

### University and Educational Intelligence.

AN Aitchison Memorial Scholarship, of the value of 36l. and tenable for two years in the full-time day course in technical optics, at the Northampton Polytechnic Institute (London), is being offered to students of both sexes. The examination will be held on September 22 and 23. Particulars can be obtained from the Hon. Secretary and Treasurer, Mr. Henry Purser, 42 Grays Inn Road, London, W.C.1.

THE Air Ministry announces that the next examination of candidates for entry as flight cadets to the Royal Air Force Cadet College, Cranwell, will begin on November 17, when 35 cadetships will be offered. Forms of entry, which can be obtained from the Secretary, Civil Service Commission, Burlington Gardens, W.1., will not be accepted later than September 17. Candidates must be medically fit and be between the ages of 17½ and 19½ years. Cadets undergo a two years' course at the College, where, in addition to continuing their general education, they receive a thorough training in all questions concerning military aviation and cognate subjects, and also graduate as service pilots. Full details as to entry into Cranwell are contained in Air Publication 121, Regulations for admission to the Royal Air Force Cadet College (H.M. Stationery Office, Kingsway, W.C.2, 6d. net).

THE universities receive each year from the grant-aided schools in England and Wales 4½ per cent. of the total number of pupils leaving the schools. The president of the Board of Education recently directed attention to this percentage as being abnormally small. In the United States, according to an article in the April issue of *School Life*, 350,000 boys and girls—six times as many as a quarter of a century ago—will be completing their public high-school course this year, and of this number 112,000 will go to college and 50,000 will enter other institutions to continue their education. This abundant supply of recruits for post-secondary education affords evidence of widespread prosperity, but their acceptance is not an un-mixed advantage either to them or to the institutions receiving them. The president of the Carnegie Foundation for the Advancement of Teaching says in his annual report for 1923-24 that the colleges and professional schools admit each year a growing army of high-school graduates who lack the qualities of intellectual training which would fit them for fruitful college study, for they have not learned to use their minds. This is in some measure due to the gradual substitution of a new ideal of the meaning of a liberal education for the old-time conception of training the habits and powers of the mind. The mere acquisition of knowledge, formerly regarded as a secondary matter, has become the main thing. "Our high schools and colleges seek to give their pupils something from every field of thought. Following the advice of Herbert Spencer they labour to present these packages of knowledge in the most agreeable forms. The textbooks offer every variety of predigested knowledge. . . . It is exactly the reverse of that intellectual training which the study of science ought to bring." One of the most pressing needs of the time, moreover, is to diminish the subserviency of the school to the college and to open up from the elementary and from the secondary schools leadings to technical schools in the trades, in agriculture, and in the arts. The vocational courses given in the high school are no substitute for "the sharp, precise training that makes for the sort of technical skill that adds joy to work and is one of the most prolific sources of human happiness."

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### Early Science at Oxford.

**August 12, 1684** (*continued*). Dr. Alexander Pudsey, Fellow of Magdalen College, subscribed to ye Articles, and then sate as President.

Dr. Plot communicated some of ye bark of ye clove tree; it had a strong aromattick tast, very much like cloves, and very differing from Cinnamon, which has sometimes been thought to be ye bark of this tree. He communicated also some patterns of firr, taken up in ye old *dewet pool*, in ye parish of Norbury in Staffordshire, so full of Turpentine, that it is transparent; this is that which they use as candles. and may well be thought to have adventitious Bitumen from ye moores, wherein it lies; for forreign firr is not so transparent, will not burn so well; and that this is firr, appears very probable, because some of ye trees taken up, have six branches at ye annuall distances, which, as ye Doctor thinkes, no trees, but firrs, have.

**August 19, 1684.** The Society being met, ye following experiments were tried, by Mr. Musgrave.

Human spittle, clarified by standing, being mix't with syrup of violets, turned to a delicate *green* color. Part of a Mucous substance, taken out of ye Stomach of a Jack near ye Pylorus, and mixt with solution of sublimate, became much whiter, than it was before. Another part of it, mix't with syrup of violets, turned *green*.

The same person has observ'd like effects, by mixing a liquor found in ye stomach of a *Hedghog*, with syrup of violets, and with solution of sublimate.

These Experiments are urged as an argument against ye existence of an *acid ferment* in ye stomach. It seems probable, that ye great worke of Digestion proceeds from a *volatile alcali*.

He also tooke notice of a large *bed of Glands*, making about ye ¾ths of ye inside of ye stomach, and seated near ye pylorus, of a Jack; the whole bed appears of a brownish red color, and is divided into severall Ridges, which run parallel to one another, and ye same way with ye stomach; for ye better contraction of that part especially when empty, (at which time these Glands being fix'd to the inmost coat, are, together with it, drawn up into wrinkles), that edge of this bed of glands, which is nearest ye head of ye fish, is dented, ye ridges breaking off on a sudden; but at ye other end, on this side ye Pylorus, they diminish almost insensibly.

By these Glands, he supposes, at least a considerable share of ye menstruum (the great efficacy of which makes this fish a fit subject to illustrate ye nature of Digestion) is seperated from ye blood; for blood vessels may be seen in great numbers on ye other side of ye glands, and inner tunic, by seperating it, and them, from the middle and muscucose tunic; and, as a farther argument of this use of ye glands, he has observed, that that part of ye stomach where they are, is generally moister, then the other part near ye mouth; and that, in dissecting Jacks, whose stomachs have been filld with some large fish of ye pinnaceous kind, (which must enter with ye head foremost) ye head, and foremost parts, of ye devoured fish, have, as far as the glands reach, been either actually dissolv'd, or fairly turning, into a mucilage; whereas, at ye same time, ye other, and less bony, part of ye included fish, being not yet come within ye power of the menstruum, has still retain'd its form, and consistence.

Mr. Walker presented ye Society with ye draughts, and descriptions, of two sorts of Wooden Bridges, contrived without any pillar under them, tho of a considerable length; these accounts will be printed very suddenly.