the state of the sky should be made on international days was recommended.

(4) The importance of observatories for the study of the upper air to be urged on all countries which do not possess them.

(5) M. de Massani's project to establish an upper-air observatory on the plains of Hungary, near Kecskemét, was endorsed.

(6) It was resolved to bring to the notice of aëro clubs the importance of observations during ascents of manned balloons for sport, &c.

(7) Copies of traces of registering instruments are to be exchanged between members of the commission if required.

(8) Titles of new publications to be sent to Prof. Assmann for publication and analysis in *Fortschritte der Physik*, or to the U.S. Weather Bureau for the *Monthly Weather Review*.

(9) Prof. Rotch's proposition to express the temperature gradient as positive when the temperature decreases with altitude was adopted.

(10) Prof. Rotch's proposal that in the published observations of kite ascents simultaneous observations at ground-level be given was adopted.

(11) The thanks of the commission to be sent to the Austrian Minister of War and to the Vienna Aëro Club for their assistance, and to other Governments which have encouraged the study of the upper air.

(12) The thanks of the commission to be sent to the Spanish Government for its promise to establish an observatory on the Peak of Teneriffe, and to the Spanish military aëronauts and to the German Government for aiding the project.

(13) Various new members were elected—MM. Trabert, Vincent, Kleinschmidt, Bjerknes, Ryder, and Bamler; the directors of the observatories of Irkutsk, Tiflis, and Ekaterinburg; and several military aëronauts, including Colonel Capper.

(14) It was resolved that the next meeting of the commission should be held in Vienna in the autumn of 1912.

Besides the formal meetings of the congress, the members were entertained on several occasions by the Prince of Monaco. A lecture was given by M. Bourée on the oceanographical work that has been done by the Prince on his yacht the *Princesse Alice*, and on April 4 the members were taken by motor to the Nice Observatory by the Corniche Road.

PROBLEMS OF APICULTURE.

ABOUT four years ago a mysterious disease appeared among the bees of the Isle of Wight, and caused great mortality. The most characteristic features were disinclination to work, some distension of the abdomen, frequent dislocation of the wings, and, later, inability to fly. At this stage the bees could only fly a few feet from the hive, and then dropped and crawled about aimlessly on the ground. They could often be seen crawling up grass stems or up the supports of the hive, where they remained until they fell back to the earth from sheer weakness, and soon afterwards died. An investigation was begun by Mr. A. D. Imms, but, as he was unable to continue the work, the Board of Agriculture secured the services of Dr. W. Malden, whose report is issued in the February number of the *Journal of the Board of Agriculture*. He finds that the only organ affected is the chyle stomach, all other organs being normal; there is no paralysis of the wing muscles. The disease is almost certainly infectious, and a plague-like bacillus was frequently found in the chyle stomachs of diseased bees, but not in those of healthy bees. Owing to difficulties of manipulation, it was impossible to establish definitely any causal connection between the disease and the presence of the organism, although the experiments strongly suggest that there is such a connection. It is to be hoped that the investigation may be completed; it promises to be of general importance for the solution of problems connected with infectious diseases of bees.

The whole question of bee diseases needs working out more fully, for little is as yet known with any degree of certainty about the causes of some of them, and few of the disease-producing bacteria have been investigated. An important administrative question is also raised: if a diseased hive is not at once destroyed it becomes a source of infection for surrounding hives, and one careless bee-keeper can in this way do serious harm to others round about him without becoming liable to compensate them for their loss. In a recent Bulletin issued from the United States Department of Agriculture Bureau of Entomology (No. 75), discussing the status of apiculture in the United States, it is urged that bee-keeping should not be popularised, but should be confined, so far as possible, to competent men having a sufficient financial stake in the business to ensure that the bees should have proper attention. "No question in apiculture," says the writer, "at all compares in importance with the control of bee diseases." Two contagious brood diseases already cause serious loss, and there is reason to believe that they are spreading at a rapid rate. The bee industry of the States is quite important enough to deserve consideration; the value of the honey is put at 20,000,000 dollars annually, but the work of the bees in fertilising the blossoms of fruit trees is valued at a still higher figure.

Among other bee problems that are still obscure, few are more interesting than the mating of bees. A host of questions suggest themselves as one watches the wonderful flight of the virgin queens and the drones, but investigation is rendered difficult by the absence of methods. It is no easy matter to arrange that only selected drones shall mate with the queens. Only few cases are on record where mating took place when the bees were caged, even though all the conditions were normal and the cages used were very large—Mr. Davitte's was 30 feet high and of the same diameter. Mr. Miller recently made some experiments, with negative results, at the Rhode Island Agricultural Experiment Station on this subject, and his paper, in the current annual report, affords a good illustration of the difficulties that the investigator meets.

METEOROLOGY OF THE DUTCH EAST INDIES.

WE are indebted to the Royal Observatory of Batavia for the following valuable publications:—(1) meteorological, magnetical, and seismometric observations for 1906, and (2) rainfall observations made at the Netherlands East Indian stations for 1907. It may not be generally known that the establishment of this important observatory was primarily due to a suggestion made by Baron A. v. Humboldt to the Governor-General of Netherlands' India in 1856 (Bayard, Presidential Address to the Royal Meteorological Society, January, 1899). Humboldt pointed out the great value that a magnetical and meteorological observatory at Batavia would be for the promotion of knowledge concerning those phenomena between the tropics. The Amsterdam Academy strongly supported the suggestion, and invited Prof. Buys Ballot to draw up a plan. The proposal of the latter, in 1857, included the organisation of hourly observations at Batavia and the establishment of secondary stations at some places in the East Indian Archipelago, and Dr. P. A. Bergsma was subsequently appointed director of the proposed system. Hourly observations were commenced at Batavia in 1866, and have been continued without interruption down to the present time, with summaries after each five-yearly period, but the establishment of second-order stations was not carried out on account of expense. Wind observations are, however, made at many places by non-official observers, and are collected by the observatory. In 1879 Dr. Bergsma organised a system of rainfall observations throughout the archipelago which has since been regularly continued.

The data for 1907 are published in two volumes, giving (1) daily and monthly amounts, and (2) monthly and yearly amounts and the number of rain-days, together with the results for 1879–1907, at all stations having observations for five years and upwards. At the end of the year the official stations numbered 292, and included Java, Sumatra, Borneo, North Guinea, and the many islands lying between them, some of the principal places being provided

with self-recording gauges. The rainfall over this vast area varies very greatly, according to position and altitude and the strength of the monsoons. On the whole, the amounts for 1907 differed little from the average; in Java the extreme yearly values were about 29 inches and 196½ inches (both in the eastern part), and at outlying stations about 21 inches to 197½ inches (both in Celebes). The results at more than 700 stations in Java, including the observations at non-official stations, for the period 1879–1905, have recently been separately published by Dr. W. van Bemmelen. In addition to the above-mentioned publications, the observatory has issued the results of several valuable investigations relating to seismology, tides, &c., and has completed a magnetic survey of the whole archipelago. Papers have also been published bearing upon the moon's influence on meteorological and magnetical phenomena.

RECENT PAPERS ON FISHES.

A REVIEW, by Mr. E. W. L. Holt, of recent contributions to our knowledge of the life-history of the eel, forms the subject of No. 8 of Irish Fisheries Scientific Investigations for 1907 (1909). After a survey of the development and migration of the species, the author is of opinion that the breeding-resort of the eels of northern Europe is in the deep water outside the 500-fathom line to the south-west of Ireland, where alone their leptocephali have been taken in abundance. It by no means follows from this that all north European eels which reach the sea succeed in arriving at the breeding-area, and possibly Finnish eels never breed at all. If this be so, it becomes a practical certainty that elvers—unlike salmon—do not return to the rivers from which their parents started, as, indeed, is improbable on other grounds, seeing that eels—unlike salmon—are hatched in the sea.

In the second part of vol. xxxi. of Notes from the Leyden Museum, Prof. Max Weber, of Amsterdam, describes a large number of new species of fishes collected by the members of the *Siboga* Expedition in Austro-Malaya. A large proportion of these were taken in littoral or sublittoral waters, but others were captured on coral-reefs or in deep water with nets. Many of the new forms are blennies and gobies, no fewer than seven new species of the type-genus (Gobio) of the latter group being described. The present preliminary notice is published on account of the interest attaching to these fishes from a distributional point of view.

To vol. vii., part i., of *Annotationes Zoologicae Japonenses*, Mr. S. Tanaka contributes two papers on Japanese fishes, one dealing with those inhabiting rock-pools at Misaki, and including descriptions of two new species, while the second is devoted to eight new species from Japan generally, two of these being gobies and one a blenny.

Finally, three new species of cisco, or lake-herrings, of the genus Argyrosomus from the great lakes of North America are described by Messrs. Jordan and Evermann in No. 1662 of the Proceedings of the U.S. National Museum (vol. xxxvi., pp. 165–172), where a note is appended on the species of white fish (Coregonus) inhabiting the same region.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

BIRMINGHAM.—Sir E. Ray Lankester, K.C.B., has resigned his appointment as Huxley lecturer for the coming session, and Mr. W. Bateson, F.R.S., has accepted an invitation to fill the vacancy thereby caused.

On July 7 the King is to perform the opening ceremony of the new buildings of the University. These buildings, which are situate in the south-west corner of Edgbaston, are about three miles from the centre of the town. They comprise the Great Hall, an imposing structure about 160 feet in length, 80 feet in width, and 60 feet high; two separate blocks devoted to engineering in its various branches, civil, mechanical, and electrical; another block for mining and metallurgy, with additional buildings for the manufacture and working of iron and steel; and a power-station for the generation of electrical power, which is distributed to the different blocks for driving machinery and for lighting purposes. These sections have all been in working order for two or three years; and at the present time there are approaching completion two blocks for the departments of physics and chemistry respectively, and a third structure which will serve the function of a central library. Rising high above all these is the Chamberlain Tower, with its clock and bells, measuring from base to summit about 325 feet, the gift of a local donor as a tribute to the Chancellor of the University.

CAMBRIDGE.—In connection with the Darwin centenary, it is proposed to confer the degree of Doctor of Science, *honoris causa*, upon:—E. van Beneden, professor of zoology in the University of Liège; Robert Chodat, professor of botany in the University of Geneva; Francis Darwin, F.R.S., of Christ's College; Karl F. von Goebel, professor of botany in the University of Munich; L. von Graff, professor of zoology in the University of Gratz; H. Höffding, professor of philosophy in the University of Copenhagen; J. Loeb, professor of physiology in the University of California, Berkeley; E. Perrier, director of the Natural History Museum, Paris; G. A. Schwalbe, professor of anatomy in the University of Strassburg; H. von Vöchting, professor of botany in the University of Tübingen; H. de Vries, professor of botany in the University of Amsterdam; C. D. Walcott, secretary of the Smithsonian Institution, Washington; E. B. Wilson, professor of zoology in the Columbia University of New York; and C. R. Zeiller, professor of palæobotany in the École Nationale Supérieure des Mines, Paris.

The special board for biology and geology has approved a grant of 25*l.* from the Balfour fund made by the managers to Mr. R. C. Punnett, in furtherance of his experiments to investigate the inheritance of certain features in rabbits.

The syndicate on alternatives for the general examination, after consultation with the special boards affected, recommends that the schedules for the first examination for the M.B. degree be adopted for the proposed preliminary examination in science, and that the examinations be conducted by the same examiners and on the same papers. It is proposed to allow that the three subjects of the examination—chemistry, physics, and elementary biology—be taken separately, but all candidates must pass in each subject. Detailed regulations have been issued as regards the amendment of the ordinances which the various suggestions will involve.

The new agricultural buildings are now well advanced, and it is hoped they will be ready for occupation by October. The amount of expenditure already incurred is 14,000*l.*, and it is now necessary to obtain specifications and estimates for furniture and fittings. It is estimated that these, together with the architect's commission and incidental expenses, will amount to 3500*l.* At the present time the building fund amounts to 17,000*l.*, and there is thus a balance of 3000*l.* in hand. A further sum of 2000*l.* has been promised as soon as 18,000*l.* has been subscribed. Strenuous efforts are therefore being made to obtain the 1000*l.* required to reach this amount.

LONDON.—Wednesday, May 12, was Presentation Day at the University. In the absence of the Chancellor (Lord Rosebery), the Vice-Chancellor (Sir Wm. Collins, M.P.) presided. Before the proceedings in the Great Hall commenced, the first general parade of the University contingent of the Officers' Training Corps, which mustered more than 400 strong, was held in front of the University. Addresses were delivered by the Vice-Chancellor and by Sir Henry Mackinnon, Director-General of the Territorial Force. The first report of the new principal, Dr. H. A. Miers, F.R.S., showed continued progress, the number of matriculants having risen from 3277 in 1907–8 to 3886 in 1908–9. A corresponding increase was also reported in the number of first degrees granted (from 1192 to 1336) and of higher degrees (from 64 to 78). In concluding his report, the principal directed attention to the great progress which had been made in the organisation of higher education in London since the re-constitution of the University, and the "appalling deficiencies" which still existed