

Section of the History of Medicine

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An Outline of Dentistry in the British Army, 1626 - 1938

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(*The Army Dental Corps*)

CHRONOLOGY

- 1617 : *Surgion's Mate*, John Woodall ; dental instruments in surgeon's chest.
- 1626 : War with France—Woodall medical adviser—his chest becomes regulation pattern for the army—July 10, Charles I authorizes free issue of chest—first authorized dental outfit for temporary army surgeons and mates.
- 1626-1695 : Musketeers (two-thirds of infantry) require incisors to open the bandoleer (powder charge).
- 1628 and 1639 : Woodall's *Viaticum* giving uses and illustrations of the dental outfit for the army surgeon.
- 1660 : Standing army formed—regular surgeons and mates—no details of instruments in chest.
- 1676 : *Eight Chirurgical Treatises*, Richard Wiseman—first recorded gunshot wound of jaw (1650).
- 1678-1810 : Grenadiers (one company per regiment) require incisors to open the fuse of the grenade.
- 1696-1865 : The cartridge (combining charge and bullet) supersedes the bandoleer—all infantry required incisors and canines to tear open the cartridge.
- 1798 : Hospital equipments laid down—one dental instrument.
- 1816 : Report on Maxillo-Facial Injuries at Waterloo.
- 1820 : Three dental instruments in equipment.
- 1821 : Defective teeth as a cause of rejection.
- 1830 : Odontalgia as a cause of admission to hospital.
- 1838 : Four tooth instruments.
- 1857 : Medical officers supplied with sets of extracting and filling instruments ; requested to conserve teeth.
- 1878 : Gutta-percha splint for fractured jaw added to equipment.
- 1880 : British Dental Association formed—agitates constantly for army dentistry, but without success.
- 1899-1902 : South African War.
- 1900 : Mr. N. Pedley, honorary dentist at Deelfontein, for six months.
- 1901 : Four contract dentists for troops in the field. First issue of tooth-brush.
- 1903-1908 : Dentistry course to R.A.M.C. officers—instituted at Guy's Hospital. Clinical teachers in dentistry appointed.
- 1904-1908 : Eight contract-dentists appointed for army in home commands.
- 1909-1914 : Whole-time dentists superseded for part-time civilian contract.
- 1910-1914 : Three contract-dentists for British troops in India.

1914–1918 : The Great War. Slow recognition by authorities of the need for dental treatment at home and in the field ; May 1918 Lt.-Col. Helliwell appointed to War Office in advisory capacity.

1921 : January 4—The Army Dental Corps formed.

1932 : Standing Army Advisory Committee on Maxillo-Facial Injuries formed.

PREVIOUS to the formation of the standing army in 1660, forces and their medical staff were raised under a system of contract for the duration of campaigns, men being

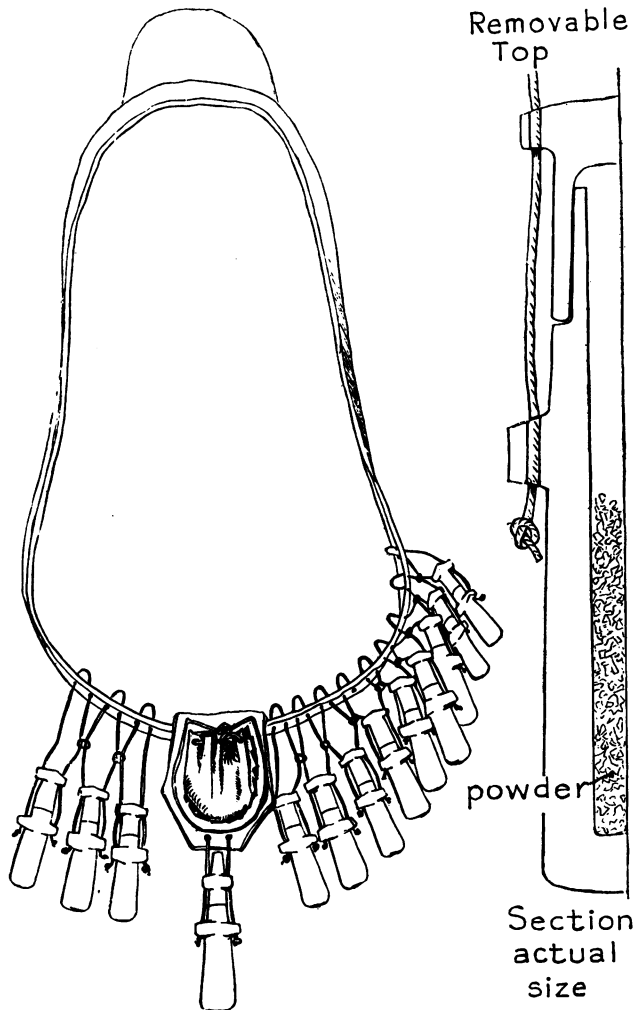


FIG. 1.—Bandoleers, shown in the cluster and full size. c. 1640. (From *The British Army*. Scott, 1868.)

roughly graded by physique for the various arms of the time. The infantry unit early in the seventeenth century was the company, 100 to 300 strong, one-third pikemen and two-thirds musketeers, the latter carrying the gunpowder charge in bandoleers—wooden tubes, four inches long, attached to a shoulder strap (fig. 1).

We read "It doth behove musquetiers to be strong and puissant of body, without sickness, aches, or other impediments" (Scott, 1886), but we are not told that it also behoved them to have front teeth wherewith to pull off the bandoleer cap before pouring the powder down the muzzle. The use of incisors and canines as the quickest and simplest means to free the powder in the charge lasted till 1865, when the modern pin-firing mechanism was introduced, and for two centuries the possession of sufficient teeth for the purpose was the infantry dental standard, if we may call it such.

A surgeon and apprentice, styled "mate", were allotted to each infantry company, the former supplying his own chest of instruments and dressings, for which he received additional pay of twopence a month from each man. In his *Surgeon's Mate*, 1617, John Woodall, first Surgeon-General to the East India Company, details the contents of the chest required by the Company's surgeons, which soon became the regulation pattern for the forces and which Charles I, by Order in Council of July 10, 1626, authorized as a free issue by way of special inducement to surgeons to join his expedition against France. Woodall (appointed medical supervisor to the force) in a recruiting circular to "the younger sort of surgeons, my brethren" acquainted them of this Order by which the King not only increased the pay and field allowance of the previous reign, but "His Majestie moreover allowed and gave to each surgeon appointed to 250 men a surgery chest of £17 valew, free of account" (Gore, 1878).

We may therefore consider the instruments specified "for teeth" as the first authorized dental outfit (fig. 2).

FIRST AUTHORIZED ARMY DENTAL OUTFIT—JULY 10, 1626 (CHARLES I).

Instruments	Modern counterpart
Paces	Crown forceps
Pullicans	Dislocating forceps
Forcers	Elevators
Punches	Chisels
Crowes bills	Root forceps
Flegmes	Periosteal elevators
Gravers	Scalers
Small files	Similar

Their uses are described, and some of them are illustrated, in Woodall's *Viaticum, or Pathway to the Surgeon's Chest*, 1628, "containing chirurgicall instructions for the younger sort of surgeons in His Majestie's emploie", in which he tells us:—

"All these recited instruments, and each of them, are needfull in the surgeons chest, and cannot bee well forborne for the drawing of teeth, forasmuch as the cleansing of the teeth and gums, and the letting of the gums' blood are often no small things for keeping men in health, and sometimes doe save the lives of men both at sea and land. For we see that from an Apostume begun under a rotten or hollow tooth, for want of drawing of the same, sometimes proceedeth great swellings in the face, or in the Amygdals and throat, and the party is suffocated and dieth."

Hence we see that scaling and gum treatment, in addition to extraction, were performed by the company surgeon, and we note the mention of extensive caries, with cellulitis of the face and fatal angina as complications of acute alveolar abscess.

On the downfall of the Commonwealth in 1660, the various forces in the three kingdoms, numbering some 80,000 men, were entirely disbanded, and a small standing army of about 5,000 was formed under Charles II. The temporary company surgeon was replaced by a regimental "chirurgeon" permanently attached to the regiment, supplying a chest of which no details are available but in which some dental instruments were included, no doubt.

Richard Wiseman, "the Father of English Surgery", and most noted military surgeon of the Restoration, gives us two important army cases and also a vivid picture of oral surgery at that time, in his great work *Severall Chirurgicall Treatises*, 1676.

"One was shot in the Face betwixt the Nose and Eye on the right side into the Ethmoides by Pistol-bullet. After he had been cured some years of the external wound in his Face, he became troubled with a fretting Ichor, which discharged by that Nostril; and especially at his first rising

**A NOTE OF THE PARTI-
cular Ingrediencies due to the Surgeons
Chest, and of other necessary Appendexes
seruing for Chirurgicall vses, whereof these next
recited may be placed on the lidde of the Chest,
if the Surgeon will haue it so.**

Incision knives.
Dismembring knives.
Cautlings.
Rasors.
Trapan.
Lenatories.
Head-Sawes.
Dismembring Sawes.
Dismembring Nippers.
Mallet and Chizell.
Speculum Oris.
Speculum Oris with a Screw.
Speculum Linguae.
Speculum Ani.
Cautrizing Irons.
Storks bills.
Rauens bills.
Crowes bills.
Terebellum.

Incision shieres.
Probes or stamules.
Spatulaes great and small.
Spatulum Mondani.
Paces.
Pullicans.
Forcers or punches.
For teeth. } Crowes bills.
Flegmes.
Grauers.
Smuil files.
One bundle of small German Instru-
ments.
Glisten Sirings.
Small Sirings.
Catheter.
Waxe Lights.
These for the lidde of the
Chest.

A

The

FIG. 2.—Page 1, *Surgion's Mate*. Woodall, 1617.

in the morning out of Bed it would run half a spoonful of a yellowish colour, which had made a chop or gutter at the lower end of that Nostril by its acrimony. After some years he felt, upon bending his head backward or forwards, the Bullet to rowl to and fro over the roof of his Mouth. He complained to me of his grievance at the Hague in Holland, a little before his Majesty's going into Scotland. We resolv'd Upon the cutting thro' the Palat-bone, to which purpose I placed him in a clear light, one holding his head steady, while I cut into the roof. But the flesh was so close

tied to the bone that it would not yield to my Spatula as I expected ; wherefore I applied a bit of a Caustick-stone, and held it to the place with a pledget of lint a few minutes ; by which I consumed the soft fleshy part over the bone, and afterwards cut into the bone such a hole, that in the moving of his head I could see the bullet lodged in the hole ; which encouraging us to proceed in our work, the bullet was afterwards taken out, and he eased of that discharge of matter which threaten'd a filthy carious ulcer. My attendance upon his Majesty into Scotland hindring my prosecution of that cure, I left him in the hands of a Chirurgion there, and since have often seen him at Court. But the Ulcer did not close up with a Callus ;] however the place is supplied by a small plate without offence."—Book IV : *Sinuous Ulcers in Gunshot Wounds*.

This case may be dated with some confidence, as having occurred in 1650, for Wiseman accompanied Charles, then Prince of Wales, from the Hague to Scotland in June of that year (*Dictionary of National Biography*, 1900). It probably refers to a royalist officer wounded in the civil war and subsequently attached to the Prince's retinue, and is the first recorded treatment of a gunshot wound of the jaws before the days of a standing army period. Of special significance is the mention of a prosthetic appliance subsequently used to close the resulting sinus into the antrum.

" An officer of the King's Regiment of Foot, marching at the head of his Company in a hot Summer's day, heated his blood and was seized with a pain in one of his teeth of the lower right Jaw. He sent for a Tooth-drawer, who pulling out the tooth brake the alveoli off from the jaw according to the length of it. . . . The neighbouring parts swelled and apostemated, and all his teeth and part of the alveoli cast off."—Book II : *Of Ulcers with Caries in the Bones*.

The unfortunate officer reported to Wiseman, apparently consulting surgeon to the army at the time, who first attempted to cure the condition by fomentation, irrigation, and drainage.

" We hoped the outward and inward swelling and discharge of matter would have lessened ; but they not yielding one jot to our endeavours, I laid open the Cheek from the Orifice I had enlarged forward along the Bone, with intention to take it out ; but it was so shut in, that I could by no means get it out, till with watchmakers files I cut through that Bone ; then the ends thrust out into his Mouth. These I pulled out ; they proved to be pieces of the Alveoli. Then I felt the Jaw itself arise ; and, considering that if it was loose it must out, I passed the end of my Probe under it ; whereupon it rose up, having been some while loose and was only held down by the aforesaid Alveoli ; which being removed, the Jaw came away without the least pain or one drop of Blood, he only crying out of his Ear, as if it had made a hole through there."—*Loc. cit. supra*.

" The jaw being extracted, the side was ready to fall in ; to prevent which I caused the patient to hold it stretched out with his fingers in his mouth and a looking glass held before him, that he might the better see to keep it more exactly even whilst I by agglutinative powders ' cum albumine ovi ' made a Crust upon the outside ; which with pastboard wet ' in aceto ' applied over it sate close to it ; and after it was dried kept that side of the cheek firm, and by bandage it continued so, he helping it as hath been above said. Whilst his chaps were thus bound up, I continued to wash his mouth with the decoction above said injected often in a day with a syringe ; by which means the ulcer was cleansed and cured, and disposed to a callus, which grew and hardened in less than twenty days so equal with the other, as without looking in his mouth it could not be discerned."—*Loc. cit. supra*.

As the King's Regiment of Foot was one of the earliest in the standing army, this case may be regarded as the first recorded dental extraction and we specially note : (a) Osteomyelitis with loss of right angle and vertical ramus ; (b) poroplastic splint to counteract the resulting displacement ; (c) complete bony regeneration following on Wiseman's correct surgical procedure.

In 1678, grenadiers were introduced, and were required to have incisor teeth to open the fuse of the grenade—another use of teeth connected with arms of the service till about 1810, when grenades were discontinued.

The words of command and precise movements for freeing the powder in the bandoleer and grenade in 1690 were as follows :—

<i>Musketeers</i>	
Words of command	Explanation
No. 21 : “ Open them with your teeth.”	“ Bring the charger to your Mouth, pulling off the Cap with your Teeth and the help of your thumb.”
No. 22 : “ Charge with Powder.”	“ Bring your charger to the Muzzle, turning it up, pouring the Powder in the Barrel.”
<i>Grenadiers</i>	
No. 12 : “ Open your Fuse.”	“ Bring the Grenade to your mouth with your Right Hand, tell 1, 2, open the Fuse with your Teeth.”

(From *The Exercise of the Foot*, 1690.)

By the end of the century, pikemen had disappeared on the introduction of the bayonet, and the bandoleer had been displaced by the cartridge in which the powder and bullet were combined, thus greatly simplifying the loading of the musket. Thereafter, the whole of the infantry bit cartridges (fig. 3).



Handle Cartridge

FIG. 3.—“ The biting of the cartridge ”, from *The Soldier's Companion*. Lond., c. 1740.

Word of command	Explanation
“ Handle Cartridge.”	First movement : “ Draw the cartridge from the pouch.”
	Second movement : “ Bring it to the mouth, holding it between the forefinger and thumb, and bite off the top of it.”

(From *The Soldier's Companion*, circ. 1740.)

The eighteenth century is a barren period as regards our subject, for no records were kept; only a few army surgeons published their experiences or cases, and none of these refer to dental treatment or gunshot wounds of the jaws. Men were billeted in the garrets of lodgings or ale-houses, while £30 per annum was allowed the regimental surgeon for the hire of accommodation for a so-called hospital.

In 1740, only two barracks were in existence in England but, by 1798, barracks sufficient to house some 20,000 men had been built and a hospital organization was instituted, with definite schedules of equipment including dental instruments. At the same time, instructions for the medical examination of recruits were introduced, but it was not till 1821 that defective teeth were mentioned as a cause for rejection, previous to which the non-medical recruiting staff were responsible for ensuring that the infantry recruit could bite a cartridge. Napoleon did not leave so important a matter to chance, for his Code for Conscription, 1810, gives precise instructions on this point (Table I).

TABLE I.—THE DENTAL STANDARDS, 1625 TO 1938.

1625–1695 : Incisors and	{	Musketeers (two-thirds Infantry) to open the bandoleer (powder charge).
1678–1810 : canines were		Grenadiers (one company) per regiment to open the fuse of the grenade.
1695–1865 : required by		Whole of Infantry, to open the cartridge (combining powder-charge and bullet).
1798 : First instructions for medical inspection of recruits.		
1821 : First mention of defective teeth as a cause of rejection (Hospital Regulations). “ Deficiency of many teeth, and particularly if accompanied by an unsound state of the remainder.”		
1824–1865 : “ Loss of many teeth, particularly of the incisors and canines.” (Compare Napoleon Code of Conscription, 1810, “ Loss of the incisors or canine teeth of the upper or lower jaw hindering the biting of the cartridge. A person without canine or incisor teeth cannot be a soldier of the line, but may be employed in other services ”.)		
1865–1898 : “ Loss of many teeth.”		
1899 : “ Recruits must possess a sufficient number of sound teeth for efficient mastication.”		
1906–1914 : “ Loss or decay of teeth to such an extent as to interfere materially with efficient mastication.”		
1921–1936 : “ The eleven-point standard ”—a simple, practical guide for medical officers :—		
	{	incisors, canines, and premolars, count as one point each.
sound or		first and second molars as two points each.
reparable		
functional	{	third molars (according to development) as one or two points each.
Maximum possible points, 22.		
Minimum points required, 11—namely 50% masticating efficiency.		
1937 : The standard was modified for other than front-line troops.		
1938 : All standards in abeyance.		

In 1830, a category of causes of admission to hospital was introduced, in which “ odontalgia ” is included, suggesting that painful dental conditions were then common. In 1857, medical officers were requested by the Director-General, Army Medical Department, to conserve certain teeth rather than extract them in every case (*British Journ. Dent. Science*, May 1857) for which purpose the set of filling instruments shown in fig. 4 and detailed in Table II was authorized.

Even in the most skilled hands, this set was ridiculously inadequate for any useful purpose, and medical officers very wisely refrained from using it, hence there is no

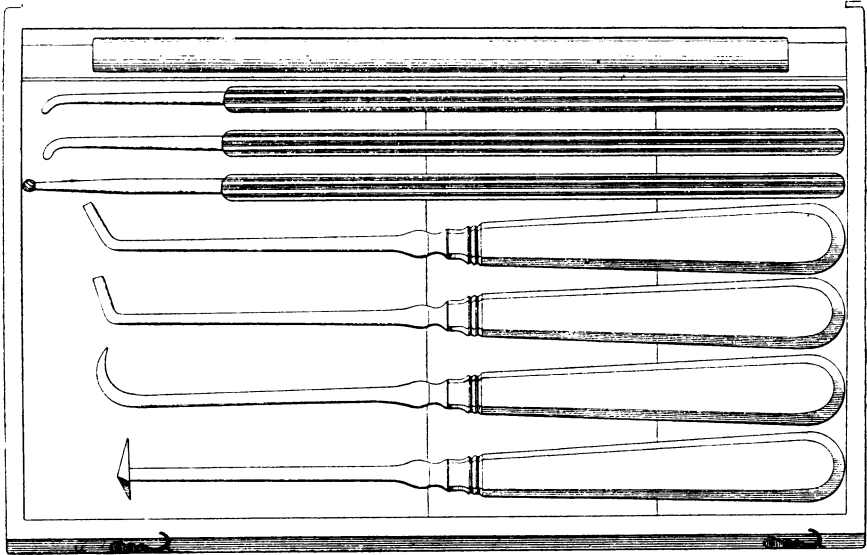


FIG. 4.—Set of instruments, stopping and scaling, 1857, illustrated in *Army Medical Equipment*. 1866.

record of the conservation of teeth in the army previous to the employment of dental surgeons in 1900 (Table III).

TABLE II.—REGIMENTAL HOSPITALS. AUTHORIZED DENTAL EQUIPMENT, 1798–1900.

1798–1820 :	1 key instrument for teeth, to fit trephine handle
1820–1838 :	1 key instrument 1 tooth forceps 1 tooth lever
1838–1857 :	1 tooth key 2 tooth forceps 1 punch 1 gum lancet
1857–1900 :	<i>Set of extracting instruments :—</i> 4 upper forceps, 4 lower forceps 4 forceps for children 1 set of six elevators to fit one handle 1 tooth key with three claws 1 spring gum lancet
	<i>Set of stopping and scaling instruments (fig. 4) :—</i> 2 stoppers 2 scalars 2 excavators 1 rosehead sheets, gold leaf amalgam gutta-percha

TABLE III.—DENTAL TREATMENT.

1626-1660 Pre-standing army	Extractions Scalings Gum treatments	} by	Company-Surgeon—expected to be able “to draw a tooth well”. (Woodall.)
			Mate—expected to be “not ignorant of tooth drawing”.
1660-1900	Extractions only by regimental surgeons or mates.		
<i>S.A. War—</i>			
1900 (March-August)	General treatment by Mr. N. Pedley, Honorary Dental Surgeon, Imperial Yeomanry Hospital, Deelfontein.		
1901-1902	General treatment (except dentures and repairs) by 4 contract army dentists in the field.		
1903-1908	Conservative treatment by 8 contract army dentists in home commands.		
1909-1914	Limited conservative treatment by part-time civilian contract.		
<i>India—</i>			
1910-1914	Conservative treatment by 3 contract army dentists.		
1914-1921	All necessary treatment by temporary army dental officers.		
1921-1938	All necessary treatment by The Army Dental Corps (the first regular dental officers).		

In 1860, dentistry became a separate profession and in 1880 the British Dental Association was formed, agitating from its inception for some measure of dental treatment for the soldier, but without success.

Meanwhile, wounds of the jaws and face by cannon, gunshot, sabre, and lance, were becoming increasingly frequent in the various campaigns, attracting the attention of army surgeons, a few of whom published their experiences of such cases (Table IV).

TABLE IV.—OBSERVATIONS ON MAXILLO-FACIAL INJURIES (19TH CENTURY).

(1) *Report on the Wounded at Waterloo*, by John Thomson, Surgeon to the Forces, 1816.

“Musket-balls seldom enter the mouth without fracturing the jaws, several cases of which were seen. In passing through the upper part of the mouth, the balls had not only fractured the upper jaw, but they had also destroyed portions of the palate and removed the partition dividing the mouth from the nose. Fractures of the lower jaw, upon one or both sides, were very common. Few of these ever heal without distortion of the face; tedious exfoliations of bone take place and the fractured extremities occasionally show no disposition to unite by callus.”

It would appear that, at this time, cases were more or less left to Nature.

(2) *Principles of Military Surgery*, by John Hennen, Deputy Inspector of Military Hospitals, 1818.

“It is astonishing how little beyond simple dressing is required in the most serious looking penetrating wounds about the mouth and cheeks, but it becomes a very different matter if the bone, particularly the lower jaw, is fractured or has sustained a loss of substance. The powerful and opposite muscles inserted into it render it difficult, if not impossible to prevent great deformity. If the bone is divided into two portions, apply the lower jaw closely in contact with the upper, which must be viewed in the light of a fixed splint, supporting the part by a properly adapted roller over the fractured points. The patient must keep his mouth closed and his food must be altogether fluid. Loosened teeth form a great source of irritation, and should be removed as soon as possible, for I have never seen the attempt to save them productive of ultimate good.”

(3) *The Surgeon's Pocket Book*, by Surgeon-Major J. H. Porter, 1875.

In the chapter on wounds of the face and adjacent parts, he mentions—

Upper jaw: Replacement of fragments as far as possible; cold water dressings; approximation of soft tissues with adhesive plaster.

Lower jaw: More numerous and troublesome; difficulty of reducing displacement and maintaining position; difficulty of feeding and incessant flow of saliva.

Treatment: Gutta-percha splint; four-tailed bandage; ligature of contiguous teeth with silver wire or silk; bandaging combined with open wedging of posterior fragments; fluid diet through long tube; morphia.

TABLE IV (continued)

Description of case.—" At Redan in 1855, an officer received a bullet wound at the ala of the right nostril, which smashed most of his teeth in both jaws, broke in the hard palate, lacerated the tongue extensively, and broke the lower jaw in several places. His condition was that of extreme wretchedness, but by adjustments of the parts, removal of splinters and support by means of the gutta-percha splint, he was made comparatively comfortable. Suppuration was profuse and the wounds remained open for a considerable time, but he so far recovered as to be able to perform the duties of a field officer, having had a false palate and several teeth adapted to his mouth."

In 1878, a sheet of gutta-percha for moulding round fractured jaws was added to the equipment in the field, and medical officers were trained in its use at the Army Medical School, Netley, during the course in military surgery.

At the outset of the South African War in October 1899, no provision was made for the dental treatment of the force in the field. Mr. Newland Pedley, on the staff of Guy's Hospital Dental School, went out in February 1900, for six months, as honorary dental surgeon with the Imperial Yeomanry Hospital, Deelfontein (founded by voluntary subscription), and he was the first dentist to treat the soldier in war.

The British Dental Association, perturbed by reports of serious dental sick-wastage, approached the War Secretary, who was sufficiently impressed to appoint four contract dentists for the troops in 1901—the first paid army dentists (Table V).

TABLE V.—DENTAL PERSONNEL, SOUTH AFRICAN WAR.

Report by Mr. N. Pedley, Honorary Dental Surgeon, Yeomanry Hospitals, March–August 1900.

- (a) "Disease, neglect, tough beef and hard biscuit play havoc with the teeth."
- (b) "Nothing is done to preserve the soldier's teeth whilst he has any, and when they are gone, he must go home as a man unfit for service."
- (c) "Had very few severe gunshot cases which were treated in conjunction with Mr. Alfred Fripp (consulting surgeon)."

The First Paid Dental Surgeons to treat Troops in the Field, 1901.

J. K. Clark (Bloemfontein).
E. W. Corfe (Elandsfontein).
J. B. Gillies (Norvals Point).
W. B. Woodhouse (Pretoria).

No army status—pay, £1 a day and captain's allowances—supplied own filling instruments—Government supplied necessary furniture and materials.

Report of these Four Dentists on Return from the S.A. War.

- (a) No mechanical appliances were supplied in the outfit, hence no dentures could be made or repaired.
- (b) Most extractions without anæsthetic—when required, chloroform was administered by an army surgeon.
- (c) Last drafts sent out had extremely defective teeth—most of these men were useless as fighting units, being unable to masticate the diet of tough meat and hard biscuits.

TABLE VI.—OFFICIAL STATISTICS—SOUTH AFRICAN WAR, 1899–1902.

Dental Report.

"There was among men with the Colours not only a considerable prevalence of dental caries, but a septic condition of the mouth was almost more common.

Caries of the teeth and its accompaniments, including pyorrhœa, was much more important than is shown by the admissions to hospital, and was a very serious matter in relation to inefficiency.

Of 6,942 admissions to hospital for caries, etc. about one-third were invalided to England, the remaining two-thirds were nominally returned to duty, but many of them were unfit for duty in the field and had to be kept within reach of soft food."

Dental Sick-wastage, South African War.

Average ration strength in the field	Number of admissions to hospital for dental disabilities	Number of these invalided to England as unfit for service
208,300	6,942	2,451 (1.2% of total effective force)

After the campaign, eight whole-time army dentists were appointed to the home commands, but were superseded in 1908 by a system of local part-time civilian contract. As for India, where the British troops had been neglected, three whole-time contract dentists were appointed in 1910 (Table VII).

TABLE VII.—DENTAL PERSONNEL, 1904–1914.

First Dental Surgeons to Treat Troops in Peace Time. April 1904 to March 1908.

(Home Commands Only.)

J. K. Clark, Aldershot	J. B. Gillies, Dublin
C. de Foubert, Cork	H. G. H. Cowell, Edinburgh
A. Rice, Woolwich	C. W. Randall, Colchester
A. F. A. Howe, Portsmouth	H. C. Toone, Devonport

Contract—£1 a day and travelling expenses—no rank or army status—no uniform—supplied with up-to-date equipment. Estimated cost, £5,000 per annum.

They were superseded in 1908 by local civilian part-time contract.

First Dental Surgeons for British Troops in India, 1910–1914.

J. Carr	F. Byrne	J. P. Helliwell
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Whole-time contract ; conservative treatment only ; no rank or army status.

Meanwhile, the army medical service had been reorganized, and dentistry was included in the subjects in which officers at the Royal Army Medical College, London, could be graded as “specialist” after taking a course in the subject. Accordingly, clinical teachers in dentistry were appointed, but only four “dental specialists” were graded in six years, and were not employed in such capacity. The scheme was abandoned in 1908 (Table VIII).

TABLE VIII.—COURSE IN DENTISTRY FOR R.A.M.C. OFFICERS, 1903–1908.

Clinical Teachers

1903, J. H. Badcock, F.R.C.S., L.D.S.
 1904–1906, W. A. Maggs, M.R.C.S., L.D.S.
 1906–1908, M. F. Hopson, L.D.S.

External Examiner

Mr. Paterson, M.R.C.S., L.D.S.

The Courses were given at Guy's Hospital Dental School.

The following were graded as “specialists” in dentistry :—

Majors J. H. Pocock ; B. W. Longhurst ; J. B. Cautley ; H. C. Wentworth.

It may therefore be said that, at the outbreak of the Great War in 1914, dental treatment for the soldier was negligible. No provision whatever had been made for treatment in the field, and no dental officer accompanied the expeditionary force to France. As everyone knows, the authorities were lamentably slow to recognize the necessity of, and to make provision for, dental treatment at home and in the field. It was not till May 1918, when Major Helliwell, then Senior Dental Officer in the London District, was appointed to the War Office in an advisory capacity, with the rank of Lieutenant-Colonel, that anything like organized and effective measures were taken (Table IX).

One lesson of the war was that men dependent on dentures are potential inefficient, for dentures are so easily lost or broken, wilfully or accidentally. There was a constant stream of thousands of men from army areas to the base, for the fitting of new dentures and repairs—a wastage of effectives which seriously perturbed army commanders. This experience profoundly influenced subsequent army dental policy, and the denture question still remains a major problem of its own. Another

lesson of the war was the high incidence of wounds of the face and jaws in modern warfare, requiring specialized treatment by an organized maxillo-facial team of

TABLE IX.—NUMBER OF DENTAL OFFICERS, HOME AND IN THE FIELD, 1914–1918.

Year		
1914	August to October	None with Expeditionary Force
	November	12
	December	20 for France only
1915	February	36 (Including the first for Home)
	May	57
1916	August	150
	August	300 (Compulsory Service Act)
	December	463
1917	December	501
1918	May	(Lt.-Col. Helliwell appointed to War Office in advisory capacity)
	August	714
	November	850

(Official Medical Statistics of the Great War, 1931.)

surgeons and dental officers. An Army Advisory Committee was formed in 1932 to deal with all matters relating to this subject (Table X).

TABLE X.—ARMY ADVISORY STANDING COMMITTEE ON MAXILLO-FACIAL INJURIES, MAY 1932.

CONSTITUTION OF THE COMMITTEE

Chairman

Colonel J. P. HELLIWELL, C.B.E., Director, Army Dental Service, War Office.

Members

*Mr. W. KELSEY FRY, M.C., M.R.C.S., L.D.S.

[Sir HAROLD D. GILLIES, C.B.E., F.R.C.S.

Mr. W. WARWICK JAMES, O.B.E., F.R.C.S., L.D.S.]

Secretary

Major S. H. WOODS, O.B.E.

* Nominated by the British Dental Association.

TERMS OF REFERENCE

To investigate and report on the treatment of maxillo-facial injuries and to make recommendations in regard to :—

- (i) the provision and equipment of special hospitals or departments for these cases;
- (ii) general methods of treatment, and
- (iii) the training of dental officers in the principles of preliminary treatment in the field.

(The Report made in June 1935 is an official publication.)

In the introduction to the Army Estimates for 1921, it is said that

“ Sound teeth in the soldier are of prime importance and an army dentally fit will have reduced rates of sickness and invaliding. A proposal has, therefore, been put forward for the formation of a Dental Corps to consist of 110 officers and 132 other ranks (mechanics and orderlies) for which it is hoped approval will be obtained.”

By Royal Warrant dated January 4, 1921, the Army Dental Corps was formed, under Lt.-Colonel Helliwell at the War Office, when, for the first time, an organized, comprehensive, continuous scheme of dental treatment became available to the soldier throughout his service.

TABLE XI.—TREATMENT BY THE ARMY DENTAL CORPS.

Recruits.

On joining, the recruit is inspected and he is rendered dentally fit during his three months' training, every effort being made to conserve defective teeth. A large proportion of the dental officers at home are detailed for this intensive treatment of the recruit.

Year	Number inspected	Number requiring treatment	Average requirement per man
1936	23,455	23,182 (99%)	2.5 extractions 4.5 conservations

Trained Soldiers.

The recruit joins his regiment as a trained soldier and is dentally inspected annually in March. Continuation treatment is given by the dental officer in the area to maintain dental fitness. All drafts for foreign service are inspected and rendered dentally fit prior to embarkation. Necessary dentures are supplied.

Year	Number inspected	Number requiring treatment	Average requirement per man
1936	139,004	75,850 (55%)	1.5 conservations

Year 1936. Annual Dental Report.

Teeth conserved	..	254,182	New dentures supplied	..	2,172
Teeth extracted	..	98,520	Dentures repaired	..	2,471
Scalings	..	42,978	Fractures of jaws	..	120
Gum treatments	..	2,706	Jaw appliances made	..	59

Personnel treated.—Officers; other ranks; families of soldiers; boys in technical schools; Royal Naval and Royal Air Force personnel at stations abroad.

TABLE XII.—THE ARMY DENTAL CORPS PERSONNEL, 1921–1938.

Year	Administrative officers (excluding a Director at the War Office)		Total establishment of officers
1921	4 Majors	(Joint service for Army and Air Force)	110
1930	4 Majors	Air Force section separated to form R.A.F. dental service	
1935 (September)	4 Lieutenant-Colonels		124
1935 (October)	2 Colonels 9 Lieutenant-Colonels		150
1938 (August)	Same		162

Normal Geographical Distribution (1938).

Home Commands	..	112	India	..	30
Gibraltar	..	1	Burma	..	1
Malta	..	2	Malaya	..	3
Egypt	..	7	Hong Kong	..	3
Sudan	..	1	North China	..	1
Palestine	..	1			

Summary: Home 112; abroad 50; total 162.

Other Ranks.

Dental mechanics.—These are trained at The A.D. Corps School of Instruction, Aldershot, in denture work and the making of appliances and splints for maxillo-facial injuries.

With exception of one small laboratory in the London district, all the denture work at home is undertaken at the Central Laboratory, Aldershot.

Abroad, mechanics are posted to command laboratories or to single dental centres. Establishment (1938)—40.

Dental clerk-orderlies.—These are trained at The A.D. Corps School of Instruction, Aldershot, in the duties of surgery-attendant and clerk. 1 clerk-orderly is allotted to each officer. Establishment (1938)—170.

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