

# AAAS ANNUAL MEETING

26-31 December 1969

Boston





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26-31 December 1969, Boston

Registration badges will be required for admission to all sessions,  
except for a few special programs to which the public will be invited.

## ADVANCE REGISTRATION FORM

Mail to: American Association for the Advancement of Science, Dept. R  
1515 Massachusetts Ave., N.W., Washington, D.C. 20005

- ☐ Enclosed is \$10 Registration Fee (*Program* and Convention Badge)
- ☐ Enclosed is \$15 Registration Fee (including spouse) (*Program* and Convention Badges)
- ☐ Enclosed is \$5 Student Registration Fee (16 years and older) (*Program* and Convention Badge)
- ☐ Enclosed is \$5 for the *Program* only
- ☐ Enclosed is \$..... for tours.

(Mailing date of program and badge will be 1 Dec.)

NAME: \_\_\_\_\_  
(Last) (First) (Middle Initial)

MULTIPLE REGISTRATION: \_\_\_\_\_  
(List full name for spouse and each student.)

MAILING ADDRESS: \_\_\_\_\_  
(For receipt of *Program*) (Street) (City/State) (Zip Code)

INSTITUTION OR  
COMPANY AFFILIATION: \_\_\_\_\_  
\_\_\_\_\_  
(City) (State) (Zip Code)

CONVENTION ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

## TOURS AND SPECIAL EVENTS

The AAAS is pleased to offer tours and special events for registrants (only) at the Association's Annual Meeting. Chartered buses will provide transportation. The only fee involved, except in the case of the concert, is for transportation. Please use this form to register. Indicate the number of tickets you wish to order. Enclose payment. Attendance is limited; early registration is recommended. **No refunds after 15 Dec.** Tour participants will visit "behind-the-scenes" of the establishments and hear about work in progress.

### Number of Tickets

### Tour or Special Event

- \_\_\_\_\_ Worcester Foundation for Experimental Biology, 27 Dec., 9:00 a.m.-3:00 p.m. (\$3.00)
- \_\_\_\_\_ New England Aquarium, 8:30-11:30 a.m. (\$3.00; includes \$1.00 admission fee)
- \_\_\_\_\_ 27 Dec.
- \_\_\_\_\_ 29 Dec.
- \_\_\_\_\_ Boston Symphony Orchestra Concert, 29 Dec., 8:30 p.m., Symphony Hall  
(Tickets \$5.00 each; no transportation is provided.)
- \_\_\_\_\_ Cambridge Electron Accelerator, 29 Dec., 9:00-11:30 a.m. (\$2.00)
- \_\_\_\_\_ Massachusetts General Hospital, 9:00 a.m.-12:15 p.m. (\$2.00)
- \_\_\_\_\_ 29 Dec.
- \_\_\_\_\_ 30 Dec.
- \_\_\_\_\_ M.I.T., 29 Dec., 8:30 a.m.-noon (\$2.00)
- \_\_\_\_\_ M.I.T. Educational Presentation, 29 Dec., 1:30-4:30 p.m. (\$2.00)
- \_\_\_\_\_ Isabella Stewart Gardner Museum, 30 Dec., 2:00-5:00 p.m. (\$2.00)
- \_\_\_\_\_ Museum of Fine Arts, 30 Dec., 9:30 a.m.-1:00 p.m. (\$3.00; includes \$1.00 admission fee)
- \_\_\_\_\_ Museum of Science, 30 Dec., 10:00 a.m.-12:30 p.m. (\$2.00) (luncheon included)
- \_\_\_\_\_ Woods Hole Oceanographic Institution, Marine Biological Laboratories, and U.S. Bureau of  
Commercial Fisheries, 30 Dec., 9:30 a.m.-5:00 p.m. (\$4.00)
- \_\_\_\_\_ Harvard University, 30 Dec., 1:30-4:30 p.m. (\$2.00)
- \_\_\_\_\_ Total number of tickets. \$\_\_\_\_\_ total amount remitted for tours.

No fee is involved for the following events, but tickets are required. Please indicate the number of tickets you require. No transportation is provided.

- \_\_\_\_\_ Science/Music Symposium, 27 Dec., 8:30 p.m., Jordan Hall of New England Conservatory.
- \_\_\_\_\_ Tea at the headquarters of the American Meteorological Society, 28 Dec., 3:00-5:00 p.m. (Ladies only)

## HOTEL REGISTRATION

The American Association for the Advancement of Science will hold its 1969 Annual Meeting in Boston, Mass., 26-31 December 1969. The following hotels will be used for housing. Registration desks will be located at the Sheraton-Boston Hotel, Statler-Hilton Hotel, and the War Memorial Auditorium. For location of offices and sessions, see page 1158 of the 2 September issue of *Science*.



### HOTEL RATES\* (Per Day)

HOTEL	SINGLE	DOUBLE	TWIN	SUITES
Cambridge Charterhouse** 5 Cambridge Parkway	\$16.00	\$22.00	\$22.00	—
Copley Square Hotel 47 Huntington Avenue	13.50-15.50	18.50-19.50	19.50-20.50	\$25.00-up
Essex Hotel** 695 Atlantic Avenue	11.50-12.50	17.50	18.50	—
Holiday Inn-Charles River** 5 Blossom Street	—	18.00	23.00	—
Lenox Hotel 710 Boylston Street	15.50-19.50	18.50-24.50	21.50-26.50	21.00-up
Madison Hotel** 25 Nashua Street	10.75-14.75	14.75-18.75	16.75-19.75	29.75-up
Midtown Motor Inn 220 Huntington Avenue	16.00-18.00	—	22.00-24.00	—
Parker House Hotel** 60 School Street	13.00	17.00	21.00	37.50-up
Sheraton-Boston Hotel Prudential Center	14.00-23.00	24.00-26.00	24.00-29.00	39.00-up
Sheraton Plaza Hotel Copley Square	17.00-20.00	23.00-26.00	23.00-26.00	45.00-up
Somerset Hotel 400 Commonwealth Avenue	17.00	—	21.00	—
Statler-Hilton Hotel Park Square	16.00-20.00	23.00-25.00	25.00-27.00	61.00-up

Massachusetts Room Tax, 5.7%; rates for suites: parlor plus one-, two-, three-bedroom; \$4.00-5.00 additional charge for cots.  
\* Not shown on map, page 1158 of the 12 September issue of *Science*.

### HOTEL RESERVATIONS FORM

Mail To: AAAS Housing Bureau, Greater Boston Chamber of Commerce, 125 High Street, Boston, Massachusetts 02110

(Reservations received after 13 December cannot be assured.)

HOICE OF HOTEL: First \_\_\_\_\_ Second \_\_\_\_\_ Third \_\_\_\_\_

ROOM: ☐ Single ☐ Double ☐ Twin ☐ Suite Preferred rate \$ \_\_\_\_\_

Number in party \_\_\_\_\_ sharing this room will be (list name and address of each person, including your own):

ARRIVAL: Date \_\_\_\_\_; \_\_\_\_\_ a.m. \_\_\_\_\_ p.m.

DEPARTURE: Date \_\_\_\_\_; \_\_\_\_\_ a.m. \_\_\_\_\_ p.m.

Be sure to list definite arrival and departure date and time. Hotel reservations will be held *only* until 6 p.m. unless otherwise specified.

NAME: \_\_\_\_\_

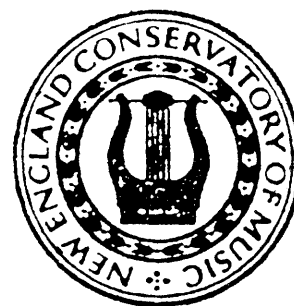
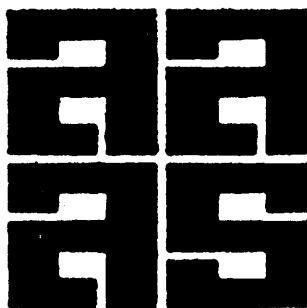
(Individual requesting reservation)

ADDRESS: \_\_\_\_\_

(Street)

(City and State)

(Zip Code)



*The American Association for the Advancement of Science announces for its Boston Meeting in 1969*

## TWO MUSICAL EVENTS

### A SPECIAL CONCERT

by the Boston Symphony Orchestra.  
William Steinberg, Music Director.

Symphony Hall, Monday, 29 Dec., 8:30 p.m.

#### Program

WAGNER Overture to "Die Meistersinger  
von Nürnberg"

SCHUBERT Symphony No. 9 in C Major  
Andante-allegro ma non troppo  
Andante con moto  
Scherzo  
Finale

Intermission

WEBERN Six pieces for Orchestra, Op. 6  
Langsam (Slowly)  
Bewegt (With movement)  
Mässig (Moderately)  
Sehr mässig (Very moderately)  
Sehr langsam (Very slowly)  
Langsam (Slowly)

STRAUSS Till Eulenspiegels Lustige  
Streiche, Op. 28

Tickets: Each \$5.00, tax included.  
For details, see page 642.

### SCIENCE AND MUSIC: A CONCERT/SYMPOSIUM

at the New England Conservatory of Music.  
Gunther Schuller, President.

Jordan Hall, Saturday, 27 Dec., 8:30 p.m.

#### Program

David Epstein (M.I.T.), *Moderator*  
*Electronic Media: A Survey*

Milton B. Babbitt (Princeton University):  
*The Synthesis of Perception of Musical Sound.*

Vladimir Ussachevsky (Columbia University):  
*Sound Synthesis in the Tape Studio and its Current Extensions.*

James K. Randall (Princeton University):  
*The Use of the Digital Computer in Sound Synthesis.*

Musical examples will illustrate the talks and, in addition,  
the following compositions will be performed in their  
entirety:

USSACHEVSKY Of Wind and Brass

DAVIDOVSKY Synchronism No. 2 for Four  
Instruments and Tape

BABBITT Ensembles for Synthesizer

RANDALL Mudgett

Tickets: No charge, but must be obtained in advance.  
For details, see page 642.

## Special Exhibits

### AAAS Annual Meeting

#### Boston

26–31 December 1969.



#### Boston Public Library

Copley Square, Boston—536-5400

(Earliest of the nation's monumental public library buildings, Boston's Central Library Building was opened in 1895. It is in Italian Renaissance style, and contains many important works of art, as well as priceless library collections.)

**Mendeleev Centennial**—During the AAAS Meeting and thereafter, the exhibit cases on the first floor will feature a display of materials related to the publication by Mendeleev, in 1869, of his periodic table of the elements. The exhibit, arranged through the cooperation of Everett Mendelsohn of Harvard's Department of the History of Science, will include some materials on loan from the New York Public Library.

**Hours**—Mondays through Fridays, 9:00 a.m.–9:00 p.m.; Saturdays, 9:00 a.m.–6:00 p.m.; closed Sundays.

**Admission**—Free.

#### Botanical Museum, Harvard University

Oxford Street, Cambridge—868-7600

(Part of Harvard University's museum complex, which also includes, in the same building, the Museum of Comparative Zoology, the Mineralogical Museum, the Geological Museum, and the Peabody Museum of Archaeology and Ethnology.)

**Glass Flowers**—The world-famous Ware Collection of glass flowers, illustrating the principal systematic, biological, and economic relations of plants, are the main feature of the Botanical Museum. However, the museum also contains many other exhibits, including medicinal and poisonous plants. The Glass Flowers, perfect in every botanical detail, are the lifework of two German glassblowers, Leopold and Rudolph Blaschka, father and son. Explanatory booklets, available at the museum, include reproductions of many of the specimens in full color.

**Other Exhibits**—Other feature exhibits in the museum are: North American birds, dinosaurs, invertebrate fossils, and mammals; minerals, gems, meteorites and New England minerals and gemstones; rock specimens and large topographical and geological models; anthropological exhibits of nature and prehistoric cultures of several continents.

**AAAS Hours**—In addition to the regular hours (see below) the Glass Flowers will be open to AAAS registrants on Sunday, 28 Dec. and Monday, 29 Dec. from 4:30 p.m. (regular closing time) to 9:00 p.m.

**Regular Hours**—Monday through Saturday, 9:00 a.m.–4:30 p.m.; Sundays, 1:00 p.m.–4:30 p.m.; closed Christmas and New Year's Day.

**Admission**—Free, except for the Glass Flowers: Adults 25¢; Children under 16 (must be accompanied by an adult in any part of the museum) free.

#### Fogg Art Museum

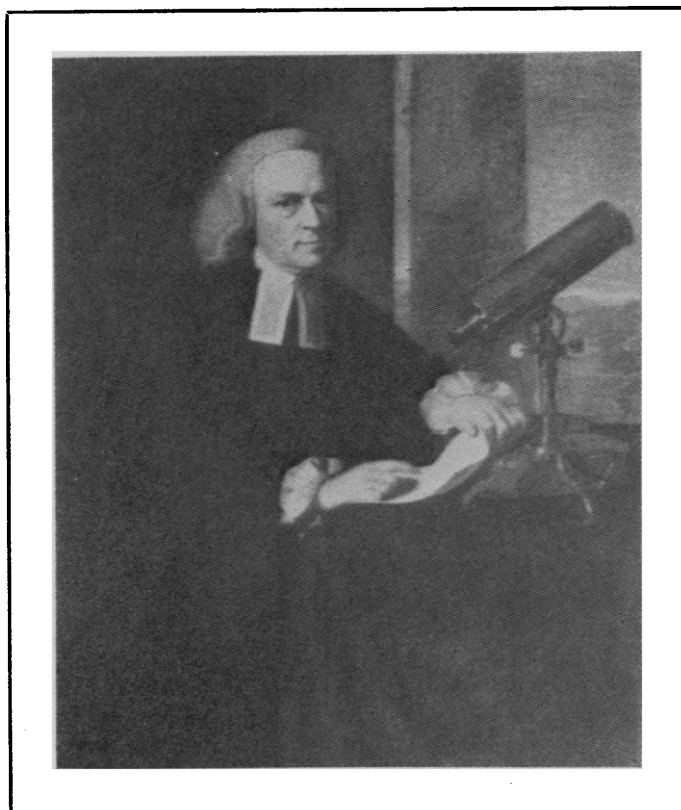
At Harvard University, Quincy Street, Cambridge—868-7600, ext. 2387

(A teaching and research museum. Major collections of drawings, European art of the late 18th and early 19th centuries, and Far Eastern art.)

**Harvard Scientists and their Apparatus**—At the time of the December Meeting of the AAAS, the Fogg Museum will display examples from Harvard's collection of 18th- and 19th-century scientific apparatus, together with portraits of the men who used these instruments.

Among several portraits by John Singleton Copley to be exhibited are those of John Winthrop, Hollis Professor of Mathematics and Natural Philosophy, and Thomas Hollis, who endowed the professorship and presented to Harvard College much of the "philosophical apparatus" with which

Above: Main Reading Room, Boston Public Library



John Winthrop by Copley, circa 1773 [Harvard]

the professor of "natural philosophy" demonstrated the physical and chemical phenomena about which he lectured. The portrait of John Winthrop shows a portable reflecting telescope made by James Short of London; this telescope will be one of a number in the exhibition.

Other early astronomical apparatus included in Harvard's collection are quadrants, sextants, and orreries. Instruments used to demonstrate scientific principles in other fields will also be on view; among others, electrostatic machines and thunder houses.

**Hours**—Mondays through Saturdays, 9:00 a.m.–5:00 p.m.; Sundays, 2:00 p.m.–5:00 p.m.

**Admission**—Free.

#### **Isabella Stewart Gardner Museum**

280 The Fenway, Boston—566-1401

(A collection of paintings, sculpture, tapestries, stained glass, furniture, and other objects of art, in a building of Italian style. The central court has a display of flowers. Acoustiguide tours are available; units may be rented for 50¢, or 75¢ for two persons together.)

**Music**—Free musical programs on open days at 3:00 p.m. in the museum's Tapestry Hall.

**AAAS Tour**—On Tuesday, 30 Dec., there will be a special AAAS tour of the museum, followed by tea. Details may be found on page 649.

**Hours**—Tuesday, Thursday, Saturday, 10:00 a.m.–4:00 p.m.; Sunday, 2:00–5:00 p.m.

**Admission**—Free.

#### **Houghton Library**

At Harvard University, Cambridge—868-7600

(Part of the Harvard University Library, the largest univer-

sity library in the world and the oldest in this country, Houghton Library was opened in 1942 to house rare books and manuscript collections.)

**Rara Astronomica**—An exhibition featuring about 50 rare astronomical books, manuscripts, and instruments from the collection of Harvard University. Houghton Library owns America's most outstanding collection of the works of Kepler, and one of the important collections of manuscripts of Sir William Herschel. Also on display will be a 14th-century manuscript of Chaucer's *Treatise on the Astrolabe*; an autograph letter of Galileo; and a copy of the elaborate 1540 *Astronomicum Caesareum* of Peter Apianus.

**Hours**—Friday, 26 Dec., 9:00 a.m.–5:00 p.m.; Saturday, 27 Dec., 9:00 a.m.–1:00 p.m.; closed Sunday, 28 Dec.; 29, 30, and 31 Dec., 9:00 a.m.–5:00 p.m.

**Admission**—Free.

#### **The Museum of Fine Arts**

265 Huntington Ave., Boston—267-9377

(Outstanding collections of Chinese, Japanese, Indian, Mesopotamian, Egyptian, Greek, Roman, European, and American arts. Some are unrivaled anywhere in the world.)

**Back Bay Boston, The City as a Work of Art**—The Centennial celebration of the Museum of Fine Arts will open 1 November 1969, with "Back Bay Boston, The City as a Work of Art."

The exhibition is a vivid salute to the farsighted architects, artists, and patrons who created and ornamented the nation's most successful and enduring residential quarter of the 19th century, birthplace of the Museum. The special exhibition galleries will be totally transformed for the show, which continues through 11 January 1970.

In the first room narrated photo sequences on an arc

screen will show the bold creation of the Back Bay from a tidal marsh; in the next room is a full-circle screen upon which the architectural glories of the Back Bay will be projected in continuous photographic images. This seamless projection on a 360-degree screen is a new process being used for the first time.

The stair hall will be devoted to the great patrons, the houses they lived in, and the treasured works of arts which they gave to the museum.

The third exhibition gallery will celebrate the Back Bay's great artists and architects of the past; Sargent, La Farge, St. Gaudens, Richardson, McKim, and Olmsted. Finally, the visitor will walk back into the present and get a glimpse of the future. Photographs, renderings, original architectural drawings, and models will present the current Back Bay projects and other outstanding designs of architects I. M. Pei, Philip Johnson, Paul Rudolph, and Hideo Sasaki—and the Back Bay of the more distant future as seen by the Boston Redevelopment Authority.

For the catalogue, Walter Muir Whitehill writes an authoritative foreword on museum patrons. The provocative introduction is by Lewis Mumford. Consultant for the exhibition is William Alex of New York, general editor of architectural drawings for Princeton University Press, author and organizer of exhibitions for the U.S. State Department and the Museum of Modern Art.

**AAAS Tour**—On Tuesday, 30 Dec., there will be a special tour of the museum's laboratories for research, conservation, and restoration of art objects. For details, see page 649.

**Hours**—Tuesdays, 10:00 a.m.–9:00 p.m.; Wednesdays through Sundays, 10:00 a.m.–5:00 p.m. Closed Mondays, Christmas, and New Year's Day.

**Admission**—Adults \$1.00; Tuesdays, 5:00 p.m.–9:00 p.m., free; Sundays, 10:00 a.m.–1:00 p.m., 50¢. Free at all times to members, children under 16, and servicemen in uniform. Admission to the Back Bay exhibition will be 50¢.

## Museum of Science

Science Park, Boston—742-1410

(A wide variety of exhibits, many of them activated, dealing with science and technology; special demonstrations; displays of particular interest to children. Regularly scheduled 45-minute planetarium programs.)

**The "Boston Arm"**—During the months of November and December, there will be an exhibit of the "Boston Arm" at the museum. The "Boston Arm" is a new prosthetic device which is controlled by neural impulses. During the Boston Meeting, the museum will present special live demonstrations of the arm for AAAS registrants. More information may be obtained at the AAAS information desk.

**Planetarium**—Regularly scheduled 45-minute programs, 50¢ each in addition to museum admission. The planetarium's traditional holiday program transports visitors to Bethlehem. Possible astronomical causes for the Christmas Star are considered.

**AAAS Tour**—On Tuesday, 30 Dec., there will be a AAAS tour of the Museum of Science limited to those with a specific interest in the establishment and operation of science museums, planetariums, and public science centers. Details may be found on page 650.

**Open House**—The day of 27 Dec., 6:00–10:00 p.m. The

evening will include a presentation of the planetarium's Christmas program. Open only to *AAAS Registrants* and their immediate families. *Admission free* with presentation of your name tag. More information may be found at the AAAS information desk.

**Hours**—Monday through Saturday, 10:00 a.m.–5:00 p.m.; Sunday, 11:00 a.m.–5:00 p.m.; Friday night to 10:00 p.m. Closed New Year's Day.

**Admission**—Adults, \$1.50; 5 through 16, 50¢; members and children under 5, free. Special Friday night rate (5:00–10:00 p.m.): adults, \$1.00; 5 through 16, 25¢. *AAAS Meeting Registrants* will receive a 50¢ reduction on the adult fee with the presentation of their AAAS Meeting name tags.

## New England Aquarium

Central Wharf, Boston—742-8870

(Opened in 1969, a new facility with both living and graphic exhibits, including a giant ocean tank simulating the coral reef environment and a special children's tide pool aquarium with living aquatic creatures that can be handled.)

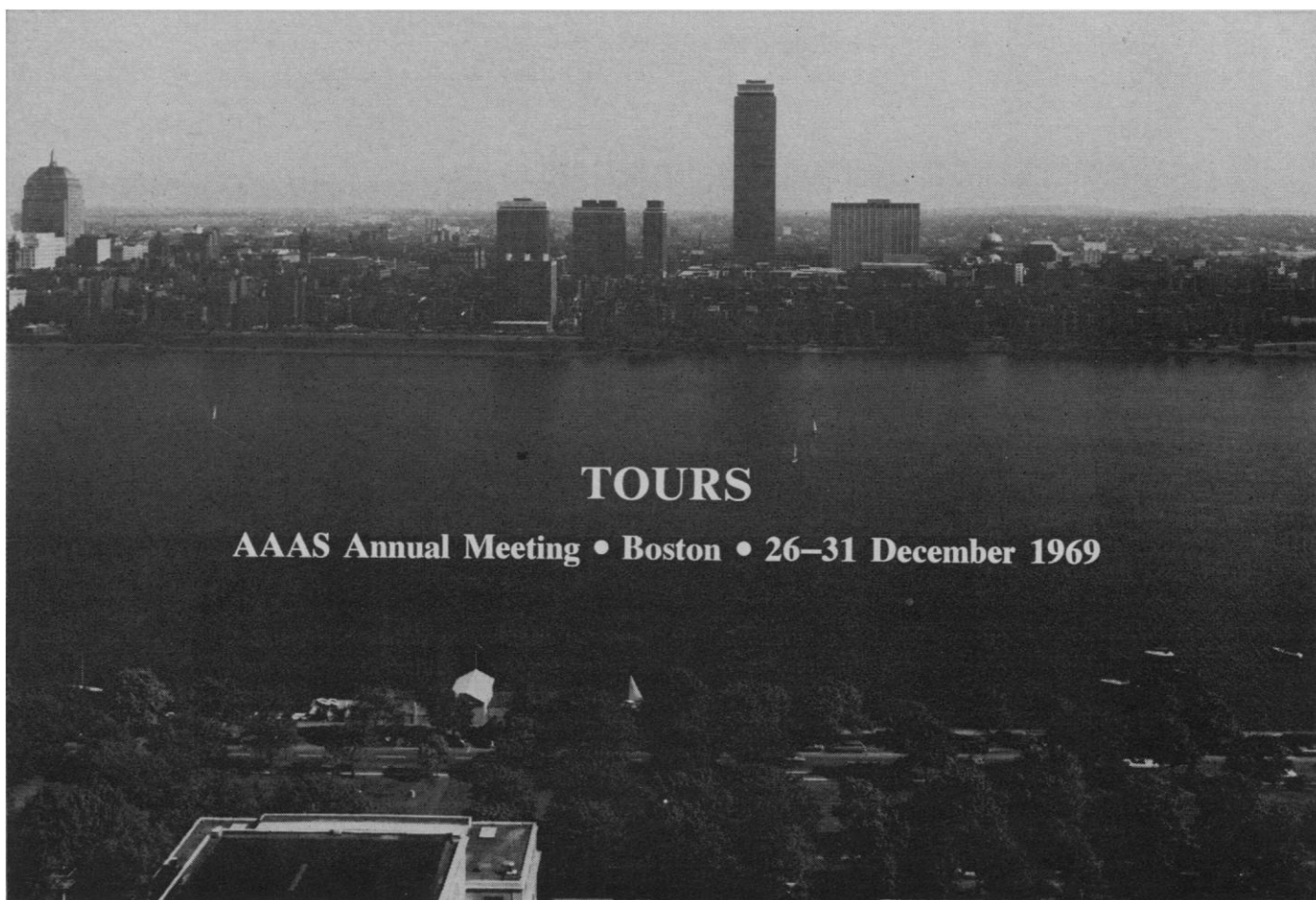
**AAAS Tours**—On Saturday, 27 Dec. and Monday, 29 Dec., there will be special AAAS tour of the aquarium. For details, see page 648.

**Hours**—Weekdays, 9:00 a.m.–5:00 p.m.; Saturdays, 10:00 a.m.–6:00 p.m.; Sundays, 12 noon–8:00 p.m.

**Admission**—Adults, \$1.50; children through age 14, 75¢.



Glass flower, bachelor's button with butterfly.



## TOURS

AAAS Annual Meeting • Boston • 26-31 December 1969

During the Boston Meeting, there will be a number of special tours, for AAAS registrants only, of local and nearby scientific and educational institutions. For each tour, there is a nominal charge for transportation; all tour buses will depart from, and return to, the Sheraton-Boston Hotel. Following are descriptions of the individual tours, in the order of their listing in the Advance Registration Form for the Boston Meeting. The number of registrants who can be accommodated on each tour is limited.

### Worcester Foundation for Experimental Biology

Saturday, 27 Dec. (\$3.00)

*Leave* Sheraton-Boston Hotel: 9:00 a.m.; *Arrive* Worcester Foundation 10:00 a.m.—*Leave* Worcester Foundation: 3:00 p.m.; *Arrive* Sheraton-Boston Hotel 4:00 p.m.

Registrants will be given a brief lecture of the nature and current work of the Foundation; then they will go on a tour of the laboratory. Some of the current research projects discussed will be: sleep, cancer, schizophrenia, and reproduction physiology. Lunch will be provided for the registrants at their own cost in the company-subsidized cafeteria (cost will be minimal).

### New England Aquarium

Saturday, 27 Dec. and Monday, 29 Dec. (\$3.00)

#### Two tours

*Leave* Sheraton-Boston Hotel: 8:30 a.m.; *Arrive* New

England Aquarium 9:00 a.m.—*Leave* New England Aquarium: 11:30 a.m.; *Arrive* Sheraton-Boston Hotel 12:00 noon.

The New England Aquarium, which opened its doors in 1969, will be the destination for two AAAS tours. Registrants will have a chance to view exhibits at the aquarium; to visit "behind the scenes," by way of slides; to learn how a completely modern facility of this kind is operated; and to hear, during a lecture by Guy C. McLeod, about the research programs currently under way.

### Cambridge Electron Accelerator

Monday, 29 Dec. (\$2.00)

*Leave* Sheraton-Boston Hotel: 9:00 a.m.; *Arrive* Cambridge Electron Accelerator 9:30 a.m.—*Leave* Cambridge Electron Accelerator: 11:30 a.m.; *Arrive* Sheraton-Boston Hotel 12:00 noon.

The Cambridge Electron Accelerator, a laboratory operated jointly by M.I.T. and Harvard, is located within the grounds of Harvard University. AAAS registrants will view, and have explained, the 6-BEV electron synchrotron and associated experimental equipment. Members of the laboratory staff will discuss current research projects.

**Note: Visitors under 14 years of age will not be permitted on this tour.**



### Massachusetts General Hospital

Monday, 29 Dec. and Tuesday, 30 Dec. (\$2.00) **Two tours**  
*Leave Sheraton-Boston Hotel: 9:00 a.m.; Arrive Massachusetts General Hospital 9:30 a.m.—Leave Massachusetts General Hospital: 12:15 p.m.; Arrive Sheraton-Boston Hotel 12:45 p.m.*

After a brief welcome to Massachusetts General Hospital, AAAS registrants will split into three groups to visit in rotation (i) the laboratory of Dr. Jerome Gross, whose research is related to the enzymatic control of tissue remodeling; (ii) the laboratory of Dr. Paul Russell, who is conducting research in transportation immunology; and (iii) the famous "ether dome" where anesthesia was first administered in hospital practice. Time will be provided for a question-and-answer period, and for coffee.

### Massachusetts Institute of Technology

Monday, 29 Dec. (\$2.00)  
*Leave Sheraton-Boston Hotel: 8:30 a.m.; Arrive M.I.T. 9:00 a.m.—Leave M.I.T.: 12 noon; Arrive Sheraton-Boston Hotel 12:30 p.m.*

After a brief welcome on behalf of the faculty and administration, student guides will conduct registrants through the halls of M.I.T. to three specific presentations/discussions of current research projects:

1) Single-cell protein for food. (Dept. of Nutrition and Food Science—Professors Scrimshaw and Goldblith.) The department has an interdisciplinary program of research with single-cell protein. This involves a pilot plant unit for production of single-cell protein, studies on removal of nucleic acids from the material, studies on the feeding of single-cell protein to experimental animals, and finally, clinical studies on the utilization of single-cell protein by human subjects. There will be a trip through the laboratories concerned.

2) Research using high magnetic fields. (Francis Bitter National Laboratory—Professor Lax). The world's most intense, continuous magnetic fields are used at the Francis Bitter National Magnet Laboratory for research in solid-state, low-temperature, and plasma physics and in related areas of science. Visitors will see the 10-megawatt magnet power supply, experiments in the magnets, new applications of magnetic fields to medicine and technology, and the new hybrid magnet consisting of water-cooled and superconducting sections.

3) Information processing for research and education. (Information Processing Services—Professor Mills.) The Information Processing Center at M.I.T. is a large and versatile computer facility whose purpose is to meet the teaching, research, and administrative needs for information processing of all members of the Institute community. This facility, completed in the summer of 1968, houses a multiple IBM 360 complex and a specially modified IBM 7094 installation, which has been providing general-purpose time sharing to the campus and the New England colleges since 1963. This visit will include a presentation on use and management of computers at M.I.T. and a tour through the computer rooms.

### Massachusetts Institute of Technology

Monday, 29 Dec. (\$2.00)

31 OCTOBER 1969

*Leave Sheraton-Boston Hotel: 1:30 p.m.; Arrive M.I.T. 2:00 p.m.—Leave M.I.T.: 4:30 p.m.; Arrive Sheraton-Boston Hotel 5:00 p.m.*

A special presentation of experimental M.I.T. programs in education; Professor Jerrold Zacharias will preside. The Education Research Center, one of M.I.T.'s interdepartmental laboratories, was established in 1960 for research in the teaching and learning processes, for preparation of new aids to learning—some along lines taken by traditional departments and some along interdisciplinary lines. New formats, new styles of student-faculty interaction, the application of films, tapes, computers, and programmed methods to new and old subject matter will be described in a short lecture. Inspection of apparatus, space projects, and plant will be available.

### Isabella Stewart Gardner Museum

Tuesday, 30 Dec. (\$2.00)  
*Leave Sheraton-Boston Hotel: 2:00 p.m.; Arrive Gardner Museum 2:30 p.m.—Leave Gardner Museum: 5:00 p.m.; Arrive Sheraton-Boston Hotel 5:30 p.m.*

Through the courtesy of the Trustees of the Isabella Stewart Gardner Museum, a visit to this world-famous palace, in the style of Venice of the 15th century, on Boston's Fenway and housing Mrs. Gardner's art collection. The tour will begin with a brief lecture on the museum's collection; then registrants will be free to tour the premises on their own, or attend the concert in the Tapestry Room at 3:00 p.m. Tea will be served in the Dutch Room at 4:00 p.m. Members who wish to hear a Court Talk at 2:30 p.m. should gather in the Spanish Cloister area upon arrival.

### The Museum of Fine Arts

Tuesday, 30 Dec. (\$3.00; includes \$1.00 admission fee)  
*Leave Sheraton-Boston Hotel: 9:30 a.m.; Arrive Museum of Fine Arts 10:00 a.m.—Leave Museum: 1:00 p.m.; Arrive Sheraton-Boston Hotel 1:30 p.m.*



*London bus to be used as shuttle bus.*



Upper left. *Gray Building, Massachusetts General Hospital*

Upper right. *Worcester Foundation for Experimental Biology*

Left. *New England Aquarium*

Boston's Museum of Fine Arts, observing its Centennial this year, has arranged an unusually interesting visit for AAAS registrants with three members of the Museum's staff: (i) William J. Young, Director of the Research Laboratory—scientific analysis of art objects for dating, authentication, or restoration; (ii) Frank Dolloff, Conservator of Prints and Drawings—the preservation of prints, drawings and watercolors through paper technology; and (iii) Richard Finlayson, Conservator of Paintings—the use of contemporary solvents and pigments in the restoration of oil paintings of the masters.

### **Museum of Science**

Tuesday, 30 Dec. (\$2.00)

*Leave Sheraton-Boston Hotel: 10:00 a.m.; Arrive Museum of Science 10:30 a.m.—Leave Museum of Science: 1:00 p.m.; Arrive Sheraton-Boston Hotel 1:30 p.m.*

A tour limited to those with a specific interest in the establishment and operation of science museums, planetariums, and public science centers, whether as a planner, staff member, or a member of a governing board. The tour will include a brief inspection of the facilities of Boston's Museum of Science, discussions of its programs, and a talk on the importance of science museums in primary education by the Museum's Director, Bradford Washburn. A complimentary luncheon will be served during Washburn's talk.

### **Woods Hole**

(Woods Hole Oceanographic Institution, Marine Biological Laboratories, U.S. Bureau of Commercial Fisheries)

Tuesday, 30 Dec. (\$4.00)

*Leave Sheraton-Boston Hotel: 9:30 a.m.; Arrive Woods Hole 11:00 a.m.—Leave Woods Hole: 5:00 p.m.; Arrive Sheraton-Boston Hotel 6:00 p.m.*

After arriving at the town of Woods Hole, the AAAS registrants will gather in the Laboratory of Marine Sciences Auditorium for half-hour briefings on the work of the three major research institutions—the Woods Hole Oceanographic Institution, the Marine Biological Laboratories, and the U.S. Bureau of Commercial Fisheries. Lunch will be an informal, Dutch treat affair; the cost is estimated at \$2.00 maximum. After lunch, the party will be divided into three groups, to visit MBL, WHOI, and BCF in rotation. According to present schedules one, and possibly two, of WHOI's oceangoing research vessels should be in port at the time of the tour.

### **Harvard University**

Tuesday, 30 Dec. (\$2.00)

*Leave Sheraton-Boston Hotel: 1:30 p.m.; Arrive Harvard University 2:00 p.m.—Leave Harvard University: 4:30 p.m.; Arrive Sheraton-Boston Hotel 5:00 p.m.*

The tour will consist of the following discussions: (i) A. G. Oettinger—Technical Aids to Creative Thought. A demonstration of the BRAIN (the Harvard Experimental Basic Reckoning and Instructional Network) designed to be used as an interactive computational aid in teaching or research involving mathematical analysis; (ii) T. E. Cheatham and Professor D. Cohen—Demonstration of Computer Graphics Techniques; and (iii) Richard I. Land—Fire-whirl: model of a fire storm obtained by establishing a vortex over burning liquid fuel.

# Educational Exhibits, Science Film Theater, Special Events

AAAS Annual Meeting • 26–31 December 1969 • Boston

## Educational Exhibits

For the first time this year, AAAS has arranged for a number of Educational Exhibits, by invitation, as part of the familiar Annual Exposition of Science and Industry. All exhibits will be in the Exhibition Hall (second floor) of Boston's War Memorial Auditorium, next to the Sheraton-Boston Hotel.

The Exhibits Committee for the Boston Meeting has arranged for Educational Exhibits that stress the scientific and technological accomplishments of both private and public research and educational institutions in the Greater Boston area in three major fields—health, weather, and computers. Boston is, of course, well known as one of the leading medical centers of the world. Exhibits related to weather help celebrate the 50th anniversary of the American Meteorological Society, with headquarters in Boston. Some of the most exciting new computer technology is based on Greater Boston research, both academic and industrial.

In addition, the Educational Exhibits will include a display of space-oriented technology by NASA, an exposition of the technology underlying the mapping of Mount McKinley arranged by Boston's Museum of Science, and two film rooms. In one room, there will be almost continuous screening of NASA films, including sequences of the moon landing; in the other room, of particular interest to educators, there will be separate booths, each devoted to educational film clips and projection equipment suitable for instruction in a variety of scientific disciplines.

## Science Film Theater

Several items comprise the Science Film Theater for this year's Annual Meeting in Boston:

1) A variety of science films will be shown during the mornings of 27–30 December (Saturday through Tuesday), from 9:30 a.m. to 12:00 noon in the Grand Ballroom of the Sheraton-Boston Hotel.

2) Distinguished Film Lectures will be given during the afternoons of 26–30 December (Friday through Tuesday) starting at 4:30 p.m., in the Grand Ballroom of the Sheraton-Boston Hotel.

3) As part of the Annual Exposition of Science and

Industry, on the second-floor exhibition area of Boston's War Memorial Auditorium, there will be showings of NASA films, including sequences of the moon landing, and a display of educational film clips and projectors.

Admission to the science film showings and the Film Lectures, both in the Sheraton-Boston Hotel, is free. Admission to the Exposition of Science and Industry is by registration badge only.

## Science Film Theater Program

### Saturday, 27 December

9:30 a.m.

1. **Why Man Creates**—An examination of man's creative ability through a series of vignettes. (Produced by Saul Bass & Associates for Kaiser Aluminum & Chemical Corporation).

10:00 a.m.

2. **Computer Sampler**—Extracts from computer-generated industrial and research films in mathematics, engineering, and physics. (Produced by the National Committee for Electrical Engineering Films).

10:25 a.m.

3. **Heart Motion by Computer Graphics**—The use of computer graphics as an aid to understanding heart motion. (Produced by Loma Linda University School of Medicine).

11:00 a.m.

4. **Computer Fluid Dynamics**—Fluid flow problems and their solutions shown by experiment and computer simulation. (Produced by Los Alamos Scientific Laboratory).

11:25 a.m.

5. **Incredible Machine**—The computer writes and talks at Bell Telephone Laboratories. (Produced by Owen Murphy Productions for American Telephone & Telegraph Company).

11:40 a.m.

6. **The Product of an Uncertain Gaussian**—Computer graphics and art combine to give a feeling for quantum mechanics. (Produced by the Polytechnic Institute of Brooklyn).



11:55 a.m.  
7. **Notes on a Triangle**—A ballet of triangular forms. (Produced by the National Film Board of Canada).  
*Close: 12:00 noon*

#### Sunday, 28 December

9:30 a.m.  
1. **Maine's Harvesters of the Sea**—Maine fishermen describe their work in their own words; commercial processing of seafoods is illustrated. (Produced by Bay State Film Productions, Inc., for the Maine Department of Sea and Shore Fisheries).

10:00 a.m.  
2. **Laboratory of the Body**—An introduction to dental research and its relation to today's scientific community. (Produced by Sy Wexler Film Productions for the American Dental Association).

10:30 a.m.  
3. **Wild Wings**—Banding, migration studies and disease prevention research at the Wildfowl Trust at Slimbridge, England. (Produced by British Transport Films).

11:05 a.m.  
4. **Great Barrier Reef**—Australian ecologists, oceanographers, and zoologists describe their work at the Great Barrier Reef. (Produced by the Australian News and Information Bureau).

11:35 a.m.  
5. **Talking with Dolphins**—Vocal communication between man and dolphin. (Produced by Motion Picture Productions, Naval Underseas Warfare Center).

11:50 a.m.  
6. **Worth How Many Words**—A series of photographic impressions of our complex world. (Produced by Morton Goldscholl Design Associates, Inc., for Eastman Kodak Company).

*Close: 12:00 noon*

#### Monday, 29 December

9:30 a.m.  
1. **Desert People**—The daily life of the aborigines of the Western Desert of Australia. (Produced by the Australian News and Information Bureau).

10:25 a.m.  
2. **The First Americans**—Tracing the origins of the first humans on this continent. (Produced by the National Broadcasting Company).

11:10 a.m.  
3. **Confrontation**—An exploration of the disagreements between present students and Arthur Morgan, the former president of Antioch College. (Produced by Richard Kaplan Productions, Inc., for Antioch College).

11:40 a.m.  
4. **People and Particles**—A group of Harvard University physicists struggling with their work at the Cambridge

Electron Accelerator. (Produced by Harvard Project Physics).

*Close: 12:00 noon*

#### Tuesday, 30 December

9:30 a.m.  
1. **The Distinction Between Past and Future**—A general audience lecture by Richard Feynman. (Produced by the British Broadcasting Company).

10:15 a.m.  
2. **Superconducting Magnets**—Building and testing a 67,000 gauss magnet. (Produced by Argonne National Laboratory).

10:30 a.m.  
3. **The Active Sun**—What we learn from studying the sun's activity. (Produced by the National Academy of Sciences).

11:00 a.m.  
4. **Laser Light**—The principles, present and possible future applications of lasers. (Produced by Motion Picture Department, Scientific American).

11:40 a.m.  
5. **Atmospheric Electricity**—The role of electricity in our atmosphere. (Produced by the American Meteorological Society).

*Close: 12:00 noon*

#### **Special Events**

A number of Special Events have been arranged for the Boston Meeting.

**Boston Symphony Orchestra Concert**—(27 Dec.). See page 644 for details.

**Science and Music (A Concert/Symposium)** (27 Dec.). See page 644 for details.

**Tea: American Meteorological Society Headquarters**—The American Meteorological Society, founded at the AAAS Annual Meeting in St. Louis in 1919, celebrates its 50th anniversary this year. Part of the celebration is a tea for AAAS ladies only—registrants or wives—on Sunday afternoon, 28 December, from 3:00 to 5:00 p.m. Tickets are required, and may be obtained either through advance registration or at the Information desks at the Sheraton-Boston and Statler-Hilton hotels at the time of the Annual Meeting.

A.M.S. Headquarters, at 45 Beacon St., Boston, is one of the historic Harrison Gray Otis houses. Designed by Charles Bulfinch and built in 1806, the house overlooks Boston Common, which Mr. Otis was instrumental in having converted into the first public park in the United States.

Tea will be served in the Rossby Memorial board room, formerly the oval ballroom, where, legend has it, the waltz was first danced in this country. Members of the A.M.S. staff will conduct a guided tour of the whole house.