of Modular Functions and Theorems on Partitions" at a joint session of Section A, the Mathematical Society and the Mathematical Association. At the Mosque at 11:00 A.M., on Wednesday, Professor R. C. Archibald, of Brown University, will deliver his retiring address as vice-president and chairman of Section L. He will speak on "Mathematicians, and Poetry and Drama."

AWARD OF THE PENROSE MEDAL TO PROFESSOR LAWSON

THE Penrose Medal, the highest honor of the Geological Society of America, has been awarded to Dr. Andrew Cowper Lawson, professor emeritus of geology and mineralogy at the University of California, "for eminent research in pure geology, and outstanding original contributions and achievements which mark a decided advance in the science of geology."

Dr. Lawson, authority on earthquake phenomena and continental border movements, is the tenth recipient of the medal since its founding in 1927 by the late Dr. R. A. F. Penrose, Jr., of Philadelphia. Presentation will be made at a dinner at the Waldorf-Astoria Hotel, New York City, on December 30 during the semi-centennial meeting of the society.

Engaged in many different phases of research in geology since 1882, Dr. Lawson has studied and published reports on numerous regions of the United States and Canada. After the great California earthquake in 1906 he organized and directed investigations in seismology, advancing the science of predicting earthquakes. He has recently devoted much attention to fundamental theories concerning the nature and process of certain types of earth movements, and is author of a series of papers on the applications and implication of the theory of isostasy, a subject involving the theoretical condition of equilibrium which the earth's surface assumes under gravitation. He has been on the faculty of the University of California for forty-eight years.

Dr. Lawson was born in Anstruther, Scotland, on July 25, 1861. He was graduated from the University of Toronto in 1883. He took the master of arts degree at Toronto in 1885, and the doctor's degree at the Johns Hopkins University in 1888. Harvard University conferred the honorary degree of science upon him in 1936, the University of Toronto having similarly honored him in 1923. He received the honorary degree of doctor of laws from the University of California in 1934.

He became assistant professor of mineralogy and geology at the University of California in 1890, having been on the Canadian Geological Survey eight years. In 1892 he was named associate professor, and in 1899 full professor, continuing until his retirement from active duty in 1928. He was dean of the College of Mining from 1914 to 1918. Besides being chairman of the California State Earthquake Committee in 1906, he was a member of the U. S. Assay Commission in 1916; chairman of the Division of Geology and Geography of the National Research Council in 1923–24, and delegate to the International Geological Congress in 1888 in London, 1897 in St. Petersburg, 1913 in Toronto and 1928 in Madrid.

Dr. Lawson was president of the Geological Society in 1926, vice-president in 1908, chairman of the Cordilleran Section from 1906 to 1912 and secretary of the same section from 1899 to 1906. He was president of the Seismological Society of America in 1909. He is also a member of the American Association for the Advancement of Science, the American Institute of Mining and Metallurgical Engineers, the American Academy of Arts and Sciences, the American Philosophical Society and the National Academy of Sciences.

The award committee, in addition to Dr. Vaughan, was composed of Professors Nevin M. Fenneman, of the University of Cincinnati; Douglas Johnson, of Columbia University; Donald H. McLaughlin, of Harvard University; Adolph Knopf, of Yale University; John P. Buwalda, of the California Institute of Technology, and James Gilluly, of the University of California at Los Angeles.

Previous recipients of the medal have been: Thomas C. Chamberlin, 1927; Jakob J. Sederholm, 1928; Francois A. A. Lacroix, 1930; William M. Davis, 1931; Edward O. Ulrich, 1932; Waldemar Lindgren, 1933; Charles Schuchert, 1934; Reginald A. Daly, 1935, and Arthur P. Coleman, 1936. No medal was awarded in 1929 and 1937.

SCIENTIFIC NOTES AND NEWS

THE Nobel prize in physics has been awarded to Professor Enrico Fermi, of the University of Rome, "in recognition of his discovery of new elementary radioactive substances engendered by irradiation of neutrons." It is announced that Nobel prizes for physiology and medicine and for chemistry will not be awarded this year.

THE following awards of medals have been made by the President and Council of the Royal Society, London: The Copley Medal to Professor Niels Bohr, For.Mem.R.S., in recognition of his distinguished work in theoretical physics and particularly in the development of the quantum theory of atomic structure. The Rumford Medal, as announced in SCIENCE

last week, to Professor R. W. Wood, For.Mem.R.S., in recognition of his distinguished work and discoveries in many branches of physical optics. The Davy Medal to Professor G. Barger, F.R.S., in recognition of his distinguished researches on alkaloids and other natural products. The Darwin Medal to Professor F. O. Bower, F.R.S., in recognition of his work of acknowledged distinction in the field in which Darwin himself labored. The Hughes Medal, awarded jointly to Dr. J. D. Cockcroft and Dr. E. T. S. Walton, in recognition of their discovery that nuclei could be disintegrated by artificially produced bombarding particles.

DR. IRVIN ABELL, of Louisville, president of the American Medical Association, received on November 5 the Laetare Medal, awarded annually by the University of Notre Dame to an outstanding Catholic layman.

THE Norman Medal of the American Society of Civil Engineers has been awarded to Professor Hunter Rouse, of the California Institute of Technology, for his work on the mechanics of fluid turbulence.

ON the occasion of the fiftieth anniversary of Goucher College, Baltimore, the degree of doctor of laws was conferred on Dr. Margaret Reed Lewis, of the department of embryology of the Carnegie Institution at the Johns Hopkins University; on Dr. Madge Thurlow Macklin, of the Medical School of the University of Western Ontario, and on Dr. Florence Barbara Seibert, of the Henry Phipps Institute of the University of Pennsylvania.

DR. C. L. HUSKINS, professor of genetics at McGill University, has been granted leave of absence for the autumn term to enable him to become visiting professor of botany at the University of California. He will take over the courses in cytology during the absence of Professor T. H. Goodspeed, now directing a botanical expedition into South America. Dr. R. M. Love, of the Cereal Division, Central Experimental Farm, Ottawa, has been appointed sessional lecturer in genetics at McGill University. Dr. Sheldon C. Reed has been made acting chairman of the department.

DR. PETER GRAY, lecturer in embryology at the University of Edinburgh, has been appointed associate professor of biology at the University of Pittsburgh. He will take up the work at the beginning of the next semester.

FOLLOWING a year spent at the University of Oxford on a Guggenheim fellowship, Dr. Lawrence Olin Brockway has been appointed assistant professor of chemistry at the University of Michigan.

DR. HARRY R. DESILVA, lecturer in psychology at Harvard University, has been appointed research associate in psychology at Yale University. He will have charge of a program of Automobile Driver Research in the Institute of Human Relations. Research on drivers will be carried out by a staff in cooperation with neighboring motor vehicle departments. The work is made possible by a grant to Yale University from the recently established Esso Safety Foundation.

DR. G. L. FREEMAN has been promoted to an associate professorship of psychology at Northwestern University. James Egan and Louis Krasno have received research appointments in the Laboratory of Psychophysiology.

DR. H. S. W. MASSEY has been appointed from January 1, 1939, to the Goldsmid chair of mathematics tenable at University College, London. Since 1933 he has been lecturer in mathematical physics at Queen's University, Belfast.

DR. ROBERT K. ENDERS, of the Edward Martin Biological Laboratory of Swarthmore College, has been promoted to an associate professorship and has been granted leave for the year 1938–1939. He will be stationed at Swarthmore College, where he will continue, as biologist of the Bureau of Biological Survey, to work on the reproductive cycle of the mink. This project is supported by a grant from the Bankhead-Jones Special Research Fund.

CLARENCE BEAMAN SMITH, assistant director of extension work and chief of the Division of Cooperative Extension of the U. S. Department of Agriculture, retired on October 31. He had been in the department for forty-two years, thirty of which were in connection with extension work.

JAMES R. KILLIAN, JR., editor of the *Technology Review,* has been appointed to fill the newly established post of executive assistant to the president of the Massachusetts Institute of Technology, Dr. Karl T. Compton. Mr. Killian will participate in the administration of the institute and will take over some of the responsibilities which have been carried by Vice-president Vannevar Bush, who on the first of the year becomes president of the Carnegie Institution of Washington. He will also be chairman of the Board of Publications of the Technology Press. Mr. Killian was for three years secretary of the board of publications of the American Chemical Society.

THE Lord President of the Council of the British Department of Scientific and Industrial Research has appointed Dr. G. Stafford Whitby, at present director of the division of chemistry of the National Research Council, Canada, formerly professor of chemistry at McGill University, to be director of the Chemical Research Laboratory, Teddington, in succession to Sir Gilbert Morgan, who retired on September 10. Dr. Whitby is expected to take up the work early in 1939.

A GRANT of $600 has been awarded to Dr. Frank J. Studer, of the department of physics at Union College, by the American Institute of Electrical Engineers for fundamental research on the physics of resistance welding.

DR. ROBERT L. STARKEY, of the New Jersey Agricultural Experiment Station, has returned after a year's work in the laboratory of Professor Kluyver at Delft, Holland.

J. C. HENING, associate in dairy research at the New York State Experiment Station at Geneva, has returned from a six-months' leave, during which he worked at the Dairy Research Institute of the University of Reading, England.

PROFESSOR ALBERT EINSTEIN will be chairman of the Advisory Committee on Science of the New York World's Fair, which will cooperate in preparing a central exhibit of science. Other members of the committee are: Dr. Robert Chambers, of New York University, zoology; Dr. Karl T. Compton, president of Massachusetts Institute of Technology, physics; Gano Dunn, of J. G. White Engineering Corporation and president of Cooper Union, industrial research; Dr. Frank B. Jewett, vice-president of the American Telephone and Telegraph Company, industry; Waldemar Kaempffert, *The New York Times*, the public; Paul B. Mann, Evander Childs High School, New York City, children's interests; Professor R. H. McKee, Columbia University, chemistry; Charles F. Roth, manager of the Grand Central Palace, New York City, industrial exposition technique; Professor Edmund W. Sinnott, Columbia University, botany, and Dr. Gerald Wendt, director of science at the fair, who will act as secretary to the committee.

PROFESSOR NIELS BOHR, of the University of Copenhagen, will lecture at the Institute for Advanced Study at Princeton. He plans to give one formal lecture a week from January 17 to May 1, under the title, "Elements and Principles of Atomic Theory."

DR. RAYMOND PEARL, of the School of Hygiene and Public Health of the Johns Hopkins University, was in residence at Indiana University from September 27 to November 15. He conducted a number of seminars and gave a series of five public lectures on "Man the Animal." This was the first series of lectures under the Patten Foundation established in 1936.

DR. ARNO B. LUCKHARDT, professor of physiology at the University of Chicago, gave the annual N. W. Jones lectures on November 2, 3 and 4, at the University of Oregon Medical School. His subjects were: "Dr. Wm. Beaumont and the Beaumont Memorabilia of the University of Chicago"; "Academic or Unsuccessful Research"; and "A Neglected Chapter in Anatomic Illustration and Instruction."

DR. GEORGE SARTON, lecturer at Harvard University on the history of science and editor of *Isis* and *Osiris*, journals of the history of science, lectured on November 9 on "The Function of Academies—Past and Present," before the American Academy of Arts and Sciences, Boston.

DR. WENDELL MEREDITH STANLEY, of the department of animal and plant pathology of the Rockefeller Institute for Medical Research at Princeton, N. J., gave on November 14 an address before the New York Academy of Sciences entitled "The Nature of Viruses."

DR. K. LARK-HOROVITZ writes: "In my recent review on new text-books in physics (SCIENCE, October 14, page 354), I discussed the excellent new text of R. A. Millikan and collaborators. Unfortunately I quoted the book as Millikan and Roller. I hasten to correct this mistake, which has been pointed out to me by several colleagues—the actual authors of this book are R. A. Millikan, D. Roller and E. C. Watson."

A PRESS dispatch from San Francisco, Calif., dated November 10, reports that California voters administered an overwhelming defeat to a state proposition which would have prohibited the use of impounded animals for medical purposes. With most of the precincts counted, the vote was 560,795 favoring the proposition, and 1,164,097 against it.

DR. ELLIOTT C. CUTLER, Moseley professor of surgery, Harvard Medical School, and chairman of the American Medical Association Committee for Protection of Medical Research, writes to Science Service: "The defeat of the so-called humane pound initiative measure in California will encourage all scientific bodies, defenders of biological research, and doctors everywhere to continue their investigations for the betterment of the health of the American people. The defeat on this bill is a clear indication that the public as a whole believes in defending the frontiers of knowledge and in training doctors in technical methods in surgery through the use of animals. It is to be hoped that the recent defeat to the misguided sentimentalists in their attempt to embarrass and hinder medical research will lead people to appreciate that the promise of future improvements in public health matters and the discoveries which will better their welfare will largely depend upon the freedom with which scientists may conduct investigations."

THE National Research Council has subscribed to a table in the Stazione Zoologica di Napoli. Biologists desiring to avail themselves of the use of this table in the near future should write to the Division of Biology and Agriculture, National Research Council, Washington, D. C. The award of the table will be in the hands of a committee of the division, consisting

of the representative to the Division from the American Society of Zoologists, chairman, the president of the American Society of Zoologists, the president of the Botanical Society of America and the chairman of the Division of Biology and Agriculture, National Research Council, *ex officio*.

THE College of Medicine of the State University of Iowa announces a gift of $22,500 from the John and Mary R. Markle Foundation, to be spent over a two-year period; $12,500 of the fund will provide for a continuation of the research on inflammatory conditions of the eye in the department of ophthalmology under Dr. C. S. O'Brien, and the remainder will be used to continue the research program on blood clotting and the bleeding tendency in the department of pathology under Dr. H. P. Smith.

THE Committee on Scientific Research of the American Medical Association has recently awarded grants to Dr. Rucker Cleveland, of the department of anatomy, Vanderbilt University School of Medicine, for research on the cytology of the endometrium; to Dr. A. R. Buchanan, professor of anatomy, University of Mississippi Medical School, to be used for research on the vestibular mechanism in monkeys; to Dr. E. Spiegel, of the School of Medicine of Temple University, Philadelphia, for work on "physicochemical factors influencing the excitability of the central nervous system"; to H. D. West, associate professor of biochemistry at Meharry Medical College, Nashville, Tenn., for the continuation of his work on the synthesis of dl-threonine; to Dr. Charles F. Code, of the department of physiology of the University of Minnesota, for his work upon the histamine content of blood in normal and certain abnormal conditions; to Dr. A. Emge, of Stanford University School of Medicine, for further studies on the relation of sex hormones to tumor growth; to H. E. Carter, assistant professor of biochemistry at the University of Illinois, for the study of betaines of aminohydroxyl acids, and to Dr. Alexander Levy, for experimental work in the field of chest surgery, to be carried on in the department of surgery of the Medical School of the University of Oregon.

APPLICATIONS for the position of principal industrial toxicologist (organic compounds) in the U. S. Public Health Service, at a salary of $5,600 a year, must be on file with the U. S. Civil Service Commission at Washington, D. C., on November 28.

THE School of Mathematics of the Institute for Advanced Study each year allocates a small number of stipends to gifted young mathematicians and mathematical physicists for the purpose of enabling them to broaden their scientific outlook and to work on their research programs at Princeton in contact with the members of the institute and university faculties. Only such candidates will be considered as have already given evidence of ability in independent research comparable at least with that expected for the degree of doctor of philosophy. Applications for the academic year 1939–40 should be filed before February 1, 1939. Blanks for this purpose may be obtained from the School of Mathematics, The Institute for Advanced Study, Fine Hall, Princeton, N. J.

ANNOUNCEMENT has been made by the Finney-Howell Research Foundation, Inc., that all applications for fellowships for next year must be filed in the office of the foundation, 1211 Cathedral Street, Baltimore, Md., by January 1. Applications received after that date can not be considered for 1939 awards, which will be made on the first of March. This foundation was provided for in the will of the late Dr. George Walker, of Baltimore, for the support of "research work into the cause or causes and the treatment of cancer." The will directed that the surplus income from the assets of the foundation together with the principal sum should be expended within a period of ten years to support a number of fellowships in cancer research, each with an annual stipend of two thousand dollars, "in such universities, laboratories and other institutions, wherever situated, as may be approved by the Board of Directors." Ten such fellowships were awarded in 1938. Fellowships carrying an annual stipend of $2,000 are awarded for the period of one year, with the possibility of renewal up to three years; when deemed wise by the board of directors, special grants of limited sums may be made to support the work carried on under a fellowship.

A SIXTEEN unit display entitled "The March of Life" will make up the exhibit of the University of California Medical School at the Golden Gate International Exposition in 1939. The presentation will show what medicine and surgery have accomplished since the time of Hippocrates and, in addition, demonstrate the services rendered by the university's medical center to its own students.

DISCUSSION

A MEASURE OF THE FLIGHT CAPACITY OF GRASSHOPPERS

THAT grasshoppers have a most effective means of relieving congestion in one quarter and contributing to it in another is indicated by the results of a recent study conducted by the North Dakota Agricultural Experiment Station.

For some years it has been apparent that localized