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BY

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those who believe that the virus multiplies in some tissue other than the nervous system, passes thence into the blood stream, and from there may or may not involve the central nervous system. Some workers have altered their views one way or the other as new facts became available as a result of laboratory investigations in either monkeys or man, but Faber has always maintained that the virus is basically neuronocytotropic and its primary host in the living subject is the nerve cell alone. He believes that

> "The initial invasion of the body tissues ordinarily occurs into the peripheral nerves of the mouth and pharynx, followed by centripetal spread to the regional peripheral ganglia where lies the primary site of virus multiplication. Infection may or may not extend from here to the central nervous system. Virus is excreted into the alimentary lumen by centrifugal axonal spread from infected ganglia."

One of Faber's most recent papers describes widespread invasion of the spinal cord following experimental inoculation into the vertebral artery of monkeys, whereas nerve-borne entry is followed by only restricted distribution, usually in the pons and medulla, which is believed by Faber to form the basis for secondary spread of infection by axonal routes to other parts of the central nervous system. Faber believes this latter process provides a better correlation with the clinical picture at the onset than does viraemia.

This monograph consists of a description of the author's work in monkeys, some of it previously unpublished, and the work of others where it supports his view, all aimed at proving his thesis described above. Although the material makes convincing reading for the most part, one must point out that none of Faber's work has been carried out in chimpanzees, which appear to simulate most closely the behaviour of the virus in man. In fact, in some recent experiments of Bodian, in which the virus was fed to chimpanzees, no virus was recovered immediately before the viraemic stage from the trigeminal and coelic ganglia, but the largest amounts of virus were found in lymphoid tissues, e.g., tonsils and Peyer's patches, as well as in the stools.

F. O. MacCallum.

BROADSHEETS (New Series)

The broadsheets already published are as follows:

(1) Disc Technique for Sensitivity to Antibiotics
(2) Sensitivity of Tubercle Bacilli to Streptomycin
(3) The Detection of Barbiturates in Blood, C.S.F., Urine, and Stomach Contents
(4) The Estimation of Carbon Monoxide in Blood
(5) The Identification of Reducing Substances in Urine by Partition Chromatography
(6) The Paul-Bunnell Test
(7) The Papanicolaou Technique for the Detection of Malignant Cells in Sputum
(8) Investigation of Haemorrhage States with Special Reference to Defects of Coagulation of the Blood.

Broadsheets are obtainable from Dr. W. McMenemy, Secretary, A.C.P., the Maida Vale Hospital for Nervous Diseases, London. Each broadsheet costs 1s. for the first 25 copies, and thereafter 9d.

BOOKS RECEIVED DURING THE YEAR 1955

(Review in a later issue is not precluded by notice here of books received.)

Behandlung rheumatologischer Erkrankungen durch Anästhesie. By Egon Fenz. (Pp. xi+112 ; 18 figures. D.M. 12.) Darmstadt: Verlag von Dr. Dietrich Steinkopff. 1955.

The Skin—A Clinicopathologic Treatise. By Arthur C. Allen. (Pp. xv+1,048 ; 495 full-page illustrations. £9 7s. 6d.) London: Henry Kimpton. 1954.

Le Risque Thérapeutique: Prévention et Traitement des Accidents. By Guy Duchesnay. (Pp. 600 ; illustrated. Fr.frs. 3,500.) Paris: G. Doin et Cie. 1954.

Traitement des Lithiases rénales. By Maurice Loeper and Jean Cottet. (Pp. 204 ; illustrated. Fr.frs. 1,380.) Paris: G. Doin et Cie. 1955.

La Bacillémie Tuberculeuse et la Phtisiogénèse. By François Delencour. (Pp. 320. Fr.frs. 1,200.) Paris: G. Doin et Cie. 1954.

Lectures on the Scientific Basis of Medicine, Vol. 3—1953–4. (Pp. ix+398 ; 9 plates. 35s.) London: The Athlone Press. 1955.

Cancer: Race and Geography. By Paul E. Steiner. (Pp. xiv+364; 50 tables. 38s. 6d.) London; Baillière, Tindall and Cox. 1954.

Perspectives and Horizons in Microbiology. By Selman A. Waksman. (Pp. x+220 ; illustrated. $3.50.) New Brunswick: Rutgers University Press. 1955.

Clinical Approach to Jaundice. By Leon Schiff. (Pp. xii+113 ; 52 figures. 27s. 6d.) Oxford: Blackwell Scientific Publications ; Springfield, Illinois: Charles C. Thomas. 1954.

Donne e fanciulli . . . meno felici. By I. and G. Calderoli. (Pp. 231. Lira 1,000.) Bergamo (Italy): Tipografia Orfanotrofio Maschile. 1937–1954.

La Progénèse. Facteurs Préconceptionnels du Développement de l'Enfant. Edited by Raymond Turpin. (Pp. 720; 56 figs. Fr.frs. 3,500.) Paris: Masson et Cie. 1955.

Dextran: Its Properties and Use in Medicine. By John R. Squire, J. P. Bull, W. d'A. Maycock, and C. R. Ricketts. (Pp. 91 ; 7 figures. 15s.) Oxford: Blackwell Scientific Publications. 1955.

Transactions of the American Goiter Association, 1954. (Pp. xii+483; illus. £5.) Oxford: Blackwell Scientific Publications; Springfield, Illinois: Charles C. Thomas. 1955.

Atlas zur Spurenkunde der Elektrizität. By Stefan Jellinek. (Pp. viii+78 ; 94 figures. £6 3s. 6d.) Vienna: Springer-Verlag. 1955.

The Plasma Proteins in Pregnancy. By Harold C. Mack. (Pp. xii+118 ; illustrated. 27s. 6d.) Oxford: Blackwell Scientific Publications. 1955.

Medical Manual of Chemical Warfare, 4th ed. (Pp. 88 ; 5 colour plates. 4s.) London: H.M. Stationery Office. 1955.

Laboratory Identification of Pathogenic Fungi Simplified. By Elizabeth L. Hazen and Frank Curtis Reed. (Pp. xii+108 ; 22 figures. 40s.) Oxford: Blackwell Scientific Publications; Springfield, Illinois: Charles C. Thomas. 1955.

Practical Medical Mycology. By Edmund L. Keenev. (Pp. v+145. 27s. 6d.) Oxford: Blackwell Scientific Publications; Springfield, Illinois: Charles C. Thomas. 1955.

The Diagnosis and Treatment of Haemophilia and Its Related Conditions. By R. G. Macfarlane and Rosemary Biggs. (Pp. 23. 2s. 6d.) M.R.C. Memorandum No. 32. London: H.M. Stationery Office. 1955.

Diseases of the Skin and Liver. By Sheila Sherlock. (Pp. xv+720; 198 figures. 50s.) Oxford: Blackwell Scientific Publications. 1955.

genic germs, so that the antiseptic actually helped rather than hindered bacterial multiplication.

In 1922 came the discovery of lysozyme. Following an observation that his own nasal secretion after a common cold had an inhibitory action on some of the bacteria present in the nose, he showed that this lytic substance was present in many tissues and secretions of the body and was also widely distributed in Nature. But, because it was not particularly active against pathogenic organisms *in vitro,* the medical world did not give it the attention it deserved. His work with lysozyme prepared the way for the epoch-making discovery of penicillin.

Fleming had been studying variation in the staphylococcus, which meant that he was frequently examining colonies of that organism as they appeared on ordinary nutrient agar. As a result of this exposure a mould appeared on the culture medium some days later, and Fleming noticed the unusual phenomenon of the disappearance of staphylococcal colonies around the mould. His first paper describing his work with the active principle of this mould, which he named penicillin, showed that he appreciated the great potentialities of this substance as a new kind of antiseptic, particularly as it had no toxic effect on the phagocytic leucocytes. A few years later he reported that " it has been used on a number of indolent septic wounds and has certainly appeared to be superior to dressings containing potent chemicals."

Following the introduction of penicillin as an antibiotic drug, Fleming devised a number of microtechniques for its estimation in serum, etc., which became widely used. He was among the first to use phase-contrast microscopy in this country, and with its help he showed that, contrary to a recent claim, flagella were closely associated with bacterial motility. He made innumerable interesting discoveries which have never been published, and just before he died he had been demonstrating to us the effect of different qualities of paper in bringing out the pigment of chromogenic bacteria.

Fleming was a reticent, taciturn, and humble man, with an independent mind, great tenacity of purpose, a tough yet sensitive personality, and abiding loyalty. He was a born naturalist, keenly observant of everything around him, and always ready to devise and test new methods for studying germs in the laboratory or seeds and plants in the garden. He accepted the many honours that were showered upon him modestly and unaffectedly. The simple kind of tribute touched him most, such as a collection of signatures or a letter from a child or from some poor person who had benefited from penicillin. He had been looking forward to working again with opsonin, phagocytes, and lysozyme, for the natural defences of the body were his constant interest. Now, instead, we mourn the loss of a great scientist and a great man.

ROBERT CRUICKSHANK.

Professor H. M. Turnbull

We regret to announce the death on September 29 of Professor H. M. Turnbull, Emeritus Professor of Morbid Anatomy in the University of London. He was an honorary member of the Association of Clinical Pathologists. It is hoped to include an obituary notice in the next issue.

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Page numbers preceded by " (P) " refer to the summaries of papers read at the General Meetings of the Association of Clinical Pathologists

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