

prove too commercially-minded, or if 'job-hunters' increase. At the same time, he notes the absence of heads of colleges who have had a scientific training, whereas Cambridge has often benefited by their ability. We hope that Mr. Diplock will enlarge further on his theme.

Are we Civilized? Human Culture in Perspective.

By Robert H. Lowie. Pp. xiii + 306. (London: George Routledge and Sons, Ltd., 1929.) 12s. 6d. net.

In this amusing and witty book, Prof. Lowie has made a survey of human culture with the view of analysing the permanent and impermanent elements in the line of progress. His thesis is that man, like the chimpanzee, must fight against the forces of destruction; but he has forged ahead of the ape by

passing on his experience to his descendants of the next generation. Prof. Lowie aims at showing that in so doing he has passed on dross as well as gold. In his time and space survey, he shows that identity in difference leads to the conclusion that we ourselves, however much we may differ from our ancestors and the so-called 'lower races', retain much in our own make-up, 'inherited' in the looser sense, which justifies the interrogative which forms the title of his book. Prof. Lowie holds no brief for the popular theory of Nordic superiority, because, as he says, he does not recognise that a Nordic race exists to-day. Like everything he writes, the book is stimulating. Though scientific in method and outlook, it is written in a style which avoids technicalities and will appeal to the least instructed of readers.

Forthcoming Books of Science.

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Anthropology and Archæology.

D. Appleton and Co.—The Mound-Builders, H. C. Shetrone. *Edward Arnold and Co.*—An Introduction to Physical Anthropology, E. P. Stibbe. *Cambridge University Press.*—The Bronze Age, Prof. V. Gordon Childe; The Place-Names of Sussex, A. Mawer and F. M. Stenton. *Macmillan and Co., Ltd.*—The Palace of Minos: a Comparative Account of the Successive Stages of the Early Cretan Civilization as illustrated by the Discoveries at Knossos, Sir Arthur Evans. Vol. 3. *Methuen and Co., Ltd.*—The Science of Folklore, Dr. A. Haggerty Krappe; Welsh Folklore and Folk Custom, Prof. T. Gwynn Jones; Caste in India: the Facts and the System, E. Senart. Translated by Sir E. Denison Ross; A Season's Work at Ur: being an Account of the British Museum Archæological Mission to Babylonia, 1919, Dr. H. R. Hall. *Kegan Paul and Co., Ltd.*—The Flood: New Light on an Old Story, H. Peake; Minoans, Philistines, and Greeks: b.c. 1400-900, A. R. Burn; Death Customs: an Analytical Study of Burial Rites, Dr. Effie Bendam. *G. Routledge and Sons, Ltd.*—The Khoisan Peoples of South Africa: Bushmen, and Hottentots, Dr. I. Schapera. (Ethnology of Africa Series.) *Williams and Norgate, Ltd.*—Further Discoveries in the Antiquity of Man, Sir Arthur Keith.

Biology.

Edward Arnold and Co.—The Progress of Life: a Study in Psychogenetic Evolution, Prof. A. Meek. *Cambridge University Press.*—British and Foreign Trees and Shrubs in Cornwall, E. Thurston. *Chapman and Hall, Ltd.*—The Story of Evolution: Facts and Theories on the Development of Life, B. C. Gruenberg. *Epworth Press.*—Medical Herbs, R. Morse. *G. G. Harrap and Co., Ltd.*—Pythons and their Ways, F. W. FitzSimons. *Macmillan and Co., Ltd.*—Studies on the Structure and Development of Vertebrates, Prof. E. S. Goodrich; The Size-Factor in Plant Morphology, Prof. F. O. Bower; Strasburger's Text-book of Botany, re-written by Prof. H. Fitting, Prof. H. Sierp, Prof. R. Harder, and Prof. G. Karsten. Seventh English edition, translated from the seventeenth German edition by Prof. W. H. Lang. *Oxford University Press.*—The Genetical Theory of Natural Selection, Dr. R. A. Fisher. *G. Routledge and Sons, Ltd.*—Animal Life on the Seashore, Prof. L. Renouf. *Sidgwick and Jackson, Ltd.*—The Development of Sex in Vertebrates, Dr. F. W. Rogers Brambell; Invertebrate Zoology: an Introduction to Animal Morphology and Bionomics, Prof. W. Garstang (Textbooks of Animal Biology); The Biology of Mammas,

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Exhibition in 1872 and was labelled prophetically "A Young Engineer". The headmaster of his first school, Cargilfield, Edinburgh, encouraged his mechanical tastes. When at this school he gave exhibitions with a magic lantern and became skilled in taking photographs. In 1877 he took a good photograph of Prof. T. H. Huxley which, with other portraits, is included in a book entitled "Autobiographical and other Writings", which was in the press when he died. In 1878 he was sent to Fettes College, but as he hated games he found the school life very uncongenial. In his opinion the way Latin and Greek were taught in public schools, especially the unnecessary stress laid on grammar, took away all the romance from the wonderful stories of Greece and Rome. He also considered that compulsory games had a tendency to damp out any originality a boy might possess. He, however, enjoyed the work in the carpenter's shop at Fettes.

In 1879, after reading the description of the working of a telephone given by Prof. Dolbear, Campbell Swinton constructed a pair of telephones which functioned excellently. As the telephone had only been invented some two years previously, this would have been a good piece of work for a scientific worker; for a boy of fifteen it was admirable. His house master, thinking that his scientific absorption interfered with his classical studies, made him send the telephones home.

In the easter of 1881, Alan was sent at his own request to Havre, where he had lessons in mathematics and French, but he seems to have spent much of his time in taking snap photographs of ships and fishing boats. He also visited the lighthouse on several occasions and studied how the electric arc was fed by a de Meritens dynamo which had permanent steel magnets. He was puzzled by the fact that the current seemed to have no effect on a little compass needle brought near it, the reason being that it was alternating current.

Campbell Swinton was a great believer in self-education. The passing of advanced examinations he regarded as pure waste of time. He attributed his success to cultivating scientific friends and to attending lectures at institutions like the Royal Institution and the Royal Society of Arts.

In 1881, Campbell Swinton visited the Paris Exhibition and was most impressed by the wonderful electrical inventions he saw. In 1882 he was apprenticed to Lord Armstrong in the works at Elswick. During this period he fitted a Chilian battleship with electric gun-firing control which enabled any number of guns to be fired simultaneously. In 1887 he left Elswick and set up in London as an electrical contractor and consulting engineer. He installed the electric light in many town and country mansions.

Early in January 1896, after reading an account in the morning paper of Prof. W. C. Röntgen's discovery of X-rays, Swinton was successful in obtaining a shadow photograph by means of a

Crookes tube which he happened to possess. A few days later he obtained a shadow photograph of the bones in his own hand. The present writer remembers him showing this at the Camera Club, which was then in Charing Cross Road. This was the first photograph produced by Röntgen rays in Great Britain. It was reproduced in NATURE of Jan. 23, 1896. On Feb. 4, 1898, he showed many interesting experiments with cathode and X-rays at the Royal Institution. In conjunction with Sir Charles Parsons, he converted diamond into coke by heating it in a vacuum by cathode rays. As the diamond became carbonised, it split up and frothed and became much larger in size. The temperature at which this conversion took place was 1890° C.

In 1904, Campbell Swinton gave up contracting work and became exclusively a consulting engineer. He was specially interested in radio work. When the Marchese Marconi first came to England he called on Swinton, who introduced him to Sir William Preece and rapid developments in radio telegraphy soon ensued. When in Copenhagen in 1910, Swinton first heard articulate speech by radio when listening to tests with the Poulsen system. He was associated with the development of the Parsons turbine and was a director of the Parsons Marine Steam Turbine Co., Ltd. He went out on many of the trials of the pioneer turbine boat, the *Turbinia*, which created a sensation at the Naval Review in 1897 by going at the record speed (at that time) of 33½ knots. Swinton was one of the pioneers of motoring in England.

Campbell Swinton was associated with many electrical works and supply stations. He was a director of Crompton, Parkinson, Ltd., and of W. T. Henley's Telegraph Works, Ltd. In 1911 he was president of the Röntgen Society and in 1913 of the Radio Society. For several years he was chairman of the council of the Royal Society of Arts. In 1915 he was elected a fellow of the Royal Society and twice served on the council. In 1926 he presented the Royal Society with £1000 to form the nucleus of a general purposes fund. He undertook to defray the costs of the charter which was recently granted to the British Association. He had been a member of the general board and of the executive committee of the National Physical Laboratory. He was well known at the Athenæum Club, of which he had been a member for nearly thirty years; he was unmarried.

Campbell Swinton was a member of the three professional engineering institutions—the Civils, the Mechanicals, and the Electricals. He had been a vice-president of the Electricals for four years and had served energetically on many committees. In his home in Chester Square he was most hospitable, and enjoyed showing to his guests the photographs he had taken of many eminent scientific workers and demonstrating the latest developments in radio communication. He will be missed by many, and especially by his old assistants, with whom he maintained a warm friendship.

A. R.