moment there are established at these places Mr. Marconi's latest appliances, so adjusted that each receiver at one station responds only to its corresponding transmitter at the other. During a three days' visit to Poole, Mr. Marconi invited me to apply any test I pleased to satisfy myself of the complete independence of the circuits, and the following are two out of many such tests: Two operators at St. Catharine's were instructed to send simultaneously two different wireless messages to Poole, and without delay or mistake the two were correctly recorded and printed down at the same time in Morse signals on the tapes of the two corresponding receivers at Poole.

In this first demonstration each receiver was connected to its own independent aërial wire hung from the same mast. But greater wonders followed. Mr. Marconi placed the receivers at Poole one on the top of the other, and connected them both to one and the same wire about 40 ft. in length, attached to a mast. I then asked to have two messages sent at the same moment by the operators at St. Catherine's, one in English and one in French. Without failure each receiver at Poole rolled out its paper tape, the message in English perfect on one and that in French on the other. When it is realized that these visible dots and dashes are the results of trains of intermingled electric waves rushing with the speed of light across the intervening 30 miles, caught on one and the same short aërial wire and disentangled and sorted out automatically by the two machines into intelligible messages in different languages, the wonder of it all cannot but strike the mind.

Your space is too valuable to be encroached upon by further details, or else I might mention some marvellous results, exhibited by Mr. Marconi during the same demonstrations, of messages received from a transmitter 30 miles away and recorded by an instrument in a closed room merely by the aid of a zinc cylinder, four feet high, placed on a chair. More surprising is it to learn that, whilst these experiments have been proceeding between Poole and St. Catherine's, others have been taking place for the Admiralty between Portsmouth and Portland, these lines of communication intersecting each other; yet so perfect is the independence that nothing done on one circuit now affects the other, unless desired. A corollary of these latest improvements is that the necessity for very high masts is abolished. Mr. Marconi now has established perfect independent wireless telegraphic communication between Poole and St. Catherine's, a distance of 30 miles, by means of a pair of metal cylinders elevated 25 or 30 feet above the ground at each place.

I need not enlarge on the possibilities thus opened out for naval and military purposes. The importance of this practical solution of the problem of independent electric wave telegraphy, in which each wireless circuit is as private as one with a wire, is obvious without comment. My desire is solely to mention the above facts for the benefit of general readers, whose minds will thus perhaps be eased of any doubts lest this brilliant application of electrical discoveries should, like some others, fall short of satisfying the requirements of practical use and be relegated to the region of imperfect inventions or unfulfilled hopes.

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*SPECIES OF MOSQUITOES COLLECTED FOR THE BRITISH MUSEUM.**

AT the latter end of 1898 a committee was appointed jointly by Mr. Chamberlain and the Royal Society to exercise a general supervision over a scientific investigation of malaria, and it was then suggested that, in view of the connection of malaria with mosquitoes, it would be desirable to obtain exact knowledge of the different species of mosquitoes and allied insects in the various tropical colonies. Acting on this suggestion, Mr. Chamberlain at once issued a circular despatch to the Governors of all the Crown colonies, requesting them to take the necessary steps to have such collections made and sent to the Natural History Museum for examination and classification of the specimens. For the guidance of those who might be employed on the work, directions for collecting, mounting and preserving the insects were drawn up by the museum and distributed in the colonies. As a result of these measures considerably over 3,000 specimens of mosquitoes have, we learn, been received at Cromwell-road up to

* From the London *Times*.

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 inocuous *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 Gibralter. 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