

Current Topics and Events.

THE text of the twelfth Huxley Memorial Lecture, delivered recently by Sir Arthur Keith, is published supplementarily to this issue. Its title, "The Adaptational Machinery concerned in the Evolution of Man's Body," admirably defines the greatest of present biological problems, "infinite in extent and complexity," and still affording scope for "many centuries of labour." Such phrases measure the magnitude of Darwin's influence, exerted steadily for over sixty years. The Huxley lecturer, speaking from a vast knowledge of evolutionary biology, says that we know of no means by which the machinery of mechanical adaptation can be altered from without. With Huxley, he believes that the government which rules within the body of the embryo proceeds along its way altogether uninfluenced by occurrences or experiences which affect the body or brain of the parent. The machinery of adaptation has its "pre-determined line" of action. We may carp at the word; but Huxley's meaning seems clear enough: he described a sequence in a natural order, not a consequence of a supernatural order. How far we have advanced along the thorny path which the great Darwinians mapped out for us may be judged fairly from the address itself. The question of use-inheritance is crucial; and while every failure to demonstrate its occurrence serves only to establish the Darwinian theory more firmly, there are those who still hope to find in the intricacies of the problem a door of escape from the position assumed by Darwin and Huxley and, we believe, the best and most philosophical workers in biology to-day. Man, even scientific man, does not seem altogether willing to assume his rightful place in the Universe; albeit the place which Darwinism assigns to him is fundamentally securer and philosophically grander than any other which individual or collective wit has designed. We are still far from plumbing the depth of wonder of the Universe of which we are a part, in which we "live, move, and have our being," and the "many centuries" of Sir Arthur Keith that separate us from that aim is a phrase that is good only because it does not bring imagination to a halt. This aspect of the Darwinian theory is still not widely apprehended; none of the natural sciences comes so near to intriguing the personal prejudices of its votaries as biology; but as potent to confuse present work and thought is that sterilising influence of great ideas which, while they liberalise for a time, do so spasmodically. Many workers, all unconsciously, turn from Darwinism because it does for them not too little but too much. Forty, thirty, and even twenty years ago, comparative anatomy and embryology pressed forward irresistibly with Darwinian enthusiasm. During the "many centuries" ahead the present reaction will probably have less significance than appears now; but, for the clarification of present work, Sir Arthur Keith's advocacy is timely.

IN a lecture entitled "Charles Darwin, 1809-1882" delivered to the teachers of the London County Council on March 21, and now published (London:

Cambridge University Press, 2s. 6d. net), Prof. Karl Pearson has brought out with great clearness the importance of the successive revolutions in thought caused by modern discoveries in astronomy, geology, and anthropology, unified as the two latter are by the crowning achievement of Darwin. Prof. Pearson is no doubt justified in attributing the comparatively slow progress of scientific investigation before Darwin to the fact that even among scientific men the date of 4004 B.C. was commonly accepted for the creation of the universe. Many excuses may be offered for this obsession, but it is fair to remember that the date represents only the computation by an Irish Archbishop of the figures given in the existing text of Genesis, and can scarcely be spoken of as having been "fixed by the Church." Perhaps Prof. Pearson is a little too much apt to revive the memory of "old forgotten far-off things, and battles long ago." However, there can be no doubt of the magnitude of the revolution effected by Darwin, a revolution which has made itself felt in every department of human thought. In view of recent occurrences in America, it can scarcely be considered unnecessary to insist once more on the indisputable fact that the doctrine of evolution, thanks to Darwin, is now as thoroughly established as any of the great generalisations of science. Prof. Pearson does well also to emphasise the admirable personal qualities of Darwin.

ABOUT twenty years ago (see NATURE, October 20, 1904, p. 602, and December 15, 1904, p. 156) the performances in Berlin of an intelligent horse—"Clever Hans"—were tested by a committee of psychological experts. The conclusion arrived at was that the performances of the animal, like those of the horse "Mahomet," exhibited in London several years previously, and of performing animals generally, depended chiefly upon observations of movements of the trainer. An experiment carried out by the Marconi Company in connexion with the Zoological Society, at Regent's Park on August 9, supports this conclusion as to the perceptual character of animal thought. The trainer of an Indian elephant at the Society's Gardens spoke to the animal from the British Broadcasting Company's studio, and his voice was distinctly heard in a loud-speaker arranged against the elephant-house. Four orders were given by the trainer, and, though they are always obeyed immediately when he is near, the elephant took no notice of them clearly uttered by the trumpet attached to the wireless receiver. It is possible, of course, that though the words could be heard easily by the people present at the experiment and listening for them, the absence of the trainer deprived the elephant of the associative relation between sound and action. This might be tested by connecting an electrophone with a gramophone record of the trainer's orders, the trainer himself being present but not actually speaking. We should then learn whether an elephant can recognise "His Master's Voice," like the Scotch terrier of the well-known advertisement of gramophones.

FOR the protection of inventions, justification of the patent system is based upon the demands of natural justice and upon economic grounds of pure expediency, a justification which has been recognised in all countries. Similarly for the protection of scientific ideas which are not inventions, justice demands a measure of protection even if expediency speaks with a voice less certain. From time to time, therefore, the cry is raised for protection to be accorded to such important discoveries as do not come within the category of inventions for which patents are obtainable; and now the matter is raised again, this time by the League of Nations. Thus the *Times* for July 30 informs us that the Intellectual Co-operation Commission of the League has decided to submit to the Council and to the Assembly a draft convention for the protection of scientific discoveries. In submitting the draft, the Commission is asking the Governments to establish for scientific discoveries "a copyright similar to that granted for literary and artistic work." What exactly is contemplated by the proposal is far from clear, neither the general idea nor the details having come to hand. If, however, the proposal deals only with the literary expression of a discovery, as might be inferred from the Press notice, it is difficult to see in what way the author of the scientific discovery would in any manner receive benefit. A discovery once published may be expressed in many different ways, such that no one of them need infringe copyright in the others. If the proposal is nothing more, the addition then to the legal systems of nations that it will make will be virtually nil. If, however, it submits a scheme whereby the discoverer of a natural principle or law of world-wide utility may receive a reward commensurate with the importance of the discovery, it is to be welcomed on all hands. Even if the proposal should be found to concern itself only with the literary expression of a discovery, it may yet serve a useful purpose, since it may result in directing public attention once again to the callous neglect of the interests of those to whom the world in the past has been so vastly indebted.

A WEEK of great interest has just ended at Oxford—one of real importance and significance. The seventh International Congress of Psychology has just concluded its meeting there, the last one having been held in Geneva in 1909. For the first time since the War, psychologists from all parts of the world assembled to discuss current problems of psychology. It is mainly due to its president, Dr. C. S. Myers, director of the National Institute of Industrial Psychology, that this result was achieved, and that the entire week passed off so amicably and instructively. The congress was limited to about two hundred members, and included representatives from Great Britain and Ireland, America, Austria, Belgium, Czechoslovakia, France, Germany, Holland, Hungary, Japan, Norway, Poland, Roumania, Spain, Sweden, and Switzerland. They were housed in New College and in Balliol and Manchester Colleges. There were numerous papers and discussions upon scientific and practical aspects of psychology, but no useful purpose

would be served merely by recounting their titles. The proceedings opened on Thursday, July 26, with a meeting at which the president made a happy inaugural speech, and a letter was read from Lord Curzon, Chancellor of the University, welcoming the congress to Oxford. A reception was held the same evening in the gardens of New College. On the following afternoon Dr. and Mrs. William Brown entertained the members of the congress at a garden party in the gardens of Worcester College. On Sunday, July 29, the congress listened to a sermon given by Rev. Canon Barnes in the Cathedral, in which he alluded to the way in which science and religion could aid each other. In the afternoon a delightful excursion was made by river to Nuneham, where, thanks to the kindness of Lady Harcourt, the members of the congress were conducted by her and her daughters over the house and grounds. The congress ended in the evening of August 2 with a dinner at Christ Church. Psychologists may feel justly proud at having achieved so much, not only in advancing their own science, but also in promoting peace and goodwill amongst nations generally. About seventy members of the congress paid a visit to Cambridge on Thursday, visiting the Colleges and the Psychological Laboratory, which owes its existence to Dr. C. S. Myers, President of the Congress.

MR. H. SPENCER JONES, Chief Assistant at the Royal Observatory, Greenwich, has been appointed His Majesty's Astronomer at the Cape, in succession to the late Mr. S. S. Hough.

APPLICATIONS are invited from persons possessing an honours degree in electrical engineering or physics, and having experience of electrical research, preferably in the technique of alternating current measurements at high frequencies, for the post of a technical assistant at the Royal Aircraft Establishment, Farnborough. The applications should be addressed to the Superintendent.

THE following awards for the year 1923–24 have been made by the Salters' Institute of Industrial Chemistry, and approved by the Court of the Company. Fellowships are awarded to Mr. T. B. Philip, Imperial College of Science and Technology; Mr. W. G. Sedgwick, Armstrong College, Newcastle-on-Tyne; and Mr. D. T. A. Townend, Imperial College of Science and Technology. Fellowships are renewed to Mr. C. G. Harris, Jesus College, Oxford; and to Mr. J. H. Oliver, Imperial College of Science and Technology. Mr. W. Randerson, a fellow for 1922–1923, having been elected to an Albert Kahn travelling fellowship for the year 1923–24, is made an honorary fellow for the year.

THE Civil Service Commissioners announce that an open competitive examination for not fewer than 12 situations as probationary assistant engineer in the Engineer-in-Chief's Department of the General Post Office will be held in London, commencing on November 6 next. Limits of age: 20 and 25, with certain extensions. Regulations and form of application will be sent in response to requests by letter addressed to the Secretary, Civil Service Commission, Burlington Gardens, London, W.1.

THE British Photographic Research Association, which was the first Research Association to be formed under the Department of Scientific and Industrial Research, completed its term of five years in May last. A thorough and searching investigation of the work accomplished has been made by the Department, which has also taken into consideration the researches which are either in progress or are contemplated, with the result that a further grant in aid for a period of years has been promised. Although the financial position of the photographic industry, which is comparatively a small one, is at present at a very low ebb, it is very satisfactory to note that the leaders of the industry are so convinced of the valuable work done by the Research Association, and of the good results which are likely to accrue, that it has been decided to carry on its operations.

The Association has had to contend with considerable difficulties during its first five years, but, under the directorship of Dr. Slater Price, it has now a well-established reputation not only in this country, but also in Europe and America. A number of papers dealing with fundamental principles have been authorised for publication in the various scientific journals.

THE Maidstone Museum has set a good example to other provincial institutions of this class by issuing a set of post-cards, published at 1½d. each, illustrating its prehistoric collections. These include a clay bowl attributed to the Bronze Age; palæoliths of the Chellean period; a group of eoliths; some neolithic flint implements—all found in the vicinity. The series also includes a set of good examples of Roman glass.

Our Astronomical Column.

D'ARREST'S COMET.—MM. Dubiago and Lexin continue the search ephemeris of this comet (for Greenwich Noon): they use practically the same elements as those deduced by Mr. F. R. Cripps. There is still a prospect of finding the comet, as the greatest surface brightness is not attained until September 12; but the object is in considerable south declination in September and October.

	R.A.		S. Decl.		R.A.		S. Decl.
	h.	m.			h.	m.	
Aug. 24.	17	6·6	9° 8'	Sept. 8.	17	43·1	16° 58'
29.	17	17·5	11 49	13.	17	57·9	19 22
Sept. 3.	17	29·7	14 26	18.	18	13·8	21 34

THE SHOWER OF AUGUST METEORS.—Mr. W. F. Denning writes:—"The fine warm weather and absence of strong moonlight enabled these meteors to be well observed during the period from August 3-11.

"The display, however, up to the time of writing (August 12) has not been an abundant one, though a fair number of Perseids appeared each night, and the radiant showed its usual displacement to the east-north-east.

"Mr. J. P. M. Prentice, at Stowmarket, recorded the flights of 250 meteors up to August 9, and had recognised a number of the usual minor showers, including α Capricornids, δ and γ Aquarids, δ Cassiopeids, γ and θ Cygnids, Sagittids, ϵ Taurids, α - β Perseids, β Piscids, and Lacertids. Mr. Prentice saw a splendid Perseid fireball on August 9, 12h. 32m. G.M.T., with an estimated magnitude greater than that of the full moon. The streak lasted 23 seconds, and its colour was bright blue surrounded by bright red.

"Mr. A. King watched the shower from Lincolnshire on and after August 3, and saw a fair number of Perseids. At Bristol some observations were made on August 4-11, during which period the Perseids were only moderately active. The brightest meteor seen at Bristol was a Cygnid on August 11, 9.40 G.M.T. It was brighter than Jupiter, and traversed a short path from $289^{\circ}+66^{\circ}$ to $289^{\circ}+72^{\circ}$; it left a white streak for a second, across δ Draconis."

PROF. R. SCHORR'S "EIGENBEWEGUNGS-LEXICON."—Prof. Schorr, director of Bergedorf Observatory, Hamburg, has just brought out a very useful work of reference in the form of a comprehensive catalogue of practically all the known proper-motions of stars. It is arranged in zones of declination, 1° wide, the designation of the stars being taken from the Durchmusterungs of Bonn, Cordoba, and the Cape. It is numbered by columns (two to a page) and there are 400 columns, each containing some fifty stars.

Only one determination is given of each motion, presumably the best available; the authorities are given in each case. The centennial motion is given to two decimals of a second of time in right ascension, and one decimal of a second of arc in declination; a few stars are given to one figure less than this.

To diminish cost the work was typewritten, and then multiplied by a mechanical process, the result being perfectly clear and legible. The price is fixed at thirty Swiss francs.

Already a first supplement has appeared, containing 1739 stars; some of these, marked "!", are improved values for stars already in the Lexicon, but the majority are additional stars.

This is the second very useful work that Prof. Schorr has issued in a few months, his new reduction of Rümker's Hamburg Catalogue having lately appeared (NATURE, April 28, p. 564).

THE FREE PENDULUM.—Mr. F. Hope-Jones delivered a lecture on this subject to the British Horological Institute on April 19, and it has lately been issued as a pamphlet. He lays stress on giving the pendulum that we rely on as primary time-keeper as little work to do as possible; his three desiderata are: (1) the maintaining impulse must be given at the zero (lowest) position; (2) it must only be given occasionally; and (3) there must be no other interference with the pendulum.

Mr. Hope-Jones states that this problem has been solved, quite independently, by five men in the last twenty-five years: Mr. Rudd in 1898, Sir David Gill in 1904, Mr. Bartrum in 1913, Father O'Leary, S.J., during the War, and Mr. W. H. Shortt, who has been at work since 1911 on the matter, his clock being installed at Edinburgh Observatory early in 1922. The details of each of the five methods are briefly given, but the last is considered much the best. The fundamental pendulum, constructed of invar, is in an air-tight case, pressure 3.5 cm., kept at constant temperature. It receives its impulse every half-minute, at the lowest position; the remontoire is worked by the slave-clock, which is synchronised by a "hit or miss" action to within 0.01 second. Two diagrams of the changes of weekly rate in periods of three months are given; the range of weekly rate is 0.02 second per week. Prof. Sampson notes that the clock is superior to the Riefler instrument, though that is a very fine clock.

A clock with uniform rate is of great importance in fundamental astronomy for the removal of the small systematic errors in right ascension; they have been greatly reduced, but not wholly removed.