plasma (C1 INH, C4b-binding protein, factor H and factor I) or present in cell membranes (decay-accelerating factor [DAF], membrane cofactor protein [MCP] and homologous restriction factor [HHF]) that modulate the complement proteins and protect 'innocent' bystander cells and tissues from complement damage.

**terminal c. pathway** the final stages of complement activation in which C5b, C6, C7, C8 and C9 are activated; common to both the alternate and classical pathways; results in formation of the attack complex which forms pores in cell membranes.

**complementarity** the relationship between bases in the DNA double helix whereby every base on one strand is matched to a complementary base on the other strand by hydrogen bonds.

**c.-determining region (CDR)** restricted regions within the variable regions of antibodies that bind to antigenic determinants.

**complementary, alternative, and integrative therapies** [kəm'plə-mən'tə-re] defined by the American Veterinary Medical Association as a heterogeneous group of preventive, diagnostic, and therapeutic philosophies and practices that are not considered part of conventional (Western) medicine as practiced by most veterinarians and veterinary technicians. These therapies include, but are not limited to, veterinary acupuncture, acupressure, and acupressure; veterinary homeopathy; veterinary manual or manipulative therapy (i.e., therapies based on techniques practiced in osteopathy, chiropractic medicine, or physical medicine and therapy); veterinary nutraceutical therapy; and veterinary phytotherapy. The Royal College of Veterinary Surgeons (UK) maintains that such therapies should be complementary rather than an alternative to treatments for which there is a recognised evidence base or which are based in sound scientific principles.

**complementary and alternative veterinary medicine (CAVM)** [kəm'plə-mən'tə-re] see **complementary, alternative, and integrative therapies**. See also **acupuncture, aromatherapy, Ayurvedic medicine, Bach flower therapy, bioenergetic medicine, traditional Chinese medicine, chiropractic, ethnoveterinary medicine, herbal medicine, holistic medicine, homeopathy, integrative medicine, magnetic field therapy, massage therapy, naturopathic medicine, nutraceutical medicine, orthomolecular therapy**.

**complementation** [kəm'plə-mən'tə'shən] infection of the same cell by two viruses in which one provides a gene product which the other requires.

**α-complementation** a method for selecting bacteria that have been transformed with a plasmid vector in the pUC series which carries the *N*-terminal coding sequence for β-galactosidase of the *lac* operon.

**complete blood count (CBC)** a complete assessment of circulating elements in the peripheral blood. Includes a quantitative report on the cellular elements, hemoglobin concentration, packed cell volume, red blood cell indices, possibly platelet indices and a report on cellular morphology. See also **blood count**.

**complex** [kəm'pleks] **1.** the sum or combination of various things, like or unlike, as a complex of clinical signs. **2.** that portion of an electrocardiographic tracing that represents the depolarization of the ventricle. **3.** in chemistry, ensembles of molecules formed by a combination of compounds and ions held together by chemical forces.

**antibody-antigen c.** a complex formed by the combining of antibody and antigen. Called also immune complex.

**Ghon c.** see primary complex (below).

**Golgi c.** a complex cellular organelle involved in the synthesis of glycoproteins, lipoproteins, membrane-bound proteins and lysosomal enzymes. See also **Golgi apparatus**.

**immune c.** antibody-antigen complex.

**major histocompatibility c. (MHC)** see major **histocompatibility complex**.

**multienzyme c.** the bringing together of all of the enzymes involved in a series of reactions such that the product of enzyme A is passed directly to enzyme B and so on to the final product.

**olivary nuclear c.** gray matter located in the medulla oblongata dorsal to the pyramidal tracts; an important part of the motor feedback regulatory mechanism.

**primary c.** the combination of a parenchymal pulmonary lesion and a corresponding lymph node focus, occurring in primary tuberculosis. Similar lesions may also be associated with other mycobacterial infections and with fungal infections. Called also Ghon complex.

**compliance** [kəm-pli'əns] **1.** the quality of yielding to pressure or force without disruption, or an expression of the measure of ability to do so, as an expression of the distensibility of an air- or fluid-filled organ, e.g., the



lung or urinary bladder, in terms of unit of volume per unit of pressure. The compliance of the lungs ( $C_L$ ) and thorax ( $C_T$ ) determine the elastic resistance to ventilation. The total compliance of the lungs and thorax ( $C_{LT}$ ) is given by the formula  $1/C_{LT} = 1/C_L + 1/C_T$ .  $C_L$  is measured by determining the intrapleural pressure at different end-inspiratory volumes. A balloon-tipped catheter is used to determine the intrapleural pressure, which is transmitted through the soft wall of the esophagus.  $C_L$  is usually divided by the functional residual capacity to give the specific compliance. Lung compliance is decreased in congestive heart failure and interstitial lung disease and increased in emphysema.  $C_{LT}$  can be measured by determining the change in lung volume for various amounts of pressure difference between the mouth and chest surface using a body plethysmograph. **2.** The willingness to follow a prescribed course of treatment or the extent to which owners follow the veterinary advice given.

**blood vessel c.** the ability of each blood vessel to expand, or contract, to best accommodate a particular volume, and a particular hydrostatic pressure of blood depends on the proportional composition, and the distribution, of its content of collagen, elastin, smooth muscle.

**C. Policy Guide** most recently updated in 2016, an addition to the (US) Federal Food, Drug and Cosmetic Act which allows for the extralabel use of drug products approved for use in animals, to be used in minor species (defined by exclusion as, animals other than cattle, horses, swine, chickens, turkeys, dogs and cats) when there are no approved treatment options available, the health of animals is threatened, and suffering or death would result from failure to treat the affected animals. Requires a valid **veterinarian-client-patient relationship** and there are a number of documentary requirements.

**complication** [*komˈpli-kaˈshən*] **1.** a disease(s) concurrent with another disease. **2.** the occurrence of two or more diseases in the same patient. **3.** the occurrence of a second disease as a consequence of the first.

**component therapy** [*kom-poˈnənt*] in transfusion medicine, use of just that component of blood which is required, e.g., whole blood, packed red blood cells, or plasma.

**composite** [*kəm-pozˈit*] a dental material to perform a defect restoration.

**composite milk samples** [*kəm-pozˈit*] a specimen is taken from each of the four quarters, or the two halves in ewes, does and mares, into the same sample bottle. Contrast with quarter samples.

**compound** [*komˈpaʊnd*] **1.** made up of diverse elements or ingredients. **2.** a substance made up of two or more materials. **3.** in chemistry, a substance made up of two or more elements in union. The elements are united chemically, which means that each of the original elements loses its individual characteristics once it has combined with the other element(s).

**c. 469** see **isoflurane**.

**c. 1080** see **sodium fluoroacetate**.

**c. 1081** see **fluoroacetamide**.

**c. granular corpuscle** see **gitter cells**.

**compress** [*komˈprəs*] a square of gauze or similar dressing, for application of pressure or medication to a restricted area, or for local applications of heat or cold.

**compression** [*kom-preshˈən*] **1.** the act of pressing upon or together; the state of being pressed together. **2.** in embryology, the shortening or omission of certain developmental stages.

**c. band** pulled tightly across an animal on an x-ray table to reduce thickness, restrict respiratory movement and restrain the patient. Both ends of the band are fixed to the table and there is a mechanism for tightening it. May be used to apply pressure to the abdomen of a dog to increase the visibility of abdominal organs, although this is rarely performed in modern radiology due to the availability of ultrasound and computed tomography.

**c./distraction methods** a stress-radiographic method of positioning dogs for the assessment of hip laxity for the diagnosis of hip dysplasia. One radiograph is taken with the femoral heads compressed into the acetabula. The other position is with maximal lateral displacement of the femoral heads using a special device for leverage.

**hourglass c.** in **cervical spondylomyelopathy** (wobbler syndrome), characteristic combination of dorsal and ventral compression of the cervical spinal cord caused by a combination of hypertrophy of the annulus fibrosus, hypertrophy of the ligamentum flavum and degenerative disease of articular facets.

**c. plating** an internal fixation method of treating fractures by the application of plates across the fracture lines and fixing them in place with specially designed screws. The objective is to provide extreme stability of the fracture. Properly designed plates of the correct size for the patient and the use of screws with maximum holding power make the system independent of any additional form of support.



**C-74:** Compression screws used in fracture repair in horses.

From Hinchcliff KW, Kaneps AJ, Geor RJ, Equine Sports Medicine and Surgery, Saunders, 2004.

**c. plating device** a device that is connected to an already fixed end of a compression plate and then connected to the other bone fragment so as to obtain as complete compression as possible. Not commonly used when modern dynamic compression plates are utilized.

**spinal cord c.** compression of the cord by a space-occupying lesion in the vertebral canal causes an upper **motor** neuron syndrome below and a lower **motor** neuron syndrome at the site of the lesion.

**compresst cattle** dwarf cattle.

**compromised** **1.** lacking adequate resistance to infection, or lacking the ability to mount an adequate immune response, owing to a course of treatment, e.g., immunosuppressive drugs or infections, irradiation, or to an underlying disorder, e.g., leukemia. **2.** lacking a sufficient blood supply to remain viable.

**Compton effect** [*kompˈtən*] the decrease in energy of electromagnetic radiation due to the interaction of a photon with an outer shell electron of a target. One of a one of the three kinds of interaction when x-rays pass through an absorbing medium. The interacting photons pass on in a new direction (Compton scatter) having given up part of their energy in ionizing an atom in the absorbing medium (Compton absorption). Important in the upper range of x-ray energies used in veterinary imaging.

**Compton metabolic profile test** [*kompˈtən*] a test based on the concept that the nutritional status of an animal can be estimated by the chemical measurement of some of the components of the blood. It is used to determine the need for variation in the diet of the animal or herd and is thought to be more accurate and to be effective much earlier than the clinical assessments that are more customary as preventive measures. The testing procedure includes the collection of blood samples on a number of occasions during the year and from cows in various stages of nutritional and lactational stress. Only a small group of cows is examined and proper statistical precautions are taken to ensure that conclusions drawn will be valid. A large number of biochemical estimations are carried out on the blood samples, and in some instances on urine samples, so that the animals' nutritional and metabolic status with respect to most of the significant metabolites can be assessed.

**compulsive** [*kom-pulˈsiv*] the state of being subject to compulsion.

**c. drinking** see primary **polydipsia**.

**c. rolling** an involuntary movement in which the recumbent patient persists in rolling, always in the same direction, until it meets an obstruction.

**c. walking** affected animals walk oblivious to their surroundings. They appear to be blind, walk into objects, headpress against them and stay in this position for long periods, are oblivious to danger and may die of misadventure. They may attempt to climb a wall and fall over backwards. Common causes are hepatic encephalopathy and increased intracranial pressure.

**computed radiography (CR)** a form of digital, filmless radiology. A photostimulable storage phosphor (barium fluorohalide) plate is exposed to x-rays in a cassette as for film radiography. The plate is then scanned to produce a computer graphic file of the x-ray intensity absorbed by the plate.



**C-75:** CT of a dog's abdomen. An adrenal tumor is invading the caudal vena cava (arrow)

Courtesy C Beck.

**c. r. plate** a barium fluorohalide phosphor layer is mounted on a sheet of plastic to absorb energy from x-ray photons. Subsequently, photostimulable light is released when the plate is scanned by a laser beam. Residual effects of absorbed x-rays are erased by exposing the plate to fluorescent light thereby allowing it to be reused repeatedly to record x-ray images.

**c. r. scanner** scans a computed radiography plate with a laser, releasing photostimulated light into a photomultiplier tube. The electrical output is digitized and mapped into the computer image file, thereby creating a radiographic-like image.

**computed tomography (CT)** an imaging technique using x-rays and computers to produce cross sectional images through a patient's body. See computed **tomography**.

**COMS** caudal occipital malformation syndrome. See **Chiari-like malformation**.

**Con A** concanavalin A.

**conacaste tree** *Enterolobium cyclocarpum*.

**conarium** see **pineal** body.

**concanavalin** [kon<sup>u</sup>ˈkə-nəvˈə-lin] either of two phytohemagglutinins isolated along with canavalin from the meal of the jack bean (*Canavalia ensiformis* and other species of *Canavalia*), which agglutinate the blood of mammals as a result of reaction with polyglucosans.

**c. A (Con A)** binds to sugar residues on cell surfaces and stimulates T lymphocytes to proliferate.

**concanavalin** toxic lectin protein found in jack beans (*Canavalia* spp). Has the ability to restore the growth pattern of tumour cells to that of normal cells.

**concatemers** tandemly repeated identical DNA sequences; intermediate structures formed during the replication of some DNA molecules which are subsequently cleaved to form unit-length molecules.

**concaevation** the induction of maternal behavior in virgin females or males when exposed to neonates.

**concauity** [kon-kəvˈi-te] a depression or hollowed surface.

**conceive** [kən-sēv] to become pregnant.

**f. to conceive (FTC)** said of cows which return to estrus after mating.

**concentrate** [kənˈsən-trāit] **1.** to bring to a common center; to gather at one point. **2.** to increase the strength by diminishing the bulk of, as of a liquid; to condense. **3.** a drug or other preparation that has been strengthened by evaporation of its nonactive parts. **4.** any food that contains low fiber and high TDN, for example grains. **5.** a carefully compounded mixture of micro- and macronutrients, largely vitamins and minerals, suitable for adding to a herbivore's meal and roughage diet which is probably lacking the supplements contained in the concentrate.

**concentration** [kənˈsən-trəˈshən] **1.** increase in strength by evaporation. **2.** the ratio of the mass or volume of a solute to the mass or volume of the solution or solvent.

**hydrogen ion c.** an expression of the degree of acidity or alkalinity (pH) of a solution. See also **acid-base balance**.

**mass c.** the mass of a constituent substance divided by the volume of the mixture, as milligrams per liter (mg/l).

**minimum effective c. (MEC)** the threshold concentration of a drug in plasma below which the efficiency of the drug as a treatment drops off sharply.

**minimal inhibitory c. (MIC)** the lowest concentration of an antimicrobial that inhibits the growth of a bacterium; usually in reference to an antimicrobial sensitivity test.

**minimal lethal c. (MLC)** the lowest concentration of antimicrobial that kills a particular bacterium; usually in reference to an antimicrobial sensitivity test.

**molar c. (c)** the amount of a constituent in moles (millimoles or micromoles) divided by the volume of the mixture, as millimoles per liter (mmol/l). See also **molar**<sup>1</sup>.

**mutant prevention c. (MPC)** the blood concentration of antibiotic that minimizes or limits the development of resistant organisms.

**c. test** a test of renal function based on the patient's ability to concentrate urine. See **water** deprivation test.

**conception** [kən-sepˈshən] fertilization or fusion of gametes to produce a zygote. The term may also signify the onset of pregnancy. See also **reproduction**.

**c. efficiency** see **conception** rate (below).

**early c. factor (ECF)** see **early pregnancy** hormone (factor).

**c. failure** a lack of fertilization or failure of fertilization.

**c. prevention** prevention of the establishment of pregnancy by the use of teaser males in commercial herds or flocks, or progesterone implants in the control of female wild animals. Methods include surgical alteration or hormonal manipulations to disturb sperm transport, ovulation or fertilization. See also **contraception**.

**c. rate** percentage of matings that result in conception.

**Conception Vessel** [kən-sepˈshən] in acupuncture one of the two major extra meridians, besides the 12 regular meridians. Along with the **Governing Vessel**, its function is seen as absorbing excess Qi from the major meridians (vessels) and returning it when it becomes deficient. Called also Ren Mai.

**conceptus** [kən-sepˈtəs] the whole product of conception at any stage of development, from fertilization of the ovum to birth, including extraembryonic membranes as well as the embryo or fetus.

**c. dropsy** see **fetal ascites**, **hydramnios**, **hydrallantois**.

**concha** [kɒŋˈkə] pl. *conchae* [L.] a shell-shaped structure.

**c. of auricle** the base of the auricle of the external ear, bounded anteriorly by the tragus and posteriorly by the antihelix.

**ethmoidal c.** a series of scroll-like bones which arise from the ethmoid bone, project into the nasal chambers and support the olfactory mucous membrane.

**nasal c.** one of two or three delicate, mucosa-covered turbinate bones occupying a large part of each half of the nasal cavity. See also Table 9.

**conchitis** [kɒŋ-kɪˈtɪs] inflammation of a concha.

**conchotomy** [kɒŋ-kɒtˈə-me] incision of a nasal concha.

**Concinnum** a genus of flukes of the family Dicrocoeliidae.

**conclination** [kɒnˈkli-nəˈshən] inward rotation of the upper pole of the vertical meridian of each eye.

**concomitant variable** [kən-komˈi-tənt] see **concomitant variable**.

**concordance** [kən-kɒrˈdæns] in genetics, the occurrence of a given trait in both members of a twin pair.

**concrecence** [kən-kresˈəns] a growing together of parts originally separate.

**concrete** mixture of cement and reinforcing gravel or stones used in the surfacing of yards, passageways, milking parlors and the like; critical to the good condition of feet and hooves of farm livestock. Excessive wear due to a too-abrasive surface causes **footrot** of pigs and epidemic lameness in dairy herds.

**concretio** [kən-kreˈshe-ɔ] [L.] *concretion*.

**c. cordis** adhesive pericarditis in which the pericardial cavity is obliterated, often with dystrophic calcification of the pericardium.

**concretion** [kən-kreˈshən] **1.** a calculus or inorganic mass in a natural cavity or in tissue. **2.** abnormal union of adjacent parts. **3.** a process of becoming harder or more solid.

**concurrent** [kən-kurˈənt] simultaneous as in disease, infection, infestation.

**concussion** [kən-kushˈən] a violent jar or shock, or the condition that results from such an injury.

**brain c.** loss of consciousness, transient or prolonged, due to a blow to the head; breathing often is unusually rapid or slow. Outward evidence of the injury may include bleeding, sometimes from the nose, and contusions (bruises). There may be residual signs such as local paralysis on recovery.

**spinal cord c.** may lead to temporary paresis or spinal shock, with possible local paralysis continuing after partial recovery.



**c. stunner** a sharp blow to the head sufficient to cause stunning may be used as a prelude to euthanasia or, in laboratory animals, as a means of euthanasia on its own.

**condemned meat** meat classified at inspection as unfit for human consumption.

**condensation** [kənˈdæn-səˈʃən] **1.** the act of rendering, or the process of becoming, more compact. **2.** the process of passing from a gaseous to a liquid or solid phase. In animal housing this is a matter of great importance because of the need for a dry environment as a prevention against the spread of infection, especially those spread by inhalation.

**condenser** [kən-denˈsər] **1.** a vessel or apparatus for condensing gases or vapors. **2.** a device for illuminating microscopic objects. **3.** a device for boosting the voltage in an electrical circuit.

**c. discharge unit** used to generate high voltages needed for diagnostic x-rays using standard 110/220 volt input. An advantage for mobile units. It discharges over a short period, which helps prevent movement blur.

**condition** [kən-dishˈən] **1.** to train; to subject to conditioning. **2.** state of the body in terms of amount of tissue carried. Spoken of as obese, fat, thin, emaciated. See also **body condition score**. **3.** of wool; a qualitative assessment of the degree of waste included in the fleece, including yolk, plant fiber, dust.

**body c. scale** see **body condition score**.

**light c.** see **thinness**.

**c. scoring** the allocation of a score to indicate an animal's body condition. See also **body condition score**.

**conditioned** educated by a conditioning process. See **conditioning**.

**c. reinforcer** the pairing of a neutral stimulus with a primary, or natural, reinforcer.

**c. response** a response that does not occur naturally in the animal but that may be developed by regular association of some physiological function with an unrelated outside event, such as ringing of a bell or flashing of a light. Soon the physiological function starts whenever the outside event occurs. Called also conditioned reflex. See also **conditioning**.

**c. food aversion** behavioral tool used to train horses and ruminant livestock to avoid some poisonous plants. Aversion is produced by administering lithium chloride orally in temporal association with feeding the plant of interest. Repetitive administrations can result in long-term aversion of grazing animals to natural selection of the plant in range systems. Averted animals must be run as a separate group from non-averted animals as social conditioning may reverse the aversion.

**conditioner** involved in improving physical condition.

**livestock c.** a person involved in special feeding programs for heavy producing dairy cows or animals being prepared for shows, exhibitions, fairs and sale. Usually done at the conditioner's premises because of the secret nature of the materials and procedures. Represents a potential health threat from infectious disease.

**soil c.** agents such as gypsum added to clay soil to improve its physical state.

**conditioning** [kən-dishˈən-ɪŋ] **1.** learning; behavior modification in animals. **2.** preparation of young cattle for shipment and entry into a feedlot. The procedure varies but usually includes vaccination against potential pathogens, prophylactic treatment for worms and lice, administration of vitamins and when necessary feeding of antibiotics and introduction to the kind of diet likely to be fed. **3.** tenderizing of meat by careful storage at an appropriate temperature for a sufficiently long period.

**aversive c.** behavior modification using an adverse stimulus in response to the inappropriate or undesirable behavior. Called also avoidance.

**classical c.** a form of learning in which a response is elicited by a neutral stimulus which previously had been repeatedly presented in conjunction with the stimulus that originally elicited the response. Called also respondent conditioning, Pavlovian conditioning. The concept had its beginnings in experimental techniques for the study of reflexes. The traditional procedure is based on the work of Ivan P. Pavlov, a Russian physiologist. In this technique the experimental subject is a dog that is harnessed in a sound-shielded room. The neutral stimulus is the sound of a metronome or bell which occurs each time the dog is presented with food, and the response is the production of saliva by the dog. Eventually the sound of the bell or metronome produces salivation, even though the stimulus that originally elicited the response (the food) is no longer presented.

**instrumental c.** takes place only after the subject performs a specific act that has been previously designated. The most common form of this conditioning uses an instrument such as a bar that must be pressed by the subject to achieve the delivery of food or other reward.

**odor c.** classical conditioning to odors of essential oils is an element in aromatherapy.

**operant c.** behavior that is modifiable by its consequences where the probability of that behavior occurring again may either increase if there is reinforcement or decrease if there is punishment.

**Pavlovian c.** see classical conditioning (above).

**respondent c.** see classical conditioning (above).

**condominium** a centrally owned, usually cooperative, facility of feed mill, feed trucks, feed purchasing and health services but separate individual ownership of livestock, and usually the feedlot yards.

**condor** a New World vulture; a diurnal bird of prey noted for its large size. Includes the South American *Vultur gryphus* (Andean condor), and the largest North American land bird *Gymnogyps californianus* (California condor).

**conduct** behavior as a professional. Behavior relative to a code of ethics agreed to by members of a professional organization.

**c. conducive to unfairly attracting business** see **touting, solicitation, unprofessional c.** see **misconduct**.

**conductance** [kən-dukˈtəns] ability to conduct or transmit, as electricity or other energy or material; in studies of respiration, an expression of the amount of air reaching the alveoli per unit of time per unit of pressure, the reciprocal of resistance.

**conduction** [kən-dukˈʃən] conveyance of energy, as of heat, sound or electricity.

**accessory tract atrioventricular c.** permits a sinus impulse from the atria to ventricles to precede that carried by the normal atrioventricular conduction system. Arrhythmia results, the particular electrocardiographic characteristics depending on the pathway(s) involved. See also **Wolff-Parkinson-White syndrome**.

**aerial c., air c.** conduction of sound waves to the organ of hearing through the air.

**bone c.** conduction of sound waves to the inner ear through the bones of the skull.

**c. disorder** abnormalities in the conduction pathways of the heart.

**James accessory c.** see **James fibers**.

**c. system** the system comprises the sinoatrial and atrioventricular nodes, atrioventricular bundle and Purkinje fibers.

**c. time** an indicator of a peripheral nerve's ability to carry an impulse; measured during electromyography. A nerve that has undergone Wallerian degeneration is unable to carry an impulse. Severe loss of myelin results in a prolonged conduction time.

**conductive** having the quality of readily conducting electric current.

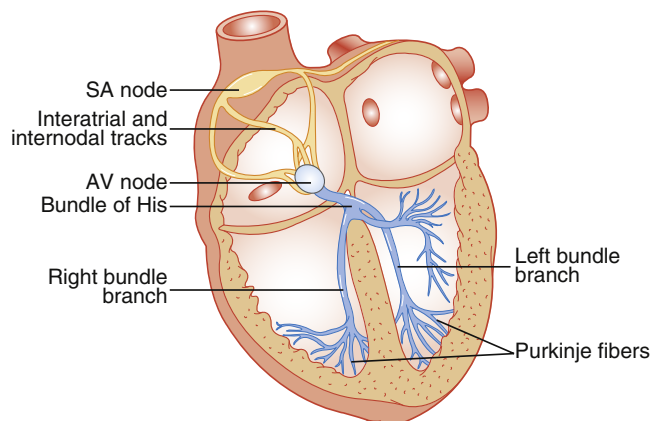
**c. flooring** flooring or floor covering made specially conductive to electrical current, usually by the inclusion of copper wiring that is earthed externally.

**conductivity** [kənˈdʌk-tivˈi-te] capacity for conduction.

**electrical c.** in milk increases with an increase in the severity of inflammation of the mammary tissue. Used as a mastitis detection device.

**conduit** [kənˈdoo-ɪt] a channel for the passage of fluids or air.

**ileal c.** the surgical anastomosis of the ureters or a bowel segment to one end of a detached segment of ileum, the other end being used to form a stoma on the abdominal wall.



**C-76:** Cardiac conduction system.

Thomas, J. and Lerche, P. *Anesthesia and Analgesia for Veterinary Technicians*, 5th Edition. Mosby, 2015.

**vascular c.** artificial blood vessel; used in repair of pulmonic stenosis by providing a bypass of the obstruction and in correction of arteriovenous fistulae.

**condylarthrosis** [kon"dəl-ahr-thro'sis] a modification of the spheroidal form of synovial joint, in which the articular surfaces are ellipsoidal rather than spheroid.

**condyle** [kon'dīl] a rounded projection on a bone, usually for articulation with another bone; a knuckle.

**c. fracture** one involving a condyle, most commonly distal humerus or femur in small animals and distal cannon bone in horses.

**occipital c.** either one of a pair of articular prominences that flank the foramen magnum and form synovial joints with the atlas.

**condylectomy** [kon"dəl-ek'tə-me] excision of a condyle.

**condyliion** [kon'dīl'e-ən] the most lateral point on the surface of the head of the mandible.

**condyloid** [kon'də-loīd] resembling a condyle.

**condyloma** [kon'də-lo'mə] an elevated wartlike lesion of the skin.

**c. acuminatum** a small, pointed papilloma of viral origin.

**canine c.** see canine transmissible **venereal** tumor.

**condylotomy** [kon'də-lot'ə-me] transection of a condyle.

**condylus** [kon'də-ləs] pl. *condyli* [L.] see **condyle**.

**Condy's crystals** purple granules of potassium **permanganate**, an oxidizing agent used topically and in aquaculture as an antimicrobial agent.

**cone** [kōn] **1.** a solid figure or body having a circular base and tapering to a point. **2.** in radiology, a conical or open-ended cylindrical structure placed over the x-ray tube to restrict the size of the beam. Cones have been replaced by the light beam diaphragm. See also **collimation**. **3.** surgical cone. **4.** one of two photoreceptor cell types found in the retina. Important for color perception, fine visual acuity and vision in relatively bright ambient light. Found in highest number in the central area of the retina. See also **rod**.

**c. down (2)** in radiology, to restrict the x-ray beam. See also **collimation**.

**c. dysplasia (4)** progressive degeneration of retinal cones; the rods are normal. Seen especially in Alaskan malamute and German short-haired pointer dogs; causes impaired day vision from an early age with normal night vision and a normal fundoscopic appearance.

**ether c.** a cone-shaped device used over the face in administration of ether for anesthesia.

**growth c.** bulbous enlargement at the tip of every growing axonal fiber in the fetus, from which many long filopodia extend.

**c. of light** the triangular reflection of light seen on the tympanic membrane.

**pressure c.** the area of compression exerted by a mass in the brain, as in transtentorial herniation.

**cone-nose bug** [kōn'nōs"i] see **reduviid bug**.

**coneflower** [kōn'flou"ər] common name for plants in several genera, including *Rudbeckia*, *Echinacea*.

**conexus** [ko-nek'səs] a connecting structure.

**confidence** degree of assurance.

**c. interval** a range of values about a sample statistic that has a specified probability of including the true value of the statistic.

**c. level** 1 minus the type 1 **error**; the probability that the trial under consideration will show no significant difference when there is in fact no significant difference between the treatments.

**c. limits** the highest and lowest values in a confidence interval.

**confidentiality** [kon"fi-den"she-əl'i-te] secrecy relating to information. All clinical data have a degree of confidentiality, the level varying with the information and the circumstances.

**configuration** [kən-fig"u-rə'shən] **1.** in anatomical terms the general form of a body. **2.** in chemistry, the arrangement in space of the atoms of a molecule.

**confinement** restriction of animals' movements so that they are not allowed to range freely and graze pasture but are confined either outdoors or indoors, with food brought to them. The degree of confinement varies from tie-stalls for cows and farrowing crates for sows, to lounging barns and feedlots for cattle.

**total c.** animals housed at all times; a common practice in some tropical countries where protection from the heat and humidity may be essential for high-producing livestock; labor and engineering services are costly production items.

**conflicts of interest** [kon'fliktz] the ethical situation that arises when a veterinary practitioner stands to gain a benefit from advice or treatment being provided or the outcome of the case. In all instances, there should be full disclosure to the owner.

**confluence** a running together; a meeting of streams.

**c. of sinuses** the dilated point of confluence of the superior sagittal, straight, occipital and two transverse sinuses of the dura mater.

**confocal** [kon-fə'kəl] see **confocal microscopy**.

**conformation** [kon"for-mə'shən] symmetry, size and shape of the various body regions relative to each other or the general appearance of the animal in terms of satisfying the observer's appreciation of what is a desirable appearance. Most breed societies issue lists of desirable and undesirable points of conformation. Most of them are desirable. Some are not and react adversely on the animals' well-being. Desirable conformation may also be indicated by diagrams or photographs. Also may refer to the spatial arrangement of atoms in a molecule.

**mitochondrial c.** mitochondria may be in an abnormal state of condensed conformation, detected by comparison with mitochondria of orthodox status; orthodox conformation is linked to inactive oxidase phosphorylation, condensed to active phosphorylation.

**confounding** [kon-foun'ding] when the effects of two, or more, processes on results cannot be separated, the results are said to be confounded, a cause of bias in disease studies.

**c. factor** one which is distributed non-randomly with respect to the independent (exposure) or dependent (outcome) variable which is the subject of an enquiry.

**congener** [kon'jə-nəri] something closely related to another thing, as a member of the same genus, a muscle having the same function as another, or a chemical compound closely related to another in composition and exerting similar or antagonistic effects, or something derived from the same source or stock.

**congenic** [kən-jen'ik] a genetic term usually used to refer to specially inbred strains of mice that differ only in restricted regions of the genome; used particularly in mapping major histocompatibility complex antigens.

**congenital** [kən-jen'i-təl] present at and existing from the time of birth.

**c. defects** abnormalities of structure or function which are present at birth. They may or may not be inherited. There are a number of diseases, for example the **lysosomal** storage diseases, which may be inherited or environmental in causation, in which the insult is supplied while the fetus is in utero, but the defect does not become apparent until some time after birth. By definition these are not congenital defects although the animal is born with the metabolic lesion in place. See also individual defects listed by organ or system.

**c. erythropoietic porphyria** see **porphyria**.

**infectious c. tremor** see **congenital tremor syndrome** of piglets.

**c. loco** a congenital, inherited disease of domestic chickens characterized by opisthotonos, orthotonos, inability to stand, violent somersaulting. Affected birds die of starvation and dehydration.

**congenital tremor syndrome** [kən-jen'i-təl] a benign, congenital disease of piglets manifested by severe muscle tremor, especially when standing, and absent when asleep. There is no muscle weakness, the only deaths are due to crushing due to impairment of evasive actions. Causes include: transplacental classical swine fever (hog cholera) virus infection, fetal infection with pseudorabies virus, Japanese encephalitis virus, possibly fetal porcine circovirus 2 infection, inherited sex-linked recessive gene in Landrace, inherited autosomal recessive gene in Wessex Saddleback, exposure of sow to trichlorfon (Teguvon) 45–79 days of pregnancy. The histological proof is a dysmyelinogenesis. Called also myoclonia congenita, trembles.

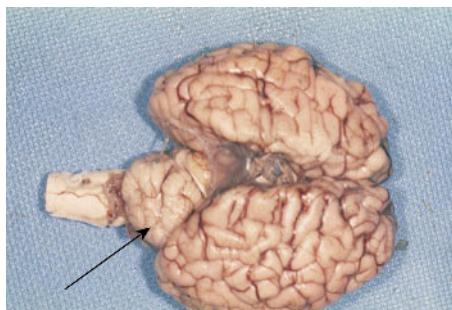
**congestion** [kən-jes'chən] abnormal accumulation of blood in a part as a result of restriction of venous drainage.

**hypostatic c.** post mortem gravitational pooling of blood in the body. Called also livor mortis. See also **lividity**.

**pulmonary c.** see **pulmonary** congestion.

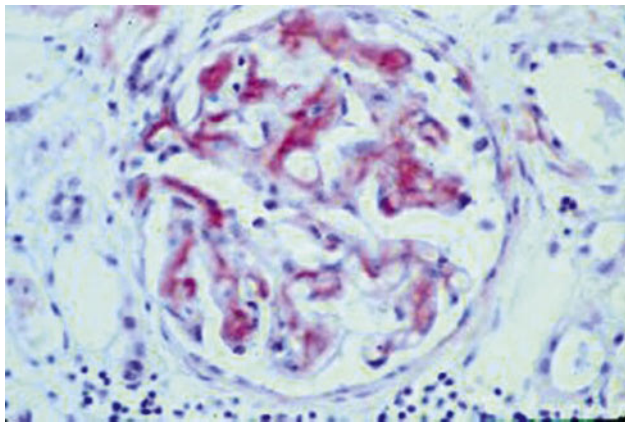
**udder c.** see **udder** edema.

**congestive** [kən-jes'tiv] pertaining to or associated with congestion. See also congestive **heart failure**.



**C-77:** Cerebellar hypoplasia in piglet with congenital trembles due to congenital classical swine fever virus infection. This is a pathognomonic postmortem finding for this cause of congenital trembles. Courtesy of JT Done.





**C-78:** Secondary amyloid deposited in a glomerulus. The red dye (Congo red) specifically binds to amyloid fibrils. Original magnification  $\times 400$ . Tizard IR. Veterinary Immunology, 10th Edition, St. Louis, MO: Elsevier, 2018.

**conglobation** [kon'glo-ba'shən] the act of forming, or the state of being formed, into a rounded mass.

**conglutinant** [kən-gloo'ti-nənt] **1.** promoting union, as of the lips of a wound. **2.** an adhesive of protein.

**conglutination** [kən-gloo'ti-nə'shən] **1.** the adherence of tissues to each other. **2.** agglutination and lysis of antibody-coated erythrocytes produced by addition of whole bovine serum.

**conglutinin** [kən-gloo'ti-nin] a serum protein found in Bovidae which can bind to fixed C3b and cause C3b-coated particles to clump.

**Congo dog** see **Basenji**.

**Congo floor maggot** see *Auchmeromyia luteola*.

**Congo red** a synthetic dye, a derivative of benzidine and naphthionic acid. It is used for differential staining of elastic fibers for microscopic examination. Amyloid is stained a light orange-red with Congo red and exhibits apple green birefringence under polarized light. Amyloid in cats stains poorly. Congo red undergoes a change in hue with acidity and thus can be used as an indicator of pH, turning red in the presence of alkalis (bases) and blue when exposed to acids.

**C. r. test** a laboratory test used in the diagnosis of **amyloidosis**, based on measuring the amount of injected dye that is removed by amyloid in the tissues of the human patient. Not now commonly used.

**conhydrine** one of the piperidine alkaloids in *Conium maculatum*. A highly fatal toxin causing paralysis of the skeletal musculature.

**conical flukes** [kən'ik-əl] see **paramphistomes**.

**coniceine** one of the toxic piperidine alkaloids in *Conium maculatum*.

**conidiobolomycosis** infection by fungi of the genus *Conidiobolus*.

**Conidiobolus** [ko-nid'e-ob'o-ləs] a genus of soil-borne saprotrophic fungi in the phylum Entomophthoromycota.

**C. coronatus** (syn. *Entomophthora coronata*) causes granuloma, which sometimes ulcerates, on the nasal mucosa and skin. See also **swamp cancer**, **phycomycosis**.

**C. incongruus** has caused an epidemic form of nasal granuloma in sheep characterized by disfiguring swellings of the nose, invasion of the local lymph nodes and involvement of the lungs causing death.

**conidiophore** [ko-nid'e-o-for] a specialized hypha upon which conidia are formed.

**conidium** [kə-nid'e-əm] pl. *conidia* an asexual spore of fungi borne on hyphae. There are many types of conidia, **blastoconidia**, **arthroconidium**, **annelloconidium**, **phialoconidium**, **poroconidia** and **aleurioconidia**.

**coniine** [co'ne-ēn] one of the toxic piperidine alkaloids in *Conium maculatum*.

**coniofibrosis** [ko'ne-o-fi-bro'sis] pneumoconiosis with exuberant growth of connective tissue in the lungs.

**coniosis** [ko'ne-o'sis] see **pneumoconiosis**.

**coniotoxicosis** [ko'ne-o-tok'si-ko'sis] pneumoconiosis in which the irritant affects the tissues directly.

**Conium maculatum** [ko-ni'əm] a toxic plant in the Apiaceae family produces piperidine alkaloids coniine, N-methyl-coniine; this weed may affect animals which eat it while grazing or in hay. Principal signs are increased frequency of defecation and urination, muscular weakness, tremor, ataxia, respiratory failure and death. Congenital arthrogryposis and spinal curvature can occur in piglets and calves whose dams have eaten the plant in early pregnancy. Called also **poison hemlock**.

**conjoined** [kən-joind'] joined together. See also **conjoined twins**.



**C-79:** *Conium maculatum* (poison hemlock) showing the umbellifera flower head and red spotting on stalk.

**conjugata** [kon'jöö-ga'tə] conjugate diameter (diameter of space encircled by items joined together, e.g., pelvic diameter—the diameter of the pelvic inlet from the sacral promontory to the pelvic brim).

**conjugate** [kon'jöö-gāt] **1.** paired, or equally coupled; working in union. **2.** conjugated compound formed by linkage of two compounds from which the original compounds can be re-formed easily. **3.** to link marker protein such as fluorescein or enzyme to an antibody molecule to detect antigen, as by **immunofluorescence** or immunoperoxidase staining. **4.** a conjugate diameter of the pelvic inlet; used alone usually to denote the true conjugate diameter. See also **pelvic diameter**.

**c. acid** conjugate pair of a strong base.

**conjugation** [kon'jöö-ga'shən] a joining. In unicellular organisms, a form of sexual reproduction in which two individuals join in temporary union to transfer genetic material. In biochemistry, the joining of two compounds, often a toxic substance with some natural substance of the body to form a detoxified product for elimination from the body.

**conjoint rotation** the complicated movement whereby alternate flexion, adduction, extension and abduction brings about rotation.

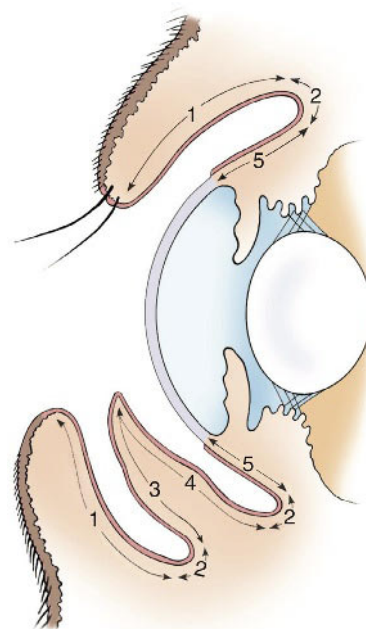
**conjunctiva** [kən-jənk'ti-və] pl. *conjunctivae* [L.] the delicate membrane lining the eyelids and covering the non-corneal parts of the eye; its several parts, (bulbar, fornical, marginal, nictital, palpebral and tarsal), are named according to the anatomical structure invested.

**conjunctival** [kən-jənk'ti-vəl] pertaining to or emanating from conjunctiva.

**c. flap** see **conjunctival graft** (below).

**c. grafts** surgical movement and fixation of bulbar or palpebral conjunctiva to cover corneal defects due to lacerations or non-healing, progressive or deep ulceration. The flaps provide a blood supply, tectonic support, physical protection, and a source of subconjunctival fibroblasts to reform corneal stroma. There are many techniques. Called also **conjunctival flap**.

**c. sac** the tear-filled space, lined by conjunctiva, between the eyelids and the globe. Called also the **conjunctival fornix** or **cul-de-sac**.



**C-80:** Anatomical regions of the conjunctiva: 1, palpebral; 2, fornical; 3, anterior face of the third eyelid; 4, posterior or bulbar face of the third eyelid; and 5, bulbar.

Maggs, David. Slatter's Fundamentals of Veterinary Ophthalmology, 6th Edition. Saunders, 2017



**C-81:** Follicular hyperplasia on the bulbar surface of the third eyelid of a dog. Maggs, David. *Slatter's Fundamentals of Veterinary Ophthalmology* - Elsevier E-Book on VitalSource, 6th Edition. Saunders, 2017:1103. VitalBook file.

**conjunctivitis** [kən-junk'ti-vi'tis] inflammation of the conjunctiva. Extension of the inflammation to or from the cornea is common; hence **keratoconjunctivitis**. May be due to trauma, frictional irritation due to entropion, distichia, ectopic cilia, and grass seed or other foreign body intrusion, infectious organisms, desiccation due to altered tear quality or quantity, ectropion, or facial or trigeminal nerve dysfunction, allergy, and other immune-mediated conditions. Sometimes seen as part of a systemic disease syndrome, e.g., rinderpest, **malignant catarrhal fever**, canine distemper, or infectious bovine rhinotracheitis. The common species-specific conjunctivitis are *Moraxella bovis* infection in cattle, *Rickettsia conjunctivae* in sheep, goats and pigs, feline herpesvirus and *Chlamydia felis* in cats, *Habronema* spp. in horses and *Thelazia* spp. in all species. Classical signs (but non-specific with respect to cause) include mucoid ocular discharge, mild blepharospasm, and ocular irritation/pruritus.

**equine seasonal c.** see equine recurrent **uveitis**.

**fetal c.** present in many cases of intrauterine infection and the causative organism can be cultured from the site.

**follicular c.** proliferation of lymphoid tissue normally present within the conjunctiva, especially the third eyelid; occurs in response to any chronic inflammation or stimulation such as dust, entropion, ectropion, distichiasis or microbial infection.

**ligneous c.** a chronic, membranous conjunctivitis characterized by deposition of amorphous eosinophilic hyaline material in the subconjunctival tissues. Young female Doberman pinschers may be predisposed. Sometimes associated with systemic (respiratory or renal) disease.

**c. neonatorum** conjunctivitis of neonatal animals prior to eyelid opening. Common in kittens infected by feline herpesvirus. May also involve the cornea with perforation and panophthalmitis possible. Called also ophthalmia neonatorum.

**primary c.** caused by an inflammatory agent that affects the conjunctiva in the first instance.

**secondary c.** conjunctivitis secondary to inflammation of neighboring or systemic tissues, typically secondary to keratitis, uveitis, blepharitis, orbital cellulitis, dacryocystitis, or generalized vasculitis.

**summer c.** an incorrect name for equine recurrent **uveitis**.

**conjunctivobuccostomy, conjunctivoralostomy** [kən-junk'ti-vo-buk-os'tə-me] a surgical technique for treatment of obstruction of the nasolacrimal apparatus in which a new drainage track is created from the conjunctival sac to the oral cavity opening between the upper lip and dental arcade. See also **conjunctivorhinostomy**.

**conjunctivoplasty** [kən-junk'ti-vo-plas'te] plastic repair of the conjunctiva.

**conjunctivoralostomy** [kən-junk'ti-vo-ri-nos'tə-me]  
**conjunctivobuccostomy.**



**C-82:** Connemara pony. From Sambras HH, *Livestock Breeds*, Mosby, 1992.

**conjunctivorhinostomy** a surgical technique for the treatment of obstruction of the nasolacrimal apparatus in which a new drainage track is created from the conjunctival sac to the maxillary sinus or nasal cavity. See also **conjunctivobuccostomy**.

**connecting tubules** one of the collecting ductal systems in the kidney permitting nephrons to connect directly with cortical collecting ducts.

**connection points** [kə-nek'shən] see **luo points**.

**connective tissue** [kə-nek'tiv] a fibrous type of body tissue with varied functions. The connective tissue system supports and connects internal organs, forms bones and the walls of blood vessels, attaches muscles to bones, and replaces tissues of other types following injury. Connective tissue consists mainly of long fibers embedded in noncellular matter, the ground substance. The density of these fibers and the presence or absence of certain chemicals make some connective tissues soft and rubbery and others hard and rigid. Compared with most other kinds of tissue, connective tissue has few cells. The fibers contain one or more of a variety of collagen proteins. Connective tissue can develop in any part of the body, and the body uses this ability to help repair or replace damaged areas. Scar tissue is the most common form of this substitute. See also **collagen** diseases.

**elastic c. t.** found especially in supportive tissues, e.g., some ligaments, and tendons, e.g., nuchal ligament or tunica flava.

**reticular c. t.** a type of connective tissue found principally in myeloid and lymphatic organs; they account for reticular meshwork.

**Connell suture pattern** [kən'əl] a technique for suture of the gut wall which resembles the **Cushing suture pattern** except that the suture goes through all layers of the gut wall. The suture goes through the wall from the serosa to the mucosa, then back from the mucosa to the serosa on the same side. The stitch then crosses the incision to the serosa on the other side and then repeats.

**Connemara pony** Irish riding pony, usually dun, or gray, black, bay or brown, 13 to 14 hands high.

**connexons** [kə-nek'son] components of the gap junction spaces between nerve cells; metabolic substances pass between nerve cells via these links.

**Connochaetes** the genus of **wildebeests** in the family Bovidae; includes *C. gnou* (black wildebeest) and *C. taurinus* (blue wildebeest), native to Africa.

**Conn's syndrome** primary **hyperaldosteronism**.

**Conocephalus** grasshoppers or katydids (family Tettigonidae), an intermediate host for the flukes in the genus *Eurytrema*.

**conotruncal abnormalities** [kə'no-trun'kal] congenital anomalies in the conotruncal septum in the developing embryo; **tetralogy** of Fallot (a combination of three such defects) is the only one recorded in animals.

**consanguinity** [kən'sang-gwin'i-te] blood relationship; kinship.

**conscious** [kən'shəs] capable of responding to sensory stimuli; awake; aware.

**consciousness** [kən'shəs-nis] the state of being conscious; responsiveness of the brain to impressions made by the senses. Altered states range from the normal, complete alertness to depression, confusion, delirium and finally loss of consciousness.

**consensual** [kən-sen'shoo-əl] of or relating to a reflexive response of one body structure following stimulation of another.

**c. pupillary light reflex** the reflex constriction of the pupil of a non-illuminated eye when light is directed into the fellow eye.

**consent** [kən-sent'] by an owner, means the veterinarian has informed the client fully of the diagnosis, prognosis and treatment options, of any risks or untoward consequences of the treatments being offered, and an estimate of the costs involved, all in a way that any reasonable person would understand. Called also informed consent.

**conserved DNA sequences** similar or identical nucleotide sequences that occur more often than would be predicted by random chance; include a number of transcription start regions called **promoters** and many others.



**consignment sale** auction sales of consignments of breeding cattle which are excess to the owner's requirements.

**consolidation** [kən-sol'i-da'shən] solidification; the process of becoming solidified or the condition of being solid; said especially of the lung as it fills with fibrinous exudate in pneumonia or with new tissues as in metastatic neoplasia.

**CONSORT statement** a research tool to improve the quality of reports of randomized trials.

**constant** [kon'stənt] a datum, fact or principle that is not subject to change.

**Michaelis c. (K<sub>m</sub>)** concentration of the substrate when the velocity of an enzyme reaction is equal to half its maximal velocity. It is also considered a measuring of the strength of the substrate-enzyme complex, known as the binding affinity of an enzyme for its substrate.

**c. (C) region** see **constant domains**.

**constant domains** [kon'stənt] the C-terminal regions of heavy and light chains of immunoglobulins; they contain the amino acid sequences that are similar in different antibodies of the same class. See also **C<sub>H</sub> domains**; **C<sub>L</sub> domain**.

**constipation** [kon'sti-pə'shən] a condition in which the alimentary transit time is prolonged in view of the amount and type of food being ingested in the preceding day or two. This means usually that the feces are hard, dry and of small bulk and are passed less frequently than expected. They may also be difficult to pass and this may cause some straining; on digital or rectal examination and in x-rays the rectum will be full of hard, dry feces. In some cases a small amount of very thin, soupy feces will be passed even though there is a sizable mass in the rectum; this is soft contents being passed around an impacted fecal mass, and **obstipation** is said to be present. See also **megacolon** in cats. **dietary c.** caused by ingestion of large amounts of foreign material such as bones, hair or fiber that mixes with feces to form hard, dry masses which are difficult or impossible to pass.

**drug-induced c.** may result from treatment with antimotility drugs.

**endocrine c.** may accompany some disorders of endocrine glands causing reduced gastrointestinal motility, e.g., hypothyroidism and hypercalcemia of hyperparathyroidism.

**environmental c.** conditions of management, particularly in dogs and cats, that inhibit freedom for defecation or present unsuitable conditions, such as soiled litter trays or restriction of a house-trained animal to a cage, may cause retention of feces with eventual drying and increased size of the fecal mass.

**neurogenic c.** disorders of innervation to the colon or hindquarters may cause an atonic colon or prevent an animal from assuming normal posture for defecation, thereby inhibiting the desire to defecate. This is seen particularly in painful intervertebral disk lesions or musculoskeletal injuries or lesions.

**obstructive c.** any impediment to the passage of feces, either within the colon, rectum or anus, or from compression by surrounding tissues can cause drying and enlargement of the fecal mass.

**constitution** [kon'sti-too'shən] **1.** the makeup or functional habit of the body. **2.** the order in which the atoms of a molecule are joined together.

**constitutional** [kon'sti-too'shən-əl] **1.** affecting the whole constitution of the body; not local. **2.** pertaining to the constitution.

**constitutive** [kon'stich'u-tiv] produced at a steady rate, independent of internal or external stimuli. Said of enzymes, RNA or protein by an organism.

**constriction** [kən-strik'shən] a narrowing or compression of a part; a stricture.

**constrictive** [kən-strik'tiv] restricting movement or dilatation of an organ, e.g., constrictive pericarditis.

**constrictor muscle** [kən-strik'tər] muscle surrounding cylindrical organs at orifices.

**c. pupillae muscle** the pupil.

**c. vestibuli muscle** the vagina.

**c. vulvae muscle** the vulva.

**constructive occupation** [kən-struk'tiv] activities provided for caged or confined animals to prevent them developing vices.

**consult** [kən-sult] to give or seek advice. The client may consult the advice of the practitioner who may then consult a specialist or consultant.

**consultant** [kən-sul'tənt] a veterinarian whose opinion on diagnosis or treatment is sought by another veterinarian attending a patient; usually a specialist.

**CONSULTANT** an on-line diagnostic support system for veterinary medicine supported by the College of Veterinary Medicine, Cornell University ([www.vet.cornell.edu/Consultant/Consult.asp](http://www.vet.cornell.edu/Consultant/Consult.asp))

**consultation** [kon'səl-tə'shən] **1.** the examination of a patient or review of a patient's case by a general practitioner. See also **referral**. **2.** a deliberation of two or more practitioners about diagnosis or treatment in a particular case.

**Consultative Group on International Agricultural Research (CGIAR)** promotes sustainable food security in developing countries through scientific research and research-related activities. It distributes several hundred million dollars annually to International Research Centers.

**consulting rooms** the place of work of a private practitioner. They may be attached to a clinic or a hospital.

**consumption** [kən-sump'shən] the act of consuming, or the process of being consumed, as in consumption coagulopathy where a failure to clot has been caused by a consumption of platelets and clotting factors. See also disseminated intravascular **coagulation**.

**contact** [kon'takt] **1.** a mutual touching of two bodies or animals. **2.** an animal known to have been sufficiently near an infected animal to have been exposed to the transfer of infectious material.

**c. activation** the initiation of the intrinsic pathway of coagulation that occurs when whole blood contacts glass or similar surfaces; involves the conversion of factor XII into its active form, factor XIIa. This subsequently converts factor XI to XIa and so the **coagulation** cascade begins.

**c. allergy** see **contact dermatitis** (below).

**bone c. repair** repair of a fracture by contact apposition of the two fracture surfaces.

**c. dermatitis** is caused by direct contact between the skin and a substance which is irritating or to which the animal is allergic or sensitive. The reaction usually occurs only on that area of the body that has come into contact with the substance. The term is imprecise and fails to distinguish between contact irritant dermatitis (below) and **allergic** contact dermatitis.

**direct c., immediate c.** the contact, by sharing the same accommodation or pasture or group, of a healthy animal with an animal having a communicable disease, the disease being transmitted as a result. See also **contact transmission**.

**c. healing** a form of primary bone healing at a fracture site where there is cortical bone in contact.

**c. hypersensitivity** see **allergic** contact dermatitis.

**indirect c.** that achieved through some intervening medium, as propagation of a communicable disease through the air or by means of fomites or another animal, e.g., an infection may be passed to animal A from animal B via animal C; animal C is an indirect contact.

**c. irritant dermatitis** skin disease produced by contact with an irritating substance; in contrast with allergic contact dermatitis, an immune reaction is not involved.

**mediate c.** indirect contact.

**contactant** [kən-tak'tənt] an allergen capable of inducing delayed contact-type hypersensitivity of the epidermis after one or more episodes of contact.

**contagion** [kən-tə'jən] **1.** the spread of disease from one animal to another. **2.** a contagious disease.

**contagious** [kən-tə'jəs] capable of being transmitted from animal to animal.

**c. abortion** see **brucellosis**.

**c. agalactia** a triad of mastitis, arthritis and ocular disease sometimes accompanied with respiratory disease, abortion and diarrhea. *Mycoplasma agalactiae* is the main causal agent in sheep and goats, but *M. mycoides* subsp. *capri*, *M. capricolum* subsp. *capricolum* and *M. putrefaciens* produce a similar if not identical clinical presentation. The udder is permanently damaged, and many animals die. Disease occurs on every continent except Australia but outbreaks and severe disease occur particularly in the Mediterranean area and Africa. A disease notifiable to the OIE (see Table 20).

**c. aphtha** see **foot-and-mouth disease**.

**c. avian epithelioma** see **fowlpox**.

**c. bovine pleuropneumonia** a highly contagious disease with principal localization in the lungs, caused by *Mycoplasma mycoides* subsp. *mycoides*. It occurs only in cattle. The cardinal signs are cough, fever, dyspnea, pleuritic friction sounds and gurgling breath sounds on auscultation of the lungs. The case fatality rate is high. An important epidemiological characteristic is the common occurrence of carrier animals with sequestra of infected material in the lungs.

**c. bovine pyelonephritis** infection of the urinary tract of cattle by *Corynebacterium cystitidis* with lesions in the kidney, ureters and bladder. Diagnostic signs are the passage of urine containing blood or discrete red cells and pus, dysuria and palpable abnormalities per rectum of affected organs. Culture of urine confirms the diagnosis.

**c. caprine/ovine pleuropneumonia** highly contagious and fatal pleuropneumonia of goats and sheep caused by *Mycoplasma capricolum* subsp. *capripneumoniae*, previously known as *Mycoplasma* strain F38. The clinical picture includes a short course with cough, dyspnea, and abnormal lung and pleural sounds on auscultation. A disease notifiable to the OIE (see Table 20).

**c. ecthyma** see contagious **ecthyma**.

**c. epididymitis and vaginitis** see **epivag**.

**equine c. acne** see **Canadian horsepox**.

**c. equine metritis** a highly contagious venereal disease resident in mares and transmitted by the stallion, which shows no clinical signs. It is caused by *Taylorella equigenitalis*. Clinically there is a profuse purulent discharge from the vulva about a week after service, endometritis and cervicitis. Also associated with infertility and abortion. So highly contagious that most countries have strict control procedures to prevent entry or spread when detected. A disease notifiable to the OIE (see Table 20).

**c. equine pustular dermatitis** see **Canadian horsepox**.

**c. mastitis** see **mastitis**.

**c. ophthalmia** see contagious **ophthalmia**.

**c. ovine foot rot** see ovine **footrot**.

**c. ovine/caprine ophthalmia** see contagious **ophthalmia**.

**c. ovine pustular dermatitis** see contagious **ecthyma**.

**c. porcine pyoderma** an infectious disease of young sucking pigs characterized by pustules on the face and neck from which streptococci and staphylococci are isolatable. The disease develops from infection of bite wounds inflicted by piglets whose needle teeth have not been removed.

**c. pustular stomatitis** see **horsepox**.

**c. pyoderma** see **exudative** epidermitis.

**c. skin necrosis** necrosis and abscessation of the skin of the shoulder and neck of camelids; etiology is unknown.

**c. venereal infection of sheep** see **ulcerative** dermatosis.

**c. venereal tumor** see canine transmissible **venereal** tumor.

**contaminant** [kən-tam'ī-nənt] something that causes contamination. Includes bacterial or viral species within an otherwise pure culture of another bacterium or virus, or on a material or in a liquid that should be sterile.

**contaminated waste milk** milk kept from the milk vat because the cow or a quarter has been treated with an antibiotic and the withholding period has not expired.

**contamination** [kən-tam'ī-na'shən] the soiling or making inferior by contact or mixture, as by introduction of infectious organisms into a wound, into water, milk, food or onto the external surface of the body or on bandages and other dressings.

**context sensitive half-time** ( $t_{1/2}$  context) in pharmacology, the time (t) for the plasma concentration to decrease by 50% ( $t/2$ ) after an intravenous infusion (the context) has ended.

**contig** [kon-tig'] a set of overlapping short DNA sequences that is used to reconstruct the sequence of a relatively long segment of DNA.

**contingence** [kon'ti-nəns] the ability to exercise voluntary control over natural impulses, such as the urge to defecate or urinate.

**Continental toy spaniel** the European name for dogs recognized elsewhere as two varieties of the **Papillon**.

**contingency** 1. a critical event such as birth or death or affliction with a particular disease. 2. a description of the functional relationship between a behavior and the environment that includes a description of the ABCs of the behavior.

**c. coefficient** see contingency **coefficient**.

**c. table** tabular classification of epidemiological data in horizontal lines and vertical rows, e.g., cause of death vertically and age horizontally, so that each patient appears only once.

**three-term c's**. stimulus-response-outcome. The construct that each behavioral act can be broken down into three key parts: a discriminative stimulus, an operant response, and an outcome that can reinforce or punish. The three-term contingency is fundamental to the study of operant conditioning.

**continual throughput housing** drafts of finished fattening or growing animals are moved out for sale or to other accommodation as they reach their target weight or age so that animals are leaving all the time and their replacements arrive at the same irregular intervals. Compare with all-in-all-out housing.

**continuing care** a professional convention that a veterinarian who is treating an animal is obliged to continue treating that case unless an arrangement is made with its custodian to transfer the care to another practitioner or to a specialist.

**continuing education** professional educational courses, provided by an institution or recognized local or national organization, which

supplement, bring up to date and refresh the level of knowledge available to the graduate veterinarian and their paraprofessional staff. In many locations, a specified amount of continuing education is a requirement for maintaining licensure or registration.

**continuous** [kən-tin'u-əs] continuing indefinitely without the need for renewal.

**c. clinical service** veterinarians are required by convention to provide a service to their clients at all times, either directly or by referral to a comparable practice.

**c. health assessment** provided by a herd health program in which regular visits to the farm by a veterinarian are a feature.

**continuous positive airway pressure (CPAP)** [kən-tin'u-əs] a method of medical gas administration in which gas is delivered to the patient at positive pressure in order to hold open alveoli that would normally close at the end of expiration and thereby increase oxygenation, prevent atelectasis, and reduce the work of breathing. It is used with patients who are breathing spontaneously. When the same principle is used in mechanical ventilation, it is called positive end-expiratory pressure.

**contra-** word element. [L.] against, opposed.

**contra-aperture** [kon'trə-ap'ər-chər] a second opening made in an abscess to facilitate the discharge of its contents. Called also counteropening.

**Contraecacum** a genus of roundworms in the family Anisakidae. Includes *C. microcephalum*, *C. spiculigerum* (wild birds) and *C. osculatum* (in seals and other fish eaters).

**contraception** [kon'trə-sep'shən] prevention of conception or impregnation. Little practiced in domestic animals, except in dogs and cats, population control being effected by other means. Is used in some less-developed communities where cattle are used as draft animals. More commonly used for the control of feral populations of horses as well as some wildlife.

**immunological c.** involves immune-mediated control of hormone or degeneration of reproductive tissues. Some methods investigated in dogs include immunization with bovine or ovine luteinizing hormone (LH) or gonadotropin so that cross-reacting antibodies neutralize the animal's own hormone. Antibodies to porcine zona pellucida antigens inhibit fertilization and implantation. More recent immunological contraception methods include immunization against GnRH in males and females.

**contraceptive** [kon'trə-sep'tiv] 1. diminishing the likelihood of or preventing conception. 2. an agent that diminishes the likelihood of or prevents conception. See also **contraception**.

**oral c.** contraceptive agent taken by mouth.

**contracted** having undergone contraction, especially in length.

**c. foal syndrome** a congenital disease of unknown origin in foals characterized by contractual deformities of axial and appendicular joints. Asymmetry of the skull, eventration of viscera, torticollis and scoliosis may also be present.



**C-83:** Contracted foal syndrome.

From Knottenbelt DC, Pascoe RR, Diseases and Disorders of the Horse, Saunders, 2003



**c. foot** see contracted heels (see below).

**c. heels** the heels of affected horses are drawn in, the bars are almost parallel and the frog is much reduced in size. Lameness is a common accompaniment. Called also contracted hoof, contracted foot.

**c. hooves** see contracted heels (above).

**c. tendon** see **tendon** contracture.

**contractile** [kən-trak'til] having the power or tendency to contract in response to a suitable stimulus.

**c. proteins** myosin, the main constituent of thick filaments of muscle, and actin, main constituent of thin muscle filaments.

**contractility** [kən'trak-til'itē] a capacity for becoming short in response to suitable stimulus.

**cardiac c.** the inotropic state of the myocardium; a major determinant of cardiac output and an important factor in cardiac compensation.

**contraction** [kən-trak'shən] a drawing together; a shortening or shrinkage.

**isovolumetric c.** ventricular muscle contraction during early systole after closure of the atrioventricular valves and before the semilunar valves open; the muscle continues to contract, forcing up the ventricular pressure without any change in the ventricular volume.

**muscle c.** see **muscle**.

**myocardial c.** individual myocardial cells transmit motor impulses across cell boundaries and act as a syncytium.

**c. phase** the stage in wound healing when there is centripetal movement of surrounding tissues and the area of the wound decreases. This is believed to be a cell-mediated phenomenon, involving myofibroblasts.

**postural c.** the state of muscular tension and contraction that just suffices to maintain the posture of the body.

**striated muscle c.** see **muscle**.

**tetanic c., tonic c.** sustained muscular contraction with alternating relaxation.

**contractor** the role adopted by a veterinarian who employs others who may be specifically educated for such task, especially technicians, to carry out specific tasks, e.g., mulesing of sheep, without being financially liable for the quality of their work.

**contracture** [kən-trak'chə] abnormal shortening of muscle tissue, rendering the muscle highly resistant to stretching. A contracture can lead to permanent disability. It can be caused by fibrosis of the tissues supporting the muscle or the joint, or by disorders of the muscle fibers themselves.

**cauliflower c.** a disfiguring result due to scarring of the pinna after an aural hematoma.

**flexor c.** joint fixed in flexion.

**tendon c.** see **tendon** contracture.

**contrafissure** [kən'trə-fish'ə] a fracture in a part opposite the site of the blow.

**contraindication** [kən'trə-in'di-ka'shən] any condition that renders a particular line of treatment improper or undesirable.

**contralateral** [kən'trə-lat'ər-əl] pertaining to, situated on, or affecting the opposite side.

**contrast** [kən'trast] radiographically the degree of difference in density between two regions on a radiograph. Black and white images on the one film is said to be high contrast; an all gray film has low or nil contrast.

**c. agents** contrast agents are used for injection into the patient, most commonly the vascular system, for either a local visualization of a system or organ or for outlining an excretory system. Radiolucent (negative) contrast media are gases such as air, oxygen or carbon dioxide. The radiopaque (positive) contrast media include the insoluble salt barium sulfate and a variety of organic iodine compounds. Barium is used for gastrointestinal studies. Water-soluble, iodinated contrast media excreted by the kidneys are used for many procedures, including all types of angiography and for intravenous, antegrade and retrograde urography and myelography. Those excreted by the liver are used for oral or intravenous cholangiography or cholecystography. **Gadolinium** is the most commonly used contrast agent in MRI.

**c. computer display** 1. contrast is limited by the contrast ratio of the display monitor. 2. contrast is dependent on the number of bits per pixel.

3. contrast enhancement is made using translation lookup tables to map the image grayscale to a non-linear output. 4. windowing; operator selects to display less than full number of great values to preferentially enhance the contrast of a portion of a computer graphic image. 5. determines the range of pixel values displayed; reducing the number of pixel values in the display increases the contrast of a computer graphic image.

**double c.** the use of two contrast agents or two routes of administration in the one patient. For example, radiopaque contrast and then air in the urinary bladder in a double contrast cystogram.

**low c.** an x-ray film with a poorly defined image because of insufficient contrast between two regions on the image.

**c. medium** a substance used in imaging to permit visualization of internal body structures. Called also contrast agent, contrast material.

**c. pattern** the pattern made by the contrast agent. Includes confined extension patterns in diverticula and similar confined spaces, and unconfined extensions, e.g., in bladder rupture.

**triple c.** the use of three contrast media or routes in the one patient at the one time.

**contrecoup** [kōn'trə-koo'] [Fr.] denoting an injury, as to the brain, occurring at a site opposite to the point of impact as a result of abrupt acceleration and deceleration of the brain within the calvarium. See also **coup**.

**contributory negligence** a common countersuit to a charge of negligence. For example, it could be alleged that a fatal outcome to a surgical operation on an animal, the basis for a suit alleging negligence, has been contributed to by the owners because they did not seek further assistance until it was too late.

**control** [kən-trōl'] 1. the governing or limitation of certain objects or events. 2. a standard against which experimental observations may be evaluated, as a procedure identical to the experimental procedure except for the one factor being studied; a requirement of any planned experimental study. Also, any individual of the group exhibiting the standard characteristics.

**disease c.** restraining or reducing the prevalence of individual disease. Includes the range of strategies from limitation of occurrence to eradication. Implies legislative control of notifiable disease.

**c. elements** nucleotide sequences on DNA that usually precede (upstream) the sequences coding for the structural gene at which regulator proteins act.

**c. factor** in a comparison between diseases caused by a number of contributing factors it may be necessary to supply controls for one or more of these factors.

**c. group** the group of animals with which the experimental group is to be matched; the group which has not had its variables manipulated experimentally. The selection of the animals to be included in the two groups may be based on matching them with respect to age, to their history of nutrition or inheritance, or vaccination or prophylactic treatment. Called also controls.

**ovulation c.** prevention of ovulation by administration of progesterone or stimulation of ovulation by injection of luteinizing hormone are examples.

**paired c.** comparison between the experimental and control groups is most accurate if the control animal for each experimental animal is selected to be as similar as possible, i.e., a paired control.

**c. pole** a pole with a noose at the end used to catch and restrain small animals.

**c. population** a large control group.

**population c.** a variety of techniques are used with **contraception** being least used. Permanent surgical interference is common in food, racing and companion animal groups, and termination of pregnancy and estrus synchronization, both by hormonal means, are also extensively practiced. Increasing the culling rate is the standard procedure for dealing with a feed shortage.

**x-ray c. unit** the controlling mechanisms in an x-ray machine. Include the voltmeter and voltage compensator control, the kilovoltage, milliammeter and milliamperage selectors and the timer and exposure control button.

**controlled** subjected to control.

**c. environment** buildings in which all food and drinking water are supplied and ambient temperature, humidity, air movement and light provision are controlled.

**c. release glass bolus** see **soluble glass**.

**c. vocabulary** a database in which the names of diagnoses or medicines, etc. are limited to avoid a continual expansion of the titles, making comparisons between groups difficult.

**Controlled Substances Act** the US federal law that regulates the prescribing and dispensing of dangerous substances, especially psychoactive drugs, including narcotics, hallucinogens, depressants and stimulants. See also **Veterinary Medicine Mobility Act**.

**contuse** [kən-tooz'] to bruise; to injure without breaking the skin.

**contusion** [kən-too'zhən] injury to tissues without breakage of skin; a bruise. In a contusion, blood from the broken vessels accumulates in surrounding tissues, producing pain, swelling and tenderness. In light-colored animals a discoloration may appear as a result of blood seepage under the surface of the skin. Serious complications may develop in some cases of contusion. Normally blood is drawn off from the bruised area in a

few days, but there is a possibility that blood clotted in the area will form a cyst or calcify and require surgical treatment. The contusion may also be complicated by infection.

**cerebral c.** contusion of the brain following trauma. It may occur with extradural or subdural collections of blood, in which case the patient may be left with neurological defects or **epilepsy**. See also **brain trauma**.

**conus** [ko'nəs] pl. *coni* [L.] **1.** a cone or cone-shaped structure. **2.** posterior staphyloma of the myopic eye.

**c. arteriosus** the funnel-shaped portion of the right ventricle of the heart at the entrance to the pulmonary trunk.

**c. medullaris** the cone-shaped caudal end of the spinal cord; found at the level of the upper lumbar vertebrae in the human spine, but more caudally in domestic animals.

**c. papillaris** a cone-shaped vascular and melanotic structure protruding off the optic nerve head into the vitreous of many reptiles and amphibians; likely responsible for retinal nutrition.

**peripapillary c.** small hyper-reflective ring immediately adjacent to the margin of the optic disc; normal finding in animals in which the optic nerve head lies within the tapetal fundus.

**convalescence** [kon'və-les'əns] the stage of recovery from an illness, operation or injury.

**convalescent** [kon'və-les'ənt] **1.** pertaining to or characterized by convalescence. **2.** a patient who is recovering from a disease, operation or injury.

**convallamarin** one of the toxic cardiac glycosides in the plant *Convallaria majalis*.

**Convallaria majalis** a toxic plant of the family Liliaceae; contains cardiac glycosides; causes cardiomyopathy, sudden death, diarrhea in companion animals. Called also lily-of-the-valley.

**convallarin** one of the cardiac glycosides in *Convallaria majalis*.

**convalloside** one of the cardiac glycosides *Convallaria majalis*.

**convection** [kən-vek'shən] the act of conveying or transmission; specifically, transmission of heat in a liquid or gas by circulation of heated particles.

**circulatory c.** the distribution of heat from some parts of the body to cooler parts, sometimes involving blood redistribution.

**convention** nonlegal rules of conduct with respect to other persons generally. In a professional sense means rules of conduct in relation to clients.

**convergence** [kən-vur'jəns] **1.** a moving together, or inclination toward a common point; the coordinated movement of the two eyes toward fixation of the same near point. **2.** the point of meeting of convergent lines.

**conversion** [kən-vur'zhən] **1.** the act of changing into something of different form or properties. **2.** manipulative correction of malposition of a fetal part during labor. In veterinary medicine, the term most commonly used is mutation.

**c. formulae** formulae for conversion of one numerical mode of expression into a different mode, e.g., avoirdupois to metric weight.

**c. ratio** a measure of activity of the thyroid gland; it expresses the proportion of the total radioactivity of the plasma, subsequent to the injection of radioactive iodine, which is bound to protein (**protein-bound iodine test**).

**invertase** [kən-vur'tās] an enzyme that converts a substance to its active state.

**converter plants** plants which convert an element such as selenium from a source from which it is usually unavailable to a soluble form that other plants can use.

**convex** having a rounded, somewhat elevated surface.

**c. face** see **cis face**.

**c. sole** see **dropped sole**.

**convolution** a tortuous irregularity or elevation caused by the infolding of a structure upon itself.

**Convolvulus** a genus in the plant family Convolvulaceae; some species contain calystegines.

**C. arvensis** contain tropane alkaloids; suspected of causing chronic colic and weight loss in horses; called also field bindweed.

**C. purpureus** see *Ipomoea purpurea*.

**convulsant** an agent which causes convulsions or lowers the seizure threshold, making seizures more likely to occur.

**convulsion** a series of involuntary contractions of the skeletal muscles. A term commonly used to describe an epileptic seizures. Seizures are symptomatic of an abnormally functioning cerebral cortex or diencephalon - they are not in themselves a disease entity. In animals, they are most often caused by idiopathic epilepsy, inflammatory conditions or primary brain tumors. Convulsions are also produced by any of a number



**C-84:** The leveling of the dead pasture and the disturbance of the soil around the feet of this dead ewe are strong indications that she died having terminal convulsions. The froth at the nose indicates terminal pulmonary edema. Such observations can help form a tentative diagnosis list for further examination at postmortem.

C

of metabolic disorders, such as hypoglycemia, hypocalcemia and hormonal imbalances; brain cell injury from head trauma, tumors and degenerative neural disease; anoxia and hemorrhage which deprive brain cells of vital substances; and acute cerebral edema which interferes with normal brain cell function. Recurrent seizures are known as epilepsy which may be divided into primary, secondary and reactive forms. Called also fit, ictus. See also **epilepsy**, **seizure**.

**central c.** convulsions arising from stimulation of the central nervous system, as distinct from those caused by lesions elsewhere.

**extracranial c.** when the cause of the convulsions is external to the brain, e.g., hypocalcemic tetanic convulsions. Called also reactive epilepsy.

**inherited c. and ataxia of cattle** see **familial convulsions** and **ataxia of cattle**.

**convulsive** pertaining to, characterized by, or of the nature of a convulsion.

**c. ergotism** see **ergot**<sup>1</sup>.

**c. foal syndrome** see **neonatal maladjustment syndrome**.

**c. seizure** see **convulsion**.

**Cooktown ironwood** *Erythrophleum chlorostachys*.

**COOL** Country of Origin Labeling Law

**Coolah grass** see *Panicum coloratum*.

**Cooley forceps** a type of surgical thumb forceps with longitudinal ribs.

**cooling systems** [kool'ing] for housed animals include spraying of roofs with water, evaporative pads with fans, foggers and misters; for pastured animals shelter from the sun by trees or artificial shade devices and cooling ponds are used.

**Coombs' test** [koomz] laboratory test that detects erythrocyte surface antigen-associated antibody and/or complement; particularly used in the diagnosis of immune mediated hemolytic anemia. A species-specific antiglobulin is added to washed erythrocytes. A positive reaction is agglutination, which indicates the presence of erythrocyte surface antibody. Called also direct antiglobulin test.

**indirect C. t.** detects antierythrocyte antibodies in the serum. Test serum is incubated with red blood cells. The cells are then washed and mixed with antiglobulin serum. Agglutination indicates the presence of antibody in test serum. Supernatant from colostrum may be used instead of serum.

**Coonabarabran ataxia** see *Tribulus terrestris*.

**coonhound** a general term for a number of varieties of hunting dogs in the southern United States, not all of which are recognized as specific breeds. See **American English coonhound**, **Black and tan coonhound**, **Bluetick coonhound**, **Redbone coonhound**, **Treeing Walker coonhound**.

**c. paralysis** see **polyradiculoneuritis**.

**coontie** *Zamia pumila*.

**coonties** *Zamia integrifolia*.

**coop** poultry house or cage

**cooperative breeding schemes** see **group breeding schemes**.

**cooperativity** [ko-op'ər-ə-tiv'ī-te] interaction between some proteins in which the binding of one may increase or decrease binding of the other.

**Cooperia** [koo-pe're-ə] a genus of intestinal nematodes in the family Trichostrongylidae. Principal infestations in sheep and goats, *C. punctata*, *C. oncophora*, *C. curticei*; in cattle, *C. oncophora*, *C. pectinata* and *C. punctata*; miscellaneous infections with other species in ruminants generally are *C. bisonis*, *C. spatulata* and *C. surnabada* (syn. *C. mcmasteri*). The worms inhabit the small intestine. See also **cooperiasis**.

**Cooperia pedunculata** North American plant in the Liliaceae family; contains furocoumarin causing primary photosensitization. Both dead and green leaves are toxic. Called also giant prairie lily, thunder lily, *Zephranthes*.



**cooperiasis** [*koo-pə-ri'ə-sis*] infestation of sheep and cattle with *Cooperia* spp.; causes diarrhea and wasting. The mortality rate without treatment can be serious but the most important losses are caused by poor weight gains in the survivors. See also *Cooperia pedunculata*.

**Cooper's worm** *Cooperia* spp.

**Coopworth** New Zealand bred low-care sheep with medium wool, used principally as a meat sheep; originated by crossbreeding of Romney Marsh and Border Leicester breeds.

**coordinates** [*ko-or'di-nəts*] of a point on a graph that represents the distance from an origin along two axes, a horizontal axis (x) and a vertical axis (y).

**geographic c.** measurement expressed in degrees latitude and degree longitude of a location on the earth's surface.

**coordination** [*ko-or'di-na'shən*] the harmonious functioning of interrelated organs and parts. Applied especially to the process of the motor apparatus of the brain which provides for the coworking of particular groups of muscles for the performance of definite adaptive useful responses.

**c. defect** lack of refinement in the coordination of complex movements such as walking or trotting.

**COP 1.** colloid osmotic pressure. **2.** a combination cancer chemotherapy protocol that uses cyclophosphamide, vincristine (Oncovin®) and prednisone. Used in the treatment of lymphoma in dogs and cats.

**COPD** chronic obstructive pulmonary disease (antiquated). See **equine asthma syndrome**, **recurrent airway obstruction**.

**copepod** [*kə'pə-pod*] a member of the subclass Copepoda of marine invertebrate parasites. There are more than 4500 species. Includes *Cyclops* spp. intermediate host for *Spirometra erinacei* and *Diphyllobothrium latum*.

**copernicium (Cn)** element 112 was officially given the name of copernicium in February 2010 by the International Union of Pure and Applied Chemistry (IUPAC).

**COPLA** a cancer chemotherapy protocol using cyclophosphamide, vincristine (Oncovin®), prednisone l-asparaginase, and doxorubicin (Adriamycin®).

**Coplin jars** wide-mouthed glass jars, usually with vertically grooved interior walls, used for the storage or staining of slides containing blood smears or tissue sections.

**copper (Cu)** [*kop'ər*] a chemical element, atomic number 29, atomic weight 63.54. It is necessary for bone formation and for the formation of blood because it occurs in several oxidative enzymes including one involved in the transformation of inorganic iron into hemoglobin.

**c. acetoarsenite** an old-fashioned green pigment once used in plaster, wallpaper, etc, and as an insecticide in orchards. A possible cause of chronic arsenic poisoning in very old houses. Called also Paris green.

**c.-associated hepatopathy** see copper-associated **hepatitis**.

**c. calcium edetate** used as a prophylactic in lambs and calves against swayback and hypocuprosis. Overdosing causes liver damage and severe subcutaneous edema and ascites.

**c. to molybdenum ratio** used as a guide to predict risk of secondary copper deficiency. If the ratio in a composite sample of pasture species is greater than 5:1, the risk is very low; if less than 2:1 then the risk is high.

**copper-molybdenum-sulfate relationship** molybdenum combines with sulfur in the rumen to form Cu-Mo-S complexes (copper-thiomolybdates) which reduce the availability of copper in the ingesta.

**c. naphthenate** a complex of copper and naphthenic acid, used as a fungicide and insecticide. A treatment for footrot in cattle and sheep, and for thrush in horses.

**c. nutritional deficiency** in ruminants this causes anemia, coat color change, depression of growth rate and congenital demyelination in the central nervous system. The deficiency may be primary or may be secondary due to intervention of high dietary intakes of iron or of sulfate and molybdenum, which interfere with the uptake of copper. Secondary deficiency is also called a conditioned copper deficiency. Diarrhea is commonly present with secondary copper deficiency. In pigs incoordination and anemia have been recorded. Horses appear unaffected. Called also enzootic ataxia, swayback, coast disease, pine, peat scours, teart, falling disease, hypocuprosis, licking sickness, and liksucht. Copper deficiency is rare in dogs and cats and is most likely to occur from excessive supplementation with calcium, which reduces absorption of many minerals, including copper or zinc.

**c. oxide needles** short lengths given orally to cattle to prevent or control copper deficiency. They lodge in papillae of the rumen and over several months pass to the abomasum where acid digestion makes copper available. They are effective in the control of secondary copper deficiency associated with high molybdenum concentrations in the diet by avoiding the binding of copper in thiomolybdenates which occurs in the rumen.



**C-85:** Coat color change in molybdenum-induced secondary copper deficiency. This Angus heifer shows a coat that has lost its luster and whose individual hair fibers have changed in color from black to red and gray.

**phytogenous chronic c. poisoning** see **toxemic jaundice**.

**c. poisoning** may be acute because of accidental administration of inorganic preparations of copper, usually as a worm drench, causing gastroenteritis. Chronic poisoning can be due to grazing on pasture growing on soils naturally rich in copper. The prevalence may be increased by the presence of converter plants, especially subterranean clover, which have a high uptake of copper, or of plants which cause chronic liver damage through **pyrrolizidine** alkaloids. Such plants are *Heliotropium*, *Senecio* and *Echium* spp. The syndrome terminates fatally when there is a sudden discharge of the large amounts of copper that then cause massive hemolysis, jaundice, hemoglobinuria and pallor of mucosae. Called also toxemic jaundice. Copper compounds reported to have caused poisoning in animals include the subacetate, oxychloride, chloride, oxide, naphthenate, carbonate, arsenite and sulfate. Chronic poisoning can also occur in more susceptible species (like sheep and goats) when fed mineral supplements or complete feeds containing high copper concentrations (formulated for cattle, swine or poultry). Poisoning by organic copper preparations administered therapeutically causes nephrosis and death due to uremia. See also **Bedlington terrier** copper-associated hepatopathy.

**c. storage disease** see **Bedlington terrier** copper-associated hepatopathy.

**c. sulfate** used as a parasiticide in aquariums and pond aquaculture; used in the treatment of foot rot in cattle and in the treatment of cyanobacteria in water.

**copper nose** photosensitive dermatitis affecting the muzzle of cattle.

**copperbottle** see *Lucilia cuprina*.

**copperhead snakes** light copper-brown to black venomous snakes; includes (Australian) copperhead (*Austrelaps* spp.) and (American) copperhead (*Agkistrodon contortrix*) and related subspecies.

**copperweed** see *Oxytenia acerosa*.

**copra meal** see **coconut meal**.

**copracrasia** fecal incontinence.

**copremesis** [*kop-rem'ə-sis*] the vomiting of fecal matter.

**coproantibody** [*kop'ro-an'ti-bod'ē*] an antibody (chiefly IgA) present in the intestinal tract or feces, associated with immunity to enteric infection.

**coproculture** [*kop'ro-kul'chər*] culture of the feces for the purpose of hatching parasite eggs and obtaining larvae for morphological identification and differentiation.

**coprodeum, coprodaeum** [*kop'ro-de'əm*] the cranial or deepest compartment of the **cloaca** of birds.

**coprogen** coproporphyrinogen.

**coprolith** [*kop'ro-lith*] a hard fecal concretion in the intestine.

**coprology** [*kop-rol'ə-je*] **scatology**.

**coprophagy** [*kop-rof'ə-je*] the ingestion of dung or feces; a vice in dogs, normal in rabbits and young foals. Called also **cecotrophy**.



**C-86:** *Agkistrodon contortrix* (Southern copperhead). Courtesy of CDC/James Gathany.

**coproporphyrin** [*kop*<sup>ro-por-fir</sup><sup>e-ə</sup>] porphyria marked by excessive excretion of coproporphyrin, chiefly in the feces.

**coproporphyrin** [*kop*<sup>ro-por</sup><sup>fə-rin</sup>] a **porphyrin** formed in the blood-forming organs and intestine and found in the urine and feces. There are two chemically distinct substances, coproporphyrins I and III.

**coproporphyrinogen** [*kop*<sup>ro-por</sup><sup>fə-rin</sup><sup>o-jən</sup>] the fully reduced, colorless compound giving rise to coproporphyrin by oxidation.

**coproporphyrinuria** [*kop*<sup>ro-por</sup><sup>fə-rin</sup><sup>u-re-ə</sup>] the presence of excess coproporphyrin in the urine.

**coprostasis** [*kop*<sup>ros</sup><sup>tə-sis</sup>] fecal impaction.

**coprozoic** [*kop*<sup>ro-zo</sup><sup>ik</sup>] living in fecal matter.

**copula** [*kop*<sup>u-lə</sup>] any bond, connecting part or structure.

**copulation** [*kop*<sup>u-lə</sup><sup>shən</sup>] sexual union or coitus; usually applied to animals other than humans.

**c. behavior** see **mating** behavior.

**c. tie** applies primarily to the second stage of copulation in dogs. See **copulatory** lock.

**copulatory** pertaining to or emanating from copulation.

**c. apparatus** those parts of the genital organs involved in copulation; the penis, vulva and vagina. Term used in relation to birds and reptiles where genitalia are concealed.

**c. inability** the male is able to maintain an erection but unable to penetrate the female.

**c. tie** during the second stage of coitus the male dog dismounts and faces the opposite way to the bitch but they remain locked together by their genitalia for some minutes. Called also **genital** lock.

**copy number** the number of plasmid or other DNA molecules in a cell.

**CoQ** coenzyme Q (**ubiquinone**).

**coquera** local name in Peru for the hydrocyanic acid poisoning in cattle caused by ingestion of the pods of *Prosopis juliflora*.

**cor** [*kor*] [L.] *cordis*. See also **heart**.

**c. adiposum** a heart that has undergone fatty degeneration or that has an accumulation of fat around it.

**c. biloculare** congenital defect with only two chambers in the heart.

**c. bovinum** a greatly enlarged heart due to a hypertrophied left ventricle.

**c. pulmonale** right ventricular heart failure due to pulmonary hypertension secondary to disease of blood vessels of the lung or secondary to chronic lung disease. Clinical signs are those of right-sided congestive heart failure.

**c. rugosum** see **cor villosum** (below).

**c. triatriatum dexter** a congenital anomaly in which the right atrium is divided into two chambers by a persistence of the right sinus venosus valve resulting in obstruction of venous return.

**c. triatriatum sinister** a congenital heart defect in which the left atrium is divided into two distinct chambers by a fibromuscular membrane.

**c. triloculare** a congenital defect of a heart with three chambers, which can be one atrium or one ventricle.

**c. villosum** means hairy heart; when the epicardium is covered with shaggy fibrous tags as a result of fibrinopurulent pericarditis.

**coracidium** [*kor*<sup>ə-sid</sup><sup>ə-əm</sup>] first larval stage of a diphyllobothriidean cestode; this motile stage consists of a ciliated embryophore containing the oncosphere.

**coracoid** [*kor*<sup>ə-koid</sup>] **1.** like a crow's beak. **2.** the stout bone of the avian shoulder that is braced against the sternum. Called also raven's beak. **3.** the coracoid process, a projection from the rim of the glenoid of the mammalian scapula. It that serves as the origin for the coracobrachialis muscle; large in humans, but small in domestic animals.

**Coragyps atratus** black vulture or American black vulture; see **vulture**.

**coral berry** see *Rivina humilis*.

**coral fungus** see *Ramaria*.

**coral plant** *Jatropha multifida*. called also **Coral bush**

**coral tree** *Erythrina* spp.

**Corallocytostroma ornicoepoides** a gall-forming Ascomycete fungus that infects Mitchell grasses (*Astrelba* spp.) in northwestern Australia; contains an unidentified nephrotoxin that causes blacksoil blindness syndrome in cattle - blindness, ruminoreticulitis, liver and kidney damage.

**Corchorus olitorius** tropical plant in family Tiliaceae; its seeds contaminate cereal grain; contain a cardiac glycoside; cause diarrhea and sudden death. Called also jute.

**cord** [*kord*] any long, cylindrical, flexible structure.

**angioblastic c.** the embryonic beginnings in the lateral mesenchyme of the dorsal aortae and aortic arches; at first solid they later become patent. Called also angiogenic cords.

**spermatic c.** structure containing ductus deferens, blood vessels and nerves passing from testis and epididymis through inguinal canal.

**umbilical c.** structure connecting fetus to placenta containing umbilical arteries and veins and, in domestic animals, urachus. See **umbilical** cord.

**cord factor** [*kord*] a cell surface glycolipid, 6,6', trehalose 6, 6' dimycolate, of *Mycobacterium* spp. that causes them to grow as cords, or strings, *in vitro*. Promotes a granulomatous response and neovascularization through recruitment of cytokines.

**cordal** [*kor*<sup>dəl</sup>] pertaining to a cord; the vocal cords.

**cordate** [*kor*<sup>dāt</sup>] heart-shaped.

**cordectomy** [*kor*<sup>dek</sup><sup>tə-mē</sup>] excision of a cord, as of a vocal cord.

**cording-up** [*kor*<sup>ding</sup><sup>up</sup>] see exertional **rhabdomyolysis**.

**corditis** [*kor*<sup>di</sup><sup>tis</sup>] inflammation of the spermatic cord. Called also funiculitis. The term is also applied to the umbilical cord, as in umbilical c. or umbilical funiculitis / funisitis.

**cordopexy** [*kor*<sup>do</sup><sup>pek</sup><sup>se</sup>] surgical fixation of a vocal cord.

**Cordophilus** see *Elaeophora*.

**cordotomy** [*kor*<sup>dot</sup><sup>ə-mē</sup>] **1.** section of a vocal cord. **2.** surgical division of the anterolateral tracts of the spinal cord. Not usually carried out in veterinary surgery.

**Cordylobia** [*kor*<sup>də</sup><sup>lo</sup><sup>be-ə</sup>] a genus of blowflies of the family Calliphoridae.

**C. anthropophaga** the maggots parasitize humans, rodents, monkeys and dogs, causing cutaneous lumps. Called also tumbu or skin-maggot fly.

**C. rodhaini** the maggot causes skin lesions in antelope, rodents and humans. Called also Lund's fly.

**core-elective educational programs** [*kor*] core subjects are taken by all students in the class, being considered to be essential to all studies in the curriculum; other subjects are thought to be not essential to all students and therefore offered for special interest selection (elective).

**core sample** [*kor*] sample of wool collected by passing a sharp hollow instrument through the bale; the sample is examined for color, contaminants and fiber diameter and the bale is sold on the basis of the sample and the weight of the bale. the sample of hay for laboratory testing of its nutritional value. Uses either a power-driven or hand-powered probe to take at least 20 cores, sampling at 90 degrees to the but ends of the bales and sampling about 18 inches into each bale to generate a sample of about 1/2 lb.

**corectasis** [*kor*<sup>ek</sup><sup>tə-sis</sup>] pathological dilation of the pupil of the eye.

**corectopia** [*kor*<sup>ek</sup><sup>to</sup><sup>pe-ə</sup>] abnormal or eccentric location of the pupil within the iris.

**coredialysis** [*kor*<sup>ə</sup><sup>di</sup><sup>al</sup><sup>ə-sis</sup>] iridodialysis.

**corediastasis** [*kor*<sup>ə</sup><sup>di</sup><sup>as</sup><sup>tə-sis</sup>] dilation of the pupil.

**corelysis** [*kor*<sup>ə</sup><sup>l</sup><sup>ə-sis</sup>] surgical breakdown of posterior synechiae (adhesions between the pupillary margin of the iris and the anterior lens capsule).

**coremorphosis** [*kor*<sup>ə</sup><sup>mor</sup><sup>fo</sup><sup>sis</sup>] surgical formation of an artificial pupil.

**corencleisis** [*kor*<sup>en</sup><sup>kli</sup><sup>sis</sup>] see **iridencleisis**.

**core(o)-** word element. [Gr.] relationship to pupil of the eye.

**coreometer** [*kor*<sup>e</sup><sup>om</sup><sup>ə</sup><sup>tər</sup>] see **pupillometer**.

**corepressor** [*kor*<sup>re</sup><sup>pres</sup><sup>ər</sup>] a substance (e.g., the product of a metabolic pathway) inhibits the expression of genes. A corepressor does not bind directly to DNA, but exerts its influence by binding to a **repressor**, causing it to become activated.

**coretomy** [*kor*<sup>et</sup><sup>ə</sup><sup>mē</sup>] see **iridotomy**.

**Corgi** see **Welsh corgi**.

**Corgidor** a hybrid name applied to dogs resulting from crossing Corgis and Labrador retrievers. See also **designer dogs**.

**Cori cycle** [*ko*<sup>re</sup>] first described by Carl Ferdinand and Gerty Cori; pathway by which muscle lactate contributes to blood glucose. Lactate formed in muscle by glycolysis is transported to the liver and resynthesized to glucose, which is then returned to muscle where lactate is reformed. Called also lactic acid cycle.

**Cori's disease** [*ko*<sup>re</sup>] see **glycogenesis** type III.

**Coriaria** [*kor*<sup>e</sup><sup>ar</sup><sup>e-ə</sup>] plant genus of the plant family, Coriariaceae; the plants are poisonous through the sesquiterpenoid lactone toxin, tutin, causing vomiting, convulsions, exhaustion and death. Includes *C. angustissima*, *C. arborea*, *C. kingiana*, *C. lurida*, *C. myrtifolia*, *C. plumosa*, *C. pottsiana*, *C. pteroides*, *C. ruscifolia*, *C. sarmentosa*, *C. sinica*. Called also tutu, sumach.

**coriitis** inflammation of the corium of the hoof; see **laminitis**.

**coriosis** degeneration of the corium of the hoof; see **laminitis**.

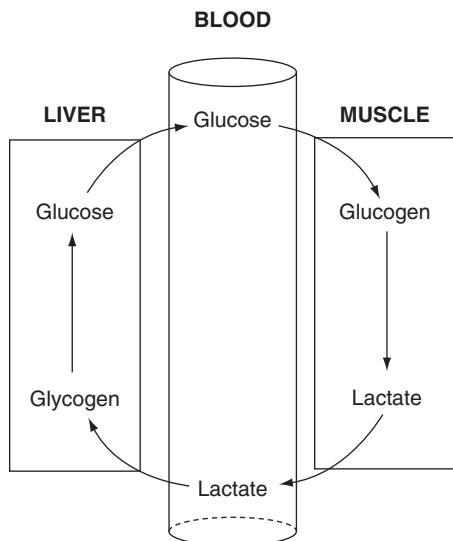
**corium** [*kor*<sup>e</sup><sup>əm</sup>] the dermis; true skin; the fibrous inner layer of the skin just beneath the epidermis, derived from the embryonic mesoderm, well supplied with nerves and blood vessels and containing hair roots and sebaceous and sweat glands. See also **dermis**.

**coronary c.** specialized corium at the coronary band of ungulates providing nourishment via papillae which extend into the hoof. Separated from the skin by the perioplic corium.

**cuneal c.** corium of the frog of the equine hoof.

**hoof c.** the corium of all of the structures of the hoof including the frog (cuneal corium), sole (sollear corium), hoof wall (laminar corium), coronet (coronary corium) and periople (perioplic corium).



**C-87:** Cori cycle.

From Kaneko JJ, Harvey JW, Bruss ML, *Clinical Biochemistry of Domestic Animals*, 5th ed, Academic Press, 1997.

**laminar c.** corium of the sensitive laminae of the hoof wall. It bears laminae which interdigitate with lamellae of the hoof wall and bind the hoof securely to the distal limb. It also supplies nutrition to the horn and via its terminal papillae to the white zone of interlamellar horn.

**papillary c.** see coronary corium (above).

**periopic c.** continuous with the corium of the skin, forming a narrow band between the skin and the coronary corium.

**solear c.** the corium of the sole of the foot, supporting the horn of the sole.

**corkscrew** a deformity in which the affected part is spiraled like a corkscrew.

**c. claw** a probably heritable defect of the lateral claw, usually of the front feet, of cattle causing serious lameness. The third phalanx is small and the claw is long, thin and curls over the medial claw. It takes very little weight. Called also curved claw, curled toe.

**c. penis** a corkscrew twist of the anterior, free part of the penis occurs normally in the vagina when a bull makes an ejaculatory thrust. Premature corkscrew penis is an abnormality which prevents intromission. It is caused by insufficiency of the dorsal apical ligament of the penis, very rarely by trauma. Most common in polled beef breed bulls.

**C-88:** Corkscrew claws in a Hereford cow.

**c. tail** a short curled tail, sometimes with an abnormal setting at the butt, occurs in calves and dogs of the breeds with naturally short tails. In dogs it often leads to skin irritation with secondary pyoderma in the surrounding, deep fold of skin.

**corkwood** see *Duboisia*.

**Cormo** sheep bred in Tasmania, Australia by crossing fine-wool merinos with Corriedale or Polwarth sheep. Easy-care, plain-body, open-face sheep, with wool 21 to 23 microns.

**corn** [*korn*] **1.** in USA and elsewhere *Zea mays*, a member of the plant family Poaceae, grown as a cereal crop bearing seeds and used as a grain feed, green chop and ensilage. Used also for human consumption as meal or flour. The grain is deficient in most essential amino acids, especially lysine and tryptophan (high-lysine varieties are available), and in calcium and cannot be used as a complete ration in pigs. It may be fed whole, cracked, flaked, roasted, as dried or as high moisture corn (contains 22-28% moisture). Overeating of the grain by ruminants causes carbohydrate engorgement, and of moldy standing corn causes moldy corn poisoning. Called also maize. The name corn is also used with other cereals such as rye corn, barley corn. **2.** in UK *Triticum aestivum* is also called corn.

**3.** a circumscribed hyperkeratosis of the footpad of dogs, particularly Greyhounds; sensitive to pressure and a cause of lameness. The cause is unknown. See also cutaneous **horn**. **4.** a hematoma between the sensitive laminae and horn of the sole, usually between the frog and bar, in the hoof of the horse. It is painful on pressure and a cause of lameness.

**c. cob** see **cob** (2). Ground into a meal it is used as a roughage of very low nutritive value in ruminant diets. Of some value as a diluent in high grain diets. In domestic settings, discarded cobs in kitchen refuse are attractive to dogs and are a cause of esophageal or intestinal obstruction if swallowed.

**c. oil** rich source of unsaturated fatty acids, particularly linoleic acid.

**squirrel c.** *Dicentra canadensis*.

**wild c.** see *Veratrum californicum*.

**corn gromwell** [*korn*] see *Lithospermum arvense*.

**cornea** [*kor'ne-ə*] the clear, transparent anterior portion of the fibrous tunic of the eye. Composed of an outer epithelium, a collagenous stroma, and inner endothelium with its basement (Descemet's) membrane. See also **corneal keratitis**, **keratopathy**.

**c. nigrum** see **corneal sequestrum**.

**corneal** [*kor'ne-ə*] pertaining to the cornea. See also **keratitis**, **keratopathy**. **c. anomaly** includes **microcornea**, **megalocornea**, **dermoid**, congenital opacity.

**c. black body** see **corneal sequestrum** (below).

**c. dystrophy** a developmental condition, inherited in some breeds of dogs and cats. Can involve the endothelium and cause corneal edema; or the subepithelial stroma, in which case lipid/mineral is deposited. See also **keratopathy**.

**c. ectasia** see **kerectasia**.

**c. edema** occurs when fluid accumulates in the corneal stroma, disrupting the normal lamellar structure and causing a loss of transparency with a characteristic blue appearance (commonly called **blue eye**).

**c. erosion syndrome** see **refractory ulcer**.

**feline focal c. necrosis** see **corneal sequestrum** (below).

**c. inflammation keratitis**.

**c. limbus** see **limbus**.

**c. lipidosis** cholesterol or other lipid accumulation in the anterior (subepithelial) stroma; may occur as a result of hypercholesterolemia and/or chronic keratitis (the latter is called corneal degeneration).

**c. melanosis** melanin within the cornea. Typically occurs either in the anterior (subepithelial) stroma and epithelium as a result of chronic superficial keratitis or on the corneal endothelium where it is often

**C-89:** Diffuse corneal edema in a dog with glaucoma.

From Maggs D, Slatter's *Fundamentals of Veterinary Ophthalmology*, 4th Edition. Saunders, 2007.



**C-90:** Corneal sequestrum in a cat. A black circular axial sequestrum with corneal vascularization and associated perilesional corneal opacification. Johnston, Spencer A., and Karen Tobias. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set, 2nd Edition*. Saunders, 2017.

associated with persistent pupillary membranes or other less common congenital ocular anomalies. Common in dogs, less common in cats and horses, rare in primates and birds. See also corneal pigmentation (below) and pigmentary **keratitis**; since there are numerous pigments other than melanin, melanosis is a more specific (and preferred) term.

**melting c.** region of cornea in which the stromal collagen becomes malacic due to collagenase production. See **collagenase**.

**c. mummification** see corneal sequestrum (below).

**c. pigmentation** literally discoloration of the cornea due to accumulation of a "pigment", the most common of which is melanin. See also superficial pigmentary **keratitis** and corneal melanosis (above).

**c. reflex** a reflex closing of the eyelids in response to stimulation of trigeminal nerve endings in the cornea. The corneal reflex can be elicited in a normal animal by gently touching the cornea with a wisp of cotton. Absence of the corneal reflex indicates deep coma or dysfunction of cranial nerve V or VII.

**c. scar** corneal fibrosis due to remodeling of the collagenous corneal stroma.

**c. sequestrum** a focal, dark, typically central region of necrosis of the corneal stroma of cats, especially Persians, Himalayans, and Birmans. Sometimes associated with overt chronic ulcerative or inflammatory disease of the cornea. Called also focal superficial necrosis, corneal mummification, keratitis nigrum.

**spontaneous chronic c. epithelial defects (SCCED)** see refractory **ulcer**.

**superficial c. erosion** see refractory **ulcer**.

**c. transplantation** see **keratoplasty**.

**c. ulcer** a defect in the corneal epithelium (and sometimes the underlying stroma); may be caused by exogenous trauma, chronic irritation as from distichiasis, entropion, ectopic cilia, or trichiasis, keratoconjunctivitis sicca, or very rare infectious agents (the herpesviruses and *Moraxella bovis*). Deep ulcers can lead to rupture of the cornea, the escape of aqueous humor and prolapse of the iris with secondary uveitis and sometimes endophthalmitis. See also **ulcer**.

**c. vascularization** extension of blood vessels into the cornea from the corneoscleral limbus; results from chronic keratitis and is often necessary for repair but reduces visual acuity.

**corneitis** [*kor''ne-i'tis*] keratitis.

**Cornell** refers to New York State Veterinary College at Cornell University, NY, USA.



**C-91:** Corneal ulcer in a horse.

From Knottenbelt DC, Pascoe RR, *Diseases and Disorders of the Horse*, Saunders, 2003.



**C-92:** Corneal vascularization in a heifer with infectious bovine keratoconjunctivitis.

**C. alternative-month accelerated lambing system** enables each ewe to lamb three times in every 2 years. Called also CAMAL scheme; superseded by the STAR system (see below).

**C. semen tests** in vivo and in vitro tests to detect IBR virus contaminated semen samples.

**C. STAR accelerated lambing system** an advanced development of the Alternate Monthly Accelerated Lambing system; the ewes in this scheme are encouraged to lamb five times in 3 years.

**C. teat curette** used to remove growths in the test cistern of cattle. Has a long thin neck and a flat blade with a blunt-ended turned around tip with a straight cutting edge. Designed for curteting back towards the operator.

**C. technique** see paravertebral **block**.

**corneoconjunctival** [*kor''ne-o-kən-junk'ti-vəl*] pertaining to the cornea and conjunctiva.

**c. graft** a graft of corneal and conjunctival tissue that is transposed axially to repair a corneal defect. Called also corneoconjunctival flap or transposition.

**corneoiridal** pertaining to the cornea and the iris.

**corneoritis** [*kor''ne-o-ri'tis*] inflammation of the cornea and iris; keratoiritis, keratouveitis.

**corneosclera** [*kor''ne-o-skler'ə*] the cornea and sclera regarded jointly. See also **corneoscleral**.

**corneoscleral** [*kor''ne-o-skler'əl*] pertaining to or emanating from the **corneosclera**.

**c. junction** see corneoscleral limbus (below).

**c. limbus** the point at which the sclera's opaque, wavy fibers join the more regularly arranged and transparent corneal fibers. Called also corneoscleral junction.

**c. shell** an ocular prosthesis, molded to fit over a phthical or enucleated globe for cosmesis.

**c. transposition** axial movement of sections of the cornea and sclera to repair an adjacent corneal defect; a keratoplasty technique. See also **corneoconjunctival graft/flap/transposition**.

**corneoscleroconjunctival** [*kor''ne-o-skler''o-kən-junk'ti-vəl*] pertaining to the conjunctiva, cornea and sclera.

**corneous** [*kor''ne-əs*] hornlike or horny; consisting of keratin.

**corniculate process** [*kor-nik'u-lāt*] hornlike process such as the process of the arytenoid cartilage.

**cornification** [*kor''ni-fi-ka'shən*] 1. conversion into keratin, or horn. 2. conversion of epithelium to the stratified squamous type.

**cornified** [*kor''ni-fid*] converted into horny tissue (keratin); keratinized.

**Cornish** a compact-bodied meat breed of poultry used extensively in crossbreeding for production of commercial meat strains. Dark, white, white-laced or red color, yellow skin and legs, brown eggs. Poor layers.

**Cornish rex** see **Rex**.

**cornstalk disease** mycotoxic **leukoencephalomalacia**.

**cornstalk poisoning** a poorly defined syndrome in cattle feeding on standing corn damaged by drought or early frost. The syndrome is one of nervous signs highlighted by dullness, weakness, recumbency, constriction of pupils and clonic convulsions before death.

**cornu** [*kor''noo*] pl. **cornua** [L.] horn; a hornlike excrescence or projection; a structure that appears horn-shaped, especially in section. See also **cornual**.

**c. ammonis** shaped like a ram's horn; sometimes applied to the curved cornua of the ruminant uterus. Also applied to the infolding of gray and white matter in the **hippocampus**.

**dorsal c.** the dorsal protuberance of gray matter in the spinal cord. Called also dorsal horn.

**lateral c.** the lateral projection from the lateral intermediate substance of the spinal cord. It is prominent only in the thoracolumbar parts of the cord.



**nasal c.** the slender, ventral part of the comma-shaped alar cartilages that make up the support for the rim of the nostril.

**thyroid cartilage c.** there are rostral and caudal cornua on the thyroid cartilage.

**uterine c.** the horns of the uterus.

**ventral c.** the ventral horn of gray matter in the spinal cord. Contains the motor horn cells for the neurons of the peripheral nerves.

**cornual, cornuate** [*kor'noo-əl, kor'nu-āt*] **1.** pertaining to the horns of the spinal cord. **2.** pertaining to the horns of a cow, bull, buck or ram.

**c. nerve block** **cornual block.**

**cornuectomy** dehorning.

**Corona** [*kə-ro'nə*] a type of canary, which can be any breed; distinguished by a cap of feathers like an inverted saucer or a Beatles haircut. Called also Crested.

**corona** [*kə-ro'nə*] pl. *coronae* [L.] a crown; a crownlike eminence or encircling structure.

**glans c.** the prominent, denticulated margin of the glans penis in the stallion. Usually called *corona glandis*.

**c. radiata 1.** the radiating crown of projection fibers passing from the internal capsule to every part of the cerebral cortex. **2.** an investing layer of radially elongated follicle cells surrounding the zona pellucida of the ovum.

**coronary** [*kor'ə-nar'ē*] **1.** encircling in the manner of a crown. **2.** a term applied to vessels, ligaments, nerves, the band at the skin–hoof junction.

**3.** blood vessels partially encircling the heart.

**c. arteries** two large arteries that branch from the ascending aorta and supply all of the heart muscle with blood. See also Table 8.

**c. artery anomaly** one or both arteries originate from the pulmonary artery instead of the aorta; anoxia of the myocardium leads to congestive heart failure.

**c. artery laceration** in foals by sharp ends of fractured rib sustained during parturition and in cattle due to penetration by a reticular foreign body; sudden death due to cardiac tamponade.

**c. artery rupture** can result from perforation by a foreign body from the reticulum as part of the syndrome of traumatic reticular pericarditis. Cardiac tamponade results, causing acute or congestive heart failure.

**c. band** the junction of the skin and the horn of the hoof. Called also coronet. See also coronary **corium**.

**c. chemoreflex** intravenous injection of chemicals such as veratridine causes cardiac slowing, hypotension and apnea due to reflex response by the myocardium. Called also Bezold–Jarisch reflex.

**c. cushion** the spongy, resilient hypodermis beneath the coronary corium of the hoof.

**c. emboli** lodgment of an embolus in a coronary artery is a rare occurrence in animals. Myocardial ischemia and asthenia result, the effect on the animal varying with the amount of muscle compromised.

**c. occlusion** the occlusion, or closing off, of a coronary artery. The occlusion may result from formation of a clot (thrombosis). Narrowing of the lumen of the blood vessels by the plaques of **atherosclerosis**, as occurs in humans, does not occur in animals. If there is adequate collateral circulation to the heart muscle at the time of the occlusion, there may be little or no damage to the myocardial cells. When occlusion is complete, however, with no blood being supplied to an area of the myocardium, **myocardial infarction** results.

**c. perfusion pressure** the difference between aortic diastolic and right atrial diastolic pressure; a determinant of the blood flow to cardiac muscle.

**c. thrombosis** formation of a clot in a coronary artery. See also **myocardial infarction**.

**Coronaviridae** [*kə-ro'nə-vir'ī-de*] a family in the order *Nidovirales* of enveloped, single-stranded, plus sense RNA viruses about 100 nm in diameter. The envelope has prominent droplet-shaped spikes which resemble a solar corona. The two genera are *Coronavirus* which includes viruses that cause avian infectious bronchitis, hepatitis in mice, transmissible gastroenteritis in swine, canine coronavirus gastroenteritis, bovine coronavirus enteritis in neonatal calves and occasionally foals, a syndrome of lethargy and gastrointestinal dysfunction in adult horses, hemagglutinating encephalitis of pigs, feline infectious peritonitis, turkey coronavirus enteritis (bluecomb disease) and severe acute respiratory syndrome (SARS) in humans; and *Torovirus* which includes Breda virus and Berne virus which cause enteric infections in cattle and horses.

**coronavirus** [*kə-ro'nə-vi'rās*] a virus in the family **Coronaviridae**. Bats are an important reservoir for coronavirus causing human and animal diseases. In 2019 a novel coronavirus (COVID-19) emerged in China as a cause of respiratory disease in humans leading to declaration of a global health emergency.

**canine c. (CCoV)** a cause of acute, usually mild and self-limiting enteritis in dogs, but a more virulent strain has caused fatal disease in puppies.

**canine respiratory c. (CRCoV)** isolated from respiratory samples of dogs and a probable species in the genus; similar to bovine and human coronaviruses.

**feline c.** see **feline enteric virus, feline infectious peritonitis**.

**porcine respiratory c.** see **porcine respiratory coronavirus**.

**turkey c.** see **turkey coronavirus enteritis**.

**coronet** [*kor'ə-net*] the junction between skin and hoof; called also **coronary band**.

**Coronet** a breed of guinea pig characterized by a long, flowing coat with a single rosette on the forehead.

**coronitis** [*kor'ə-ni'tis*] dermatitis of the skin at the coronet of the hooves; a cause of lameness. Because of the implications of vesicular disease any animal with coronitis must receive an oral examination. The lesions may be vesicles, erosions or granuloma.

**coronoid process** [*kor'ə-noid*] **1.** a part of the mandible that projects into the temporal fossa and provides attachment for the temporal muscle. **2.** the medial and lateral prominences located on either side of the trochlear notch of the ulna, forming part of the articular surface with the radius and humerus.

**fragmented c. p. (2)** a developmental lesion of young, large breed dogs. Causes a weight-bearing lameness. May occur in association with osteochondritis dissecans of the medial humeral condyle. Called also ununited coronoid process, elbow dysplasia, jump-down syndrome.

**ununited c. p. (2)** see fragmented coronoid process (above).

**coronoidectomy** [*kor'ə-noi-dek'tə-me*] surgical removal of the coronoid process of the mandible.

**corpora** [*kor'pə-rə*] plural form of **corpus**.

**c. albicantia** see **corpus albicans**.

**c. arenacea** sandy or gritty bodies, found in the pineal body; appear to be of glial or stromal origin; have the structure of hydroxyapatite crystals. Called also brain sand, acervuli, psammomas.

**c. cavernosa penis** see **corpus cavernosum penis**.

**c. lutea** see **corpus luteum**.

**c. nigra** normal cystic dilation of the posterior iris epithelium at the pupillary margin especially dorsally; less so ventrally. Present in most large herbivores. Particularly notable in the horse. Called also iridal granule, granular iridica.

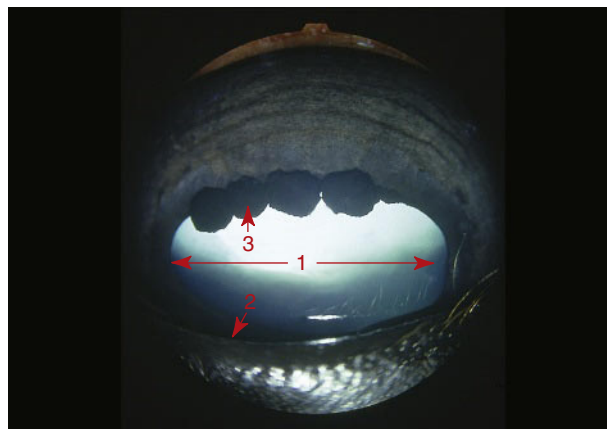
**c. quadrigemina** four rounded eminences on the dorsal surface of the mesencephalon. See also **colliculus**.

**corpus** [*kor'pəs*] pl. *corpora* [L.] body.

**accessory c. lutea** the corpora lutea which develop during early pregnancy in the mare in addition to the primary corpus luteum. They are, in fact, follicles that undergo luteinization under the effect eCG. With the primary corpus luteum, they insure maintenance of pregnancy in the first 100 to 120 days.

**c. albicans, corpora albicantia** white fibrous tissue that replaces the regressing corpus luteum in the ovary in the latter half of pregnancy in the cow.

**c. amygdaloideum** a small mass of subcortical gray matter within the tip of the temporal lobe, anterior to the temporal horn of the lateral ventricle of the brain; it is part of the limbic system.



**C-93:** Corpora nigra. Anterior surface of the equine iris with characteristic iridic granules. 1, Pupil; 2, pupillary margin; 3, iridic granule.

Dyce, Sack, and Wensing's Textbook of Veterinary Anatomy, 5th Edition. Saunders, 2017.

**c. amylacea** small hyaline masses of degenerate cells found in the prostate, thyroid, neuroglia and milk where they may be sufficient in a cow to block the papillary duct of the teat sinus. They are formed by stasis of milk flow in a duct and inspissation of the fluids. Subsequently they may become detached and find their way to the teat.

**c. atreticum** scar in the ovary produced by atresia of a follicle when late in its development.

**c. callosum** an arched mass of white matter in the depths of the longitudinal fissure of the brain, and made up of transverse fibers connecting the cerebral hemispheres.

**c. callosum agenesis** all or part of the corpus may be absent and there may be additional associated defects.

**c. cavernosum clitoridis** one of the pair of erectile bodies of the clitoris.

**c. cavernosum penis** either of the two columns of erectile tissue forming the body of the penis. See also corpus cavernosum **penis**.

**c. cavernosum penis ruptur** common in bulls occurring during mating; commonly at the distal bend of the sigmoid flexure; result in hematoma and subsequent adhesions with inability to protrude the penis properly or angulation of the penis.

**c. cavernosum urethrae** see corpus spongiosum **penis**.

**c. fimbriatum** a band of white matter bordering the lateral edge of the temporal cornu of the lateral ventricle of the brain.

**c. geniculatum** see geniculate **body** lateral, and geniculate **body** medial.

**c. hemorrhagicum** 1. an ovarian follicle, especially one freshly ruptured, containing blood. 2. a blood-filled temporary structure formed immediately after ovulation and before complete luteinization.

**c. luteum** a progesterone-secreting yellow glandular mass in the ovary formed from the wall of an ovarian follicle that has matured and discharged its ovum. See also **ovulation**. In most animals that do not conceive the corpus luteum regresses quickly and a new follicle develops. The corpus luteum may be retained when there is uterine pathology which mimics pregnancy; no new follicle develops and the cow fails to come into heat. Called also retained corpus luteum. A similar clinical picture is observed with cystic corpora lutea.

**c. prostaticum** body of prostate (distinct from disseminate part of prostate in bulls).

**c. spongiosum penis** see corpus spongiosum **penis**.

**c. striatum** a subcortical mass of gray and white substance in front of and lateral to the thalamus in each cerebral hemisphere.

**corpuscle** [*kor'pəs-əl*] any small mass or body.

**blood c's** formed elements in the **blood**, i.e., erythrocytes and leukocytes.

**bulbous c.** temperature-sensitive nerve endorgan.

**colostrum c's** large rounded bodies in colostrum, containing droplets of fat and sometimes a nucleus.

**compound granular c.** see **gitter cells**.

**genital c.** pressure receptor nerve-endings in the penis and clitoris.

**Golgi-Mazzoni c.** probably a pressure receptor; occur in hairless skin and associated mucosae, glans penis, foot pad of carnivores, hoof connective tissue.

**c. of Grandry** in the dermis of a duck's bill. See also corpuscle of Herbst (below).

**c. of Herbst** located in the dermis of the duck's bill these corpuscles are extremely sensitive to vibration.

**lamellar c.** pressure-sensitive nerve-endings. Called also Ruffini corpuscle.

**malpighian c.** see renal corpuscle (below).

**Meissner c.** touch-sensitive nerve receptors.

**meniscoid c.** touch-sensitive nerve endorgan.

**pacinian c's** see **pacinian corpuscle**.

**Purkinje's c's** large, branched nerve cells composing the middle layer of the cortex of the cerebellum.

**red blood c.** erythrocyte.

**renal c.** a tuft of capillaries enveloped by the dilated end of a renal tubule. Constitutes the beginning of the structural unit of the kidney (nephron). Called also malpighian corpuscle.

**Ruffini c.** see lamellar corpuscle (above).

**tactile c's** medium-sized encapsulated nerve endings in the skin; called also tactile papillae.

**white blood c.** leukocyte.

**corral** a small fenced-in enclosure with high, wooden fences, suitable for holding cattle or horses.

**c. system** a management system in which range cattle are put into corrals and fed hay for a period when the environment is most inhospitable or at other times of stress, e.g., calving.

**corrective** pertaining to or emanating from the correction of a fault.

**c. mating** an approach to selection of dams and sires in which an undesirable trait in one parent is 'corrected' in the offspring by mating to a parent with an opposing or improved value for the characteristic.

**correlated response** change in an unselected character resulting from genetic selection of another character.

**correlation** [*kor''ə-lə'shən*] 1. in neurology, the union of afferent impulses within a nerve center to bring about an appropriate response. 2. the degree to which statistical variables vary together.

**c. coefficient** see correlation **coefficient**.

**corridor disease** [*kor''i-dor*] form of East coast fever occurring in eastern and southern Africa, caused by *Theileria parva* but tick transmitted to cattle from buffalo by *Rhipicephalus appendiculatus* or *R. zambesiensis*.

**Corriedale** medium wool, meat sheep originated in New Zealand and Australia by crossbreeding Lincoln or Leicester with Merino; wool 25 to 30 microns.

**Corriente** originally a small frame, Mexican breed of cattle of Spanish origin; more commonly the term is for cattle of non-descript breeding, usually from Mexico. Often used in the US as recreational-roping and rodeo cattle.

**Corrigan's pulse** [*kor''i-gən*] a jerky pulse with abrupt onset and termination. Common in aortic regurgitation. See **pulse**.

**corrosive** [*kə-ro'siv*] having a caustic and locally destructive effect; an agent having such effects.

**c. sublimate** mercuric chloride or mercury bichloride; an antiquated medicine used typically as a disinfectant and caustic agent for wounds.

**Cortaderia selloana** a perennial reed-like plant with a large, silvery inflorescence, up to 10 ft high; used mainly as an ornamental but also as supplement to pasture; grows best in warm climates. Very palatable. Called also pampas grass.

**cortex** [*kor'teks*] pl. **cortices** [L.] an outer layer, as the bark of the trunk or root of a tree, or the outer layer of an organ or other structure, as distinguished from its inner substance.

**adrenal c.** the outer, firm layer comprising the larger part of the **adrenal gland**; it secretes a number of hormones. See **corticosteroid**, **aldosterone**, **mineralocorticoid**, **glucocorticoid**.

**cerebellar c.** the superficial gray matter of the cerebellum.

**cerebral c., c. cerebri** the convoluted layer of gray matter covering each cerebral hemisphere. See also **cerebral cortex**.

**renal c.** the smooth-textured outer layer of the kidney, composed mainly of renal corpuscles and convoluted tubules, extending in columns between the pyramids.

**Corti** anatomical structures named after the Italian anatomist, Alfonso Corti (1822-1876).

**C's canal** a space between the outer and inner rods of Corti (see below).

**C's ganglion** the ganglion of the cochlear nerve, located within the modiolus, sending fibers peripherally to the organ of Corti and centrally to the cochlear nuclei of the brainstem. Called also spiral ganglion.

**organ of C.** lying against the basilar membrane in the cochlear duct; contains special sensory receptors for hearing, and consists of neuroepithelial hair cells and several types of supporting cells.

**C's rods** rodlike bodies in the inner ear, having their heads joined and their bases on the basilar membrane widely separated so as to form a spiral tunnel.

**cortical** [*kor''ti-kəl*] pertaining to or emanating from a cortex, usually bone, cerebral or adrenal.

**c. hyperplasia** caused by chronic stimulation of the adrenal cortex by ACTH.

**c. necrosis** see **polioencephalomalacia**.

**c. sinus** vascular sinuses in the cortex of a lymph node.

**corticcate** [*kor''ti-kāt*] having a cortex or bark.

**corticifugal** [*kor''ti-sif''ə-gəl*] proceeding, conducting, or moving away from the cortex.

**corticipetal** [*kor''ti-sip''ə-təl*] proceeding, conducting, or moving toward the cortex.

**corticoadrenal** [*kor''ti-ko-ə-dre'nəl*] adrenocortical; pertaining to the adrenal cortex.

**corticobulbar** [*kor''ti-ko-bul'bər*] pertaining to or connecting the cerebral cortex and the medulla oblongata or brainstem.

**corticoid** [*kor''ti-koid*] a drug or natural substance with activities similar to (-oid) those of the hormones produced by the adrenal cortex (cortic-); see **glucocorticoids** and **mineralocorticoids**.

**corticolytic drugs** [*kor''ti-ko-lit''ik*] see **adrenolytic**.

**corticopontine** [*kor''ti-ko-pon''tīn*] pertaining to or connecting the cerebral cortex and the pons.



**corticorectular tract** [kor''ti-ko-rə-tik'u-lər] part of the reticular formation and therefore a participant in the modulation of the integration systems in the brain.

**corticospinal** [kor''ti-ko-spi'nəl] pertaining to or connecting the cerebral cortex and spinal cord.

**c. tracts** nerve fibers in these spinal cord motor tracts have their cell bodies in the cerebral cortex. Some have crossed to the opposite side of the cord from their side of origin, some are direct.

**corticosteroid** [kor''ti-ko-ster'oid] any of the hormones produced by the adrenal cortex; also, their synthetic equivalents. Called also adrenocortical hormone and adrenocorticosteroid. All the hormones are steroids having similar chemical structures, but quite different physiological effects. Generally they are divided into **glucocorticoids** (cortisol, or hydrocortisone, and corticosterone), **mineralocorticoids** (aldosterone and desoxycorticosterone, and also corticosterone) and androgens.

**c.-binding globulin**  $\alpha$ -globulin that binds unconjugated corticosteroid and transports it in the plasma; called also transcortin.

**corticosteroid-induced joint disease** degenerative joint disease caused by repeated intra-articular injections of corticosteroid.

**corticosteroid responsive tremor syndrome** see **Shaker dog disease**.

**corticosterone** [kor''ti-ko-s'tər-ōn] a steroid hormone of the adrenal cortex; it is usually classified as a **glucocorticoid**, but it also has slight **mineralocorticoid** activity.

**corticotomy** removal of a piece of bone cortex, leaving the intramedullary blood supply intact.

**corticotrop** one of the types of secretory cells in the adenohipophysis; secrete ACTH and beta-lipoprotein.

**corticotrope** [kor''ti-ko-trōp] a cell of the anterior pituitary gland that secretes ACTH.

**corticotroph adenoma** [kor''ti-ko-trōf'ən] functional tumors of the pars intermedia or the pars distalis of the pituitary gland which cause a syndrome of cortisol excess in dogs. See **Cushing's disease**, **chromophobe adenoma**.

**corticotrophic** [kor''ti-ko-tro'fik] see **corticotropic**.

**corticotrophin** [kor''ti-ko-tro''fin] see **corticotropin**.

**corticotropic** [kor''ti-ko-tro'pik] having a stimulating effect on the adrenal cortex; pertaining to corticotropin; adrenocorticotropic.

**coroscopy** [kə-ros'kə-pe] retinoscopy, or skiametry.

**corticotropin** [kor''ti-ko-tro''pin] 1. adrenocorticotropic hormone. See also **ACTH**. 2. a pharmaceutical preparation derived from the anterior pituitary of mammals and used to stimulate adrenal cortical activity in various conditions, such as allergy, hypersensitivity and rheumatoid arthritis. It has also been used experimentally in a large number of disorders.

**c.-like intermediary peptide** a polypeptide hormone of the intermediate pituitary; stimulates insulin release from the pancreas.

**c.-releasing factor** secreted by the hypothalamus and conveyed by local circulation to the corticotrophs in the pituitary which are then stimulated to produce ACTH. Called also corticotropin-releasing hormone (CRF).

**cortilymph** [kor''ti-limf'ən] the fluid filling the intercellular spaces of the organ of Corti.

**Cortinarius** [kor''ti-nar'e-əs] a genus of mushrooms in the phylum Basidiomycota; contain a toxic cyclic peptide, cortinarin, and a toxic bipyridine, orellanine, both of which cause kidney damage and subsequent uremia. Includes *C. orellanoides* (*C. speciocissimus*), *C. orellanus*, *C. splendens*.

**cortisol** [kor''ti-sol] a hormone from the adrenal cortex; the principal **glucocorticoid**. Called also 17-hydroxycorticosterone and, pharmaceutically, hydrocortisone. A synthetic preparation is used for its anti-inflammatory actions.

**c.-binding globulin** much plasma cortisol is bound to a  $\alpha$ -globulin—transcortin, some to albumin. Much is free and in the form of a glycuronide or sulfate.

**c.:corticosterone ratio** the ratio between the two hormones is different between species and even between individual animals. There is also a circadian rhythm in the ratio which must therefore be interpreted with caution.

**c.:creatinine (C/C) ratio** measured in the urine as a sensitive screening test for hyperadrenocorticism. Comparing the measured concentration of urinary cortisol with that of creatinine, which is excreted at a relatively constant rate, will detect increased daily excretion of cortisol, which parallels cortisol concentration in the blood.

**c. hemisuccinate** see **hydrocortisone**.

**c. response test** see **ACTH response test**; **dexamethasone** suppression test.

**cortisone** [kor''ti-sōn] a **glucocorticoid** with significant **mineralocorticoid** activity, isolated from the adrenal cortex; used as an anti-inflammatory

agent and for adrenal replacement therapy in patients with Addison's disease.

**Corvus** a genus of medium to large, perching birds of the family Corvidae which includes jays, magpies, ravens and crows. They are omnivorous and may act as physical carriers of contagious disease because they will, on occasion, eat carrion.

**Corydalis** [ko-rid'ə-lis] a large genus of American plants in the family Fumariaceae; contains isoquinoline alkaloids which cause convulsions, vomiting and diarrhea in livestock and companion animals.

**corymbiform** [ko-rim'bi-form] clustered; said of lesions grouped around a single, usually larger, lesion.

**Corynebacteriaceae** [ko-ri''ne-bak-tēr''e-a'se-e] a family of pleomorphic gram-positive bacteria, sometimes containing metachromatic granules. Contains the genera *Corynebacterium*, *Mycobacterium*, *Nocardia*, and *Rhodococcus*.

**corynebacterial** [ko-ri''ne-bak-tēr'e-əl] pertaining to or emanating from bacteria of the genus *Corynebacterium*.

**c. lymphadenitis** see **caseous lymphadenitis**.

**c. mastitis** a severe, acute mastitis in cows causing much suppuration, mammary abscessation and loss of the affected quarter. Now more correctly called *Trueperella* mastitis. See also summer **mastitis**.

**c. pneumonia** old name for *Rhodococcus equi* pneumonia.

**c. pyelonephritis** see **contagious** bovine pyelonephritis.

**Corynebacterium** [ko-ri''ne-bak-tēr'e-əm] a genus of gram-positive, pleomorphic bacteria of the family **Corynebacteriaceae**. They are short, slightly curved rods, sometimes club-shaped. Likely to be grouped into angled and palisade arrays of cells. The type species is *Corynebacterium diphtheriae*, the cause of diphtheria in humans.

**C. bovis** a common inhabitant of the bovine udder, but not considered to be a pathogen. May have importance in protecting the udder from more damaging pathogens.

**C. cystitidis** causes **contagious** bovine pyelonephritis.

**C. equi** now classified as *Rhodococcus equi*.

**C. kutscheri** causes systemic abscessation in rodents similar to caseous lymphadenitis in sheep. Previously called *C. murium*.

**C. minutissimum** found in wound infections in lambs.

**C. parvum** now called *Propionibacterium acnes*.

**C. pseudotuberculosis** cause of **caseous lymphadenitis** of sheep and goats, ulcerative **lymphangitis**, and **Canadian horsepox** and **pectoral** abscesses of horses. Previously called *C. ovis*.

**C. pyogenes** now called *Trueperella pyogenes*, previously *Arcanobacterium pyogenes*, *Actinomyces pyogenes*.

**C. rathayi** now called *Rathayibacter rathayi*.

**C. renale** previously classified as types I, II and III, but now allocated to the species *C. renale*, *C. pilosum* and *C. cystitidis*, respectively. Causes bovine pyelonephritis and **enzootic** balanoposthitis in sheep.

**C. suis** now classified as *Actinobaculum suis*. Previously called *Eubacterium suis*.

**C. ulcerans** a rare cause of subacute bovine mastitis, but a recognized risk for people who drink raw milk.

**coryneform** [ko-ri'nə-form] organisms resembling those the family **Corynebacteriaceae**. Includes a number of actinomycetes. See also **diphtheroid**.

**corynetoxicosis** [ko-ri'nə-tok'si-ko'sis] poisoning of grazing livestock by corynetoxins (tunicaminylluracils) produced by *Rathayibacter toxicus* in nematode-induced seedhead galls on pasture grasses - *Lolium rigidum* (annual ryegrass) in Australia and South Africa, *Lachnagrostis filiformis* (blowaway grass) and *Polypogon monspeliensis* (annual beard grass) in Australia and *Festuca nigrescens* (Chewing's fescue) in North America and New Zealand. Causes high case fatality ratio syndrome of tremors, ataxia and intermittent cerebral convulsions. Called also annual ryegrass toxicity, floodplain staggers, Stewart's Range syndrome. See also **tunicaminylluracils**.

**corynetoxins** tunicaminylluracil toxins produced by *Rathayibacter* spp. in seedhead galls of pasture grasses; cause corynetoxicosis. See also **tunicamycin**, *Lolium rigidum*, *Lachnagrostis*, *Polypogon*, *Festuca*, *Rathayibacter*.

**Corynocarpus laevigatus** New Zealand plant in family Corynocarpaceae; contains karakin, a nitrocompound, which causes incoordination and paralysis. Called also karaka tree.

**Corynosoma** a genus of acanthocephalan parasites of the family Polymorphidae. Called also thorny-headed worm.

**C. semerme** and **C. strumosum** non-pathogenic parasites in the intestines of dogs and foxes. Cause enteritis in mink. Many species in cetaceans and pinnipeds.

**Corythaeola cristata** great blue turaco, the largest of the turacos, native to equatorial West Africa.

**coryza** [ko-ri'zə] profuse discharge from the mucous membrane of the nose.

**infectious c.** see **fowl coryza**.

**pigeon c.** see **pigeon herpesvirus**.

**turkey c.** an upper respiratory tract disease, caused by *Bordetella avium*, occurring in turkey poults under conditions of stress, particularly poor ventilation. There is sneezing, a mucoid rhinotracheitis and collapse of the trachea. Secondary airsacculitis and pericarditis are common. Mortality is often as high as 25%. Called also rhinotracheitis.

**cosmesis** [koz-me'sis] cosmetic therapy or procedures, such as tattooing. Also sometimes applied to such procedures when used for therapeutic purposes.

**cosmetic** [koz-met'ik] **1.** beautifying; tending to preserve, restore, or confer comeliness. **2.** a beautifying substance or preparation.

**c. surgery** surgery carried out purely to enhance the appearance of the animal. When it is for the purpose of enhancing or disguising its appearance in the show ring, this is considered unethical. The animal is not in a position to judge or to express an opinion and the question of beauty is adjudicated by the owner. Because animal fashions have sometimes tended to the bizarre there has been a marked turn in public opinion against cosmetic operations which are seen by some as unwarranted mutilations.

**cosmid** [koz'mid] a class of plasmid-based vectors carrying bacteriophage λ cos sequences required for packaging DNA into phage particles. Used for cloning large DNA fragments (up to 45 kilobases). Recombinant molecules constructed using cosmids are incorporated into bacteriophages using *in vitro* packaging extracts and introduced with high efficiency into *Escherichia coli*.

**Cosmocephalus obvelatus** nematode found in the esophagus of rockhopper penguins.

**COST European Cooperation in Science and Technology.**

**cost function** a mathematical formula created for the purpose of estimating a cost, e.g., the cost of making an observation when it varies from stratum to stratum of a collection of data.

**costa** [kos'tə] pl. *costae* [L.] a rib.

**costalgia** [kos-tal'jə] pain in the ribs.

**costectomy** [kos-tek'tə-me] excision of a rib.

**Costia** a genus of flagellated protozoa in the family Tetramitidae. Called also *Ichthyoboda*.

**C. necatrix** and **C. pyriformis** parasites on the skin of freshwater fish.

**costive** **1.** pertaining to, characterized by, or producing constipation. **2.** an agent that depresses intestinal motility.

**costiveness** see **constipation**.

**cost(o)-** word element. [L.] relationship to rib.

**costocervical** [kos'to-sur'vi-kəl] pertaining to the ribs and neck.

**costochondral** [kos'to-kon'drəl] pertaining to a rib and its cartilage.

**enlarged c. joints** visible in thin animals, palpable in fat ones; symptomatic of rickets when it is called a rachitic rosary.

**costophrenic** [kos'to-fren'ik] pertaining to the ribs and diaphragm.

**c. angle** in radiographs, the angle between the ribs and the diaphragm. The angle may be altered by the presence of fluid in the pleural cavity.

**costosternal** [kos'to-stur'nəl] pertaining to the ribs and sternum.

**costotomy** [kos-tot'ə-me] incision or division of a rib or costal cartilage.

**costotransverse** [kos'to-trans-vərs'] pertaining to the ribs and the transverse processes of the vertebrae.

**costovertebral** [kos'to-vur'tə-brəl] pertaining to a rib and a vertebra.

**costoxiphoid** [kos'to-zi'foid] pertaining to the ribs and xiphoid cartilage or process.

**cosyntropin** [ko-sin-tro'pin] a synthetic corticotropin used in the screening of adrenal functional capacity on the basis of plasma cortisol response after intramuscular or intravenous injection. Called also tetracosactrin.

**Coton de Tulear** a small (8-13 lb) white dog from Madagascar with a long, fine white coat that has the texture of cotton.

**cotransport** [ko-trans'port] the simultaneous movement of two substances across a membrane. See also **antipport**, **symport**.

**co-trimoxazole** [ko'tri-moks'ə-zol] an antibiotic preparation made of a mixture of **trimethoprim** and sulfamethoxazole.

**Cotswold** large, polled, longwool English breed of sheep reputedly descended from sheep introduced by the Romans.

**cottage cheese** a soft, uncured cheese made from soured skim milk; most of the lactose is removed with the whey. Used in low-residue diets for dogs and cats.

**cotted** said of wool which has become matted or felted while on the sheep, due usually to continuous wetting.

**cotton** [kot'ən] **1.** see **suture** (3, 4). **2.** plants in the genus *Gossypium*.

**c. ball test** a test of vision in animals; a piece of cotton is dropped within the field of vision. A dog or cat with normal vision will follow or "track" the cotton as it descends.

**balloon c. (2)** *Gomphocarpus physocarpus*.

**c. bush (commercial cotton)** plant *Gossypium* spp. in the family Malvaceae; seeds contain gossypol, a toxic phenol which causes cardiomyopathy, hepatopathy and edema in all organs.

**red c. bush** *Asclepias curassavica*.

**c. seed meal** meal or cake residue after extrusion of oil; used as livestock feed but toxic because of presence of gossypol.

**wild c.** see *Asclepias*.

**cotton fur** the normally fine, dense fur of a chinchilla becomes wavy and cotton-like; caused by excessive protein in the diet.

**cotton-leaf physic nut** *Jatropha gossypifolia*.

**cotton underfur** a condition of the coat of mink caused by feeding on particular fish, e.g., Pacific hake, whiting, which encourages the development of anemia.

**cotton wool disease** general term for external fungal infections of fish.

**cotton-wool spot** funduscopically visible white or gray, 'fluffy' opacities in the retinal nerve fiber layer due to reduced axonal transport. In veterinary patients, most commonly indicate early systemic hypertension.

**cottonseed** [kot'ən-sēd] seed of the cotton plant. Made into cake after oil extraction and used as feed for livestock.

**c. cake** or meal contains **gossypol** and causes hepatitis and degeneration of cardiac muscle. The clinical syndrome includes dullness, weakness, dyspnea and edema. Usually fed as decorticated cake because of the high fiber content of the raw product.

**c. hulls** winnowed from the cotton seeds and used as roughage for ruminants. Have negligible feed value but are an effective diluent for grain because of the ease with which they can be handled by mechanical equipment.

**c. oil** used topically as an emollient.

**cottontail** [kot'ən-tāl] see **cottontail rabbit**. Lagomorphs of the genus *Sylvilagus*, found in the Americas.

**Cotugnia** a genus of tapeworms of the family Davaineidae. Includes *C. cuneata*, *C. digonopora* and *C. fastigata*. Found in the intestines of birds.

**Coturnix coturnix** [kə-'niks] see **quail**.

**Cotyledon** [kot'ə-le'dən] African genus of the plant family Crassulaceae; contains bufadienolide cardiac glycosides; causes krimpsiekte (cotyledonosis). Includes *C. orbiculata* (*C. decusata*, *C. leucophylla*), *C. umbilicus* (*Umbilicus rupestris*, navelwort, pennywort). Many species have been reclassified as *Tylecodon* spp.

**cotyledon** [kot'ə-le'dən] **1.** any subdivision of the uterine surface of the human placenta. **2.** discrete elevations of chorioallantoic tissue of the ruminant fetal membranes that adhere intimately with the maternal caruncles to form placentomes. See also **caruncle**.

**cotyledonary** pertaining to or emanating from cotyledons.

**c. placentation** see **placentation**.

**cotyledonosis** [kot'ə-le'də-no'sis] poisoning of livestock in southern Africa by plants in the genera *Tylecodon*, *Cotyledon* and *Kalanchoe* containing cumulative **bufadienolide** cardiac glycosides. Clinical signs include exercise intolerance, paresis, paralysis, torticollis, paralysis of the lower jaw and tongue, dysphagia, drooling of saliva, abdominal pain, convulsions and death within a few hours. No significant necropsy lesions. Poisoning in cattle can also occur when prunings from ornamental plants are disposed on pastures. Secondary poisoning occurs in dogs and humans who eat meat from diseased animals. Called also **krimpsiekte**.

**Cotylophoron cotylophoron** [kot'ə-lof'ə-rən] see **paramphistomiasis**.

**coryzavirus** see **Rhinovirus**.

**Cotylurus** a genus of digenetic trematodes in the family Strigeidae; includes *C. cornutus*, *C. flabelliformis*, *C. platycephalus* and *C. variegatus*; parasitic in the intestines of wild birds.

**couch** see **kush**.

**couch grass** *Elymus repens*, a perennial invasive grass often considered a weed. Name also given to *Cynodon dactylon*

**kimberly c. g.** *Brachyachne convergens*.

**slender native c. g.** *Brachyachne tenella*.

**couching** luxation of the lens of the eye due to chemical zonulolysis. Historically used for the restoration of vision in an eye with cataract.

**cougar** (*Puma concolor*) a large, solid fawn-colored predator cat in the subfamily Felinae native to the Americas; resembles a short-legged maneless lion. Called also puma, mountain lion, panther.

**cough** [kavwɪ] **1.** a sudden noisy expulsion of air from the lungs. **2.** to produce such an expulsion of air.



**dry c.** cough without expectoration.

**canine c.** see **kennel cough**.

**goose honk c.** a chronic, harsh, dry cough characteristic of collapsed trachea.

**Newmarket c.** see **equine influenza**.

**nocturnal c.** in dogs associated with heart disease, psychogenic coughing or collapsed trachea.

**productive c.** cough attended with expectoration of material from the bronchi.

**psychogenic c.** dogs sometimes associate coughing with the attention received and develop it as a habit.

**c. reflex 1.** the sequence of events initiated by the sensitivity of the lining of the passageways of the lung and mediated by the medulla as a consequence of impulses transmitted by the vagus nerve, resulting in coughing, i.e., the clearing of the passageways of foreign matter. **2.** the response elicited by applying pressure on a trachea. Increased with inflammation of the respiratory epithelium; decreased by cough suppressants and pain.

**coughing** [kəʊ'fɪŋ] **1.** pertaining to **cough**. **2.** the act of producing a sudden, forceful expiration against a closed glottis with sudden opening of the glottis.

**coughing up feed** indicates a problem with the swallowing mechanism, either functional e.g., pharyngeal paralysis, or physical e.g., foreign body lodged in pharynx.

**coulomb (C)** [koo'lɒm] **1.** the unit of electrical charge, defined as the quantity of electrical charge transferred by 1 ampere in 1 second. **2.** the SI unit of exposure to radiation. 1 coulomb per kilogram = 3876 roentgen; abbreviated C/kg.

**Coulter counter** [kɒl'tɜr] an electronic cell counter for particles in a fluid medium by electronic means. Can be calibrated to count cells in milk or a blood sample.

**coumachlor** a coumarin derivative used as a rodenticide; can cause poisoning in domestic animals which are likely to be exposed to it. Causes internal and external hemorrhages and the animal dies of anemia.

**coumafuryl** see **fumarin**.

**coumaphos** an organophosphorus insecticide and anthelmintic, effective against nematodes, including *Haemonchus*, *Trichostrongylus*, *Ostertagia*, *Cooperia* and *Trichuris* spp. in cattle and sheep.

**coumarin** [koo'mæ-rɪn] **1.** a principle extracted from the tonka bean (*Dipteryx odorata*), from which several anticoagulants are derived, that inhibits hepatic synthesis of vitamin K-dependent coagulation factors. See also **dicoumarol**. **2.** any of these derivatives.

**coumarinic acid** a substance whose lactone is coumarin, the anticoagulant.

**coumarol** see **dicoumarol**.

**coumatetralyl** a derivative of warfarin and used as a rodenticide. As a poison in domestic animals it causes the same disease as warfarin but is more dangerous because of its use in concentrated form. See also **warfarin**.

**coumestans** estrogenic substances found in *Medicago* spp., e.g., lucerne/alfalfa and barrel medic.

**coumestrol** an estrogenic substance occurring naturally in *Trifolium repens*, *T. fragiferum* and *Medicago sativa*. See **estrogen**.

**Council for Agricultural Science and Technology (CAST)** a group of scientific societies, foundations and corporations with interests in the science and technology of food production and agriculture.

**Councilman body** [koun'sæl-mən] see **cytosegresome formations**.

**count** [kaunt] a numerical computation or indication.

**differential c.** a count, on a stained blood smear, of the proportion of different types of leukocytes (or other cells), sometimes expressed in percentages but more often reported in absolute numbers ( $10^9/l$ ) for a better indication of abnormalities that may exist.

**somatic cell c.** see **somatic cell counts**.

**sperm c.** see **semen concentration**.

**total bacterial c.** determination of the concentration of bacteria by examination of a sample microscopically or by flow cytometry. These methods do not distinguish between viable and non-viable organisms. See also **Breed's direct smear method**. For milk samples a total bacterial count may also be measured by determining the number of colony forming units by culture on agar plates. This is compared to the thermotolerant bacterial count to assess milk quality.

**viable bacterial cell c.** enumerating the number of viable bacteria present in a sample based on counting the number of colonies produced by culture of a given dilution.

**wool c.** an arbitrary number given to wool to indicate its fiber diameter, e.g., 60's, based on an eyeball assessment of the number of hanks of yarn

that could be spun from one pound of wool. Now superseded by measurement of the diameter, e.g., 20 microns.

**worm c.** a total worm count requires a freshly slaughtered cadaver, collection of intestinal or other fluid in an aliquot sample; in the case of lungs it is often necessary to digest the tissue; worms in a sample are counted and the total worm burden is then determined by considering the dilution factor and/or sample size.

**counter** [koun'tɜr] an instrument or apparatus by which numerical value is computed; in radiology, a device for enumerating ionizing events.

**Coulter c.** see **Coulter counter**.

**Geiger c., Geiger-Müller c.** a radiation counter using a gas-filled tube that indicates the presence of ionizing particles.

**scintillation c.** a device for detecting beta and gamma rays, permitting determination of the concentration of radioisotopes in the body or other substance. It is more important for gamma rays, which are poorly measured by a Geiger counter.

**counterconditioning** a technique of changing an undesirable response of an animal to a stimulus by engaging the animal in another response that is incompatible with the first.

**countercurrent** [koun'tɜr-kur'ənt] flowing in an opposite direction.

**c. exchanger** a countercurrent system in which transport between the inflow and the outflow is passive.

**c. multiplier** a mechanism that enables a membrane to absorb much more solute than water so that the residual fluid has a lower osmotic pressure. The classical example of this phenomenon is the loop of Henle in the kidney. Called also countercurrent multiplier mechanism or system.

**counterelectrophoresis** [koun'tɜr-e-lek'tro-fə-re'sis] see **counter immunoelectrophoresis**.

**counterextension** [koun'tɜr-eks-ten'shən] traction in a proximal direction coincident with traction in opposition to it.

**counter immunoelectrophoresis (CIE)** [koun'tɜr-im'u-no-e-lek'tro-fə-re'sis] a laboratory technique in which an electric current is used to accelerate the migration of antibody and antigen through a buffered gel diffusion medium. Antigens in a gel medium in which the pH is controlled are strongly negatively charged and will migrate rapidly across the electric field toward the anode. The antibody in such a medium is less negatively charged and will migrate in an opposite or 'counter' direction toward the cathode. If the antigen and antibody are specific for each other, they combine and form a distinct precipitin line. Was historically used for the rapid diagnosis of some bacterial, mycoplasma and viral infections.

**counterincision** [koun'tɜr-in-si'zən] a second incision made to promote drainage or to relieve tension on the edges of a wound.

**counterirritant** [koun'tɜr-ir'i-tənt] **1.** producing counterirritation. **2.** an agent that produces counterirritation. Blistering by application of a paste or liquid containing rubefacient agents such as cantharides or mercuric iodide, and firing, by burning the skin and superficial tissues with a hot iron, were used as counterirritants on the lower limbs of lame horses. Archaic and inhumane.

**counterirritation** [koun'tɜr-ir'i-tə'shən] superficial or dermal irritation that is then intended to relieve some other irritation.

**counteropening** [koun'tɜr-o'pən-ɪŋ] a second incision made across from an earlier one to promote drainage. Called also contra-aperture.

**counterpressure** [koun'tɜr-presh'ər] externally applied pressure used to control internal hemorrhage and in the treatment of shock. See also **antishock pneumatic garment**.

**counterpulsation** [koun'tɜr-pəl-sə'shən] technique for assisting the circulation by the use of an external pumping device synchronized with cardiac systole.

**counterpuncture** [koun'tɜr-punk'chər] a second opening made opposite another.

**countershock** [koun'tɜr-shok'] see **cardioversion**.

**countersain** [koun'tɜr-stān] a stain applied to render the effects of another stain more discernible.

**countertraction** [koun'tɜr-trak'shən] traction opposed to traction; frequently used in reduction of bone fractures.

**counting-out pen** [kaunt'ɪŋ] the pen in which each shearer's sheep are collected after shearing and then counted as a basis for payment of the shearer.

**Country of Origin Labeling Law (COOL)** requires retailers to identify the country of origin of muscle cut and ground meats, including beef, veal, lamb, pork, chicken, and goat meat; wild and farm-raised fish and shellfish; and plant agricultural commodities. Administered by the USDA Agricultural Marketing Service.

**coup** [koo] [Fr.] denoting an injury, as to the brain, occurring at the point of impact. See also **contrecoup**.

**coupage** percussion of the thorax using cupped hands to aid in the removal of respiratory secretions. Called also percussion therapy.

**coupling** [kup'ling] **1.** in an animal's conformation, the distance between the top of the scapulae to the hip joints. **2.** in ultrasonography, the transmission of sound from the transducer into the tissues being examined. A medium such as a gel or mineral oil is used to exclude air from between the two surfaces.

**course** **1.** the series of events in a disease incident in a patient. It may be peracute, acute, subacute, chronic or intermittent. **2.** to course a rabbit, hare or fox is to run it in view, the opposite of conventional hunting by scent. Is prevented by legislation in most countries.

**acute c.** 1 or 2 days.

**chronic c.** more than 1 week.

**intermittent c.** periods of normality of a few minutes or hours.

**peracute c.** a few hours.

**recurrent c.** periods of normality of weeks to months.

**subacute c.** up to a week.

**coursework** said of a postgraduate degree, usually a master's, based on lectures and practical work in courses rather than research.

**coursing** the sport of chasing live prey with sighthounds.

**courtesy title** used by the community to identify a member of a professional group, e.g., doctor, dentist, veterinarian, and others, whose professional degrees are not doctorates; titles may be regulated in some jurisdictions.

**courtship** paying attention to a member of the opposite sex with a view to mating. Occurs in farm animals but is not highly developed other than estral display by the female and seeking by the male. In wild animals courtship is often a very ritualistic and involves prolonged activity, including changes in behavior and coloring aided by physical contact, and may involve dances, vocalisation or fighting. Typically the male courts the female, who selects a mate based on performance. Some species have elaborate and unique actions such as the preparation and use of a courtship pad, as in **peafowls** (peacocks) and Argus pheasants.

**c. feeding** see neurotic **regurgitation**.

**Coutoubea ramosa** South American plant in the family Gentianaceae poisonous to cattle causing tachycardia, tachypnea and death; toxin unidentified.

**covalence** [ko-va'ləns] a chemical bond between two atoms in which electrons are shared between the two nuclei.

**covariance** [ko-vār'e-əns] the expected value of the product of the deviations of corresponding values of two random variables from their respective means.

**c. method** used for the calculation of relationship and inbreeding in large populations.

**covariate** [ko-var'e-ət] predictors during the allocation of experimental units in a randomized design.

**Covault spay hook** a long, thin, probelike instrument with a curved end and a buttoned tip, used to hook around the uterus of a companion animal and to bring it into the incision where an ovariohysterectomy can be performed.

**covenant** agreements used in veterinary practice and entered into at the start of employment that restrict the professional activity of the new veterinarian when he/she leaves the practice. Includes agreements that constrain the unauthorized disclosure of propriety information such as client information and business finances; that restricts the former employee from working in competition; that prohibit the hiring of the original practice employees. Not legally binding in all States or countries

**cover** [kuv'ər] see **mating**.

**coverage** an ArcGIS file-based vector data storage format for storing the location, shape, and attributes of geographic features for a single theme such as soils, streams, roads, or land use. Associated feature attribute tables describe and store attributes of the geographic features.

**coveralls** overalls with full cover for the arms, trunk and legs; popular protective clothing for veterinarians working on farms.

**coverglass** [kuv'ər-glas] a thin glass that covers a mounted microscopical object or a culture. Called also coverslip.

**covering** [kuv'ər-ing] **1.** mating, usually of horses. **2.** the legal practice of providing relief services for a veterinarian who is absent from his or her practice. **3.** the illegal practice of using an unqualified employee to work in the guise of a qualified one. This is with particular reference to practicing medicine and surgery and administering anesthetics and making diagnoses. The employing veterinarian is guilty of covering, the employed person is guilty of practicing illegally.

**coverslip** [kuv'ər-slip] see **coverglass**.

**coverts** an assembly of contour feathers that form a type of cowling over the flight feathers of the wings (the remiges) or the tail (the rectrices); see feather **remex**.

**cow** bovine female after having had one calf. See also **cattle**. The term is also used to describe mature females of some other species, e.g., elk, moose, reindeer, wapiti, elephants, whales.

**brood c.** used for breeding.

**c. bush** see *Leucaena leucocephala*.

**c.-calf operation** North American term for a farm that maintains a breeding herd of beef cattle and produces weaned calves. In the commercial cow-calf feeder system, animals are sold at weaning or may be kept as stockers.

**c.-calf pair** a breeding beef cow with calf at foot.

**c. cockle** see *Saponaria*.

**dry c. 1.** a cow in the 2 to 3 month period between the end of lactation and the subsequent calving. Cows in which calving is imminent are close-up dry cows, or are freshening. **2.** a mature cow which is not lactating whatever the reason.

**dry c. therapy** see **dry period treatment**.

**empty c.** cow not in calf when she should be. Called also barren cow.

**foundation c.** one from which many of the animals in a herd or breed have originated.

**fresh c.** a cow recently calved.

**c. index** an estimate of the genetic ability of the cow to transmit to her offspring her capacity to produce milk and butterfat. The index is calculated on the basis of the cow's record of production, especially her deviation from herd mates, the herd's productivity status and the productivity proof of her sire.

**c.-kick** a forward kick with a hindlimb, dangerous to the mounting rider of a horse, or to the clinician examining a cow.

**open c.** cow not in calf, usually said of cows still to be bred.

**c.-pony** American stock horse, used for working cattle on the range.

**c. pool** a cooperative arrangement for milking cows in which a central unit cares for and milks cows or herds which belong to different owners.

**c. wheat** *Melampyrum arvense*.

**cow-associated mastitis** see contagious **mastitis**.

**cow comfort** influences economically important activities in dairy cattle such as feed intake, milk production, reproduction and health; one of the main factors which influence profitability of dairy farms due to its association with involuntary culling, cow longevity, and productive life. Measures to assess this can include monitoring activity such as feeding, rumination, cud chewing, standing and lying (resting) time and locomotion with **locomotion scores**. Lying time and the number of lying periods can be a particularly good monitor as they are influenced by the health of the cow, quality of the bedding, type of housing and the number of animals per square foot. Automated data loggers, e.g. **pedometers**, can be used and play an important role in overcoming monitoring challenges posed by grazing systems.

**cow-day** for one cow for one day. Used as a measure of pasture, the amount required to fully feed a cow for peak lactation for one day (approximately 30 lb dry matter of grass).

**cowbane** *Cicuta* spp.

**cowbell** a bell, usually metal but of varying composition depending on the region where it is used, that is hung around the neck of a cow. see **bell-cow**.

**Cowdria ruminantium** [kou'dre-ə] see *Ehrlichia ruminantium*.

**cowdriosis** [kou'dre-ō'sis] see **heartwater**.

**cow-hocked** a conformation defect in a horse. The points of the hock are close together, the fetlocks wider apart than normal.

**cowmen** men, although the term usually includes women, who work physically with cattle. Includes herdsman, grooms, milkers.

**cowpea** see *Vigna unguiculata*.

**cowperitis** [kou'pər-i'tis] inflammation of the bulbourethral (Cowper's) glands.

**Cowper's glands** [kou'pər] see **bulbourethral glands**.

**cowpox** [kou'poks] a contagious disease of cows characterized by the appearance of pox lesions on the teat and udder skin. The causative virus is in the genus *Orthopoxvirus*. Typical lesions are a patch of erythema, then a papule, followed by a vesicle, then a pustule and finally a scab. The disease is transmissible to humans and is now rare.

**feline c.** a poxvirus infection of cats in the UK and Europe, caused by the cowpox virus, characterized by multiple nodules and ulcerated lesions of the skin, mainly on the head, face, ears, neck and forelimbs. Occasionally there is conjunctivitis and oral ulceration and rarely generalized infection with fatal respiratory involvement. Usually acquired by hunting small rodents, but cattle have been implicated, rarely. Cat-to-human transmission has been recorded as a rare event.

**c. virus** a poxvirus which is antigenically distinct from vaccinia virus and pseudocowpox virus. The characteristics of the virus are otherwise identical with the vaccinia virus. See also **vaccinia**.





**C-94:** Secondary papules and crusted skin lesions in a cat with cowpox virus infection.

Skyles, J.E. *Canine and Feline Infectious Diseases*, Saunders, 2014. Secondary papules and crusted skin lesions in a cat with cowpox virus infection.

**cowside** the bovine equivalent of bedside, e.g., said of manner.

**c. mastitis tests** test carried out in the milking parlor, not back in the laboratory, e.g., California Mastitis Test.

**cowslip** 1. see *Caltha palustris*. 2. see **hoof** block.

**water c.** *Caltha palustris*.

**COX** cyclo-oxygenase.

**coxa** [kɒk'sə] pl. *coxae* [L.] the hip, loosely, the hip joint.

**c. plana** flattening of the head of the femur resulting from osteochondrosis of its epiphysis.

**c. valga** deformity of the hip joint with increase in the angle of inclination between the neck and shaft of the femur, producing a straighter bone.

**c. vara** deformity of the hip joint with decrease in the angle of inclination between the neck and shaft of the femur.

**coxal tuber** see **tuber** *coxae*.

**coxalgia** 1. hip joint disease. 2. pain in the hip.

**coxib** [kɒk'sɪb] a subclass of nonsteroidal anti-inflammatory drugs that selectively inhibit cyclo-oxygenase-2 (COX-2), thereby minimizing the gastrointestinal toxicity of nonselective COX inhibition; coxibs used in veterinary medicine include **deracoxib**, **firocoxib**.

**Coxiella** [kɒk'se-el'ə] a genus of obligately intracellular bacteria in the order *Legionellales*, previously classified among the *Rickettsiales* but now recognized to be most closely related to *Legionella pneumophila*. It contains a single species, *C. burnetii*, the causative agent of the zoonotic disease **Q fever**. It also infects the trophoblast cells of sheep and cattle without causing disease.

**coxiellosis** infection by members of the genus *Coxiella*.

**coxitis** [kɒk-si'tis] inflammation of the hip joint.

**cox(o)-** word element pertaining to the hip.

**coxodynia** [kɒk'so-din'e-ə] pain in the hip.

**coxofemoral** [kɒk'so-fem'o-rəl] pertaining to the hip and thigh.

**c. arthropathy** high prevalence in pen-fed young bulls which is characterized by the sudden onset of lameness in a hindlimb, with pain and crepitus in the hip joint and rapid wasting of the muscles of the croup and thigh. There is a family predisposition to this degenerative arthropathy; it is exacerbated by a diet high in phosphorus and low in calcium and dense in energy so that the bull has a high body weight and is growing fast. The onset is acute and often precipitated by fighting or mating. The disease may not develop until 3 or 4 years of age in bulls that are reared at pasture.

**c. joint** the **hip** joint.

**coxsackievirus** [kɒk-sak'e-vi'ræs] one of a heterogeneous group of enteroviruses of humans; recovered from dogs with mild diarrhea. Called also Coxsackie virus. Coxsackievirus B7 is related antigenically to swine vesicular disease virus.

**coyote** (*Canis latrans*) a North American predatory wild dog. Called also prairie wolf, it is closely related to the gray wolf, and is widely distributed

throughout North and Central America. Largely carnivorous, coyotes are major livestock predators, and regular shooting, trapping and poisoning programs are undertaken in the USA to help protect against livestock losses.

**coyotillo** [koi-o-te'yo] see *Karwinskia humboldtiana*.

**coypu** see **nutria**.

**CPA** cardiopulmonary arrest.

**CPAP** continuous positive airway pressure.

**CP:ATP ratio** creatine phosphate:adenosine triphosphate ratio.

**CPB** see cardiopulmonary **bypass**.

**CPBA** competitive protein-binding assay.

**CPCR** cardiopulmonary cerebrovascular resuscitation.

**CPD** citrate-phosphate-dextrose an anticoagulant solution used for the collection of blood for purposes of storage and transfusion. See also **ACD** solution.

**CPDA-1** citrate-phosphate-dextrose-adenine; an anticoagulant used in blood collection bags.

**CPE** cytopathic effect.

**CPG** central pattern generator.

**CpHV-1** caprine herpesvirus-1.

**CPiV** canine parainfluenza virus.

**CPK** creatine phosphokinase.

**cPL** canine pancreas-specific lipase.

**cpm** counts per minute.

**CPR** cardiopulmonary resuscitation.

**CPRA** see central progressive **retinal** atrophy.

**CPRP** cardiopulmonary cerebral resuscitation.

**cps** cycles per second.

**CPT** 3-chloro-*p*-toluidine, an avicide.

**CPV** canine parvovirus.

**CR** computed radiography.

**Cr** chemical symbol, *chromium*.

**Cr<sup>51</sup> EDTA** a compound used to assess permeability of intestinal mucosa; 24-hour excretion in urine is measured following oral administration.

**crab** [krab'ɪŋ] the pattern of movement when the animal's body is at an angle to the line of travel.

**crab grass** [krab] *Digitaria* spp.

**crabs eye** see *Abrus precatorius*.

**Crabtree effect** the inhibition of oxygen consumption on the addition of glucose to tissues or microorganisms having a high rate of aerobic glycolysis; the converse of the Pasteur effect.

**crack** [kræk] a discontinuity in a hard, brittle surface such as horn, hoof.

**toe c.** see **sandcrack**.

**cracked** said of grain; indicates grain that has been exposed to a combined breaking and crushing action.

**cracked heels** in horses, a dermatitis in the hollow between the heels occurring most commonly in the hindlimbs. See also **greasy heel**.

**cracked pot sound** the sharp, nonresonant note, like the noise made by striking a cracked pot, made by percussion of subcutaneous emphysema or an air-filled cavity in the lungs.

**cracker** of little worth; term used to describe old sheep in poor condition and with no teeth.

**Florida c. cattle** descend from criollo cattle brought to Florida by the Spanish. They are small with varied coloration and spotting patterns and lyre shaped or back-swept horns. The original breed is largely lost through cross breeding for better size and production. Called also cracker cattle.

**c. heels** colloquial name given to cattle with chronic miserotoxin toxicosis because of noise made when rear hooves strike each other.

**crackles** [kræk'əlz] a small, sharp sound heard on auscultation. Non-respiratory crackles are caused by dry, bristly hair and insufficient pressure on the stethoscope head. Pulmonary crackles are caused by rapid and explosive distension of airspaces. Also characteristic of emphysema, especially when it is subcutaneous. An early observation in pleurisy but disappears as exudate separates pleural surfaces. See also **rale**.

**cracklings** proteinaceous residues after fat is melted and run off during offal processing. Called also greaves.

**cradle** [kra'dəl] a barred restraining device.

**calf c.** is interposed in a chute in a vertical position. The calf is driven in. It may be anything up to 6 months of age. One side of the cradle is movable and the calf is clamped in tightly. The cradle is then swiveled on its bottom hinge and the calf is upended so that it can be castrated, branded, dehorned.

**neck c.** a series of bars tied together like a nonrigid fence. Tied round the neck of a horse like a loose splint, it prevents the horse from biting or licking itself.



**C-95:** Neck cradle on a horse.

From Bassett JM, McCurnin's Clinical Textbook for Veterinary Technicians, 9th Edition. Elsevier, 2018.

**lamb c.** the lamb is laid on its back in the device, its legs are clamped in position exposing scrotum and tail for castration and tail docking, and the perineal area to expose skin folds for mulesing.

**Crambe abyssinica** plant in the family Brassicaceae; contains a glucosinolate which causes weight loss in poultry when seed meal made from this plant is fed.

**cramp** [*kraɪmp*] a painful spasmodic muscular contraction.

**Greyhound c.** muscle spasms, particularly in the hindlegs, usually in unfit dogs, with excessive excitement, or high environmental temperatures.

**heat c.** a form of equine colic after vigorous exercise with heavy sweating. Caused by electrolyte loss. Signs include muscle tremor and rigidity.

**raptor c.** hypocalcemic, tetanic convulsions in raptor birds caused by a dietary deficiency of calcium.

**Scottie c., Scotch c.** an inherited defect in Scottish terriers that occurs as hyperkinetic episodes from an early age, but may only be precipitated by exercise or excitement. Some dogs show the disorder only infrequently during their otherwise normal lives. Affected dogs become stiff with hyperextension of the limbs which may prevent walking or cause brief cessation of respiratory movements. Pharmacologic studies suggest the condition is caused by a deficiency of serotonin, although brain concentrations of serotonin are normal in affected dogs.

**crampiness** see inherited periodic spasticity.

**cramping** [*kraɪmp'ɪŋ*] see **cramp**.

**cramp spasticity** see inherited periodic spasticity.

**cranberry** fruit from plants in the genus *Vaccinium*; proanthocyanidins found in raw fruit and its juice inhibit *Escherichia coli* adhesion to uroepithelial cells and have been used in the treatment of recurrent urinary tract infections.

**cranial** [*kra'ne-əl*] in a cranial direction; toward the head end of the body.

**cranial** [*kra'ne-əl*] pertaining to the cranium or to the head end of the body. See also **anterior, cranium**.

**c. intestinal portal** the entrance into the embryonic foregut from the expanded midgut.

**c. nerve reflexes** see specific nerves.

**c. nerves** nerves which are attached to the brain and pass through the openings of the skull. There are 12 pairs of cranial nerves, symmetrically arranged so that they are distributed mainly to the structures of the head and neck. See also specific nerves and Table 13.

**c. tibial reflex** percussing just below the lateral tibial condyle (cranial tibial muscle) normally causes a slight flexion of the tibiotarsal joint. A test of the integrity of spinal cord segments L6 to S2, sciatic and peroneal nerves. Exaggerated in spinal cord lesions above L6.

**c. tumor** see **brain tumors**.

**c. vena cava** see Table 14.

**Craniata** [*kra'ne-ə'tɑ*] a subphylum of the phylum Chordata. Includes vertebrates with a distinct brain and brain box.

**craniectomy** [*kra'ne-ek'tə-me*] excision of a segment of the skull.

**suboccipital c.** the surgical approach is to the caudal cerebellum.

**crani(o)-** word element. [L.] relationship to the skull.

**craniocaudal** [*kra'ne-o-kaw'daɪ*] in the nomenclature of radiographic positioning, the direction of entry of an x-ray beam that enters at the cranial plane or aspect of the part being examined and exits at the caudal plane or aspect. In quadrupeds this includes the limb proximal to the antebrachio-carpal and tarsocrural joints. See also **dorsopalmar** and **dorsoplantar**.

**craniocoele** [*kra'ne-o-sēl*] protrusion of part of the brain through the skull.

**craniocerebral** [*kra'ne-o-ser'ə-brəl*] pertaining to the skull and cerebrum.

**cranioclasia** see **craniotomy** (2).

**cranioclast** an instrument for performing craniotomy (2) or crushing a fetal head.

**craniodidymus** [*kra'ne-o-did'i-məs*] a fetus with two heads.

**craniofacial** [*kra'ne-o-fa'shəl*] of or pertaining to the cranium and face.

**c. dysplasia** inherited in cattle; characterized by convex nasal profile, shortened mandible, macroglossia.

**c. index** an indication of the shape of the skull. The formula is cranium length/facial length.

**c. malformations** any congenital deformity of the cranium or face including cyclopia, cebocephaly, cheiloschisis.

**craniomalacia** [*kra'ne-o-mā-la'shə*] abnormal softness of the bones of the skull.

**craniomandibular** [*kra'ne-o-man-dib'u-lər*] pertaining to or emanating from the cranium and face.

**c. osteopathy** see **craniomandibular osteopathy**.

**craniometer** [*kra'ne-om'ə-tər*] an instrument for measuring the skull in craniometry.

**craniometry** [*kra'ne-om'ə-tre*] a branch of morphometry, being the measurement of the dimensions and angles of a bony skull.

**craniopagus** [*kra'ne-op'ə-gəs*] conjoined twins joined at the head; called also **cephalopagus**.

**craniopharyngeal** [*kra'ne-o-fā-rin'je-əl*] pertaining to the cranium and pharynx.

**c. duct** the primordial outgrowth from the roof of the pharynx from which the posterior lobe of the pituitary gland is formed; a vestigial structure in most species; see also **Rathke's pouch**.

**c. duct cyst** cysts from remnants of the distal craniopharyngeal duct are found close to the pituitary gland. Pressure on the gland and inflammation and subsequent fibrosis of it can cause a syndrome of adenohypophyseal hypofunction. There may be blindness, obesity and diabetes insipidus. Brachycephalic breeds of dogs are predisposed.

**craniopharyngioma** [*kra'ne-o-fā-rin'je-o'mā*] a benign tumor arising from the cell rests derived from the infundibulum of the hypophysis or Rathke's pouch. Usually seen in young animals, they grow slowly. Their effects may be seen as a hypopituitarism, cranial nerve deficits or central nervous system dysfunction.

**cranioplasty** [*kra'ne-o-plas'te*] any plastic operation on the skull.

**craniopuncture** [*kra'ne-o-punk'chər*] exploratory puncture of the brain.

**craniorachischisis** [*kra'ne-o-rā-kis'ki-sis*] congenital fissure of the skull and vertebral column.

**c. totalis** failure of fusion of the entire neural tube.

**craniocrural** [*kra'ne-o-sa'krəl*] pertaining to the skull and sacrum.

**c. outflow** the parasympathetic outflow.

**cranoschisis** [*kra'ne-os'ki-sis*] congenital fissure of the cranium due to sagittal failure of fusion of the cranial bones; see also inherited **cranium bifidum**.

**cranosclerosis** [*kra'ne-o-skla-ro'sis*] abnormal calcification and thickening of the cranial bones.

**cranoscopy** [*kra'ne-os'kə-pe*] diagnostic examination of the head.

**craniospinal** [*kra'ne-o-spi'nəl*] pertaining to the skull and spine.

**craniotome** [*kra'ne-o-tōm*] a cutting instrument used in craniotomy.

**craniotomy** [*kra'ne-ot'ə-me*] 1. operation involving entry into the cranium. 2. puncture of the skull and removal of its contents to decrease the size of the head of a dead fetus and facilitate delivery.

**craniotympanic** [*kra'ne-o-tim-pan'ik*] pertaining to the skull and tympanum.

**cranium** [*kra'ne-əm*] pl. *crania* [L.] the skeleton of the head, variously construed as including all of the bones of the head, all except the mandible, or the eight bones forming the vault lodging the brain. See also **head, skull, cranial**.

**inherited c. bifidum** a defect in the closure of the bones of the cranial vault causes exposure of the brain. Meningocele or encephalocele may be present. Affected animals do not survive. Called also **cranoschisis**.

**crankcase oil** see **oil**

**crash cart** a portable trolley containing all equipment and drugs required for cardiopulmonary resuscitation and emergency care.

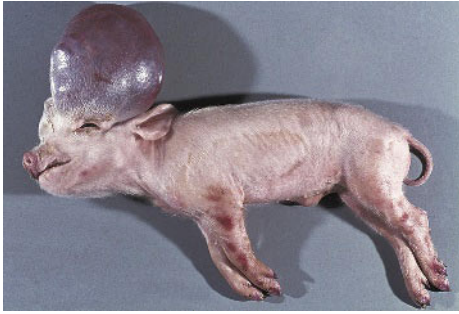
**Crassostrea** genus of farmed oysters in subclass Lamellibranchia; includes *C. angulata* (Portuguese oyster), *C. gigas* (Pacific cupped oyster), *C. virginica* (American cupped oyster).

**crater** [*kra'tər*] an excavated area surrounded by an elevated margin, as caused by ulceration.

**crateriform** [*kra-ter'i-form*] bowl-shaped, like a crater.

**craterization** [*kra'tər-i-za'shən*] excision of bone tissue to create a crater-like depression. Frequently used in the management of **osteomyelitis**.





**C-96:** Inherited cranium bifidum with meningocele.  
From van Dijk JE, Gruys E, Mouwen JMVM, Color Atlas of Veterinary Pathology, 2nd ed, Saunders, 2007.



**C-97:** Piglet creep area. The optimal ambient temperature for young piglets is above 80°F while that for the sow is 65°F. The heated creep area attracts the piglets and reduces the risk for hypothermia and crushing injuries. Creep feed may also be available in this area of the farrowing pen.

C

**Craterostomum** a genus of nematode worms of the family Strongylidae. Includes *C. acuticaudatum* and *C. tenuicauda* (in equine large intestine).  
**craw** [*kraw*] see **crop** (2).

**crayfish** freshwater crustaceans. Includes many genera and species, many of them farmed and occasionally kept as aquarium pets. The predominant species in North America are *Procambarus* and *Pacifastacus*; in Australia many are in the genus *Cherax* (see also **yabby**). In some American dialects, called crawfish or crawdad.

**European c.** *Astacus astacus*.

**freshwater c.** see crayfish (above).

**Louisiana c.** *Procambarus clarkii*.

**c. plague** epizootic disease of crayfish caused by the oomycete fungus *Aphanomyces astaci*. All species of freshwater crayfish are considered susceptible to infection with the outcome of an infection depending on the species of crayfish. In North American crayfish species it is a benign parasite and these species can act as carriers of the pathogen. In contrast European and Australian species can develop severe disease. It causes fungal growth on the shell, white necrotic musculature, a loss of coordination and a high mortality rate. A disease notifiable to the OIE (see Table 20).

**red swamp c.** *Procambarus clarkii*.

**signal c.** *Pacifastacus leniusculus*.

**crayon** a soft color-marking material used in identification especially in sheep.

**c.-marking** marking of ewes by rams wearing crayons on their chests and held there by a harness. By changing the color of the crayon it is possible to date the reproductive events of the flock. See also **tupping crayon**.

**crazy chick disease** an encephalomalacia of young (2 to 4 weeks old) chickens caused by vitamin E nutritional deficiency. Signs include incoordination, orthotonos, opisthotonos, clonic convulsions, death.

**crazy cow syndrome** neurological disorder believed caused by *Solanum dimidiatum*.

**CRCoV** canine respiratory coronavirus.

**CRD** 1. chronic respiratory disease. See **chronic** respiratory disease of chickens, **murine** respiratory mycoplasmosis. 2. chronic renal disease.

**cream** [*krēm*] 1. an oil and water emulsion used topically in the treatment of skin disease. 2. the natural rising of butterfat on stored cow's milk; also obtained by mechanical centrifugation. 3. an uncommon coat color in a horse, although some very light palominos would qualify. The horse is cream all over, including the **muzzle** (1), **mane** and tail; the skin is unpigmented and the haircoat is cream. There is often a deficiency of pigment in the iris.

**cold c.** useful as an emollient to soften and hydrate the skin.

**c. rinse** hair conditioners that make the coat lie flat and comb easily.

**creatinase** [*kre-at'i-nās*] an enzyme that catalyzes the decomposition of creatine into sarcosine and urea. Also called creatine amidinohydrolase.

**creatine** [*kre'e-tin*] a nonprotein nitrogen substance synthesized in the body from three amino acids: arginine, glycine (aminoacetic acid) and methionine. Found mainly in skeletal muscle (95%) and in small quantities in brain, heart and testes. Creatine readily combines with phosphate to form phosphocreatine, or creatine phosphate, which is present in muscle, where it serves as a storage form of high-energy phosphate for donation to ADP forming the ATP necessary for intense muscle contraction.

**c. kinase (CK)** an organ-specific enzyme catalyzing the transfer of a phosphate group from phosphocreatine to ATP. It has three isoenzymes: CK<sub>1</sub>, found primarily in the brain; CK<sub>2</sub>, found in the myocardium; and CK<sub>3</sub>, found in both skeletal muscle and the myocardium. In humans, the presence of CK<sub>2</sub> in the blood is useful in diagnosing a recent myocardial infarction, but in animals CK<sub>3</sub> is most commonly increased related to muscle damage. Called also creatine phosphokinase, Lohmann's enzyme.

**c. phosphate** see creatine (above).

**c. phosphokinase** called also CPK; see creatine kinase (above).

**creatinemia** [*kre"ə-tī-ne'me-ə*] excessive creatine in the blood.

**creatinine** [*kre-at'i-nin*] a nitrogenous compound formed as the irreversible end product of **creatine** metabolism. It is formed in the muscle in relatively small amounts, passes into the blood and is excreted in the urine. The excretion of creatinine over 24h is proportional to the muscle mass. A laboratory test for the creatinine concentration in the blood is used as a measurement of kidney function or severity of renal insufficiency. Since creatinine is normally produced in fairly constant amounts as a result of the breakdown of phosphocreatine and is excreted in the urine, an elevation in the creatinine concentration in the blood indicates a disturbance in kidney function.

**c.:blood urea nitrogen ratio** determination of blood creatinine and blood urea nitrogen (BUN) and the relationship between them is an additional assessment of renal function. It may be useful in the differential diagnosis of azotemia and in monitoring renal disease when protein-restricted diets are being given.

**c. clearance test** a measure of glomerular filtration rate based on the rate at which creatinine is filtered through the renal glomeruli. Endogenous creatinine is measured in a 24-hour urine sample; exogenous creatinine involves injection into the patient and a shorter period of urine collection.

**c.:cortisol ratio** see **cortisol:creatinine ratio**.

**c.-protein ratio** **protein-creatinine ratio**.

**urine c./serum c. ratio** used to distinguish between prerenal and renal azotemia.

**creatinuria** [*kre"ah-tī-nu'reə*] an increased concentration of creatine in the urine. An excessive endogenous breakdown of muscle can cause this.

**creatorrhea** [*kre"ə-to-re'ə*] undigested muscle fibers in the feces; occurs with deficiency of trypsin in chronic exocrine pancreatic disease.

**creep** [*krēp*] a barrier containing small apertures. Only the young animals of the group can penetrate the barrier. See also **creeping**.

**c. barrier** a barred barrier permitting maximum auditory, olfactory, visual and palpatory contact without domination. A useful technique in a primate colony.

**c. feeding** feed is placed on one side of the barrier and only the young can get access to it.

**c. grazing** a creep is placed across the entrance to the pasture and only animals small enough to penetrate the creep get access to the pasture.

**c. ration** a weaning diet, suitable for weaning the young, which are the only animals able to penetrate the creep.

**creeper cows** cow with hypocalcemic parturient paresis that is alert and struggles; usually over 5 years of age and in good to excellent condition. May respond to treatment with potassium acetate in addition to normal calcium therapy. See also **downer cow syndrome**.

**creeper pigs** see **Pietrain** creeper pigs.

**creeping** [*krēp'ing*] 1. gradual progression of a lesion or tissue growth. 2. prostrate, stoloniferous, growth pattern of a plant.

**c. substitution** gradual penetration across a fracture site by osteogenic tissue followed by bone formation.

**creeping Charlie** see *Glechoma hederacea*.

**creeps** [*krēps*] see **osteomalacia**.

**cremaster muscle** [*kre-mas'tər*] a slip of muscle detached from the internal oblique muscle that passes through the inguinal canal and is attached to the outer vaginal tunic of the spermatic cord; the muscles serve to draw up the testes when cold or injury threatens. See Table 12.

**cremasteric** [*krēm"as-ter'ik*] pertaining to the cremaster muscle.

**cremation** [*kre-ma'shən*] disposal of a cadaver by total burning.

**cremello** creamy white coat color in horses; result of dilution of a yellow color. Like chestnuts cremellos are homozygous; heterozygotes are palominos.

**crena** [kre'nə] a shallow notch in the mid-dorsal aspect of the sole border of the distal phalanx of the horse. Called also *crena marginis solearis*.

**crenate, crenated** [kre'nāt, kre'nāt-əd] scalloped or notched.

**crenation** [kre-na'shən] the formation of abnormal notching around the edge of an erythrocyte; the notched appearance of an erythrocyte due to its shrinkage after suspension in a hypertonic solution. See also **echinocyte**.

**crenocyte** [kre'no-sīti] a **crenated** erythrocyte.

**Crenosoma** [kre'no-so'mə] a genus of lungworms of the family Crenosomatidae. Includes *C. mephitidis*, *C. petrowi*, *C. striatum* (wild animals) and *C. vulpis* (in dogs, wild carnivores).

**crenulation** [kren'u-la'shən] **crenation**.

**creosol** [kre'o-sol] one of the active constituents of creosote.

**creosote** [kre'o-sōt] a mixture of phenols from wood tar; historically used externally as an antiseptic and internally in chronic bronchitis as an expectorant. A mixture of the carbonates of various constituents of creosote (creosote carbonate) is used the same as the base.

**c.-treated timber** treating timber with creosote is a common method of preservation. Use of the timber for housing while it is still wet may cause poisoning especially in young pigs. There may be local burning of the skin, oral, esophageal and gastric erosion, or degeneration of parenchymatous organs.

**Crepidostomum** digenetic trematode parasite of salmonid and other fish. The genus is a member of the family Allocreadiidae.

**crepitant** [krep'i-tənt] having a dry, crackling sound.

**crepitation** [krep'i-ta'shən] a dry, crackling sound or sensation, such as that produced by the grating of the ends of a fractured bone.

**respiratory c.** a dry, crackling sound.

**crepitus** [krep'i-təs] **1.** the grating of fractured bone fragments against each other. **2.** the crackling of joints. **3.** the noise produced by pressure on tissues containing an abnormal amount of air or gas, as in cellular emphysema. **4.** the discharge of flatus from the bowels. **5.** crepitation. **6.** a crepitant rale.

**crepuscular** active at twilight or just before dawn; said of animals or birds.

**crested** [kres'ənt] shaped like a new moon.

**glomerular c.** proliferation of parietal epithelial cells lining Bowman's capsule in the kidney; associated with glomerulonephritis or glomerular injury.

**crezols** [kre'solz] **1.** a group of phenols from coal or wood tar; includes *p*-crezol, *o*-crezol (2-methylphenol), *m*-phenol (3-methylphenol), *p*-phenol (4-methylphenol). **2.** a preparation consisting of a mixture of isomeric crezol from coal tar or petroleum is used as a disinfectant.

**c. poisoning** the form of poisoning depends on the route of entry and the dose. There may be local corrosion, or cardiac depression, or liver damage with signs of jaundice, weakness, coma and death.

**cross** see *Lepidium sativum*.

**cow c.** *Sium angustifolium*.

**bitter c., yellow rocket** see *Barbarea vulgaris*.

**crest** [krest] **1.** a projecting structure or ridge, especially one surmounting a bone or its border. **2.** a term describing the upper margin of the neck; root of the mane in a horse. **3.** in canaries, a crown of long feathers on the head, all radiating out from a central point; inherited as a dominant trait. **4.** a tuft or growth of feathers, fur or skin along the top of the heads of some birds, reptiles and other animals.

**ampullary c.** linear thickenings of the walls of the ampullae of the semicircular canals.

**dental c.** the maxillary ridge passing along the alveolar processes of the fetal maxillary bones.

**epicondylar c.** ridges which extend from the epicondyles of the humerus to the shaft.

**ethmoid c.** located on the inside surface of the nasal bones of the pig and dog.

**external occipital c.** an extension of the external occipital protuberance to which the ligamentum nuchae is attached.

**facial c.** the prominent palpable crest on the external aspect of the maxilla of horses stretching from beneath the orbit to the middle of the molar teeth. The masseter muscle is attached to its ventral surface.

**c. hair** see **mane**.

**iliac c.** the thickened cranial border of the ilium of dogs and cats.

**neck c.** the fatty, fibrous tissue above the nuchal ligament which gives the stallion's neck its characteristic elevated contour.

**neural c.** cords of nervous tissue which detaches from the developing spinal cord in the embryo; contribute tissue to the somatic and autonomic ganglia, and many other structures.

**nuchal c.** the thick, transverse crest on the occipital bone.

**palatine c.** a low transverse ridge on the palatine bones.

**petrosal c.** divides the cranial cavity into cerebellar and cerebral compartments.

**renal c.** the median ridge in the pelvis of many kidneys onto which papillary ducts open.

**reticular c's** the mucosal folds in the ruminant reticulum that form the cells of the honeycomb compartments of the walls.

**sacral c's** the median crest is the fused dorsal spines of the sacral vertebrae; the lateral sacral crest is the fused articular processes.

**sagittal c.** the ridge in the middle of the skull which extends forwards from the occipital protuberance; more pronounced in some species, breeds and individuals.

**trochanteric c.** a ridge which runs between the greater and lesser trochanters and forms the caudal wall of the trochanteric fossa.

**urethral c.** a longitudinal ridge in the roof of the pelvic urethra formed from two folds of urinary bladder mucosa which fuse after separate origins at the ureteric orifices.

**vestibular c.** divides the vestibule of the inner ear into the spherical and elliptical recesses.

**Crested canary** a breed developed from the Norwich canary, characterized by a narrow head and a very large crest.

**crested dog's tail** see *Cynosurus cristatus*.

**crestyl** tolyl.

**m-crestyl acetate** a topical antiseptic and antifungal agent effective against superficial yeast infections.

**cretylic acid** [kre-sil'ik] see **crezols**.

**cretin** [kre'tin] an animal exhibiting cretinism.

**cretinism** [kre'tin-iz-əm] arrested physical and mental development with dystrophy of bones and soft tissues, resulting in disproportionate dwarfism. Due to congenital or early-onset hypothyroidism. Seen in foals and possibly is an unrecognized cause of neonatal deaths in other species.

**cretinoid** [kre'tin-oid] resembling a cretin, or suggestive of cretinism.

**cretinous** [kre'tin-əs] affected with cretinism.

**Creutzfeldt-Jakob disease (CJD)** [kroits'felt yah'kōb] a rare, fatal spongiform encephalopathy of humans caused by a prion. The most common form is sporadic, occurring in older humans with no known risk factors, but a small percentage of cases are familial and a further small percentage are iatrogenic, acquired through exposure to infected nervous system tissue through medical procedures.

**variant C.-J. d. (vCJD)** a fatal spongiform encephalopathy of humans infected through consumption of cattle products contaminated with the agent of bovine spongiform encephalopathy (BSE). Because of the geographic distribution of BSE, vCJD has occurred predominantly in the UK and Europe. Despite extensive exposure to contaminated meat the size of the vCJD epidemic that has emerged since its initial detection is relatively low (approximately 225 worldwide). It has affected younger people than classic CJD and has a longer clinical course. there is evidence for genetic susceptibility.

**crevice** [krev'is] a fissure.

**gingival c.** the space between the cervical enamel of a tooth and the overlying unattached gingiva.

**crevicular fluid** [krə-vik'u-lər] produced by epithelium of the gingival sulcus, it contains immunoglobulins with antimicrobial properties.

**CRF** abbreviation for chronic renal failure.

**CRH** corticotropin releasing hormone.

**CRI** constant-rate infusion.

**cria** a nursing camelid of either sex; more informally, any young camelid. After weaning the cria is referred to as a **tui**.

**cria-ation** see **criation**

**criation** parturition in camelids. From the Spanish word, cria, meaning young alpaca or llama.

**crib** [krib] a rack or manger in a stable.

**c.-biting** a neurosis or acquired habit in stabled horses characterized by stereotypic behavior. The horse grasps a solid object with its incisor teeth, arches the neck, pulls upwards and backwards and swallows air. The consequences are eroded teeth, hypertrophy of the sternothyrohyoid muscle, occasionally gastric distention and severe weight loss. Called also wind-sucking, cribbing.

**c.-biting operation** a partial myectomy of the sternohyoideus muscle preventing ventral flexion of the head; a Forssell's procedure. An addition to this procedure involves a neurectomy of the spinal accessory nerve; a modified Forssell's procedure.

**cribber** a horse with the vice of **crib-biting**.

**cribbing** [krib'ing] see **crib-biting**.

**cribriform** [krib'ri-form] perforated like a sieve.

**c. plate** see **cribriform plate**.

**cricetine** members of the subfamily Cricetinae, the New World rats and mice. Includes the **hamster**.





**C-98:** Incisor teeth of a crib biting horse.

From Knottenbelt DC, Pascoe RR, *Diseases and Disorders of the Horse*, Saunders, 2003.

C

**Cricetus** [*kri-se'təs*] see **hamster**.

**cricket paralysis virus** member of the *Dicistroviridae* family of RNA viruses. A lethal infection in the house cricket (*Acheta domestica*) and a problem to commercial enterprises that raise these to sell for feeding to pet reptiles.

**cricoarytenoid** [*kri'ko-ahr'i-te'noid*] pertaining to the cricoid and arytenoid cartilages.

**c. muscle** see Table 12.1E.

**cricoesophageal** pertaining to the cricoid cartilage and the esophagus.

**cricoid** [*kri'koid*] ring-shaped.

**c. cartilage** a ringlike cartilage at the caudal part of the larynx.

**cricoidectomy** [*kri'koi-dek'tə-me*] excision of the cricoid cartilage.

**cricolaryngotomy** [*kri'ko-lar'ing-got'ə-me*] a surgical procedure for reconstruction of the larynx in subglottic stenosis.

**cricopharyngeal** [*kri'ko-fə-rin'je-əl*] pertaining to the cricoid cartilage and pharynx.

**c. dysphagia** see cricopharyngeal **achalasia**.

**c. myotomy** a surgical procedure for the treatment of cricopharyngeal achalasia; involves severance of the median raphe between cricopharyngeus muscles on the dorsal aspect of the larynx.

**cricopharyngeus muscle** [*kri'ko-far'in-je'əs*] see Table 12.1C.

**cricothyrotomy** incision through the cricoid and thyroid cartilages.

**cricothyroid** [*kri-ko-thi'roid*] pertaining to the cricoid and thyroid cartilages.

**c. ligament** attaches the cricoid to the thyroid cartilage.

**cricothyrotomy** [*kri'ko-thi-rot'ə-me*] incision through the skin and cricothyroid membrane to secure a patent airway for emergency relief of upper airway obstruction.

**cricotomy** [*kri-kot'ə-me*] incision of the cricoid cartilage of the larynx.

**cricotracheal membrane** [*kri'ko-tra'ke-əl*] the mucosal lining of the cricotracheal ligament.

**cricotracheotomy** [*kri'ko-tra'ke-ot'ə-me*] incision of the trachea through the cricoid cartilage.

**Crile hemostatic forceps** standard type of hemostats with box joint, ratchet catch, long blades with cross ridging on the blade face.

**Crimean-Congo hemorrhagic fever (CCHF)** a disease of humans in central Asia through to eastern Europe who are in contact with livestock. Maintained and transmitted in a vertical and horizontal transmission cycle involving a variety of wild and domestic vertebrate species, including livestock that act as amplification hosts, but without showing significant signs of illness. Virus can persist in ticks for their entire lifespan, and can also be transmitted vertically to the next generation. A disease notifiable to the OIE (see Table 20).

**crimidine** a rapidly acting convulsant, also an anticoagulant, used as a rodenticide in some countries. Not allowed in the United States. Attacks all species similarly except for poultry which simply become somnolent. Pyridoxine has been used as an antidote.

**crimp 1.** a regular wave formation of small dimensions, e.g., the crimp of wool fibers epitomized in the Merino breed and its derivatives. A desirable character in Huacaya alpaca fleece, but considered by some as a fault in the fleece of Suri alpacas. **2.** wave formation seen in histologic sections of tendinous tissue.

**c. marks** marks made by wrinkling the x-ray film while holding it between the fingers.

**crimped** said of grain that has been passed through corrugated rollers after previous exposure to moist heat so that the grain is fractured but there is a minimum of dust. Pasture species for hay, particularly alfalfa, may be crimped at the time of cutting to facilitate rapid drying.

**crinogenic** causing secretion in a gland.

**crinophagy** [*kri-nōf'ə-je*] a process in which excessive amounts of hormone are fused with lysozymes to degrade the hormone.

**Crinum** [*kri'nəm*] a genus of cultivated ornamental plants of the family Liliaceae (Amaryllidaceae), some of which are known to cause collapse and death in sheep and goats. Called also spider lily.

**Criollo** native Spanish-American light horse or riding pony. Includes a number of ethnic varieties, e.g., Argentine Criollo. Any color, 13.3 to 15 hands high. Originated from a mixture of Arab, Barb and Andalusian.

**cripples** see **osteomalacia**.

**crisis** [*kri'sis*] pl. *crises* [L.] **1.** the turning point of a disease for better or worse; especially a sudden change, usually for the better, in the course of an acute disease. **2.** a sudden paroxysmal intensification of signs in the course of a disease.

**addisonian c.** see **addisonian crisis**.

**adrenal c.** **addisonian crisis**.

**crispatine** an hepatotoxic pyrrolizidine alkaloid present in the plant *Crotalaria crispata*.

**CRISPR** Clustered Regularly Interspaced Short Palindromic Repeats, which consist of identical repeated DNA sequences (repeats), interspaced by highly variable sequences (spacers). Together with the CRISPR-associated (cas) genes, they form the CRISPR/Cas system responsible for defending prokaryotic cells against invaders. In molecular biology, the CRISPR/Cas9 system is being employed as a powerful tool for genome editing.

**crista** [*kris'tə*] see **crest** (1).

**c. ampullare** see ampullary **crest**.

**c. dividens** a prominence in the septum secundum which, in fetal circulation, directs blood from the posterior vena cava through the foramen ovale to the left atrium.

**cristobalite** [*kris-to'bə-lit*] the form of silicate which is found in the granulomatous lesions in silicate pneumoconiosis in horses.

**Crithidia** [*kri-thid'e-ə*] a genus in the family Trypanosomatidae (trypanosomes) found in arthropods and other invertebrates.

**C. luciliae** commercial preparations of this organism are used as substrate in assays for serum antibodies against native DNA.

**crithdial stage** [*kri-thid'e-əl*] see **epimastigote**.

**critical** [*krit'ī-kəl*] **1.** a point at which one property or state changes to another property or state. **2.** pertaining to a crisis in a disease.

**embryological c. period** the period during the life of the embryo, specific for each body system, during which organogenesis takes place.

**c. distance** see flight **distance**.

**c. point drying** a technique used in preparing tissues for electron microscopy; to eliminate distortion due to surface tension.

**c. temperature** the body temperature above which the animal is said to be febrile. See body **temperature**.

**critical care** [*krit'ī-kəl*] patient care pertaining to a crisis in a disease.

**c. c. medicine** intensive care for victims of trauma or disease.

**c. c. unit** a unit in a hospital in which intensive patient care staff and all services, including resuscitation and life support equipment, are available.

**critter** cowboy term for an animal; may refer to any animal once identified. Derived from an early American dialect pronunciation of creature.

**Crivellia** see *Przevalskiana*.

**crock** cull ewe; called also crone.

**crocodile** large aquatic reptile, member of the family Crocodylidae. Includes the Nile (*Crocodylus niloticus*), the Marsh or Muggie (*C. palustris*), the Estuarine or Saltwater (*C. porosus*), the freshwater crocodile (*C. johnsoni*), the American (*C. acutus*), New Guinea (*C. novaeguineae*), Cuban (*C. rhombifer*) and the West African or dwarf (*Osteolaemus tetraspis*) crocodile. Farmed commercially for leather and meat.

**crocodilia** reptile member of the order Crocodylia. Includes **alligator**, **caiman**, **crocodile** and **gavial** species.

**Crocodylia** see **crocodile**.

**Crofton weed** *Ageratina adenophora*.

**Crohn's disease** [*kron*] a regional, granulomatous enteritis of humans; equine granulomatous enteritis, histiocytic ulcerative colitis of Boxer dogs, **Johne's disease** of cattle, and regional or terminal ileitis of pigs are similar diseases and all have been proposed as possible animal models.

**cromoglycate** [*kro'mo-gli'kāt*] see **cromolyn**.

**cromolyn** [*kro'mə-lin*] a mast cell stabilizer which, if administered prior to exposure to allergens, prevents degranulation and release of histamine in a hypersensitivity reaction. Administered as an aerosol for prophylaxis of bronchial asthma and allergic rhinitis. Previously used in the treatment of equine asthma, for which it is largely ineffective. Called also cromoglycate.

**crone** see **crock**.

**crooked calf** a syndrome of arthrogryposis and/or cleft palate occurring in regions of western USA, Alaska and Canada. Arthrogryposis varies in severity from calves that are ambulatory and may achieve market status to

those that are severely deformed, requiring cesarian section or destruction. Cleft palate is usually fatal. In endemic areas, it has constant but low prevalence with higher incidence and severity periodically. See also lupine-induced **arthrogryposis**.

**crooked neck** a disease of turkeys thought to be due to airsacculitis caused by *Mycoplasma meleagridis*. A similar syndrome in Brown Leghorn chickens is due to an inherited defect.

**crooked tail syndrome** genetic defect in Belgium Blue cattle resulting from selection for muscle hypertrophy (double muscling) Besides prominent deviation of the tail, there is growth retardation manifesting at one month of age, abnormally shaped legs and skulls, and in some spastic paresis.

**crooked toe disease** a disease of young chickens and turkeys of unknown etiology. Only a few birds are affected. The phalanges are twisted so that the toes are bent laterally or medially and the birds have difficulty in walking. Must be differentiated from **curled toe paralysis**.

**Crookes' tube** the original x-ray tube; worked on the principle of ionization of gas within the tube.

**crop** [*krop*] **1.** a saccular diverticulum of the esophagus just anterior to the entrance to the thorax. Present in all domestic birds. Called also *ingluvies*, *craw*. **2.** domesticated plants sown and harvested for use by humans. **3.** a cosmetic surgical procedure carried out on the ears of dogs of certain breeds. See **ear cropping**.

**c.-bound** impaction of the crop in a bird.

**c.-eared** small eared.

**c. flush** treatment of a sick bird by a flushing out, with normal saline via an esophageal tube, of food and debris from the crop. See also *crop wash* (below).

**impacted c.** distention of the crop with undigested food.

**c. milk** crumbly material, composed of lipid-laden, desquamated epithelial cells mixed with food, elaborated by both male and female pigeons in the crop and regurgitated to feed the nestlings.

**pendulous c.** a condition of domesticated birds in which the crop becomes very distended and full of feed. Sporadic cases only, but there is an inherited predisposition to gross distention in turkeys. Called also *impacted crop* or *crop bound*.

**c. residues** the remains of a crop after the commercially sought part of it has been harvested, e.g., wheat stubble, pea haulms, oat straw.

**sour c.** crop stasis in young birds with bacterial or yeast overgrowth.

**c. stasis** food distends the crop, which may fail to empty or do so only slowly. Weight loss, vomiting or regurgitation, and weakness may occur. There may be discoloration or necrosis of skin over the crop.

**c. wash** used in the differential diagnosis of trichomoniasis and candidiasis and to assess crop flora in birds with regurgitation and other signs referable to upper alimentary tract disease.

**cropout** a horse with body spots; see *cropout Quarter horse*.

**cropworms** see *Capillaria*, *Gongylonema*.

**cross** [*kros*] **1.** a cross-shaped figure or structure. **2.** any organism produced by mating genetically distinct individuals. See also **crossbreeding**, **cruciate**.

**c.-cut grid** see *cross-hatch grid*.

**c. pregnancy** the fetus is in the horn on the side opposite to the corpus luteum.

**c. table** see *horizontal beam*.

**test c.** breeding to an individual that is phenotypically recessive for the trait of interest, in order to determine the status (heterozygous or homozygous) of the other individual by analyzing proportions of phenotypes in the offspring.

**c. tie** a common method of restraining a horse for simple procedures such as grooming. The horse is tied to a pillar on either side, the shorter and tighter the better and preferably from the cheek dees of a hackamore. The head should be kept high to avoid the horse lashing out with both feet at once.

**cross country races** races which feature jumps, water hazards and which test the horses' speed and stamina.

**cross-eyed strabismus** in which there is manifest deviation of the visual axis of one eye toward that of the other eye, resulting in diplopia. Called also *esotropia* or *convergent strabismus*.

**cross-firing** see **forging**.

**cross-fostering** the transfer of young from one dam to another, usually to equalize numbers in litters of approximately the same age. Commonly practiced in rearing piglets.

**cross-immunity** [*kros-i-mu'ni-te*] a form of immunity in which immunity to one bacterium or virus is effective in protecting the animal against an antigenically similar but different organism, e.g., protection of cattle against bacillary hemoglobinuria (*Clostridium haemolyticum*) by

vaccination against black disease (*C. novyi*) and measles virus vaccine used to immunize dogs against canine distemper. See also *heterotypic vaccine*.

**cross-over groups** [*kros'o-var*] groups of animals which are being compared with respect to certain variables and in which the difference in variables can be transposed from one group to the other so that a cross-over experiment is conducted.

**cross ratio** see **odds ratio**. Called also approximate relative risk.

**cross-reaction** see **cross reaction**.

**cross-reactivity** [*kros're-ak-tiv'i-te*] the degree to which an antibody participates in cross-reactions.

**cross-regulation** in the regulation of enzyme activity, the product of one pathway serves as an inhibitor or activator of an enzyme in another pathway.

**cross-sectional study** a study in which a statistically significant sample of a population is used to estimate the relationship between an outcome of interest and population variables as they exist at one particular time. Since both the outcome and the variables are measured at the one time these studies are not strong at showing cause-effect relationships.

**crossbite** [*kros'bit*] a malocclusion in which one or more mandibular teeth have a more buccal or labial position than the antagonist maxillary teeth.

**caudal c.** one or more of the mandibular cheek teeth are buccal to the opposing maxillary cheek teeth when the mouth is closed. Called also *posterior crossbite*.

**rostral c.** one or more of the mandibular incisor teeth are labial to the opposing maxillary incisor teeth when the mouth is closed. Called also *anterior crossbite*.

**crossbow** a weapon used to fire darts filled with immobilizing agent at otherwise uncontrollable animals. Less dangerous than cordite guns and does not scare other animals because there is no noise.

**crossbred** progeny of a mating between two animals which are purebreds of different breeds.

**crossbreeding** [*kros'bred-ing*] hybridization; the mating of organisms of different strains or species, e.g., when animals of different breeds are mated. Practiced extensively in farm animals to capitalize on advantages conferred by **hybrid vigor**.

**rotational c. system** a program in which the sire for the terminal cross of lamb or calf is changed each year so that the state of heterosis is maintained at a high level.

**crossed extensor reflex** a reflex movement which occurs in response to a withdrawal reflex testing, in which extension is occurs concurrently in the limb opposite that being tested. Seen in upper motor neuron disease due to loss of inhibition of inhibitory neurons in the spinal cord.

**crossed legs** while standing or walking is a sign of ataxia.

**Crossiella equi** a gram-positive, branching micro-organism associated with placentitis and abortion in mares in Kentucky. See also *nocardioform placentitis*.

**crossing** [*kros'ing*] see **crossbreeding**.

**crossing over** [*kros'ing o'var*] the exchanging of genetic material between homologous chromosomes, during the first meiotic division, resulting in new combinations of genes.

**crossmatch** [*kros'mach*] a procedure that tests compatibility between the donor and recipient of a blood transfusion by detecting the presence of antibodies in plasma in the recipient (major crossmatch) or donor (minor crossmatch). The recipient's erythrocytes or leukocytes are mixed with the donor's serum and vice versa. Absence of agglutination, hemolysis and cytotoxicity indicates that the donor and recipient are compatible.

**Crossoptilon auritum** blue-eared **pheasant**.

**crossover** [*kros'o-var*] an exchange of material between two homologous chromosomes.

**Crotalaria** [*kro'ta-lar'e-a*] a plant genus of the legume family Fabaceae. There are many species and many are poisonous. Many contain pyrrolizidine alkaloids which cause damage in liver, lungs and in pigs in the kidney. Called also *rattlepods*. The diseases caused have many names including **walkabout**, Kimberley horse disease, *stywesiekte* and *jaagsiekte*. Includes as causes of liver damage and dummy syndrome in horses and cattle: *C. anagyroides*, *C. barkae* (*C. geminiflora*), *C. burkeana*, *C. crispata*, *C. dissitiflora* (gray rattlepod), *C. lachnocarpoides*, *C. mauensis*, *C. mesopontica*, *C. mitchellii*, *C. mucronata*, *C. novae-hollandiae*, *C. pallida* (*C. mucronata*), *C. polysperma* (*C. saltiana*, *C. striata*), *C. ramossissima*, *C. retusa* (wedge-leafed rattlepod), *C. rhodesiae*, *C. rotundifolia*, *C. sagittalis*, *C. spectabilis* (*C. retzii*, *C. sericea*), *C. steudneri* (*C. hispida*), *C. zimmermannii*. Includes as causes of esophageal ulceration in horses: *C. aridicola* (Chillagoe horse poison), *C. medicaginea* (*C. trifolium*). Includes as a cause of pulmonary edema: *C. eremaea*, *C. spartioides*, *C. pallida*. Includes as a cause of lung



damage in horses (crotalariosis equorum): *C. dura* (wild lucerne), *C. globifera* (wild lucerne), *C. juncea* (sunn hemp), *C. mitchellii*, *C. spartioides* (dune bush).

**Crotalinae** [*kro-tal'i-de*] a subfamily of snakes from the family Viperidae, with movable fangs (Solenoglypha). Includes pit vipers (*Bothrops* spp.) and rattlesnakes (*Crotalus* spp.).

**Crotalus** [*kro'tə-ləs*] see **rattlesnake**.

**crotamiton** [*kro'tə-mi'ton*] an acaricide used in the topical treatment of scabies. Less effective than other acaricides such as ivermectin, and rarely used

**crotching** see **crutching**

**Croton** [*kro'tən*] a genus of the plant family Euphorbiaceae. Contains croton oil, a violent and lethal purgative. Cake made from the seeds after extraction of the oil may also cause severe gastroenteritis. Includes *C. capitatus*, *C. texensis*, *C. tiglium*.

**croton oil** [*kro'tən*] extracted from the plant *Croton* spp; no longer used as an emetic and cathartic agent because of its toxicity.

**Croton setigerus** North American plant in the family Euphorbiaceae; contains large proportion of indigestible roughage which causes abomasal impaction, regurgitation, vomiting. Called also *Eremocarpus setigerus*, turkey mullein, dove weed.

**crotonyl isothiocyanate** a highly poisonous substance found in the seeds of swedes and turnips. Causes severe gastroenteritis.

**crotoxyplos** an insecticide used for fly control and externally on livestock; a cholinesterase inhibitor. See **organophosphorus compound**.

**croup 1.** the muscular area around and above the base of the tail in the horse. **2.** acute obstruction of the larynx caused usually by allergy or respiratory infection. Used with reference to children and chickens.

**point of c.** highest point of the croup, corresponding to the sacral tuberosity.

**crow** a bird in the genus *Corvus*.

**c. pick** predatory gouging of eyes and other soft tissues from sick or weak lambs by crows. Wounds often infected with gas gangrene organisms.

**crow poison** see *Amianthium muscitoxicum*.

**crowding** [*kroud'ing*] panic state developed by chickens, adult birds, sheep in response to perceived attack or noxious stimulus; group piles up in a corner and many die of suffocation; in horses takes the form of squeezing an attendant against another horse or a stable wall, a common vice in horses which are permanently stabled.

**c. stress** constant low level stress due to insufficient accommodation space per animal.

**crowfoot** common name for plants in several genera, particularly *Ranunculus*, which include *R. sceleratus* (celery leaved, cursed), *R. acris* (meadow).

**c. grass** *Eleusine indica*.

**crowns** [*kroun*] **1.** the topmost part of an organ or structure, e.g., a tooth or the top of the head. **2.** artificial crown on a tooth.

**c. amputation** total removal of clinical crown substance.

**anatomical c.** that part of a tooth that is coronal to the cemento-enamel junction or anatomical root.

**clinical c.** that part of a tooth that is coronal to the gingival margin; also called erupted crown in equines.

**c. preparation** removal of enamel or enamel and dentin to establish on a tooth the biomechanically acceptable form necessary to receive and retain a prosthodontic crown.

**c. reduction** partial removal of tooth substance to reduce the height or an abnormal extension of the clinical crown.

**reserve c.** that part of the crown of a hypsodont tooth that is apical to the gingival margin.

**crown beard** [*kroun*] see *Verbesina encelioides*.

**crown-of-thorns** see *Euphorbia*.

**crozier, crosier** unfolding (uncurling) new leaf on bracken and most ferns; inspiration for the tip of ecclesiastical staffs.

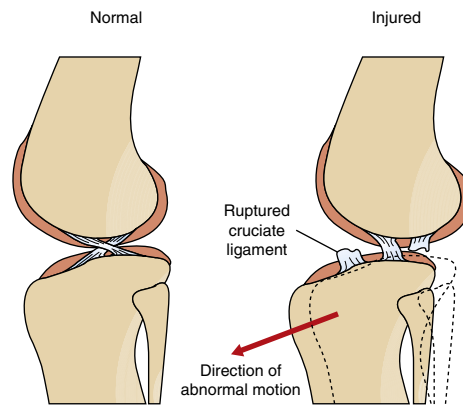
**CRP** C-reactive protein; cyclic AMP-receptor protein.

**CRT** capillary refill time.

**CRTZ** chemoreceptor trigger zone.

**cruciate** [*kroo'she-āt*] shaped like a cross.

**caudal (posterior) c. ligament** complements the cranial cruciate ligament in providing a major part of the stability of the stifle joint. It originates from the lateral aspect of the medial femoral condyle in the depths of the intercondylar fossa, passes caudally and distally to insert on the medial side of the popliteal notch (tibia). Rupture is rare, except in association with cranial cruciate rupture, and results from severe injuries to the joint.



**C-99:** Cranial cruciate ligament rupture.

From Fossum TW, Small Animal Surgery, 5th ed, Elsevier, 2019.

**cranial (anterior) c. ligament (CCL)** part of the stifle joint, originates from the intercondylar fossa on the caudal aspect of the medial side of the lateral femoral condyle. It runs cranially, medially and distally between the condyles of the femur to insert on the cranial intercondyloid area of the tibia. The ligament acts to limit cranial movement of the tibia relative to the femur, and when the joint is flexed to limit internal axial movement. Rupture of this ligament is common in dogs, causing lameness, often with joint effusion, and chronic arthritis. Surgical reconstruction or stabilization of the joint is recommended.

**c. suture pattern** an interrupted cross mattress suture to close wounds that are under a lot of tension. The needle is inserted through the tissue, across the wound, then back through the tissue on the other side, across the wound on the outside and advancing the needle to the next suture site where a second stitch is made in the same manner as the first. The two ends are then tied across the wound so as to create the cross shape.

**crucible** [*kroo'si-bəl*] a vessel for melting refractory substances.

**cruciform** [*kroo'si-form*] cross-shaped.

**crude fat** [*krood*] see **crude fat**.

**crude fiber** [*krood*] see **fiber<sup>2</sup>**.

**crude oil** [*krood*] fossil oil as it is retrieved from its natural location.

**c. o. poisoning** crude oil is usually too unpalatable for livestock but cattle will drink it if they are salt hungry. The effects of ingesting large amounts are severe depression, incoordination and vomiting, leading to development of aspiration pneumonia and death.

**crude protein** [*krood*] see **crude protein**.

**crude rate** [*krood*] a measure of overall frequency which has not been adjusted for significant factors which might have influenced the rate.

**cruel vine** see *Araujia sericifera*.

**cruelty** the infliction of pain or distress unnecessarily.

**c. to animals** an offence under the Protection of Animals Act or similar legislation. The definition of *unnecessary* varies between countries and from time to time in the one country. Under the impetus of a great body of community compassion the threshold has been greatly lowered in recent times. Determination of the prevailing standard of cruelty can only be decided by the courts. It is now taken to include, besides physical assault and surgery without anesthesia, deprivation of food, water and shelter, and failure to seek veterinary care when an animal needs medical attention. The worst kinds of cruelty are susceptible to the heaviest penalty, under the classification of aggravated cruelty.

**crufomate** [*kroo'fo-māt*] an organophosphorus compound used as an anthelmintic and in the control of warble fly in cattle. Called also Montrel, Ruelene.

**crumbs** small particle feed especially formulated for very young poultry and piglets. Produced by a roller mill called a crumbler with rolls specially designed for breaking up pellets into smaller particles.

**crumbweed** common name used for plants in the genus *Chenopodium* and the related *Dysphania*. Includes black crumbweed (*Chenopodium melanocarpum*), green crumbweed (*C. carinatum*), red crumbweed (*Dysphania rhadinostachya*).

**cruor** [*kroo'or*] clotted portion of coagulated blood.

**crupper** the part of the harness of a horse which encircles the tail and prevents the harness from slipping forward.

**crural** [*krood'al*] pertaining to or emanating from a leg or crus.

**c. hernia** see **femoral hernia**.

**crus** [*kru:s*] pl. *crura* [L.] **1.** shaped like the human leg. **2.** a leglike part. Called also branch, e.g., the branches or crura of the atrioventricular bundle.

**c. cerebri** the ventral part of the cerebral peduncles comprising fiber tracts descending from the cerebral cortex to form the longitudinal fascicles of the pons.

**clitoridal c.** the continuation of the corpora cavernosa of the clitoris, diverging posteriorly to be attached to the sciatic arch.

**diaphragmatic c.** two fibromuscular bands that arise from the lumbar vertebrae and insert into the central tendon of the diaphragm.

**fornical c.** two flattened bands of white matter that unite to form the body of the fornix of the cerebrum.

**penile c.** the continuation of each corpus cavernosum of the penis, diverging caudally to be attached to the sciatic arch.

**crush 1.** a restraining device for large animals. See also **chute**. **2.** application of pressure so as to destroy the natural condition, shape or integrity of the parts. **3.** see **crushing**.

**multiple-c.** surgical instruments, e.g., heavy duty emasculators, in which each jaw has more than one crushing surface, mounted one behind the other, each successive surface coming into contact with its counterpart as increasing pressure is applied to the handles of the instrument.

**crush syndrome** renal failure with edema, oliguria and other clinical signs occurring after crushing of a large body part, especially a large muscle mass, causing the release of myoglobin and other nephrotoxic compounds. See also lower nephron **nephrosis**.

**crushing** deaths of newborn animals, especially those in litters, caused by the mother lying on them accidentally. Contributed to by weakness of the neonate or inappropriate accommodation. A problem in piglets and puppies. Called also overlying.

**crust** [*krust*] a formed outer layer, especially an outer layer of solid matter formed by drying of a bodily exudate or secretion. It may be serocellular or hemorrhagic.

**palisading c.** there are alternating layers of cellular debris and exudate; typical of fungal infections of the skin and dermatophilosis.

**crusta** [*krus'tah*] pl. *crustae* [L.] a crust.

**Crustacea** [*krəs-tə'she-ə*] a class of arthropods including the lobsters, crabs, shrimps, wood lice, water fleas and barnacles.

**crotalus** [*kro'tə-ləs*] a fibrinogen-clotting enzyme found in the venom of *Crotalus adamanteus* (rattlesnake).

**crustaceans** members of the class **Crustacea**. Includes amongst the aquatic crustaceans, shrimp, prawn, yabby, crab, lobster. Many of them are now farmed commercially in enclosed waters.

**parasitic c.** small crustaceans or copepods are common parasites on the gills and skin of aquarium, marine net pen fish, and freshwater pond fish. They are usually grossly visible and when present in high numbers they can cause severe morbidity and mortality.

**crutch** [*kruch*] **1.** the area of the skin from the anus ventrally to the scrotum in the male and to a comparable position in the female. **2.** an instrument consisting of a long handle with a U shape at one end.

**Kühn's c.** see **Kühn's crutch**.

**repulsion c.** used in obstetrics to repel a calf or foal fetus to enable malpositioned limbs to be repositioned.

**Williams c.** a repulsion crutch in which the U-shaped end has a screw-in sharp spike at the bottom of the U to prevent the crutch slipping off the calf while repelling it.

**crutching** shearing of the wool from the perineal region of the sheep as a protection against blowfly strike. Wool contaminated by dags of manure and by urine is a major attractant for blowflies. See also **dagging**.

**crutchings** the wool obtained by crutching.

**cryalgnesia** [*kri'al-je'ze-ə*] pain on application of cold.

**cry(o)-** word element. [Gr.] relationship to cold.

**cryoadhesion** in contact freezing, the bond between a cryoprobe and the tissue being treated; facilitated by moisture on the tissue.

**cryoanalgesia** [*kri'o-an'al-je'ze-ə*] the relief of pain by the application of cold to peripheral nerves.

**cryobank** [*kri'o-bank'*] a facility for freezing and preserving semen, embryos and other cells at low temperatures (usually  $-196.5^{\circ}\text{C}$ ) for future use.

**cryobiology** [*kri'o-bi-ol'ə-je*] the science dealing with the effect of low temperatures on biological systems.

**cryocautery** [*kri'o-kaw'tər-e*] see cold **cautery**.

**cryoepilation** [*kri'o-ep'i-lə'shən*] use of cryotherapy to facilitate epilation and destroy hair follicles thus reducing the chance of regrowth; used in the treatment of distichiasis, ectopic cilia and trichiasis.

**cryoextraction** [*kri'o-ek-strak'shən*] use of a cryoprobe to form an attachment to the lens capsule and facilitate intracapsular lens removal.

**cryoextractor** [*kri'o-ek-strak'tər*] a cryoprobe used in **cryoextraction**.

**cryofibrinogen** [*kri'o-fi-brin'o-jən*] an abnormal fibrinogen that precipitates at low temperatures and redissolves at  $98.6^{\circ}\text{F}$  ( $37^{\circ}\text{C}$ ).

**cryofibrinogenemia** [*kri'o-fi-brin'o-jə-ne'me-ə*] the presence of cryofibrinogen in the blood.

**cryogen** [*kri'o-jən*] substance used to lower temperature in tissue to be frozen, e.g., liquid nitrogen, Freon, carbon dioxide and nitrous oxide.

**cryogenic** [*kri'o-jen'ik*] producing low temperatures.

**cryoglobulin** [*kri'o-glob'u-lin*] an abnormal globulin that precipitates at low temperatures and redissolves at  $98.6^{\circ}\text{F}$  ( $37^{\circ}\text{C}$ ).

**cryoglobulinemia** [*kri'o-glob'u-li-ne'me-ə*] the presence of cryoglobulin in the blood, which is precipitated in the microvasculature upon exposure to cold.

**cryohypophysectomy** [*kri'o-hi'po-fiz-ek'tə-me*] destruction of the pituitary gland by the application of cold.

**cryolite** a naturally occurring mineral, sodium aluminum fluoride, May be a source of fluorine poisoning if the mineral is used industrially.

**cryometer** [*kri-om'ə-tər*] a thermometer for measuring very low temperature.

**cryopexy** [*kri'o-pek'se*] use of a cryoprobe to cause controlled focal chorioretinitis that ultimately scars and fuses retina to underlying choroid. Used to prevent or limit retinal detachment.

**cryophilic** [*kri'o-fil'ik*] preferring or growing well at low temperatures.

**cryophylactic** [*kri'o-fə-lak'tik*] resistant to very low temperatures; said of bacteria.

**cryoprecipitate** [*kri'o-pre-sip'i-tāt*] any precipitate that results from cooling.

**cryopreservation** [*kri'o-prez'ər-va'shən*] maintenance of the viability of excised tissue or organs by storing at very low temperatures.

**cryoprobe** [*kri'o-prōb*] an instrument for applying extreme cold to tissue.

**cryoprotectant** [*kri'o-pro-tek'tənt*] substance added to living biological material, e.g., embryo, ova, spermatozoa, that is to be preserved in a viable state by freezing. The common substances are ethylene glycol, DMSO and glycerol.

**cryoprotective** [*kri'o-pro-tek'tiv*] capable of protecting against injury due to freezing, as glycerol protects frozen red blood cells or sperm cells.

**cryoprotein** [*kri'o-pro'tēn*] a blood protein that precipitates on cooling.

**cryoreduction** [*kri'o-re-duk'shən*] use of cryosurgery to reduce the bulk of an otherwise inoperable tumor. Usually used in association with radiation therapy, but may be palliative.

**cryoscopy** [*kri-os'kə-pe*] examination of fluids based on the principle that the freezing point of a solution varies according to the amount and nature of the solute.

**cryospray** [*kri'o-spra*] the use of a liquid nitrogen spray in **cryosurgery**.

**cryostat** [*kri'o-stat*] **1.** a device by which temperature can be maintained at a very low level. **2.** in pathology and histology, a chamber containing a microtome for sectioning frozen tissue.

**cryosurgery** [*kri'o-sur'jər-e*] the destruction of tissue by application of extreme cold. Used in the treatment of certain malignant lesions of the skin and mucous membranes, anorectal lesions and in the removal of cataracts.

**cryothalamectomy** [*kri'o-thal'ə-mek'tə-me*] destruction of a portion of the thalamus by application of extreme cold.

**cryotherapy** [*kri'o-ther'ə-pe*] the therapeutic use of cold. See also **cryosurgery**, **hypothermia**.

**cryotolerant** [*kri'o-tol'ər-ənt*] able to withstand very low temperatures.

**cryotome** [*kri'o-tōm'*] microtome used in a **cryostat**.

**cryotonsillectomy** [*kri'o-ton'si-lek'tə-me*] the use of **cryosurgery** to excise the tonsils.

**crypt** [*kript*] a blind pit or tube on a free surface.

**anal c's** furrows, with pouchlike recesses at the caudal end, separating the rectal columns; called also anal sinuses.

**colonic c.** straight tubular glands in the colonic mucosa.

**c's of Lieberkühn** the lumen of intestinal glands on the surface of the intestinal mucous membrane.

**tongue c.** deep, irregular invaginations from the surface of the lingual tonsil.

**tonsillar c's** epithelium-lined clefts in the palatine tonsils.

**cryptectomy** [*krip-tek'tə-me*] excision or obliteration of a crypt.

**cryptitis** [*krip-ti'tis*] inflammation of the mucous membrane of the anal crypts.

**crypt(o)-** word element. [Gr.] concealed, hidden, obscure; a recess or pit [anat.]

**Cryptobia** a genus of biflagellate protozoa that parasitize fish, amphibians and other aquatic creatures.

**C. borreli**, **C. brachialis**, **C. cyprini** parasitic hemoflagellates of fish, transmitted by leeches.

**Cryptocarya pleurosperma** Australian tree in the family Lauraceae; the bark contains a very irritating alkaloid, cryptopleurine, and the leaves



contain pleuropermine which is also vesicant and irritant. Called also poison walnut.

**Cryptocaryon** a ciliate protozoan.

**C. irritans** cause of 'white spot' skin and gill disease in saltwater fish.

**cryptocephalus** [krip"to-sef'ə-ləs] microcephalus.

**cryptococcosis** [krip"to-kō-kō'sis] infection by *Cryptococcus neoformans* or *Cryptococcus gattii*, having a predilection for the brain and meninges but also invading the skin, nasal cavity, lungs, eyes and rarely other organs such as the udder. In animals it occurs most often in cats, but is recorded in most other species. Granulomas in the upper respiratory tract and meningoencephalitis are the clinical features. Called also European blastomycosis, torulosis.

**Cryptococcus** [krip"to-kō-kō'əs] a genus of yeast-like fungi.

**C. farciminosum** see **Histoplasma capsulatum** var. *farciminosum*.

**C. gattii** a species of limited distribution. Associated with trees of the genus *Eucalyptus* in some environments, but not in western North America. A cause of **cryptococcosis** in mammals and birds.

**C. neoformans** a species of worldwide distribution, causing **cryptococcosis** in mammals and birds. Previously called *Torula histolytica*, *Torulopsis neoformans*.

**Cryptocotyle** a genus of flukes (digenetic trematodes) in the family Heterophyidae.

**C. concavium**, **C. jejuna**, **C. lingua** intestinal flukes that can cause enteritis in fish-eating birds, dogs and other mammals. Fish are the intermediate hosts.

**cryptodeterminant** [krip"to-de-tur'mi-nənt] hidden determinant.

**cryptodidymus** [krip"to-did'ə-məs] endadelphos.

**cryptogenic** [krip"to-jen'ik] idiopathic.

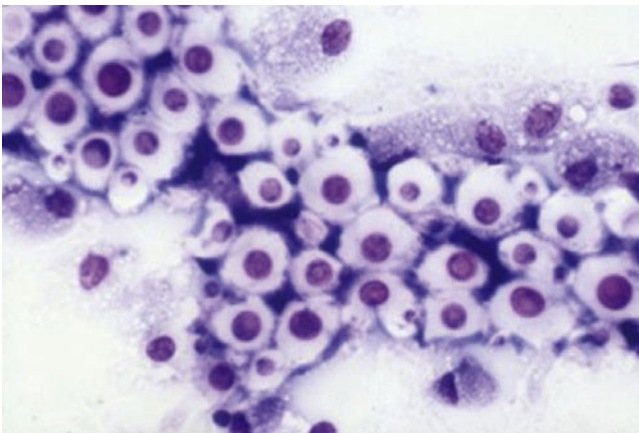
**cryptolith** [krip"to-lith] a concretion in a crypt.

**cryptomerorachischisis** [krip"to-me"ro-rə-kis'ki-sis] see **spina bifida** occulta.

**cryptophthalmia**, **cryptophthalmus** [krip"tof-thal'me-ə, krip"tof-thal'məs] congenital absence of the palpebral fissure, the skin extending from the forehead to the cheek, and the eye malformed or rudimentary.



**C-100:** Cryptococcal granuloma.



**C-101:** A fine needle aspirate showing a cluster of cryptococcal organisms with large capsules and minimal inflammatory response.

Ettinger SJ, Feldman EC, Cote E, (Cardi. Textbook of Veterinary Internal Medicine Expert Consult, 8th Edition. Elsevier (HS-US), 2016.

**cryptopodia** [krip"to-po'de-ə] swelling of the lower leg and foot, covering all but the sole of the foot.

**cryptorchid** [krip-tor'kid] an animal with undescended testes. Called also rig, ridgling, high flanker. See **cryptorchidism**.

**cryptorchidectomy** [krip"tor-kī-dek'tə-mē] excision of an undescended testis. See also **orchectomy**.

**cryptorchidism** [krip-tor'kī-diz'əm] the state of being a cryptorchid. An improperly developed testis may never leave the abdomen (abdominal cryptorchidism) or is lodged in the inguinal canal (inguinal cryptorchid). Retained testes (abdominal and inguinal) both produce male hormones and secondary sex characters and behavior. This is the basis for hormonal diagnosis of cryptorchidism. They also have a higher risk of developing tumors in the retained testicle. Failure of both testicles to descend is uncommon. Usually only one testis is involved and the other produces sufficient spermatozoa to render the animal fertile. Called also rig.

**inherited c.** there is some evidence that cryptorchidism can be inherited in most species.

**cryptorchism** [krip-tor'kiz-əm] see **cryptorchidism**.

**cryptosporidiosis** [krip"to-spo-rid'e-o'sis] infection with *Cryptosporidium*. Clinical signs usually include diarrhea, vomiting (in carnivores), dehydration, malabsorption, steatorrhea, weight loss and/or wasting. Cryptosporidiosis in humans is mainly caused by *C. hominis* or *C. parvum*. *C. canis*, *C. felis* or *C. meleagridis* have been recorded. Human cryptosporidiosis is proposed to be transmitted anthroponotically (human-to-human) for *C. hominis* and *C. parvum*, or zoonotically (animal-to-human) for *C. parvum*. The transmission of *C. canis* and *C. meleagridis* to humans is not well characterized. Transmission is seen in so called "petting farms" where children are close to animals, swimming pools (resistant to chlorination) and where surface water is used for drinking water. In many cases, cryptosporidiosis resolves as immunity develops to eliminate or suppress the infection, although chronic infections can develop in high-risk host groups, particularly neonates and immuno-compromised or -suppressed patients which, due in part to the limited availability of highly effective chemotherapeutic treatment, can result in death. Asymptomatic infections occur and represent a significant risk to susceptible host animals.

**Cryptosporidium** [krip"to-spo-rid'e-əm] a genus of parasitic protists (family Eimeriidae) that predominantly infect the alimentary tract of most vertebrate groups (including mammals, reptiles and birds), usually causing enteritis or gastritis and rarely cholangitis or pancreatitis. Infections can be associated with respiratory disease in birds. Currently 30 species of *Cryptosporidium* are considered valid. Species include *C. bayleyi* and *C. meleagridis* in birds, *C. serpentis* in reptiles, *C. crotalis* in reptiles, *C. nasorum* in fishes, *C. canis* in dogs, and *C. felis* in cats, *C. bovis* and *C. fayeri* in cattle, *C. agni* in sheep and *C. suis* and *C. scrofarum* in pigs. *C. parvum* can infect different species, including cattle, small ruminants and humans. *C. hominis* infects humans and has been found very rarely in other hosts. *C. hominis*, *C. parvum* and *C. viatorum* cause disease in humans. Other species of *Cryptosporidium* (including *C. canis* and *C. meleagridis*) can infect immunocompromised, immunodeficient or immunosuppressed humans. *C. andersoni* (*C. muris*) infects cattle. See also **cryptosporidiosis**.

**Cryptostegia grandiflora** plant of the family Asclepiadaceae, originally from Madagascar; contains cardiac glycosides; causes sudden death after exercise in cattle and horses. Called also rubber vine.

**Cryptostemma calendula** see **Arctotheca calendula**.

**cryptotoxic** [krip'to-tok'sik] a substance with toxic properties which are only exhibited in particular circumstances.

**crystal** [kris'təl] a naturally produced angular solid of definite form.

**c.-induced arthritis** see **gout**, **pseudogout**.

**piezoelectric c.** the source of sound waves in **ultrasonography**.

**radiographic c's** crystals on radiographs caused by faulty use of fixative, commonly excess acidity or insufficient washing of the film.

**synovial c.** see **gout**, **pseudogout**.

**tissue c.** recognizable crystals in tissues occur in **ethylene glycol** poisoning, crystal-associated **cholangiohepatopathy**, zinc and **oxalate** poisoning.

**urine c's** see **crystalluria**.

**c. violet** a brilliant organic deep purple dye that stains cells; used in the Gram stain to differentiate gram-positive and gram-negative bacteria.

**c. violet vaccine** an obsolete hog cholera (classical swine fever) vaccine.

**crystallin** [kris-tal'in] a protein comprising the lens of the eye.

**crystalline** [kris'tə-lēn] 1. resembling a crystal in nature or clearness. 2. pertaining to crystals.

**c. lens** the transparent organ behind the pupil of the eye. See also **lens**.



**C-102:** Crystalluria: calcium phosphate crystals in urine sediment.

From Raskin RE, Meyer D, Atlas of Canine and Feline Cytology, Saunders, 2001.

**crystallography** [*kris"təl-og'rə-fē*] the science dealing with the study of crystals.

**x-ray c.** the determination of the three-dimensional structure of molecules by means of diffraction patterns produced by x-rays.

**crystalloid** [*kris"tə-loid*] **1.** resembling a crystal. **2.** a noncolloid substance. Crystalloids form true solutions and therefore are capable of passing through a semipermeable membrane, as in **dialysis**. The physical opposite of a crystalloid is a **colloid** (3), which does not dissolve and does not form true solutions.

**c. particle** a matrix particle in a single membrane contained in a peroxisome, when viewed through an electron microscope. Called also nucleoid.

**c. solution** contains electrolytes and nonelectrolytes which, when given intravenously, will diffuse into all body fluid compartments. Examples are normal saline, Ringer's solution and 5% dextrose in water.

**crystalluria** [*kris"təl-u're-ə*] the excretion of crystals resulting from precipitation of salts in the urine, formation of which is determined by the concentration of salts and pH of the urine. See also **struvite**, **feline lower urinary tract disease**.

**Cs** chemical symbol, *cesium*.

**CSA** canine secretory alloantigen.

**csA** cyclosporin A.

**CSF** cerebrospinal fluid.

**CSF-1** colony-stimulating factor 1. Also called monocyte-macrophage colony-stimulating factor.

**CSFs** colony-stimulating factors.

**CSK** see chronic superficial **keratitis**.

**CSM** cerebrospinal meningitis.

**C<sub>T</sub>** thoracic compliance.

**CT NEW UNIQUE TERM** computed tomography.

**CTA medium** a semisolid medium with cystine and trypticase. Used together with carbohydrate disks to demonstrate acid production in the identification of fastidious bacteria.

**CTAT** computerized transaxial tomography. Replaced as a term by **computed tomography**.

**ctenidium** a series of spines which occur in rows on the heads or the first thoracic segment of fleas; called also combs; useful for morphological identification.

**Ctenizidae** a family of venomous spiders, include the trapdoor spider.

**Ctenocephalides** [*te"no-sə-fal'i-dēz*] a genus of fleas of the order Siphonaptera. Includes *C. canis* (dogs and related species), *C. felis*, *C. f. felis*, *C. f. strongylus*, *C. f. damarensis* and *C. f. orientalis*; infest cats, dogs and related small animals.

**Ctenopharyngodon idella** farmed finfish in the family Cyprinidae. Called also grass carp.

**CTL** cytotoxic T lymphocyte.

**cTLI** canine trypsin-like immunoreactivity.

**cTnl** cardiac troponin I protein

**CTP** cytosine triphosphate.

**CTP synthetase** see **cytidine 5'-triphosphate**.

**CTSH** canine thyroid stimulating hormone; see **thyrotropin**.

**Cu** chemical symbol, *copper* (*L. cuprum*).

**cu.** cubic.

**cu.cm** cubic centimeter; cc; cm<sup>3</sup>

**cu.mm** cubic millimeter; mm<sup>3</sup>

**cu**b**** the newborn of a number of animal species, typically large predatory animals such as lions, wolves and bears.

**Cuban molasses-urea-bagasse** a feedlot cattle feeding system based on using excess sugar cane residues. Bagasse is the fibrous residue of sugar cane after the sugar juice is expressed.

**cubes** feed for animals compressed into cubes. May be entirely concentrate, or roughage such as alfalfa, but many nowadays are a complete ration including hammer-milled fiber. Are more expensive but reduce wastage and can be eaten more quickly than a milled grain mixture. See also **pellet feeding**.

**cubicles** [*ku'bi-kəlz*] individual cow bed spaces separated by half height and half length partitions. Usually located in loose housing cow accommodation in which the cow is free to wander at will.

**cubitus** [*ku'bi-təs*] the forelimb distal to the humerus; includes the elbow, forearm, paw.

**c. valgus** a deformity of the elbow in which it deviates away from the midline of the body when extended.

**c. varus** a deformity of the elbow in which it deviates towards the midline of the body when extended.

**cuboid** [*ku'boid*] resembling a cube; applied particularly to bones such as the fourth tarsal bone.

**Cubomedusae** [*ku"bo-mə-doo'se*] an order of aquatic animals including sea wasps and box jellyfish, e.g., *Chironex fleckeri*.

**Cuboni test** a pregnancy test for use in mares and based on detection of estrogens in the urine. Suitable for use only from 5 months of pregnancy.

**Cuclogaster heterographus** a louse species belonging to the order Ischocera (Insecta). Called also head louse. Affects fowls and partridges.

**cucumber** [*ku'kəm-bər*] plants in the genus **Cucumis**.

**c. seed tapeworm** *Dipylidium caninum*; so called because of the appearance of proglottids on fresh canine feces.

**squirting c.** see **Ecballium elaterium**.

**Cucumis** [*ku'kəm-is*] a genus in the plant family Cucurbitaceae. The cucumbers. Contain toxic tetracyclic triterpenes which cause enteritis and diarrhea. Includes *C. africanus*, *C. melo* var. *agrostis* (*C. picrocarpus*), *C. trigonus*, Ulcardo melon), *C. myriocarpus* (prickly paddymelon), *C. sativus*.

**cucurbitacins** toxic tetracyclic triterpenes found in plants of the family Cucurbitaceae, e.g., squash, pumpkin, cucumber, melons. Called also 'bitter principle of the cucurbits'.

**cucurbitine** marginally effective cestocidal compound in pumpkin seed.

**cud** [*kud*] the bolus regurgitated by ruminants. It contains fiber, other food particles, rumen liquor and flora.

**c. chewing** after regurgitation, chewing on the remains of the regurgitus.

**c. dropping** a usually temporary condition in the cow in which each regurgitated bolus is rejected to the exterior. There is no other abnormality.

**losing the c.** the cow that has 'lost her cud' is not ruminating. This is a nonspecific sign of illness.

**c. transfer** a therapeutic practice of collecting fresh ruminal contents, from the mouth of a ruminating cow or by stomach tube from a rumen or from a freshly killed normal animal, and administering an infusion of it to a cow with ruminal stasis. The objective is to repopulate the recipient rumen with viable, normal ruminal flora.

**cuddie trot** the strange gait of a sheep with scrapie. It is an unsteady trot with the ears moving loosely up and down.

**cudding** [*kud'ing*] chewing the cud. See also **rumination**.

**cuffing** [*kuf'ing*] formation of a cufflike array, as of leukocytes about a blood vessel in many inflammatory conditions.

**c. pneumonia** chronic enzootic pneumonia of calves in which there is lymphofollicular cuffing of small airways.

**cul-de-sac** [*ku'l'də-sak'*] [Fr.] a **blind pouch**.

**Douglas' c.** a sac or recess formed by a fold of the peritoneum dipping down between the rectum and the uterus. Called also rectouterine excavation or pouch.

**culard** [*ku-lahrd'*] see **myofiber hyperplasia**.

**culdoscope** [*ku'l-do-sköp*] an endoscope used in culdoscopy.

**culdoscopy** [*kəl-dos'kə-pe*] use of an endoscopic instrument inserted into and through the ventral wall of the vagina, into the pelvic cavity to visualize the pelvic viscera.

**Culex** [*ku'ləks*] a genus of mosquitoes found throughout the world; cause 'insect worry' and many species transmit various infectious agents, e.g., microfilariae, apicomplexan parasites and viruses, such as those of Japanese encephalitis and equine encephalomyelitis.

**C. pipiens** transmits the virus of fowlpox.

**C. pipiens quinquefasciatus** a serious pest of poultry and carrier of a number of poultry diseases.

**C. tarsalis** transmits western equine encephalomyelitis.

**C. tritaeniohynchus** transmits Japanese encephalitis virus.

**Culicidae** [*ku-lis'i-de*] a family of mosquitoes. See **Culex**, **Anopheles**.

**culicide** [*ku'li-sid*] an agent that destroys mosquitoes.



**culicifuge** [ku-lis'i-fūj] an agent that repels mosquitoes.

**culicine** [ku'li-sin] **1.** any member of the Culicinae including *Culex* or related genera. **2.** pertaining to, involving, or affecting mosquitoes of the genus *Culex* or related species.

**culicoid** see *Culicoides*.

**Culicoides** [ku-li-koi'dēz] a large genus of biting midges belonging to the family Ceratopogonidae. They act as vectors of bluetongue, ephemeral fever, Akabane virus of cattle, epizootic hemorrhagic disease of deer, equine encephalosis and African horse sickness and many are intermediate hosts of filarioid nematodes. Many are causes of cutaneous hypersensitivity in horses (Queensland or sweet itch)—*C. brevitarsis*, *C. imicola*, *C. insignis*, *C. lupicaris*, *C. obsoletus*, *C. pulicaris*, *C. punctatus*, *C. spinosus*, *C. stellifer* and *C. varipennis* can be involved. *C. brevitarsis* (*C. robertsi*) one of the vectors of bluetongue virus and causes hypersensitivity to its bite. Called also Queensland itch. See also equine **allergic dermatitis**.

*C. furens* intermediate host of *Mansonella ozzardi*.

*C. grahami* intermediate host of *Dipetalonema perstans* and *D. streptocerca*.

*C. nubeculosus* intermediate host of *Onchocerca cervicalis*.

*C. pungens* intermediate host of *Onchocerca gibsoni*.

**culicoides hypersensitivity** [ku-li-koi'dēz] see equine **allergic dermatitis**.

**Culiseta** [ku'li-se'tə] a genus of mosquitoes, e.g., *C. melanura*, which act as vectors for equine encephalomyelitis.

*C. melanura* transmits American encephalomyelitis virus; does not feed on large mammals but does feed on aquatic birds.

**cull** [kul] the act of **culling**. Called also **cast**.

**Cullen's sign** [kul'ən] bluish periumbilical discoloration due to subcutaneous intraperitoneal hemorrhage.

**Cullen spp.** genus in the plant family Fabaceae. Contain furanocoumarins and may cause primary photosensitization. Includes *C. cinereum*, *C. patens*. Called also *Psoralea*.

**culling** [kul'ing] removal of inferior animals from a group of breeding stock. The removal is premature, i.e., before completion of its life span, disposal of an animal from a herd or other group. In farm animals this means disposal because of their being superfluous to the needs of the group to maintain its size. Animals may be culled because of age, either because they are too old or because they are very young and their retention would necessitate culling an older, more desirable animal. Animals may also be culled because of disease, failure to produce or reproduce, because of inherited defects or because of undesirable conformation or breed type. There are two general classes of culls, involuntary culls, e.g., deaths, and voluntary culls, e.g., age culls.

**biological c.** culling of animals on the biological grounds of incapacity to pass a productivity test.

**independent c.** based on specific levels of performance for each trait included in the breeder's selection program. An example in Hereford cattle might be culling of all heifers below 450 lb at weaning and all heifers with no pigmentation around the eyes.

**c. program** a set of rules for a manager to follow in carrying out culling within a herd.

**c. rate** the number of animals culled as a proportion of the number of animals from which the culling was done.

**voluntary c.** culling by decision of the farmer to accommodate the farm's management plan. See also **culling**.

**culls** the animals extracted from a herd or flock by culling.

**culmen** [kul'mən] pl. *culmina* [L.] **1.** the anterior and upper part of the monticulus cerebelli; called also **cacumen**. **2.** the median longitudinal ridge on a bird's beak.

**culms** the shoots and roots of sprouted grains in the brewing process. These are removed during brewing and are salvaged as a food supplement. Called also malt culms.

**culotte** in dogs, the longer hair on the back of the thighs; prominent in some breeds such as the Chow Chow.

**cultivation** [kul'ti-va'shən] the propagation of organisms, applied especially to the growth of microorganisms or other cells in artificial media.

**culture** [kul'chər] **1.** the propagation of microorganisms or of animal cells in media conducive for their growth. **2.** to induce such propagation. **3.** the product of such propagation.

**anaerobic c.** one carried out in the absence of oxygen.

**continuous flow c.** the cultivation of bacteria in a continuous flow of fresh medium to maintain bacterial growth in logarithmic phase.

**explant c.** **1.** a small piece of fresh tissue such as trachea or gut maintained in cell culture medium. **2.**

**hanging-drop c.** a culture in which the material to be cultivated is inoculated into a drop of fluid attached to a coverglass inverted over a hollowed slide.

**primary c.** a bacterial, fungal, cell or tissue culture started from material taken directly from an animal. Subsequent passages of cells are referred to as secondary cultures.

**secondary c.** a subculture derived from a primary culture.

**slant c.** one made on the surface of solidified medium in a tube that has been tilted when the agar was solidifying to provide a greater surface area for growth while occupying minimal storage space.

**stab c.** a culture into which the organisms are introduced by thrusting a needle or wire deep into the medium.

**streak c.** one in which the medium is inoculated by drawing a wire loop carrying the organisms across it.

**suspension c.** a culture in which cells multiply while suspended in a suitable liquid medium.

**tissue c.** the maintaining or growing of tissue, organ primordia, or the whole or part of an organ *in vitro* so as to preserve its architecture and function. See **explant culture** (above).

**type c.** an exemplary culture of a species of microorganism usually maintained in a central reference collection of type or standard organisms.

**cumulus** [ku'mu-ləs] pl. *cumuli* [L.] a small elevation.

**c. oophorus** a mass of follicular (granulosa) cells surrounding the ovum in the vesicular ovarian follicle. Called also **discus oophorus**, **discus ovigerous**, **discus proligerous**.

**cu** the acupuncture basic unit of measurement; acupuncture 'inches'. This differs for each individual. in the horse equals the width of the 16th rib at the level of the tuber coxae.

**cunean** pertaining to the cunean tendon.

**c. bursa** the bursa interposed between the cunean tendon and the tarsal bones on the medial aspect of the hock of the horse.

**c. tendon** the medial branch of the insertion of the tibialis cranialis muscle in the hindlimb of the horse.

**c. tendon bursitis** inflammation of the cunean bursa.

**c. tenectomy** surgical excision of a section of the cunean tendon (also known as the "jack cord" in horseman parlance) as an older treatment for bone **spavin** in horses.

**cuneate** [ku'ne-āt] wedge-shaped.

**c. tubercle** a slight elevation in the medulla oblongata indicating the position of the cuneate nucleus of the lemniscal system.

**cuneiform** [ku'ne'i-form] **1.** wedge-shaped. **2.** the first, second and third tarsal bones (medial, intermediate, and lateral cuneiforms).

**c. process** processes of the arytenoid cartilage in dogs, or the epiglottic cartilages of horses.

**cuneus** [ku'ne-əs] pl. *cunei* [L.] a wedge-shaped lobule on the medial aspect of the occipital lobe of the cerebrum.

**c. ungulae** see **frog** (2) of the horse's foot.

**cuniculus** [ku-nik'u-ləs] pl. *cuniculi* [L.] a burrow in the skin made by a mange mite,

**cujevoi** *Alocasia brisbanensis*.

**cup** [kup] a depression or hollow.

**physiological c.** a slight depression sometimes observed in the optic disk.

**tooth c.** central depression on the occlusal surface of the horse's incisor teeth at the time of eruption; as the horse ages and the occlusal surface is eroded, the cup becomes smaller and eventually disappears; the reducing size is used in aging of horses by their teeth.

**cupola** [koo'pə-lə] cupola.

**cupping** [kup'ing] a technique in acupuncture in which negative pressure is applied to points using specially designed cups. Some rely on burning a combustible solution inside the cup to create a vacuum and are not much used. In massage therapy, only the hand is used.

**Cupressocyparis leylandii** member of the plant family Cupressaceae; contains isocupressic acid. May cause abortion in livestock. Called also **Leyland cypress**.

**Cupressus** genus of trees in the family Cupressaceae; the leaves contain **isocupressic acid**, and when fed to pregnant cattle cause abortion. The aborted fetus has a typical leukoencephalomalacia. Includes *C. macrocarpa*, *C. sempervirens*. Called also **Monterey cypress**.

**cupric** [koo'prik] pertaining to or containing divalent **copper**.

**c. complex** see **cuprimyxin**.

**cuprimyxin** [kup'ri-mik'sin] a copper-containing antibacterial and antifungal agent for topical use.

**cuproprotein** copper bound to a protein, e.g., ceruloplasmin.

**cuprous** [koo'prəs] pertaining to or containing monovalent copper.

**cupresis** [koo'proo-re'sis] the urinary excretion of copper.

**CUPT** combined utero-placental thickness; measurement taken during pregnancy to evaluate placental health and in particular determine presence or absence of placentitis. Also called CTUP or combined thickness of uterus and placenta.

**cupula** [koo'pu-lə] pl. *cupulae* [L.] a small, inverted cup or dome-shaped cap over a structure.

**diaphragmatic c.** the cranio-ventral dome of the diaphragm.

**pleural c.** the apex of each pleural sac lying at the cranial aperture of the thorax.

**cupulolithiasis** [ku'pu-lo-fi-thi'ə-sis] the presence of calculi in the cupula of the posterior semicircular duct.

**cur** a derogatory term for a mongrel dog. The word is also used in reference to various treeing hounds, eg Leopard cur (**American leopard hound**) and **Blackmouth cur**.

**curare** [koo-rah're] any of a wide variety of highly toxic extracts from various botanical sources, including species of *Strychnos*, a genus of tropical trees; used originally as arrow poisons in South America. A form extracted from the shrub, *Chondrodendron tomentosum*, has been used as a skeletal muscle relaxant. The active principle is *d*-tubocurarine.

**curariform** [koo-rah'ri-form] like curare in its action.

**c. drugs** these include *d*-tubocurarine, gallamine, decamethonium, succinylcholine (suxamethonium). Like curare they cause neuromuscular paralysis but without loss of consciousness.

**curarization** [koo'rah-ri-za'shan] administration of curare (usually tubocurarine) to induce muscle relaxation by its blocking activity at the neuromuscular junction. Also used to denote induction of skeletal muscle paralysis via the administration of any nondepolarizing neuromuscular blocking drug (atracurium, pancuronium)

**curb** [kərb] **1.** thickening of the plantar tarsal ligament in the hock of the horse. The ligament is obviously thickened a few inches below the point of the hock. Initially there is pain at the site, the horse is lame and at rest stands with the weight on the other leg. **2.** that part of a curb bit in a bridle that provides the restraint additional to the bit itself. Includes the bars and chain. See also **bit** (2).

**c. reins** the reins attached to the bars of a curb bit.

**curby hocks** hocks which are affected by **curb**.

**curcin** a phytotoxin found in *Jatropha curcas*.

**curd** the proteinaceous part of milk precipitated by rennin. Usually contains some fat when whole milk is used.

**cure** [kūr] **1.** the course of treatment of any disease, or of a special case. **2.** the successful treatment of a disease or wound. **3.** a system of treating diseases. **4.** a medicine effective in treating a disease. **5.** preserve meat by salting, smoking, pickling.

**cured meat** meat which has been treated with salt and nitrate or nitrite. The salt dehydrates the meat, the nitrate releases nitrous acid which

converts myoglobin to nitrosomyoglobin which has an attractive pink color when cooked. The cooking process converts the nitrosomyoglobin to nitrosohemochrome. Salted meat is produced by simply adding salt. Bacon, ham and other specialty cured meats are put through additional processes, especially smoking, to achieve special effects. See also **bacon curing**, **pickling**.

**curet** [ku-ret'] **curette**.

**curetage** [ku're-tahzh'] [Fr.] the cleansing of a diseased surface, as with a curette.

**endometrial c.** physical curettage of the uterus is not practiced in animals but chemical irritation achieves a similar effect and is used in cows and rarely in mares. The commonest infusion is an iodine preparation such as Lugol's iodine, more rarely kerosene.

**subgingival c.** aids in the treatment of periodontal disease; consists of removing inflammatory tissue under the free gingival margin and adjacent bony structures.

**curette, curet** [ku-ret'] **1.** a spoon-shaped instrument for cleansing a diseased surface. **2.** to use a curette.

**bone c.** there are a number of types, e.g., **Brun bone curette**, **nail-hole curette**.

**curettement** [ku-ret'ment] **curettagement**.

**curie (Ci)** [ku're] a non-SI unit of radioactivity, defined as the quantity of any radioactive nuclide in which the number of disintegrations per second is  $3.7 \times 10^{10}$ . Now replaced by the **becquerel**.

**curie-hour** [ku're our'] a non-SI unit of dose equivalent to that obtained by exposure for one hour to radioactive material disintegrating at the rate of  $3.7 \times 10^{10}$  atoms per second.

**curietherapy** [ku're-ther'ə-pe] see interstitial **brachytherapy**.

**curing** [kūr'ing] said of meat. See **cured meat**.

**curium (Cm)** [ku're-əm] a chemical element, atomic number 96, atomic weight 247.

**curled toe** see **corkscrew claw**.

**curled toe paralysis** a disease of chickens caused by a nutritional deficiency of riboflavin. A complete deficiency of the vitamin causes early mortality before the deformity develops. The toes are curled inwards or under and the chicken has to stand and walk on its hocks. See also **crooked toe disease**.

**curly calf syndrome** see **arthrogryposis multiplex**, **Akabane virus disease**, **Schmallenberg virus disease**.

**curly coat** seen in some breeds of dogs, such as Curly coated retrievers, Irish water spaniels; reported as an inherited condition in some breeds of cattle, horses and pigs. DNA testing for varying coat length genotypes is available for dogs of some breeds.

**Curly coated retriever** a medium-sized gun dog with distinctive black or liver coat in short, crisp curls over the entire body except the face.

**Curly horse** a North American saddle breed of variable description, derived from wild horses. Characterized by its curly coat, particularly inside the ears and on the fetlocks; said to be hypoallergenic for people. There are dominant gene and recessive gene varieties.

**current** [kūr'ənt] that which flows; electric transmission in a circuit.

**alternating c.** a current that flows in opposite directions sinusoidally.

**direct c.** a current whose direction is always the same.

**currycomb** a flat toothed device used like a brush in grooming horses, principally for removing debris such as caked mud. Made usually of metal or hard rubber. Used in combination with a dandybrush or bodybrush.

**Curschmann's spirals** [ 'mahn] coiled, basophilic plugs of mucus formed in the lower airways and found in sputum and tracheal washings; indicate chronic obstruction.

**cursorial** adapted for running; said of certain birds and mammals.

**curvature** [kūr'və-čər'] a nonangular deviation from a normally straight course.

**greater c. of reticulum** in the cow lies against the diaphragm opposite the sixth and seventh ribs and faces left and ventrally.

**greater c. of stomach** the left or lateral border of the stomach, marking the junction of the parietal and visceral surfaces.

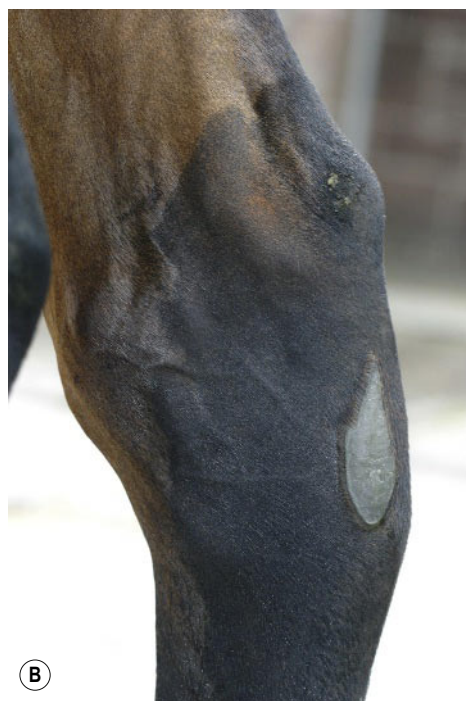
**lesser c. of reticulum** in the cow faces right and dorsally and lies against the omasum.

**lesser c. of stomach** the right or medial border of the stomach, marking the junction of the parietal and visceral surfaces.

**spinal c.** abnormal deviation of the vertebral column, as in **kyphosis**, **lordosis** and **scoliosis**.

**curve** [kərv] a line that is not straight; the line representing varying values in a graph.

**area under moment c.** plasma drug concentration  $\times$  time after dosing versus time after drug administration.



**C-103:** Profile of the plantar aspect of a horse's hock showing a curb.

McAuliffe, Siobhan. Knottenbelt and Pascoe's Color Atlas of Diseases and Disorders of the Horse, 2nd Edition. Elsevier Health Sciences, 2013.



**area under the c.** the area under a plasma concentration versus time curve. A measure of drug absorption.

**characteristic c.** the photographic characteristics of an emulsion on an x-ray film based on plotting the density of the image obtained against the logarithm of the exposure under specified conditions of development.

**epidemic c.** a graphical representation showing the number of new cases of the disease plotted against time (incidence). Prevalence is one point in time within the curve. A decision on when the new infection rate creates an epidemic varies with the disease and the circumstances. The rate would need to be clearly in excess of its expected frequency.

**fitted c.** the theoretical frequency distribution whose closeness of fit to the subject data is under test.

**freehand c.** a line drawn in by hand on a scattergram to establish the relationship between two variables.

**frequency c.** a curve representing graphically the probabilities of different numbers of occurrences of an event.

**growth c.** the curve obtained by plotting increase in size or numbers against the elapsed time.

**logarithmic c.** the curve which demonstrates the straightline relationship between two variables when both of them are scaled as logarithms.

**log dose–response c.** the standard way of presenting pharmacological data about a drug. The response is plotted against dose on a semilogarithmic graph. It has the advantage that a wide range of dose rates can be entered on the one graph.

**one-step growth c.** a plot of the growth of a virus in cell culture when all cells are infected simultaneously.

**oxygen–hemoglobin dissociation c.** a graphic explanation of the release and acquisition of oxygen from and to the hemoglobin in the blood in varying circumstances of oxygen partial pressure in the environment.

**plasma concentration–time c.** the plasma concentration of a drug plotted against time.

**semilogarithmic c.** as for logarithmic curve except that only one of the variables is scaled as a logarithm. See also **logarithmic** relationship.

**sigmoid c.** an S-shaped curve. A common curve in biological distributions.

**survivorship c.** a graphic presentation of a life table. Obviously the proportion of survivors decreases with advancing age of the group.

**vertebral c.** the downward curve of the thoracolumbar region and that of the cervical region in some animals.

**curvilinear** a line appearing as a curve; nonlinear.

**c. regression** see **curvilinear regression**.

**Curvularia** [*kur''-vu-lar'e-ə*] a genus of dematiaceous molds in the phylum Ascomycota. Associated with blackgrain **mycetoma**. Species implicated include *C. verruculosa*, *C. lunata* and *C. geniculata*. See also **maduromycosis**.

**curvus** a deformity in which there is curvature. Seen in growth deformities of the radius and ulna in which there is premature closure of the distal ulnar physis and the radius continues to grow with a cranial bowing. See also **valgus**.

**Cuscuta** a genus of parasitic plants in the family Convolvulaceae; an unidentified toxin causes nervousness, staggering vomiting, diarrhea. Called also dodder.

**cush** the position in which a camelid rests in sternal recumbency on the ground; achieved by bending the front legs, dropping to the knees one at a time, then flexing and folding the hind legs. Camelids sleep and chew cud in a kushed position; the normal position for mating. Also spelled **kush**.

**Cushing's disease** [*koosh'ing*] hyperadrenocorticism secondary to excessive pituitary excretion of adrenocorticotrophic hormone; based on the original description by Dr. Harvey Cushing of humans with pituitary tumors, described as basophil adenomas of the pars distalis; now taken to include also the more common corticotroph adenomas. Called also pituitary-dependent **hyperadrenocorticism**.

**Cushing response** [*koosh'ing*] a reflex bradycardia and respiratory depression that occurs in response to increased intracranial pressure; when intracranial pressure rises beyond the capacity for cerebrovascular autoregulation to accommodate it, the subsequent fall in delivery of blood to the brain causes hypoxia which then leads to systemic hypertension (in attempt by the brain to maintain cerebral blood flow). This in turn triggers baroreceptors in the heart to lower heart rate, leading to bradycardia.

**Cushing-like disease** a disease caused by functional corticotroph adenomas of the adenohypophysis which may give rise to clinical signs of cortisol excess; seen most commonly in dogs. See also **Cushing's disease**.



**C-104:** Alpaca cria in the “cush” position.

Dyce, Sack and Wensing's. Textbook of Veterinary Anatomy, 5th Edition. Saunders, 2017. Alpaca cria in the “cush” position.

**Cushing suture pattern** [*koosh'ing*] a fast, continuous, inverting suture pattern for closure of a gastrointestinal or urinary bladder incision. Bites are taken parallel to the incision, incorporating the submucosa, but the suture does not pass right through the wall into the lumen.

**Cushing's syndrome** [*koosh'ing*] a group of signs produced by an excess of free circulating cortisol from the **adrenal** cortex. Causes are: (1) excessive secretion of adrenocorticotrophic hormone (ACTH) from the pituitary gland, which may actually result from faulty release of corticotropin-releasing factor (CRF) from the hypothalamus or a functional tumor, usually corticotroph adenoma; (2) tumor of the adrenal cortex, causing hypersecretion of the glucocorticoids; (3) iatrogenic Cushing's syndrome resulting from excessive or prolonged administration of exogenous glucocorticoids; and in humans (4) ectopic production of ACTH by extrapituitary tumors. Most commonly seen in dogs (canine Cushing's syndrome; CCS), infrequently in aged horses (**equine** pituitary pars intermedia dysfunction) and rarely in other species. See also **hyperadrenocorticism**. Affected dogs show polyuria, polydipsia, polyphagia, muscle weakness and atrophy, pendulous abdomen, hair loss and an increased susceptibility to infection, particularly of the skin and urinary tract.

**pseudo C. s.** see **alopecia X**.



**C-105:** Canine Cushing's syndrome.

**cushingoid** [*koosh'ing-oid*] resembling Cushing's syndrome, said of signs and clinical features.

**cushion** [*koosh'an*] a term describing exceptional thickness of the upper lips or flews seen in some short-nosed breeds of dogs, e.g., Boxer, British bulldog.

**cushion comb** a small, low, oval comb with a smooth surface on a domestic fowl.

**cuspid** [*kusp*] a pointed or rounded projection, such as on the crown of a tooth, or a segment of a cardiac valve.

**semilunar c.** any of the semilunar segments of the aortic valve or the pulmonary valve. See also **semilunar**.

**cuspid** [*kus'pid*] **1.** in the horse, pig, dog, and cat the fourth tooth on either side from the midline in each jaw; called also canine tooth. **2.** having one cuspid.

**cuspid** [*kus'pis*] pl. *cupides* [L.] a cuspid.

**custom** done to the order of the customer on materials owned by the customer, e.g., custom **feedlot**.

**cuSum** cumulative sum; sum of the data so far, updated as each item is collected.

**cut** [*kut*] **1.** gelded; castrated. **2.** of meat. The standard parts of a carcass of meat. Varies between countries. Includes sirloin, neck chops, silverside and so on. **3.** incision made by any sharp edge. **4.** yield of wool per head of sheep shorn. **5.** to separate one or more animals from a group. **6.** a level (cut point) of a performance trait above which animals will be kept and below which they will be sold.

**c. proud** a lay term and a lay operation used historically in horses. Intended to retain some stallion characteristics especially ramping and pseudo-aggression. The practice is to leave all of the spermatic cord and a little of the epididymis in the horse. There is no anatomical, or endocrinological (as testosterone is produced solely in the testicle), basis for the view that the practice has the desired effect, nor that the gelding that unintentionally has these characteristics loses them if the ends of his spermatic cords are further pruned. In modern veterinary surgical practice, all of the epididymis and most of the spermatic cord are removed during a routine surgical castration.

**speedy-c.** see **speedy-cutting**.

**cut-and-fit ration balancing** a trial and error method of designing a ration, adding and deleting different amounts and different source feeds until the target analysis is achieved.

**cutability** said of meat; the proportion of boneless, trimmed, saleable retail cuts of meat obtained from a carcass.

**cutaneous** [*ku-ta'ne-as*] pertaining to the **skin**. See also under headings of individual diseases, e.g., cutaneous actinobacillosis.

**idiopathic c. and renal glomerular vasculopathy** a disease almost exclusively affecting racing Greyhounds in the USA and predominantly gun dogs and hounds in the UK. An infectious or environmental trigger is suspected. Severe vasculitis results in cutaneous necrosis, acute kidney injury and high mortality. Called also Alabama rot, Greenetrack disease.

**cutdown** [*kut'doun*] creation of a small incised opening, especially in the tissues over a vein (venous cutdown) to facilitate venipuncture and permit the passage of a needle or cannula for withdrawal of blood or administration of fluids.

**Cuterebra** [*ku'tar-e'bra*] large flies whose larvae are parasitic, mostly on wild rodents, but cats and dogs are occasionally infected. The larvae burrow under the skin and cause cyst-like cavities. Called also cuterebra flies. Includes *C. americana*, *C. buccata*, *C. emasculator* and *C. lepvora*.

**cuticle** [*ku'tə-kəl*] **1.** a layer of more or less solid substance covering the free surface of an epithelial cell. **2.** the narrow band of epidermis extending from the wall of the nail or claw, onto the surface; called also eponychium. **3.** the layer of cells on the surface of a hair shaft or wool fiber. In wool it is the projection of the edge of cuticular plates that gives the fiber its unique felting property. **4.** an extremely thin, transparent, proteinaceous covering over the eggshell of bird's eggs. It may contain pigment and is permeable to gases.

**c. of koilin** a tough membrane, usually yellow in color, and a carbohydrate-protein complex, produced by the solidification of the secretion of the tubular glands in the gizzard mucosa of birds; the cuticle protects the mucosa during its crushing operations.

**Cutifilaria** a genus of nematodes in the family Onchocercidae, parasites of deer. Includes *Cutifilaria wenki* (deer; skin).

**cutin** [*ku'tin*] **1.** a waxy constituent of the cuticle of plants. **2.** a preparation of ox serosa used as suture material and as a wound dressing.

**cutireaction** [*ku'ti-re-ak'shən*] cutaneous reaction.

**cutis** [*ku'tis*] the outer protective covering of the body; the skin.

**c. anserina** transitory erection of the hair follicles due to contraction of the arrectores muscles, a reflection of sympathetic nerve discharge; goose flesh.

**c. asthenia** see cutaneous **asthenia**.

**c. hyperelastica** see **Ehlers-Danlos syndrome**.

**Cutler-Beard flap** see cross-lid **flap**.

**cutting 1.** a gait defect in horses. See **brushing**. **2.** severing tissue, as with a blade, knife or scissors.

**press c.** a technique for making an incision with a scalpel blade in which there is increasing pressure in the same direction the blade is being moved.

**slide c.** pressure is applied at right angles to the movement of the blade. Safer and better controlled than press cutting when dissecting.

**cutting horse** not a breed, but a class of horse used for working cattle on the range, in cattle camps and in yards and shows; especially adept at separating selected animals from a group or herd. Several varieties exist, e.g., Canadian Cutting horse, American Cutting horse. See also **Australian Stock horse**.

**cuttlefish** marine animals of the Cephalopoda family of molluscs with a bony structure (gladius) internally. This boatlike structure is a common finding at the sea's edge and is much used as a dietary supplement and plaything for caged birds. Ambush predators, amongst the most intelligent invertebrates with a large brain to body size ratio, their main diet is fish and crabs. Includes the common cuttlefish (*Sepia officinalis*) and dwarf cuttlefish (*S. bandensis*).

**cuvette** [*ku-vet'*] [Fr.] a glass container generally having well-defined characteristics (dimensions, optical properties), to contain solutions or suspensions for study.

**CV** closing volume.

**cv.** cultivar.

**CVA** cerebrovascular accident.

**CVM** Center for Veterinary Medicine; complex **vertebral** mal-formation.

**CVMA** Canadian Veterinary Medical Association.

**CVMM** cervical vertebral malformation malarticulation. See **cervical spondylomyelopathy**.

**CVP** central venous pressure.

**CVS** cardiovascular system

**CWD** chronic wasting disease.

**cwt** hundredweight; a unit of measurement for weight. In North America, equal to 100 lb (45.359 kg.); called also a short hundredweight. In Imperial units, equal to 112 lb (50.8 kg); known as a long hundredweight.

**cyacetazide** see **cyanacethydrizide**.

**cyadox** a quinoxaline derivative, used as a growth promotant.

**cyanacethydrizide** an anthelmintic used in the treatment of lungworms. Poisoning is characterized by incoordination and convulsions. Pyridoxine is the antidote. Called also cyacetazide.

**cyanamide** [*si'an'ə-mīd*] in the form of calcium cyanamide, a fertilizer and may cause **cyanide** poisoning.

**cyanhemoglobin** [*si'an-he'mo-glo'bin*] a stable compound formed by the combination of hydrogen cyanide with hemoglobin; prevents oxygen-hemoglobin binding. It gives the bright red color to the blood that is characteristic of peracute cyanide poisoning.

**cyanide** [*si'ə-nīd*] a binary compound of cyanogen. Some inorganic compounds, such as cyanide salts, potassium cyanide and sodium cyanide, are important in industry for extracting gold and silver from their ores and in electroplating. Other cyanide compounds are used in the manufacture of synthetic rubber and textiles. Cyanides are also used in pesticides. There are many potential sources of cyanide in the environment of farm animals. Cyanide poisoning occurs most commonly when cattle gain access to a bulk supply of a cyanogenetic plant, e.g., sudan grass, immature sorghum. Typical clinical signs are dyspnea within a few minutes of getting access to the food, restlessness, recumbency and death within a matter of 15 minutes to 2 hours. The cyanide is not free in the plants but is combined with a glycoside radical and must be degraded by ruminal enzymes to release its HCN. Called also hydrocyanic acid. See **cyanogenetic glycosides**.

**cyanmethemoglobin** [*si'an-met-he'mo-glo'bin*] a compound formed by combination of hydrocyanic acid with methemoglobin. In laboratory methods, hemoglobin is converted to cyanmethemoglobin and measured spectrophotometrically.

**cyanmetmyoglobin** [*si'an-met-he'mo-glo'bin*] a compound formed from metmyoglobin by addition of the cyanide ion.

**cyan(o)-** word element. [Gr.] blue.

**cyanocrylate glue** [*si'ə-no-ak'ra-lāt*] tissue adhesives used for treatment of minor wounds and abrasions, vascular and ophthalmic surgery, and hemostasis. Used widely in exotic pet surgical procedures such as skin closure, repair of bird beaks and chelonian shell repair.

**β-cyano-l-alanine** a lathyrogenic agent in *Vicia* spp.

**cyanobacteria** [*si'ə-no-bak-te're-ə*] photosynthesizing bacteria of widely varying form and inhabiting many environments including marine and



fresh water. They produce a blue or blue-green pigment. Formerly classified as algae (division Cyanophyta) and known as blue-green algae. Some species are non-toxic, some produce hepatotoxins, others produce neurotoxins, and still others produce dermatotoxins. Toxic species include *Anabaena*, *Anabaenopsis*, *Aphanizomenon*, *Coelosphaerium*, *Cylindrospermopsis*, *Fischerella*, *Gloeotrichia*, *Gomphosphaeria*, *Haplosiphon*, *Hormothamnion*, *Lyngbya*, *Microcystis*, *Nodularia*, *Nostoc*, *Oscillatoria*, *Pseudoanabaena*, *Schizothrix*, *Seytonema*, *Synechococcus*, *Tolypothrix*, *Trichodesmium*. Called also cyanophytes. See also **algal poisoning**.

**cyanocobalamin** [si''ə-no''ko-bal''ə-min] **vitamin B<sub>12</sub>**.

**cyanogen bromide** [si-an''o-jən] reagent used to fragment peptide chains, since it cleaves only those peptide bonds in which methionine contributes the carbonyl group. Also used as coupling agent in affinity chromatography where it reacts with the Sepharose matrix forming a reactive product to which proteins, nucleic acids or other biopolymers can be coupled.

**cyanogenesis** [si''ə-no-jen''ə-sis] cyanide production. Occurs in certain plants (e.g., bracken) in response to wounding, or as a deterrent to herbivores.

**cyanogenic, cyanogenetic** [si''ə-no-jə-net''ik] generating or giving rise to cyanide.

**c. glycosides** potentially poisonous cyanide radicals are found in plants in the form of cyanogenic glycosides, in which form they are not poisonous. The glycosides may be broken down by plant enzymes or by rumen microorganisms which produce β-glycosidase and rapidly hydrolyze cyanogenic glycosides. Horses and pigs are less susceptible.

**cyanolabe** the pigment in retinal cones that is more sensitive to the blue range of the spectrum than are chlorolabe and erythrolabe.

**cyanopeptolins** a group of cyanobacterial heptapeptide toxins that can be neurotoxic. Produced by bacteria in the genera *Microcystis* and *Planktothrix*.

**Cyanophyceae** see **cyanobacteria**.

**cyanophyte** see **cyanobacteria**.

**cyanophyte** see **cyanobacteria**.

**cyanopsin** [si''ə-nop''sin] a photosensitive visual pigment occurring in the cone cells of the retina.

**cyanosed** [si''ə-nōzd] see **cyanosis**.

**cyanosis** [si''ə-no''sis] a bluish discoloration of the skin and mucous membranes due to abnormally high concentration of reduced hemoglobin in the underlying vessels. Indicative of poor oxygenation, either because of peripheral factors or central cyanosis.

**central c.** that due to desaturation of arterial blood, the aortic blood having abnormally high concentrations of reduced hemoglobin.

**enterogenous c.** a syndrome due to absorption of nitrites and sulfides from the intestine, principally marked by methemoglobinemia and/or sulfhemoglobinemia associated with cyanosis.

**peripheral c.** that due to an abnormally high concentration of reduced hemoglobin in the venous blood as a result of extensive oxygen extraction at the capillary level.

**ruddy c.** mucosal congestion combined with cyanosis.

**Cyathocephalus** a tapeworm genus of the family Cyathocephalidae.

**C. truncatus** a tapeworm of fish that can cause retardation of growth.

**Cyathospirura** a spiruroid nematode that causes granulomatous lesions in the stomachs of cats and foxes. Includes *C. seurati*.

**Cyathostoma** [si''ə-thos''tə-mə] a genus of the roundworm family Syngamidae. Includes *C. bronchialis*, *C. brantae*, *C. lari* and *C. variegatum* (birds; respiratory tract).

**cyathostomiasis** [si''ə-tho-sto-mi''ə-sis] see **cyathostominiasis**.

**Cyathostominae** a subfamily of the stronglylid roundworms (cyathostomins) of horses which replaces the original genus of *Trichonema*. It includes the genera *Cyathostomum*, *Cylicocycclus*, *Cylicodontophorus*, *Cylicostephanus*, *Poteriostomum*, *Petrovinema*, *Gyalocephalus*, *Cylindropharynx* and *Caballonema*.

**cyathostominiasis** disease 2state caused by infestations of small stronglyles (cyathostomins - members of the subfamily Cyathostominae), including *Cyathostomum*, *Cylicocycclus*, *Cylicodontophorus*, *Cylindropharynx*, *Cylicostephanus*, *Poteriostomum*, *Gyalocephalus* and *Caballonema*; particularly the larval stages, which emerge synchronously from the large intestinal wall to the lumen, cause acute or chronic diarrhea and can be fatal in severe cases. The disease is usually referred to as larval cyathostomiasis or cyathostominiasis.

**cyathostomiosis** see **cyathostominiasis**.

**cyathostomosis** see **cyathostominiasis**.

**Cyathostomum** [si''ə-tho-sto''mum] a genus of stronglylid nematodes of the subfamily Cyathostominae.

**C. catinatum**, **C. coronatum**, **C. labiatum**, **C. labratum**, **C. sagittatum**, **C. tetracanthum** in the large intestine of horses and other equids. Heavy infestations (particularly emerging larval stages) can cause severe diarrhea.

**cybernetics** [si''bər-net''iks] the science of communication and regulatory systems, which in the animal includes autoregulation and feedback mechanisms in maintaining homeostasis.

**cycad** [si''kad] dioecious, non-flowering woody plants (gymnosperms) which produce seeds in a woody cone consisting of exposed seed leaves (sporophylls), not enclosed in an ovary. The leaves are usually in a rosette at the top of the stem, which may be subterranean. These plants are not palms. Genera include *Bowenia*, *Cycas*, *Dioon*, *Encephalartos*, *Lepidozamia*, *Macrozamia*, *Zamia*.

**c. glycoside** group of glycosides, including cycasin and macrozamin, found in cycad plants; oxidized *in vivo* to release toxic methylazoxymethanol (MAM). Poisoning is reported in cattle, sheep, dogs and cats with clinical signs referable to the gastrointestinal, hepatic, and central nervous system.

**Cycas** [si''kəs] one of the cycad genera from Australia, Asia, the Pacific and eastern Africa. Includes many species, all of which should be regarded as potentially poisonous; those known to have poisoned animals include *C. armstrongii* (*C. lane-poolei*), *C. angulata*, *C. basaltica*, *C. media*, *C. circinalis*, *C. revoluta*. They contain the cycad glycoside cycasin. The leaves cause incoordination when eaten by cattle; see **Zamia** staggers. The seeds may also cause severe gastroenteritis and hepatic necrosis. Called also *zamia*. *C. revoluta* is also called sago 'palm'; it is not a palm.

**cycasin** [si''kə-sin] a toxic glycoside found in *Cycas* spp. and other cycads.

**cyclacillin** [si''klə-sil''in] a semisynthetic penicillin of the ampicillin class. Called also **ciclacillin**.

**Cyclamen europaeum** [sik''lə-mən] a member of the plant family Primulaceae which contains irritating saponins

**cyclamin** [sik''lə-min] a toxic glycoside present in *Cyclamen europaeum*.

**cyclarthrosis** [sik''lahr-thro''sis] a pivot **joint**.

**cyclase** [si''klās] an enzyme that catalyzes the formation of a cyclic phosphodiester.

**cycle** [si''kəl] a succession or recurring series of events.

**cardiac c.** a complete cardiac movement, or heartbeat, including systole, diastole, and the intervening pause. The cycle includes eight separate phases: (1) isovolumetric contraction; (2) maximum ejection; (3) reduced ejection; (4) protodiastole (onset of ventricular relaxation); (5) isovolumetric relaxation; (6) rapid flow; (7) diastasis (onset of atrial contraction); (8) atrial systole.

**cell c.** see **cell cycle**.

**futile c.** In metabolism, a cycle in which a product is formed and then converted back into the precursor with no overall effect except to generate heat from the consumption of ATP. For example, **6-phosphofructokinase 1** and **fructose-1,6-bisphosphatase**, which catalyze opposite reactions, are both active in muscle at all times. Such cycles have a role in metabolic regulation, as they are sensitive to small changes in the activity of the relevant enzymes, and also may play a part in heat generation.

**Krebs c.** see **tricarboxylic acid cycle**.

**ovarian c.** the sequence of physiological changes in the ovary involved in ovulation. See also **ovulation** and **reproduction**.

**reproductive c.** the cycle of physiological changes in the reproductive organs, from the time of fertilization of the ovum through gestation and parturition. See also **reproduction**.

**cyclotomy** [sik''lek''tə-me] excision of a piece of the ciliary body.

**cyclic** [si''klik] pertaining to or occurring in a cycle or cycles. The term is applied to chemical compounds that contain a ring of atoms in the nucleus and to metabolic pathways.

**c. adenosine monophosphate (AMP)** see cyclic **adenosine monophosphate**.



**C-106: Cyanosis.**

From Bassett JM, McCurnin DM, McCurnin's Clinical Textbook for Veterinary Technicians, 7th ed, Saunders, 2010.

**c. guanosine monophosphate (cGMP)** see cyclic **guanosine monophosphate**.

**c. neutropenia of collies** see cyclic **hematopoiesis**.

**c. non-breeder cows** cows demonstrating estrus regularly but not being submitted for mating; deferral of mating.

**c. nucleotide** see cyclic **nucleotide**.

**cyclical** occurring in cycles; statistically a periodic movement of a time series, e.g., recurrent epidemics.

**cyclicality** cycling of disease incidence, being seasonal (annual on a seasonal basis) or secular (long-term, greater than one year, e.g., outbreaks of ephemeral fever).

**cyclins** [si'klinz] a set of related proteins that regulate the passage of cells through the cell cycle by forming complexes with cyclin-dependent protein kinases.

**c.-dependent protein kinase (Cdk)** forms complexes with cyclins to become active in activating stages of the eukaryotic cell cycle.

**cyclitic membrane** a fibrovascular membrane extending from the ciliary body over the posterior lens capsule as a result of uveitis.

**cyclitis** [sik-li'tis] inflammation of the ciliary body.

**cyclizine** [si'kli-zēn] an antihistamine used as an anti-nauseant to prevent motion sickness in dogs and cats.

**cycl(o)-** word element. [Gr.] round; recurring, cycle.

**cyclochlorotine** a cyclic peptide toxin produced by the fungus *Penicillium islandicum*. Also known as islanditoxin. It is a hepatotoxin and its metabolites are hepatocarcinogenic.

**cyclochoroiditis** [si'klo-kor'oid-i'tis] inflammation of the ciliary body and choroid.

**Cyclocoelidae** a family of large flukes (digenetic trematodes) parasitic in the body, nasal cavities, and air sacs of aquatic birds. Includes *Tracheophilus cymbius* (*Tracheophilus sisowi*) of ducks.

**cyclocytherapy** [si'klo-kri'o-ther'a-pe] destruction of the ciliary body or part thereof; done to decrease aqueous humor production in the treatment of glaucoma.

**cyclodestruction** destruction of the ciliary body processes by cryotherapy or photocoagulation to reduce aqueous humor production in the treatment of glaucoma.

**cyclodialysis** [si'klo-di-al'a-sis] creation of a communication between the anterior chamber of the eye and the suprachoroidal space, to allow alternative route of filtration for aqueous humor in glaucoma.

**cyclodiathermy** [si'klo-di'a-thur'me] destruction of a portion of the ciliary body by diathermy to reduce aqueous formation in the treatment of glaucoma. Now largely replaced by cryotherapy and photocoagulation.

**cyclohexamines, cyclohexylamines** a group of dissociative anesthetics that includes phencyclidine, ketamine, and tiletamine.

**cycloheximide** an antibiotic produced by *Streptomyces griseus* that inhibits protein synthesis. It is too toxic and nonselective for common clinical use, but is used in treatment of cancers and management of graft-versus-host reactions following transplantation. Also used agriculturally for the control of fungal diseases of plants and turf and as a bacterial inhibitor in selective media for culturing fungi.

**cyanopenphas** an organophosphate insecticide which causes delayed neurotoxicity in birds.

**cyclokeratitis** [si'klo-ker'a-ti'tis] inflammation of the cornea and ciliary body. More commonly termed keratouveitis since the iris is likely also involved.

**cycloleucine** [si'klo-loo'sēn] non-metabolizable cyclic amino acid related to leucine not found in proteins. Important in the study of amino acid transport. Has immunosuppressive, antineoplastic and cytostatic properties.

**cyclonite** a plastic explosive; also has been used as a rodenticide; toxic effects in humans and dogs manifested by convulsions.

**cyclo-oxygenase (COX)** [si'klo-ok'sə-jən-ās] enzyme which catalyzes the biosynthesis of prostaglandins from arachidonic acid. *COX-1* is important in the production of prostaglandins responsible for protection of gut mucosa. *COX-2* is associated with production of inflammatory prostaglandins. Non-steroidal anti-inflammatory drugs, including aspirin, ibuprofen and indomethacin, inhibit cyclo-oxygenases. Called also prostaglandin synthetase.

**cyclopamine** a steroidal alkaloid in the plant *Veratrum californicum* responsible for the development of the cycloplan deformity caused by feeding the plant to pregnant ewes on the 14th day of pregnancy.

**cyclopean, cycloplan** pertaining to a cyclops.

**c. deformity** there are two identified causes in animals, poisoning of sheep by the plant *Veratrum californicum*, and one of the two forms of inherited prolonged gestation in cattle.

**cyclopentolate** [si'klo-pen'to-lāt] in the hydrochloride form, an anticholinergic used as eyedrops to produce cycloplegia and mydriasis.

**cyclopentolate** [si'klo-pen'to-lāt] an anticholinergic drug used topically as a mydriatic and cycloplegic in the diagnosis (pupil dilation) and treatment of ophthalmic conditions.

**cyclopentanoperhydrophenanthrene** [si'klo-pen'tə-no-pər-hi'dro-fə-nan'thrēn] the steroid nucleus.

**cyclophosphamide** [si'klo-fos'fə-mīd] an alkylating agent used primarily for the treatment of lymphomas and leukemias in dogs and cats. Adverse effects include bone marrow suppression, gastrointestinal toxicity and sterile hemorrhagic cystitis.

**cyclophotocoagulation** [si'klo-fō'to-ko-ag'u-la'shən] laser treatment to destroy the ciliary body processes and reduce aqueous humor production in the treatment of glaucoma. See also **cyclodestruction**.

**Cyclophyllidea** [si'klo-fəl-id'e-ə] important order of cestodes in the class Cestoda, parasitic in birds and mammals.

**cyclopia** [si'klo'pe-ə] a developmental anomaly characterized by a single orbital fossa, with the globe absent or rudimentary, apparently normal, or duplicated, or the nose absent or present as a tubular appendix located above the orbit and absence of the maxillae. Important animal occurrences of cyclopia are in one of the forms of inherited **prolonged gestation**, and in poisoning by *Veratrum californicum*.

**cyclopiazonic acid** a mycotoxin produced by *Aspergillus* and *Penicillium* spp. fungi growing on feedstuffs. Causes feed refusal in pigs but often combined with aflatoxin poisoning and more serious effects.

**cycloplegia** [si'klo-ple'je-ə] paralysis of the ciliary body muscle; used to reduce accommodation and pain due to ciliary body spasm.

**cycloplegic** [si'klo-ple'jik] 1. pertaining to, characterized by, or causing cycloplegia. 2. a pharmacologic agent that produces cycloplegia.

**cycloposine** one of the alkaloids in the plant *Veratrum californicum* responsible for the development of cyclopean deformities in sheep.

**cyclopropane** [si'klo-pro'pān] a powerful central nervous system depressant once used as an inhalant **anesthetic**. Highly explosive requiring special handling and precautions against sparks or flames, which would result in an explosion. No longer used for safety reasons.

**Cyclops** [si'klops] a genus of small aquatic crustaceans, some species of which act as hosts of *Dipyllobothrium* and *Dracunculus* spp. Called also water fleas.

**cyclops** [si'klops] a fetus exhibiting **cyclopia**.

**cyclosis** [si'klo'sis] movement of the cytoplasm within a cell, without external deformation of the cell wall. Called also cytoplasmic streaming.

**cyclosporin A** [si'klo-spor'in] see **cyclosporine**.

**cyclosporine** [si'klo-spor'ēn] a neutral cyclic peptide, the major metabolic product of the fungus *Tolypocladium inflatum*; a specific suppressor of the T lymphocyte response. Used as an alternative to glucocorticoids in the management of atopic dermatitis in dogs and in the treatment of a many steroid-responsive and idiopathic inflammatory disorders in dogs and cats, including the autoimmune diseases, feline eosinophilic granuloma complex, and perianal fistula. Called also cyclosporin (INN).

**cyclothiazide** [si'klo-thi'a-zīd] a diuretic and antihypertensive agent.

**cyclozoonosis** [si'klo-zo-on'a-sis] a zoonotic disease that requires at least two species of vertebrates as definitive and intermediate hosts. Examples are **hydatid** disease (*Echinococcus granulosus*) and **trichinosis** (*Trichinella spiralis*).

**Cydonia oblonga** the quince tree, a member of the Rosaceae family; can cause cyanide poisoning.

**cyesis** see **pregnancy**.

**cyfluthrin** a fluorinated pyrethroid, used in ear tags on cattle to control flies and ticks.

**cygnet** a young swan.

**Cygnus** the genus of **swans**.

**cygon** see **dimethoate**.

**cyhalothrin** a synthetic pyrethroid used to control lice and ked on sheep.

**cyhexatin** an acaricide used in horticulture and reputed to cause congenital defects in experimental animals.

**CyHV1, CyHV2, CyHV3** **cyprinid** herpesviruses 1, 2, and 3.

**Cylicocycylus** one of the genera of the strongylid nematodes in the subfamily Cyathostominae. Includes *C. elongatus*, *C. insignis*, *C. leptostomus*, *C. nassatus* and *C. ultrajectinus* (found in large intestines of horses and other equids).

**Cylicodontophorus** one of the genera of strongylid nematodes in the subfamily Cyathostominae. Includes *C. bicoronatus*, *C. euproctus* and *C. mettami* (found in horse large intestine).

**Cylicospirura felineus** a spirurid nematode associated with the formation of nodules in the stomach of domestic and wild felids.



**Cylicostephanus** one of the genera of strongylid nematodes in the subfamily Cyathostominae, previously included in the genus *Trichonema*. Found in the large intestine of horses and other equids and include *C. calicatus*, *C. goldi*, *C. hybridus*, *C. longibursatus* and *C. minutus*.

**cylicostomes** see *Cyathostominae*.

**cylindroid** [sil'in-droid] **1.** shaped like a cylinder. **2.** a urinary cast of various origins, which tapers to a slender tail that is often twisted or curled upon itself.

**cylindroma** [sil'in-dro'mə] adenocystic carcinoma; tumor with a nest of cells that are cylindrical in cross section.

**Cylindropharynx** a genus of strongylid nematodes in the subfamily Cyathostominae. Found in the large intestine of equids.

**cylindrospermopsin** hepatotoxic alkaloid in *Cylindrospermopsis raciborskii* and some other cyanobacteria.

**Cylindrospermopsis raciborskii** a filamentous cyanobacterium containing the alkaloid hepatotoxin cylindrospermopsin.

**cylindruria** [sil'in-droo're-ə] the presence of cylindroids in the urine. See urinary casts.

**Cymbiforma** see *Ogmocotyle*.

**Cymopterus** a genus of toxic plants in the family Apiaceae; contain furanocoumarins which cause primary photosensitization. Includes *C. longipes*, *C. watsonii*. Called also spring parsley.

**Cymric** considered by some to be a longhaired variety of the **Manx** cat.

**Cynanchum** genus of plants in the family Asclepiadaceae; contains pregnane glycosides (cynafosides) which cause incoordination, tremor, seizures, paralysis. Includes *C. africanum*, *C. ellipticum*, *C. obtusifolium*. Called also monkey rope, klimp, bobbejantou.

**cynanfosides** pregnane glycoside neurotoxins in *Cynanchum* spp.

**cynapine** toxic piperidine alkaloid in *Aethusa cynapium*.

**Cyniclomyces guttulatus** a gastrointestinal tract yeast in the phylum Ascomycota. Has been detected in dogs with enteritis but its clinical significance is not clear. Previously classified as *Saccharomyces guttulatus*.

**Cynodon** [si'nə-don] genus of grasses in the Poaceae family; they may contain cyanogenic glycosides, and acute cyanide poisoning (geilsiekte) and goiter have been attributed to them. All of the grasses are very widespread and enjoy good reputations as pasture grass. Includes *C. dactylon* (Bermuda grass), *C. nlemfuensis* (African Bermuda grass, Tifton 68), *C. plectostachyus*, *C. aethiopicus* (stargrass).

*C. dactylon* + *Balanisia epichloe* Bermuda grass infested by the fungus causes incoordination.

**Cynoglossum officinale** a member of the plant family Boraginaceae; contains the hepatotoxic **pyrrolizidine** alkaloids heliosupine and echinatine; called also houndstongue.

**cynology** study of dogs.

**Cynosurus cristatus** a genus in the family of grasses Poaceae. Host for *Claviceps purpurea* - rye ergot - and a potential source of ergot poisoning. Called also crested dogtail grass.

*C. echinatus* associated with incidents of so-called 'acute bovine liver disease' in southern Australia. This syndrome is suspected to be a mycotoxicosis, but evidence is lacking. Called also rough dog's tail.

**cytotrophy** [si-ot'ra-fe] nutrition of the embryo or fetus.

**cypermethrin** a synthetic pyrethroid used as an insecticide and acaricide.

**cypress** common name for plants, generally in the family Cupressaceae, but occasionally others. See *Cupressus*.

**Leyland c.** *Cupressocyparis leylandii*.

**Monterey c.** *Cupressus macrocarpa*.

**summer c.** *Kochia scoparia*.

**cyprinid** a member of the fish family Cyprinidae, including carp, tench, minnow, goldfish, barbel, chub, bream and many others.

**c. herpesviruses** includes cyprinid herpesvirus 1 (CyHV1; carp pox virus), cyprinid herpesvirus 2 (CyHV2; hematopoietic necrosis virus) and cyprinid herpesvirus 3 (CyHV3; koi herpesvirus).

**Cyprinus carpio** farmed finfish in family Cyprinidae. Called also common carp.

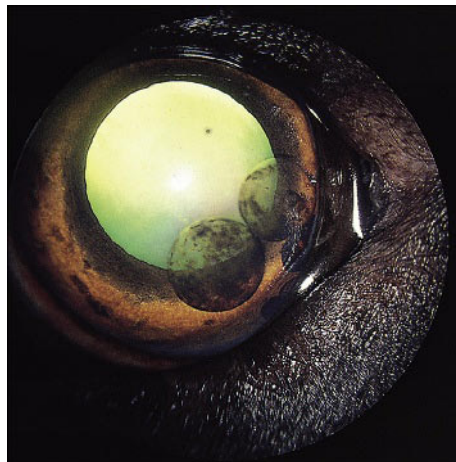
**cyproterone** [si-pro'tər-ōn] a synthetic steroid that inhibits the secretion of androgens.

**cyproheptadine** a histamine and serotonin antagonist used as an antipruritic and antihistaminic. It has also been used as an appetite stimulant in cats and in the treatment of pituitary-dependent hyperadrenocorticism. See also **equine** pituitary pars intermedia dysfunction.

**Cyrnea** a genus of spiruroid worms in the family Habronematidae.

*C. colini*, *C. pillata* found in the proventriculus and gizzard of birds.

**cyromazine** a triazine insect growth regulator, used as a feed additive for chickens to control fecal-feeding flies, and in Australia to control fly



**C-107:** Multiple anterior uveal cysts in a dog. From Peiffer R, Petersen-Jones S, Small Animal Ophthalmology, 4th ed, Saunders, 2009.

strike of sheep. Feed use is not permitted in all countries so it may also be applied directly to the manure by spraying of a solution

**Cys** cysteine.

**cyst** [sist] **1.** a closed epithelium-lined sac or capsule containing a liquid or semi-solid substance. Most cysts are harmless but they occasionally may change into malignant growths, become infected, or obstruct a gland. There are four main types of cysts: retention cysts, exudation cysts, embryonic cysts and parasitic cysts. See also specific locations and organs. **2.** a stage in the life cycle of certain parasites, during which they are enveloped in a protective wall. See also **cystic**.

**aneurysmal bone c.** see **bone** cyst.

**anterior uveal c.** an acquired or congenital structure which may arise from the iris or ciliary body epithelium. Visible as a mass attached to the iris or free-floating in the anterior or posterior chamber. Those arising from the ciliary body may not be visible. Seen commonly in dogs and horses. See also **iris** cyst.

**blood c's** small round hemangiomas containing blood found in the carcasses of poultry at meat inspection.

**branchial c., branchiogenic c., branchiogenous c.** one formed from an incompletely closed branchial cleft. See also **branchial** cyst.

**cervical c's** retention cysts of glands in the uterine cervix in the cow, are palpable as fluctuating masses on rectal examination. Called also nabothian cyst or follicle.

**chocolate c.** one filled with hemosiderin following local hemorrhage.

**cutaneous c.** see **epidermal** cyst, **dermoid** cyst, **follicular** cyst, **sebaceous** cyst.

**daughter c.** one that develops within a parent cyst, e.g., hydatid cyst.

**dentigerous c.** see **dental** cyst.

**echinococcus c.** hydatid cyst.

**embryonic c.** one developing from bits of embryonic tissue that have been overgrown by other tissues, or from developing organs that normally disappear before birth. An example is a **branchial** cyst.

**epidermal inclusion c.** see follicular cyst (below).

**exudation c.** a cyst formed by the slow seepage of an exudate into a closed cavity.

**fatty c.** formed when fat accumulates in large amounts and the cells break down forming a central mass of lipid surrounded by a multinuclear rim.

**follicular c.** **1.** of skin; spherical nodule in the superficial dermis lined by squamous epithelium and filled with dense dry laminated keratin squames. May be developmental or acquired. Called also keratin cyst, horn cyst. Named for the level of the hair follicle they are derived from: infundibular cyst, isthmus cyst, matrical cyst and hybrid cyst. Rupture can induce pyogranulomatous dermal inflammation. **2.** of gland; chamber formed by occlusion of the duct of a follicle or small gland. **3.** of ovary; graafian follicle enlarged beyond physiological size without ovulation; see cystic **ovarian** degeneration.

**Gartner's duct c.** see cystic **Gartner's ducts**.

**horn c.** see follicular cyst (above).

**hybrid c.** one combining elements of epidermoid and trichilemmal cysts. **hydatid c.** the larval stage (metacestode) of the tapeworms *Echinococcus granulosus* and *E. multilocularis*. See also **hydatid** disease.

**inclusion c.** see follicular cyst (above).

**interdigital c's** see **pododermatitis**; interdigital **pyoderma**.

**lateral cervical c.** see **branchial** cyst.

**luteal c's** develop from ovarian follicles which fail to rupture but have a lining of luteal cells. Anestrus is the presenting clinical sign.

**marine fish c's** worldwide occurrence in fish of round nodules in fibrous capsules; the cause is unknown.

**meibomian c.** misnamed as this is not a cyst; see **chalazion**.

**mesenteric c.** congenital, thin-walled cyst between the leaves of the mesentery; may enlarge and cause colic or even intestinal obstruction.

**c. of Morgagni** see **Morgagni's hydatid**.

**nabothian c.** see cervical cyst (above).

**orbital c.** see **mucocele**.

**ovarian c.** see cystic **ovarian** disease.

**parasitic c.** one forming around larval parasites (tapeworms, amebae, trichinae) that enter the body.

**primordial c.** a developmental odontogenic cyst, lacking enamel or dentin formation.

**pseudohorn c.** invagination of hyperplastic epidermis; not a true cyst.

**retention c.** a tumor-like accumulation of a secretion formed when the outlet of a secreting gland is obstructed. These cysts may develop in any of the secretory glands—the mammae, pancreas, kidney, salivary or sebaceous glands, and mucous membranes. See also renal **retention** cysts.

**sarcosporidian c's** cylindrical cysts (schizonts) containing bradyzoites, found in the muscles of those infected with *Sarcocystis* spp.

**salivary c.** see salivary **mucocele**.

**sebaceous c.** one arising in the pilosebaceous apparatus, lined by stratified squamous epithelium and containing largely macerated keratin and often sufficient sebum to render the contents greasy and often rancid.

**subconjunctival c., conjunctival c.** misplaced secretory tissue which causes a slowly enlarging, fluctuant subconjunctival mass.

**vitelline c.** a congenital cyst lined with ciliated epithelium occurring along the gastrointestinal canal; the remains of the omphalomesenteric duct.

**cystacanth** an intermediate stage of any acanthocephalan, e.g., *Macracantharhynchus* spp., found in arthropods.

**cystadenocarcinoma** [*sis-tad'-ə-no-kahr-'si-no'mə*] adenocarcinoma with extensive cyst formation.

**cystadenoma** [*sis-tad-ə-no'mə*] cystoma blended with adenoma.

**mucinous c.** a multilocular, usually benign, tumor produced by ovarian epithelial cells and having mucin-filled cavities.

**papillary c.** any tumor producing patterns that are both papillary and cystic; called also papilloadenocystoma.

**serous c.** a cystic tumor of the ovary containing thin, clear yellow serum and some solid tissue.

**cyctropia** [*si-'klo-tro'pe-ə*] **strabismus** in which there is a deviation of the eye around the anteroposterior axis of one eye relative to its fellow eye.

**cystalgia** [*sis-tal'jə*] pain in the bladder.

**cystathionase** [*sis-tə-thi'o-nās*] cystathionine  $\gamma$ -lyase, an enzyme which breaks down cystathionine into cysteine and  $\alpha$ -ketobutyrate.

**cystathionine** [*sis-tə-thi'o-nēn*] a dipeptide consisting of serine and homocysteine. A key intermediate in the trans-sulfuration pathway from methionine to cysteine. Deficiency may indicate the presence of metabolic disorders such as cystathioninuria.

**c.  $\beta$ -synthase** enzyme catalyzing the synthesis of cystathionine from homocysteine in the pathway for cysteine synthesis.

**cystatin C** [*sis-tat'in*] a protease inhibitor filtered by the glomerulus and almost totally reabsorbed in the proximal renal tubules. With decreased glomerular filtration, serum levels rise. Potentially useful in dogs as a surrogate for glomerular filtration rate and therefore as a marker of renal function, but some concurrent diseases may limit this utility.

**cystectasia** [*sis'tek-ta'zhə*] dilatation of the bladder.

**cystectomy** [*sis-tektə-mē*] **1.** excision of a cyst. **2.** excision or resection of the urinary bladder.

**cysteine** [*sis'te-ēn*] a sulfur-containing non-essential amino acid produced by enzymatic or acid hydrolysis of proteins or biosynthesis from serine and homocysteine, readily oxidized to cystine; sometimes found in urine.

**cystencephalus** [*sis'tən-sef'ə-ləs*] a fetus with a membranous sac in place of a brain.

**cystic** [*sis'tik*] **1.** pertaining to or containing cysts; see **cyst**. **2.** pertaining to the urinary bladder or to the gallbladder.

**c. calculus** calculus in the urinary bladder.

**c. corpus luteum** the normal corpus luteum is solid. Some have a central cavity filled with fluid but this does not affect their function. See also **luteal** cyst.

**c. duct** the excretory duct of the gallbladder. See also **bile duct**.

**c. endometritis** see **pyometra**.

**c. eye** the failure of the optic vesicle to come into close apposition to the cranial ectoderm during embryological development results in persistence of the vesicle and the formation of a cystic eye.

**c. follicle** see cystic **follicle**; cystic ovarian degeneration (below).

**c. hyperplasia** see cystic **endometrial hyperplasia**.

**c. endometrial hyperplasia-pyometra complex** the term applied to a series of endometrial changes leading to **pyometra** in dogs; first cystic endometrial hyperplasia, then plasma cell infiltration of the endometrium during diestrus, followed by acute inflammatory reaction which then becomes chronic.

**c. ovarian degeneration, disease (COD)** includes cystic follicle and luteal cyst (cystic corpus luteum are normal; see above). A major cause of reproductive failure and economic loss in dairy cattle. Results in an increase in days open in the post partum period and an increase in culling rates for reproductive failure. It occurs when a mature follicle fails to ovulate as a result of exogenous or endogenous disruption of the hypothalamo-hypophysial-ovarian axis; the resultant anovulatory follicular structure can regress or persist as a follicular cyst or a luteal cyst depending on its structural characteristics. Diagnosis and differentiation of follicular cysts and luteal cysts has traditionally been by transrectal palpation but ultrasound examination is more accurate. COD has an hereditary component.

**c. placental mole** results from the death of the fetus with the persistence of the fetal membranes.

**c. prostatic hyperplasia** caused by blockage of glandular ducts. Enlargement of the gland may cause constipation, possibly dysuria. The enlarged gland should be palpable per rectum. Common in intact male dogs.

**c. rete tubules** occur in the ovaries of cows, bitches, queens; may be sufficiently large to be mistaken for cystic follicles.

**c. retinal degeneration** see **microcystoid retinal degeneration**.

**cysticercoid** [*sis'ti-sur'koid*] a stage in the life cycle of cyclophyllidean cestodes. One of the forms of metacestodes in which there is a single, retracted scolex withdrawn into a small vesicle which has a very small cavity. Found in invertebrates such as oribatid mites, fleas, lice, beetles and copepods.

**cysticercosis** [*sis'ti-sər-ko'sis*] infection with cystercerci in the intermediate hosts of a number of species-specific cestodes. The disease is largely symptomless except for cysticercosis caused by *Cysticercus cellulosae*, but has some hygiene importance. Called also sheep measles, beef measles. See also **Cysticercus**. Porcine cysticercosis is a disease notifiable to the OIE (see Table 20).

**Cysticercus** [*sis'ti-sur'kəs*] larval (metacestode) stage, consisting of an invaginated scolex surrounded by a fluid-filled cyst cavity, of cyclophyllidean cestodes in the family Taeniidae. Now considered to be an invalid generic name. The common ones are listed below.

**C. bovis** larval stage of *Taenia saginata*, a tapeworm of humans. The cysticerci are found mainly in the muscles of cattle. Humans are infected by eating uncooked beef. Called also beef measles.

**C. cellulosae** larval stage of *Taenia solium*, a tapeworm of humans. The cysticerci are found in the skeletal and cardiac muscles of the pig and in the muscles and central nervous system of humans. Humans are infested by eating uncooked pork. Called also pork measles.

**C. fasciolaris** the larval stage of *Taenia taeniaeformis*, a tapeworm of cats and wild Felidae and related species. The cysticerci are in the liver of rodents.

**C. ovis** the larval stage of *Taenia ovis*, a tapeworm of dogs and wild canids. The cysticerci are found in the skeletal and cardiac muscles of sheep and goats. Dogs are infected by ingesting raw infected meat.



**C-108:** Cysticercosis with cysts in the omentum. From van Dijk JE, Gruys E, Mouwen JMVM, Color Atlas of Veterinary Pathology, 2nd ed, Saunders, 2007.



**C. pisiformis** the larval stage of *Taenia pisiformis*, a tapeworm of dogs and wild canids. The cysticerci are in the peritoneal cavity of rabbits and hares.

**C. tarandi** the larval stage of *Taenia krabbei*, a cestode parasite of dogs and wild carnivores. The cysticerci are found in the muscles of wild ruminants.

**C. tenuicollis** the larval stage of the tapeworm *Taenia hydatigena*, a tapeworm of dogs and wild canids. The cysticerci are found in the liver and on the peritoneum in sheep but also in other ruminants and pigs. Infection in the dog occurs when infected offal is fed raw. Called also long-necked bladderworm.

**cysticercus** [sis''ti-sur'kəs] pl. *cysticerci* [Gr.] a larval form of tapeworm. See also **cysticercosis**.

**cystiform** [sis'ti-form] resembling a cyst.

**cystigerous** [sis-tij'ər-əs] containing cysts.

**cystine** [sis'tēn, sis'tin] a naturally occurring amino acid, an important sulfur-containing component of the protein molecule. It is sometimes found in the urine and in the kidneys in the form of minute hexagonal crystals, frequently forming cystine calculus in the bladder.

**c. calculi** see cystine **uroliths**.

**cystinemia** [sis'ti-ne'me-ə] the presence of cystine in the blood.

**cystinuria** [sis'ti-nu're-ə] a hereditary condition characterized by persistent excessive urinary excretion of cystine, lysine, ornithine and arginine, due to impairment of renal tubular reabsorption of these amino acids. The predominant clinical manifestation in dogs is the formation of urinary cystine calculi. A DNA test is available. See also **urolithiasis**.

**cystistaxis** [sis'ti-stak'sis] oozing of blood from the mucous membrane into the bladder.

**cystitis** [sis-ti'tis] inflammation of the urinary bladder. The condition may result from an ascending infection coming from the exterior of the body by way of the urethra, or it may be caused by an infection descending from the kidney. Often cystitis is not an isolated infection but is rather a result of some other physical condition. For example, urinary retention, calculi in the bladder, tumors, or neurological diseases impairing the normal function of the bladder may lead to cystitis. Clinical signs include frequency, pain on urination, blood-stained urine, a thickened bladder wall. Significant clinical pathology findings include hematuria, a high cell count indicative of inflammation, and bacteria recovered on culture.

**c. cystica** cystitis marked by the presence of submucosal cysts.

**emphysematous c.** an occasional complication of diabetes mellitus in dogs and cats, caused by gas-forming bacteria.

**epizootic equine c.** an Australian disease of horses similar to *Sorghum* spp. poisoning.

**gangrenous c.** results from severe inflammation and ischemia; the bladder wall is green to black.

**c. glandularis** mucin-secreting glands present in the mucosa in a case of cystitis.

**hemorrhagic c.** hemorrhage is the main clinical feature.

**interstitial c.** an idiopathic cystitis seen in **feline** lower urinary tract disease; characterized by irritative voiding and the presence of submucosal petechial hemorrhages seen on cystoscopy. As cystoscopy is rarely performed to make the diagnosis, the term **feline** idiopathic cystitis is used interchangeably.

**polypoid c.** a hyperplastic inflammation of bladder mucosa in which there is development of a non-neoplastic polypoid mass or masses.

**cystitis-ataxia syndrome** [sis-ti'tis ə-tak'se-ə] principally a disease of horses grazing *Sorghum* spp.; characterized by incoordination, frequent urination, urine scalding of perineum; suspected cause is a chronic low-level intake of cyanogenetic glycosides. A similar syndrome seen in cattle and sheep grazing *Sorghum* spp.

**cystitis-pyelonephritis** [sis-ti'tis pi''lo-nə-fri'tis] combined cystitis and pyelonephritis; pyelonephritis often succeeding an initial cystitis.

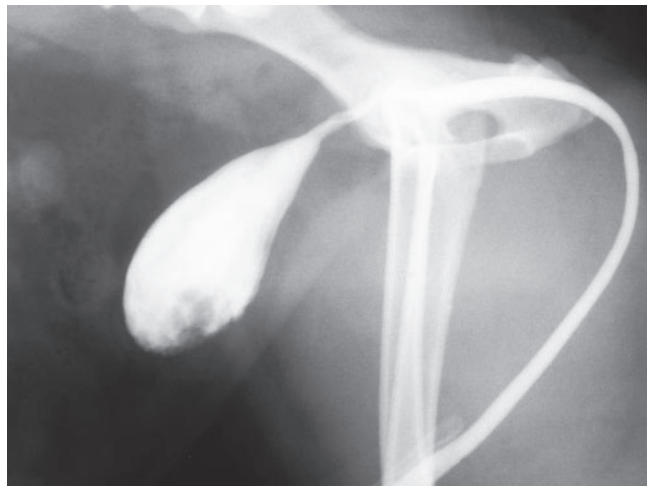
**c.-p. of sows** a disease of sows caused by *Actinobaculum suis* (*A. suis*, *Eubacterium suis*, *Corynebacterium suis*), carried in the prepuce of the boar (which remains clinically unaffected) and environment and is transmitted venereally. There is acute renal failure and unexpected death in acute cases, and dysuria, blood-stained, turbid urine accompanied by vaginal discharge in those that live a longer period; there is a high case fatality. There is cystitis on endoscopic examination. A major cause of sow mortality in most countries.

**cystotomy** [sis-tit'ə-me] surgical division of the capsule of the crystalline lens.

**cyst(o)-** word element. [Gr.] relationship to a cyst or bladder.

**cystoadenocarcinoma** [sis'to-ad''ə-nə-kahr''si-nə'mə] adenocarcinoma associated with cysts.

**cystocarcinoma** [sis'to-kahr''si-nə'mə] carcinoma associated with cysts.



**C-109:** Retrograde urethrocytogram demonstrating the typical crani-oventral location of polypoid cystitis.

Johnson SA, Tobias K. *Veterinary Surgery: Small Animal Expert Consult: 2-Volume Set*, 2nd Edition. Saunders, 2017.



**C-110:** Collection of a urine sample through ultrasound-guided cystocentesis.

From Hendrix CM, Sirois M, *Laboratory Procedures for Veterinary Technicians*, 5th Edition. Mosby, 2007.

**Cystocaulus** [sis'to-kaw'lus] a nematode genus of the family Protostrongylidae. Includes *C. nigrescens* (*C. ocreatus*). Found in the lungs of sheep and goats.

**cystocele** [sis'to-sē] herniation or bulging of the urinary bladder into the vagina.

**cystocentesis** [sis'to-sen-te'sis] percutaneous needle puncture of the bladder for the purpose of obtaining a urine sample uncontaminated by material from the lower urogenital tract, or less frequently for therapeutic decompression. Usually performed in dogs and cats through the abdominal wall in the suprapubic (prepubic) position. Called also vesicopuncture.

**cystodynia** [sis'to-din'e-ə] pain in the bladder; cystalgia.

**cystoelytroplasty** surgical repair of a vesicovaginal fistula.

**cystoepithelioma** [sis'to-ep'i-the''le-o'mə] a tumor with cystic and epitheliomatous elements.

**cystofibroma** [sis'to-fi-bro'mə] a fibroma containing cysts.

**cystogastrostomy** [sis'to-gas-tros'tə-me] surgical anastomosis of a pancreatic cyst to the stomach for drainage.

**cystogram** [sis'to-gram] the image obtained by cystography.

**micturating c.** see voiding cystogram (below).

**retrograde c.** an image made while the bladder is being filled with contrast agent from the urethra.

**voiding c.** an image of the urinary tract made while the animal is urinating. Called also micturating cystogram.

**cystography** [sis-tog'rə-fe] contrast imaging of the urinary bladder.

**cystoid** [sis'toid] 1. resembling a cyst. 2. a cystlike, circumscribed collection of softened material, having no enclosing capsule.

**Cystoisospora** [sis'to-i-sos'pə-rə] a genus of coccidia, previously classified as *Isospora* spp. with indirect life cycles.

**C. burrowsi**, **C. canis**, **C. heydorni**, **C. ohioensis**, **C. wallacei** coccidia of dogs; may cause enteritis.

**C. felis**, **C. rivolta** coccidia of cats; may cause hemorrhagic enteritis.

**cystojejunostomy** [sis'to-jə-joo-nos'tə-me] surgical anastomosis of a pancreatic cyst to the jejunum.

**cystolith** [sis'to-lith] a vesical calculus.

**cystolithectomy** [sis'to-li-thek'tə-me] surgical removal of a vesical calculus.

**cystolithiasis** [sis'to-li-thi'ə-sis] formation of vesical calculi.

**cystolithic** [sis'to-lith'ik] pertaining to a vesical calculus.

**cystolithotomy** [sis'to-li-thot'ə-me] see **cystolithectomy**.

**cystoma** [sis-to'mə] a tumor containing cysts of neoplastic origin; a cystic tumor.

**cystometrogram** [sis'to-met'ro-gram] the graphical record obtained by **cystometry**.

**cystometry** [sis'to-mə-trog'rə-fe] the graphic recording of intravesical volumes and pressures. See **cystometry**.

**cystometry** [sis'tom'ə-tre] the study of the pressure-volume relationship of the urinary bladder through a specialised catheter placed in the bladder via the urethra. Used in dogs to assess storage capacity, compliance and detrusor muscle function. Complementary studies of the urethral pressures are usually also done. Called also cystometry. See also **urethral pressure profile**.

**cystomorphous** [sis'to-mor'fəs] resembling a cyst or bladder.

**cystopexy** [sis'to-pek'se] fixation of the bladder to the abdominal wall.

**cystoplasty** [sis'to-plas'te] plastic repair of the bladder.

**cystoplegia** [sis'to-ple'jə] paralysis of the bladder.

**cystoproctostomy** [sis'to-prok-tos'tə-me] surgical creation of a communication between the urinary bladder and the rectum.

**cystoptosis** [sis'top-to'sis, sis'to-to'sis] prolapse of part of the inner coat of the bladder into the urethra.

**cystopyelitis** [sis'to-pi'ə-li'tis] inflammation of the bladder and renal pelvis.

**cystopyelonephritis** [sis'to-pi'ə-lo-nə-fri'tis] combined cystitis and pyelonephritis.

**cystorrhaphy** [sis-tor'ə-fe] suture of the bladder.

**cystorrhoea** [sis'to-re'ə] mucous discharge from the bladder.

**cystorrhexia** urinary bladder rupture.

**cystoscope** [sis'to-sköp"] an endoscope specially designed for passage through the urethra to permit visual inspection of the lumen of the urinary bladder. It has an outer sheath with a lighting system, a telescope with forward or oblique viewing, and an obturator which can be removed to allow passage of various devices into the bladder for diagnostic or therapeutic purposes.

**cystoscopy** [sis-tos'kə-pe] examination of the lumen of the urinary bladder by means of a cystoscope, which is introduced into the urethral orifice and passed through the urethra into the bladder. A catheter or biopsy forceps can be passed through the cystoscope into the bladder and, if necessary, beyond, into the ureter and renal pelvis. In this way, urine samples or tissue biopsies can be obtained for diagnostic purposes. Soft tissue masses and 'stones' (urinary calculi) may be removed during the same procedure. In addition, radiopaque fluids may be injected into the bladder or ureters for contrast radiography of the urinary tract (see **pyelography**).

**cystostomy** [sis-tos'tə-me] surgical formation of an opening into the bladder.

**cystotomy** [sis-tot'ə-me] incision of the bladder. See also **vesicotomy**.

**cystoureteritis** [sis'to-u-re'tə-i'tis] inflammation involving the urinary bladder and ureters.

**cystoureterogram** [sis'to-u-re'tər-o-gram] contrast imaging of the bladder and ureter.

**cystourethrography** [sis'to-u-rə-thog'rə-fe] contrast imaging of the urinary bladder and urethra.

**voiding c.** images taken while the animal is voiding urine.

**cystourethroplasty** [sis'to-u-re'thro-plas'te] surgical revision of the urinary bladder and urethra, usually applied to creation of a urethral sling in the treatment of urinary incontinence in dogs.

**cystourethroscope** [sis'to-u-re'thro-sköp"] an instrument used to examine the lumen of the urethra and urinary bladder.

**cystourethroscopy** [sis'to-u-re'thros'kə-pe] endoscopic examination of the lumen of the urethra and urinary bladder.

**Cyt** cytosine.

**cytapheresis** [sit'ə-fə-re'sis] a procedure in which cells of one or more kinds (leukocytes, platelets, etc.) are separated from whole blood and retained, the plasma and other formed elements being retransfused into the donor; it includes leukapheresis and thrombocytapheresis.

**cytarabine** [si-tar'ə-bēn] an antimetabolite that inhibits DNA synthesis, and hence has antineoplastic and antiviral properties. Used to treat leukemias and lymphoid malignancies in dogs and cats. Adverse effects

include bone marrow suppression and gastrointestinal toxicity. Called also cytosine arabinoside, arabinosyl cytosine, ara-C.

**Cytauxzoon** [si'tawk-zo'on] a genus of protozoan parasites of the family Theileriidae.

**C. felis** causes **cytauxzoonosis**, a fatal disease in domestic cats.

**C. sylvicaprae**, **C. strepsicerosi**, **C. tauroragi** these protozoa multiply by fission in erythrocytes. They have been observed in wild animals and in cats.

**cytauxzoonosis** [si'tawk-zo'o-no'sis] a disease of cats caused by the piroplasm *Cytauxzoon felis*, transmitted by the ticks *Amblyomma americanum* and *Dermacentor variabilis* and characterized by fever, hemolytic anemia, leukopenia, thrombocytopenia, jaundice and often death. Called also bobcat fever, as bobcats are the main reservoir host.

**-cyte** word element. [Gr.] a cell.

**cythioate** an organophosphorus anthelmintic administered orally to dogs and cats for the control of fleas.

**cytidine** [si'ti-dēn] a nucleoside, cytosine riboside; a constituent of RNA and cytidine nucleotides.

**c. 5'-triphosphate (CTP)** pyrimidine-nucleotide base involved in the structure of the nucleic acids DNA and RNA, in the activation of sugars, and in phospholipid synthesis.

**cytisine** [sit'i-sin] the toxic quinolizidine alkaloid in laburnum (*Laburnum anagyroides*), *Retama retam* and broom (*Cytisus scoparius*) trees.

**Cytisus** [sit'i-səs] genus of the Fabaceae legume family; contain the toxic alkaloid cytisine which causes excitement, incoordination, convulsions and death due to asphyxia. Includes *C. scoparius*, *C. multiflorus*, *C. proliferus*. Called also brooms.

**cyt(o)-** word element. [Gr.] relationship to a cell.

**cytoanalyzer** [si'to-an'ə-li'zər] an electronic optical apparatus for the detection of malignant cells in smears.

**cytocentrifuge** [si'to-sen'tri-fūj] designed for hypocoellular fluids; it spins at lower speeds and has more gradual acceleration and deceleration than normal centrifuges. Some are able to deposit cells directly onto a slide for examination.

**cytochalasin** [si'to-kal'ə-sin] any of a group of fungal metabolites that bind to and inhibit polymerisation and elongation of actin, thus inhibiting the motility of polymorphonuclear leukocytes.

**cytochemistry** [si'to-kem'is-tre] the identification and localization of the different chemical compounds and their activities within the cell.

**cytochrome** [si'to-krōm] any of a class of hemoproteins, widely distributed in animal and plant tissue, whose main function is electron transport; distinguished according to their prosthetic group as *a*, *b*, *c* and *d*.

**c. b<sub>5</sub> reductase** a flavoprotein that catalyzes the reduction of cytochrome *b<sub>5</sub>*, which is involved in the desaturation of fatty acids in the liver and in cytochrome P450-containing systems.

**c. oxidase** an *a* type cytochrome which contains copper and receives electrons from another cytochrome, of the *c* type, and transfers them to oxygen atoms allowing the oxygen to combine with hydrogen atoms to form water. A nutritional deficiency of copper leads to a general reduction in metabolic rate because of the absence of cytochrome oxidase *a*.

**c. P450** superfamily of hemoproteins having functions in steroid metabolism and detoxification of drugs and other xenobiotics.

**c. system** the sum of cytochromes which play a part in the body's metabolic processes. Includes the cytochrome oxidases and cytochrome reductases.

**cytotoxic** [si'to-si'dəl] causing cell destruction.

**cytocide** [si'to-sid] an agent that destroys cells.

**cytotoxicity** [si-tok'si-tis] the destruction of cells.

**cytodiagnosis** [si'to-di'ag-no'sis] diagnosis based on examination of cells.

**cytodifferentiation** [si'to-dif'ə-ren'she-a'shən] the development of specialized structures and functions in embryonic cells.

**cytodystol** [si'to-dis'təl] denoting that part of an axon remote from the cell body.

**Cytodites** a genus of mites; parasites in the air sacs of birds, the air sac mite; usually do not have any pathogenic effect. Includes *Cytodites nudus*.

**Cytoproct** previously a genus of rickettsiae.

**C. bovis**, **C. phagocytophila**, **C. ondiri** see *Anaplasma phagocytophilum*, *Ehrlichia ondiri*.

**cytofilaments** [si'to-fil'mənt] structural elements in the cytoplasm of cells; other elements are microtubules, filaments and cytoplasmic inclusions.

**cytogenesis** [si'to-jen'ə-sis] the origin and development of the cell.



**cytogenetic** [si''to-jə-net'ik] pertaining to or originating from the origin and development of the cell.

**c. defects** abnormalities in the number or composition of the chromosomes in an individual animal; abnormalities of the karyotype. These can be detected in the fetus by the study of amniotic fluid obtained by abdominocentesis but has limitations in animals that bear litters. Prenatal sex determination is also possible by this means.

**c. infertility** infertility related to chromosomal abnormality; karyotype abnormalities.

**cytogenetics** [si''to-jə-net'iks] the study of the number, structure and function of chromosomes in cells; the combined sciences of genetics and cytology.

**clinical c.** the branch of cytogenetics concerned with relations between chromosomal abnormalities and pathological conditions.

**cytogenic** [si-to-jen'ik] **1.** pertaining to cytogenesis. **2.** forming or producing cells.

**cytglycopenia** [si''to-gli''ko-pe'ne-ə] deficient glucose content of the body or blood cells.

**cytohistogenesis** [si''to-his''to-jen'ə-sis] development of the structure of cells.

**cytohistology** [si''to-his-tol'ə-je] the combination of cytological and histological methods.

**cytoid** [si'toid] resembles a cell.

**cytokine** [si'to-kin] one of a large number of protein substances produced by cells of the immune system that function to signal other cells within the local area of the secreting cell. Include interleukins, lymphokines and chemokines. Bind specific cell-surface receptors on the responding cell. See also **monokine** and **lymphokine**.

**cytokinesis** [si''to-ki-ne'sis] the final stage of cell division, when the cytoplasm is divided between daughter cells in **mitosis** or **meiosis**.

**Cytolichus** see **Cytodites**.

**cytolemma** [si''to-lem'ə] of the oocyte, the limiting membrane of the yolk of a bird's egg; the plasma membrane.

**cytolisin** substance causing cell lysis.

**cytologic, cytological** [si''to-loj'ik] pertaining to cytology.

**c. examination** examination of material for purposes of cytology. Carried out on cerebrospinal fluid, joint fluid, aspirates of body cavities and cystic lesions. Includes total and differential counts.

**cytologist** [si-tol'ə-jist] a specialist in cytology.

**cytology** [si-tol'ə-je] the study of cells, their origin, structure, function and pathology.

**aspiration biopsy c. (ABC)** the microscopic study of cells obtained from superficial or internal lesions by suction through a fine needle.

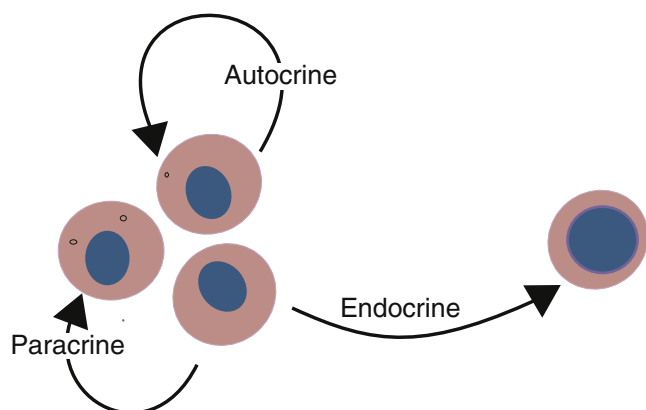
**brush c.** examination of cells obtained from a mucosal surface using a cytological brush.

**exfoliative c.** microscopic examination of cells desquamated from a body surface or lesion as a means of detecting malignancy and microbiological changes, to measure hormonal concentrations, etc. Such cells may be obtained by such procedures as aspiration, washing, smear and scraping, and the technique may be applied to vaginal secretions, urine, abdominal fluid, prostatic secretion, etc.

**cytolysin** [si-tol'ə-sin] a substance or antibody which causes cytolysis.

**cytolysis** [si-tol'ə-sis] the dissolution of cells.

**immune c.** cell lysis produced by antibody with the participation of complement.



**C-111:** Cytokines. The distinction among autocrine, paracrine, and endocrine effects.

Tizard, Ian. Veterinary Immunology, 10th Edition. Elsevier (HS-US), 2017.

**cytolysosomes** [si''to-li''so-sōmz] cytolysosomes are formed when products of cytoplasmic degeneration are engulfed by primary lysosomes; they are finally digested and the residual body which remains is extruded from the cell.

**cytolytic** [si''to-lit'ik] pertaining to or emanating from cytolysis.

**c. reactivity** type II hypersensitivity.

**cytomegalic** [si''to-mə-gal'ik] a state of cytomegaly.

**c. inclusion body disease** a disease of young pigs. See **inclusion body rhinitis**.

**cytomegalovirus** [si''to-meg'ə-lo-vi''rəs] member of the *Betaherpesvirinae* subfamily, they infect humans, monkeys, pigs and rodents in which they appear to establish life-long infections. The viruses are highly host specific, slow growing, remain highly cell-associated and produce large intranuclear inclusion bodies in enlarged cells. Diseases produced by cytomegaloviruses are subtle.

**mouse c.** causes subclinical infection of submaxillary salivary glands and other tissues in wild mice.

**porcine c.** causes **inclusion** body rhinitis and a generalized infection in young pigs.

**cytomegaly** [si''to-meg'ə-le] unique and marked enlargement of cells; a characteristic of cytomegaloviruses; occurs also in cells infected with one strain of an ovine adenovirus.

**cytometaplasia** [si''to-met'ə-pla'zhə] change in function or form of cells.

**cytometer** [si-tom'ə-tēr] a device for counting cells.

**cytometry** [si-tom'ə-trē] the counting of cells.

**flow c.** see **flow cytometry**.

**cytomorphology** the morphology of body cells.

**cytomorphosis** [si''to-mor-fo'sis] the changes through which cells pass in development.

**cyton** [si'ton] cell body of a neuron; called also soma.

**cytopathic** [si''to-path'ik] pertaining to or characterized by pathological changes in cells.

**cytopathogenesis** [si''to-path''o-jen'ə-sis] production of pathological changes in cells.

**cytopathogenic** [si''to-path''o-jen'ik] pertaining to or emanating from cytopathogenesis.

**c. effect** having a destructive effect on cells. See also **cytolytic**.

**cytopathological, cytopathologic** [si''to-path''o-loj'i-kəl, si''to-path''o-loj'ik] relating to cytopathology; denoting the changes in cells in disease.

**cytopathologist** [si''to-pə-thol'ə-jist] an expert in the study of cells in disease; a cellular pathologist.

**cytopathology** [si''to-pə-thol'ə-je] the study of cells in disease; cellular pathology.

**cytopenia** [si''to-pe'ne-ə] deficiency in the cells of the blood.

**Cytophaga** [si-tof'ə-gə] a genus of gram-negative, gliding, rod-shaped bacteria.

**C. columnaris** now classified as *Flavobacterium columnare*.

**C. johnsonae** now classified as *Flavobacterium johnsoniae*. See false **columnaris disease**.

**C. psychrophila** causes peduncle or cold water disease of Brook trout. Predisposed to by subnormal water temperature. Now classified as *Flavobacterium psychrophilum*.

**cytophagy** [si-tof'ə-je] the ingestion of cells by phagocytes.

**cytophilic** [si-to-fil'ik] having an affinity for cells.

**c. antibody** see **cytotropic antibody**.

**cytophylaxis** [si''to-fə-lak'sis] **1.** the protection of cells against cytolysis. **2.** increase in cellular activity.

**cytopipette** [si''to-pi-pet'] a pipette for taking cytological smears.

**cytoplasm** [si''to-plaz'am] the protoplasm of a cell surrounding the nucleus and is enclosed by the cell membrane.

**cytoplasmic** [si''to-plaz'mik] pertaining to or included in cytoplasm.

**c. inclusions** include secretory inclusions (enzymes, acids, proteins, mucosubstances), nutritive inclusions (glycogen, lipids), pigment granules (melanin, lipofuscin, hemosiderin). See also **inclusion body**.

**c. inheritance** the cytoplasmic organelles, chloroplasts and mitochondria contain DNA which contains a number of genes. These extrachromosomal genes are transmitted to daughter cells via cytoplasm. Called also maternal inheritance.

**c. nuclear inclusion** see **inclusion body**.

**c. skeleton** includes microtubules, centrioles, cilia, flagellae.

**cytoplasmolysis** [si''to-plaz-mol'i-sis] lysis or digestion of the cytoplasm of cells as part of the death of tissues.

**cytosegresome formations** spherical, refractile, eosinophilic structures which develop in hepatic cells that have been sublethally injured. Called also Councilman bodies, hepatocellular acidophilic bodies.

**cytosine** [si'to-sēn] a pyrimidine base found in the **nucleic acids**, **deoxyribonucleic acid** (DNA) and **ribonucleic acid** (RNA).

**c. arabinoside** see **cytarabine**.

**cytoskeleton** [si''to-skel'ə-tən] a conspicuous internal reinforcement in the cytoplasm of a cell, consisting of tonofibrils, filaments of the terminal web, and other microfilaments.

**cytosol** [si'to-sol] the liquid medium of the cytoplasm, e.g., cytoplasm minus organelles and nonmembranous insoluble components.

**cytosome** [si'to-sōm] the body of a cell apart from its nucleus.

**cytospin** [si'to-spin] **1.** a high speed centrifuge used for cytocentrifugation. **2.** a method of preparing a concentrated sample of cells from a cell-poor fluid. Using centrifugation to separate cells and deposit them in a thin layer on a slide.

**cytostasis** [si-tos'tə-sis] inhibition of cell proliferation.

**cytostatic** [si'to-stat'ik] **1.** suppressing the growth and multiplication of cells. **2.** an agent that so acts.

**cytotaxis** [si-to-tak'sis] the movement of cells toward each other (positive cytotaxis) or away from each other (negative cytotaxis) in response to a stimulus.

**cytotaxonomy** [si'to-tak-son'ə-me] study of the relationships between and the classification of organisms based on chromosomes.

**cytotechnologist** [si'to-tek-nol'ə-jist] a medical laboratory technologist specializing in cytology.

**cytotoxic** [si'to-tok'sik] having a deleterious effect upon cells.

**c. antibody** see cytotoxic **antibody**.

**c. drugs** generally refers to those used in chemotherapy of neoplasms, e.g., cyclophosphamide, vincristine, etc.

**c. T lymphocyte** see **T lymphocyte**.

**cytotoxicity** [si''to-tok-sis'i-te] destruction of cells; used to describe lysis of cells by immune mechanisms. See also **antibody**-dependent cell-mediated cytotoxicity (ADCC).

**cell-mediated c. assay** a test of cell-mediated immunity in which activated cytotoxic T lymphocytes cause lysis of <sup>51</sup>Cr-labeled target cells.

**cytotoxin** [si'to-tok'sin] a toxin having a specific toxic action on cells of special organs.

**cytotrophoblast** [si'to-trof'o-blast] the cellular (inner) layer of the trophoblast, in contrast to the outer syncytiotrophoblast (referring to human placentation).

**cytotropism** [si-tot'ro-piz-əm] **1.** cell movement in response to external stimulation. **2.** the tendency of viruses, bacteria, drugs, etc., to be attracted to and exert their effect upon certain types of cells of the body.

**cytula** the impregnated ovum; zygote

**cyturia** [si-tu're-ə] the presence of cells of any sort in the urine.

**Czech pied cattle** red and white, pied, dual purpose cattle from former Czechoslovakia.

**Czechoslovakian vicak** a dog breed developed in Eastern Europe in the 1950s for military purposes by crossing German shepherd dogs with Carpathian wolves.

**Czerny-Lembert suture** a combination of the Czerny and Lembert suture patterns. The Czerny suture, which may be interrupted or continuous, is buried by a seromuscular Lembert layer.

**Czerny suture** [cher'ne] **1.** an intestinal suture in which the thread is passed through the mucosa only. **2.** union of a ruptured tendon by splitting one of the ends and suturing the other into the split.