

most effective. When a mosquito enters a house and rests on the wall before attacking man, it picks up enough D.D.T. to prevent its biting. It may also be impregnated on to wide-meshed bed nets, thus rendering them effective barriers against mosquitoes and sandflies. It would also appear probable that the use of D.D.T. may solve the problem of insect transmission by planes and thus prove a safe and, withal, simple measure in combating yellow fever. Against mosquito larvæ it is equally effective, though for this purpose it will be necessary to produce a floating, non-wettable powder containing a sufficiency of D.D.T. At present it is most effective when dissolved in the customary larvicidal oils, by spraying pools and other collections of water containing mosquito larvæ. It is equally effective on that universal pest, the house fly, and when sprayed in kerosene emulsions on various biting flies which plague cattle and other domestic stock; but, most important of all, it has been found by Buxton and Nash that the vicious and dangerous tsetse (*Glossina*) of Central Africa is readily killed by traces of D.D.T. on cloth or on the hair of animals. This method opens up great possibilities in the control of the tsetse, which have so far resisted every other measure to exterminate them. The discovery that they may be either exterminated locally or greatly reduced in numbers by the employment of herds of bait animals, or by impregnating clothing, is obviously of prime importance to the future of Central Africa. The general adoption of these comparatively simple measures should enable domestic animals—cattle, horses and pigs—to thrive in many areas where it was impossible for them to exist on account of the trypanosome diseases conveyed by the tsetse fly.

The impregnation of clothing with D.D.T. for the suppression of lice was one of the major discoveries of the War. When properly applied to shirts it can resist many washings and this fact has resulted in protecting our troops from the ravages of these pests which proved such a disgraceful feature of the First World War. The method of application of D.D.T. in dust by handblowers, by puffing up the sleeves and trouser legs or down the neck and into the waist of skirts and trousers effectively delouses a whole population in a short time. This is the method which was employed in one of the most remarkable pieces of preventive medicine yet recorded, namely, the typhus epidemics in Naples early in 1944.

D.D.T. also acts on bed-bugs, cockroaches and on some species of tick.

Enough has been said to indicate that this new discovery has placed in our hands a weapon of immense importance. Its influence upon health and comfort in the insect-ridden tropical and sub-tropical lands is bound to be great and it will probably have far-reaching effects upon colonization and development of the British tropical Empire.

The future of tropical medicine is therefore bright. There are still immense, almost limitless, fields to explore and conquer. Verily the harvest is plenteous and the labourers are few, but those who are in a position to know are much perturbed about the present position of tropical medicine in London. Obviously something will have to be done to preserve the ideals of Manson's School. That they should crumble and die is unthinkable.

It can reasonably be urged, in these days of imperial aid for colonial development and of increasing Empire-mindedness of the British Parliament and of the British people, that more whole-hearted support

should be forthcoming so as to create in this, the Metropolis of the British Empire, a world centre for the study of tropical diseases, worthy of its greatness and of its glorious heritage and to keep the flag of tropical medicine flying where it ought to be, in London. Such a tropical centre should be remodelled on the lines of Manson's original School with a Hospital for Tropical Diseases, the School of Tropical Medicine with its special departments of protozoology, helminthology and entomology in close association with one another. In view of the remarkable achievements in tropical hygiene—one of the most outstanding victories of the Second World War—this section will have to play a leading part. Special emphasis should be placed upon the desirability of founding a hostel in connexion with the centre where students from overseas can be housed and made to feel at home in the somewhat, to them, forbidding surroundings.

Colonial governors are well aware of the prestige that scientific medicine brings in its train and that the almost instantaneous and magical effects of some of the modern drugs (mentioned in this review) do more to enhance respect in the minds of illiterate people for British administration than almost any other measure.

It therefore becomes incumbent on the British Government to encourage and foster, as it undoubtedly will, tropical medicine as an essential part of Colonial policy.

Let us see to it, therefore, that our young men returning from the wars to take up this most important branch of medicine are given the tools to get on with the job.

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OBITUARIES

Dr. A. C. Oudemans

SINCE communication has been established with Holland, we have heard from Dr. G. L. van Eyndhoven of the death, at the age of eighty-five years, of Dr. A. C. Oudemans. He died at Arnhem on January 14, 1943.

Dr. Anthonie Cornelius Oudemans, a son of Prof. J. A. Chr. Oudemans, chief engineer of the Geographical Service of the Dutch East Indies, was born in Batavia on November 12, 1858. He came of a gifted family some members of which held important positions, usually of a scientific nature, in the Dutch East Indies. In Holland, two of his uncles were distinguished men of science: Prof. A. C. Oudemans as a chemist and Prof. C. A. J. A. Oudemans as

botanist and mycologist, while his cousin, Dr. J. Th. Oudemans, was president of the Dutch Entomological Society for many years.

At an early age, Dr. Oudemans was sent from the Dutch East Indies to Holland and received his education at the High School at Arnhem and at the University of Utrecht. Some years later he returned to Arnhem High School as a teacher, and remained there until his retirement at sixty-five.

From the age of twenty-one, when Oudemans published his first paper, until two years before his death, he wrote 584 papers for publication. The greater number of these were comparatively short works of a systematic nature, mainly on the order Acari (mites and ticks) of the class Arachnida, but scarcely a phylum in the animal kingdom escaped his notice, and in his earlier years he published many papers on the vertebrates. His interest in plants was considerable and he wrote about a score of papers of a botanical nature.

Among his best known publications is his book, written in English, on "The Great Sea-Serpent. An Historical and Critical Treatise with the reports of 187 Appearances (including those of the Appendix), the Suppositions and Suggestions of Scientific and Non-scientific Persons, and the Author's Conclusions" (Leyden: Brill; London: Luzac; 1892). This work he very aptly dedicated to "Owners of Ships and Yachts, Sea Captains and Zoologists". His interest in the 'sea-serpent' was maintained all his life, and when the so-called 'Loch Ness Monster' made its erratic appearances in the waters of that northern loch, Dr. Oudemans wrote some further notes on the subject during 1934-35.

He is also remembered by many zoologists for his studies on the dodo which appeared in 1917: "Dodo-Studien, naar aanleiding van de vondst van een gevelesteen, met Dodo-beeld van 1561 te Vere" (*Verh. kon. Akad. v. Wetensch.*, 2e Sect., 19, No. 4).

It sometimes happens when a man's life-work is mainly devoted to a relatively obscure subject that he becomes better known by work done on matters of more popular interest. It was so to a certain extent with A. C. Oudemans; he was widely known as the writer of works on the 'sea-serpent' and the dodo, but not always identified with the magnificent work he did on the Acari, in which field he was supreme. In recent years, however, his fame as 'father of acarology'—as he has been called—has spread more widely, partly through the increasingly obvious importance of the study of acarology both from the economic and medical points of view.

His magnum opus is the "Kritisch Historisch Overzicht der Acarologie". This is an encyclopædia of all recorded observations on the Acari from 850 B.C. until A.D. 1850 compiled with painstaking completeness. This vast work of reference is arranged in three parts. The first part appeared in 1926 as a supplement to vol. 69 of the *Tijdschrift voor Entomologie 's-Gravenhage* and deals with the period 850 B.C. to A.D. 1758 (500 pages with 68 text-figures, among them being reproductions of some very interesting contemporary drawings). Part 2, dealing with the years 1759-1804, was also published as a supplement to a volume (vol. 72, 1929) of the *Tijdschrift* (1097 pages with 267 text-figures). Part 3, dealing with the years 1805-50, was published as a separate work by E. J. Brill (Leyden). This part was divided into six volumes, A-G. Volume A, 1936 (430 pages with 179 text-figures), contains all general references during the specified time to Acari generally and

Holothryroidie and Mesostigmata in particular. Dr. Max Sellnick collaborated with Dr. Oudemans in the section dealing with the Mesostigmata. Volume B, also published in 1936 (367 pages with 170 text-figures), is devoted to Ixodides, with Dr. Paul Schulze collaborating. Volume C (550 pages, with 230 text-figures), published, as were all the subsequent volumes, in 1937, deals with the Tarsonemini, Stomostigmata and Eleutherengona (including Halacaridæ and Tetrapodili); Dr. Oudemans acknowledged help from Dr. Karl Viets in the work done on the Halacaridæ. Volume D (649 pages, with 332 text-figures) is devoted to Parasitengona; volumes E and F, issued together, contain in E all references to the Acaridæ (522 pages with 159 text-figures) and in F, with the help of Carl Willmann, all the references to the Oribatei (215 pages, with 147 text-figures). Volume G (643 pages) is an index to Part 3. In all, the work runs to more than five thousand pages and some fifteen hundred illustrations. The arrangement of each part is under the headings of systematics, external morphology, internal anatomy, histology, physiology, teratology, ecology, embryology, ontogeny, phylogeny, habitat, chronology, distribution, economics, medical zoology, nomenclature and literature. It is thus obvious that all the aspects of the subject came under Dr. Oudemans' notice and were documented in such a manner as to make this "Kritisch Historisch Overzicht der Acarologie" a work of outstanding importance to the acarologist.

In addition to his publications, one of the great services Dr. Oudemans rendered was his interest in and enthusiastic encouragement of younger acarologists throughout the world. In this his natural gift as a teacher was clearly discernible. He was always ready to answer questions promptly and fully, and where it was possible for anyone working on his subject to visit him in Arnhem, his kindness and simplicity made them instantly at home. There he placed at their disposal not only his collection of 7,500 microscopical preparations and his library of more than 10,000 works on Acari and the 65,000 drawings made by him in the course of his own work, but also he gave freely of his most valuable time.

The collections and drawings made by Dr. Oudemans are now safely housed in the Rijksmuseum voor Natuurlijke Historie, Leyden, and will be of the greatest value in the future of the subject that Dr. Oudemans served so faithfully.

SUSAN FINNEGAN.

Major S. S. Flower, O.B.E.

MAJOR STANLEY SMYTH FLOWER, who died at Tring on February 3, was a born naturalist, who from his boyhood took a keen interest in all living beings, and will be remembered especially for his important series of papers on the duration of life in various animals.

Flower was born in the Conservator's House at the Museum of the Royal College of Surgeons, Lincoln's Inn Fields, on August 1, 1871. He was the second son of Sir William Flower, and as a boy often accompanied his father to meetings of the Zoological Society, and met most of the famous naturalists of his time. He was educated at Wellington and King's College, London, entered the army in 1890 and was commissioned into the Northumberland Fusiliers. He was seconded to the Siamese Government as scientific advisor in 1896 and spent two years in Bangkok, also travelling in Siam and Malaya.