

astronomy; agriculture comes next, with but half the space devoted to astronomy, while business and finance occupy little space. If this distribution of topic does not indicate any marked difference between American and British interests and ways of life, there is a pronounced American flavour about many of the entries and the language in which they are described. There are some curiosities among the applications, while others raise queries not always mathematical.

Running down the index, one soon encounters: "Beauty Culture—see Cosmetology". Following instructions, one is directed to T 7·01, meaning problem 1 in subsection 7 (sine curves) of trigonometry. Here one finds an excerpt from the *American Hairdresser* and one reads (no, not a Fourier analysis of a permanent wave, but) a disquisition, illustrated with squiggly diagrams, upon the stimulating effects of 'oscillating' (a distinction is drawn between 'oscillating' and 'alternating') electric currents as affected by differing wave form. A well-known approximate formula for the perimeter of an ellipse is "used by permission of the Chevrolet Division of General Motors Corporation", who use it to find the perimeter of the section of a gear lever. Why? A1 1·19 gives a formula by which the day of the week corresponding to any date may be determined. On p. 297 is an elegant "Sketch showing Principles of Installing Traffscope on Hill"—whereby a motorist can see the road for some 1,000 ft. beyond the summit. Are Traffscopes common in the United States? And so on—but the bulk of the book is straightforward, useful and usable material for the teacher of mathematics.

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## PROGRESS OF ARMY MEDICINE

### War and Disease

By Dr. Ralph H. Major. (Advancement of Science Series, No. 3.) Pp. 190+8 plates. (London: Hutchinson's Scientific and Technical Publications, n.d.) 12s. 6d. net.

WAR has always been more interesting than disease to the historian, and medical matters received little attention in early chronicles unless they had a very definite bearing on the outcome of the struggle. Medical men have always followed armies but often for educational rather than humanitarian purposes, and only comparatively recently have organized military medical services been evolved.

Dr. Major has outlined the progress of army medicine from the earliest times to the present day, recording as he goes the influence of disease on individual campaigns and on history in general. Plague and typhus were rife in Greece, and particularly in Athens, in the Peloponnesian War between Sparta and Athens. In the second century A.D. Roman soldiers who had fought the Parthians imported smallpox from Mesopotamia, and this epidemic, which lasted fifteen years, spread through Italy and the Roman Empire, and may have contributed to the downfall of the Romans. The Crusaders, whose habits and morals were generally lower than readers of Scott would imagine, suffered from scurvy, and were responsible for an increase in eprosy in Europe. One fine thing did emerge from the Crusades, namely, the foundation of the Knights of St. John or Hospitallers, and the growth of the Order and its work is fully described. Briefly covered are the early years of spread of the plague of syphilis,

and the part played by the mercenary armies of Charles VIII of France.

The gunpowder era brought new types of wounds and new techniques to deal with them. The pioneers mentioned include Hans von Gerssdorf, Paracelsus, Paré, and Giovanni di Vigo, who was also noted as an early user of mercury in the treatment of syphilis.

Throughout history the same diseases keep recurring: smallpox, plague, typhus, and, since 1492, syphilis. In more recent times, plague forced Napoleon to give up his siege at St. John of Acre and may have altered the shape of history.

The work of Larrey, Napoleon's surgeon, is fully covered, for he can be considered as the forerunner of the modern army surgeon. Larrey was responsible for some excellent observations on trachoma which affected the French armies in Egypt, and for the introduction of ambulances for speedy evacuation of wounded. He had to deal also with scurvy, for the protective effect of lemons, described in 1753 and generally adopted in the British Navy some forty years later, was not yet known to him.

So far there has been little description of any humanizing elements in war and disease, but the Crimean War produced Florence Nightingale, who revolutionized nursing. She reduced the mortality in the hospitals in Scutari from 427 per thousand to 22 per thousand in a few months. In her time the mortality among soldiers in peace-time was twice that of the civilian population, and she was responsible for many reforms in the Army Medical Services. In her footsteps came J. Henry Dunant, an eyewitness of the Battle of Solferino, whose experiences there led him to the formation of the Red Cross Society in 1863.

The Spanish-American War receives full attention both in its political and in its medical aspects, with due importance given to yellow fever and its investigation by Reed and others. The investigation and control of typhoid fever is traced from the Spanish-American War through the Boer War to the present time. Japanese methods and thoroughness are shown in the re-organization of their army medical services after the Chinese War of 1894 when disease caused four times as many deaths as did wounds, so that the proportions were reversed in the Russian War only a few years later.

In the War of 1914–18 the main points studied were the reduction in the rate and mortality in typhoid, influenza, venereal disease, gas gangrene, and tetanus, and the improvements in artificial limbs and plastic surgery. Shellshock brought the psychiatrist to the fore. One of every five men invalided out of the Army passed through the hands of the psychiatrist. The proportion is as great to-day. Perhaps the wars of the future may be fought bloodlessly by an exchange of psychiatrists. The Italo-Abyssinian War was conspicuous by the absence of scurvy and louse-borne diseases from the large Italian Armies, although both were rife on the Abyssinian side. The Spanish Civil War was the testing ground for the Winnett-Orr technique in wound surgery. Sulphonamide therapy is the only subject covered in the present War.

This book is an excellent short survey of the subject and does not suffer by the author's occasional digressions into local politics. That its reading is none too easy is the fault of war-time conditions of small type and restricted space, and this, too, has no doubt reduced the number of possible illustrations which could have enhanced the interest.

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