joint on the death of a relative seems to have been peculiar to Goodenough. It was first noted by M. H. Moreton, R.M., in his report, Appendix N to the "Annual Report on British New Guinea," 1897–98. He describes which joints are cut off for special relatives, and adds: "They do not, as a rule, disjoint the fingers of the right hand, but, on the occasion of a man distinguishing himself in fighting, the first joint of the third finger of the right hand is lopped off. This custom is falling into disuse. . . . I do not know that the custom of disjointing is practised in a single other district. . . . I have noticed many natives with mutilated left hands." Our authors do not refer to Moreton's statement, nor do they confirm or deny any association between the particular joint and a definite relationship. They describe the method, and say that "in Mud Bay adults shrank from the pain this mutilation caused, so little children were made the victims. . . . Men seldom lose more than two or three finger-joints [never of the thumb or of the right-hand little finger], but it is not at all unusual for a woman to have all the fingers (not the thumbs) of one or even of both hands maimed," but only the terminal phalanges are removed. One lore-learned native said that "all the dead go to Wafolo [an uninhabited district on the north-west side of Fergusson Island] except those with unchopped fingers; these are killed and eaten by some dogs that bar their path."

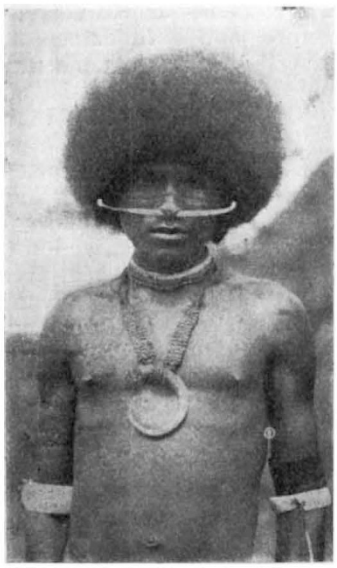

FIG. 1.—A Kabuna youth, Mud Bay, Goodenough Island. From "The Northern D'Entrecasteaux."

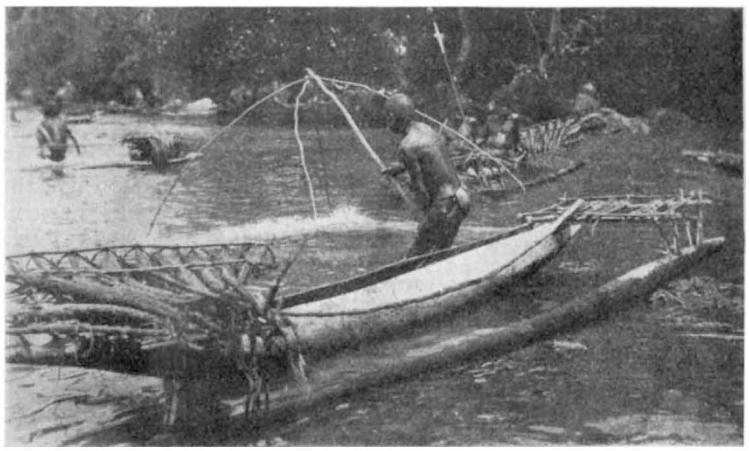

FIG. 2.—Fishing with traps and hauling up a square fish-net, *lata*, Mud Bay, Goodenough Island. From "The Northern D'Entrecasteaux."

Mr. Ballantyne's long and intimate knowledge of the natives gives especial authority to the estimate of the psychology of the natives and of their magico-religious beliefs and customs, and it is in this section that the partnership of a missionary and a trained ethnologist is particularly valuable. Thirty-seven excellent photographs add to the interest of this instructive book. A. C. H.

Obituary.

PROF. A. G. NATHORST.

ALFRED GABRIEL NATHORST, who for the greater part of his life was Director of the Palæobotanical Museum of the Swedish Academy, died at Stockholm on January 20 at seventy years of age. In many respects Nathorst was a remarkable man; precluded by deafness from the ordinary means of communicating with his fellows, he had an almost uncanny power of divining the point of a remark before it was fully expressed in writing on the tablet which he always carried with him: a keen sense of humour, a boyish love of the ridiculous, and a lovable personality made him a delightful companion. Some chance word or incident would lead him to quote verbatim passages from Dickens, especially "The Pickwick Papers," Kipling, or other favourite author; he wrote and spoke English and German with apparent ease, and some of his papers are written in French. In him, as in comparatively few men, were combined the naturalist's love of the open air and the lust of travel with the patience of the laboratory student.

Nathorst paid his first visit to England in 1872, when he met Sir Charles Lyell, whose "Principles of Geology," as he stated in acknowledging the award of the Lyell medal from the Geological Society in 1904, first attracted him to the study of geology. In 1870 he went to Spitsbergen, where he became familiar with recent Arctic plants, and on his return he investigated fresh-water Pleistocene beds in Denmark, Germany, Switzerland, and England, utilising his knowledge of existing species in tracing the distribution of Arctic plants in Europe during the Glacial period. A series of travel-notes published in 1880 contains many valuable opinions on fossil plants from Meso-

zoic and Tertiary localities in English collections. In 1879 he collected specimens of the dwarf birch at Bridlington, and on later visits he always divided his time between conferences or excursions with Mr. Clement Reid and collecting plants from the Jurassic rocks of Yorkshire. A summary of his work on the distribution of Arctic plants during the Glacial epoch was contributed by him to NATURE for January 21, 1892.

In 1907 Nathorst attended the centenary of the Geological Society as a delegate of the Swedish Academy, and received the Sc.D. degree from the University of Cambridge. In 1909 he returned to Cambridge as a delegate to the Darwin celebrations. In 1917, at the age of sixty-seven, in accordance with Swedish custom, he retired from the museum directorship. After his retirement his researches were frequently interrupted by heart trouble, but he had the satisfaction of completing an important memoir, published last year, in continuation of his well-known investigations of the Lower Carboniferous flora of Spitsbergen. Nathorst's contributions to knowledge cover a very wide field—Arctic exploration, stratigraphical and tectonic geology, palæontology in the broadest sense, and recent botany. In 1882 he again visited Spitsbergen, and in 1898 he was the scientific leader of an expedition, primarily in search of Andrée, to Bear Island, King Charles Land, and other regions; it was in the course of this expedition that he circumnavigated Spitsbergen. He described his experiences of two summers in polar seas in an attractive two-volume book written in Swedish and published in 1900, and the scientific results of the voyage, both geological and palæobotanical, have appeared in a succession of valuable papers.

Nathorst's first paper, in 1869, was on Cambrian rocks of Scania, and this was followed by a series of botanical and geological papers. In 1875 he published the first of a long series of contributions to our knowledge of the rich Rhætic floras of Scania, which have thrown a flood of light upon many extinct types, and incidentally have illustrated in a most striking manner the possibilities of the intensive study of the fossil plants of a single region. Though he became more and more absorbed in palæobotanical researches, he always retained an active interest in both geology and botany; the range of his work was exceptionally wide. He had few equals in the extent of his knowledge and in breadth of view.

It is to Nathorst more than to any other man that we owe our knowledge of Arctic floras extending from the Devonian to the Late Tertiary period. His work is characterised by meticulous accuracy, lucidity of presentation, originality, and philosophical treatment. In 1904 he contributed to the French Academy a preliminary account of a remarkable collection of Jurassic plants from Graham Land, on the borders of Antarctica, which demonstrated the almost world-wide distribution of certain ferns and cycadean plants. His palæobotanical papers deal with floras from Japan, the New Siberian Islands, the Arctic regions generally, Scandinavia, and other parts of the world. By his researches into the Jurassic plants of Yorkshire, Nathorst not only added greatly to knowledge, but also stimulated other workers in the same field, and his friendly invasion of the East Coast increased the activity of some English palæobotanists. His discovery of male flowers of Williamsonia and of several new types of the genus is of special interest to English students. An improved method, which he invented, of treating the carbonised or mummified impressions of plants led to fruitful results both from his own researches and from those of others. His demonstration of the true nature of many supposed Palæozoic Algæ marked an important advance in accurate knowledge and in experimental methods of research.

Of special interest from the point of view of evolution are Nathorst's discoveries of many new generic types, such as Pseudobornia, a primitive Devonian plant combining characters of the Equisetales and the extinct group Sphenophyllales; Lycostrobus, a Rhætic lycopodiaceous cone comparable to the large Palæozoic Lepidostrobi; Cephalotheca, a new Devonian fern with peculiar fertile pinnæ; several new seeds from Lower Carboniferous rocks of Spitsbergen; Wielandiella, a remarkable cycadean genus bearing bi-sporangiate flowers and in habit entirely different from that of recent cycads; Cycadocephalus, a Rhætic cycadean micro-strobilus; and Camptopteris, one of several Rhætic ferns which he described in detail. He also made numerous important additions to our more accurate knowledge of cycadean fronds included in the group Cycadophyta (a name instituted by Nathorst), and investigated the past history of the Ginkgoales, a group with one existing representative, the maiden-hair tree.

The Palæobotanical Museum of Stockholm, which was worthily housed in a new building, erected by the Government at a cost of 140,000*l.*, a few years before his death, is an epitome of his achievements and a monument of which his native country may be justly proud. In no other country has palæobotanical research received a more generous recognition; it is usually relegated to a position of secondary importance.

It would be difficult to exaggerate the value of Nathorst's contributions to natural knowledge; he devoted his life to research, and it was always a joy to him to give all the assistance he could to other workers who appealed to him for guidance. As a critic he would take infinite pains, and it was never a trouble to him promptly to answer in a letter of almost perfect English the most trivial questions. Those who were among his regular correspondents have lost a true friend, the value and stimulating effect of whose wise counsel and frank but kindly criticism cannot at once be thoroughly appreciated.

Nathorst was fortunately able to retire with the knowledge that his successor and pupil, Dr. Halle, would fully maintain the high standard of palæobotanical work which has long been associated with the Stockholm Museum. A. C. SEWARD.