Minnesota, Mississippi, Montana, Nebraska, New York, North Dakota, Texas and Vermont also joined in the petition for review.

NATIONAL RESEARCH FELLOWSHIPS IN THE BIOLOGICAL SCIENCES

NATIONAL RESEARCH fellowships in the biological sciences (agriculture, forestry, botany, zoology, anthropology and psychology), are as usual to be awarded in 1933 by the National Research Council.

These fellowships are administered by a board appointed by the National Research Council. They are for study and research in America or abroad, and are open to citizens of both sexes of the United States and Canada who possess a Ph.D. degree or its equivalent. The purpose of these fellowships is the promotion of fundamental research through development of thoroughly trained investigators. The present policy of the board of administration is to restrict appointment to those applicants in the early stages of a research career who have demonstrated a high order of ability and who give promise of developing individual judgments and viewpoints in investigative work.

The basic stipends per annum are $1,620 for unmarried fellows and $2,070 for married fellows, in America; or $1,620 and $2,160, respectively, with additional travel allowance, for fellows appointed to study in Europe. Awards are made for one year, but fellowships may be renewed. Applications for 1933–34 must be in the hands of the fellowship board not later than March 1, 1933. Appointments will be made about May 1.

The fellowships are not granted to any institution or university, but the choice of place to work is left to the fellow, subject to the approval of the fellowship board. The appointments are for full time and no other remunerative or routine work is permitted.

For further information address: Chairman, Board of National Research Fellowships in the Biological Sciences, the National Research Council, Washington, D. C.

THE HERSEY PROFESSORSHIP OF THE THEORY AND PRACTICE OF PHYSIC AT HARVARD UNIVERSITY

A MEETING celebrating the 150th anniversary of the founding of the Hersey Professorship of the Theory and Practice of Physic, one of the first three professorships in medicine established at the university, was held on December 20, at the Harvard Medical School.

The professorship was established on December 24, 1782. In the 150 years since that time, it has had seven holders. The first incumbent was Benjamin Waterhouse, who held the post from 1782 to 1812. His successors have been James Jackson, 1812–1836; John Ware, 1836–1859; George C. Shattuck, 1859–1873; Francis Minot, 1873–1891; Reginald Heber Fitz, 1892–1908, and Henry A. Christian, who was appointed in 1908.

The speakers at the meeting were Dr. Christian, the present holder of the professorship, and descendants of his six predecessors. Five of these six descendants of the former professors are themselves now members of the teaching staff at the Medical School. The program, in addition to Dr. Christian's address, was as follows:

"Benjamin Waterhouse and the Introduction of Vaccination into America," by his great-great-granddaughter, Margaret Thayer Lancaster.

"James Jackson as Professor of Medicine," by his great-grandson, Dr. George R. Minot, professor of medicine.

"John Ware, the Family Physician," by his grandson, Dr. Robert M. Green, assistant professor of applied anatomy.

"George Cheyne Shattuck and his Medical Contributions," by his grandson, Dr. George Cheever Shattuck, assistant professor of tropical medicine.

"Francis Minot and Hemorrhage in the Newborn," by his grandson, Dr. Francis Minot Rackemann, instructor in medicine.

"Reginald Heber Fitz and Appendicitis," by his son, Dr. Reginald Fitz, associate professor of medicine.

SCIENTIFIC NOTES AND NEWS

IN view of the death of Dr. Louis W. Austin in July, 1932, Professor A. E. Kennelly has been elected to the presidency of the International Scientific Radio Union (Union Radio Scientifique Internationale) to succeed the late General Gustave A. Ferrié.

DEAN ANDREY A. POTTER, of the School of Engineering at Purdue University, was elected president of the American Society of Mechanical Engineers at the recent New York meeting.

THE Paul Ehrlich Foundation of Germany has awarded its gold medal to Dr. Oswald T. Avery, of the Hospital of The Rockefeller Institute for Medical Research, New York, and its silver medal to Dr. Michael Heidelberger, formerly of the Hospital of The Rockefeller Institute for Medical Research and now of the Medical Department of the Presbyterian Hospital and associate professor of biochemistry of the College of Physicians and Surgeons, Columbia University, for their "epoch-making chemo-immunological discoveries."

THE Carmalt lecture at Yale University has been postponed owing to the indisposition of Dr. William H. Welch, who was expected to speak on December 16 on "Nathan Smith and the Differentiation of Typhoid Fever."

THE trustees of Stanford University have extended until March 4, 1933, the leave of absence of President Ray Lyman Wilbur, Secretary of the Interior. Before becoming president of Stanford University Dr. Wilbur was professor of medicine and dean of the medical school.

COLONEL HERBERT ALEXANDER BRUCE, formerly professor of surgery at the University of Toronto, known for his work on cancer, has been appointed lieutenant governor of Ontario.

AT the recent meeting of the American Society of Tropical Medicine held in Birmingham, Alabama, on November 18, the following honorary members were elected: Sir Henry S. Wellcome and Dr. C. Morley Wenyon, Wellcome Bureau of Scientific Research, London; Professor Dr. Friedrich Fülleborn, Institut für Schiffs- und Tropenkrankheiten, Hamburg; Dr. Charles Wardell Stiles, Washington, D. C., and Winter Park, Florida; Dr. William S. Thayer (who has since died), the Johns Hopkins University, and Dr. Frederick G. Novy, University of Michigan.

SIR ARTHUR WILLIAM HILL, director of Kew Gardens, formerly scholar and fellow of King's College, has been elected to an honorary fellowship of the college.

PROFESSOR ADOLF BARTH, formerly director of the Clinic for Diseases of the Throat, Nose and Ear at Leipzig, celebrated his eightieth birthday on November 26.

SIR JAMES CRICHTON-BROWNE, London, known for his work on mental and nervous diseases, celebrated his ninety-second birthday on November 29.

M. W. STIRLING, chief of the Bureau of American Ethnology, has been elected a fellow of the Royal Geographical Society, London.

DR. ARTHUR F. BENTON, professor of chemistry at the University of Virginia, addressed on December 1 a meeting of the Virginia Chapter of Sigma Xi. His subject was "The Mechanism of Catalyzed Chemical Reactions." Dr. Benton and Dr. T. A. White won the president and visitors' research prize of the University of Virginia for 1932 for their investigations in this field of chemistry.

DR. NORRIS W. RAKESTRAW, professor of chemistry in Brown University, has been elected secretary of the Division of Chemical Education of the American Chemical Society in succession to Dr. Ross A. Baker, professor of chemistry in the College of the City of New York.

AT the regular meeting of the Rittenhouse Astronomical Society of Philadelphia, held on December 13 at The Franklin Institute, the following officers were elected for the year 1933: James Stokley, associate director, the Franklin Institute Museum, *president;* Professor Wm. H. Barton, director, the Hyatt Observatory, Pennsylvania Military College, *vice-president;* A. Clyde Schock, Philadelphia Central High School, *secretary;* S. W. Johnson, Swarthmore, Pennsylvania, *treasurer,* and Dr. J. T. Rorer, Wm. Penn High School, member-at-large of the Board of Governors. The society adopted a new constitution providing for active and associate members and for the admission of women.

THE following officers and new members of council of the London Mathematical Society have been elected for the session 1932–33: *President,* Professor A. C. Dixon; *Vice-presidents,* Professor S. Chapman, Professor H. Levy, Mr. T. L. Wren; *Treasurer,* Dr. A. E. Western; *Librarian,* Professor H. Hilton; *Secretaries,* Professor G. N. Watson, F. P. White; *New Members of the Council,* Professor J. C. Burkill, W. L. Ferrar, Professor E. A. Milne, Professor G. F. J. Temple, Professor E. C. Titchmarsh.

C. FORSTER COOPER, of Trinity Hall, has been appointed to the newly established readership in vertebrate zoology at the University of Cambridge, as from October 1, 1932.

DR. V. A. TIEDJENS, research specialist in horticulture at the New Jersey Experiment Station, has accepted a position as technical adviser to Yoder Brothers, greenhouse flower and vegetable growers at Barberton, Ohio. He will devote his time to the study of physiological problems with flowers and vegetables.

THE Calco Chemical Company, of Bound Brook, New Jersey, has established a grant of $750 to be devoted to research in water chemistry and has awarded it to W. E. Sansbury, graduate student in chemistry at the University of Florida. Mr. Sansbury will continue a study begun during the past year under the direction of A. P. Black, of that institution, on the use of ferric salts as coagulants.

COLONEL HUGH MILLER has resigned as professor of civil engineering at Union College, Schenectady. He will continue to teach during the present year, but will receive a year's leave beginning next June. He plans to make a study of engineering education in Europe under the auspices of the Institute of International Education during his leave.

DR. CORBIN T. EDDY, associate professor of metal-

lurgy at the Michigan College of Mining and Technology, Houghton, will sail on January 6 for Europe, where he will confer and study with leading students of dilatometry. He will work with Dr. Hans Esser at St. Etienne, France, and in the laboratory of M. Pierre Chevenard at the steel works in Imphy.

DR. S. C. BROOKS, professor of zoology at the University of California, Berkeley, is engaged in research in Tahiti, having been granted leave of absence until the middle of January.

DR. M. C. RAYNER, professor of botany at Bedford College, University of London, is visiting research institutions in the southwestern United States. During her visit she is a guest in the laboratory of Dr. H. S. Reed at the Citrus Station of the University of California at Riverside, where she is investigating the mycorrhizal associations of some types of plants in southern California.

PROFESSOR ANTON J. CARLSON, professor of physiology at the University of Chicago, gave the first Herbert Swift Carter memorial lecture on December 12 at the School of Medicine of Columbia University. Dr. Carter, who was known for his work on the digestive tract, was a professor in the school and a physician in the Presbyterian Hospital.

PROFESSOR DOUGLAS JOHNSON addressed the District of Columbia Chapter of the Society of Sigma Xi, November 29, on "Some Problems in Earth History." The preceding evening he led a discussion by members of the Pick and Hammer Club of the U. S. Geological Survey on "Problems of Marine Level Correlation."

DR. WM. CHARLES WHITE delivered the annual lecture of the Minnesota Trudeau Medical Society on December 6. The subject of his address was "Modern Progress in Tuberculosis Research."

DR. ALFRED C. LANE, head of the department of geology and mineralogy at Tufts College, addressed the Royal Canadian Institute at Toronto on December 10 on "The Authority of Science."

DR. PAUL R. HEYL, of the U. S. Bureau of Standards, delivered an address entitled "Romance or Science?" before the Philosophical Society of Washington on December 15.

DR. CHARLES G. KING, professor of chemistry at the University of Pittsburgh, lectured under the auspices of the Sigma Xi Club of the University of Buffalo on December 8. His subject was "The Antiscorbutic Vitamin."

MARKUS REINER, visiting research professor of Lafayette College, and engineer, Department of Public Works, British Government in Palestine, is giving a series of lectures on mathematical rheology at the John C. Green School of Engineering, Princeton University.

DR. JOSEPH L. DONNELLY, research associate in the physiological laboratory of the University of Cincinnati, has been given a grant by the Committee on Scientific Research of the American Medical Association to aid him in the prosecution of his studies on the physico-chemical changes incident to various coagulations.

AT its recent meeting in Richmond, the Research Committee of the Virginia Academy of Science made grants in aid of research to the following persons: Dr. Jesse W. Beams, physics, University of Virginia; Dr. J. C. Forbes, biochemistry, Medical College of Virginia; Dr. J. M. McGinnis, psychology, Hollins College; Dr. Carl C. Speidel, anatomy, University of Virginia; Dr. W. L. Threlkeld, chemistry, Virginia Polytechnic Institute; Major N. Beverley Tucker, chemistry, Virginia Military Institute; Dr. I. A. Updike, chemistry, Randolph-Macon College, and Mr. John B. Lewis for the Virginia Society of Ornithologists.

PREVIOUS awards from the Elizabeth Thompson Science Fund were reported in SCIENCE on March 15 and earlier. On May 27 the following awards were made: To Professor Everett P. Davis, University of Virginia, $207 to purchase a make and break type of light control together with the necessary mechanical features of operating a shutter in the light path; to Miss Madeleine P. Grant, Smith College, $200 for aid in completing studies dealing with the mechanism of secretion in the thyroid gland; to Mr. S. Sambursky, Institute of Physics, The Hebrew University, Jerusalem, $237 for aid in purchasing a Moll microphotometer to be used for measurement of the intensity of spectral lines in various light sources and under different conditions; to Professor S. W. Britton, University of Virginia, $100 for the purchase of chemicals and other supplies necessary in his study of the function of the adrenal glands. The trustees of the Elizabeth Thompson Science Fund meet ordinarily during the last ten days of the months of February, May and November. Applications for grants should be sent well in advance of the meeting to the secretary of the fund, Dr. Edwin B. Wilson, 55 Van Dyke St., Boston, Massachusetts.

IT is stated in *Nature* that the annual congress of the British Institute of Radiology was held in London from December 7 to 9, under the presidency of Professor F. L. Hopwood. The congress was officially opened by Sir George Newman. An exhibition of x-ray apparatus was organized by the British x-ray industry. The thirteenth Mackenzie Davidson memorial lecture was delivered by Dr. J. Chadwick on "The Neutron" and the fifteenth Sylvanus Thompson

memorial lecture by the Right Honorable Viscount Lee of Fareham on "Radium as a Therapeutic Agent —the Case for National Control."

PROTECTION for the great scenic Wawona Highway in Yosemite National Park was assured when President Hoover signed a proclamation on August 13 authorizing the addition of certain public and private lands to the park area. The proclamation covers approximately 8,785 acres, of which 5,061 acres are public domain and 3,724 acres are in private ownership, subject to all valid existing rights. Half of the purchase price of the private holdings along the road most important to its proper protection has been donated to the Government, and the Department of the Interior has been authorized by Congress to match this donation with federal funds. The Wawona Highway, which is now open to public use with the exception of the tunnel section through Turtleback Dome, runs from the south end of the Yosemite Valley to Mariposa Grove. Though it originates and ends within the park boundaries, the roadway runs for a considerable distance east of Mariposa Grove outside the park limits. The new boundary authorized by the President will bring this important highway entirely within the park boundaries, add a highly scenic area to the park, and greatly improve its boundary line from an administrative angle. It will increase the total area of the park to more than three quarters of a million acres. The Wawona tunnel, 4,230 feet long and regarded as a great engineering achievement, is 95 per cent. completed. Under the Emergency Relief Act of 1932 an allotment of $251,000 has been made to this project for permanent surfacing. This work will shortly be under way, and by next season a hard-surface road between Yosemite Valley and Mariposa Grove will be available to motorists. The approach road from Fresno to the new Mariposa Grove entrance is also being greatly improved with state and forest highway funds.

MEMBERS of the American Chemical Society have received from its secretary a letter dated November 21, asking their individual cooperation in maintaining the society at least at its present membership during 1933. Among the many letters received in reply is one from the president of the society, Dr. L. V. Redman, which is printed in *Industrial and Engineering Chemistry*. Dr. Redman writes in part: "I was very happy to receive your letter of November 21, urging the members of the society to see that the society did not suffer a contraction in 1933. I can hardly express to you the satisfaction which I have felt in the fine showing of the American Chemical Society in this year 1932—doubtless the worst year of the depression which we will have. We are at the bottom and beginning to turn the corner upward, but as you point out, it is just possible that we, as a society, may lag through 1933 unless there is every effort put forward by individual members to maintain the quality and number of members in the society. Without any doubt American Chemical Society journals are the best value of any commodity sold in the world. I know of no $15 which can bring such a record of results to a man's desk as does his membership in the American Chemical Society, and it would be absolutely unbelievable if it were not a fact. Any modern man who even dares to think that he is chemical in his outlook and hesitates about giving $15 for the journals is certainly not worthy to be called a chemist, or even a man who sympathizes with chemistry. If any man has even a mild interest in chemistry he ought to be willing to pay $15 to get so complete a record of the world's chemical work per year. At first I hesitated to say the world, and yet when you consider how complete our abstracts are, it is not an exaggeration."

DISCUSSION

THE ANCESTRY OF ECHINI

DURING the past three years a discussion has been going on which, while primarily of interest to students of Echinoderms, is really of great importance to all who are concerned with problems of phylogeny or the principles of evolution. For this reason, I beg for a little space in the columns of SCIENCE in which to call attention to the matter.

For many years students of Echinoderms and paleontologists in general have regarded the Ordovician fossil Bothriocidaris as the ancestor, or at least near the ancestral stock of the Echini. Recently, however, Mortensen, the eminent Danish zoologist and one of the foremost authorities on Echini, has decided to the contrary.[1] He has put forth the proposition that Bothriocidaris "can not be considered as an Echinoid at all" (p. 109), but "must be included in the class of the Cystoidea, not in that of the Echinoidea" (p. 111). He reached this conclusion after a critical study of seven specimens of Bothriocidaris, all the material available. It should be noted that Dr. Mortensen frankly advocates the hypothesis that primitive echinoids had pluriserial interambulacra, not the monoserial arrangement found in Bothriocidaris.

Naturally, so revolutionary a suggestion aroused

[1] *Vid. Med.*, 86: pp. 93–122, 1928.