and compensation of school physicians; school nurses; school clinics; relation of health supervision in the schools to the practise of the physician, the dentist and the hospital; relation of medical and hygienic supervision in the schools to health supervision in the home; standardization of examinations; sanitary supervision of school rooms (class rooms), locker rooms, swimming pools, toilets, school books and school furniture; supervision of disease carriers; prevention of epidemics; follow-up methods and results; medical inspection and treatment; standardization of records.

SCIENTIFIC NOTES AND NEWS

McGILL UNIVERSITY held a special convocation on August 2 for the purpose of conferring honorary degrees in connection with the visit of the International Geological Congress to Canada. The degree of doctor of laws was conferred as follows: Helge Bäckström, Ph.D., professor of mineralogy and petrography in the University of Stockholm (presented by Professor Howard Barnes, F.R.S.); Alfred Bergeat, Ph.D., professor of geology in the University of Königsberg (presented by Professor Dale, M.A.); Alfred Harker, M.A., F.R.S., university lecturer in petrology in the University of Cambridge (presented by Professor John Macnaughton, LL.D.); James Furman Kemp, D.Sc., professor of geology, Columbia University, New York (presented by Professor McLeod, F.R.S.C.); Alfred Lacroix, D.Sc., professor of mineralogy at the Museum of Natural History, Paris (presented by Dean Adams, F.R.S.).

PROFESSOR W. A. BONE, F.R.S., has been awarded the Howard N. Potts gold medal for distinguished work in science or the mechanic arts by the Franklin Institute of Philadelphia, in recognition of his work upon surface combustion.

MR. JOHN TEBBUT, who has conducted a private observatory at Windsor, N. S. W., has recently celebrated two anniversaries, having entered on his eightieth year, and completed fifty years' membership of the Royal Society of New South Wales.

DR. HOMER DOLIVER HOUSE, associate director and lecturer on botany and dendrology of the Biltmore Forest School, has received the appointment of assistant state botanist of New York.

MR. A. R. HINKS, F.R.S., of the Cambridge Observatory, has been appointed assistant secretary of the Royal Geographical Society.

ACCORDING to *The Observatory* Mr. Edward Kitto has retired from the superintendence of the Falmouth Magnetic and Meteorological Observatory. In consequence partly of financial difficulties, the work of the observatory under its present constitution came to an end on June 30, but the department of terrestrial magnetism of the Carnegie Institution of Washington has arranged to carry on some of the observations for a few months longer.

SURGEON-GENERAL SIR DAVID BRUCE, head of the sleeping sickness commission which was sent to Central Africa nearly two years ago, has returned to England with Lady Bruce. Sir David will in a few weeks return to Nyasaland, where the other members of the commission are still working.

MR. CHARLES H. T. TOWNSEND, who was some time since especially charged by the Peruvian government with the investigation of the insect transmission of verruga, injected a dog with triturated females of *Phlebotomus* on July 11, and on July 17 secured as result an unmistakable case of verruga eruption. The gnats used for the injection were secured on the night of July 9 in Verrugas Canyon, a noted focus of the disease. This is the first experimental transmission of verruga by means of insects, and adds a notable case to the list of insect-borne diseases. The details of the experiment will appear shortly. Further transmission work in laboratory animals will be pursued at once, both by injections and by causing the gnats to bite.

FREDERICK G. CLAPP, managing geologist of the Associated Geological Engineers of Pittsburgh, Pa., and Alten S. Miller, of Humphreys & Miller, New York City, are examining the gas fields of Hungary in company with Professor Hugo Bockh, of that country.

PROFESSOR VLADIMIR KARAPETOFF, professor of electrical engineering at Cornell University, has started on a trip for the purpose of visiting hydro-electric developments and high-tension power transmission plants. He expects to visit the recent development on the Mississippi River at Keokuk, Iowa, and then go to Denver, Salt Lake City, Los Angeles, San Francisco, Portland and Seattle, and to attend the Pacific Convention of the American Institute of Electrical Engineers in Vancouver, B. C., September 9–13.

A FRENCH Arctic expedition, headed by Jules von Payer, sailed on August 10 for the purpose of exploring and gathering scientific data in Franz Josef Land.

UNDER the auspices of the Edinburgh Mathematical Society, a colloquium was held in Edinburgh from August 4 to 9, when courses of lectures were given on "Relativity and the new physical ideas of space and time," by Professor Conway; on "Non-Euclidean geometry," by Dr. Sommerville, and on "Harmonic and periodogram analysis," by Professor Whittaker.

A BRONZE panel has been unveiled at Lugar, Ayrshire, Scotland, in memory of William Murdoch, one of the inventors of coal-gas lighting. The panel, which takes the form of a life-size portrait medallion in bold relief, was placed on the wall of the cottage in which Murdoch was born.

THE last legislature of the state of Pennsylvania appropriated $100,000 for the control of the chestunt bark disease during the biennium 1913–14. Governor Tener, after consulting with the Chestnut Tree Blight Commission, felt that this sum was inadequate for their task, and vetoed the appropriation. It is expected, however, that all the research work of the commission will be continued, in cooperation with the Bureau of Plant Industry.

The Independent quotes the following items from its issue of fifty years ago:

Professor Wolcott Gibbs, an able chemist, has been chosen Rumford professor at Harvard University. Columbia College a year or two since refused to appoint him to a chemical professorship. Because he did not understand chemistry? No; because he was a Unitarian! This is as if you should refuse to get your clothes of the best tailor because he did not make jack knives to suit you.

Mr. Cyrus W. Field has gone to England in furtherance of his favorite Atlantic Telegraph enterprise. Both ends of the proposed telegraph line are to be under the control of England. No American is a real friend of his country who will give a cent to help England at present to such a tremendous military engine as that.

THE appointment of Professor C. F. Marvin as chief of the weather bureau of the Department of Agriculture made by the President of the United States was noted in SCIENCE last week. Before the secretary of agriculture nominated Professor Marvin for this position he had carefully considered a large number of names suggested from all sources and had sought the advice of a number of university administrators and scientific men and had asked the National Academy of Sciences to make recommendations. A committee of the National Academy gave the matter very careful consideration and its opinions were communicated to the secretary, who since has expressed his appreciation of this assistance. The committee of the National Academy of Sciences unanimously recommended the appointment of Professor Marvin. Meanwhile, the department, through its own sources of information, had come to the conclusion that Professor Marvin was the best man available for the position. Professor Charles F. Marvin was born in Putnam, Ohio, October 7, 1858. He graduated in mechanical engineering from the Ohio State University in 1883. He was instructor in mechanical and physical laboratory practise at this university for some time. He was appointed on the civilian corps of the signal service in 1884. On July 1, 1891, he was transferred to the Department of Agriculture when the weather bureau service was transferred, and was professor of meteorology. Professor Marvin has made important investigations of anemometers for the measurement of wind velocities and pressures, and on experiments conducted by him the tables used by the weather bureau for deducing the moisture in

the air are based. He has also invented important instruments for measuring and automatically recording rainfall, snowfall, sunshine, atmospheric pressure, evaporation, etc. He has made extensive studies in, and written on, the use of kites for ascertaining meteorological conditions in the free air, the registration of earthquakes, the measurement of evaporation, solar radiation, etc. He was detailed for special purposes to the Cotton States and International Exposition at Atlanta in 1895, to the Tennessee Centennial Exposition at Nashville in 1897, and to the Jamestown Exposition in 1907. In February, 1900, he was appointed a representative of the Department of Agriculture at the Meteorological Congress held in connection with the International Exposition at Paris. For some time he has been in charge of the instrument division of the Weather Bureau, an important branch of the department.

THE British secretary of state for the colonies has nominated a committee to report: (1) Upon the present knowledge available on the questions of the parts played by wild animals and tsetse flies in Africa in the maintenance and spread of trypanosome infections of man and stock. (2) Whether it is necessary and feasible to carry out an experiment of game destruction in a localized area in order to gain further knowledge on these questions, and, if so, to decide the locality, probable cost, and other details of such an experiment, and to provide a scheme for its conduct. (3) Whether it is advisable to attempt the extermination of wild animals, either generally or locally, with a view of checking the trypanosome diseases of man and stock. (4) Whether any other measures should be taken in order to obtain means of controlling these diseases. The committee will be composed as follows: Lord Desart (chairman); Mr. E. E. Austen, British Museum (Natural History); Dr. A. G. Bagshawe, Director of the Tropical Diseases Bureau; Dr. Andrew Balfour, late director of the Wellcome Research Laboratories, Gordon College, Khartum; Sir John Rose Bradford, secretary of the Royal Society; Mr. E. North Buxton; Dr. W. A. Chapple, M.P.; Sir Mackenzie D. Chalmers; Lieutenant-Colonel Sir W. B. Leishman, professor of pathology, Royal Army Medical College; Sir Edmund G. Loder, vice-president of the Zoological Society; Dr. C. J. Martin, F.R.S., director of the Lister Institute of Preventive Medicine; Mr. J. Duncan Millar, M.P.; Dr. P. Chalmers Mitchell, secretary of the Zoological Society; Professor R. Newstead, Liverpool University; Mr. H. J. Read, of the Colonial Office; the Hon. L. Walter Rothschild; Sir Stewart Stockman, chief veterinary office, Board of Agriculture and Fisheries; Mr. A. C. C. Parkinson, of the Colonial Office, will act as secretary.

THE production of coal in 1912 reached the great total of 534,466,580 short tons, valued at the mines at $695,606,071, according to a statement by Edward W. Parker, coal statistician, just issued by the United States Geological Survey. This year the report on the coal industry of the United States begins the fourth decade in which coal statistics have been published annually by the Geological Survey. In 1882, the first year of this period, the total coal production of the United States had reached what was then considered about high-water mark—103,551,189 short tons. In 1912 the production of bituminous coal alone in the state of Pennsylvania exceeded that figure by nearly 60 per cent. and the combined production of bituminous coal and anthracite in Pennsylvania in 1912 was two and one quarter times the total production of the United States in 1882. The total coal production of the United States in 1912 was more than five times that of 1882. In 1882 the United States was a poor second among the coal-producing countries of the world, Great Britain having an output exceeding that of this country by nearly 70 per cent. The United States supplanted Great Britain as the premier coal-producing country in 1899, and in 1912 it was as far ahead of Great Britain as that country was ahead of the United States in 1882. The United States at present is contributing 40 per cent. of the world's supply of coal and is consuming over 99 per cent. of its own production. In 1912 the production of coal in the United States not only surpassed all previous

tonnage records, but the average value per ton exceeded that of any normal year in the 33 years for which statistics are available. There has been only one year when prices generally were higher than in 1912, and that was 1903, the year of the fuel famine. The gain in output in 1912 over 1911 was 38,095,454 short tons and the increase in value was $69,040,860. The production of bituminous coal increased from 405,907,059 short tons to 450,104,982 tons, a gain of 44,197,923 tons, with an increase of $66,607,626 in value. The decreased production of anthracite, amounting to 6,102,469 short tons, was due entirely to the suspension of mining in April and May, when practically the entire region was idle. The factors which contributed to the increased output of bituminous coal were (1) the revival in the iron and steel industry, which stimulated production in the Eastern States, the coal made into coke showing, alone, an increase of nearly 6,000,000 tons; (2) bumper crops of grain and other agricultural products, which gave prosperity to the farming communities of the Middle West; (3) decreasing supplies of natural gas and fuel oil in the mid-continent field and their consequent lessened competition with coal from the southwestern states; (4) increased consumption by railroads and in nearly all lines of manufacturing; (5) activity in the mining and smelting of the precious and semiprecious metals in the Rocky Mountain and Pacific states. These factors combined made the year 1912 one of the rather rare prosperous years in the mining of bituminous coal.

In the House of Commons on July 24 Mr. Runciman gave, as we learn from *Nature*, an account of the work of the Board of Agriculture during the past session. Arrangements have been made for research on agricultural subjects to be carried on at a number of centers, including Rothamsted, Manchester, Birmingham, Oxford, Cambridge, the Royal Veterinary College, Leeds, Wye, Bristol and Kew, and grants amounting to £20,000 a year have been made for the purpose. In addition, £3,900 has been given for special investigations lying outside the scope of the program of the special institutes. All these investigations have reference to the great fundamental problems lying at the root of the agricultural and horticultural work of the country; the work is wholly scientific. In order to bring the scientific results into the region of practical farming a number of advisers have been set up whose function it is to advise farmers or county organizers in the light of the results of the scientific knowledge that is gained. A grant of £9,000 per annum has been made towards the salaries of these advisers.

The *Geographical Magazine* describes an important project for the construction of a vast port for the city of Milan destined to meet all possible future developments of internal navigation. The municipality has expressed approval of the project, and intends to apply to the state for powers to carry it into execution. Detailed studies have been carried out by MM. Beratta and Maiocchi, who, from wide experience of the most important river-ports of other European countries, have drawn up plans for the proposed port in respect of quays, wharfs, warehouses, railway and other communications, docks, workshops and installations of all kinds on the most approved modern principles. The total area to be covered by the port is 112 hectares (277 acres) of which about 50 acres will be occupied by the basins, an equal area by roads, railways, etc., 25 acres by the stations and the remainder by the quays. It is hoped to begin operations at an early date, so that the port may be ready by the completion of the great Venice-Milan waterway, which is to give passage to vessels of up to 600 tons burden.

The federal Lighthouse Bureau and the Forest Service are cooperating in forest work on the shores of the great lakes in the lumber states of Michigan and Wisconsin. The lighthouse reservations here include a total of nearly 5,500 acres, and range in size from 30 acres at Grand Island, Michigan, to 1,040 acres at Grand Marais. An examination is just being started to determine the best forest methods to pursue on the reservations. On some, from which the timber has been cut, white pine and Norway pine will be planted. On others the timber already growing will be

preserved through use. On two of the reservations, the forest experts point out, the opportunities are excellent for growing cedar and pine for spar buoys and piling, to be used in the work of the Lighthouse Bureau itself. All parts of the reservations can not be devoted to forests. Some areas will have to be left clear for protection from fire, while others immediately adjacent to the beacons themselves will have to be left bare in order that the lights may not be obscured.

A CONTRIBUTION on the great glaciers of Alaska is Bulletin 526 of the U. S. Geological Survey, "Coastal Glaciers of Prince William Sound and Kenai Peninsula, Alaska," by U. S. Grant and D. F. Higgins. The report is profusely illustrated with photographs and with maps of the individual glaciers, as well as two comprehensive maps of Prince William Sound and the southwestern part of Kenai Peninsula, showing the location of scores of glaciers. The report is in fact a guide and handbook to this wonderful scenic region which must prove invaluable to the tourist. Many valuable data and important measurements of glaciers in the United States, Alaska and elsewhere have been brought together from time to time, and it is probably the general impression that since the vast ice sheet which covered the northern part of North America began its retreat the glaciers of the continent have been continually shrinking. It is therefore interesting to note from the illustrations and descriptions in Bulletin 526 that some of these Alaskan glaciers are progressing and growing larger rather than retrogressing, many huge forests being upturned and devastated by the irresistible advance of the ice. In other glaciers the retreat within a period of ten years has been more than a mile. The great magnitude of some of these glaciers is seen in the descriptions, which indicate the height of the tidal ice cliffs that form the termini of the glaciers as being from 300 to 400 feet. Slowly moving down the mountain valleys, some of them steeply pitched and others relatively flat, these stupendous ice fields include billions of tons of ice. Many young Americans can find here memorials of their alma mater, for along College Fiord are Yale Glacier, Harvard Glacier, Smith Glacier, Bryn Mawr Glacier and Vassar and Wellesley glaciers.

UNIVERSITY AND EDUCATIONAL NEWS

AS noted in SCIENCE last week, the governor of Pennsylvania has signed a bill appropriating the sum of $1,226,000 for the next two years, to the Pennsylvania State College. Two years ago the college received $800,000, out of which $200,000 was to be applied for the purpose of paying off a long-standing debt, so this year's appropriation is practically double that given two years ago. This is only in keeping with the great increase in students, as last year's enrollment, including summer school for teachers, was 2,535. The increase has been among the largest in the United States.

PROFESSOR LYMAN P. POWELL, head of the ethics department at New York University, has accepted the presidency of Hobart College.

THE following resignations have recently occurred at the Alabama Polytechnic Institute: Professor Jesse M. Jones, recently appointed head of the department of animal industry, has resigned to become field agent in cooperative farm demonstration work in the states of Maryland, Kentucky and West Virginia for the U. S. Department of Agriculture. L. W. Shook, formerly field agent in live stock work, has resigned to accept a similar position with the North Carolina Station, and Mr. T. C. Bottoms, herdsman, has resigned his position to take up similar work at the same station. Mr. J. M. Johnson, assistant in the department of animal industry during the past year, has resigned to pursue graduate work in the University of Missouri.

DR. G. E. GIBSON, of the University of Edinburgh, has been appointed instructor in chemistry in the University of California.

MR. R. A. JEHLE, of the Kansas State Agricultural College, instructor in plant pathology, has been appointed instructor in plant pathology at Cornell University.

PROFESSOR R. M. BROWN, of the geography department of the State Normal School, Worcester, Mass., has been appointed as head of