

nomics, history and philology, engineering, medicine and surgery, agriculture, manufacturing and commerce, education and any other science of any nature or description, whether or not now known or now recognized as scientific, and may be applied to or through public or private associations, societies, or institutions, whether incorporated or not, or through one or more individuals."

Applications for grants under this indenture are considered by a committee of this academy on stated dates only. The next meeting to consider applications will be held on October 1. Applications should be made on special forms furnished by the committee. Correspondence, including requests for application blanks, should be addressed to the chairman of the Committee on the Permanent Science Fund, Professor John W. M. Bunker, Massachusetts Institute of Technology, Cambridge, Massachusetts.

Grants-in-aid from this fund recommended by the committee were announced by the academy on March 11 as follows:

To Elso S. Barghoorn, Jr., instructor in biology, Amherst College, for miscellaneous expenses of field work and laboratory study of the structural changes in submerged wood and plant remains, \$335.

To Thomas H. Bissonnette, professor of biology, Trinity College, Hartford, Conn., for expendable materials and assistance in a further study of photo-periodicity in animals, \$400.

To Bart J. Bok, associate professor of astronomy, Harvard University, for the construction of a 26-inch circular mosaic grating to be used with a 24-inch Schmidt telescope, a joint project in collaboration with Dr. R. W. Wood, of the Johns Hopkins University, \$750.

To Vernon I. Cheadle, assistant professor of botany, R. I. State College, for assistance in continuing a study of the conducting systems in the Monocotyledoneae, \$350.

To Clark Goodman, research associate, the Massachusetts Institute of Technology, for construction of equipment to be used in continuation of a study of the locus and relative concentration of elements in ores by the use of induced radio-activity, \$650.

To Cornelius S. Hurlbut, Jr., associate professor of mineralogy, Harvard University, for construction of equipment to be used in a study of refractive indices of amphibole and other minerals, \$450.

To Fred M. Uber, assistant professor of physics, Uni-

versity of Missouri, for reagents for use in study of synthesis of kojic acid by microorganisms using C^{13} as a tracer, \$425.

THE NUTRITION FOUNDATION

THE appointment of Ole Salthe, formerly consultant for the Federal Food and Drug Administration, as executive secretary of the Nutrition Foundation, Inc., organized by fifteen food manufacturers, as reported in SCIENCE for January 16, to study nutrition for the improvement of public health, has been announced. Scientific and industrial advisory committees have also been appointed. The foundation has headquarters at the Chrysler Building.

Members of the scientific advisory committee are:

Dr. F. G. Boudreau, director, Milbank Memorial Fund; Dr. C. A. Elvehjem, University of Wisconsin; Dr. Icie M. Hoobler, Children's Fund of Michigan; Dr. P. E. Howe, the Surgeon General's office, U. S. Army; Dr. E. V. McCollum, the Johns Hopkins University; Dr. L. A. Maynard, Cornell University; Dr. J. R. Murlin, the University of Rochester; Dr. Roy C. Newton, Swift and Company; Dr. Lydia J. Roberts, the University of Chicago; Dr. W. C. Rose, the University of Illinois; Dr. W. H. Sebrell, U. S. Public Health Service; Dr. Henry C. Sherman, Columbia University; Dr. F. F. Tisdall, the University of Toronto, and Dr. R. R. Williams, Bell Telephone Laboratories.

Members of the food industries advisory committee are:

Dr. Roger Adams, the University of Illinois, representing the Coca-Cola Company; H. A. Barnby, Owens-Illinois Glass Company; Dr. Frederick C. Blanck, the H. J. Heinz Company; Dr. Laurence V. Burton, "Food Industries"; Dr. Charles N. Frey, Standard Brands, Inc.; Frank L. Gunderson, the National Research Council; Dr. W. H. Harrison, the Continental Can Company; Norman F. Kennedy, the Corn Industries Research Foundation; Dr. Edward F. Kohman, the Campbell Soup Company; Donald Maveety, the National Biscuit Company; Dr. Robert W. Pilcher, the American Can Company; Dr. G. L. Poland, the United Fruit Company; Alan C. Richardson and James McConkie, the California Packing Company; Dr. E. H. Robinson, Swift and Company; Dr. James A. Tobey, the American Institute of Baking, and Lewis W. Waters, the General Foods Corporation.

SCIENTIFIC NOTES AND NEWS

THE Borden Company Prize of \$1,000 of the American Chemical Society for "outstanding research in the chemistry of milk" has been awarded for 1942 to Dr. George E. Holm, biochemist of the Bureau of Dairy Industry of the U. S. Department of Agriculture, in recognition of "his contributions to the understanding of the basic causes and the control of

oxidative deterioration of fats and oils, and to the prevention of spoilage of dairy products caused by the oxidation of milk fat." Leroy S. Palmer, professor of agricultural biochemistry at the University of Minnesota, was chairman of the committee of award, other members of which included Dr. Roy C. Newton, chief chemist of Swift and Company, Chi-

eago, and Dr. R. Adams Dutcher, head of the department of agriculture and biochemistry at Pennsylvania State College.

JOHN D. ROCKEFELLER, JR., has been awarded the medal of honor for city planning in recognition of "his unique services to professional ideals." The medal was presented to Mr. Rockefeller at his offices on March 10, together with a scroll commending his "broad vision and initiative." "They have enabled him to plan numerous civil projects, the influence of which has been inspiring to the present generation and the effect of which will shape and help to determine the constructive forces of the future." The citation was signed by the presidents of the societies making the award: Harvey Stevenson, New York Chapter, American Institute of Architects; Joseph Mathieu, Brooklyn Chapter, American Institute of Architects; Michael Rapuano, New York Chapter, American Society of Landscape Architects, and Dean G. Edwards, Metropolitan Section, American Society of Civil Engineers.

THE Joseph A. Capps Prize in medical research for 1941 has been awarded to Dr. Arnold Lazarow for his study on "Particulate Glycogen: a Submicroscopic Component of the Guinea Pig Liver Cell; its Significance in Glycogen Storage and the Regulation of Blood Sugar."

DR. DINSMORE ALTER, director of the Griffith Observatory, Los Angeles, has been awarded the degree of doctor of science by Monmouth College, Illinois.

DR. ARNO B. LUCKHARDT, professor and chairman of the department of physiology, School of Medicine, University of Chicago, has been elected an honorary member of the St. Louis Medical Society.

At the forty-seventh annual meeting on March 13 and 14 of the Michigan Academy of Science, Arts and Letters, officers were elected for the coming year as follows: *President*, H. R. Hunt, Michigan State College; and from the University of Michigan, *Vice-president*, Malcolm H. Soule; *Secretary*, Harry W. Hann; *Treasurer*, Mischa Titiev; *Editor*, Henry van der Schalie; *Librarian*, Warner G. Rice. General addresses were delivered by Dr. I. D. Scott, professor of geology at the University of Michigan and president of the academy, and by Dr. A. F. Blakeslee, of the Carnegie Institution, Cold Spring Harbor, N. Y.

DR. WILFORD ARLESS RISTEEN, Rochester, N. Y., has been appointed professor and head of the department of neurologic surgery at the University of Georgia School of Medicine, Augusta. He succeeds the late Dr. Richard Frank Slaughter.

PROFESSOR S. W. EDGECOMBE, horticulturist in the

extension staff of Iowa State College, has been appointed associate professor in plant science at the University of Manitoba.

DR. FRANK RIECKEN, of the University of Illinois, has been appointed research assistant professor of soils at Iowa State College.

A REVISION in organization has been effected throughout the University of Oklahoma by the action of the new president, Joseph A. Brandt. The titles of all department heads have been changed to chairmen, and general changes in personnel have been made correspondingly. The former heads of departments retain their professorships and salaries. In the scientific departments the new appointments are as follows: *Botany and Bacteriology* (to be called Plant Science), Dr. G. L. Cross is replaced by Dr. Milton Hopkins as chairman; *Chemistry*, Dr. Guy Y. Williams by Dr. Bruce Houston; *Physics*, Dr. H. L. Dodge by Dr. G. A. Van Lear; *Psychology*, Dr. L. B. Hoisington by Dr. M. O. Wilson; and *Zoology* (now consolidated with physiology, of which Dr. Alma J. Neill had been acting head, as the Department of Animal Biology), Dr. A. Richards by Dr. A. I. Ortenburger.

DR. HUGH H. YOUNG, editor of the *Journal of Urology*, having reached the age of seventy-one years, will retire on July 1 as professor of urology and as director of the Brady Urological Institute at the Johns Hopkins Hospital. He plans to keep an office in the Brady Institute and to devote himself to clinical research and writing.

THE council of the Zoological Society of London has temporarily suspended the position of secretary of the society, held by Professor Julian Huxley, "because of financial stringency owing to the war." Professor Huxley has been criticized in the House of Commons for opinions expressed during his visit to the United States.

DR. WILLARD C. RAPPEYE, commissioner of hospitals of New York City since October, 1940, has resigned to return to his work as dean of the College of Physicians and Surgeons of Columbia University. Dr. Rappeye, who succeeded Dr. S. S. Goldwater as commissioner, had planned to retire in January, but was persuaded by the mayor to remain in office somewhat longer.

DR. FRED L. ADAIR, Mary Campau Ryerson professor of obstetrics and gynecology and chairman of the department of the School of Medicine of the University of Chicago, has become chief of the State Division of Maternal and Child Hygiene.

THE editorship of the *Journal of Parapsychology* has been changed. For the past three years, Dr.

Gardner Murphy, of the College of the City of New York, and Dr. Bernard F. Riess, of Hunter College, have edited it. The editorship of the *Journal* now returns to Duke University, where it was first started. The new editors are Drs. J. B. Rhine, Charles E. Stuart and J. G. Pratt, with Dr. J. A. Greenwood as statistical editor.

JULIAN F. SMITH will relinquish his work as associate director of the Hooker Scientific Library at Central College, Fayette, Mo., of which Dr. Neil E. Gordon is director, to become technical librarian and editor of publications of the Institute of Gas Technology. To give him time to make the change the Institute of Gas Technology has arranged to divide his time between the two institutions for several months. He will continue later to act in an advisory capacity.

DR. GEORGE S. MYERS, professor of biology and head curator of zoological collections of Stanford University, will leave in June for a year's study and travel in Brazil, under a grant from the State Department in Washington. Dr. Myers will make his headquarters in the Museu Nacional in Rio de Janeiro, where he has been requested to present a series of lectures on Brazilian fishes and fisheries resources and to take charge of the advanced training and research of a selected group of Brazilian ichthyological students. He will also travel in different parts of the country to study fishes and fisheries industries.

THE *Journal* of the American Medical Association reports that the Second U. S. Army General Hospital Unit, consisting of fifty-five members of the staffs of the College of Physicians and Surgeons, the School of Dental and Oral Surgery and the Columbia-Presbyterian Medical Centers, Columbia University, have been called to active duty. The chief of the surgical service is Dr. W. Barclay Parsons, associate professor of clinical surgery, and the chief of the medical service is Dr. Yale Kneeland, Jr., assistant professor of medicine, both of whom are lieutenant colonels. Other members of the faculty have been granted leave of absence to enter active service with the Medical Corps of the Army and Navy.

DR. H. M. TYSDAL, agronomist, of the division of forage crops and diseases of the U. S. Department of Agriculture, and of the department of agronomy of the College of Agriculture, University of Nebraska, gave the eleventh series of Frank Azor Spragg Memorial Lectures at Michigan State College early in March. The memorial lecture proper dealt with "New Aspects of Forage Crop Improvement." The four other lectures were on related subjects.

THE seventh Leo Loeb Lecture under the annual lectureship which has been established by the Mu Chapter of the Phi Beta Pi Medical Fraternity was

delivered on March 23 by Dr. John Herr Musser, professor of medicine at Tulane University, at the Washington University School of Medicine, St. Louis. He spoke on "The Heart That is Getting Old."

THE sixtieth course of popular medical lectures of the School of Medicine of Stanford University will be given on April 3 and 17 and May 1 and 15. These are as follows: "The Blood Bank," Dr. John R. Upton; "Medical Aspects of Civilian Defense," Dr. Anthony J. J. Rourke; "Alcohol in Relation to Driving Hazards," Dr. Henry W. Newman; "Control of Venereal Disease under War Conditions," Dr. Charles W. Barnett.

DR. J. O. PERRINE, assistant vice-president of the American Telephone and Telegraph Company, gave a lecture-demonstration on March 26, entitled "The Electrical Voice," before the Lancaster Branch of the American Association for the Advancement of Science.

THE forty-second annual meeting of the American Association of Pathologists and Bacteriologists will be held at the Washington University School of Medicine, St. Louis, on April 2 and 3.

THE thirty-fifth annual meeting of the International Association of Medical Museums will be held at the Washington University School of Medicine, St. Louis, on April 1, under the presidency of William H. Feldman, Rochester, Minn.

THE thirty-seventh annual meeting of the American Association of Museums will be held at Colonial Williamsburg, Virginia, on Monday and Tuesday, May 18 and 19.

THE Pennsylvania Academy of Science will hold its eighteenth annual meeting at the Edinboro State Teachers College, Erie Co., Pa., on April 3 and 4. The Junior Academy will hold its meetings at the same time and place. Dr. A. Glenn Richards, Jr., of the University of Pennsylvania, will give the principal address. He will speak on "The Present Status of Electron Microscopy in Biology."

DURING the meetings of the Federation of Societies of Experimental Biology and Medicine, in Boston, the Boston and Cambridge Branch of the American Association of Scientific Workers is planning a threefold program of special interest to biologists and medical men. On Wednesday, April 1, at 8:00 P.M. a public lecture will be held at Littauer Center in the Harvard Yard, Cambridge. The speaker will be Dr. C. C. Little, director of the Cancer Research Laboratory at Bar Harbor, Maine, whose subject will be "The Social Implications of Cancer Research." On Friday, April 3, two meetings will be held in Room 22 at Boston

University College of Liberal Arts (corner of Boylston and Exeter Streets). In the afternoon a series of scientific films will be shown between 4:45 and 5:45. At 8:00 P.M. of the same day, again at Boston University, there will be held a symposium on "Biology and Medicine in the War." Among those participating are Dr. Maurice B. Visscher, of the department

of physiology of the University of Minnesota; Dr. Lucien Brouha, formerly of Liège, Belgium, and now of the Harvard Fatigue Laboratory; Dr. C. W. Walter, of the Harvard Medical School, and Dr. Harry Grundfest, of the Rockefeller Institute for Medical Research. All members of the federation and others in the Boston area are invited to attend.

DISCUSSION

ON THE STRIDULATIONS OF INSECTS

RECENTLY some articles have appeared on the effect of temperature on the stridulations of crickets. My interest in temperature control, stimulated by some of these reports and the presence of a very noisy insect in our back yard, prompted me to make some observations as described in the following paragraphs.

The insect was of the genus "*Oecanthus*" of the order "Orthoptera" and seemed to maintain a location of about three feet above the ground in the middle of a *Spirea* bush. A mercury thermometer was placed at the edge of the bush near the same level as the insect. The number of stridulations per

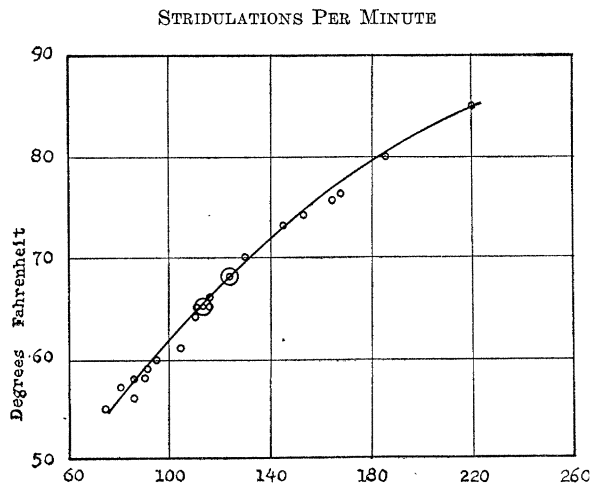


FIG. 1. Graph showing relation of stridulations of tree cricket (*Oecanthus*) to ambient temperature changes, readings taken each night from August 12 to September 10, 1941.

minute were counted manually and record made of the temperature, simultaneously. Readings were taken every day from August 12 to September 10, the temperature passing through a range of 55 degrees to 85 degrees (F) during this period. The stridulations commenced at seven P.M., and this starting period did not vary more than five minutes on successive evenings. From about seven to seven-thirty o'clock the stridulations were quite irregular with interruptions occurring every half minute. After

about seven-thirty they would proceed without interruption until the early hours of the morning. A total of 100,000 stridulations would occur on a warm night (no time out for lunch) as a fair estimate.

Data were taken at nine o'clock each evening in the interest of uniformity, as by that time the fall of temperature due to the setting of the sun had reached a point where the temperature gradient between the thermometer and the insect would be reduced to a minimum.

Observations, as shown by the graph in Fig. 1, indicate a very definite relation of periodicity of stridulation and ambient temperature. It is probable that sensitive recording apparatus would show a more uni-

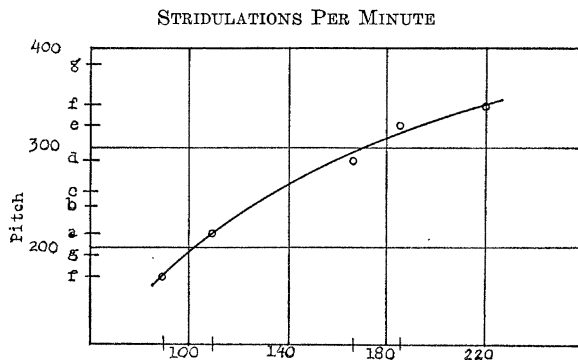


FIG. 2. Graph showing stridulations per minute in relation to pitch as compared to keys on piano. The numbers on the abscissa are vibrations per second and the keys are indicated in their approximate relation to this vibration. The keys plotted are those that came nearest to be in union with the pitch of the stridulation. (The key *c* is middle *c* on piano.)

form relation. Readings taken on different days at the same temperature were in close agreement. At 55 degrees the low limit of stridulatory power was reached, and the magnitude of the sound at this temperature was quite reduced from normal. At 54 degrees no audible sound was present. The points on the graph enclosed by circles were observations taken on a similar insect, August 23, at River Forest, Ill. The points coincide with the curve, showing a remarkable duplicity in insect life.

The stridulation seems to be made up of two move-