not be met without Congressional aid. The National Museum, under present conditions, or better, limitations, can not possibly adopt an adequate policy of entomological development. The two prime obstacles are lack of sufficient curators and lack of space. The present force of curators, even with the aid afforded by the members of the Bureau of Entomology, can not arrange and classify the collections already on hand, incomplete as these are. Some of the men work overtime and on holidays, while help is sometimes obtained from those not officially connected with the museum. But all these activities lamentably fail to meet the whole need. The museum should have enough expert curators to keep classified and in order, the available material in every group of insects, and to furnish identifications and other aid to economic entomologists and other workers in every state. Should a sufficient curatorial force be supplied, however, it would be helpless in the present crowded condition of the department. There is hardly room to move around, and almost no space for new cabinets. The only way out seems to be through the erection of a new building of suitable size; fireproof, but not necessarily of any great architectural pretensions.

Granting the building and the curators, with suitable rules and arrangements to ensure the proper care of all the collections, what more should be demanded? Undoubtedly collectors and students would present or bequeath their materials on a scale previously unheard of, because of the great services they had received from the museum and their confidence in it as a repository of types and other priceless specimens. This, however, would not suffice. Funds should be available for explorations within the United States and abroad, to discover insects hitherto unknown or unrepresented in the museum.

With curators, building and adequate collections, we are still confronted by another urgent need. The results of the work done must be made available to scientific men in every part of the country. This can only be brought about through the creation of adequate publishing facilities, insuring the reasonably prompt appearance of each work completed. At the present time authors hesitate to undertake large monographs not knowing when they will see the light of publicity, nor indeed whether they will ever do so.

Prepared by the committees to investigate conditions and needs of the United States National Museum.

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SCIENTIFIC EVENTS

MANGANESE IN COSTA RICA AND PANAMA

MANGANESE deposits have been known in Panama for many years, and some were ex-

tensively worked as early as 1871. None were recorded in Costa Rica, however, until 1915, when American engineers found deposits in western Costo Rica and, under the stimulus of the prevailing high prices, explored many of them. During 1916, 1917, and 1918 about 18,000 tons of ore was exported from Costa Rica to the United States. In October, 1918, the Geological Survey, taking advantage of the presence in Costa Rica of an American geologist, J. D. Sears, had the deposits examined. Dr. Sears afterward visited several new deposits in Panama.

The deposits in Costa Rica are found at several places on the Nicoyan peninsula, in the Province of Guanacaste, which extends along the Pacific coast. Most of the known deposits, and all those which have been the source of the shipments, lie within about 16 miles of Playa Real on the Pacific coast in the northern part of the peninsula. Other isolated deposits occur in the eastern part of the peninsula, near the Gulf of Nicoya. As the central part of the peninsula is covered with dense forest and is difficult to cross, further exploration may bring other deposits to light.

Although deposits of manganese oxides were examined at thirty-six places near Playa Real, most of the ore shipped has been derived from three deposits that lie in an area scarcely 1,000 feet square at Playa Real. These deposits are owned by the Costa Rica Manganese & Mining Co., and American company. At Playa Real, as at many other places in the region, the manganese oxides form very irregular masses, which appear to extend along the crests of hills. The genesis of the deposits is obscure, but sufficient work has been done to show that only a few persist for as much as 100 feet below the surface. Estimates of the size of the known deposits, which, however, are based upon very inadequate data and are therefore probably low, indicate that they might yield 10,000 to 15,000 tons in addition to the 18,000 tons already shipped. The oxides are intimately mixed with silica, so that careful sorting is necessary to produce material containing more than 45 per cent. of manganese. After the oxides are sorted they are carried by lighters to ships anchored near the shore.

The deposits in Panama lie in an inaccessible region along Boqueron River, about 20 miles northeast of Colon. They are about 12 miles southwest of the deposits at Nombre de Dios, which were extensively explored from 1871 to 1902. These deposits are poorly exposed and only a few of them have been explored, but the indications in two small areas warrant an estimate that the deposits there may yield 25,000 to 30,000 tons of high-grade oxides. As there is considerable float along the near-by streams other deposits may be found. In order to export the material, however, roads or tramways must be constructed at considerable expense.

THE CAMBRIDGE NATURAL SCIENCE CLUB[1]

The Cambridge Natural Science Club, founded in 1872, celebrated its 1,000th meeting by a dinner in the combination room of St. John's College, Cambridge, on Saturday, January 24. The president, Mr. J. M. Wordie, was in the chair. There were eighty-three members and guests, and the occasion was taken to bring out a complete list of the members of the club since its inauguration. This shows that of the 330 members 52 are dead, 10 having been killed or died on active service during the war, and that 55, or 16.7 per cent., had received the blue ribbon of science—the F.R.S. Indeed, in returning thanks for the guests, Sir J. J. Thomson, who, although president of the Royal Society and master of Trinity, had never been a member of the club, thought that the proportion of fellowships of the Royal Society was probably higher among members of the club than among fellows of colleges elected on account of their attainments in natural science. He confessed that he had never taken the Natural Science Tripos, though he had often examined others for it, and pleaded in defence that, like Professor W. H. Bragg, also a guest, he had made some vicarious amends by submitting a son to the ordeal. It may be noted that Professor W. H.

[1] From the *British Medical Journal*.