an ancestor, Sir William Baker, to commemorate the building of the house, are still among the finest in Great Britain. The pinetum, which at one time contained the best collection of conifers in the country, was considerably enlarged by the late Squire, who from time to time made numerous additions to it. Just before the War he commenced the formation of a new pinetum at Bell's Wood on another part of the estate, which he had planted with conifers recently introduced from China and elsewhere.

Between 1909 and 1913, Mr. Baker's interest in conifers took a more definite shape, when he published three handsome quarto volumes of "Illustrations of Conifers" which contained 'close-up' photographs of all the hardy species in cultivation. The letterpress for the work was prepared by the late Prof. A. Henry and Mr. A. B. Jackson, two well-known authorities on the group. These volumes are a valuable contribution to the literature of conifers, and have been of considerable assistance in the identification of the species. A supplementary volume to the series was commenced some time ago, and will be issued shortly. It is deeply to be regretted that Mr. Baker did not live to see its completion.

News and Views

Iron and Steel

WHEN delivering the Christmas lectures at the Royal Institution in 1925 on "Old Trades and New Knowledge", Sir William Bragg took for the subject of one of his lectures the trade of the smith. One of the objects of this lecture was to show how science has been applied to one of the oldest arts, and what it has revealed. Somewhat the same subject, but under the more prosaic title of "Iron and Steel", and dealt with in a different manner, was taken by Sir William Larke for his Friday evening discourse at the Institution on March 22, and this address is reproduced as a supplement in our issue this week. Within an hour, Sir William reviewed the whole history of the manufacture of iron and steel, pointing out some of the outstanding landmarks, referring to some of the chief inventors and touching upon some of the great achievements rendered possible by the metallurgists.

SINCE iron and steel were first used some thousands of years ago, and since iron was as precious as the crown jewels, many unknown inventors all over the world have added their contributions to the art of iron making, but as Mr. Charles Schwab said, every invention of fundamental importance in the modern iron and steel industry is British in origin. Such names as Darby, Huntsman, Cort, Neilson and Bessemer are well known, and the rise of the iron industry in Great Britain may be regarded both as a cause and a result of the so-called Industrial Revolution. Since the Norman Conquest, said Sir William, there may be said to have been three main phases of industrial development. The first extended to the beginning of the eighteenth century, when power was obtained from animals and men, the second lasted nearly a century and a half and may be described as the age of Iron and Coal, while the third phase, that of the development of metallurgy and alloy steels, has only lasted a quarter of a century, and we may be said to be at the beginning of a new era. Iron manufacture has profoundly influenced the standard of life in the past, and its effect on our social organisation is likely to continue to increase.

Dr. Irving Langmuir, For.Mem.R.S.

THE many friends of Dr. Irving Langmuir will note with pleasure that he has just been elected a foreign member of the Royal Society. It will be remembered (see NATURE, p. 768, Nov. 19, 1932) that he was awarded the Nobel Prize for Chemistry in 1932. In referring to this award, it was pointed out that it is to Irving Langmuir that we owe the conception of the orientated monolayer as the state of material at phase boundaries. A clear and simple interpretation was found for many of the phenomena occurring at interfaces, and new light was thrown on such varied subjects as thermionics, heterogeneous catalysis and surface tension. More recently, Langmuir has been investigating the stability of oil lenses on water as determined by the nature of the monolayer of the interface, a problem with many biological implications. In addition, as the late Sir William Hardy first observed, the orientated monolayer on a metal surface plays an important function in lubrication. During the last two years, Langmuir has also made the important discovery that these layers are destroyed by the passage of a rubbing surface, but if the film be made thick enough, self-repair is effected. Finally, with his co-workers, Langmuir has been investigating the conditions of mobility of substances adsorbed in monolayers on metal substrates, one of the factors to be considered when the rates of catalytic actions are under review.

Prof. Max Weber, For.Mem.R.S.

THE election of Prof. Max Carl Wilhelm Weber as a foreign member of the Royal Society gives well-deserved recognition to one whose influence on biological science is of outstanding importance. After earlier work on Crustacea, Prof. Weber soon entered upon his studies of fish, which were eventually to bring him into the front rank of ichthyologists of the day. His contributions to our knowledge of fish fauna have been very great and resulted from his personal travels into the far north, South Africa and the East Indian Archipelago. The fruits of his researches culminated in his comprehensive joint

work with L. F. de Beaufort on "The Fishes of the Indo-Australian Archipelago" published in three volumes between 1911 and 1916. But to biologists in general, Max Weber is probably better known for his able leadership of the Dutch *Siboga* Expedition in 1899–1900. This expedition covered a distance of about 12,000 sea miles in the different basins of the East Indian Archipelago, and was equipped with the best oceanographical apparatus of the time. The reports of the *Siboga* Expedition edited by Max Weber form one of the major contributions to the science of oceanography, and have filled a large gap in our knowledge of the fauna of that region. Weber himself undertook the study of the fishes collected by the *Siboga* Expedition and published in 1913 his great volume, in which no less than 131 new species were described and 240 species recorded for the first time in the Indo-Australian Archipelago. This work he dedicated to his wife, Mme. Dr. A. A. Weber-van Bosse, who accompanied him on his travels and is herself a botanist of great distinction. Prof. Weber is also the author of the most comprehensive text-book on the Mammalia to be found in any language. The first edition of this work, "Die Säugetiere", was published in 1904 in one volume; the second and latest edition, in two volumes, appeared in 1928. Taking a general view of the work, it is the most complete account in existence of the taxonomy and structure of mammals, living and fossil.

Prof. Moriz Benedikt

PROF. MORIZ BENEDIKT, a leading Austrian neurologist, was born at Eisenstadt in Hungary on July 6, 1835. His medical education was carried on in Vienna, where he studied under Hyrtl, Brücke, Skoda, Oppolzer, Rokitansky and other well-known teachers, and qualified in 1859. During the period 1861–75 he was chiefly concerned with electro-therapy and neuropathology. Afterwards he turned his attention to a comparative anatomical investigation of the brain in man and animals, and craniometric and psychological studies. In 1899 he was appointed professor of neurology in the Vienna medical faculty. In addition to a large number of articles on neuropathology, most of which were published in the *Wiener medizinische Presse* between 1869 and 1882, he wrote on anthropology, ophthalmology and otology. Like his contemporary, Charcot, he took a keen interest in art, and a few days before his death, which took place on April 14, 1920, at the age of eighty-five years, published an essay on Raphael. His name has been attached, at Charcot's suggestion, to a syndrome characterised by oculomotor paralysis on one side with paresis and tremor of the upper extremity on the other.

Electrical Units and the I.E.C.

THE practical system of units now in use is consistent, in the sense that the product of a resistance in ohms and a current in amperes gives a potential difference in volts; but it suffers from the defect that the units themselves are not those which would most naturally be derived from the fundamental mechanical units. As a consequence, the product of current in amperes and potential difference in volts gives the power, not in the usual mechanical unit (ergs per second), but in joules per second, that is, in watts. A degree of simplicity is maintained by making the relation between the practical and the absolute unit an integral power of ten in each case. We understand that the International Electrotechnical Commission at its meetings last month adopted the proposals of Prof. G. Giorgi (discussed in NATURE of April 21, 1934, p. 597) to regard these units as derived, not from the centimetre-gram-second system, but from a metre-kilogram-second system. In this system, the unit of velocity is the metre per second, so that the kinetic energy of unit mass (1 kgm.) moving with unit velocity would be 1000×100^2, that is, 10^7 times that of a gram moving with a velocity of 1 cm. a second. Thus the unit of mechanical energy on this system is 10^7 ergs = 1 joule, just as in the practical electrical system.

IT is clearly not sufficient to arrange that the product of current and E.M.F. shall give power in watts, but if a further relation is imposed, then the whole system—ohm, volt, ampere, farad, coulomb, henry, joule, watt and weber—becomes definite, and the powers of ten by which these units are related to their C.G.S. counterparts need not burden the memory; they can be recovered at any time by a simple argument. For the additional relation required, Prof. Giorgi assigns the value unity to the present international ohm, and thus makes all the units on his system identical with those of the practical system. An argument in favour of this particular choice, rather than that of current or voltage, for example, is that dimensional formulæ are appreciably simplified if resistance is taken as the fourth independent magnitude, in addition to length, mass and time. The Commission has at the same time endorsed the resolution passed at Oslo in 1930, to the effect that μ_0, the permeability of empty space, should be retained in magnetic formulæ as a physical quantity and not as a mere numeric differing from unity. On the other hand, authors are left free to use the rationalised or unrationalised formulæ, according as the value which they choose to assign to the permeability of a vacuum does or does not absorb the constant 4π.

Archæological Discovery in Crete

A DISCOVERY in Crete, of which the intrinsic interest is enhanced by the recent publication of the concluding volumes of Sir Arthur Evans's "Palace of Minos", in which he deals with the Minoan script, is announced from Athens. A dispatch from the correspondent of *The Times*, which appears in the issue of June 28, states that Dr. Marinatos, director of the museum at Candia, has announced that among antiquities discovered in the Arkalokori district is a copper double axe on which is a three line inscription in characters not previously known in the Minoan civilisation, but bearing some resemblance to those on the famous Phaistos disc. The antiquities with which this inscribed axe was found are dated at about