

the present from various quarters, and collections are still coming in almost every week. The work of identifying and describing the specimens was at first entrusted to Mr. E. E. Austen, the dipterist on the staff of the museum, but later he volunteered for active service in South Africa and joined the City Imperial Volunteers. Apart from his duties as a soldier Mr. Austen has, we hear, done useful service in his capacity of naturalist in the South African Field Force. There are not many professional dipterists in this country, and it was therefore fortunate that the director of the museum, Professor Ray Lankester, was able to obtain the services of Mr. F. V. Theobald, a graduate of the University of Cambridge, who is one of the few men in England who has studied mosquitoes, to carry on the work in Mr. Austen's absence. Mr. Theobald is now engaged in the preparation of a monograph on mosquitoes, based on the collections at the museum, the printing of which has been sanctioned by the trustees.

Pending the issue of this catalogue, it has been thought desirable, for the satisfaction of those who have been at the trouble to make the collections, to print a preliminary report of the progress made by Mr. Theobald in identifying the specimens already received. The combined collections contain a large number of species, the majority belonging to the genus *Culex*. Mr. Theobald at present has completed the genus *Anopheles*, which has been hopelessly convicted of being the medium by which the malaria parasite is transmitted from person to person. The genus is represented in the museum by 22 species, 10 of which are new to science. The *Anopheles*, unlike the comparatively innocuous *Culex*, does not appear to have a wide distribution in regard to species, although the genus is world-wide. One of the greatest distances between any two localities for the same species is Formosa and the Straits Settlements. A long series sent by Mr. Wray from the Straits Settlements contained 66 *Anopheles* and 72 *Culex*, the former being remarkable for their great variation both in color and in size; whereas all the other specimens of the genus received appear very constant in color and markings. Some species of *Culex* seem to have

a very wide distribution. Thus one species has been sent from the following widely-separated localities: Japan, Formosa, Hong-kong, Malay Peninsula, India, South and West Africa, North and South America, West Indies and Gibraltar. As many of the species are very obscure, photographs of the wings and drawings of various parts are being prepared, and complete figures of the majority of species will also be given in the proposed monograph. The collection and preservation of these tiny and very delicate insects are a most difficult matter, involving unwearied patience and extreme care. The fact that most of the collections have arrived at the museum from remote parts of the world in fair condition says much for the zeal and care with which the gentlemen concerned have endeavored to carry out the wishes of the Colonial Secretary in this important investigation.

YELLOW FEVER AND MOSQUITOES.

A PRELIMINARY paper on the etiology of yellow fever, by Walter Reed, surgeon, United States army, and James Carroll, A. Agramonte, Jesse W. Lazear, assistant surgeons, United States army, was read at the recent meeting of the American Public Health Association at Indianapolis and is published in the last issue of the *Philadelphia Medical Journal*. It appears that in eleven cases in which non-immune individuals were inoculated through the bites of mosquitoes (*Culex fasciatus*) two attacks of yellow fever followed and that another attack is directly traced to the bite of a contaminated mosquito. The authors conclude as follows:

For ourselves, we have been profoundly impressed with the mode of infection and with the results that followed the bite of the mosquito in these three cases. Our results would appear to throw new light on Carter's observations in Mississippi, as to the period required between the introduction of the first (infecting) case and the occurrence of secondary cases of yellow fever.

Since we here, for the first time, record a case in which a typical attack of yellow fever has followed the bite of an infected mosquito, within the usual period of incubation of the disease, and in which other sources of infection can be

excluded, we feel confident that the publication of these observations must excite renewed interest in the mosquito-theory of the propagation of yellow fever, as first proposed by Finlay.

From the first part of our study of yellow fever, we draw the following conclusions:

1. The blood taken during life from the general venous circulation, on various days of the disease, in 18 cases of yellow fever, successively studied, has given negative results as regards the presence of *B. icteroides*.

2. Cultures taken from the blood and organs of 11 yellow fever cadavers have also proved negative as regards the presence of this bacillus.

3. *Bacillus icteroides* (Sanarelli) stands in no causative relation to yellow fever, but, when present, should be considered as a secondary invader in this disease.

From the second part of our study of yellow fever, we draw the following conclusions:

The mosquito serves as the intermediate host for the parasite of yellow fever, and it is highly probable that the disease is only propagated through the bite of this insect.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR S. P. LANGLEY, director of the Smithsonian Institution returned to the United States on October 24th. He was given the honorary degree of Doctor of Science on October 11th, by Cambridge University.

THE Rumford Committee of the American Academy of Arts and Sciences has voted a grant of \$200 to Mr. C. E. Mendenhall of Williams College for the furtherance of his investigations on a hollow bolometer, and a grant of \$500 to Professor George E. Hale of the Yerkes Observatory in furtherance of his researches in connection with the application of the radiometer and a study of the infra-red spectrum of the chromosphere.

DR. E. W. HOBSON, F.R.S., has been nominated for the presidency of the London Mathematical Society, succeeding Lord Kelvin.

SIR LOWTHIAN BELL, F.R.S., succeeds the Hon. C. A. Parsons, F.R.S. as president of the British Institution of Junior Engineers.

PROFESSOR BRUHNE, who holds the chair of physics in the University of Dijon, has been ap-

pointed director of the observatory on the Pui-de-Dôme.

MR. MARSHALL H. SAVILLE, of the American Museum of Natural History, left for Southern Mexico on November 1st, where he will continue his excavations in the territory formerly occupied by the Zapotecs.

DR. KARL E. GUTHE, of the department of physics of the University of Michigan, is spending the present year in Leipzig, Germany, conducting investigations in the general subject of physical chemistry.

A BRONZE medallion with a likeness of Sylvester will hereafter be awarded as a mathematical prize at the Johns Hopkins University.

THE death is announced, at the age of seventy-seven years, of Dr. Friedrich Max-Müller, Corpus professor of comparative philology at Oxford University, well-known throughout the world for his researches in oriental philosophy and literature and for his more popular writings, covering a wide field.

DR. MOSES C. WHITE, emeritus professor in the Yale Medical School, died on October 24th aged seventy-nine years, and Dr. Lawrence Turnbull, the author of numerous works on diseases of the eye and ear, and a well-known specialist, on October 24th, aged seventy-nine years.

WE regret also to record the death at the age of sixty-one years of Dr. A. B. Frank, professor of botany in the Agricultural School at Berlin and director of the biological division of the Imperial Board of Health; of Dr. Robert Hegler, docent in chemistry in the University at Rostock, on September 29th, aged thirty-one years, and of Dr. Ferdinand Anton, director of the astronomical and meteorological observatory of Trieste, on October 3d, at the age of fifty-six years.

WE have already called attention to the appointment of a Baird Memorial Committee, of which Dr. H. M. Smith is chairman, the object of which is to erect a tablet or monument at Woods Holl in memory of the late Spencer F. Baird. The nature of the proposed memorial has not yet been determined as it must depend on the amount subscribed, but the committee