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

the sixteenth century before Christ, a period at which the Minoan culture was at its zenith. The discovery is otherwise remarkable in that it includes swords of exceptionally large size, which are said to be greater in number than any other single find of swords ever made in prehistoric Europe. Associated with them were some hundreds of copper axes, a number of silver axes and twenty-seven gold double axes with golden shafts. The claim that the newly discovered script is itself unknown, but bears a resemblance to characters known from the Phaistos inscription, constitutes the chief interest of the find; though it has other points which will intrigue archæologists. In the circumstances, its full publication should be delayed as little as possible, even though this should entail postponement of full discussion.

Soviet Stratosphere Research

IT is learnt from the reports in *The Times* of June 27 and 28 that stratosphere research is very active in the U.S.S.R. It will be recalled that the Russians hold the altitude record of 12 miles for manned balloons made by M. Prokofiev in October 1933, whilst the U.S.S.R. *Stratostat*, which crashed in January 1934, killing its occupants, rose even higher. The present ascent, which was only of 2½ hours' duration, was made from Moscow on June 26, during which time the balloon travelled 100 miles due south. The commander-pilot was M. Kristap Zille, who was accompanied by a physicist, Prof. Alexandre Verigo, of the Central Geophysical Observatory at Leningrad, and a mechanic named Prilutsky. It is stated that during the short flight the altitude reached was more than 9 miles and that the crew landed safely by parachute, apparently as an exercise. Prokofiev's gondola was used, its instruments were landed intact, photographs of the earth were made and varied cosmic ray records taken. It is incidentally stated, though extremely interesting to hear, that the commander had made two other stratosphere ascents in June.

London Transport Scheme

ARRANGEMENTS have been concluded between the Government and the Standing Joint Committee of the London Passenger Transport Board and the main line railways for the development of a transport scheme for London. On June 5, the Chancellor of the Exchequer announced to the House of Commons that a £35,000,000 plan had been concluded. In addition to the extensive schemes included in the Private Bill of the Transport Board, it is intended to electrify the suburban lines of the L. and N. E. Railway in north-east London entering Liverpool Street, and to extend tube railways to give new connexions between these electrified lines and the City and the West End. The high level at which Government credit now stands enables an Exchequer guarantee to be given of loans sufficient to enable the whole undertaking to be started at once. It involves the building of about 12 miles of new tube railways, the electrification of 44 miles of suburban railway and the doubling and electrification of about 12 miles of further suburban railways. In addition, we were glad to learn that trolley buses are to be substituted for tram cars on 148 route miles. These buses, like the cars, are driven by electricity, but they leave the highways more open and much safer for road traffic. It is hoped to complete the works within five years from the date of the loan. Among the improvements, we notice that escalators will be used instead of lifts and will provide ample accommodation for the increased traffic.

Gas or Electricity for Domestic Heating?

THE question of whether to heat our houses by gas or electricity is discussed in an article in the *Nineteenth Century and After* of June by Prof. W. A. Bone. He is naturally proud of the progress made by the gas industry during the past hundred years. He points out that the electrical industry is only fifty years old and has the attractiveness and self-confidence of youth, and so is apt to impress uncritical minds with its superiority. We agree that a London gas consumer buys as much potential heat for 8·6*d.* as would cost an electricity consumer nearly half a crown at 1*d.* per unit. On the other hand, every bit of the electric heat can be utilised, whilst an appreciable fraction of the gas heat passes up the chimney. Electricians are well aware of the relative costs of gas and electricity for heating, and where economy is the primary consideration, water heating by electricity is only advisable in certain cases. We do not agree with Prof. Bone that a chimney is necessary for the suitable ventilation of bed- and living-rooms. Many systems for ventilating rooms have been devised. Possibly in a few years time chimneys will be considered relics of barbarism, and roof gardens will add to the amenity of life. In London, many consumers now get their electricity at 0·5*d.* per unit and are delighted with their electric heaters and cookers, even although they have previously had extensive experience of gas rings and fires. Electricians are continually experimenting, just as are gas engineers; and are remedying some of the defects of the early installations. It is now customary to have the switch for the electric fire about three feet above the floor so that the heat can be regulated without moving an armchair.

Institute of Physics Lectures at Manchester

THE annual lectures on recent advances in physics arranged by the Manchester and District Local Section of the Institute of Physics were held in the Physics Department of the University of Manchester on June 24 and 26. The first lecture was given by Prof. Franz Simon, who is now working at the Clarendon Laboratory, Oxford, and whose researches on low temperatures are well known. He chose as his subject "Low Temperature Research—its Objects and Methods", and gave an account of recent advances in experimental technique whereby temperatures of the order of a fraction of a degree from absolute zero may be obtained. The principles underlying the experimental methods were considered