Obituary Notices

Mr. T. W. F. Gann

WE regret to record the death of Mr. Thomas William Francis Gann, archæologist and explorer of Central America, which took place in London on February 24, in his seventy-first year. He was the son of William Gann of Whitstable, and was born at Murrisk Abbey, Co. Mayo, the home of his mother, who before her marriage was Miss Rose Garvey.

Gann was educated at King's School, Canterbury, and at Middlesex Hospital, where he qualified as M.R.C.S. and L.R.C.P. in 1890. Later he went to Central America with a medical expedition to relieve distress after an earthquake in Guatemala, and from that time forward his life was devoted to Central American studies. He entered the Government service of British Honduras at Belize, becoming in due course principal medical officer of the colony and a member of the Legislative Council.

Although Gann was keenly interested in the study of tropical medicine, he was even more deeply devoted to study of the archæology of the Mayan civilization of Central America. Taking advantage of the numerous journeys to various parts of the colony, which it was necessary for him to make, he explored the country for previously unrecorded ruins, at the same time observing the character and customs of the natives, which he appreciated might serve to throw light on the peoples of the ancient civilization. It was not long before he was recognized as an authority on Central American archæology. He contributed papers to the British Association and the publications of the Smithsonian Institution of Washington, and later was appointed lecturer on Central American archæology in the University of Liverpool. In 1926 he represented the British Government at the International Congress of Americanists in Rome.

After the Great War, Gann's work, already recognized by specialists, became more widely known through the travel books of a semi-popular character which appeared annually over a number of years. In each of these he described a journey of archæological exploration which he had made in the preceding year, and on nearly every occasion he had some outstanding discovery of previously unknown ruins to record. Of these, one of the most remarkable was the city of Coba, with its wonderful stone causeway of approach, extending for many miles. He also discovered some important date-inscribed stelæ, one of which was deciphered as giving the earliest date in Mayan chronology then known. As Captain T. A. Joyce has pointed out, it was owing to his interest in following up rumours of ruined cities in the depths of the tropical forest that attention was directed to the remarkable series of stone buildings which link the temples of Yucatan to the ancient Mayan centres of Guatemala and Honduras. Gann also shared in the work of the British Museum's expedition, of which Captain Joyce was in charge, when the great ruins of Lubaantum, Pusilhà and Minanhà were excavated and explored. An explorer rather than an excavating archæologist, owing mainly to lack of opportunity, Gann was conspicuously generous in placing his knowledge at the services of others whose opportunities were more favourable. His collections enrich both the British Museum and the Liverpool Museum.

In addition to the series of volumes recording his journeys of exploration, and papers in the journals of learned societies, Gann was the author of a number of works dealing with Central American archæology and prehistory, of which the latest was "Mexico from the Earliest Times to the Conquest" (1936). With J. Eric Thompson he also wrote "A History of the Maya" (1931).

Dr. Francis G. Pease

THE Mount Wilson Observatory has suffered a severe loss by the death on February 7, at the age of fifty-seven years, of Dr. Francis G. Pease.

For many years Dr. Pease was in charge of instrument design at the Observatory. When the United States declared war in 1917, he became chief draughtsman to the National Research Council, Washington. He gave a great deal of thought to the design of very large telescopes, and his investigations showed that the construction of a 200-in. telescope presented no insuperable difficulties : he has been closely associated with the design of this telescope, which is to be erected on Mount Palomar.

Dr. Pease did a great deal of nebular photography, and many of his beautiful photographs of nebulæ are celebrated. He determined the line-of-sight velocities of a number of the extra-galactic nebulæ and investigated the rotation of some of them. In association with Dr. W. S. Adams, the spectra of various novæ were obtained after the novæ had become faint, and the novæ were shown to have become Wolf-Rayet stars.

Dr. Pease collaborated with Prof. Michelson in the application of the interferometer to the measurement of stellar diameters. With a special interferometer, 20 ft. in length, mounted on the end of the tube of the 100-inch telescope, he succeeded in measuring the angular diameter of Betelgeuse on the night of December 13, 1920, a memorable observation because it was the first measurement of the diameter of a star ever made. The measures of stellar diameters with this interferometer, and afterwards with a specially constructed 50-ft. interferometer telescope, have mostly been made by Dr. Pease. They demanded considerable skill in adjustment and great patience, qualities which Dr. Pease possessed in a unique degree.

When Prof. Michelson repeated the famous Michelson-Morley experiment with a large steel and invar interferometer in the years 1927–29, Dr. Pease collaborated in the observations. The purpose was to investigate the possible ether-drift which D. C. Miller claimed to have established. No displacement

of the fringes so great as one fiftieth of that to be expected if such an ether-drift existed was obtained.

Dr. Pease was working with Prof. Michelson on the measurement of the velocity of light, in a pipe-line one mile in length evacuated to a pressure of a few millimetres, when Prof. Michelson died in May 1931. This investigation was then placed under the direction of Dr. Pease, who succeeded in holding a pressure of 2–3 mm. in a line built up of 60-ft. sections of steel pipe, 3 ft. in diameter. Multiple reflections from mirrors at the two ends of the pipe-line increased the effective length of path. The mean velocity obtained from several sets of measures, comprising in all 2885 determinations, was $299{,}774 \pm 11$ km./sec., which must be regarded as the best determination of this velocity. H. S. J.

Prof. Max Neisser

THE death on February 25 of Prof. Max Neisser in his sixty-ninth year creates another blank in that distinguished roll of German bacteriologists who have occupied chairs of hygiene modelled on the Koch tradition. The name of Neisser bulks largely in bacteriological literature. Albert Neisser of Breslau, the discoverer of the gonococcus, was an uncle of Max; and the veriest tiro in bacteriology is, at a very early stage, introduced to at least one achievement of the latter—the Neisser stain for *C. diphtheriæ*.

Born in 1869 at Liegnitz in Silesia, Max Neisser removed with his parents to Berlin, where he received his schooling and his medical training. The work involved in the preparation of his thesis for the doctorate in medicine, which he obtained in 1893, was carried out in Rubner's laboratory. In 1899 he met Paul Ehrlich—a great event in his life. In the same year he went to Frankfort-on-Main, where he was given charge of the department of bacteriology and became a professor in 1901. In 1909 he was appointed director of the new Städtisches Hygienisches Institut, later to be named the Städtisches Hygienisches Universitäts-Institut when the University of Frankfort was founded in 1914.

During the Great War, Neisser did valuable service first in a field dressing station and later as a consultant on hygiene.

When the War ended, Neisser returned to his professorial duties, resumed his scientific work, and took a prominent part in the organization of public hygiene in Frankfort. In April 1933 he retired, at the age of sixty-three years, and has since held the title of professor emeritus.

Since he embarked on his research career forty-five years ago, Neisser has been a most devoted and assiduous student, and his contributions, which cover a surprisingly wide range, embracing bacteriological, immunological and hygienic studies, have been many. Before me is a list of no fewer than 156 titles of contributions by him in the period 1893–1935. Here I can do no more than refer briefly to some of the more outstanding achievements to his credit in the field of bacteriology and immunology.

His sojourn at Breslau under Flügge in the closing years of the nineteenth century gave Neisser an opportunity of studying what was then a very acute and pressing problem, the differentiation of diphtheria bacilli from other diphtheroids, and the elaboration of a working technique for use in institutions concerned with the diagnosis of diphtheria.

The well-known Neisser stain for demonstration of the metachromatic bodies in diphtheria bacilli dates from this period. As one of Ehrlich's band of workers in the Frankfort Institute, Neisser, with his colleague Wechsberg, took a prominent share in those pioneer studies conducted under Ehrlich's guidance on the nature and mode of action of hæmolysins, antitoxins and bactericidins in immune sera during the early years of the present century. The Neisser-Wechsberg phenomenon (1901), which disclosed the fact that excess of immune body in relation to available complement interfered with bactericidal action, was an important outcome of this period of his activity. Its precise mechanism is perhaps not even now elucidated and may have to await progress in the physico-chemical attack now being made on the nature of antigen-antibody combinations.

Neisser devoted much attention to the elaboration of accurate plating technique for evaluating bactericidal action, and in connexion with the staphylococcus, on which he wrote widely, he explored with Wechsberg the possibility of detecting by aid of methylene blue the killing power of staphylococcal leucocidin on leucocyte suspensions (so-called bioscopic method).

In 1903 Neisser's demonstration of the fact that influenza bacilli can be grown on ordinary agar in symbiosis with *B. xerosis* is of considerable historical interest in the light of later developments in our knowledge of the essential growth factors of the hæmophilic group of organisms.

In 1906 a most interesting and fruitful field in bacterial variation was opened up by Neisser's observations on an organism (*B. coli mutabile*) which, when grown on lactose-agar, was capable of throwing off variants endowed with the power of fermenting lactose. The analysis of this 'mutation' phenomenon, pursued by Massini and Reiner Müller and particularly by Penfold in Great Britain, added much to our knowledge of variation phenomena in bacteria, in so far as their fermentative properties are concerned.

During the period of his directorship of the Hygienic Institute (1909–33), Neisser's activities, so far as one may judge from the titles of his numerous papers, were, for the most part, bound up with problems of public hygiene over which he freely ranged, the care of the tuberculous, milk provision, bacteriological water analysis, disinfection and water purification being particularly favoured subjects. In the later years of his directorship he devoted much attention to the possibilities of water purification by employing the bactericidal action of silver ions.

There can be no doubt that Max Neisser was an unusually gifted and versatile occupant of the first Frankfort chair of hygiene, beloved of his students and ever ready to spend himself freely in furthering every project likely to raise the standard of public hygiene in the city of his adoption. J. C. G. LEDINGHAM.