animals, such as cattle, pigs, fowls, ducks, &c., are susceptible to plague infection, but extensive experiments made by competent observers in several parts of the world completely agree in opposition to this belief.

In the memorandum the importance of preventing the access of rats to or their entrance into buildings is emphasised. It is pointed out that a cat in the house is a safeguard against domestic invasion by rats and mice, although it must be borne in mind that the cat is in some degree susceptible to plague. Major Buchanan, of the Indian Medical Service, has strongly urged the advisability of stocking the villages in India with cats as a preventive measure, but it must be said that no very definite evidence in support of the proposal has been produced.

With regard to the extermination of rats it is admitted that complete extermination is perhaps impossible. A material diminution in the rat population would undoubtedly lessen the spread of infection amongst them, but the fertility of the rat and the fact that it overruns the whole country in enormous numbers make the task of permanently suppressing the rat community in this country an extremely difficult one. It is certain that only a never-ceasing and complete organisation for rat destruction will appreciably reduce their numbers, and it is perhaps not sufficiently realised by some of the advocates of a general rat campaign that in order to be thorough and effective such a campaign would involve a most extensive and, in the aggregate, a most costly organisation. In this connection the experience of rat destruction gained in Japan is instructive. Kitasato has reported that in five years 4,800,000 rats were killed *in Tokio alone* at a considerable financial outlay, but that at the end of this time no appreciable decrease in the rat population could be detected. Kitasato attributed this to the circumstance that the rate of destruction, vigorous as it was, did not keep pace with the natural increase in the rat population. Recent experience in India appears to point in the same direction.

It is beyond question, however, that so far as plague prevention is concerned a great deal can be done in this country by diminishing or, preferably, abolishing rat infestation in human habitations and in their immediate neighbourhood.

G. F. PETRIE.

DR. THEODORE COOKE.

WE announced with regret last week the death, on November 5, of Dr. Theodore Cooke, C.I.E., formerly a member of the Bombay Educational Department. Born at Tramore, co. Waterford, in 1836, Dr. Cooke entered Trinity College, Dublin, where, after a distinguished career as a student, he graduated in 1859 in the faculties of arts and engineering. In the former faculty he was Hebrew prizeman, first honoursman, and senior moderator and gold medallist in science; in the latter he obtained special certificates in mechanics, chemistry, mineralogy, mining, and geology. Pursuing his profession as an engineer, he joined in 1860 the service of the Bombay, Baroda and Central India Railway, then under construction; during this service he built for the company the great iron bridge at Bassein. Five years later the Government of Bombay secured the services of the talented young engineer as principal of the Civil Engineering College, which later with widened scope became the College of Science, at Poona. The post proved congenial to Dr. Cooke; his wide and varied knowledge, with which were associated much tact and great administrative gifts, enabled him to fill it with signal success until he retired from India in 1893.

Throughout his service Dr. Cooke had taken a keen interest in botanical studies, and field-work connected therewith was one of his chief recreations. What he did as a pastime was, however, characterised by the thoroughness that marked his official work; he soon became a recognised authority on the vegetation of Bombay and Scinde, and it was only fitting that when, in 1891, the Botanical Survey of India was organised, Dr. Cooke should be placed in charge of the survey operations in western India. Encouraged thereto by Sir George King, then director of the survey, Dr. Cooke made preparations for the production of a "Flora of the Presidency of Bombay." Difficulties over which neither Sir George King nor Dr. Cooke had control at first prevented the realisation of the scheme, and when Dr. Cooke retired in 1893 his energies found an outlet in a post to which he was appointed at the Imperial Institute.

The difficulties that had stood in the way of the publication of a local flora of Bombay having at last been overcome, Dr. Cooke was able, some years later, to settle at Kew and commence the preparation of the work in the herbarium there. The first part was published in 1901; the seventh and concluding part appeared about two years ago. The work is marked by the thoroughness and attention to detail characteristic of all that Dr. Cooke did; nothing is taken for granted; every previous statement is carefully verified or refuted; and the "Flora" will remain a lasting memorial to Dr. Cooke's critical acumen, industry, and energy. On its completion Dr. Cooke continued to work in the herbarium with undiminished ardour, assisting as a volunteer in the preparation of the great "Flora Capensis," edited by Sir W. T. Thiselton-Dyer, until laid aside by the illness which has ended his career. Dr. Cooke, on whom his university had already conferred the degree of LL.D., was created a C.I.E. in 1891, and was a Fellow of the Linnean and the Geological Societies.

NOTES.

THE Nobel prize for chemistry has been awarded to Prof. Otto Wallach, professor of chemistry in the University of Göttingen.

WE regret to see the announcement of the death, on November 13, of Mr. W. R. Fisher, formerly assistant professor of forestry at Coopers Hill College.

THE Royal Geological Society of Cornwall at its annual meeting at Penzance on November 8 awarded Dr. George J. Hinde, F.R.S., the Bolitho gold medal for his valuable papers and services in connection with the geology of the county.

A REUTER telegram from Pisa states that on November 10, in the presence of King Victor Emmanuel and a Government Commission, Signor Marconi received wireless telegrams direct from Canada and Massowah by means of his extra powerful installation at Coltano.

MR. A. E. BROWN, secretary of the Zoological Society of Philadelphia, has died suddenly of heart disease in his sixty-first year. He was vice-president and curator of the Academy of Natural Sciences in the same city, and a frequent contributor of zoological and biological articles to various scientific journals.

DR. C. WILLARD HAYES, chief geologist to the U.S. Geological Survey, is now visiting Panama by the direction of President Taft to make a preliminary study of