

tant paper by Dr. E. A. Cockayne on "Gynandromorphism." Insects with the secondary sexual characters of both male and female variously combined in a single individual are favourite curiosities among collectors. Dr. Cockayne is able to describe the internal reproductive organs and the genital armature in several specimens of these abnormalities. He divides such insects into three groups:—(1) Genetic hermaphrodites, with both ovaries and testes and the genital armature of both sexes represented—these are often laterally divided into a male and a female half, though the symmetry is rarely exact; (2) primary somatic hermaphrodites, which have either ovaries or testes, but both male and female structures in the armature; and (3) secondary somatic hermaphrodites, unisexual as regards the whole reproductive apparatus, but with secondary characters of both sexes in the wings, feelers, or elsewhere. The great majority of the observed cases fall into the second of these divisions. Dr. Cockayne accepts the view that sex is a Mendelian unit character, and suggests that in the "halved" gynandromorphs there must be an irregular division of the sex-determining chromatin in the first cleavage of the zygote-nucleus, while in the other types there may be "a failure in the normal process of fusion of the sex-chromosomes of the spermatozoon and ovum" or "a difference in the potency of the factors for sex occurring in the two parents."

The heredity of bone-fragility in man is discussed by Profs. H. S. Coward and C. B. Davenport in Bulletin 14 of the New York Eugenics Record Office. From a number of family histories it appears that this condition (osteopsathyrosis) behaves as a Mendelian dominant often correlated with a blue colour in the sclerotic coat of the eye, but not complicated by special association with either sex-factor. A man and woman, both free from the condition, need not fear, therefore, that it can be transmitted through them to offspring, even though they may have brothers or sisters affected.

G. H. C.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

It is announced in the issue of *Science* for April 7 that Harvard University has received a bequest of 10,300*l.* from the estate of Mr. J. A. Beebe, and one of 10,000*l.* from the estate of Mrs. W. F. Matchett; the income of both is to be used for general purposes.

In the House of Commons on May 9, Sir Philip Magnus asked the Prime Minister whether having regard to the general demand that had been expressed for an exhaustive inquiry into our present educational system, particularly with regard to the claims of science to occupy a more important place in the curriculum of our schools, he could make any statement as to the proposal for the appointment of a Royal Commission to consider and to report upon the question of the organisation of education in this country. In reply, Mr. Asquith said:—"When the Government are in possession of the results of the various inquiries they have set on foot it will be possible to decide whether any useful purpose would be served by setting up a Royal Commission."

THE growing unrest in the minds of thoughtful persons on the subject of public education finds expression in a leading article of the current issue of the *Times* Educational Supplement, which, during the last twelve months, has consistently pleaded for a more liberal conception of the aims of education in the elementary school and of the necessary extension of the compulsory period of school attendance until the age of fifteen, so as to make effective for all children

the elements at least of a secondary education from the age of eleven. As in many other matters of high importance, the events of the war have brought into clear vision many national shortcomings, not the least of which is to be found in the domain of education, alike in respect of means and method, subjects of instruction, the length of the school life, and the care of the adolescent. It is clear that the nation cannot hope to maintain and advance its position as a civilised Power of the first rank unless the mental and moral training of its future citizens receives the devoted attention of the best minds of the nation, whose advice and guidance shall be accepted independent of any merely pecuniary considerations. The issue is vital to the national well-being. Bodies like the Royal Society, the British Science Guild, the Teachers' Guild of Great Britain, various education authorities, and teachers' associations are all moving for an inquiry at the hands of men of high responsibility, eminent in the world of science and industry, and of men known for their devotion to the educational well-being of the nation. No mere departmental committee, however reinforced, will meet the grave responsibilities of the problems involved. Even in the stress of an unparalleled war—indeed, because of it—it is essential that immediate steps be taken to review our whole system of education and to find a remedy for the crying evils that beset it.

In an article in the current *Fortnightly Review*, by Mr. Archibald Hurd, we are invited to consider "The German Peril after the War," and its bearing upon the economic well-being of the British Empire. Much in the way of abuse is poured out upon the entire German nation, who are characterised as the "best-educated and most unmoral people of Europe, whose guile, lack of principle, and innate baseness we have only been in a position to comprehend since this war opened." When the war is over and victory has been achieved, "Germany with its vast population of from 60,000,000 to 70,000,000 will remain . . . with its vast resources organised, prepared to reassert its position in the world." We shall then embark upon an economic struggle scarcely less deadly in its effects than the war in which we are now engaged. It is admitted that German education—skill in applying the fruits of scientific discovery—energy, enterprise and power of organisation have brought her into strenuous rivalry with Great Britain, but it has been accompanied apparently with a Machiavellian ingenuity of means and purpose unrivalled in the world's history. "Germany has had a monopoly in explosives, chemical dyes . . . and many other essentials of modern industry, including laboratory and optical glass." "Our sick could not be tended because she controlled essential chemicals," and "in a hundred and one trades Germany has had complete control." The trend of the article favours fiscal measures as the most effective palliative, yet at the same time the nation is urged to reform its system of education and to co-ordinate science and industry. The author, however, fails to realise the true source of Germany's great economic position, namely, her educational efficiency.

A WHITE PAPER issued on April 25 contains reports of the Advisory Committee on grants to Welsh universities and colleges, and of the Departmental Committee on the National Medical School for Wales, which were both made in 1914, and Treasury minutes thereon, one of which is dated April 18 last. This minute points out that a Royal Commission has now been appointed to inquire into the organisation and work of the University of Wales and Welsh colleges, and goes on to say that the Treasury is prepared to concur in the recommendations of the Advisory Com-

mittee on condition that the new grants will be applied, pending the reconstitution of the University, to meet existing liabilities and not for new developments. The allocation of the existing annual grants of 31,000*l.*, as well as of the new grants, will be liable to reconsideration after the reorganisation of the University. The Treasury has decided to include in the 1916-17 Estimates an additional sum of 5500*l.* for the first year of the new grants, provided the local authorities continue their contribution of 2000*l.* to the University College at Cardiff. The raising of a further sum of 3500*l.* out of rates, in accordance with the recommendation of the Advisory Committee, is waived until after the war. The Treasury will, however, feel bound to attach such a condition after the war. If that condition is complied with in future years, it will be prepared in addition to pay 500*l.* for each further 500*l.* raised by local authorities over and above 5500*l.* until the total additional grant from the Exchequer to the University and the colleges reaches the figure of 11,000*l.* per annum. The minute also states that the Treasury will be prepared in due course to give effect to the recommendation of the Departmental Committee that half the additional annual cost of maintaining the National Medical School at Cardiff, up to a maximum grant of 5000*l.* a year, should be paid by the Exchequer, on the conditions set out in the reports of the Departmental Committee.

THE plea for increased attention to science put forward in the memorandum, signed by thirty-six men of science, issued last February, referred particularly to the position of scientific subjects in the public schools and at Oxford and Cambridge, and to the marks obtainable, in comparison with classics, in the examinations for the highest posts of the public service. It appears to have been the deliberate purpose of the promoters of the memorandum to limit consideration to these points, which they believe to be of fundamental importance. In any case, a reform of the present attitude towards science shown by administrative officials and legislators might be started by making scientific subjects of capital importance in the examinations for appointments in Class I. of the Civil Services; and it is possible that there is practical wisdom in limiting attention to these aspects instead of surveying the whole field of education. As the object of the memorandum was to assert the claims of science to fuller recognition in the school and the State, it was not necessary to acknowledge the complementary part played by literary studies in a complete education; yet it is scarcely too much to say that none of the men of science who signed the memorial was unmindful of it. A letter which appeared in the *Times* of May 4, signed by several leading representatives of science, as well as of the humanities, suggests that the value of literary studies is being overlooked, while the claims of science are being urged. Science is tacitly classified as technical knowledge and necessary for national prosperity, but it is held that in the education "which will develop human faculty and the power of thinking clearly to the highest possible degree . . . the study of Greece and Rome must always have a large part." In other words, "early specialisation is injurious" if it means elementary science teaching, but not when, as at present, it signifies classical languages and literature. We do not believe for a moment that the best interests of classical and literary studies would suffer if science were given the place in the curriculum now occupied by Greek and Latin; for few pupils ever reach the stage of intelligent appreciation of works in these languages, and for the majority of them good translations in English would serve as useful a purpose as vague interpretations of classical texts.

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## SOCIETIES AND ACADEMIES.

LONDON.

**Challenger Society**, April 12.—Dr. G. H. Fowler in the chair.—E. T. Browne: The geographical distribution of Siphonophores. Nearly all the species are tropical, and only one (*Diphyes arctica*) has permanently established itself in cold water. Of ninety species recognised, seventy are common to the Atlantic and Indo-Pacific, and most of the remainder have been found in the Atlantic only.—C. Tate Regan: The distribution of the clupeoid fishes of the genus *Sardina*. The species inhabit the zones between the mean annual surface isotherms of 12° C. and 20° C. They are *S. pilchardus*, of Europe, *S. neopilchardus*, of Australia and New Zealand, and *S. sagax*, of South Africa, Japan, California, and Chile.

**Royal Meteorological Society**, April 19.—Major H. G. Lyons, president, in the chair.—E. V. Newnham: The persistence of wet and dry weather. The rainfall records of Greenwich, Kew, Aberdeen, and Valencia have been examined in order to find out how often rain falls on the day following successive runs of one, two, three, etc., wet or fine days. The common notion seems to be that after a long run of wet days the chance of a fine day becomes greater, but statistics do not support this conclusion. Generally speaking, the expectation of rain on any day has been found to increase rapidly as the number of previous successive wet days increases, and to diminish with the number of successive fine days in the past. After very long spells of either kind the expectation of further rain reaches a practically steady value. The same conclusion holds for the expectation of rain in a given hour after different runs of wet and dry hours. In illustration, some of the results may be quoted. At Valencia, after seven days of drought, rain falls on the eighth day twenty-four times out of one hundred, but after seven rainy days eighty-six times. For Kew the corresponding increase is rather less, namely, from twenty-seven to seventy-three.—Prof. H. H. Turner: Discontinuities in meteorological phenomena. In a former paper certain critical dates, about six years apart (and formed according to a specified law, apparently related to the movements of the earth's axis), were specified for 200 years back; and it was shown that a number of meteorological data changed abruptly in character at these dates. In simple cases the intermediate chapters are alternately hot and cold, or wet and dry, though other changes are more complex. In the present paper various new data are submitted to the same test and give confirmatory results. The most noteworthy case is that of the mean temperatures at Paris, which confirm the dates for the past century. The changes at the critical dates are shown to be abrupt; the alternation is consistent for seventeen chapters out of eighteen; and it is shown to vary in amount according to a law which suggests the regular action of two disturbing causes, one of which has already been shown to play an important part in these phenomena, and has a period of about forty years; the other, of about fifty years, appearing clearly in Mr. Douglass's measures of Californian tree-rings.

**Mathematical Society**, April 27.—Sir J. Larmor, president, in the chair.—Major MacMahon: Some problems of combinatory analysis.—Dr. S. Chapman: The uniformity of gaseous density, according to the kinetic theory.—G. N. Watson: Bessel functions and Kapteyn series.—T. C. Lewis: Four Tucker circles.—Prof. H. S. Carslaw: The Green's function for the equation  $\nabla^2 u + \kappa^2 u = 0$  (II.).—J. Hodgkinson: The nodal points of a plane sextic.—S. Pollard: The deduction of criteria for the convergence of Fourier's series from Fejer's theorem concerning their summability.—Prof. W. H.