barrassment worse was the fact that Quigley's testimony contradicted that of witnesses from the auto industry who were heard at a committee session in Detroit the following day. The industry is far from anxious for government controls. Its position is that there is some question about the degree to which automobile smog contributes to the overall pollution problem, and it wants to make certain that expenditures to control vehicle emissions will actually reduce pollution to a degree commensurate with the cost. The companies are also worried about the economic penalty to individual motorists that the engine modifications and maintenance required to bring about reduced emissions entail. These could conceivably raise initial costs by as much as $70 and add considerably to maintenance fees as well. Nonetheless the companies are well aware that the rising public interest in pollution problems could easily lead to different standards being adopted by the 50 states, which would seriously complicate production techniques, and in addition, they have done enough research to persuade them that some control over exhaust pollution is entirely feasible. Thus, while Quigley testified that more time was needed to gather experience and perfect equipment, a witness for the auto manufacturers trade association told Muskie that ". . . if Congress decided that all new cars should be equipped with exhaust control systems of the types now becoming available to meet standards set in California, the automobile manufacturers are in a position to manufacture and install the equipment. . . ." Muskie's analysis of the conflicting testimony, which he appeared in some measure to enjoy, was as follows: "The day before yesterday the Department of Health, Education, and Welfare indicated that although we have a problem that needs to be dealt with . . . we didn't have the know-how to deal with it now. Yesterday . . . the testimony of the automobile industry was that there is no problem that needs this kind of action now, but that if there is, the industry does have the know-how to deal with it."

Whether the conflicting testimony arose from an industry-administration plan that went awry or from the absence of a plan is a secret being tightly guarded. But even the suggestion of a deal was sufficient to discomfit the administration and force it to seek a retreat. Three days after he testified against the bill Quigley made another appearance before the subcommittee, this time to support it, with a few modifications. "Muskie doesn't want blood," one of his aides remarked last week, commenting on the subcommittee's discreet handling of Quigley on his return performance, "he only wants an air pollution bill." And, thanks to the ineptitude of the administration which turned a minor production into a *succès de scandale* and raised public and political interest to a new high pitch, it appears that he is going to get one.—ELINOR LANGER

Announcements

Arrangements have been concluded for a "close working relationship" between the Institute of Pharmacology of the **University of Milan** and the department of biochemical pharmacology of the **State University of New York at Buffalo**. Collaboration between the two departments will involve the exchange of staff, research students, and technicians, shared use of some types of equipment, and a joint symposium to be held yearly. The first symposium, on cell permeability and transport phenomena, will be organized from Milan, and information on it may be obtained from L. Bolis, Via Alamanni, 19, Milan, Italy. Information on the exchange arrangements are available from J. F. Danielli, chairman of the biochemical pharmacology department at Buffalo.

Syracuse University will introduce in the fall semester two interdisciplinary programs combining engineering, physics, and mathematics with the life sciences. At the undergraduate level the department of electrical engineering will offer a B.S. degree in **biosystems**, which will enable students to obtain a strong foundation in electrical engineering and a basic knowledge of zoology and experimental psychology. Courses in the humanities also will be included. Graduate students will be offered a Ph.D. program in **sensory communications**, with the Laboratory of Sensory Communication as the focal point. The laboratory is devoted to the role of the sensory processes in human and animal communication. Additional information is available from the assistant director of the laboratory, E. J. Kletsky, Syracuse University, Syracuse, N.Y.

Meeting Notes

The second international symposium on **basic environmental problems of man in space** is scheduled 14–18 June in Paris. It is being organized by the International Astronautical Federation and the International Academy of Astronautics. The program will be devoted to four main areas: ecophysiology, psychophysiology and engineering psychology, biotechnology, and special man-machine problems. Abstracts will be available in English, French, or Russian, and papers may be read in one of these languages, with simultaneous interpretation provided. (Conference Secretariat, International Academy of Astronautics, 250, rue Saint-Jacques, Paris 5)

A conference on research problems in the physics of **x-ray spectra** will be held 22–24 June at Cornell University, Ithaca, N.Y. Discussions will include recent experimental developments, theoretical interpretations, and promising attacks on the major unsolved problems in the fields. Both invited and contributed papers may be presented. Abstracts of all papers are required; deadline: *1 June*. (H. W. Schnopper, Laboratory of Atomic and Solid State Physics, Rockefeller Hall, Cornell University, Ithaca, N.Y. 14850)

The Oak Ridge Institute of Nuclear Studies, medical division, will present its ninth symposium 1–4 November. The topic is **radioactive pharmaceuticals**. Invited speakers will include specialists from the U.S. and Europe. (Chairman's Office, Medical Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn.)

A national symposium on **veterinary education** will be held 25–26 June at the University of Georgia, Athens. It will be sponsored by the university's school of veterinary medicine and the American Veterinary Medical Association council on education. The meeting is aimed at helping schools to develop "modern concepts of education in the clinical veterinary sciences." (J. T. Mercer, School of Veterinary Medicine, University of Georgia, Athens)

The University of Oregon geology department and the New York Academy of Science will sponsor an international **lunar geological field confer-**

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ence 22–28 August in and around Bend, Oregon. It will include a 1-day symposium for the presentation of technical papers, then field tours to points of geological interest in central Oregon. The meeting, an extension of a symposium on lunar geology held last year by the New York Academy of Science, is intended to focus attention on the area's potential as a site for the development and testing of lunar base facilities and equipment that will be needed for space exploration programs. (L. Staples, Dept. of Geology, University of Oregon, Eugene)

Courses

Fairleigh Dickinson University's fourth annual **thermoanalysis** institute will be held in June, in Madison, N.J. The first of two sessions, scheduled 14–18 June, will be on "principles and applications." It will include work on thermogravimetry, differential thermoanalysis, effluent-gas analysis, and differential scanning calorimetry. The fee for this session is $100; an additional $60 for dormitory facilities is optional.

The second session, on "recent advances," will take place 21–23 June. It is designed for persons with some familiarity in the field, and will include lecture and laboratory sessions during the day and lectures in the evenings; recently developed apparatus will also be demonstrated and available for use. The fee for this session is $60, with $36 optional for dormitory facilities. (S. Gordon, Thermoanalysis Institute, Fairleigh Dickinson University, Madison)

The American Medical Association will hold its 3rd annual institute on **medical writing**, in Chicago, 28 June to 20 August. The program is designed for medical students and physicians who are interested in written communication. Registration will be limited to 12 members, each of whom will receive a fellowship of $650 to cover travel and living expenses. There will be no other fees. (Lester S. King, AMA, 535 North Dearborn Street, Chicago, Illinois)

An institute on **management through data control and communications** will be sponsored by American University, Washington, 7–10 June. The topics to be covered include advances in the integration of communications and data processing, evaluation, and justification; and implementation phases of several major systems will be analyzed. (P. W. Howerton, Center for Technology and Administration, American University, 2000 G Street, NW, Washington, D.C.)

The materials research laboratory of Pennsylvania State University will sponsor a course 14–26 June on modern methods for the **preparation and characterization of materials**, with emphasis on high-band-gap materials. Topics to be covered include crystal chemistry, phase equilibria, theory and technique of crystal growing, materials characterization by x-ray, electron microscope, microprobe, spectroscopic techniques, modern methods of elemental analysis, characterization of point line, and surface defects. (Conference Center, Pennsylvania State University, University Park, Pa.)

A course on **fermentation technology** will be presented at M.I.T. 21–25 June. Emphasis will be on the engineering aspects and the topics to be covered include mixing and mass transfer, air and medium sterilization kinetics, continuous fermentation, and instrumentation and control. (Director of the Summer Session, Room E19-356, M.I.T., Cambridge 39)

Applications are being accepted for a course in **structural synthesis** 12–16 July at Case Institute of Technology, Cleveland. The program will offer about 30 hours of lectures aimed at familiarizing engineers with synthetic structures. It will also review developments in the field during the past 6 years. The course fee is $200. Applicants must have a bachelor's degree in engineering or the equivalent. Deadline: *11 June*. (H. B. Schultz, Jr., Office of Special Programs, Case Institute of Technology, Cleveland, Ohio 44106)

The fourth annual seminar on **energetics in metallurgical phenomena** will be held at the University of Denver 21 June to 13 August. The purpose of the course is "to bring a common focusing point for the application of basic sciences to an understanding of matter." Four separate 2-week lectures will be given. Topics will include nonstoichiometric compounds, thermodynamics and transport properties, phase transformations, and deformation processes. Informal discussions will also be scheduled. Attendance is open for any or all of the sessions. Postdoctoral participants may be eligible for stipends of $125 a week, plus dependency and travel allowances, and predoctoral participants may apply for stipends of $75 a week plus travel allowance. A letter of application, including transcripts, vita, and at least one letter of recommendation are required. (W. Mueller, Department of Metallurgy, University of Denver, Denver, Colo. 80210)

Scientists in the News

The following men received awards during the National Academy of Sciences annual meeting this week in Washington:

Frederick Henry Todd, scientific adviser to the technical director, David Taylor Model Basin, U.S. Department of the Navy; the Gibbs brothers medal for outstanding contribution in the field of naval architecture and marine engineering.

Robert Stuart Edgar, associate professor of biology, California Institute of Technology; the U.S. Steel Foundation award in molecular biology, for distinguished research.

Alfred Day Hershey, director of the genetics research unit, Carnegie Institution of Washington; the Kimber genetics medal for achievement in the science of genetics.

Alfred Henry Sturtevant, professor emeritus of biology, California Institute of Technology; the John J. Carty medal for noteworthy and distinguished accomplishment in any field of science.

George Gaylord Simpson, professor of vertebrate paleontology, Harvard University; the Daniel Giraud Elliott medal for most meritorious work in zoology or paleontology published each year.

Sir Edward Bullard, professor of geophysics, University of Cambridge, England; the Alexander Agassiz medal, for original contribution in the science of oceanography.

Martin Ryle, director of the Mullard radio astronomy observatory, University of Cambridge, England; the Henry Draper medal for original contribution in astronomical physics.

Paul Herget, director of the University of Cincinnati Obseratory; the James Craig Watson medal for noteworthy astronomical discoveries or research.

Erratum: In the article "Miocene mammals and Central American seaways" by F. C. Whitmore, Jr., and R. H. Stewart (9 April, p. 180), the sentence beginning on the 11th line of the second paragraph on p. 182 should have read, "The Panama tooth is in an early stage of wear."