

7 to 9; Natural Philosophy, under the direction of Prof. W. Grylls Adams, F.R.S., on Wednesdays, from 6 to 8.30; and on Pure Mathematics, by Prof. Hudson, on Thursdays, from 6 to 8. These courses are designed for students who have, by attendance at other classes, already reached an advanced stage in their technical work. Intending students should communicate by letter with the professors, taking the class they propose to attend, and giving particulars of their previous training. The courses of instruction afford an opportunity to students who can study only in the evenings to obtain instruction in well-equipped University laboratories, and make available to evening students the same advantages as are enjoyed by University day students, but they are only intended for those who are practically engaged during the day in some trade, business, or occupation. There are also held at King's College, the following free Saturday morning classes for teachers:—(1) Physics, on Saturday morning from 10 to 1, under the general superintendence of Prof. W. G. Adams, F.R.S. (2) Mathematics, by Prof. Hudson, on the teaching of elementary mathematics, on alternate Saturdays, at 10 a.m. (3) Strength of Materials (Saturdays, 10 a.m.), by Prof. Capper. (4) Principles of Practical Physiology (Saturdays, 11 a.m.), by Prof. Halliburton, F.R.S. The Saturday morning classes, we understand, are full, but there are still vacancies at some of the evening classes.

THE encouragement given to higher scientific instruction by the London Technical Education Board is shown in the latest number of the Board's *Gazette*, which contains a list of the principal public institutions of London at which instruction adapted to the requirements of the London University examinations above the matriculation will be given during the session just commencing. In the case of most of the institutions referred to in the list, evening as well as day classes are held in pure and mixed mathematics, experimental physics, chemistry, botany, zoology, biology, physiology, and geology. No institutions are included in the list except institutions of recognised university rank and polytechnics. Another list in the *Gazette* shows the principal evening classes in science, art and technology, to be held in London during the session 1897-98. The most noteworthy addition since last year to the supply of technical instruction is the scheme of instruction provided by the Northampton Institute in Clerkenwell. This institution has drawn up a very comprehensive series of courses especially adapted to the workers in the building and engineering trades and in artistic crafts, such as watchmakers, jewellers, goldsmiths, silversmiths and electrotypers. It is interesting to notice that this institution offers for the first time, together with the Regent Street Polytechnic, special instruction in cycle making. The electrochemical department is one that should be capable of considerable development in the future. The Northern Polytechnic also enters on its first full session. Admirable provision is made in this institution for the study of chemistry and physics, and the polytechnic is also provided with good carpentering and engineering workshops. The Borough Polytechnic is erecting new buildings for giving additional accommodation to classes in printing, bookbinding, boot and shoe making, carpentry, and wheelwrights' work. A model bakery is also in process of erection. The Battersea Polytechnic is providing additional accommodation for the teaching of chemistry and biology. The Bolt Court Guild and Technical School offers instruction in various branches in lithography and photo-process work. The classes at St. Thomas' Charterhouse School have been to some extent remodelled and placed on a new basis, and considerable additions have been made to the laboratory accommodation. The classes are being organised into a definite institution under the name of the St. Thomas' Charterhouse and Rogers' Institute.

SCIENTIFIC SERIALS.

Meteorologische Zeitschrift, September.—Investigations respecting wind velocity, by Prof. G. Hellmann. Our knowledge of wind direction over the globe is fairly satisfactory, but as regards the velocity it is defective, owing to the paucity of good anemometrical observations until within a few years. These observations are also affected by several causes, such as differences of height above ground, the exposure of the instrument, methods of reduction, and instrumental errors. The author has deduced the yearly period of wind velocity for all stations for which he could find a series of ten years' observations, for all

parts of the world. The paper is accompanied by tables and diagrams, showing the mean velocity in metres per second for each month and for the year, and contains a valuable discussion of the results. The general conclusions are: (1) That the velocity increases with latitude, and decreases from the coast inland. (2) In the yearly period, the maximum in higher latitudes and exposed coasts occurs during the cold season, while in the interior of the continents it occurs between March and July. (3) The period of maximum velocity generally corresponds with that of the stormy season. (4) The minimum velocity generally occurs in August or September at those inland stations which have a spring maximum, while at coast stations which have a winter maximum, the minimum takes place in June or July. (5) The amplitude of the yearly period is greater on the coast than inland, but greatest in districts subject to strong periodical winds and monsoons.—Meteorology and terrestrial magnetism in Finland, by A. Heinrichs and E. Biese. The paper contains a summary of the meteorological observations made during the last 150 years, and which furnish good materials for investigations into secular changes of climate. The magnetic observations date from 1780. The organisation and discussion of these valuable observations during the last half of the last century and the first part of this, were principally due to the encouragement given by the University of Åbo.

The *Journal of Botany* for October reports a very remarkable addition to the British flora, in *Stachys alpina*, found by Dr. C. Bircknall in Gloucestershire, apparently wild. Mr. G. Murray gives an interesting account of his observations on the minute free-floating vegetation of the west coast of Scotland, carried on at the request of the Fishery Board of Scotland, with a description of the method used for the capture of the minute organisms.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, October 6.—The Rev. Canon Fowler, Vice-President, in the chair.—Mr. W. H. Bennett and Mr. B. Tomlin were elected Fellows of the Society.—Mr. Merrifield exhibited specimens of *Aporia crategi* and *Argynnis papphia*, subjected to high and low temperatures during the pupal stage. In both species the examples which had been cooled were much darkened. Mr. Tutt showed for comparison the extremes of over 500 examples of *A. crategi* bred or captured in Kent between 1860 and 1868, but none were so marked as those which had been artificially treated.—Mr. Tutt showed a remarkable melanic aberration of *Nemeophila plantaginis*, in which all trace of the pale ground colour of the hind wings was lost; also a series of *Abraxas ulmata* captured during the past summer by Mr. Dutton in the neighbourhood of York. Previously aberrations of the species had been rare, but a large number of this series were suffused with blue-grey or smoky-ochreous. Many of the aberrant forms were cripples. He also showed for Dr. Riding bred specimens of both broods of *Tephrosia bistortata* from Clevedon, Somerset, and bred specimens of *T. crepuscularia* and its ab. *delamerensis* from York. Hybrids were exhibited between *T. bistortata* (♂ and ♀) and *T. crepuscularia* (♀ and ♂), between the former and the form *delamerensis* (♀ and ♂), and between the two latter crosses. The offspring of the first crosses were roughly divisible into two groups following the parent forms, those of the second tended to become mongrel in appearance. Hybridisation led to the production of continuous broods, and certain broods tended to produce males only. The colouration became more intense with increase in the duration of the pupal stage.—Dr. Dixey drew attention to the experiments on hybridisation recorded in Dr. Standfuss's "Handbuch der Paläarktischen Gross-Schmetterlingen," and gave a summary of the results.—Mr. Champion showed for the Rev. J. H. Hocking an example of the long-bodied moth *Satacoma agrionata*, from New Zealand; also one of *Protopaussus waltheri*, Waterh., from China, the subject of a later communication; and specimens of the rare *Emblethis verbasci*, F., from the Scilly Isles.—Mr. Jacoby showed a Halticid beetle with a singular abnormality, the side-margin of the prothorax being split to embrace a long process.—Dr. Chapman exhibited and described varieties of *Spilosoma lubricipeda* and *Acronycta psi* bred by Dr. Riding and himself. In the latter species the characters of the different races were