Neutralization of the Venezuelan Encephalomyelitis virus by human sera

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THE OCCURRENCE in man of equine encephalomyelitis due to both the Western and Eastern encephalomyelitis virus strains was established in 1938. As to the Venezuelan equine encephalomyelitis (strain V-1938), the first two reports on an infection in human beings appeared in 1943, and in both cases they were laboratory infections. The first occurred in two laboratory workers in the Rockefeller Institute, New York, and the second one in eight laboratory workers in the Laboratory of Yellow Fever Research Service, Rio de Janeiro, Brazil. Although in two of the ten persons the illness was rather severe, in the eight others it was milder.

With regard to Venezuela, Colombia and Trinidad, where the illness among equines is widespread, there has been so far no report on its positive transmission to man, although it was suspected many times, principally in country people. For this reason we undertook investigations concerning the possibility of an inconspicuous infection among the personnel of the Institute of Veterinary Research, where the encephalomyelitis strain V-1938 has been worked on now for almost six years. For this purpose, the sero-neutralization test was carried out with sixteen human sera, ten of which proceeded from persons who have been, or still are, working with encephalomyelitic material (mice, chick-embryos, horses and donkeys infected with the virus, encephalomyelitic vaccine, etc.) and six from persons who have never had any contact with such material. Three of the last ones were also laboratory workers and three peasants living in the vicinity of the Institute.

Serial tenfold dilutions were prepared from the supernatant of a 20% V-1938 virus containing mouse-brain suspension in saline, and to 0.5 cc. of each dilution was added the same amount of the sera on test, making a series of final dilutions of the virus ranging from 10^{-2} to 10^{-18}. After an incubation for two hours at 37°C. in a water bath, the serum-virus mixtures were inoculated intracerebrally (0.03 cc.) into four-week-old Swiss white mice.

The results may be summed up as follows:

(1) The sera of three laboratory workers and one caretaker of experimental animals, who are now working for from two to five years with encephalomyelitic material, showed high neutralizing antibody titres (average neutralization index $10^{-4/74}$).

(2) The sera of three laboratory workers who worked previously with the virus, but by now have not had any contact with encephalomyelitic material for two and three and one-half years, had an equally high virus-neutralizing power (average neutralization index $10^{-4/44}$).

(3) The same neutralization index showed also the serum of one person who worked only on very few occasions with the virus and of another who performed the autopsy of thirteen encephalomyelitic horses.

(4) One laboratory worker, who is bottling the inactive virus-containing encephalomyelitic vaccine and who never came into contact with the active virus, also developed a high amount of neutralizing antibodies (neutralization index $10^{-1/0}$).

(5) The possibility is considered that all persons who have been working with the encephalomyelitis virus and who remember transitory illness with gripal symptoms, have suffered from an encephalomyelitic infection.

(6) Six persons (three from the Institute and three from outside) who have never had any contact with encephalomyelitic material, showed no neutralizing antibodies at all.

(7) Though the Venezuelan equine encephalomyelitic virus seems to be highly infective to man by direct contact, the illness is much milder than that produced by the Western and Eastern encephalomyelitis virus.

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Feeding New Grain

IT IS not wise to change quickly from old grain to new for feeding poultry. Certain, though not all, newly threshed grains contain a toxic material and will cause serious trouble. Affected birds show symptoms of bowel disturbance, their heads turn dark in colour, breathing quickens, and the temperature rises. A mild physic of four to six ounces of Epsom salts per hundred birds, fed in a wet mash, will usually give relief. Unchecked cases develop enteritis, or inflammation of the intestines and deaths result.

While all newly threshed grains do not contain poisonous properties, it is impossible to detect their presence without actually feeding the grain. Where supplies of old grain are scarce, twenty-five per cent of new grain may safely be added and the amount gradually increased. Poisonous properties in newly threshed grains apparently do not completely disappear until the grain has been in storage for a month or more.

Selection of Poultry Males

THE SEASON is approaching when the selection for next year's poultry breeding males will be made. This is a high point in the poultry breeder's art. Year after year it has been demonstrated that a strong vigorous male from high producing stock has had a marked effect on the type and producing ability of the progeny. In the question of the selection of males, poultry authorities point out that the poultryman should know his flock; that selection and observation should start with the parent stock, and continue all through the stages of growth. Even in approved flocks, it is not sufficient to leave all the effort of selection until the inspector arrives.

The male is half the flock. From the very first, some cockerels are more precocious, faster growing, quicker at feathering, have more body

conformation, and are more alert than others. The desirable cockerels should be identified by the poultryman.

When the final selection of breeding males is made, the following points should be noted: (1) apparent vigour and masculinity, with freedom from coarseness in skin, comb, wattles, and bone; (2) a clean-cut bright head; (3) a large, bright, full, prominent eye, bay or red in colour; (4) a weighty, well-proportioned bird with full-rounded, well-meated breast, wide across the shoulders and fairly long straight keel; (5) strong straight legs set well apart; (6) well-conditioned plumage, bright legs, and skin colour; (7) size shape, and colour typical of the breed; and (8) free from standard disqualifications and defects.

Extended Index of Current Veterinary Literature

Journal of the American Veterinary Medical Association October, 1944

COLBJORNSEN, J. M. S.— *Livestock in wartime Norway.* p. 185.

LAMBERT, W. V., BOYD, W. L., HARING, C. M., HUDDLESON, I. F. and LOTHE, H.— *Adult vaccination against Brucellosis in Cattle.* p. 190 (9 refs.)

SPENCER, G. R., HOYT, H. H. and WHITEHAIR, C. K.— *Listerellosis Occurring in Wisconsin.* p. 195.

ASSING, J. E.— *The practical side of Rabies.* p. 198.

CARABRA, V.— *Protein balance in surgery.* p. 201. (3 refs.)

FRICK, E. J.— *Amputation of the pelvic limb of dogs.* p. 204.

PIERCY, P. L., HARGIS, G., and BROWN, C. A.— *Mushroom poisoning in cattle.* p. 206. (2 refs.)

STUBBS, E. L.— *Blindness with Papilledema in Calves.* p. 209. (8 refs.)

KNODT, C. B. and PETERSEN, W. E.— Water *as a vehicle for the Infusion of Sulfanilamide in the Treatment of Mastitis.* p. 212.

COMMITTEE ON NUTRITION.— *Protein Reserve and Antibody Production.* p. 218.

The Australian Veterinary Journal, August, 1944

UNDERWOOD, E. J. and CURNOW, D. H.— *Vitamin A in the nutrition of sheep in Western Australia.* p. 248. (17 refs.)

GRANGER, W.— *Selection of breeding ewes: Dependence of practicable degree of selection of your ewes upon vital statistics.* p. 253. (1 ref.)

RAINEY, J. W.— *The rational treatment of equine colic.* p. 261.

INVESTIGATION COMMITTEE, 1943-44, *Report of — Toxaemic Jaundice.* p. 265.

The North American Veterinarian, October, 1944

ANONYMOUS.— *The Monthly Digest: Allergy: Part III.* p. 595. (24 refs.)

PETERSON, W. N.— *Sulfathiazole sodium sesquihydrate — a new sulfa drug for veterinary use.* p. 600.

SCHLOTTHAUER, C. F., MANN, F. C., and ESSEX, H. E.— *Black-head in turkeys: notes on its occurrence and its transmission.* p. 603. (18 refs.)

FLYNN, J. C.— *Obstetrics under difficulties.* p. 609.
Flynn's cases occurred in an Eland and a Tigress.

MAYER, K., and LACROIX, L. J.— *Esophageal obstruction..* p. 610.

COFFIN, D. L. — *A case of Dirofilaria immitis infection in a captive-bred timber wolf (Canis occidentalis, Richardson).* p. 611. (5 refs.)