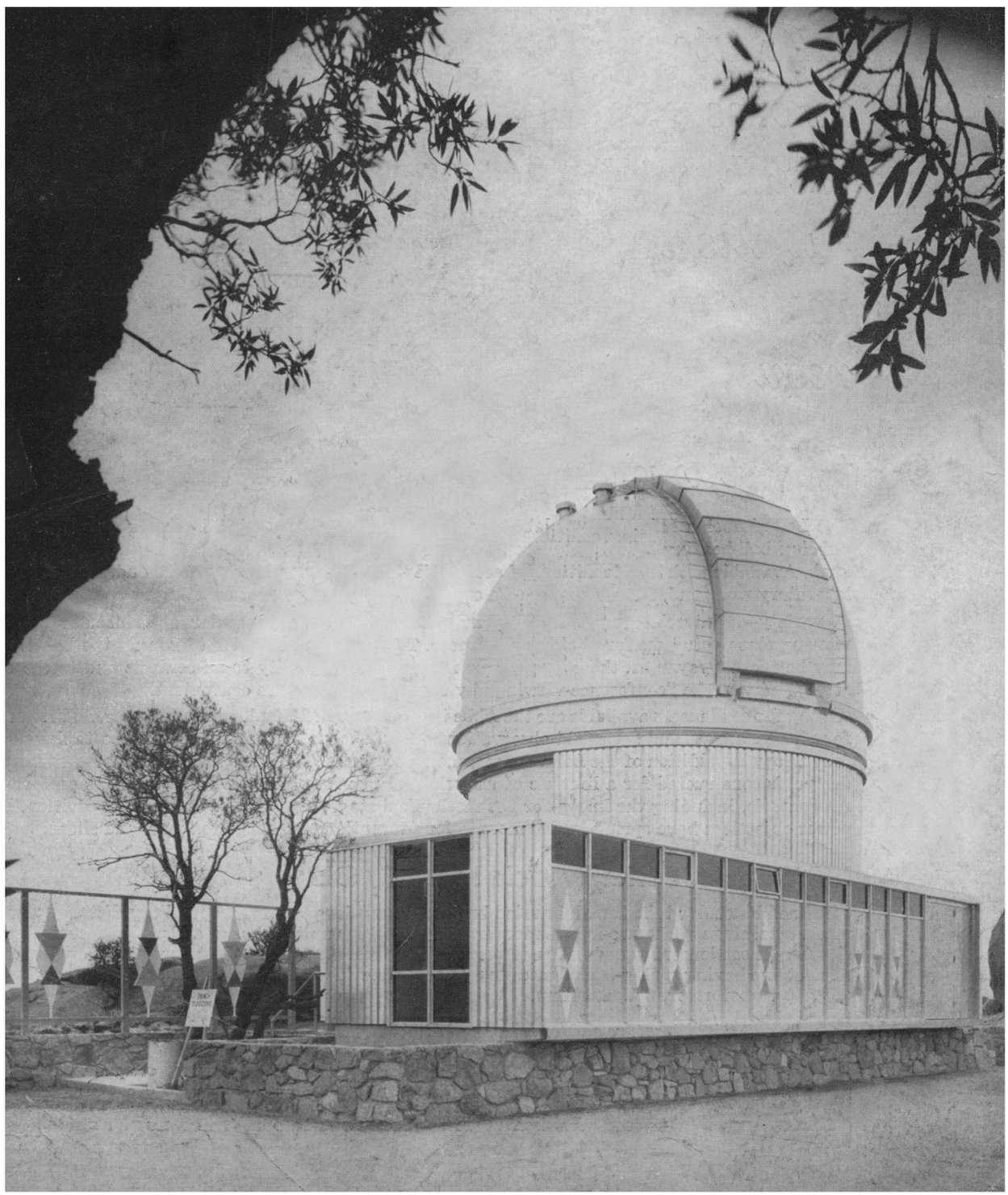
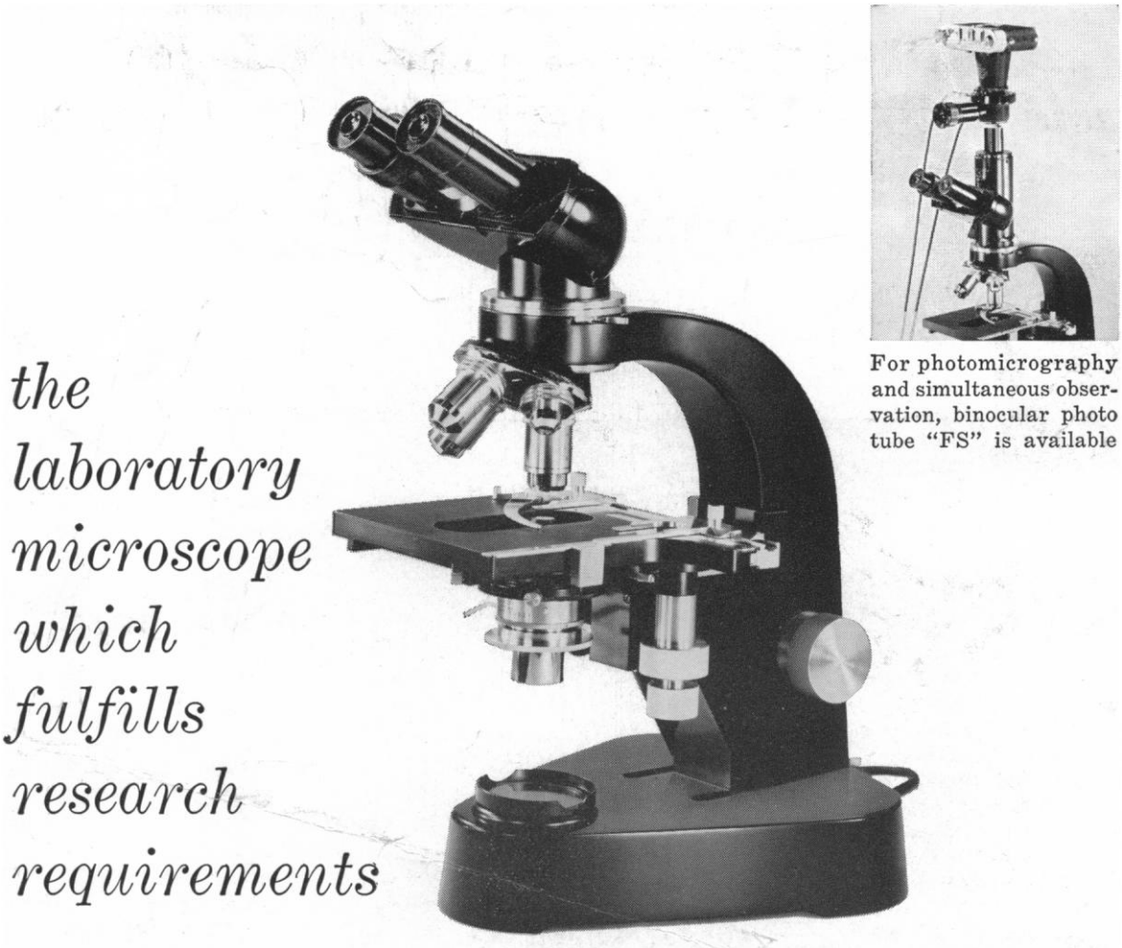
SCIENCE

6 May 1960

Vol. 131, No. 3410

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





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SCIENCE

Cover

Building for 36-inch reflector at Kitt Peak National Observatory. Pattern suggestive of Indian influence is used on screen shielding parking lot and entrance to the building. See page 1341. [Manley]

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SCIENCE

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Claim to Fame

So far as we know, no team of linguists and sociologists has as yet made a joint attack on the problems posed by the evolution and distribution of the alphabetical abbreviations for institutional names. Unquestionably the condensation of titles saves effort in speaking and cost in printing, but other factors doubtless serve to increase the currency of the short forms. An element of gamesmanship surely plays some part. No one is going to refer to the Atomic Energy Commission by its full title among his scientific peers for fear they might think him unfamiliar with "AEC." But no simple rule prevails for the formation of such abbreviations. The National Bureau of Standards is invariably referred to in conversation as "the NBS," but the National Gallery of Art is never called "the NGA."

Perhaps a little classification of abbreviations will be useful. The classic type is formed from the initial letters of all or almost all of the words that make up the institutional title, but the abbreviation so formed does not form a word. The letters are pronounced one by one. Familiar examples are FBI, CIA, and NAS–NRC.

The other common, though more recent, type of abbreviation is, like the classic type, formed from the initial letters of some or all of the words in the title, but the title has been so arranged that these initial letters can be pronounced in syllables, as words. To one not familiar with them, these words give a strange, even a barbaric, flavor to the language. Among them are UNESCO, NATO, ICSU (pronounced "ik-sue" and translated as the International Council of Scientific Unions), and ARPA–IDA (pronounced as spelled and translated as Advanced Research Projects Agency–Institute for Defense Analysis).

Some others fail to fit into either pattern. Thus, MIT (for Massachusetts Institute of Technology), DOD (for Department of Defense), and FID (for Fédération Internationale de Documentation) could be, but happily never are, treated as words. Another type of shortened title is made up of some of the initial letters combined with an abbreviation of a word. Among these hybrid types are *Aslib* (pronounced "ah-slib" and standing for the Association of Scientific Libraries) and AMSOC, for the American Miscellaneous Society.

The American Association for the Advancement of Science is abbreviated as the AAAS. To pronounce this form letter by letter would be tedious and would convey an impression of indecision: "eh, eh, eh, ess." This is avoided in two ways: physicists and mathematicians call it "the ā-cube-ess" (A^3S); all others run it smoothly off their tongues as "the triple-ā-ess."

To look at it from another angle, widespread recognition of an abbreviated title is an indication of fame and status. Recently, a young institution has moved into the elite group of organizations whose shortened titles have national currency. We congratulate the NSF, the National Science Foundation, on the occasion of its tenth birthday, 10 May 1960, for achieving such fame at so tender an age and, what is more important, for having developed in such a way that it has earned the respect of the nation's scientists. May the NSF continue its good work in support of research, education, and communication in the sciences for ten to the *n*th (10^n) years.—G.DuS.

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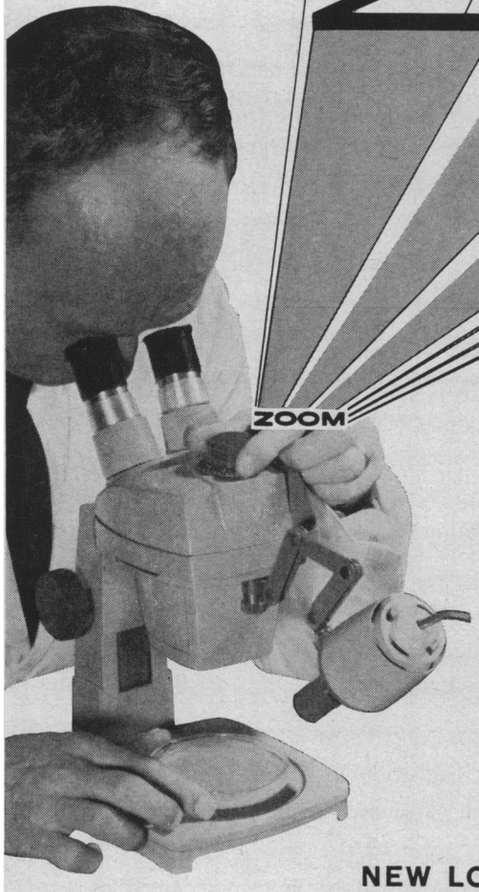

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a substrate that doesn't split by itself . . . sooty things with a lot of physics in them . . . bringing sound movies down to size

Suggestion from East Berlin

May we have your attention, please, to a 411-word essay on lipase?

Ostensibly it advertises an Eastman Organic Chemical, *Phenyl Laurate* (Eastman 7885). To be sure, 25 grams of this compound may actually be purchased for $3 from the address given at the end of the essay. Because of difficulty in draping intellectual dignity around a bottle worth $3, it serves our purpose to issue the large, round declaration that enzymes are the most important subject on earth. Does not their interplay govern all activity in the biosphere, including that in the cerebra of men of business and science? Of course.

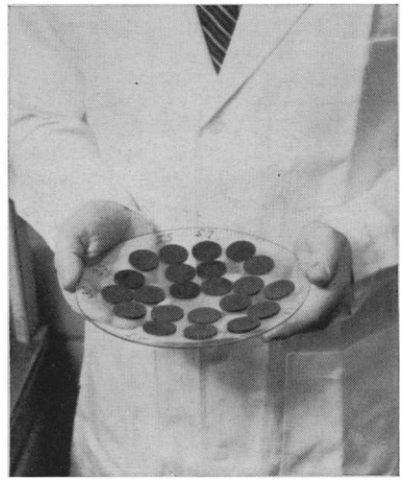
Permit us now to narrow the scope to one class of enzymes, the esterases. Lipases are esterases that split fats. Other esterases split simple esters of fatty acids. Lipases occur in certain animal organs and plant tissues. Although other esterases are fed into the mammalian blood stream from the liver, the lipase content of the blood serum is very low unless the duct of the pancreas is closed off.

To demonstrate and estimate an esterase, one gives it something (hereinafter designated a substrate) to split under fixed conditions, and one compares the amount of split product against a blank. Olive oil has been the standard substrate for lipase. The fatty acids released are titrated against sodium hydroxide. On page 221 of a certain book it says that this will work for lipase in blood serum. The measurement offers difficulties when the serum lipase level is normally low. It becomes a poor subject for wit when some foul derangement in the human machine raises the level to a point easy to measure.

The subway from East Berlin has brought out of Humboldt University there the suggestion (*Clin. Chim. Acta. 4*, 221) that phenyl laurate nicely liberates phenol in colorimetrically measurable quantity when acted upon by serum lipase. Soon after the news reached us, we prepared this compound for sale because it has good shelf life, where other proposed substrates all too soon split by themselves untouched by lipase. Then we took a different subway to Brooklyn, N. Y., to chat with a biochemist who told us of a considerable improvement in the phenyl laurate procedure.

Whoever will write name and address and the last three words of the preceding sentence on a postcard to Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company) will receive an abstract of the Brooklyn procedure as soon as it is published.

Adjustable boundary for the infrared



These sooty things have a lot of physics in them. The physics is of the old-fashioned type, not very clear, but not nearly so opaque as the little wonders themselves look when held to the light. Yet they transmit to 30μ in the very far infrared. Their utility lies in the easy adjustability of the spectral position of the transition from opacity to clarity. The opacity is achieved not by absorption and not by interference but by marvelously selective and effective scattering. What interference there is, in fact, operates on the side of clarity by beating down Fresnel reflection losses.

These *Kodak Far Infrared Filters* have turned into a hotter item than we dared hope when we first taught ourselves how to take silver chloride and convert its surface to silver sulfide in a manner as tunable as a fiddle string. Now the infrared trade—military and analytical—has grown to where it needs cut-on filters worse than it needed them ever before. And we are ready—even with a warning that these filters require precautions to protect them from harsh military environments and that silver chloride in the presence of water vapor still corrodes metal just as it always has. Of course, they can be mounted in plastic. The corrosion we can forestall if, at the expense of inserting a few absorption bands, we can be permitted to overcoat with polystyrene.

The pitch for the business is made by a collection of mimeographed sheets entitled "Kodak Far Infrared Filters," obtainable from Eastman Kodak Company, Special Products Sales, Rochester 4, N. Y. Here are given sizes, prices, and the code for specifying the cut-on wavelength wherever wanted from 1 to 5μ.

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This is quite a system of communication. Use it to instruct your Swaziland branch office. Report to the home office on whether the breakwater at Pago Pago needs rebuilding and how the swallows come in for the landing at Capistrano. Save days of literary toil. What few words the movies leave to be said are more convincing when heard in accompaniment to the sight of the action. (As for combined records of the children's voices and swiftly changing ways, shame on sentiment!)

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Meetings

Virology

The Gustav Stern symposium on "Perspectives in Virology II" met in New York City on 25 and 26 January 1960 and provided opportunities for probing into many facets of virology. It was attended by 120 invited participants, who reflected the international scope of interest in this field and the diversity of the disciplines aimed at clarification of viral problems.

Basic aspects of virology were presented on the first day. T. M. Sonneborn (Bloomington, Ind.) discussed borderline host-parasite relationships as exemplified by the kappa agents of *Paramecium*. He described the exclusion of lethal kappa agents from the cell by the more efficient benign kappa competitive agents and proposed that similar studies should be undertaken with viral agents. Robley Williams (Berkeley, Calif.) defined the significance of ultramicroscopic particles in cells and the importance of relating them to viral agents through biological assay. He reviewed the electron-microscopic appearance of many of the animal viruses which have been viewed in purified form and in ultrathin sections. He was unable to detect a distinction in observable structure between cytolytic and oncogenic viruses. He outlined developments which would be needed for further interpretation of the cell-virus relationship.

G. Schramm (Tübingen, Germany) discussed mutation in viruses. He analyzed the kinetics of mutation of tobacco mosaic virus ribonucleic acid through treatment with HNO_2. W. Wilbur Ackermann (Ann Arbor, Mich.) discussed the biochemistry of vaccinial infection. He described how the mechanism of vaccinial infection conforms to the pattern of the small viruses. In HeLa cells, one particle can initiate a focus of infection, this is followed by an eclipse phase, then virus production occurs as an all-or-none phenomenon. The cytoplasm shows increased accumulation of protein, ribonucleic acid, and deoxyribonucleic acid prior to the appearance of new virus. James E. Darnell (Bethesda, Md.) demonstrated that a cell infected with poliovirus does not make virus-specific precursor molecules for the first 2½ to 3 hours after infection. The protein and ribonucleic acid components are then synthesized and joined as mature virus.

R. Walter Schlesinger (St. Louis, Mo.) discussed vagaries of adenovirus-cell complexes and showed, by example, that a single amino acid (arginine) in the nutrient fluid can influence the appearance of cytopathology, as well as the emergence of latent viral agents. A report by Harold S. Ginsberg (Cleveland, Ohio) on biochemical alterations in adenovirus-infected cells indicated that the intranuclear inclusion bodies were deoxyribonucleic acid; that this was newly synthesized as a result of viral infection; that it differed in structure from normal host deoxyribonucleic acid; and that it was probably a "single-stranded" deoxyribonucleic acid. The inclusions were the result of an overproduction of a viral precursor. The cellular protein increase contained three distinct biologically active fractions: (i) infectious viral particles, (ii) toxin, and (iii) common soluble CF antigen.

Selman Waksman (New Brunswick, N.J.) discussed experiences in the search for antiviral agents. He attributed failures to obtain antiviral agents from microbial cultures to searches which were concerned primarily with the properties of growth and metabolism in biological systems; however, viruses possess no intrinsic enzymatic mechanisms. Clarification of the mechanism of viral synthesis and viral activity within the cell may provide leads toward effective treatment.

Papers on the second day of the

symposium were concerned with applications. Alick Isaacs (London, England) defined "interferon" as a normal cell constituent produced in excess as a defense mechanism in response to virus stimulation. He characterized "interferon" as a protein with molecular weight of 100,000. It is nontoxic and nonantigenic at virustatic doses. He postulated that "interferon" may function as an antagonist to pentose metabolism of virus replication, thereby "starving the virus." Albert Sabin (Cincinnati, Ohio) showed that by the artificial selection of polioviruses with high reproductive capacity at low or high temperatures, the virologist has a tool by which he may be able to alter or detect the biological activity of many viruses. In discussing creative associations in biology, René J. Dubos (New York) pointed out how singular biological phenomena could be altered when one organism shared the environment of another.

Sidney Kibrick (Boston, Mass.) reviewed viral infections of the fetus and newborn. He pointed out that evidence on intrauterine and neonatal viral infections in man may be more significant than has been generally anticipated. He considered the perinatal period as a most hazardous period, when poliovirus, smallpox, vaccinia, salivary gland virus, and chickenpox could pose serious problems. He reviewed 53 cases of Coxsackie virus-induced myocarditis and interpreted the route of infection as transplacental. Françoise Haguenau (Villejuif, France) analyzed tumor virus-infected cells as viewed by electron-microscopy. She stated that ultrastructural lesions could not be considered specific, and that the presence of virus-like particles could be interpreted only as an abnormal sign. It was her opinion that infected and noninfected tissue culture preparations may provide the best media for electron-microscopy. Wallace P. Rowe (Bethesda, Md.) described an epidemiological study of mouse polyoma virus infection in wild mice in the Harlem district of New York City. This study provided thought provoking guidelines for similar studies on human tumors. While serological evidence of polyoma infection was highest in mice from congested areas, there was very low incidence of tumor disease. Polyoma virus was recovered from naturally infected wild mice and from cage contents (bedding). The virus appeared to be present in some commercial colonies. Robert J. Huebner (Bethesda, Md.) discussed viruses in search of cancer. His thought-provoking presentation provided the introduction to an informal seminar (of which H. B. Andervont, Bethesda, Md., was chairman) on criteria to establish viruses as a cause of human cancer. A panel of 14 tumor-virologists attempted to define guidelines for such a program. A résumé of their discussions is being prepared by Andervont.

Peyton Rous (New York) was honored during the evening banquet, on the occasion of his 80th birthday and of the 50th anniversary of his first publication on the Rous sarcoma virus. An eloquent tribute by Charles Oberling (Villejuif, France) brought into clear perspective the contributions of Peyton Rous to science and to society.

This symposium was a unique meeting. The formal presentation of papers induced lively discussions by the participants. The aim of the symposium was to provide a forum for exchange of information among individuals of diverse interests and a bridge across which such information could be conveyed to those who will apply it in public health. The proceedings of the symposium will be published as a *Festschrift* in honor of Peyton Rous, through the Institute of Microbiology, Rutgers University.

MORRIS POLLARD
Medical Branch,
University of Texas, Galveston

Forthcoming Events

June

1–3. Culture, Society and Health, conf., New York, N.Y. (Miss D. L. Keur, Hunter College, New York)

1–3. Instrumental Methods of Analysis, annual symp., Montreal, Quebec, Canada. (W. H. Kushnick, Instrument Soc. of America, 313 Sixth Ave., Pittsburgh 22)

1–3. Radar Symp., 6th annual, Ann Arbor, Mich. (W. A. Blikken, Willow Run Laboratories, P.O. Box 2008, Ann Arbor)

1–4. American Assoc. of Bioanalysts and California Assoc. of Clinical Laboratories, annual, San Francisco, Calif. (Mrs. M. K. Higgins, 75 Buena Vista Ave., San Francisco 17, Calif.)

1–5. Irrigation and Drainage, 4th intern. cong., Madrid, Spain. (D. Diaz-Ambrona, Comité Nacional Espanol de la Comision International de Riegos y Drenajes, Ministerio De Obras Publicas, Agustin De. Bethencourt 4, Madrid)

2–4. Drugs Affecting Lipid Metabolism, intern. symp., Milan, Italy. (S. Garattini, c/o Institute of Pharmacology, Via del Sarto 21, Milan, Italy)

3–8. Pan American Medical Women's Alliance, 7th cong., San Juan, Puerto Rico. (Mrs. S. D. Rosekrans, 504 Newett St., Nullsville, Wis.)

5–8. Special Libraries Assoc., 51st annual, Cleveland, Ohio. (B. M. Woods, SLA, 31 E. 10 St., New York 3)

5–9. American Soc. of Mechanical Engineers, summer annual and aviation conf., Dallas, Tex. (L. S. Dennegar, ASME, 29 W. 39 St., New York 18)

5–9. World Power Conf., Madrid, Spain. (D. J. Pérez, Pozualo, Spanish National Committee, General Pardinas, 55, Madrid)

5–10. National Conf. on Social Welfare, annual, Atlantic City, N.J. (Natl. Conf. on Social Welfare, 22 West Gay St., Columbus 15, Ohio)

5–14. XXV Cold Spring Harbor Symp. on Quantitative Biology, Cold Spring Harbor, N.Y. (A. Chovnick, Biological Laboratory, Long Island Biological Assoc., Cold Spring Harbor)

6–8. Protein Structure and Function, 13th symp. in biology, Upton, N.Y. (D. E. Koshland, Jr., Dept. of Biology, Brookhaven National Laboratory, Upton, N.Y.)

6–10. International Conf. on Live Poliovirus Vaccines, Washington, D.C. (Secretariat, Pan American Health Organization/World Health Organization, 1501 New Hampshire Ave., NW, Washington 6, D.C.)

7–11. Microwave Tubes, intern. cong., Munich, Germany. (Nachrichtentechnische Gesellschaft im VDE (NTG), Frankfurt-am-Main, Osthafenplatz 6, Germany)

7–13. Dosimetry in Health Physics, symp., Vienna, Austria. (International Atomic Energy Agency, 11 Kärntner Ring, Vienna 1, Austria)

7–15. Partial Differential Equations and Continuum Mechanics, intern. conf., Madison, Wis. (R. E. Langer, Mathematics Research Center, U.S. Army, Univ. of Wisconsin, Madison 6)

8–9. Selenium in Nutrition, conf., Ithaca, N.Y. (K. C. Beeson, U.S. Plant, Soil, and Nutrition Laboratory, Ithaca, N.Y.)

8–10. Canadian Federation of Biological Societies (Canadian Physiological Soc., Pharmacological Soc. of Canada, Canadian Assoc. of Anatomists, Canadian Biochemical Soc.), 3rd annual, Winnipeg, Manitoba. (E. H. Bensley, Montreal General Hospital, 1650 Cedar Ave., Montreal 25, P.Q.)

8–11. National Soc. of Professional Engineers, annual, Boston, Mass. (P. H. Robbins, NSPE, 2029 K St., NW, Washington 6)

8–12. American College of Chest Physicians, Miami Beach, Fla. (M. Kornfeld, 112 E. Chestnut St., Chicago 11, Ill.)

9–10. American Geriatrics Soc., Miami Beach, Fla. (R. J. Kraemer, 2907 Post Rd., Warwick, R.I.)

9–10. Canadian Inst. of Food Technology, 3rd annual conf., Winnipeg, Manitoba. (W. J. Eva, Box 846, Winnipeg, Manitoba)

9–10. Society of Women Engineers, 10th annual conv., Seattle, Wash. (Mrs. J. A. Troxell, 3613 E. 43 St., Seattle 5)

9–11. Acoustical Soc. of America, Providence, R.I. (W. Waterfall, ASA, 335 E. 45 St., New York 17)

9–11. Endocrine Soc., Miami Beach, Fla. (H. H. Turner, 1200 N. Walker, Oklahoma City 3, Okla.)

9–11. National Speleological Soc., annual, Carlsbad, N.M. (G. W. Moore, U.S. Geological Survey, Menlo Park, Calif.)

9–12. American Medical Women's Assoc., Miami Beach, Fla. (Mrs. L. T. Majally, 1790 Broadway, New York 19)

9–12. American Rheumatism Assoc., annual, Hollywood-by-the-Sea, Fla. (F. E. Demartini, Presbyterian Hospital, 622 W. 168 St., New York 32)

9–12. American Therapeutic Soc., Miami Beach, Fla. (O. B. Hunter, Jr., 915 19 St., NW, Washington 6)

(See issue of 22 April for comprehensive list)