

SPECIAL ISSUE CONTAINING THE PRELIMINARY ANNOUNCEMENT OF THE FIFTH BOSTON MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ASSOCIATED SOCIETIES, DECEMBER 27, 1933, TO JANUARY 2, 1934. EDITED BY DR. HENRY B. WARD, PERMANENT SECRETARY

# SCIENCE

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## AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

### PRELIMINARY ANNOUNCEMENT OF THE FIFTH BOSTON MEETING

Edited by Dr. HENRY B. WARD

PERMANENT SECRETARY

THE ninety-third meeting of the association will be held in Metropolitan Boston, beginning on Wednesday, December 27, 1933. While this is regarded as the fifth Boston meeting, it is actually the sixth time that the association has met in the Boston-Cambridge area, the second meeting having been held in Cambridge in 1849.

For the 1933 meeting the official headquarters will be at the Hotel Statler, Boston, where the first general session, as well as a number of special events of importance, will be held. All the fifteen sections and a large number of associated and affiliated societies will meet at this time.

The institutions welcoming the association are Harvard University, Massachusetts Institute of Technology, Simmons College, Boston University, Boston

College, Northeastern University, Tufts College, Wellesley College and Weston College. Thus the colleges and universities in the whole metropolitan area will participate as hosts to the visiting scientists, although for general convenience the section sessions will be held in Cambridge in the lecture rooms at Harvard and at the Massachusetts Institute of Technology.

#### HOTEL HEADQUARTERS

General headquarters for the association, including sections, will be at the Hotel Statler. Rates quoted for rooms, single occupancy, with bath, are \$3.50; double occupancy, \$5.50 to \$6.00. Since not all can be accommodated at the Hotel Statler, a large number of the other Boston hotels in the vicinity of

Copley Square, easy of access to the Statler and to the transportation lines to Cambridge, are available. Headquarters for the various sections and special societies have been assigned as follows:

*Statler*: American Society of Zoologists; American Society of Parasitologists; Botanical Society of America; American Society of Plant Physiologists; American Microscopical Society; American Society of Naturalists; Genetics Society of America; Econometric Society; Society of the Sigma Xi; Honor Society of Phi Kappa Phi; Gamma Alpha Graduate Scientific Fraternity; Phi Sigma Society; Pi Gamma Mu, National Social Science Honor Society, Inc.; Sigma Delta Epsilon Graduate Women's Scientific Fraternity.

*Avery*: American Society of Agronomy; Potato Association of America.

*Bellevue*: American Nature Study Society.

*Bradford*: American Association of Economic Entomologists; Entomological Society of America.

*Kenmore*: Engineering Section (M); Medical Sciences Section (N).

*Lenox*: Ecological Society of America.

*New Parker House*: American Physical Society; American Association of Physics Teachers; History of Science Society.

*Victoria*: American Meteorological Society.

*Westminster*: American Phytopathological Society; Mycological Society of America.

*Continental (Cambridge)*: American Astronomical Society.

*Commander (Cambridge)*: American Mathematical Society; Mathematical Association of America; American Society for Horticultural Science.

#### TRANSPORTATION TO CAMBRIDGE

The Boston Elevated Railway, by its subways and surface lines, offers convenient transportation between Boston and Cambridge. In addition there will be special bus service operating in both directions between Hotel Statler and Copley Square and the buildings at Harvard where the sessions are held, with stops at the Institute of Technology en route.

Under the auspices of the local committee various special committees are arranging a number of social events especially for the entertainment of visiting ladies, including visits to museums, Wellesley, Radcliffe, etc.

The Boston area is too well known to require extended description. Historically, educationally and by virtue of its geographic position, it is familiar to many, perhaps to most, American scientists. Itself of great historic interest, its nearness to Plymouth, Salem, Lexington and Concord, and other places interwoven with early colonial life and patriotism make it a center of unusual significance to all Americans.

While Boston as a political unit is a city of approximately 800,000 people, the thirty cities and

towns of the metropolitan area, all within a radius of fifteen miles, make the real or "greater" Boston the fourth city of the United States in population, with two and a quarter million people. Its commercial significance, based on the essential industries of wool, cotton, boots and shoes, paper, machinery, etc., is also well known.

Its beautiful park system, excellent harbor, ease of access to mountain, seaside and charming rural districts need only be mentioned at this time. To those who will attend the Boston meeting this year under winter conditions its significance as an educational and scientific center will perhaps be the chief fact of importance, for Boston is the greatest educational center of the western world, including within its limits or within a radius of 50 miles not only the institutions which will act as hosts on this occasion, but numerous other colleges, schools of music and art, preparatory and vocational schools. The attendants at these institutions would of themselves constitute a city of many tens of thousands.

Among the places of interest in Boston and Cambridge may be mentioned the Peabody Museum, Germanic Museum, Fogg Art Museum, Astronomical Observatory and Botanic Garden, at Harvard; the Nautical Museum at the Massachusetts Institute of Technology; the Boston Art Museum, Gardner Museum, Boston Public Library, Boston Natural History Society, State House (historic collections), Old State House, Watertown Arsenal, Navy Yard, Bunker Hill, Old South Church, Paul Revere House, etc. An illustrated booklet descriptive of Boston and its environs will be supplied to each registrant through the courtesy of the Boston Chamber of Commerce.

S. C. PRESCOTT

#### RAILROAD RATES

Reduced railway rates on the certificate plan have been granted by almost all railroads in the United States and Canada. Persons attending the meeting should purchase a first-class, one-way ticket to Boston, securing a standard certificate form reading "For the American Association for the Advancement of Science and Associated Societies." The certificate must be left at the validation desk in the registration office, to be called for later in the same place. Each person presenting an endorsed and validated certificate may purchase a continuous passage, one-way ticket for one third of the regular fare to return by the same route used before. Tickets to Boston must be purchased between December 21 and December 23, both dates inclusive. Return tickets must be purchased by January 5.

Special fares have been announced by the Central and Trunk Line passenger associations. Tickets will be

on sale from December 14 to January 1 with a return limit of January 15, 1934; the round-trip fare is on the basis of one and one ninth times the regular first-class, one-way fare. The Transcontinental and Western lines will have special fares, which will be about the same as already announced by the Central and Trunk Line Associations. The territories of the latter include roughly points from Washington, D. C., to Saint Louis, Cincinnati and Louisville on the south; New York, Albany, Buffalo, Detroit and Chicago on the north; Atlantic seaboard on the east; the Mississippi River on the west, and all intermediate territory.

Possible further reduction of fares and the various periods when going tickets may be purchased on the certificate plan make it advisable to consult the local ticket agent.

#### REGISTRATION

The main registration headquarters will be at Memorial Hall, Harvard University, where registration facilities will be opened on Wednesday, December 27, and maintained throughout the meeting. A subsidiary registration desk will be conducted in the main lobby of the central building of the Massachusetts Institute of Technology, especially for the benefit of members of the engineering and other sections, meetings of which will be held at the institute. Any one interested in the advancement of science or education may register upon payment of the registration fee of \$1.00.

Each registrant receives a copy of the General Program, an identification card and a badge. Registration is necessary to obtain validation of certificates for reduced railway fares. Each registrant is entitled to the validation of his own railway certificate. At the registration desk reservations may be made for all excursions and banquets. The registration desk will also handle all mail, telegrams, etc., and furnish information as desired.

#### GENERAL SESSIONS

The public program of the meeting will be opened on Wednesday evening, December 27, at 8:30 by the first general session, which is to be held in the Grand Ballroom of the Hotel Statler. Dr. Henry Norris Russell, president-elect, will preside. The association will be duly welcomed to Boston by speakers representing the city and its major educational institutions, to which welcome President Russell will respond. He will then introduce Dr. John Jacob Abel, retiring president, who will deliver his address, "On Poisons and Disease, and Some Experiments with the Toxin of the *Bacillus tetani*." At the close of the formal program the local committee is to tender a reception to the officers and members of the association on behalf of the city and cooperating institutions. This

reception will be held in the Hotel Statler and will be participated in by citizens of Boston and vicinity invited by the local committee as well as by all members of the association and its affiliated societies and all others registered for the meeting.

On Thursday evening at 8:30 will be given the annual Sigma Xi address. The speaker this year is Dr. Henry E. Sigerist, professor of the history of medicine and director of the Institute of the History of Medicine at the Johns Hopkins University, on the topic, "The Foundation of Human Anatomy in the Renaissance."

On Friday evening at 8:30 the sections on Engineering (M), Social and Economic Sciences (K), and Agriculture (O) have arranged for a general session on the subject, "What Can Engineering Do for Agriculture?" The address will be given by the Secretary of Agriculture, the Hon. Henry Agard Wallace. He will present a powerful statement on this most important problem, and his coming is bound to arouse deep interest in the occasion.

On Saturday evening, December 30, at the Hotel Statler, the American Academy of Arts and Sciences, in a joint meeting with Sections D and B, will present the Rumford Medal for distinguished research in physics to Professor Harlow Shapley, director of the Harvard Observatory. Dr. Shapley's address on this occasion will be on the subject, "The Anatomy of a Disordered Universe."

The annual dinner and meeting of the American Society of Naturalists will occur Saturday evening. The society is celebrating this year its semi-centennial. The address of the occasion is to be delivered by the retiring president, Dr. B. E. Livingston, professor of plant physiology at the Johns Hopkins University.

#### VICE-PRESIDENTIAL ADDRESSES

The addresses of the retiring vice-presidents of the various sections are to be delivered according to the following schedule:

*Section on Medical Sciences (N):* Wednesday, 10:30 A. M. Dr. C. R. Stockard, of Cornell University, on "The Internal Secretions and Genetic Quality in Structural Development."

*Section on Geology and Geography (E):* Wednesday, December 27, 11:00 A. M. Professor Wm. H. Hobbs, of the University of Michigan, on "The Glaciers of Mountain and Continent."

*Section on Social and Economic Sciences (K):* Wednesday afternoon. Professor William F. Ogburn, of the University of Chicago, on "Trends in the Social Sciences."

*Section on Historical and Philological Sciences (L):* Wednesday afternoon. Dr. Waldo G. Leland, of the American Council of Learned Societies, on "Trends in the Humanities."

*Section on Botanical Sciences (G):* Thursday afternoon, December 28. President H. L. Shantz, of the University of Arizona, on "Botanical Research."

*Section on Mathematics (A):* Friday morning, December 29. Dr. H. H. Mitchell, of the University of Pennsylvania, on "Linear Groups and Finite Geometries."

*Section on Chemistry (C):* Friday, 2:00 P. M. Dr. Frank C. Whitmore, of Pennsylvania State College, on "The Polymerization of Olefins."

*Section on Zoological Sciences (F):* Friday, 6:00 P. M. Dr. A. S. Pearse, of Duke University, on "Ecological Segregation."

*Section on Psychology (I):* Friday, 6:00 P. M. Dr. Walter S. Hunter, of Clark University, on "Consciousness and Habit Formation."

*Section on Education (Q):* Friday, 6:00 P. M. Dr. Stuart A. Curtis, of the University of Michigan, on "Differential Testing as a Method of Psychological Analysis."

*Section on Anthropology (H):* Friday, 6:30 P. M. Dr. C. H. Danforth, of Stanford University, on "Genetics and Physical Anthropology."

*Section on Physics (B):* Friday. Dr. David L. Webster, of Stanford University, on "Current Progress in X-Ray Physics." Hour not set.

*Section on Agriculture (O):* Saturday, December 30, 2:00 P. M. Dr. J. H. Gourley, of the Ohio Experiment Station, on "Plant Anatomy as a Tool in Agricultural Records."

*Section on Engineering (M):* Saturday, December 30, 10:00 A. M. Dr. Dugald C. Jackson, of the Massachusetts Institute of Technology, on "The Origins of Engineering."

*Section on Astronomy (D):* Dr. Paul W. Merrill, of Mount Wilson Observatory, on "Invisible Starlight." Time not given.

#### GENERAL LECTURES

The Hector Maiben Lecture will be given this year by Dr. William Morris Davis, professor emeritus of Harvard University, at 4:30, Thursday afternoon, December 28. Professor Davis has announced his subject as "The Faith of Reverent Science."

Professor Lafayette B. Mendel will give an address on Friday evening before the Section on Chemistry (C) and the Northeastern Section of the American Chemical Society on "The Challenge of Nutrition to the Chemist."

Dr. Henry Fairfield Osborn, of the American Museum of Natural History, has accepted the invitation to deliver the Sedgwick Memorial Lecture under the auspices of the biological department of the Massachusetts Institute of Technology. The lecture will be given in the large Lecture Hall at the Massachusetts Institute of Technology, Cambridge, on Friday afternoon. Dr. Osborn will speak on "Aristogenesis, the Creative Principle in the Origin of Species."

The Gibbs Lecture will not be given this year. This lectureship was established by the American Mathe-

matical Society in 1923. All the expenses are borne by that society and all arrangements are made by it. The lectures have been greatly appreciated by a constantly increasing group of scientific men, and it is hoped that they may be continued another year.

#### SPECIAL FEATURES

The Committee on the Place of Science in Education was instructed by the council of the association to provide a special program for the Boston meeting. Accordingly, sessions have been arranged for Friday, December 29. The principal features of the occasion were reported in *SCIENCE* for November 3. The event has attracted wide-spread attention, and various organizations of science teachers are cooperating by sending official delegates. However, the meetings are not planned for delegates only; all science teachers and others interested are cordially invited to attend and to participate. A conference luncheon has been arranged with a program of special interest to science teachers.

#### SOCIAL EVENTS

The joint smoker of the biological societies, which is listed this year for 9 to 11 P. M., Thursday, has long been one of the major social features of the meetings. As usual, the event has been timed so as to avoid conflicts with items announced for early evening hours.

In accordance with the established sequence the Sigma Xi dinner is scheduled for Thursday evening before the Sigma Xi address. Other dinners which have also been located on Thursday evening are those of societies in the fields of astronomy, ecology, entomology, mathematics, plant physiology and phytopathology. On Friday evening group dinners are announced for anthropology, botany, chemistry, horticulture, psychology and education and zoology. Saturday evening has been selected for the dinner of the American Society of Naturalists.

Tentative arrangements have been made for other gatherings not yet definitely located in time or place. Full details concerning these events will be found in the final program to be secured on registration in Boston. Many organizations are planning to have reservations made and tickets sold at the general registration booth at Memorial Hall, Harvard University, Cambridge.

#### SCIENCE EXHIBITION

The 1933 Science Exhibition will be held in Memorial Hall, Harvard University, from December 27 to 30, inclusive. Extensive and interesting research, commercial and secondary school exhibits have been arranged and also, as last year, a science library which will include, in addition to the science books of

the year, the science periodicals as well. A special committee, representing the New England Biological Association, the New England Association of Chemistry Teachers, the Association of Mathematics Teachers in New England and the Eastern Association of Physics Teachers, is providing interesting exhibits and demonstrations of special value to science teachers.

The lounge in the exhibit hall will be the common gathering place and social center. Special demonstrations will be held daily in the New Lecture Hall at the tea hour.

Professor Henry Crew has been selected as chairman of the advisory committee.

#### SECTIONAL AND SOCIETY PROGRAMS

The Section on Mathematics (A), the American Mathematical Society and the Mathematical Association of America will meet from Wednesday, December 27, to Saturday, December 30, 1933.

The American Mathematical Society will hold sessions on Wednesday and Thursday. The separate sessions of the Mathematical Association will be held on Friday afternoon and Saturday morning. One of these sessions will be devoted to mathematical logic and will include addresses by Professor Alfred N. Whitehead and Alonzo Church. A special feature of the meetings will be a symposium on "General Analysis," organized by the Mathematical Society. The chief speaker will be Professor T. H. Hildebrandt, and there will be papers also by Professors R. W. Barnard and M. H. Stone. A session on "Probability" has also been arranged, to occur Wednesday at 10:00 A. M.

Arrangements have been made for mathematicians to be accommodated at the Commander Hotel and the Continental Hotel in Cambridge, not far from the grounds of Radcliffe College. The scientific meetings of the mathematical organizations will be in Longfellow Hall of Radcliffe College.

The Section on Physics (B) will meet in conjunction with the American Physical Society. The prominent item in their program will be a symposium on problems concerning the atomic nucleus. The American Association of Physics Teachers makes the keynote of the meeting "Demonstration Experiments," taking advantage of the facilities offered by Harvard and Tech. Professor George W. Pierce will give on Friday afternoon a popular lecture, abundantly illustrated, which will be of interest to others besides teachers in this field. The American Meteorological Society meets on December 27 and 28 and will feature preliminary results from the International Polar and Cloud Year.

The ~~stand-~~

ing feature a joint session with the Section on Social and Economic Sciences (K), arranged as a symposium on "The Chemical Revolution." This symposium will deal with the economic significance of chemistry. Papers will be given concerning the repercussions of chemical changes upon international trade, the effects of chemical progress upon the relations between industries, the economic readjustments resulting from progress in chemical technology, and the possible future economic changes indicated by our present research progress.

The Section on Astronomy (D) will meet in joint session with the American Astronomical Society from December 27 to 29. The society plans to hold four sessions for contributed papers, namely, in the afternoon of the first day, both morning and afternoon of the second day and the morning of the third. Dr. and Mrs. Shapley will receive the society at the Harvard College Observatory after the first session.

The Section on Geology and Geography (E) plans to hold meetings for the reading of papers on Wednesday forenoon and afternoon, December 27. No special symposia nor joint sessions have been planned, inasmuch as the Geological Society of America and the Association of American Geographers are meeting in Chicago this year. It is expected that most of the papers on the program in Boston will relate to the geology of New England or adjacent portions of North America. If necessary, an additional session will be held on Thursday morning.

The Section on Zoological Sciences (F) will meet jointly with the American Society of Zoologists on December 28, 29 and 30. Thursday morning will be devoted to the reading of papers. In the afternoon a symposium will be held on "Development and Growth of the Nervous System," under the leadership of Dr. S. R. Detwiler. All day Friday will be devoted to events at the new Institute of Biology at Harvard University. Demonstrations and research exhibits by members of the Harvard staff are scheduled in the morning and in the afternoon, following the business meetings of Section F and of the Zoologists, the demonstration program of the society. On Saturday morning sessions for the reading of papers are scheduled, and in the afternoon the Zoologists will join with the Naturalists in a symposium arranged by the Naturalists.

The American Society of Parasitologists will hold its sessions on Thursday, Friday and Saturday. The exhibit and demonstration comes on Thursday afternoon. After the luncheon Friday noon and the business session immediately following it, the presidential address will be given by Dr. Wm. H. Taliaferro on "Some Cellular Bases for Immunological Processes in Parasitic Infections." A joint session with the Sec-

tion on Medical Sciences (N) will be held on Saturday.

The Entomological Society of America will meet on December 28 and 29. On the evening of December 28 there will be a joint meeting of the two entomological societies, at which time Dr. Frank E. Lutz, of the Museum of Natural History, New York City, will deliver the annual address of the Entomological Society of America. A symposium of interest to entomologists of all fields is planned for Thursday afternoon. The annual business meeting will be held on Friday afternoon. Entomological exhibits will be placed in a room near its session room.

The American Association of Economic Entomologists will begin its sessions on Wednesday and close on Saturday morning. It will hold a symposium on the subject of arsenical substitutes and spray residues. The public address will follow the dinner on Thursday evening.

The Section on Botanical Sciences (G) and its affiliated societies will meet on December 28, 29 and 30. A joint session with the Botanical Society of America, the American Phytopathological Society, the American Society of Plant Physiologists and the Mycological Society of America is planned for Thursday afternoon. The retiring vice-presidential address will be followed by a series of invitation papers. Professor M. L. Fernald, of Harvard University, will speak on some beginnings of specific differentiation in plants. Professor R. B. Thomson, of the University of Toronto, will present his ideas concerning the organization of the young vascular plant. Professor A. J. James, of Cornell University, will discuss modern view-points and tendencies in the morphology and classification of vascular plants.

The Botanical Society of America plans joint sessions as follows: (1) with Section G and affiliated societies, on Thursday afternoon; (2) with the Ecological Society of America on Friday afternoon; (3) with the American Society of Naturalists, Genetics Society of America and the American Society of Zoologists on Saturday afternoon. Meetings of the sections of the society will occupy the forenoons. The Systematic Section plans a symposium on the general subject of "New Approaches to Taxonomy" and includes trips to the Arnold Arboretum and Gray Herbarium in its program. The annual presidential address by G. J. Peirce, of Stanford University, will be presented after the dinner on Friday evening.

The American Society of Plant Physiologists will hold a joint session with the American Society for Horticultural Science on Friday morning. The society's business session is to be held in the afternoon of this day. At the annual dinner of the society on

Thursday evening, a distinguished plant physiologist will be honored by a Charles Reid Barnes life membership. In the mornings and afternoons of December 28 and 30 papers will be read by members of the society.

The Mycological Society of America will hold a joint session with the American Phytopathological Society and another with Section G. The retiring president will address the society at its first regular session on Friday. Immediately afterward a short business session will be held. The other sessions will be given to the reading of mycological papers.

The American Phytopathological Society plans joint sessions as follows: (1) with Section G and other botanical societies on Thursday afternoon; (2) with the Mycological Society on Friday and (3) with the Potato Association of America on Saturday. On Thursday afternoon will be held the annual conference on extension work. Friday morning will be devoted to a report of the temporary committee on quarantines appointed at Chicago and a general discussion of the "Biological Basis of Plant Quarantines."

The societies related to the Sections on Zoological Sciences (F) and on Botanical Sciences (G) have announced attractive programs. The Ecological Society of America plans a joint session with the Botanical Society of America on Friday afternoon. On Saturday forenoon a symposium on "Oceanography," with Dr. T. Wayland Vaughan, Dr. S. A. Waksman, Dr. W. C. Allee and Dr. George L. Clark as the speakers, is listed. The annual dinner of the society will be held on Thursday evening, followed by the presidential address by Professor E. B. Powers, of the University of Tennessee. General sessions will be held on Thursday forenoon and afternoon and Saturday afternoon. Friday morning will be devoted to a business session.

The Genetics Society of America will hold regular sessions for the reading of papers on Thursday, Friday and Saturday mornings. Afternoons will be devoted to informal discussion and demonstrations at the new Biological Institute and to attendance at various symposia. An excursion is being planned to the Bussey Institution, in order that those interested may have an opportunity of seeing the work carried on there.

The American Society of Naturalists is again sponsoring the annual Biologists' Smoker on Thursday night. The annual symposium, a joint session with Sections F and G, including the Botanical Society of America, the American Society of Zoologists and the Genetics Society, will be held on Saturday afternoon. The evening session of the

semi-centennial anniversary of the society. The annual dinner of the Naturalists has been planned for Saturday evening, at which time the President, Dr. Burton E. Livingston, will deliver his retiring address.

The American Nature Study Society meets on December 27, 28 and 29. During the sessions the functions of the society will be discussed: "Fostering All Outdoor Activity," led by Professor George Green, of Pennsylvania State College; "Public School All Year Training," led by George Vinal, of Western Reserve University; "Elementary School Teacher Training in Science," led by Gerald Craig, of the Teachers College, Columbia University; "Research in Science Teaching," led by Florence Billig, of Detroit Teacher Training School; "Conservation," led by Stanley Mulaik, of Edinburg, Texas, and "Adult Education," led by A. F. Satterthwait, of the U. S. Entomological Bureau. The annual dinner will be followed as usual by an illustrated lecture. An exhibition illustrating the work of the various fields in which the society functions will be displayed in or near the session room.

The American Microscopical Society will hold its annual business meeting on Friday at 4 P. M.

The Section on Anthropology (H) is holding its meetings from December 28 to 30. No joint sessions have been planned. Thursday morning will be devoted to a discussion on "Anthropology as a Discipline." Friday morning will be given over to a symposium on "Anthropology and the Child," and the afternoon session to a discussion on "Anthropology and History." The Saturday morning session will center upon the consideration of "Anthropology and the Community."

The Section on Psychology (I) will meet from December 28 to 30. The sessions will be open for contributed papers.

The Section on Social and Economic Sciences (K) will meet on December 27, 28, 29 and 30. The Wednesday morning session will treat of the slum program. On Thursday morning a sociological session is planned, with the major paper by Professor P. A. Sorokin, of Harvard University. The joint session with the Section on Chemistry (C) on Thursday afternoon will be opened by a paper by Dean W. B. Donham, of the Harvard School of Business Administration, on "How Chemistry Has Altered Relations between the Industries." Later sessions will be devoted to joint sessions and reading of papers in accordance with plans not yet definitely adjusted. A joint session with Economics is set for Friday.

The Econometric Society will meet on Saturday with Section K. The morning program will deal with "Probability and Economics." Addresses will be

given by Dr. Eugen Altshul, formerly chief of the Business Cycle Institute of Frankfurt, Germany; Mr. Victor von Szeliski, chief statistician for the National Recovery Administration, and Dr. C. F. Roos, principal economist of the National Recovery Administration. The afternoon program will be devoted to miscellaneous contributed papers.

The Section on Historical and Philological Sciences (L) will meet on December 27 and 28. On the first day will be presented the results of an intensive study of New England dialect conducted over a period of three years by the American Council of Learned Societies through a group of linguists, directed by Professor Hans Kurath, of Brown University.

The program will consist of a paper by Professor Kurath, who will describe some of the most interesting results that have been returned showing the geographical distribution of dialect characteristics. Professor Kurath's lecture will be illustrated by projections. It will be followed by the performance of a considerable number of phonographic records of dialect secured in different parts of New England and by a demonstration of the use of mechanical recording in securing language and music records in other parts of the country. There will, for example, be some records of Gullah dialect from South Carolina.

The study of New England dialect is part of the work on a general Linguistic Atlas of the United States and Canada, the preparation of which has been undertaken by the Council of Learned Societies.

On Thursday the topic will be "A National Policy for the Preservation of Historic Sites and Monuments." This session will be presided over by Dr. John C. Merriam, president of the Carnegie Institution of Washington. The principal paper will be presented by Dr. Verne E. Chatelain, chief of the Historical Division of the National Parks Service in Washington. Dr. Chatelain will state the general problem confronting the Historical Division, will illustrate by maps and pictures the distribution and nature of historic sites and monuments in the United States, and will outline a fundamental policy for their preservation.

The paper will be discussed by numerous scholars interested in the problem, particularly by those who have had experience in dealing with historic sites on a regional or state basis. The fact that the National Parks Service has recently become the custodian of the Military Parks, including such battlefields as Gettysburg, Vicksburg and Antietam, makes the discussion especially appropriate at this time.

The History of Science Society will meet on December 29. The program will be devoted to a review of scientific progress in the American colonies from 1621 to 1783. The president will give his re-

tiring address, reviewing the work of the society and its relation to the history of science movement. Dr. S. E. Morison, of Harvard University, will speak on the background of Colonial culture. Dr. C. A. Browne, of the U. S. Bureau of Chemistry, will have as a topic the history of industrial chemistry of the period. Dr. Lao G. Simons, of Hunter College, will speak on the mathematical knowledge in the Colonies. Dr. Henry R. Viets, of Boston, will speak on medicine in the Colonies. A number of other prominent speakers will also give papers, making thus a general symposium on Colonial culture.

The preliminary announcement of the Section on Engineering (M) will be a subject of special note to be published later.

The Section on Medical Sciences (N) will meet on December 27, 28, 29 and 30. On the first two days symposia on "Pneumonia," "Sociology and Medicine," "Tuberculosis," "Appendicitis" and "Typhoid Carriers" will be held. On December 29 there will be a joint meeting with the American College of Dentists. On December 30 the meeting will be given over to a joint session with the American Society of Parasitologists.

The Section on Agriculture (O) will hold a joint session with the American Society of Agronomy on December 28 under the auspices of the Northeastern Section of the Agronomy Society. The program has been arranged by Dr. T. E. Odland, Dr. M. H. Cubbon and Dr. M. F. Morgan, consisting of a symposium on "Field and Microchemical Methods for Determining Soil Deficiencies." Invitation papers will be presented by a number of men active in developing soil-testing technique.

The section will cooperate with Sections M and K in a symposium on "The Engineer and the Farm Problem" to be held on Saturday. The section will also meet in joint session with the American Society for Horticultural Science and the Agronomy Society on Saturday afternoon.

The American Society for Horticultural Science

plans joint sessions with other organizations as follows: (1) with the American Society of Plant Physiologists on Friday morning, the program being devoted to physiological problems with horticultural plants; (2) with Section O at which the retiring president, Dr. J. H. Gourley, will be the principal speaker.

The Section on Education (Q) plans four sectional programs and a joint dinner with Section I. One of the Friday programs consists of a series of papers concerning recent investigations of the components of mental ability. Among others, Dr. E. L. Thorndike and Dr. Truman Kelley will participate. A second session on Friday will consist of reports of research from members of the section. One of the sessions on Saturday will be organized around the central theme, "The Measurement of Individual Growth or Progress," under the direction of Dr. Walter F. Dearborn. Another session will consider reports of research from members of the section.

The Gamma Alpha Graduate Scientific Fraternity will hold its annual council meeting for the consideration of fraternity business on Friday afternoon. On Saturday morning all members of the fraternity will meet for breakfast and informal reunion at the Statler Hotel.

Pi Gamma Mu will meet for the annual luncheon at the Hotel Statler at 12:30 p. m. on Saturday. National officers and several distinguished guests will speak.

Sigma Delta Epsilon plans to hold a business session open to members alone, and a breakfast open to all women in science, at which a guest speaker to be announced later will preside.

The program is unusually condensed, so that one finds an unfortunate number of conflicts. For this reason readjustments are being sought and if secured may change somewhat the arrangements outlined above. Those in charge of special programs are earnestly requested to send notice of any changes to the office of the permanent secretary at the earliest possible moment in order that the final program may be free from errors.

## DEATH AS THE RESULT OF CHANGE OF LIVING MATTER WITHIN THE PLANT CELL<sup>1</sup>

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LIVING is moving. Life implies perpetual change of form, perpetual interchange between the living

matter and the inert surroundings. Movement, which we generally associate with life in animals, generally fails to be evident to us in the case of plants.

Still, much of the knowledge acquired during the recent years on the nature of living matter, and its

<sup>1</sup> Invitation address at A Century of Progress Meeting of the American Association for the Advancement of Science, Chicago, June 28, 1933.