

we marvel at the apparent dulness of early man in being content to use the most roughly chipped flints for many thousands of years before he learned to polish them, and eventually to employ materials better suited for the manufacture of implements and weapons. But when we consider how slowly and laboriously primitive man acquired new ideas, and how such ideas—even those which seem childishly simple and obvious to us—were treasured as priceless possessions and handed on from tribe to tribe, it becomes increasingly difficult to believe in the possibility of the independent evolution of similar customs and inventions of any degree of complexity.

The hypothesis of the "fundamental similarity of the working of the human mind" is no more potent to explain the identity of customs in widely different parts of the world, the distribution of megalithic monuments, or the first appearance of metals in America, than it is to destroy our belief that one man, and one only, originally conceived the idea of the mechanical use to which steam could be applied, or that the electric battery was not independently evolved in each of the countries where it is now in use.

In these discursive remarks I have attempted to deal with old problems in the light of newly acquired evidence; to emphasise the undoubted fact that the evolution of the primates and the emergence of the distinctively human type of intelligence are to be explained primarily by a steady growth and specialisation of certain parts of the brain; that such a development could have occurred only in the mammalia, because they are the only plastic class of animals with a true organ of intelligence; that an arboreal mode of life started man's ancestors on the way to pre-eminence, for it gave them the agility, and the specialisation of the higher parts of the brain incidental to such a life gave them the seeing eye, and in course of time also the understanding ear; and that all the rest followed in the train of this high development of vision working on a brain which controlled ever-increasingly agile limbs.

If, in pursuing these objects, I may have seemed to wander far from the beaten paths of anthropology, as it is usually understood in this section, and perhaps encroached upon the domains of the Zoological Section, my aim has been to demonstrate that the solution of these problems of human origins, which have frequently engaged the attention of the Anthropological Section, is not to be sought merely in comparisons of man and the anthropoid apes. Man has emerged not by the sudden intrusion of some new element into the ape's physical structure or the fabric of his mind, but by the culmination of those processes which have been operating in the same way in a long line of ancestors ever since the beginning of the Tertiary period.

If I have made this general conception clear to you, however clumsily I have marshalled the evidence and with whatever crudities of psychological statement it may be marred, I shall feel that this address has served some useful purpose.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

AMONG the honorary degrees to be conferred by the University of Leeds on October 3, in connection with the visit of the Iron and Steel Institute, are:—LL.D. on the president of the institute, Mr. Arthur Cooper, and degrees of D.Sc. on Sir Robert Hadfield, past-president, Mr. J. E. Stead, and M. Adolph Greiner, vice-presidents, and the president of the Society of German Ironmasters.

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AMONG the public lectures to be delivered in connection with the opening of the new session at University College, London, we notice the following:—*Faculty of Arts*.—October 3, amulets, Prof. Flinders Petrie; October 4, the philosophy of Shadworth Hodgson, Prof. G. Dawes Hicks; October 5, general phonetics, D. Jones; October 9, introduction to comparative psychology, Carveth Read. *Faculty of Science*.—October 4, Joseph Dalton Hooker, Prof. F. W. Oliver. *Faculty of Engineering*.—October 9, the sources of energy available to man, Prof. J. A. Fleming.

IN connection with the Faculty of Engineering of the East London College, one of the constituent colleges of the University of London, a special course of lectures on the management of public electric supply undertakings has been arranged. The lectures will be given by Mr. A. Hugh Seabrook, and will commence on Monday evening, October 14. It is hoped by this means to arouse the interest of electrical engineers and others in the practical working of modern electrical undertakings. The principal of the college will be pleased to provide particulars of the fees for these lectures, and also of other special courses in connection with the engineering faculty of the college.

It is unusual to find astronomy and meteorology among the subjects of courses of lectures arranged by a local education committee. We are glad to see that the Manchester Education Committee is an exception to the rule, and that such lectures are being given at the Municipal School of Technology. Mr. W. C. Jenkins is delivering a course of twenty-six lectures on descriptive astronomy in the Godlee Observatory, of which he is curator, dealing with the descriptive and popular aspect of astronomy; a course of twelve lectures on elementary meteorology, supplementary to those on descriptive astronomy, demonstrations to be given at the Meteorological Station, established in the garden adjacent to the Municipal Secondary School; and a course of twenty-six lectures on astronomical observations and the use of the Nautical Almanack for students familiar with the elements of astronomy.

THE Newcastle Section, the Society of Chemical Industry, and the Armstrong College are this winter arranging courses of evening lectures on special chapters in applied chemistry, which, it is anticipated, will prove specially interesting to those chemists and engineers already engaged in the industries. To inaugurate the scheme a special fund is being raised, which has already received liberal support from the principal manufacturers in the district. Two courses of five lectures each have been arranged for this winter, for which the committee has secured the services of well-known specialists. The first course is one on coal-gas manufacture and the carbonisation of coal, by Dr. Harold G. Colman, of London, and the second on metallography, by Dr. Desch, of Glasgow University. The first course will commence on October 16, and continue at fortnightly intervals; the second course is to commence on January 28, 1913.

THE East Ham Technical College begins its seventh session this month. Being situated in a district largely devoted to chemical industries, it endeavours to provide instruction suitable to the locality. The chemical department, which has been reconstructed during the vacation, comprises two lecture rooms, an inorganic laboratory, with bench accommodation for sixty-four students, an organic laboratory of similar dimensions, specially arranged for technological work, two smaller organic laboratories, and a research laboratory. A metallurgical subdepartment has been recently

equipped. Practical and theoretical courses in pure chemistry extend over five years, and a college certificate is granted; there are also complete courses in gas engineering, gas supply and distribution, coal-tar distillation, chemical engineering, soap manufacture, painters' oils, colours and varnishes, oils, fats and waxes, metallurgy, and sugar manufacture, all of which are largely attended by students who are engaged either in the laboratories or on the plant in the respective industries.

MORE accommodation has for some time been urgently needed in the departments of bacteriology and public health of King's College (University of London). This has now been provided, with the sanction and approval of the University, by the removal of these departments with their staffs to 62 Chandos Street, Strand, W.C. (Charing Cross Medical School Buildings), where an excellent suite of laboratories is at present vacant owing to the transference of the Charing Cross Medical School's preliminary and intermediate medical studies to King's College. The laboratories at Chandos Street are being altered and refitted, and the accommodation there provided will comprise a large class laboratory, research laboratory, professors' laboratory, and lecturer's laboratory for each department, bacteriology and public health respectively; a photomicrographic laboratory, preparation and animal rooms; a large theatre, office, and library for the joint use of the two departments. There will be the regular courses of instruction in bacteriology, clinical pathology and photomicrography, and for the diploma of public health. Research and investigation work for public bodies and others will also be carried on as before. The new laboratories will be opened on or about October 1. The laboratories vacated at King's College by this removal will be utilised for increasing the accommodation for the preliminary and intermediate medical studies.

THE volume of announcements of the Northampton Polytechnic Institute, London, E.C., for the session 1912-13 shows that the equipment of the institute has been steadily extended since last year, but there is no large item like a new generating station to report on this occasion. In the mechanical engineering department the equipment for experimental work in aeronautics has been considerably augmented and a new steam power plant has been laid down, which will enable students to experiment on the efficiency of steam plant from the coal and water to the brake of the engine with measuring appliances at every stage. In the evening classes in the electrical engineering department the heavy electrical engineering work now so well known is being continued. An important departure has been made in radio-telegraphy by the extension of the single course previously given to additional courses. The courses and classes in telegraphy and telephony have been remodelled to suit the changed conditions in the public services. In the mechanical engineering department the courses in aeronautical engineering have been further developed, especially on the experimental side. The new equipment referred to above will form a prominent feature of the laboratory instruction. The extensive work of this department in automobile and other branches of engineering is being continued. In technical optics and in technical chemistry the courses have been brought quite up-to-date, but there is no development that calls for special remark. The half-time trade courses in technical chemistry and in horology inaugurated last session are being further developed. In these classes the students, all of whom are engaged

in commercial workshops, are in attendance from 9 a.m. to 1 p.m., and spend the afternoons in their employers' workshops. The experiment appears to meet the needs of the particular trades mentioned, and if it continues to be as successful as in the past year it will probably be extended to other trades.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 16.—M. A. Grandier in the chair.—H. Deslandres: The relations of the prominences with the filaments and *alignements* of the upper layers of the solar atmosphere. Further details on the character of the *alignements* and the filaments (long dark flocculi, absorption markings of Hale and Evershed). The *alignements* are subdivided into two classes, those with dark and with bright lines. The properties of the latter are consistent with the assumption of a circulation current of the upper atmosphere.—A. Lacroix: The mineralogical constitution of the volcanoes of the Island of Reunion. The essential characteristic of the mineralogy of Reunion is the production in the same volcano, and at the expense of the same magma, of well-characterised types of sub-alkaline and alkaline rocks. These have hitherto been regarded as necessarily of independent origin.—Fred Vles: Remarks on the form of the sun and moon.—Paul Gaubert: The influence of the velocity of attack of calcite by acids on the form of the corrosion figures of this mineral: An account of experiments with calcite and dolomite when attacked with dilute solutions of hydrochloric, acetic, formic and nitric acids.—Walter T. Swingle: The slow artificial ripening of the Deglet-nour date. The Algerian date was introduced into the United States (Arizona and California) in 1900, but the fruit did not ripen properly on the tree. It has been proved that the dates may be ripened in twenty-four hours by incubation at a temperature of 43° to 49° C. It has now been found that in presence of moisture the fruit can be slowly ripened at the ordinary temperature.—M. Foëx and P. Berthault: A disease of maize in Cochinchina. The disease, the effects of which are described in detail, is due to a fungus of the genus *Dothiorella*.—E. C. Teodoresco: The influence of temperature on nucleases. Nuclease from the plants studied only completely lost its diastatic properties after having been heated to about 90° C. The maximum diastatic action is at about 34° C.—Alphonse Berget: An arrangement of apparatus designed for the relative measurement of the acceleration of gravity.—De Montessus de Ballore: Earthquakes and sunspots.

CAPE TOWN.

Royal Society of South Africa, August 21.—Dr. J. K. E. Halm in the chair.—A. G. Howard: The blizzard of June 9-12, 1902. In continuation of the paper by Mr. Stewart, read in November, 1904, before the South African Association for the Advancement of Science, the writer of the present paper brings to notice a series of synoptic charts of the weather conditions from June 8 to 13, 1902, inclusive.—J. Hewitt and J. H. Power: A list of South African Lacertilia, Ophidia, and Batrachia in the McGregor Museum, Kimberley, with field notes on various species. The paper is offered primarily as a contribution to our knowledge of the fauna of the Kimberley district. The present-day fauna of that neighbourhood is shown to be composite, a new element having been introduced along with timber from Bechuanaland. The faunistic lists