SCIENTIFIC NOTES AND NEWS

THE election of Dr. Vernon Kellogg as secretary emeritus of the National Research Council was announced by the executive board on December 9 following his resignation as permanent secretary, an office that he has held for the past twelve years from the time that the National Research Council began its activities on a peace-time basis. Dr. Kellogg's resignation is effective on December 31. The new position continues his work and affiliation with the National Research Council in an advisory capacity while he is relieved of administrative duties which his health does not permit him to perform.

DR. HENRY NORRIS RUSSELL, professor of astronomy at Princeton University and director of the Princeton Observatory, was elected president of the American Philosophical Society at its meeting on December 4. The election was to fill the vacancy caused by the death of Dr. F. X. Dercum.

CHIEF JUSTICE HUGHES, chancellor of the Board of Regents of the Smithsonian Institution, will present on December 18 two awards of $2,500 each, given by the Research Corporation of New York to Dr. Andrew Ellicott Douglass, of Tucson, Arizona, and to Dr. Ernst Antevs. The prize is awarded to Dr. Douglass for his researches on the rings that mark the annual growth of trees which have thrown light on the past climate of the earth and on the correspondence between weather and solar activity. The award to Dr. Antevs was in recognition of his use of varves, layers of clay in ancient lake beds, as timepieces of glacial activity. Dr. Douglass and Dr. Antevs will each give a half-hour illustrated account of his principal researches.

GOLD medals of the Radiological Society of North America were presented at the recent St. Louis meeting to Dr. Max J. Hubeny, of Chicago, for distinguished services in x-rays and radium, and to Dr. Carlos Heuser, of Buenos Ayres, for x-ray developments useful for studying the internal organs of women.

PROFESSOR J. STANLEY GARDINER, of the University of Cambridge, has been elected an honorary member of the Boston Society of Natural History.

THE German Society for Cancer Research has elected Dr. Frederick L. Hoffman, of Wellesley Hills, Massachusetts, to honorary membership in appreciation of his numerous contributions to cancer statistics research.

A DINNER was given in New York on December 2 by the American Society of Mechanical Engineers in honor of Dr. Calvin W. Rice, secretary of the society for the past twenty-five years. Dr. Rice was made an honorary member of the society in recognition of his long and valuable services. The presentation was made by Dr. John R. Freeman, of Providence, and President Karl T. Compton, of the Massachusetts Institute of Technology, of which Dr. Rice is a graduate, delivered the address.

THE University of Michigan has been presented with the bust of Dr. Cyrenus Garritt Darling, professor emeritus of oral surgery, who for thirty-seven years was connected with the School of Medicine and Surgery and the College of Dental Surgery. The ceremony was held at his home, the presentation being made by Dr. Frederick Novy, professor of bacteriology, who spoke for the donors. The bust was accepted for the university by President Alexander Grant Ruthven, who spoke of the services that Dr. Darling had rendered to his school, to his state and to humanity. The bust is the work of Mr. Carleton W. Angell, artist in the university museums and instructor in modeling in the College of Architecture.

DR. BYRON H. JACKSON, of Moses Taylor Hospital, Scranton, Pennsylvania, was elected president for 1932 at the recent congress at St. Louis of the Radiological Society of North America. He succeeds Dr. Francis Carter Wood, of Columbia University.

AT a recent meeting of the New York Academy of Medicine, Dr. John A. Hartwell, president of the academy, was re-elected for a second term of two years. Dr. Lewis A. Connor, second vice-president, will automatically become first vice-president at the beginning of the new year. Dr. Frederick Tilney, professor of neurology in the College of Physicians and Surgeons of Columbia University, was elected second vice-president to fill the term of Dr. John O. Polak, who died last summer. Dr. Harlow Brooks was elected third vice-president to succeed Dr. Edwin Beer.

PROFESSOR A. C. DIXON has been elected president of the London Mathematical Society. The vice-presidents are Professor S. Chapman, Professor H. Levy and Mr. T. L. Wren.

Nature reports that the following officers have been elected for the Cambridge Philosophical Society: *President,* Professor A. Hutchinson; *Vice-presidents,* Mr. G. Udny Yule, Dr. W. H. Mills, Mr. F. T. Brookes; *Treasurer,* Mr. F. A. Potts; *Secretaries,* Mr. F. P. White, Dr. J. D. Cockcroft, Dr. H. Hamshaw Thomas; *New Members of the Council,* Dr. R. H. Rastall, Mr. C. F. A. Pantin, Mr. N. F. Mott.

DR. ESMOND R. LONG, professor of pathology at

the Graduate School of Medicine of the Division of Biological Sciences of the University of Chicago, has resigned to become director of laboratories of the Phipps Institute of the University of Pennsylvania, his resignation to become effective in July, 1932.

DR. EWEN M. MACEWEN, professor of anatomy at the University of Iowa College of Medicine, has been appointed head of the department to succeed the late Dr. Henry J. Prentiss.

THE *Experiment Station Record* reports that Dr. Frank T. Shutt has retired as Dominion chemist and assistant director of experimental farms of the Canadian Department of Agriculture, thereby terminating a public service of forty-four years. Mr. L. E. Kirk, professor of field husbandry at the University of Saskatchewan since 1922, has been appointed Dominion agrostologist at the Central Experimental Farm, Ottawa. Dr. Allen Deacon has been appointed Dominion animal geneticist.

THE Macbeth-Evans Glass Company, Charleroi, Pennsylvania, has established in the Mellon Institute at Pittsburgh a fellowship in illuminating glassware to which Dr. Rob Roy McGregor, of the Mellon Institute research staff, a specialist in physical chemistry, has been appointed.

M. EMILE PICARD, permanent secretary of the Paris Academy of Sciences, has been elected a member of the French Council of Public Instruction.

DR. ALFRED STENGEL, vice-president of the University of Pennsylvania, in charge of the medical group, has been elected a member of the board of managers of the Wistar Institute to fill the vacancy caused by the death of Mr. Arthur L. Church.

DR. WILLIAM D. CUTTER has been appointed secretary of the Council on Medical Education and Hospitals of the American Medical Association.

DR. ORLANDO H. PETTY has been appointed health officer of Philadelphia following the death of Dr. Andrew A. Cairns in September.

DR. W. F. FOSHAG, curator of mineralogy in the U. S. National Museum, has returned from field-work in Mexico, where he visited mines and studied the mineral deposits in the states of Zacatecas and San Luis Potosi.

DR. F. VENING MEINESZ, of the Dutch Geodetic Commission, an expert on the measurement of gravity at sea, is coming to the United States to take part in the International Expedition to the West Indies, sponsored by Princeton University. Dr. Meinesz will attend the meeting of the Geological Society of America at Tulsa where he will give a paper on "Gravimetric Studies in the East Indies and Folded Mountains."

DR. MAJOR GREENWOOD, professor of epidemiology and vital statistics at the London University School of Hygiene and Tropical Medicine, is giving three Herter Foundation lectures at the Johns Hopkins University School of Medicine. Dr. Greenwood was the guest of honor at a dinner of the medical faculty at the Maryland Club on December 3.

ADMIRAL CARY T. GRAYSON, M.D., an alumnus of the Medical College of Virginia, Richmond, delivered its founder's day address on Tuesday, December 1. This marks the ninety-fourth session of the institution. His subject was "The Modern Trend of Medicine."

DR. C. E. K. MEES, director of research and development for the Eastman Kodak Company, delivered the first of the annual series of Aldred Lectures at the Massachusetts Institute of Technology on December 4. The title of Dr. Mees's address was "Reminiscences." At noon on the same day he addressed the Technology Faculty Club.

DR. W. H. TALIAFERRO, professor of parasitology at the University of Chicago, will deliver the third Harvey Society Lecture at the New York Academy of Medicine on December 17. His subject will be "Infection and Resistance to the Blood Inhabiting Protozoa."

DR. G. CANBY ROBINSON, director of the New York Hospital-Cornell Medical College Association of New York City, delivered the History of Medicine Lecture at Vanderbilt University on December 3. His subject was "The Liberators in Medicine—Vesalius, Paré and Paracelsus."

THE HONORABLE BERTRAND RUSSELL was the speaker before a general convocation at the University of Oklahoma, Norman, on November 23. His subject was "The Scientific Outlook." He also spoke to the members of the staffs of the departments of philosophy and of the several natural sciences at a luncheon given under the auspices of the department of philosophy.

DR. OLIVER KAMM, director of research of Parke, Davis and Company, Detroit, was the principal speaker before the New York section of the American Chemical Society on the evening of December 4. He spoke on "Chemical Investigations in the Field of Ductless Glands."

AT the inaugural meeting on November 7 of the eighty-third session of the Royal Canadian Institute, Dr. E. F. Burton, professor of physics at the University of Toronto, delivered the presidential address, entitled "Seeing the Invisible." The lecture was in celebration of the Faraday-Maxwell Centenary.

THE biennial Huxley Lecture on recent advances in

science in their relation to practical medicine was given at Charing Cross Hospital Medical School on November 26, by Sir Almroth Wright. His subject was "Immunity: the Old Doctrine and the New."

AT a recent meeting of the Royal College of Surgeons, London, the appointments were announced of Dr. Robert Cruickshank, of the University of Glasgow, as Milroy Lecturer for 1933, and of Professor Edward Mellanby as Croonian Lecturer, 1933.

THE Oriental Institute on the campus of the University of Chicago, built at a cost of $1,500,000, which is the largest archeological headquarters in the world, was formally opened and dedicated on December 4. Dr. James H. Breasted, as director of the institute, unlocked the gates of the five exhibition halls —those for the Egyptian, the Assyrian, the Assyro-Babylonian, the Persian-Moslem and the Hittite-Palestinian civilizations. The speakers, in addition to Dr. Breasted, were Dr. Raymond Fosdick, of the Rockefeller Foundation, and Dr. John H. Finley, associate editor of *The New York Times.*

GROUND was broken on November 9 for the Division of Plant Pathology at the Princeton branch of the Rockefeller Institute for Medical Research. The new buildings will consist of a laboratory, 144 feet by 40 feet, two and one-half stories in height, eight greenhouse units, each 65 feet in length, and a potting shed. Dr. Louis O. Kunkel, of the Boyce Thompson Institute for Plant Research, will be in charge of the new division. The buildings were designed by Messrs. Coolidge, Shepley, Bulfinch and Abbott, of Boston, and are being constructed by Matthews Construction Company, of Princeton, New Jersey. The name of the Princeton branch has been changed to the Department of Animal and Plant Pathology of the Rockefeller Institute for Medical Research.

THE house which John James Audubon built and in which his last years were spent is to be saved after having been abandoned to the wreckers, according to an announcement made by Harold W. Decker, an ornithologist of the Bronx. The building, which stands now below the viaduct at Riverside Drive and 155th Street, New York City, hemmed in by tall apartment houses, is being removed in sections, to the new park site provided by the city at Riverside Drive and 161st Street. There it will be restored to the condition it was in when Audubon entertained his friends, in his home away from "the crazy city," far to the south. The removal expenses have been underwritten anonymously and a fund of about $25,000 will be needed to complete the work of restoration. The National Association of Audubon Societies, 1974 Broadway, New York, N. Y., will receive contributions.

ACCORDING to the *British Medical Journal* Lord Moynihan, president of the Royal College of Surgeons of England, laid the corner-stone of the Wellcome Research Institution on November 25. This is the new building now in course of erection in Euston Road and Gordon Street, W.C., London. When completed the institution will embrace the following affiliated laboratories and museums: bureau of scientific research, physiological research laboratories, chemical research laboratories, historical medical museum and museum of medical science. The architect's design for the building was exhibited at the Royal Academy last summer.

DIRECTOR BARTON WARREN EVERMANN, of the California Academy of Sciences, announces that on December 3 the power cruiser *Valero III,* owned by G. Allan Hancock, left San Pedro, California, under the auspices of the academy, bound for Central and South American waters. The primary object of the expedition is the study and collection of marine life, especially fishes, from those tropical seas. Provision has been made for the use of dredges, trawls, traps and other forms of collecting equipment, some of which is newly designed for special purposes. The program calls for stops at Mazatlan, Acapulco, Panama, Cocos Island, Malpelo Island and the Galapagos. At the last place special attention will be given to stocking the eight tanks being carried, with live fishes for display in the Steinhart Aquarium of the California Academy of Sciences in San Francisco. Mr. Alvin Seale, superintendent of the aquarium, is in immediate charge of the scientific work, assisted by Dr. L. G. Hertlein, who will make general collections, particularly of mollusca and fossils. Collections of living reptiles, birds and marine mammals will be obtained for the San Diego Zoological Park, this phase of the work being under the special charge of Mr. Charles B. Perkins, of Denver, Colorado.

THE *Journal* of the American Medical Association writes under "Current Comment" as follows: "Repudiation of the Bilbo administration, which so nearly wrecked the educational institutions of Mississippi, occurred recently when Martin Sennett Conner was overwhelmingly elected governor. The standing of the medical school of the university was threatened in 1930 when the dean and the entire faculty were ousted and others put in their places. A partial restitution took place when the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, and other organizations interested in higher education, the united medical profession of Mississippi and an aroused public opinion protested against such high-handed and destructive tactics. Most of the faculty members were recalled and Dr. P. L. Mull, professor of anatomy, was named acting dean. Professors were

graciously lent to the school by Vanderbilt University and the University of Tennessee. The medical school was nursed along through this trying period, but it is now evident that the people of the state of Mississippi were eagerly awaiting the time when they could administer a death blow to further officious interference with their schools. The new governor will no doubt be constructive rather than destructive in educational matters."

THE London *Times* reports that an extension to the research laboratories of the English Steel Corporation, Limited, at Vickers works, Sheffield, was opened on November 8 by Sir Joseph Thomson, master of Trinity College, Cambridge. He described these new laboratories "as a signal token of the advance in importance attached to research by industry. It was a comparatively recent thing for research and industry to be linked together. Not long ago the bulk of the people in industry took the view that things might be 'all right,' but would not work in practice, and in those days science and industry were rivals, well aware of each other's imperfections. He did not suggest that all the fault was on the side of the manufacturers, for often men of science did not realize the immense amount of work which had to be done to take a discovery from the shelter of the laboratory into the rough-and-tumble of the works. The transition often required years of work and cost much. Between the laboratory and the works was a long stretch of country through which it was difficult to find a way, but when the way had been found the reward was very rich. To the people engaged in the laboratories he particularly emphasized the importance of looking for the unexpected, for it was from the unexpected discovery that new industries were formed and new employment created."

THE department of zoology and physiology of Wellesley College, housed in temporary quarters since 1914, when College Hall was destroyed by fire, now occupies a new building. The erection of the zoology unit completes Sage Hall, the botany wing of which was opened in 1927. The building, modern in construction and equipment, includes laboratories for the introductory course and for more advanced courses in zoology and physiology; lecture rooms; small private laboratories for the staff; department offices; adequate storage space. Among the features of special interest which contribute to the convenience and teaching value of the new building the following may be mentioned: room for giving new courses long postponed; a departmental library, a memorial to Miss Caroline B. Thompson, a former member of the department; a demonstration room for the exhibition of illustrative material for the elementary course; a museum for the display of collections long kept in storage; a small greenhouse; a vivarium including mammal rooms with out-of-door runs, turtle pools, and frog tanks, fresh and salt water aquaria, Daphnia tanks. Mr. Kitson, of the State Fish Commission, has given to the department between three and four hundred fresh water fishes including pickerel, sun fish, speckled trout and pout. As soon as the salt water has been installed Mr. O'Brien, of the South Boston Aquarium, has promised the department salt water forms. A tame skunk, the gift of Benson's Animal Farm, Hudson, N. H., occupies one of the mammal rooms; a well-arranged monkey room still awaits an occupant. The vivarium not only serves as quarters for guinea pigs and rats used in dietary experiments, etc., but it will, it is hoped, stimulate in students and staff an interest in the natural history side of biology.

IT is planned to erect for the Forest Products Laboratory of the University of Wisconsin, at a cost of $900,000, a building to provide facilities for every known technical test of wood in all stages of its transformation from logs to paper and turpentine. The building, which will be U-shaped, about 275 feet long and for which ground already has been broken, will be six stories high, with 175,000 square feet of floor space. It will stand on a ten-acre site overlooking Lake Mendota at Madison. It is hoped that the building will be completed in August, 1932. Six floors at one end of the building will be used as pulp and paper research laboratories. Provision is made for a large timber preservation laboratory, a wood fermentation unit, fractionating stills, a general section of wood chemistry, wood glueing, painting, finishing and fireproofing laboratories, and facilities for the study of wood fungi and insect pests. A railroad siding, a power plant of 630 boiler horsepower, and a number of service elevators, hoists and monorails will be required. The laboratory was established in 1910 and has occupied buildings owned by the University of Wisconsin. The work has been carried on for several years by a staff of two hundred members and the laboratory has outgrown its present quarters. The state appropriation has recently been doubled. The land on which the new building will stand was given by the regents of the University of Wisconsin.

ACCORDING to the *Experiment Station Record* the Minnesota State Legislature has made provision for increased facilities for both field crop and horticultural plant breeding investigations in the Agricultural Experiment Station of the University of Minnesota. An appropriation of $30,000 was made for the erection and equipment of a farm crops field house at University Farm. This will be used for the curing and storing of nursery and increase stocks and will

contain weighing, drying and preparation rooms and facilities for cleaning and storing seed stocks of various kinds. For the fruit farm near Zumbra Heights in the Lake Minnetonka district, $9,000 was appropriated for the purchase of additional land and $13,500 for an office building and laboratory. Nearly all the investigations in fruit crop breeding are conducted at this farm, and the laboratory will provide much-needed facilities and greatly expedite the making of records and the interpretation of results.

DISCUSSION

CYCLONE AND ANTI-CYCLONE

IN some recent letters, published[1] and personal, Sir Napier Shaw suggests that we might with profit employ the terms *"air-sink"* and *"air dump"* for cyclone and anticyclone. Both of the last-named have done honorable service, and it will be long before they are eradicated from conventional usage in all treatises on airgraphics. But even as we are eliminating the almost unpronounceable word meteorology, so we may gradually dispense with terms that have outlived their usefulness. Cyclone came to us from Piddington, with the Greek κυκλος or coil of a snake, and anti-cyclone from Francis Galton, as the opposite of an uprising, rotary wind structure. It would now seem that we have unconsciously overstressed the importance of the circulatory air flow in a depression or cyclone; and so neglected the scooping-out or removal of air on the one hand and the heaping-up or cumulative effect on the other, which is so aptly pictured as a *dump*. This overstressing of the "low" as shown by the surface air flow and a positive insistence upon the fundamental physical relation that air flow is initiated by pressure, and pressure only, has resulted in missing a most important factor in the formation of areas of high and low pressure.

To quote Sir Napier Shaw:

> So pressure-gradient comes to be the mere index of the response of an air current to the centrifugal force of the earth's rotation aided or counteracted by any local curvature of the air's path.

Here then we come to a new point of view, as explaining the origin, also maintenance, of highs and lows, and this is of importance in forecasting the weather, and an understanding of the daily maps. Cyclone and anticyclone are really created and maintained by the winds of the straight isobars that lie between them. To quote further from Sir Napier

> The high and the low are mere incidents of the relative motion of the air currents of different directions. In the northern hemisphere wherever the passing currents keep the English rule of the road, with opposing traffic on the right, high pressure (and generally fine weather) between them is the inevitable consequence; but wherever the atmosphere adopts the continental rule of keeping the opposing traffic on the left, there a "low" between them is equally inevitable.

This fundamental law in forecasting we have recognized for some years at Blue Hill Observatory, and may be expressed briefly as, "An air flow from northwest, north or northeast, in advance of a flow of warm, moist air from south or southwest, is less likely to give precipitation and form a depression than when the southerly air flow is in advance of a dry, cold flow from the north." In keeping with the new point of view, we should perhaps mark storm paths, not from the loci of minimum pressure but from the points of wind conflict.

Much more could be said concerning an automatic balance between wind velocity and gradient under the influence of the earth's rotation; but it must suffice for the present to call attention to this shifting of attention from pressure minima to air-flow effects as the really important dynamical agents.

Sir Napier has also calculated the energy of the horizontal motion of a 100 meter layer of air, in thickness, with pressure interval of 2 kilobars as approximately 26,000 kilowatt-hours, varying with height and latitude.

ALEXANDER MCADIE

HAMPTON, VA.

[1] *Nature*, June 27, 1931, "Potential Temperature and the Stratosphere"; August 8, 1931, "The Energy of Horizontal Atmospheric Motion."

THE UNCERTAINTY PRINCIPLE

IN his note on "The Uncertainty Principle and Free Will" published in SCIENCE for August 14 (p. 172), Professor A. H. Compton seems to overlook the important distinction between a thing which is *indeterminable* and one which is *indeterminate*. No one can predict with accuracy and certainty what the weather will be to-morrow, to say nothing of predicting what it will be a week or a month hence. But I think no scientific man would claim that because the weather is indeterminable it is indeterminate—that the weather to-morrow will not depend, inevitably, on conditions which exist to-day.

It may be an "even chance" whether the photon of which Professor Compton writes will enter one or the other of two photoelectric cells, but it is illogical to suppose, for that reason, that the conduct of the photon is not determined by complex conditions of such a character that prediction is impossible. The fact that so minute an event may produce tremendous