

does not seem to be the case. If the rate of improvement in adaptation ("adaptative evolution") depends upon the rate of mutation and the severity of elimination, it also should be proportional to the rate of reproduction; but the finely adapted birds and mammals have a relatively low rate of reproduction. If the rate of "progressive evolution" depends upon the rate of mutation and the severity of selection, it again should be proportional to the rate of reproduction; but the most complex and most highly differentiated of all animals have the lowest rate of reproduction. In face of the difficulty of accounting for the differences in the rate of evolution, Prof. Conklin doubts whether current theories as to the causes of evolution are wholly satisfactory. It may be doubted, however, whether we are able to state the problems of diversity of rate with sufficient precision to allow of their being used as tests of the validity of the ætiological formulæ in the field. It is likely enough that there are factors of organic evolution still to be discovered, but we do not think that Prof. Conklin exhausts the potency of those that are already known. Thus, after writing: "It seems highly probable that the rate of mutation is influenced by environmental conditions, as Plough has shown in the case of the pomace-fly, and it is probable that environment has played a large part in the rate of evolution," he adds: "On the other hand, the evidences against the inheritance of the effects of use and disuse are so strong that one hesitates to invoke their aid." We submit, however, that the rôle of a changeful environment in affording mutational stimulus has very little to do with its rôle in imprinting modifications. We agree, all the same, with Prof. Conklin that there is no reason for supposing that the formulation of the factors in evolution is approaching exhaustiveness. Ætiology is still a young science.

University and Educational Intelligence.

THE Air Ministry announces that Dr. O. S. Sinnatt, lecturer in mechanical engineering at King's College, University of London, has been appointed professor of aeronautical science at the R.A.F. Cadet College, Cranwell.

WE learn from *Science* for August 27 that the family of the late Sir John Darling, of Adelaide, South Australia, has contributed the sum of 15,000l. towards the cost of erecting a new building for the medical school of the University of Adelaide. This building will be designed to accommodate the departments of physiology, biochemistry, and histology, and the medical library. The building will be erected and equipped at a cost of 25,000l.

A FULL account of the courses of instruction in the various departments of Bradford Technical College will be found in the calendar which has just been issued. Full-time day courses in technical sciences are provided which extend over three or four years; they lead to the college diploma. Part-time courses, mainly evening work, are also given. The latter are intended to meet the needs of those who are engaged in industry during the greater part of their time. Special facilities are also given to students who may wish to undertake advanced study or research work. The college is well provided with laboratories, among which may be mentioned the engineering and testing shops, a complete plant for the production of textiles, and a power-house which has been arranged for demonstration purposes.

THE calendar of Birkbeck College has been issued, and contains useful information for students intending to take degrees at London University. The courses provided by the college are set out in detail; they

consist of day and evening courses in the faculties of arts and science, and evening courses in the faculties of laws and economics. Facilities are also provided for post-graduate and research work. During the autumn and spring terms special courses of lectures on the history of London will be given, and there will also be four lectures, commencing October 11, on "The Thomson Effect" by Mr. H. R. Nettleton for the physics side. Particulars of university and other courses can be obtained from the office of the college or by letter to the secretary.

THE calendar of the London School of Economics and Political Science has been issued, and contains a detailed syllabus of all the courses available for students. Classes are open to those who intend to proceed to degrees in economics and commerce, and also to such as wish to pursue specialised or advanced study on topics on which they may be engaged. All the courses necessary for the degrees of B.Sc.(Econ.) and B.Com. are given at hours which make it possible for both day and evening students to take them. The school provides courses for a number of university diplomas and school certificates; among these are the university diploma for journalism, the academic diploma in sociology and social science and the certificate in social science, the academic diploma in geography, and the commercial and geography certificates granted by the School itself. Facilities are also provided for students desirous of proceeding to the degrees of Master and Doctor of Science, Philosophy, Laws, and Literature.

IN the calendar of the Merchant Venturers' Technical College, Bristol, attention may be directed to some novel features which are mentioned. The first is the Bristol "sandwich" scheme of training for engineers. This course takes five years to complete, about half of which are spent in a works and the other half in the university. A number of engineering firms co-operate with the college for this instruction, and others have expressed their willingness to accept students who have completed the course, in some cases at reduced premiums. Another feature of the college is a two years' course for apprentices. The curriculum extends over two years, and the classes take up one day each week. Students who pass the two examinations given will receive the Engineer Apprentice's Testamur. A series of popular lectures will also be given during the autumn and spring, two of which should be of scientific interest, namely, "Lightning and Thunder," by Prof. J. T. Macgregor-Morris, and "Devices which Won the War," by Mr. J. R. Raphael.

Societies and Academies.

PARIS.

Academy of Sciences, August 23.—M. Henri Deslandres in the chair.—A. Lacroix: The existence in Madagascar of a silicate of scandium and yttrium, thortveitite. This mineral, the richest known in scandium, was discovered in 1911 by J. Schetelig in Norway, and since that time has not been found in any other locality. Amongst specimens collected from the pegmatite of Befanamo, Madagascar, was one which agreed in its physical properties with the mineral described by Schetelig. The presence of scandium, ytterbium, and neoytterbium was confirmed by the spectrograph, and there were also indications of zirconium, aluminium, and titanium. In view of the importance of obtaining a sufficient supply of scandium for a more complete study of this element, other minerals from this region have been examined spectroscopically, and scandium has been detected in cymo-