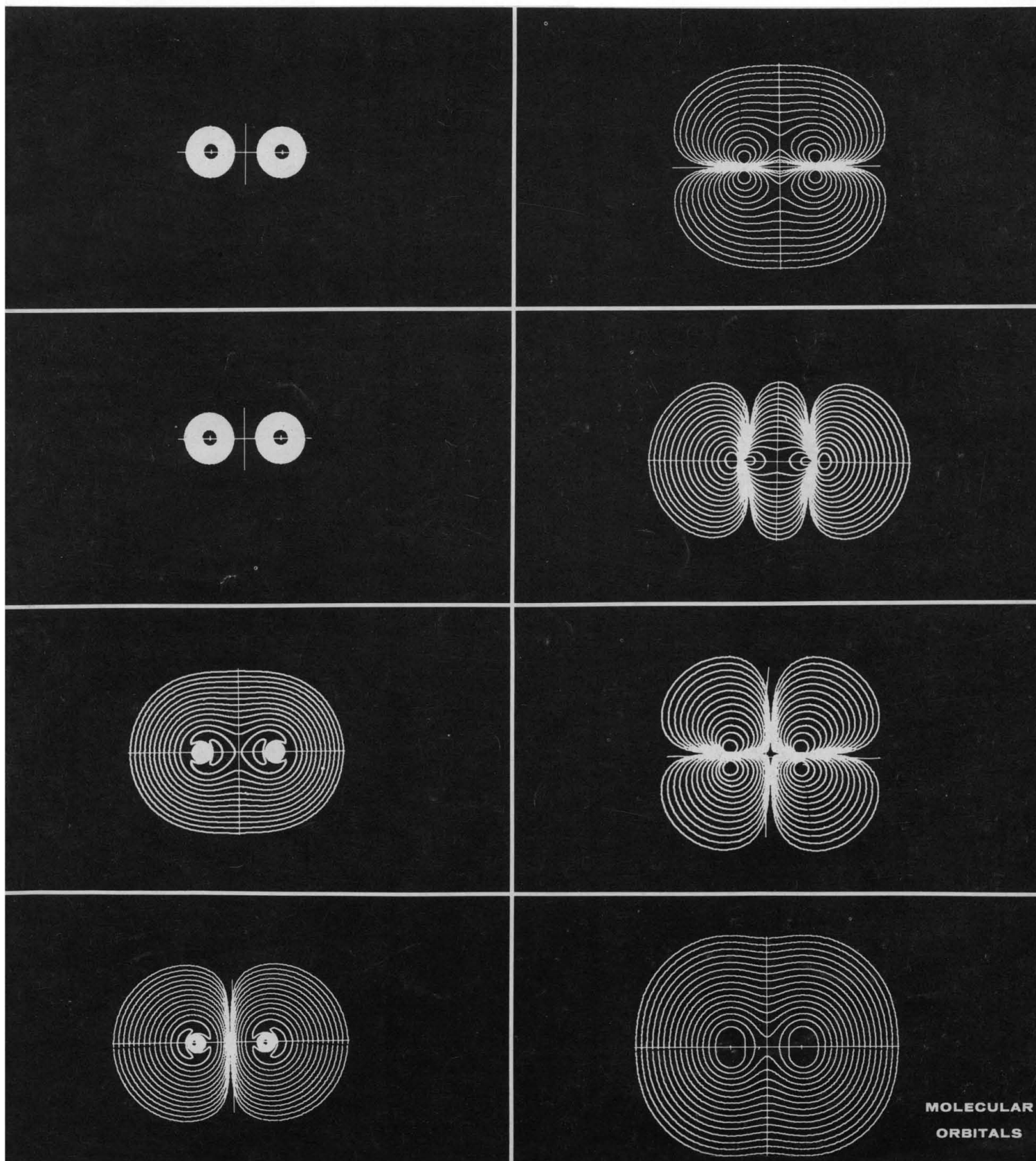


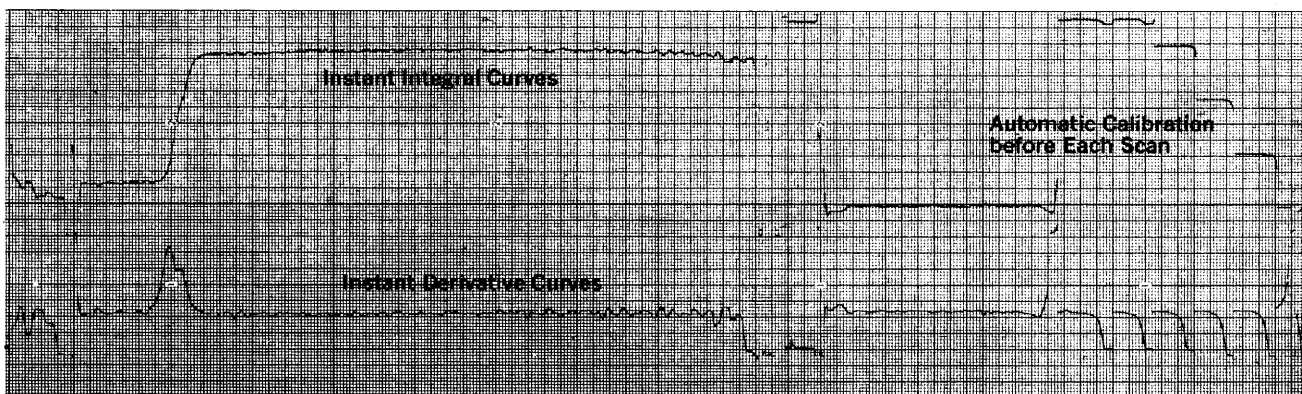
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25 February 1966

Vol. 151, No. 3713

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

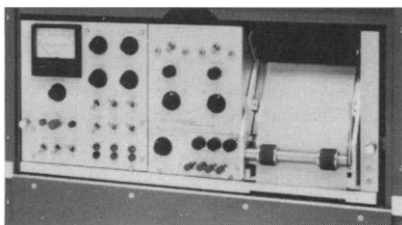




Boundary Velocity Experiment, two DNA's, 44,000 rpm, 265 mμ

Direct Scanning...the new era in analytical ultracentrifugation

The Photoelectric Scanner permits investigators, for the first time, to take full advantage of the highly discriminating absorption optical system of the Model E. It provides split-beam photometry—during centrifugation, at wavelengths selectable at will from 440 mμ down to 236 mμ. You can see what is happening in the cell as it happens because you get an immediate written record, and both integral and derivative curves are recorded simultaneously.



Recorder and controls for Photoelectric Scanner

Thus direct scanning frees you from the tedious procedures associated with the camera; provides "direct viewing" of sedimentation processes, electronic precision and discrimination in scanning the cell, and a variety of

wavelengths at which to work. The precision and versatility that this new tool brings to biochemical research will inevitably open new areas of study. Already two investigators working with a scanner have been able to distinguish the catalytic and regulatory protein subunits of an enzyme in an association-dissociation study that augurs well for exciting work ahead.

What that work will be, what more will be accomplished in the era of direct scanning, only time and the ingenuity of investigators will tell.

Inherent advantages of the Scanner

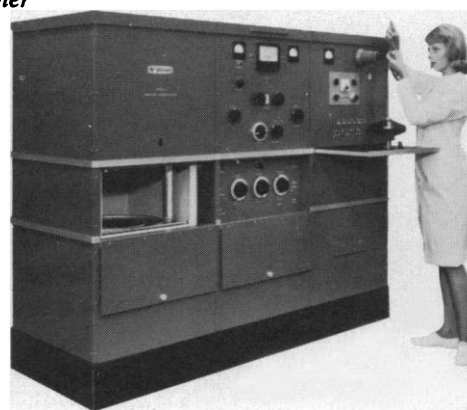
- Because the Scanner utilizes the split-beam principle, two samples in a double sector cell can be subjected to identical experimental conditions—an important factor in studying extremely small differences in sedimentation coefficients, for example. Or sample solution and solvent can be used in the double sector cell, with solvent

reading automatically subtracted from the sample solution.

- With the Scanner classical sedimentation equilibrium measurements at extremely low concentrations in the UV are significantly easier to make. And they are more accurate because calibration steps are recorded before each scan.

- Having both curves simultaneously is a real advantage. For example: the derivative curve can show the presence of secondary components not readily recognizable from the integral curve; the integral curve can show heterogeneous material not revealed by the derivative curve.

For more information about the Photoelectric Scanner, write to Spinco Division at the address below.

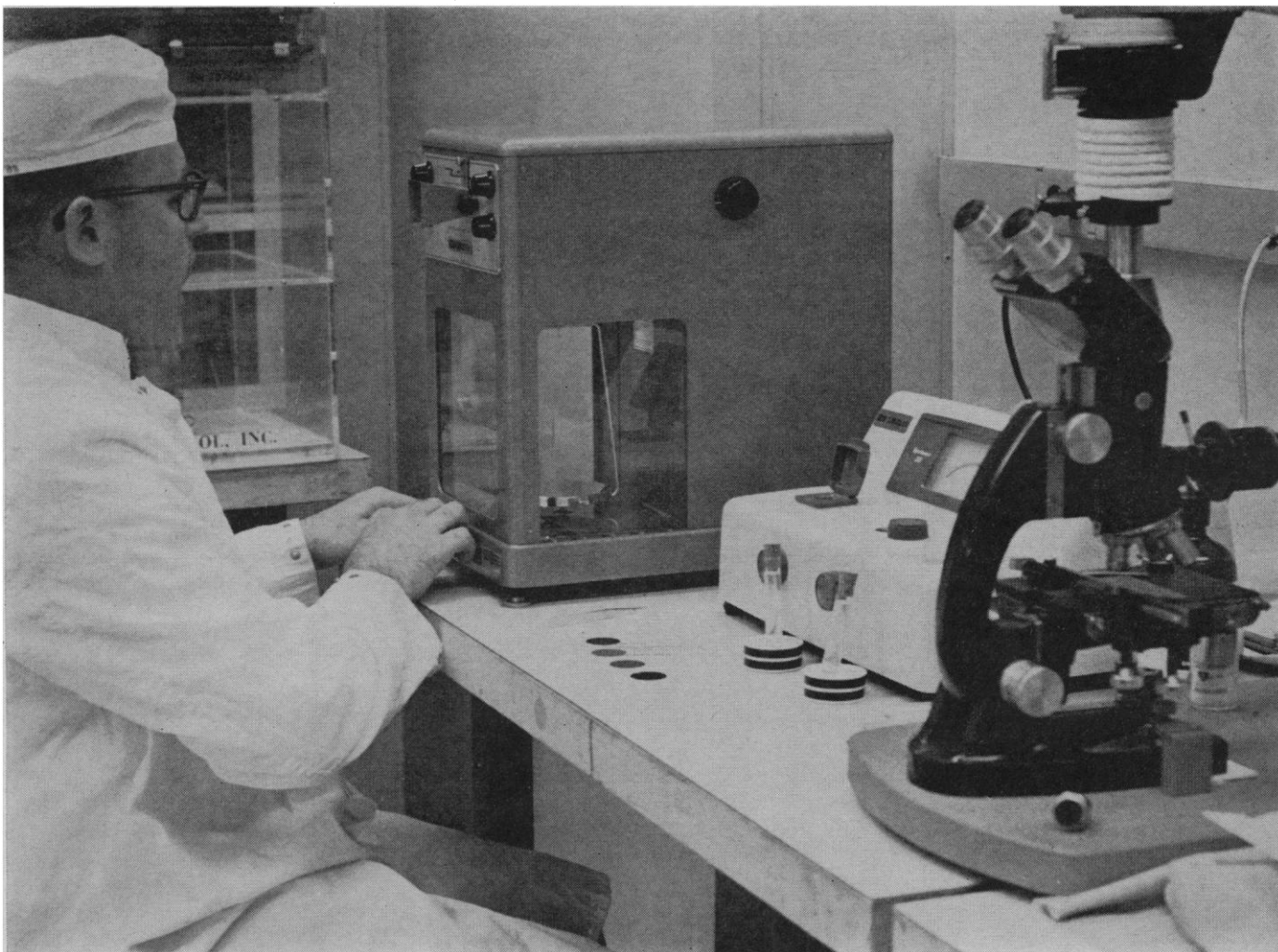


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AT IBM'S SYSTEMS MANUFACTURING DIVISION, EAST FISHKILL, NEW YORK . . .

Mettler balance solves 60-millionths-of-an-inch measurement problem

Putting an ultra-thin layer of glass on transistors the size of a grain of salt – this was a crucial problem facing the IBM Systems Manufacturing Division. It was solved by depositing a layer of glass on more than a thousand transistors at a time, ganged together on a wafer the size of a half-dollar.

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Electron density contour diagrams displaying the molecular orbital model of the fluorine molecule. The total electron density is illustrated in the bottom, right-hand drawing; other diagrams are of the seven different molecular orbitals making up the molecule. These diagrams were calculated and drawn by electronic computers. See page 961. [Argonne National Laboratory, Argonne, Illinois]

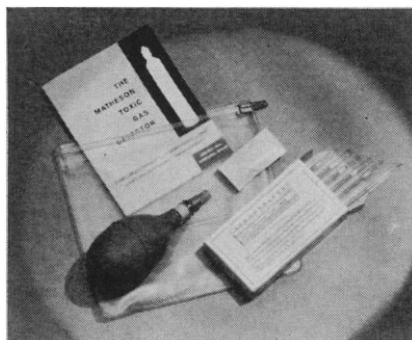
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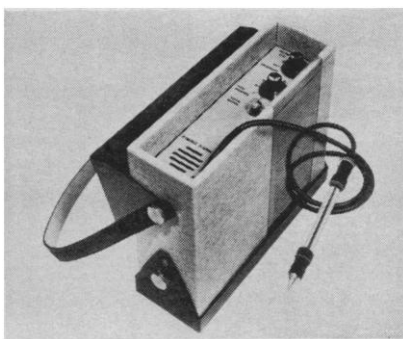
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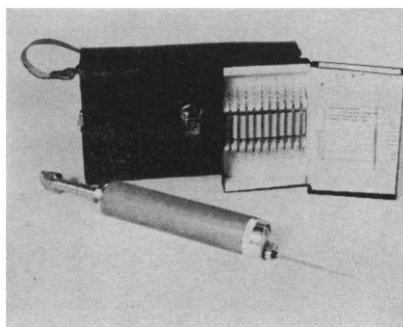
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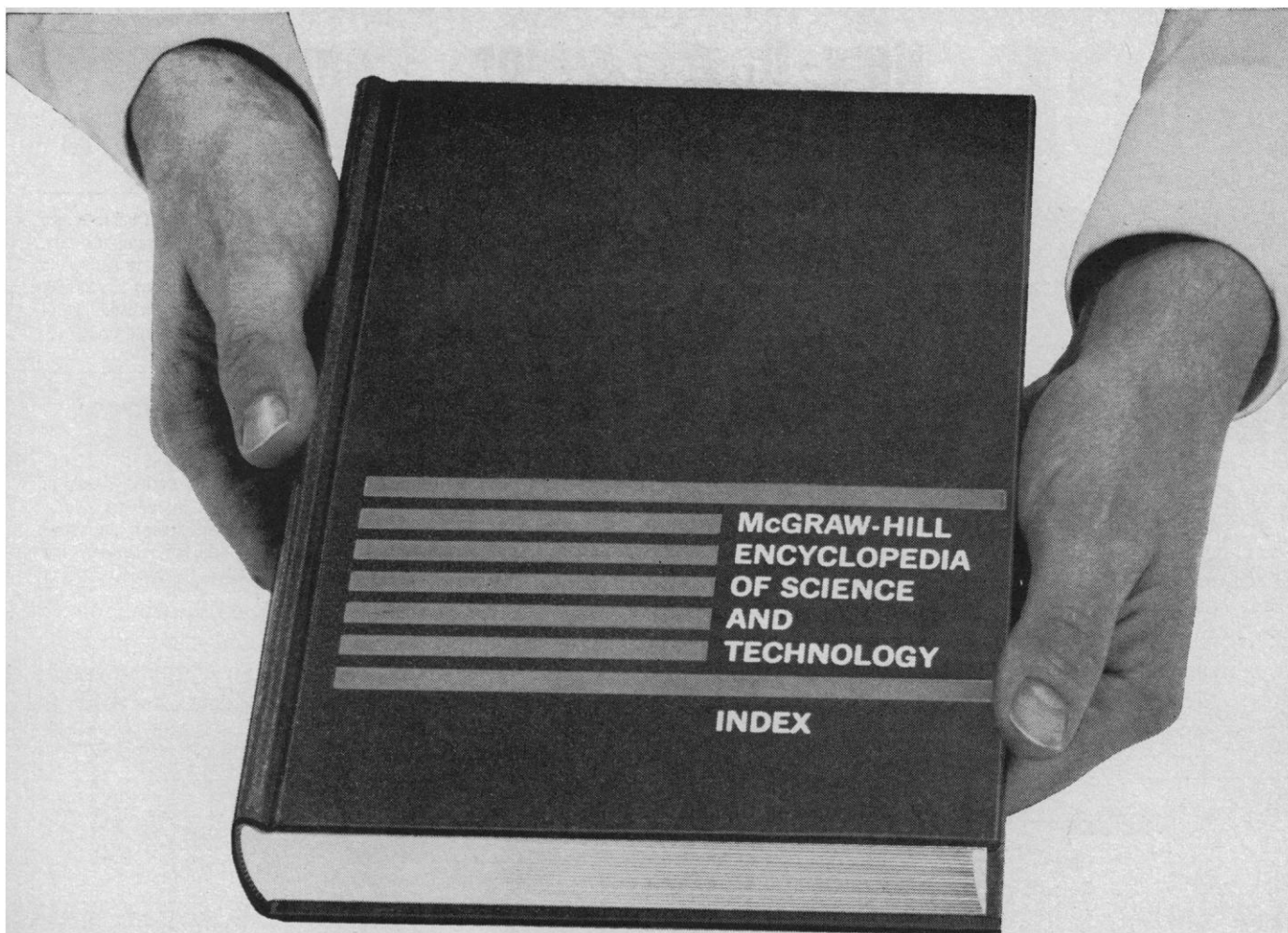
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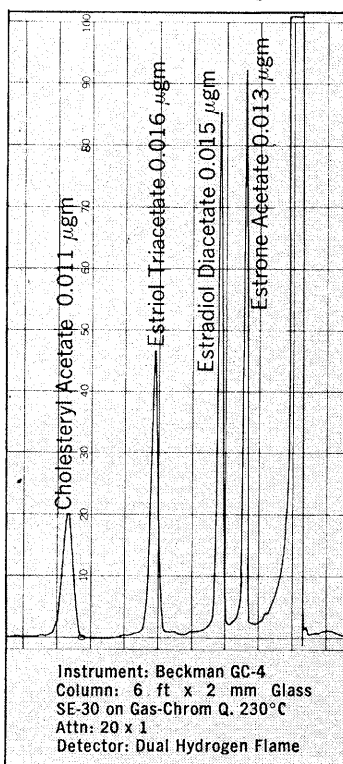
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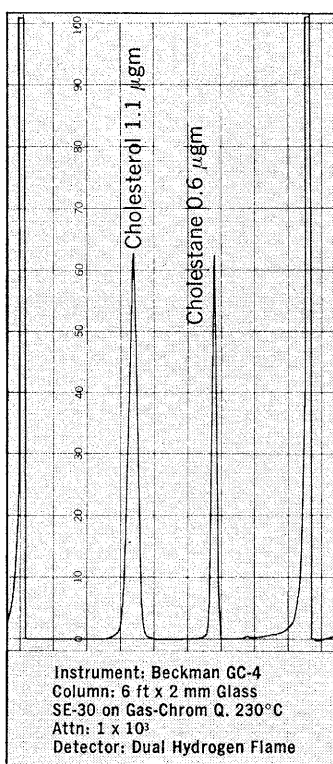
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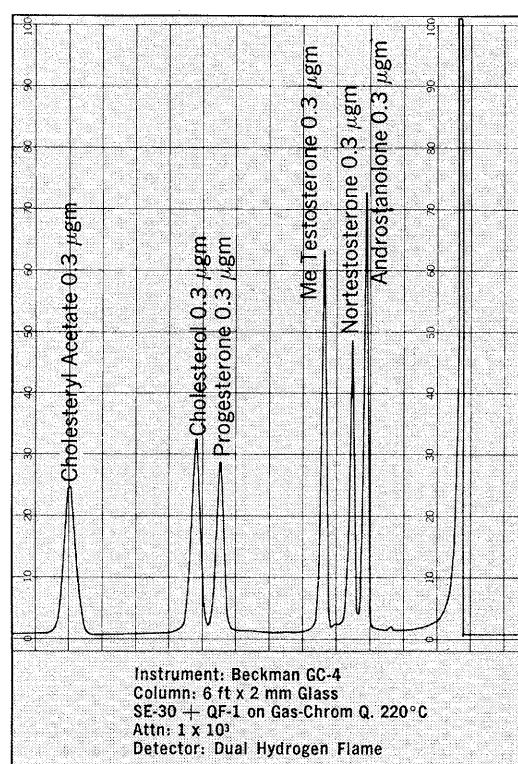
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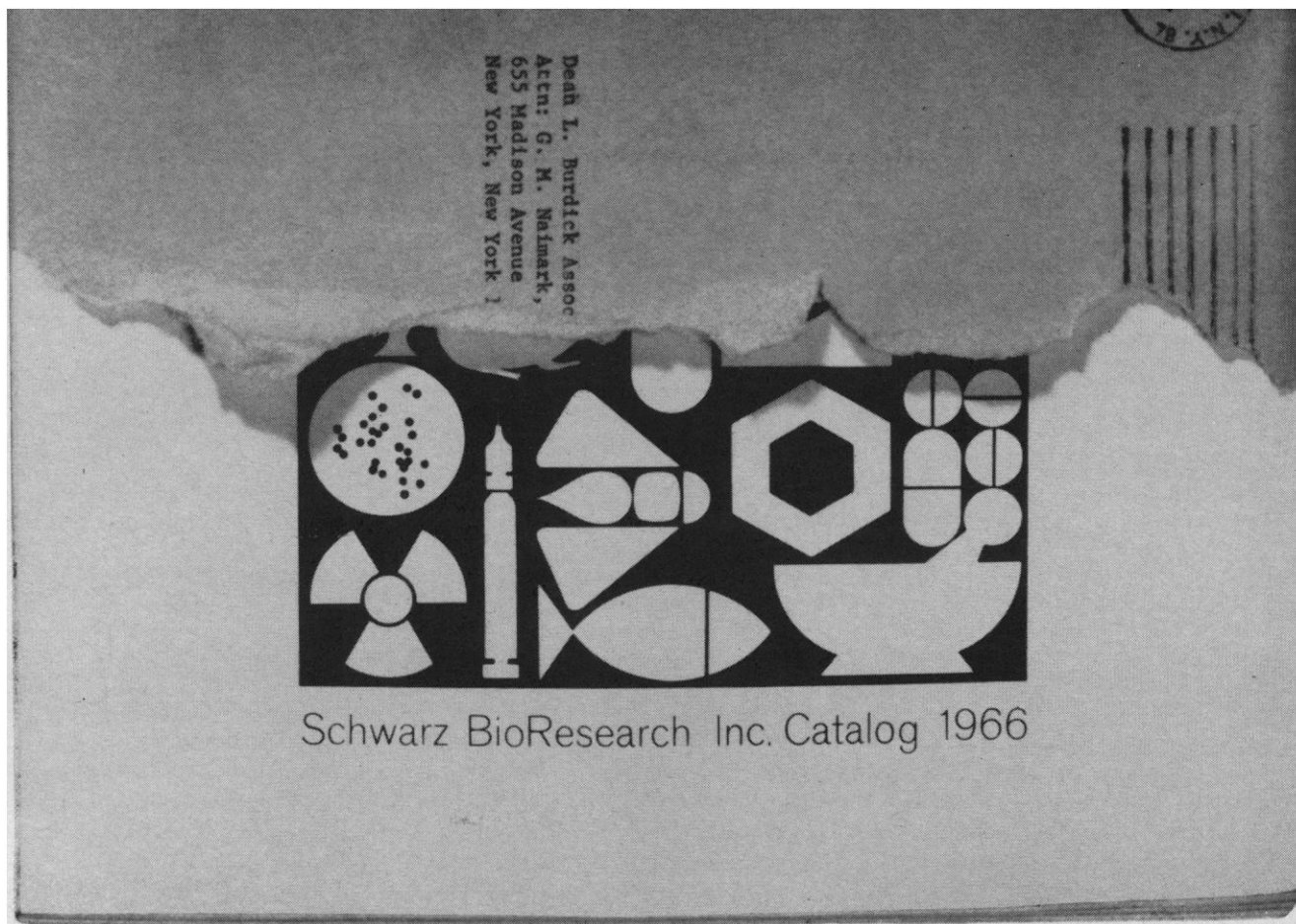
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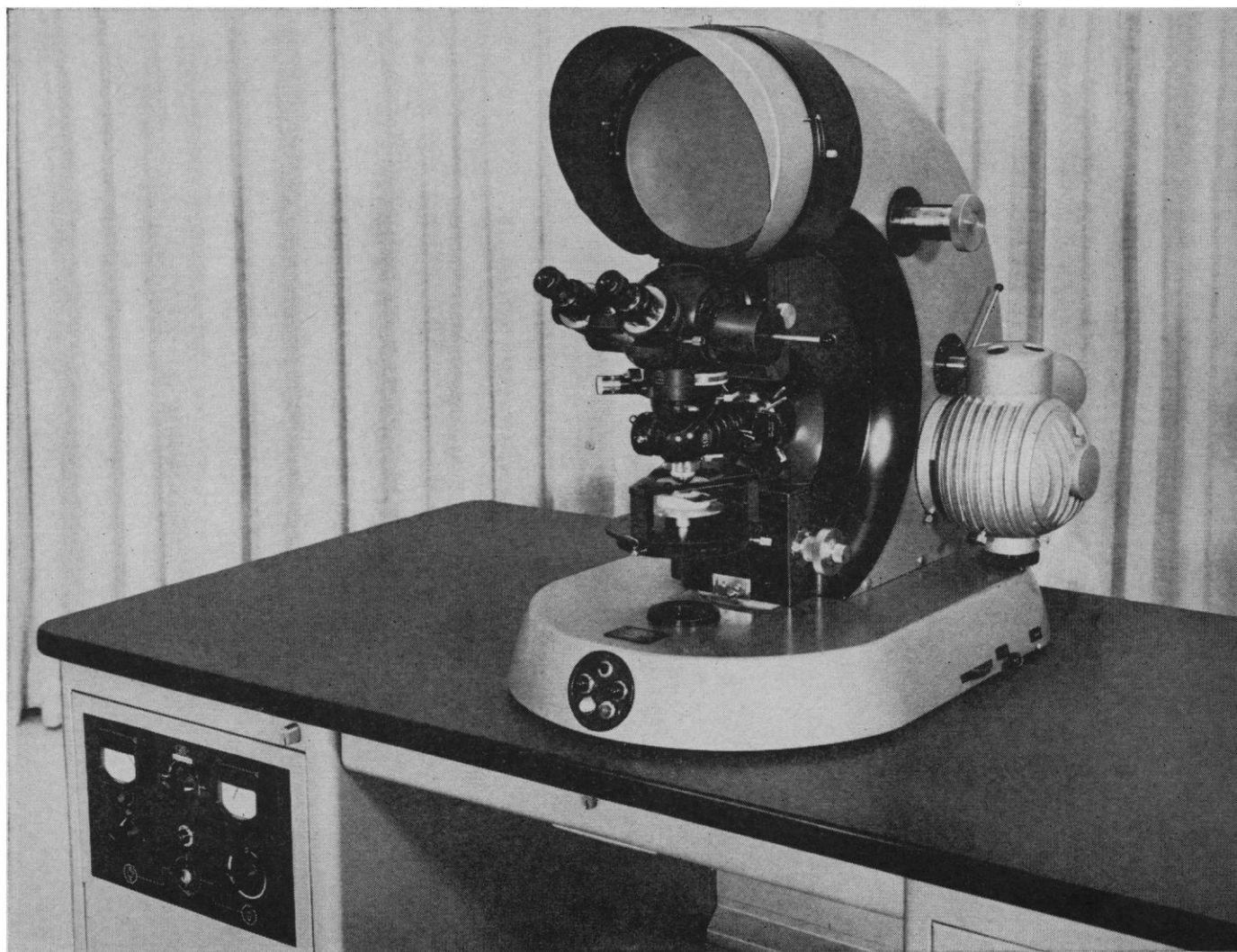
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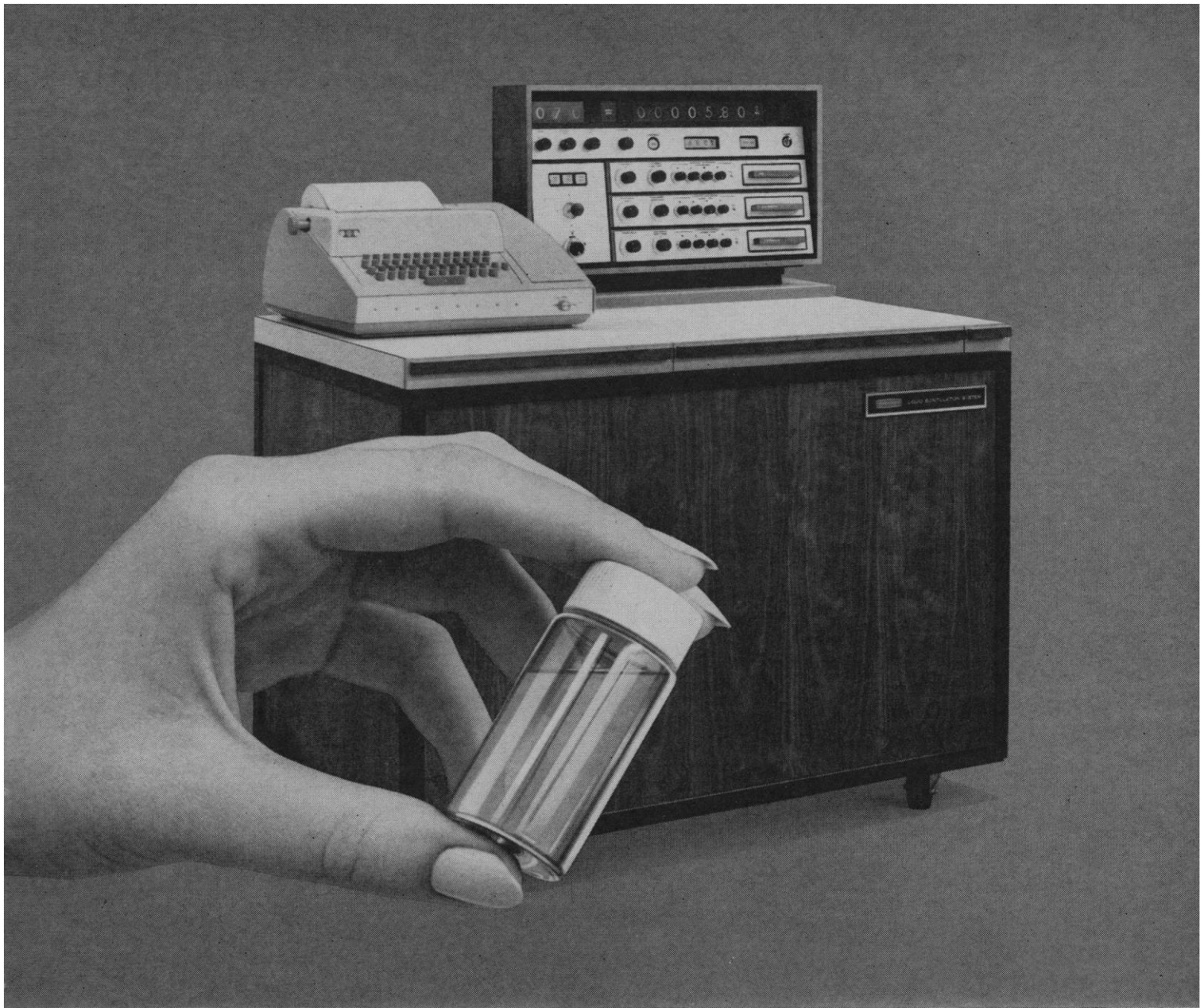
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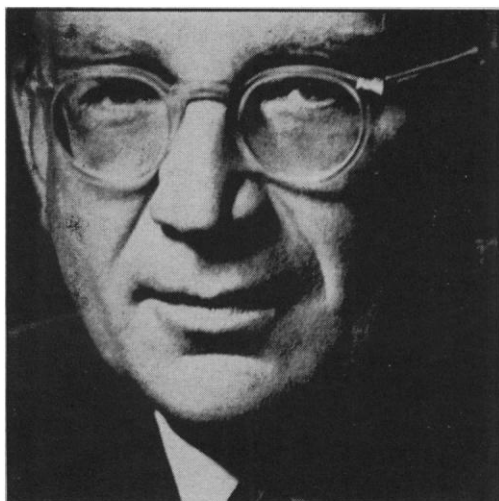
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ica wildlands are less used, less cared for, and less able to contribute to the practical and spiritual needs of people than they were a generation ago—this despite the enormous publicity that is being given to the outdoor recreation “industry” and the statistics of “visitor trips.”

To sum up, I suggest that the formal “conservation movement” must give way to a far broader approach to the reestablishment of functioning, ecologically balanced human communities within the landscape.

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634 Garcia Street,
Santa Fe, New Mexico

. . . I should like to call attention to a unique approach to conservation problems which originated in Massachusetts. In 1957 the Commonwealth authorized the establishment of municipal conservation commissions. The members of the commissions, appointed by selectmen or mayors, are concerned citizens who serve without pay to protect and develop the natural resources of their own communities. Conservation commissions have proved to be one of the most effective ways to combat conservation problems at the local level. Since its beginning in Massachusetts, the conservation-commission movement has spread into Connecticut, New Hampshire, and Rhode Island.

RICHARD E. LAFOND

5 Pleasant Street,
Monson, Massachusetts

Abelson suggests that we “give over much of the areas of our parks to wilderness, letting nature take its course, while observing closely what is happening [and] and at the same time . . . devote limited areas to controlled experimentation.” Such projects might readily fire the imagination of many scientists. A joint field team in the earth and biological sciences might possibly be given a grant for an area 10 miles on a side. The chosen site might then be evacuated, if necessary, and isolated (much like the “reserves” in Huxley's *Brave New World*). If a restricted part, let us say a tenth, of this area were available for experimentation and the remainder were not entered but observed by long-range techniques, a tremendous study potential would be created.

Such a project would be a long-term proposition requiring the time of

many scientists and with cumulative expenses possibly comparable to those of the 200-GeV machine for high-energy physics. The problems of site selection and assignment of research facilities might also be as complex as those that have arisen with that machine (see *News and Comment*, 17 Dec., p. 1566). Unfortunately, the idea does not have a major government agency like the AEC behind it. Thus we may have to depend on the proliferation of inadequate projects to meet the need, unless on some common meeting ground—perhaps the AAAS—the applicable sciences can draw up a bolder scheme to make such a study on earth as feasible and productive as our efforts to strike out into the heavens.

ARTHUR R. LEPLEY

1572 Upland Road,
Huntington, West Virginia

Prohyphen

If Morris Leider (“Antiunion,” 10 Dec., p. 1408) wants to found a Society for the Preservation of the Hyphen, I will promise to become a charter member. . . . If to accomplish clarity in scientific writing we must flout convention, I say flout it! What is to happen to “un-ionized” without its protective hyphen? I have nothing against an unhyphenated “subconscious,” but when it comes to “subunit,” my subconscious refuses to disassociate the word from buns. . . .

May I also put in a good word for the diaeresis? If our microbial friends are not to be allowed to be micro-organisms, may they not at least be microörganisms, to spare them from becoming mic-roor’ganisms? Unlike the hyphen, this at least requires no extra space.

STEWART A. BROWN

Trent University,
Peterborough, Ontario, Canada

New Russian Journal in Genetics

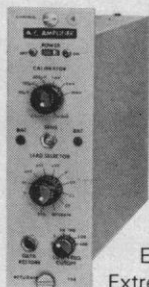
The first issue, dated July 1965, of a new journal called *Genetika* (not to be confused with the Dutch journal of the same name) recently reached me from the U.S.S.R., having been sent me by one of the two assistant editors who is well known to me both personally

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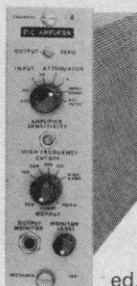
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and professionally, S. I. Alikhanian. Since it is clear from the contents that genuine scientists in the U.S.S.R. have officially reentered the field of genetics, the new *Genetika* will be welcomed by biologists and scientists in general in other countries and more especially in our own. The content of the articles ranges from fields of genetics that have long been worked to studies on a molecular scale, and from basic problems to useful applications. Included also are review and historical articles, an article paying tribute to Chetverikov, one of the early pioneers in population-mutation studies, and even two articles by Vavilov written in the late '30's. No attempt has been made to compromise with or condone the doctrines that were so devastatingly espoused by Lysenko and his group. Moreover, both the research contributions and the more general or historical ones appear to me to be of high caliber. Most of the articles have English summaries, and English titles are given for all in a table of contents.

The frequency of publication is given as 12 times a year, the annual subscription price as 18 rubles. The address is Journal "Genetika," Room 35, Osipenko Street 52, Moscow, Zh-127, U.S.S.R.

I have also received, after a year's delay caused by forwarding difficulties, the second issue, dated 6 May 1964, of *Researches in Genetics*, the first issue having appeared in 1962. It is not clear whether it will be continued, or whether it has been superseded by *Genetika*. (Its editor, M. E. Lobashev, is also on the editorial board of *Genetika*.) It too deals with actual genetics and contains English summaries.

H. J. MULLER

Department of Zoology,
University of Wisconsin, Madison

Academic Administrators: New Breed

Wolfe's editorial "Future administrators" (10 Dec., p. 1411) reveals a rather cautious attitude toward internships for young professors who openly "defy the academic mores by frankly aspiring to administrative careers."

However, consider the alternatives: the traditional trial-and-error learning of ex-professors who have just spent 20 years believing that "administrator"

is a dirty word; or, graduate programs that openly defy even stronger academic mores by "frankly aspiring" to train professional administrators.

The prototype of the internship program Wolfe cites—conducted by the American Council of Education under a Ford Foundation grant—is a 4-year effort by the Ellis L. Phillips Foundation of New York. As one of the 12 Phillips Interns currently assigned, allow me to vouch for the value of this experience. Not only do we observe and assist administrators in action, but we have the opportunity to think about, read about, and talk about administrative problems in a realistic and meaningful context.

It is to be hoped that this "new breed" of administrators will help meet the growing need for administrative talent in our colleges and universities.

ROBERT F. CARBONE

Office of the Vice President,
University of Wisconsin, Madison

... Also worthy of note are the departments or centers of higher education which have been performing similar functions for some years. Examples in the Midwest are at Minnesota, Southern Illinois, Indiana, Ohio State, Michigan State, and (perhaps the best known of all) the Center for the Study of Higher Education at the University of Michigan. At such places there can be added to the administrative-internship experiences the presence of organized studies in higher education.

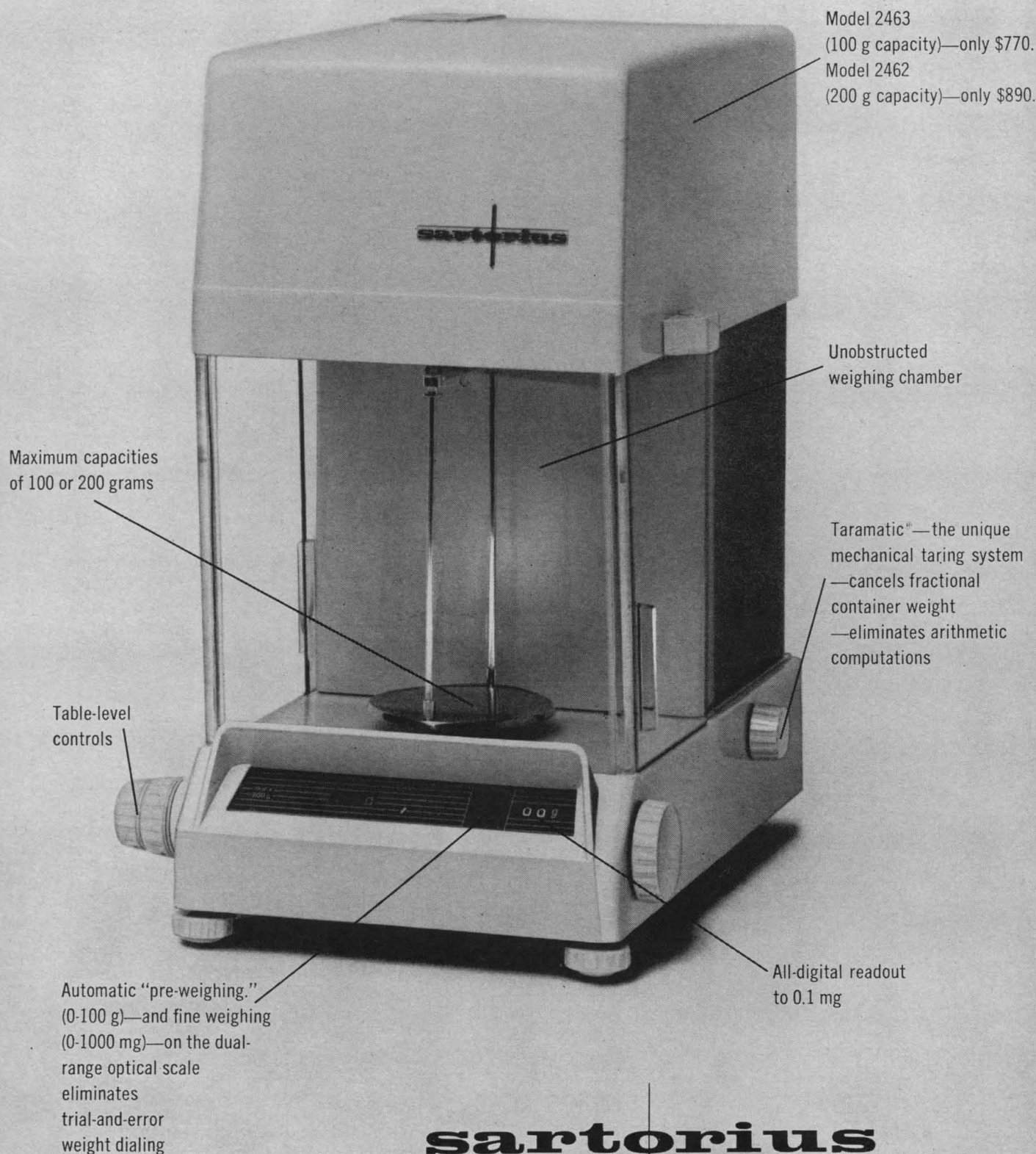
ARTHUR J. DIBDEN

Department of Higher Education,
Southern Illinois University,
Carbondale 62903

Erratum: Training Stipends for Foreign Biologists

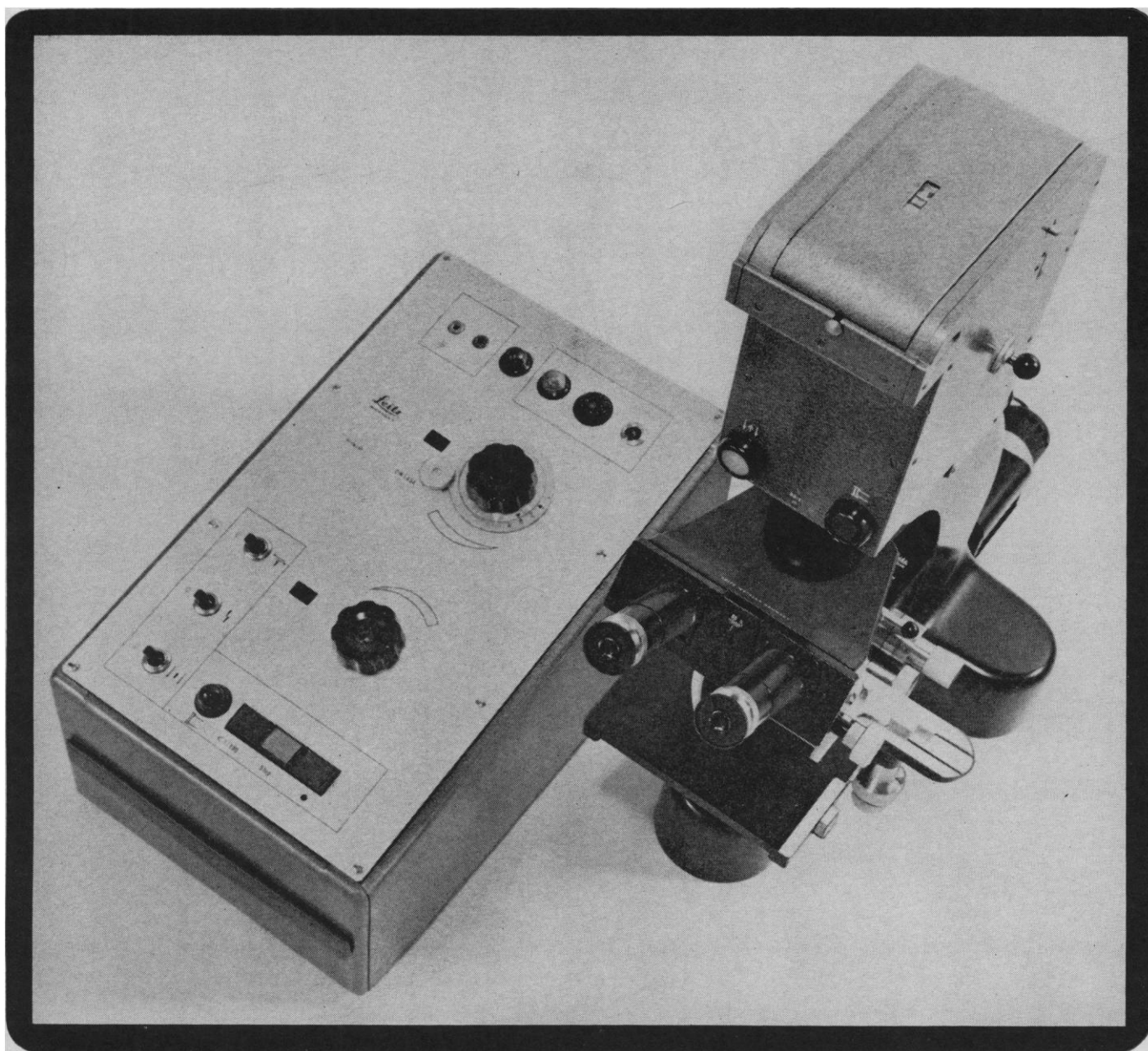
As a result of a copy editor's change in the letter by Seymour S. Cohen in the issue of 17 December ("Biology worldwide," p. 1533), a sentence there includes the erroneous statement that a regulation of the National Institutes of Health "prevents the assignment of training grants to foreign applicants." The author's own sentence read: "... the regulation of the National Institutes of Health relating to training grants which prevents the assignment of scholarships to foreign applicants is a shortsighted policy." His protest is directed against the restrictions imposed in the past few years on stipend support for foreign nationals who wish to study in the United States for advanced degrees without being admitted for permanent residence.

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Books about Science

Publishers' Weekly brings the information that 20,234 new books were published in the United States in 1965. Of these, 1850 were in the science category, 942 were in technology, 2372 were in sociology and economics, and 582 were in psychology and philosophy.

Chiefly from the science category, but from other groups as well, the AAAS publication *Science Books* is now reviewing and rating about 900 books a year that appear to be of general or library interest. There is a welcome trend in books of this kind: the quality seems to be improving. Fewer appear to have been produced by an author who simply went to the library, borrowed from some older works, and whipped up a new volume in time for the Christmas trade. In recent years the university presses have shown an increasing interest in this area of publication. The sponsors of the improved science courses for high school students have brought out some excellent books for collateral reading or to extend the student's range. Other good series are being produced under other auspices. More science books for general audiences are being written by well-trained science writers and professional scientists, and some of their works are getting wide acclaim. Sidney Chapman received an Edison Foundation Book Award in 1960 for his *IGY: Year of Discovery*. One of four contenders for the 1965 National Book Award in the "science, philosophy, and religion" class is *Science and Ethical Values* by Bentley Glass. Other recent examples are René Dubos' *The Unseen World* and Theodosius Dobzhansky's *Heredity and the Nature of Man*, both originally prepared as AAAS Holiday Science Lectures.

On 25 February the AAAS entered this field of publication with the appearance of Joseph R. Caldwell's *New Roads to Yesterday—Essays in Archaeology*, published by Basic Books. The volume consists of a selection of papers, reviewed and brought up to date, which originally appeared as lead articles in recent volumes of *Science*.

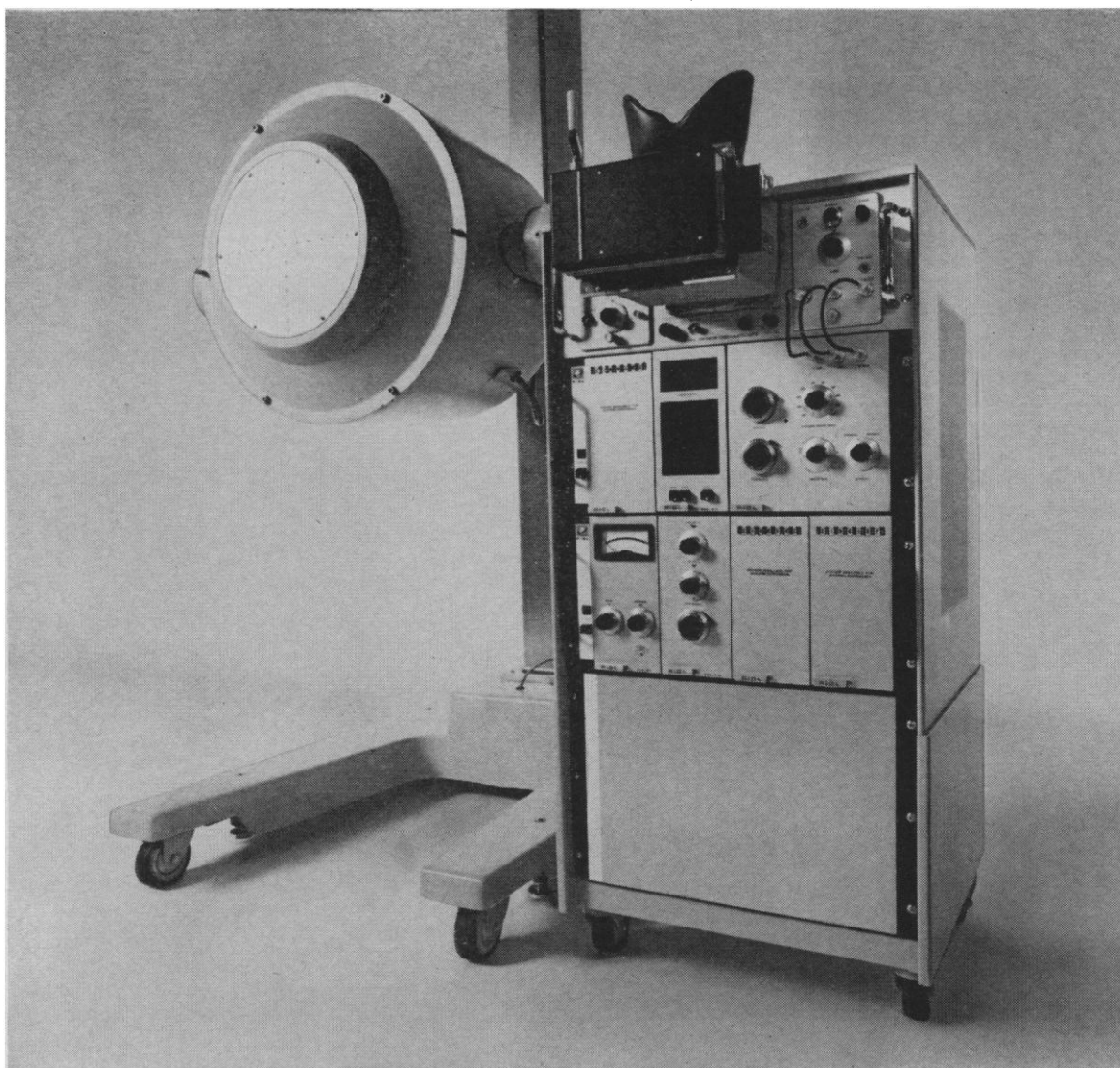
A quarter of a century ago, Doubleday Doran and Company produced an earlier series of volumes selected and prepared by the AAAS. First in the series was H. H. Newman's *Multiple Human Births*. The price of \$2.50 now seems unbelievably low, and the old advertisements seem, in 1966, a bit florid: "In his accounts of the first meeting of twenty pairs of identical twins separated from infancy, Dr. Newman often strikes the profoundest chords of human emotion, chords sometimes gloriously joyous and sometimes tragically pathetic," or, "More interesting than fiction . . . Dr. Newman's book is one of almost universal appeal."

Strange Malady—the Story of Allergy and Alcohol Explored followed in the series, but they apparently fell short of attaining "almost universal appeal," for Doubleday Doran turned down the fourth and fifth manuscripts. However, Macmillan Company brought out the sixth, Mark Graubard's *Man's Food: Its Rhyme or Reason*, and W. W. Norton published the final one, W. B. Cannon's *The Way of an Investigator*. Paper shortages and the preoccupation of scientists with wartime responsibilities then brought the series to an end.

There is a useful place for such volumes. The serious reader—young student or interested adult—appreciates the opportunity to read a book by an author who knows his field thoroughly. If the author has developed a clear and interesting style, the reader can learn much, and learn it with pleasure. Both readers and fellow scientists are indebted to the authors who write such books.

—DAEL WOLFLE

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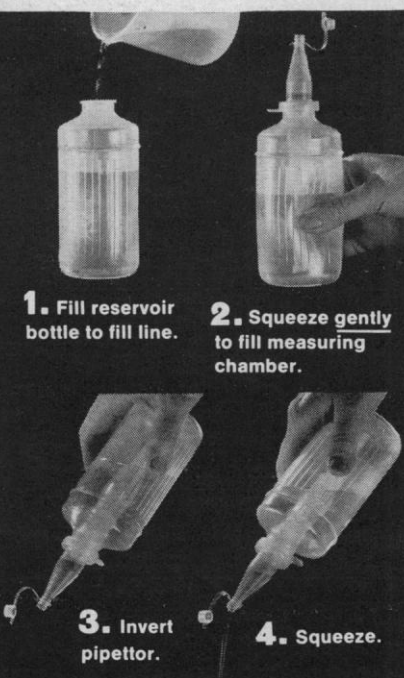
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29-31. **Applied Meteorology**, 6th natl. conf., Los Angeles, Calif. (B. N. Charles, Booz-Allen Applied Research, 6151 W. Century Blvd., Los Angeles 90045)

29-31. **Chemical Soc.**, anniversary mtgs., Oxford, England. (General Secretary, Burlington House, London W.1)

29-31. **Surface-Active Substances**, intern. conf., Berlin, East Germany. (Inst. für Fettchemie, Deutsche Akademie der Wissenschaften zu Berlin, Rudower Chaussee 5, 1199 Berlin-Adlershof)

29-31. **Symbolic and Algebraic Manipulation**, symp., Assoc. for Computing Machinery, Washington, D.C. (J. E. Sammet, I.B.M. Corp., 545 Technology Sq., Cambridge, Mass. 02139)

29-1. American Assoc. for **Contamination Control**, 5th annual technical mtg., Houston, Tex. (W. T. Maloney, The Association, 6 Beacon St., Boston, Mass.)

29-1. **Ultraviolet and X-ray Spectroscopy of Laboratory and Astrophysical Plasma**, conf., Abingdon, England. (Inst. of Physics and the Physics Soc., 47 Belgrave Sq., London, S.W.1, England)

30. **Oral Cancer**, 4th symp., St. Francis Hospital, Poughkeepsie, N.Y. (M. A. Engelman, 1 E. Academy St., Wappingers Falls, N.Y.)

30-1. **Magnetohydrodynamics**, 7th symp., Princeton, N.J. (R. G. Jahn, Guggenheim Laboratories, Forrestal Research Center, Princeton, N.J. 08540)

31-2. **Michigan Acad. of Science, Arts, and Letters**, Wayne State Univ., Detroit. (E. A. Wunsch, Dept. of English, Univ. of Michigan, Ann Arbor)

April

1-2. **Alabama Acad. of Science**, Birmingham-Southern College, Birmingham. (W. B. DeVall, Dept. of Forestry, Auburn Univ., Auburn, Ala.)

1-2. **Arkansas Acad. of Science**, Little Rock. (G. E. Templeton, Univ. of Arkansas, Fayetteville)

1-5. **National Science Teachers Assoc.**, New York, N.Y. (R. H. Carleton, 1201 16th St., NW, Washington, D.C. 20036)

1-7. **American Acad. of General Practice**, Boston, Mass. (M. F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Mo.)

4-6. **Atomic Energy Soc. of Japan**, annual mtg., Tokyo. (M. Masamoto, Japan Atomic Energy Research Inst., 1-1, Shibatomura-cho, Minato-ku, Tokyo)

4-6. **Exobiology**, conf., Ames Research Center, Moffett Field, Calif. (Letters and Science Extension, Univ. of California, Berkeley 94720)

4-6. **American Assoc. of Physical Anthropologists**, Berkeley, Calif. (F. E. Johnston, Dept. of Anthropology, Univ. of Pennsylvania, Philadelphia 19104)

4-7. **Federation of European Biochemical Soc.**, 3rd mtg., Warsaw, Poland. (T. Klopotoski, Polish Biochemical Soc., Freta 16, Warsaw)

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