January 12.—"The Organization of Medical and Surgical Emergencies in San Francisco," Dr. Edmund Butler.

January 26.—"Medicine in Community Service," President Ray Lyman Wilbur.

February 9.—"Relation of Diet to Health," Dr. Agnes Fay Morgan.

February 23.—"Occupational Therapy," Mary C. Rixford.

March 9.—"The Rôle of Psychiatry in Preventive Medicine," Dr. George S. Johnson.

March 23.—"Some Contributions of Medical Science to Our Knowledge of Pain," Dr. Joseph C. Hinsey.

OFFICERS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

A FULL account of the Boston meeting of the American Association for the Advancement of Science and the scientific societies associated with it, edited by the permanent secretary, will be published in the issue of SCIENCE for February 2. Officers of the association were elected as follows:

PRESIDENT

Professor Edward L. Thorndike, Teachers College, Columbia University.

VICE-PRESIDENTS AND CHAIRMEN OF SECTIONS

A—*Mathematics.* Professor R. D. Carmichael, University of Illinois.

B—*Physics.* Professor Henry G. Gale, University of Chicago.

C—*Chemistry.* Professor Joel H. Hildebrand, University of California.

D—*Astronomy.* Professor Frederick Slocum, Wesleyan University.

E—*Geology and Geography.* Professor James B. Macelwane, St. Louis University.

F—*Zoological Sciences.* Professor George L. Streeter, Carnegie Institution.

G—*Botanical Science.* Dr. Bernard O. Dodge, New York Botanical Garden.

H—*Anthropology and Archeology.* Dr. Melville J. Herskovitz, Northwestern University.

I—*Psychology.* Professor John E. Anderson, University of Minnesota.

K—*Social and Economic Sciences.* Carl Snyder, Federal Reserve Bank, New York.

L—*Historical and Philological Sciences.* Professor Solon J. Buck, University of Pittsburgh.

M—*Engineering.* Dr. C. E. Skinner, Westinghouse Electric and Manufacturing Company, East Pittsburgh.

N—*Medical Sciences.* Dr. Cyrus C. Sturgis, University of Michigan.

O—*Agriculture.* Professor Jacob G. Lipman, Rutgers University.

Q—*Education.* Professor Guy Thomas Buswell, University of Chicago.

ELECTED MEMBERS OF THE COUNCIL

Professor F. K. Richtmyer, Cornell University.

Dr. John C. Merriam, Carnegie Institution.

MEMBERS OF THE EXECUTIVE COMMITTEE

President Karl T. Compton, Massachusetts Institute of Technology.

Professor Edwin G. Conklin, Princeton University.

TRUSTEE OF SCIENCE SERVICE

Dr. J. McKeen Cattell.

SECRETARIES OF SECTIONS

I—*Psychology.* Professor John A. McGeoch, University of Missouri.

N—*Medical Sciences.* Professor Earl Baldwin McKinley, George Washington University Medical School.

SCIENTIFIC NOTES AND NEWS

THE Rumford Medal of the American Academy of Arts and Sciences was presented to Dr. Harlow Shapley, director of the Harvard College Observatory, at a joint meeting in Boston on December 27 of the academy and the American Association for the Advancement of Science. Dr. Shapley spoke on "The Anatomy of a Disordered Universe."

PRESENTATION of the Penrose Medal to Dr. Waldemar Lindgren, head of the department of geology at the Massachusetts Institute of Technology, was made on December 29 at the annual dinner of the fellows of the Geological Society of America. Professor Edson S. Bastin, head of the department of geology at the University of Chicago, in presenting the medal to Dr. Lindgren, pointed out that Professor Lindgren had brought his adopted country into a position of leadership in the science of ore deposits.

THE William H. Nichols Medal, bestowed annually by the New York section of the American Chemical Society, has been awarded for 1934 to Dr. Henry C. Sherman, Mitchill professor of chemistry in Columbia University. The award goes to Dr. Sherman for achievement in vitamin research, particularly in its quantitative aspects.

THE eleventh annual prize of $1,000, given by the American Association for the Advancement of Science to the author of a noteworthy paper presented at the winter meeting, was awarded at Boston to Dr. Reuben L. Kahn, professor of bacteriology at the University of Michigan Medical School, for his paper "Tissue Reactions in Immunity."

DR. WILHELM HIS, professor of internal medicine at Berlin, celebrated his seventieth birthday on December 29.

DR. A. FRANKLIN SHULL, professor of zoology at the University of Michigan, was elected president of the American Society of Naturalists at the semi-centennial anniversary meeting held in Boston on December 30.

OFFICERS of the Geological Society of America for 1934 are: *President,* William H. Collins, director of the Canadian Geological Survey; *Past president,* C. K. Leith, head of the department of geology, University of Wisconsin; *Vice-presidents,* Arthur L. Day, director, Geophysical Laboratory, Carnegie Institution, Washington, D. C.; Eliot Blackwelder, head of the department of geology, Stanford University; Percy E. Raymond, professor of paleontology, Harvard University; John E. Wolff, retired professor of petrography and mineralogy, Harvard University; *Secretary,* Charles P. Berkey, head of the department of geology, Columbia University; *Treasurer,* Edward B. Mathews, head of the department of geology, the Johns Hopkins University.

THE following officers were elected at the recent meeting in New York City of the Association for Research in Nervous and Mental Diseases: Dr. Theodore H. Weisenburg, of Philadelphia, *president;* Dr. Lewellys F. Barker, of Baltimore, and Dr. Clarence A. Patten, of Philadelphia, *vice-presidents,* and Dr. Thomas K. Davis, of New York, *secretary-treasurer.*

HOWARD COONLEY has been reelected to the presidency of the American Standards Association for the year 1934. Mr. Coonley is the president of the Walworth Company, New York, and also a director of several industrial, insurance and banking organizations. F. E. Moskovics, chairman of the board of the Marmon-Herrington Company of Indianapolis, and vice-president of the American Standards Association, was also reelected for the coming year.

DR. J. HAROLD WILLIAMS, professor of education at the University of California at Los Angeles, has been elected president of the Southern California Society for Mental Hygiene.

DR. RICHARD ATKINSON STONEY, Dublin, has been elected president of the Royal Academy of Medicine of Ireland, succeeding Dr. Thomas G. Moorhead.

DR. ROLLO C. BAKER, since 1927 associate professor of anatomy at the Ohio State University College of Medicine, has been appointed chairman of the department to succeed the late Dr. Francis L. Landacre.

DR. K. S. GIBSON has been appointed chief of the colorimetry section of the optics division of the Bureau of Standards to succeed the late I. G. Priest.

DR. F. L. DULEY, professor of soils at Kansas State College, Manhattan, has been appointed regional director of the Soil Erosion Service for the Limestone Creek Watershed in Jewell, Smith and Mitchell Counties, in northern Kansas.

DR. J. M. TINLEY, associate agricultural economist in the University of California, a member of the research and teaching staff of the Giannini Foundation of Agricultural Economics, has left for Washington, D. C., to aid in the national program of the dairy section of the Agricultural Adjustment Administration.

FRED W. PADGETT, professor of petroleum chemistry at the University of Oklahoma, has resigned to accept a position with the Sun Oil Company at Marcus Hook, Pennsylvania.

IRVING E. MUSKAT, research associate, is on leave from the University of Chicago and is engaged in research in organic chemistry at the Rockefeller Institute for Medical Research.

DR. OLIVER L. FASSIG, research associate of the Blue Hill Meteorological Observatory of Harvard University, is spending the winter in San Juan, Puerto Rico, at the School of Tropical Medicine, where he is carrying on meteorological investigations—a continuation of his researches on tropical climate.

DR. ALEXANDER G. RUTHVEN, formerly professor of zoology and director of museums of the University of Michigan, and now president, sailed from New York on December 12 for Europe, where he expects to inspect the several sites at which scientific expeditions of the university are at work.

DR. TRACY I. STORER, professor of zoology at the Davis branch of the College of Agriculture of the University of California, who has been given leave of absence for the spring semester, left on December 19 in order to make a study of wild life administration and control in European countries.

DR. WALTER B. CANNON, George Higginson professor of physiology at the Harvard Medical School, will deliver the annual Hodgen lecture of the St. Louis Medical Society on January 9. His subject will be "The Significance of the Emotional Level."

DR. ROBERT F. LOEB, associate professor of medicine at the College of Physicians and Surgeons, Columbia University, has concluded a visit to the School of Tropical Medicine, San Juan, Puerto Rico, where he delivered a series of lectures on "Edema and Its Treatment" and "Dehydration and Shock with Particular Reference to Adrenal Insufficiency."

DR. A. E. KENNELLY, professor of electrical engineering, emeritus, at Harvard University and the Massachusetts Institute of Technology, gave on December 8 the second in the series of Aldred Lectures at the institute. His subject was "The Relations of Engi-

neering to Our Modern World." On February 16, Dr. Harlow Shapley, director of the Harvard Observatory and member of the corporation of the institute, will give an illustrated lecture on "Engineering Problems and Practises in the Construction of Galaxies." This also is one of the Aldred Lectures.

DR. WILLIAM J. CROZIER, professor of general physiology and director of the Laboratory of General Physiology at Harvard University, will give a series of eight Lowell Lectures on "Mechanism and Behavior" in January, beginning on the fourth. The titles of the separate lectures are: "Elements in Behavior," "Tropistic Elements in Behavior," "Geotropic Conduct," "Variability in Behavior," "The Inheritance of Elements of Conduct," "The Combination of Tropistic Responses," "Analysis of Higher Behavior" and "Behavior and Natural History."

THE inaugural lecture by Professor P. M. S. Blackett, who was recently appointed to the university chair of physics in Birkbeck College, was entitled "Cosmic Radiation." The chair was taken by Lord Rutherford.

THE Sociedad Cubana de Historia Natural "Felipe Poey" has recently been reorganized after about five years of inactivity due to abnormal political conditions prevailing in that country. Meetings will be held as before at the Universidad Nacional in Havana, the first regular session being scheduled for January 15. Dr. Carlos de la Torre has been again elected president. Among other officers elected for the ensuing year are the following: *First Vice-president,* Dr. A. Mestre; *General Secretary,* Dr. Carlos Guillermo Aguayo; *Treasurer,* Miguel Jaume. *Directors of Sections: Mineralogy and Geology,* Dr. Santiago de la Huerta; *Biology,* Víctor Rodríguez; *Zoology,* Dr. Carlos de la Torre; *Entomology,* S. C. Bruner; *Paleontology,* R. H. Palmer; *Anthropology,* Dr. A. Mestre; *Agronomy,* Gonzalo M. Fortún; *Botany,* Brother León.

THE annual general meeting of the American Philosophical Society will be held on April 19, 20 and 21, beginning at 2 P. M., on Thursday, April 19.

THE forty-sixth annual meeting of the American Physiological Society, under the presidency of Dr. Arno B. Luckhardt, of the University of Chicago, will be held under the auspices of the College of Physicians and Surgeons, Columbia University, from March 28 to 31. The scientific meetings will be held in the Hotel Pennsylvania, which will also serve as headquarters. The demonstrations will be made at the College of Physicians and Surgeons. Dr. C. C. Lieb, 630 West 168th Street, is chairman of the local committee.

THE American Public Health Association will hold its sixty-third annual meeting in Pasadena, California, from September 3 to 6. The Western Branch of the American Public Health Association, with a membership of more than 1,200 from eleven western states, will hold its fifth annual meeting at the same time. Dr. J. D. Dunshee, health officer of Pasadena, has been appointed chairman of the Local Committee on Arrangements. He will be assisted by Dr. John L. Pomeroy, president, and Dr. W. P. Shepard, secretary of the Western Branch.

APPLICATIONS for positions of various grades in toxicology must be on file with the U. S. Civil Service Commission at Washington, D. C., not later than January 11. At present there is a vacancy in the position of assistant toxicologist in the Bureau of Chemistry and Soils, Department of Agriculture, with headquarters in San Francisco. The entrance salary for this position ranges from $2,600 to $3,200 a year. Entrance salaries for all grades covered by the examination range from $2,600 to $5,400 a year, less a deduction of not to exceed 15 per cent. as a measure of economy and a retirement deduction of 3½ per cent. Competitors will not be required to report for a written examination, but will be rated on their education and experience. Certain specified education and experience are required.

THE Porter Fellowship in physiology of the American Physiological Society, established by Professor W. T. Porter, of Harvard University, will be continued for the year 1934–35. The candidate is to be appointed on the basis of research promise independent of the completion of advanced degrees. The proposed program of investigation is limited only by the general purpose of the fellowship, the pursuit of physiological research. The program submitted by the candidate must, however, be approved by the council. The stipend will be not less than $500 for the academic year. Further information can be obtained from Dr. Frank C. Mann, secretary, The Mayo Foundation, Rochester, Minnesota.

THE University of Buffalo announces a competition for its annual award of a gold medal to the author of a paper on an ophthalmologic or an allied subject. Dr. Harold W. Cowper, 543 Franklin Street, Buffalo, is chairman of the committee on award.

GOVERNOR LEHMAN, of New York State, has asked Dean Carl E. Ladd, of the New York State College of Agriculture, Cornell University, chairman of the Agricultural Advisory Commission, to take up with the federal authorities a suggestion that the Dutch elm disease in New York State be attacked with the aid of federal funds. Governor Lehman stated in his letter that there is every evidence that the disease spread rapidly in 1933 and that "immediate action is neces-

sary if we are to save the trees in this country." The Federal Government has made available $400,000 of Civic Works Administration funds with which to attack the disease up to May 1 next. Additional or other funds will be required after that. Governor Lehman urges that for the next two or three years, "or for such period as is necessary to determine the feasibility of eradication, the Federal Government continue to supply all funds necessary to adequately prosecute the complete eradication program."

DISCUSSION

WHAT ARE "EXPANSION" AND "CONTRACTION"?

IN a recent issue of SCIENCE (November 10, 1933), Dr. Mast takes exception to the terminology which I have proposed (September 29, 1933) to designate the movements of the pigment masses in the chromatophores of vertebrates and their changes in shape and apparent size. I proposed the terms "chromatosome," "melanosome," etc., for those pigment masses, and contended that the terms "expansion" and "contraction" be applied to these contained masses, rather than to the chromatophores themselves, to which many writers continue inconsistently to apply them.

Mast's account of the movements of the pigment granules back and forth along definite paths will hardly be disputed, at least for certain cases in which these phenomena have been carefully followed. We may also accept as probable his assertion that the source of the movement lies in the colorless cytoplasm, rather than in the granules themselves. His further reasoning, however, is difficult to follow. "While it is evident," he writes, "that the pigment masses (chromatosomes) change enormously in form, there is no evidence indicating that they *per se* change in size, *i.e.*, expand and contract, and that the change is due to processes within them." Again, "Under the conditions which induce movement of the pigment granules out into the branches of the chromatophores they become distributed through a relatively large space, and under those which induce movement in the opposite direction they become concentrated in a relatively small space."

I fail to see why Mast's account of what happens to the pigment granules in a chromatophore would not apply in its essentials to a volume of gas, subjected to variations in temperature or pressure. Here the molecules "become distributed through a relatively large space," or "become concentrated in a relatively small space," as the case may be. Yet no one hesitates to say that the volume of gas "expands" and "contracts." The same is true of liquids or solids, though within a much narrower range.

The fact that the pigment granules are suspended in hyaline protoplasm, and that this is (probably) responsible for their migrations, should not affect the issue. The "chromatosome," *i.e.*, the aggregate assemblage of pigment granules, does *expand* and *contract* in the same sense that a volume of gas expands and contracts. To say that the component particles "spread out" or "aggregate" is no more true in one case than in the other. But it is often convenient to avoid such circumlocutions, and to speak directly of what happens to the assemblage of particles. Is it not just as accurate to say that urethane, for example, causes "the chromatosomes to expand" as to say that this drug causes "the pigment particles in the chromatophores to spread out"? And is it not much simpler?

I can not, therefore, agree with Mast's contention "that the phrase 'expansion and contraction of these masses' (chromatosomes) describes the phenomena in question but little, if any, more accurately than the phrase 'expansion and contraction of chromatophores.'" If the words, as I have used them, are misapplied, it is likewise incorrect to speak of the expansion and contraction of the mercury in a thermometer or of the air in a tire-pump.

F. B. SUMNER
SCRIPPS INSTITUTION OF OCEANOGRAPHY

CONVENTIONS OF BOTANICAL NOMENCLATURE

A RECENT article by Dr. R. W. Brown[1] is provoking in more senses than one; the sober admonition that "the botanists should now without hesitation follow the wise leadership of the zoologists" in a matter of nomenclature may well provoke the petty rage of *Fachleute;* it will provoke not only rage, but also attempts to answer and reflections on the nature of botanical nomenclature.

The field of systematic botany is cultivated by men of all nations; the fruit of their labor is intended for the use of all men, and all men are free to propose improvements in methods of cultivation. Dr. Brown urges at least four improvements: (1) The adoption of a standard system of pronunciation of scientific names; (2) the elimination of case-endings from personal names in specific epithets; (3) a new rule in codes compelling authors of names to supply the etymology; and (4) the decapitalization of all specific epithets.

Specific answers are to be derived from general principles. The names of plants are not code-designations arbitrarily established and subject to tinkering; they are words of a language, subject to the rules

[1] SCIENCE, 78: 333–335, 1933.