logic and versed in the history of human thought. On the philosopher, in the modern sense of the word, rests a great responsibility, perhaps the most urgent responsibility in the world to-day—that of laying bare the foundations of empirical knowledge so that we may use it with foresight instead of a blind understanding. And when we turn to what one of the most able and promising of the younger philosophers has to tell us on this all-important question, we find that it is mainly a set

of speculations on how to translate from one ineffective language into another. If Mr. Ayer were a less significant figure we might in silence leave his book to psychologists, for whom the question it discusses, and perhaps the discussion itself, has some academic interest. It is because of the possibility that he might yet bring his great talents to bear on the problem which he thinks he has already considered that his book deserves serious attention.

OBITUARIES

Prof. H. S. Hele-Shaw, F.R.S.

HENRY SELBY HELE-SHAW, who died on January 30 at the age of eighty-six, combined in an unusual degree the academic and the inventive mind. Educated privately, he served an apprenticeship for four years as a mechanical engineer, after which he won a Senior Whitworth Scholarship and with it proceeded to University College, Bristol. On completing the course, he was appointed lecturer in mathematics and engineering at Bristol, and a few years after, in 1881, was made professor of engineering. Four years later he was appointed the first professor of engineering at University College, Liverpool. He held this post until his resignation in 1904, when he was appointed first professor of engineering in the Transvaal Technical Institute; after a year he was made principal of the Institute. Soon afterwards the Secretary of State for the Colonies appointed him organizer of technical education in the Transvaal.

On returning from South Africa in 1906, Hele-Shaw set up a consulting practice in Westminster and carried this on with great success until his death. He was president of the Institution of Mechanical Engineers in 1922, and president in 1915 of Section G (Engineering) of the British Association. He delivered the James Watt Anniversary Lecture in 1902, the subject being "James Watt, Inventor". He was an LL.D. of St. Andrews, a D.Sc. of Bristol, and a D.Eng. of Liverpool.

While at Liverpool Hele-Shaw was largely responsible for collecting funds for the endowment of the chair of engineering and for the building of the Walker Engineering Laboratories. It was here, too, that he carried out his experimental work on stream-line flow which established his reputation as a scientific investigator, and for which he was elected a fellow of the Royal Society in 1899.

It was during his early days at Liverpool that Hele-Shaw's inventive ability began to develop. He was much interested in the subject of friction and delivered four Cantor Lectures on the subject in 1886. It was about this time that he invented his well-known multiple-disk clutch. He also became very interested in road transport, and in 1897 organized the Liverpool trials of commercial vehicles for the Liverpool Automobile Club and Self-Propelled

Traffic Association. He became president of the Institution of Automobile Engineers in 1909.

After taking up consulting practice, Hele-Shaw developed several important inventions, among which his hydraulic variable-speed gear, the stream-line filter, and the Victaulic pipe joint are especially worthy of mention. His most recent important work was on variable-pitch airscrews.

As an organizer of technical education Hele-Shaw did valuable work, especially in more recent years in connexion with the introduction of National Certificates. In 1920, when the Board of Education approached the Institution of Mechanical Engineers with a view to collaboration in a certificate scheme to take the place of the old Science and Art Certificates, Hele-Shaw was chairman of the Education Committee of the Council, and it was largely due to him that the scheme was adopted. He was the first chairman of the Joint Committee and held this post until 1937.

Until the end he was a remarkably vital character. As a lecturer he was breezy, humorous, and unconventional, and as such will be happily remembered by more than one generation of students.

A. H. GIBSON.

Sir Pendrill Varrier-Jones

By the tragically sudden death on January 30 of Sir Pendrill Varrier-Jones in his fifty-eighth year the medical profession has lost a pioneer in the full tide of his activities. The only son of Dr. C. Morgan Jones of Glamorgan, he was educated at Epsom College and St. John's College, Cambridge, where he was a foundation scholar and prizeman, graduating in the first class of the Natural Sciences Tripos, Part 1. Proceeding to St. Bartholomew's Hospital he qualified there and became house physician. On the completion of his term of office he returned to Cambridge for pathological research under Sir German Sims Woodhead. At the outbreak of the War of 1914-18 the Cambridgeshire tuberculosis officer joined the R.A.M.C., and Varrier-Jones, who was graded as unfit for military service, was asked to undertake his work temporarily. He accepted with some reluctance, for hitherto his interests had been directed purely to laboratory research.

It is difficult to realize to-day the total inadequacy of the treatment of pulmonary tuberculosis fifty years ago. Too often the out-patient at hospitals merely received some cod liver oil and cough mixture, after waiting for some hours at the risk of infecting other patients. Open-air sanatoria, both in Norfolk, were started in the middle 'nineties by Dr. Jane Walker and by Dr. Burton-Fanning. Then King Edward VII by his question "If preventible why not prevented?" galvanized the authorities into some sort of activity, resulting in the establishment of the sanatorium at Midhurst. Though interest in the subject had now been aroused, no large-scale plans were made until the National Health Insurance Act, with the consequent provision of hospital and dispensary facilities.

The point on which Varrier-Jones seized was the great liability of the patient to relapse on his return to the environment in which he had contracted the disease, thus nullifying the efforts that had been made. Engaging the support of Clifford Allbutt, Sims Woodhead and Humphry Rolleston, he started a village settlement at Bourn in Cambridgeshire in 1915 with only one patient in a shelter, but filled with a vision of the future. That vision was for the patient to pass through all the stages of hospital and sanatorium treatment, and to be provided with occupation suited to his state of health. When afebrile he was to work at a trade for the trades union rate of wages. He would reside in a hostel, or if married, in the village settlement with his wife and family. If at any time his health relapsed he would be sure of prompt and expert treatment in the institution. And Varrier-Jones lived to see that audacious vision realized. In 1918 much more extensive premises were obtained at Papworth Hall, and gradually the institution expanded over five hundred acres of land, complete with administrative blocks, hospital wards, a large sanatorium, laboratories and a research institute, a village settlement of more than a hundred cottages, hostels for men and women, and factories with annual sales which together with those of Enham, have now reached nearly half a million pounds annually. This might have been considered sufficient for the activities of any man, but they were not enough for Varrier-Jones. He was honorary medical director of the Enham Village Centre for ex-Service men, replanned the Preston Hall Village Settlement at the request of the British Legion, and advised on the establishment of a village settlement near Dublin. His latest ambition was to add a teaching department to Papworth, and he was writing enthusiastically to some medical supporters about this only an hour before his death.

Enthusiasm was indeed the keynote of his character, reinforced by tenacity and tireless energy. He has been well described as a Celt with all the Celt's fire and imagination and with the long black hair and gestures of an impresario. In early life he was nicknamed the Pendragon, and he adopted this as the trade-mark of the Papworth goods. Sir Clifford Allbutt said of him that he restored hope to those who had lost it, and there is no doubt that his great success was due to the force of his personality. So

individual were his gifts that it is difficult to see who can succeed him, for clinical insight and great business capacity are seldom united. Yet there can be no doubt that his plan is capable of wide extension and would greatly help to solve the problem of pulmonary tuberculosis, converting damaged lives from a liability to an asset for the community. He was strongly of opinion that the community by insisting on the notification of tuberculosis thereby accepted responsibility for those on whom it had imposed this handicap. It was his proud boast that no child born in the settlement of a tuberculous parent had ever developed tuberculosis.

The value of his work was publicly recognized by a knighthood in 1931, the fellowship of the Royal College of Physicians in 1934, and the Weber-Parkes Prize in 1939.

W. LANGDON-BROWN.

Prof. V. Putti

PROF. VITTORIO PUTTI, the eminent orthopaedic surgeon, who died recently, was born on March 1, 1880, at Bologna, where he received his medical education and qualified in 1903. For eleven years he was assistant to Alessandro Codivilla at the Rissoli Institute at Bologna, of which he became director in 1914. In 1909 he was appointed lecturer in orthopaedics and in 1914 professor in this subject at his Alma Mater. In 1917 he founded the journal *Chirurgia degli Organi di Movimento*, to which *Bibliografia Ortopedica*, founded by him three years later, containing summaries of current orthopaedic literature, formed a useful supplement. Putti introduced many new orthopaedic operations and made numerous valuable contributions to the literature of his speciality, particularly on congenital dislocation of the hip, osteoarticular tuberculosis, for the electrotherapeutic treatment of which he founded the Codivilla Institute at Cortone d'Ampesso as a branch of the Rizzoli Institute, diseases of the vertebral column, transplantation of muscles and Madelung's deformity. Enjoying an international reputation, he received invitations to lecture in several foreign countries including Great Britain, where he had many friends.

J. D. ROLLESTON.

WE regret to announce the following deaths:

Dr. Rendel Harris, F.B.A., the well-known biblical scholar, archæologist and Orientalist, on March 1, aged eighty-eight.

Prof. C. R. Lanman, professor of Sanskrit at Harvard University during 1880-1937, and a corresponding member of the British Academy, who was a distinguished Orientalist and authority on ancient Indian languages and literature, aged ninety.

Mr. C. A. Ludwig, associate plant physiologist in the Division of Soil Microbiology of the Bureau of Plant Industry, U.S. Department of Agriculture, on January 7, aged fifty-four.

Dr. Adolpho Lutz, for many years chief of the department of medical zoology at the Instituto Oswaldo Cruz, Rio de Janeiro, aged eighty-four.

Dr. C. B. Ticehurst, the distinguished ornithologist and editor of *Ibis*, on February 17, aged sixty.