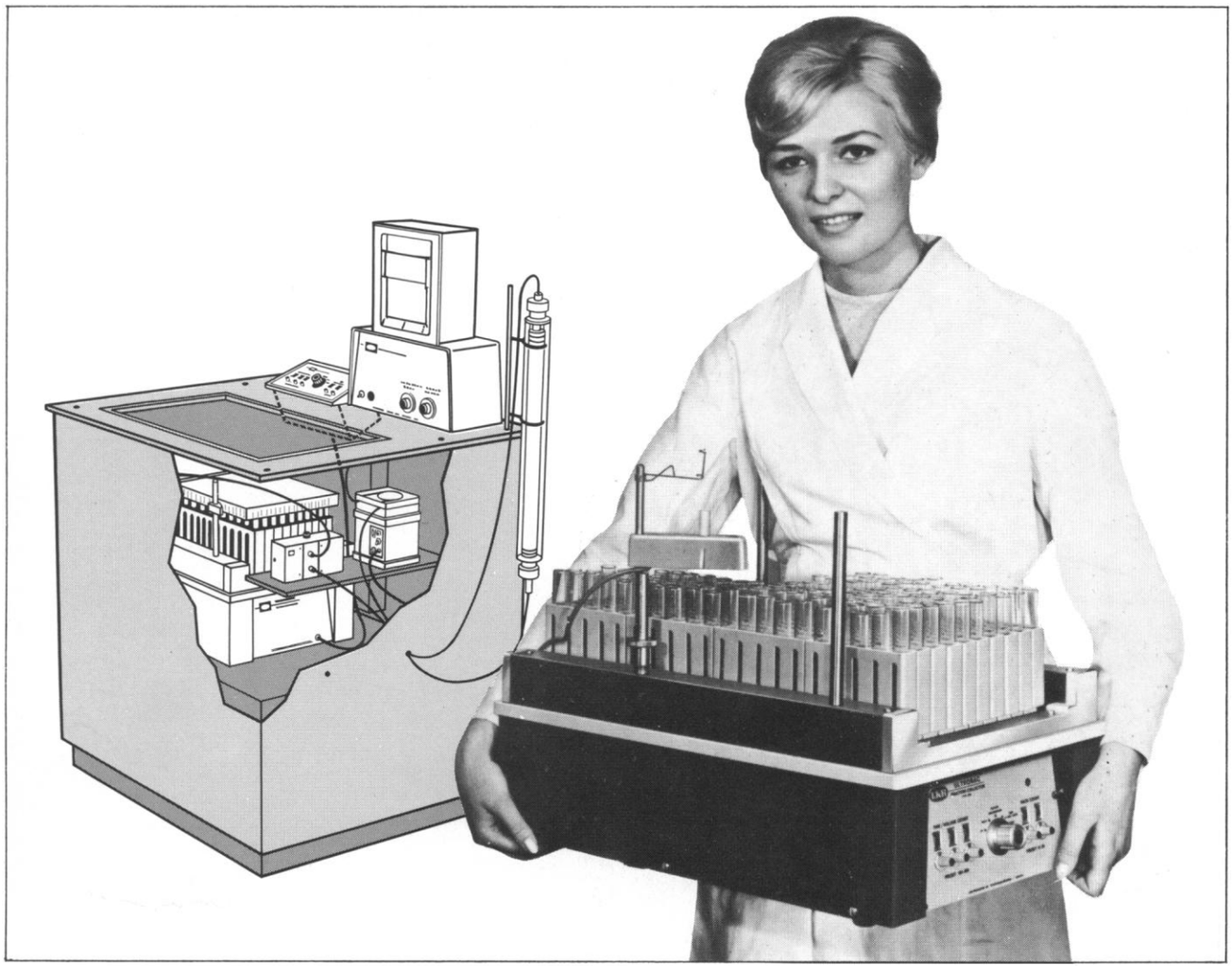
SCIENCE

15 March 1968
Vol. 159, No. 3820

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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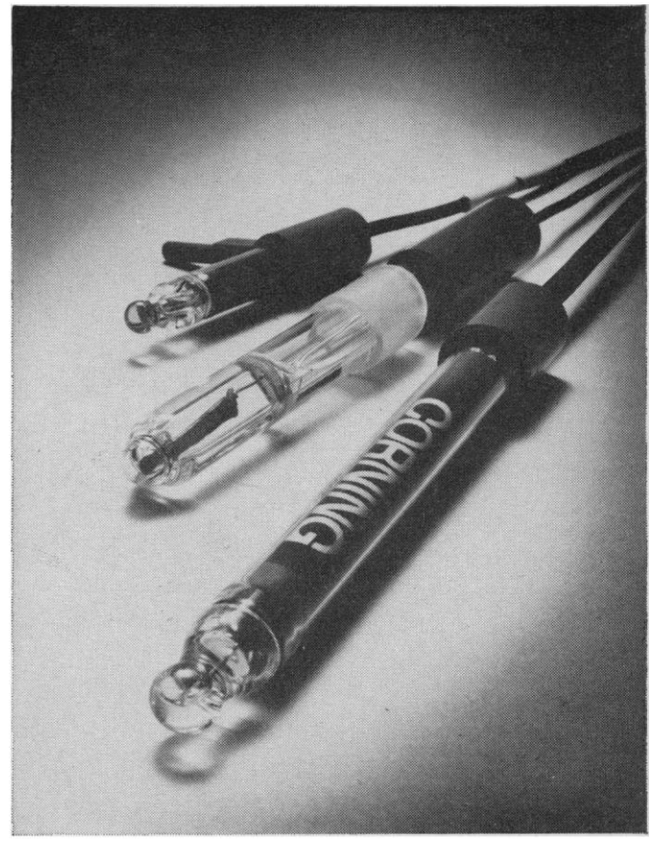

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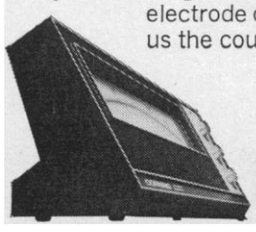

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SCIENCE

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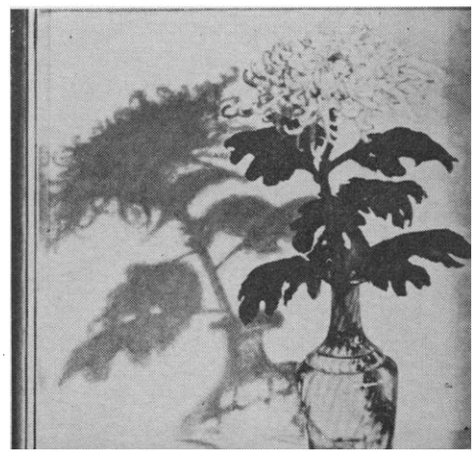
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

COVER Painting executed by artist while under the influence of LSD (150 micrograms). The chrysanthemum (lower right), a painting illustrating the artist's earlier, customary (representational) style, was used as the model. After ingestion of LSD during an investigation of the effects of this drug on artistic production, the artist believed he was painting an excellent piece. After recovery he was not so sure. See page 1189. [Artist, Jack Jones, Santa Monica, California; courtesy of Sidney Cohen, Veterans Administration, Los Angeles, California]

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



project's success and the age, education, experience, or length of service with the organization of the project manager. A strong relationship was found, however, to exist between project success and a "Responsibility Index." The Responsibility Index was computed by taking the ratio of the dollar size of the project under study to the dollar size of the project manager's most recent project.

The Matthew effect causes successful project managers to be selected as managers of the most important projects; since these projects command the highest priority within the organization, they usually turn out successfully—and the cycle repeats. Of course, parity must be preserved and the unsuccessful project manager finds himself on a down escalator leading to oblivion.

MARK R. DUSBABEK
Fluor Corporation, Box 7030, Los Angeles, California 90022

Reference

1. I. M. Rubin and W. Seelig, *IEEE (Inst. Elec. Electron. Eng.) Trans. Eng. Management* **14**, No. 3 (1967).

Gliding over Antarctica

I have read Nelson's fascinating account, "Science in Antarctica" (26 Jan., p. 407). One of the pictures shows a lenticular cloud over the mountains of Ross Island. Such clouds are not "unusual formations" over mountains. In fact, they are well known and eagerly sought after by glider pilots as evidence of a "wave" which can carry a glider to considerable heights (depending on the height of the mountain and the strength of the wind). I wonder if exploration of such phenomena using a glider as vehicle has a place in the overall program. If so, I would gladly offer my services and even my own two-seat sailplane. All the Navy has to do is to take me there. Soaring anyone?

JOSEPH M. SEGARRA
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UFO Iconography

I am very fond of Clarke's First and Second Laws, but something seems to be wrong with his Third Law; or perhaps it should be phrased differently ("Any sufficiently advanced technology is indistinguishable from magic," Letters, 19 Jan.). Magic can usually be

distinguished from advanced technology by the fact that it is not imaginative enough. The UFO discussion is a good case in point. All the reports of UFO sightings describe artifacts as visualized by the technology previous to the sighting. In fact, *all* of them look like the interplanetary vehicles in science-fiction illustrations. This would be exactly the case if (and it is a big if) they were "magic"—mental materializations of a sending mind. In the literature of Tibetan travels there are many reports of "sighting" materialized devils. But they do not look like "advanced technology" devils, not even like the devils in western iconography. *All* of them resemble in every detail the pictures of devils in Tibetan books.

CARLOS GARCIA-MATA
Oenoke Ridge, New Canaan, Connecticut 08640

Tempora Mutantur

The flurry of press conferences given recently by scientists in advance of publication on their important work in the biomedical sciences reminds me of Justice Oliver Wendell Holmes's statement on 28 June 1911, when he was speaking at Class Day Exercises on the 50th anniversary of the Harvard Class of 1861:

> I learned in the regiment and in the class the conclusion, at least, of what I think the best service that we can do for our country and for ourselves: To see so far as one may and to feel the great forces that are behind every detail . . . to hammer out as compact and solid a piece of work as one can, to try to make it first rate, and to leave it unadvertised.

"And to leave it unadvertised"—what unorthodox philosophy in contemporary society! *Tempora mutantur et nos mutamur in illis.* Yes, but are these particular mutations in the spirit and best interest of our science?

Nobody will for a moment doubt the vital importance to layman and scientist alike of dissemination and discussion of scientific discovery in public news media, but I suggest that we be equally concerned about timing, manner, and style of doing this. As pointed out in these columns some time ago in connection with a related problem (P. Siekevitz, Letters, 21 Oct. 1966): Why the rush?

HERMANN LISCO
Harvard Medical School, 25 Shattuck Street, Boston, Massachusetts 02115

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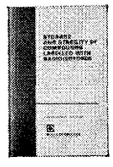

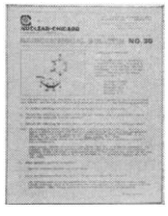

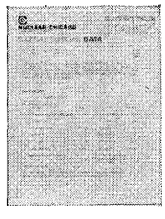

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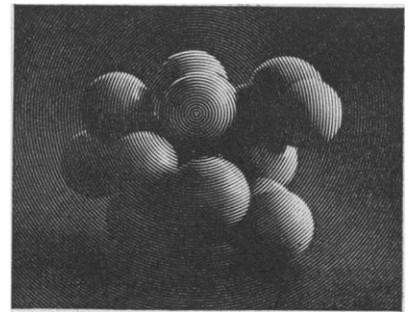

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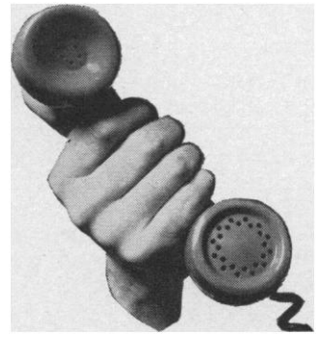

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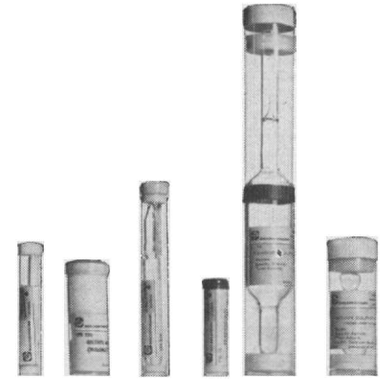

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For prices on these compounds and ordering data, request our **Radiochemical Bulletin No. 33.** It also contains similar information on other high specific activity compounds of biological interest—steroids, sugars, nucleics.

AMINO ACIDS	Current Specific Activity mc/mM
L-Alanine-C14(U)	162
L-Arginine-C14(U) monohydrochloride	324
L-Aspartic-C14(U) acid	217
L-Crystine-C14(U) hydrochloride	324
L-Glutamic-C14(U) acid	276
Glycine	108
L-Histidine-(2-*ring*-C14)	57.8
L-Leucine-C14(U)	305
L-*iso*Leucine-C14(U)	290
L-Lysine-C14(U) monohydrochloride	324
L-Methionine-(*methyl*-C14)	56.8
L-Phenylalanine-C14(U)	495
L-Proline-C14(U)	270
L-Serine-C14(U)	160
L-Threonine-C14(U)	208
DL-Tryptophan-(*methylene*-C14)	52
L-Tryptophan-(*methylene*-C14)	52
L-Tyrosine-C14(U)	475
L-Valine-C14(U)	270

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LSD and Marihuana

It is characteristic of youth to rebel against accepted values and to test himself and his environment, often to the point of no return. Nevertheless, the use of psychedelic drugs would not have become so widespread had not the press glamorized them. Frank Barron* has said: "The chemical substance most instrumental in the spread of the psychedelic movement is printer's ink. . . . The slick-paper picture magazines of large circulation . . . have used a device . . . : they deplore the excesses that they are at pains to picture and they warn of dangers while at the same time suggesting the appeal of what they dramatize."

Today these drugs are being tried by a substantial fraction of the best of our nation's youth. A massive uncontrolled experiment is being conducted whose total cost cannot now be determined. The current favorite among university students is marihuana. At a recent symposium held at the College of Physicians of Philadelphia, Dana L. Farnsworth of Harvard estimated that 30 to 35 percent of the students at major universities on the East and West coasts had tried marihuana at least once. About half the students did not repeat the experiment. Farnsworth reported that 5 percent of the students had tried LSD, at the height of its popularity several years ago. Current use is probably under 1 percent. He attributed this decline to an awareness among students that the drug has untoward effects.

Some of the sequelae have been cited by Donald B. Louria.* Among the adverse effects of LSD are schizophrenic reactions, paranoid reactions, psychotic depression, chronic anxiety reactions, and acting out of suicidal tendencies. Louria described observations on some 130 inpatients at Bellevue Hospital. Each was admitted for LSD-induced psychosis or LSD-caused exacerbation of an established psychiatric disorder. About a sixth of the patients had not recovered after 2 weeks and were referred for potential long-term hospitalization. Chronic abuse of LSD often leads to "a solipsistic, negativistic existence in which LSD becomes synonymous with life itself."

Although students are aware of at least some of these mental effects, they are more impressed by reports of chromosomal damage and possible birth defects arising from the use of LSD. Such reports have had a sobering effect exceeding that of any preaching by adults.

While the use of LSD seems to be decreasing, the use of marihuana appears to be growing, both in high schools and in universities. The inconclusive information about marihuana is not reassuring. Although no direct connection between marihuana and heroin has been established, the social setting in which "pot" is used is conducive to other, more serious adventures. Some of the effects of marihuana seem reminiscent of LSD. Large doses may produce confusion, disorientation, and increased anxiety and psychoses lasting hours or sometimes weeks. In the Middle East habitual use of marihuana leads to a cannabis psychosis† whose victims are reminiscent of the derelicts of skid row.

In the United States in the past, use of marihuana was largely confined to individuals in the lower socioeconomic levels. Today some of our finest youth are engaged in experiments that could have very damaging long-term effects. Evaluating the consequences of this fad is a task of the highest priority.—PHILIP H. ABELSON

* *LSD, Man & Society*, R. C. DeBold and R. C. Leaf, Eds. (Wesleyan University Press, Middletown, Connecticut, 1967). †W. H. McGlothlin, in *The Marihuana Papers*, D. Solomon, Ed. (Bobbs-Merrill, Indianapolis, 1966), page 412.

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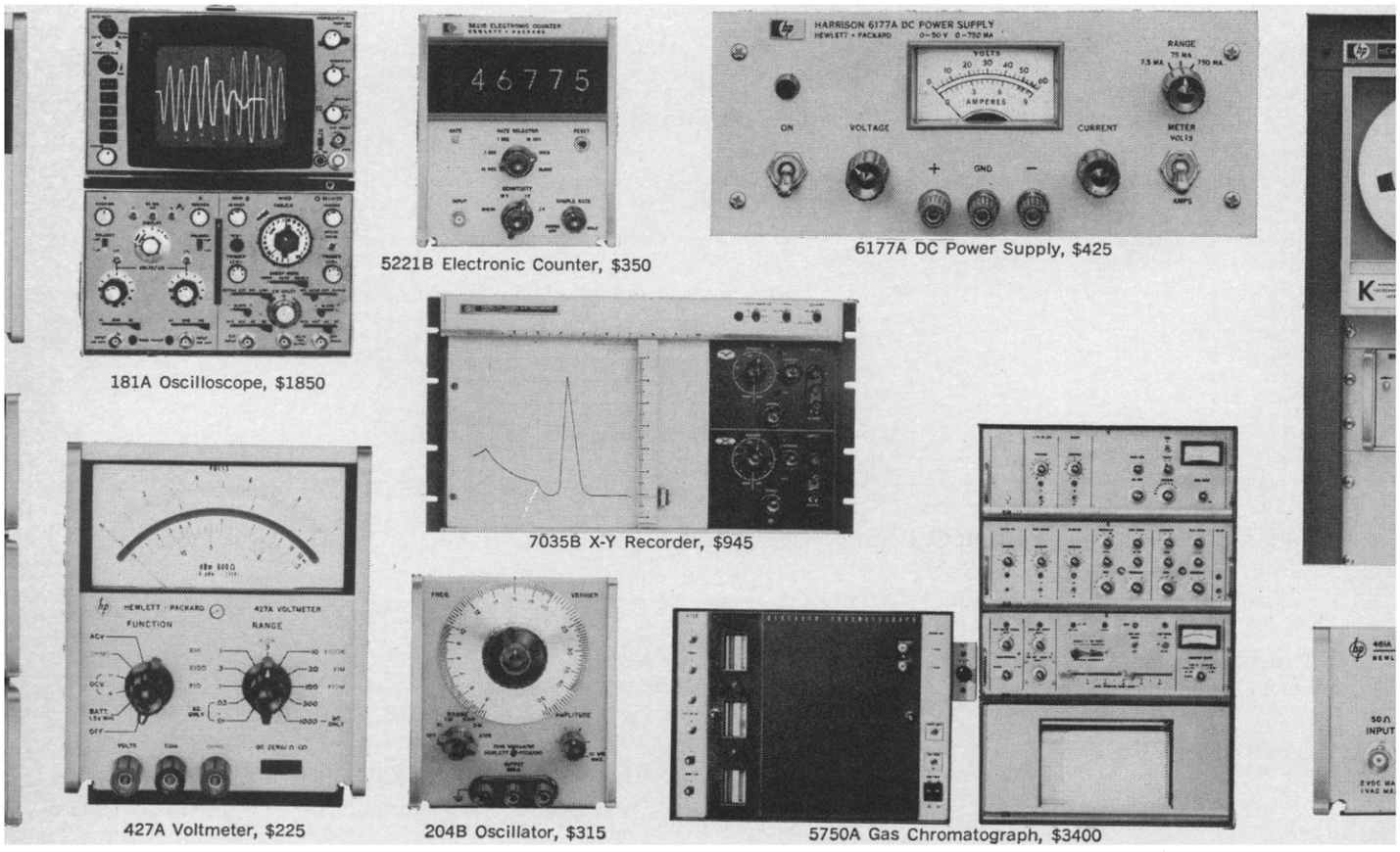

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sponsive to changes in watershed conditions. It is likely that the sedimentary record in lakes, which is an historical record as well, will be useful not only for interpreting precultural events and conditions but also the degenerative changes in waters resulting from man's more recent activities. Studies of Lake Washington (W. T. Edmondson, U.S.A.) and Lake Zürich (E. A. Thomas, Switzerland) indicate that sediments hold great promise.

Scientists in the Soviet Union have already recognized the importance of paleolimnology by having held two large symposia at Minsk and Leningrad on the paleolimnology of the northwestern European portion of the U.S.S.R. A third meeting is planned for Vilnius in a couple of years.

The symposium was sponsored by the International Association of Limnology and the Biology Department of the Hungarian Academy of Sciences, with support of the International Union of Biological Sciences and Section PF of the International Biological Program.

The proceedings of this symposium will be published in the Mitteilungen series of the International Association of Limnology (T. T. Macan, Secretary).

DAVID G. FREY
Department of Zoology, Indiana University, Bloomington 47401

Calendar of Events

Courses

Histochemistry, Vanderbilt University, 28 July–17 August. For college and university teachers of zoology. Applicant must be member of faculty of an accredited college or university and teach at least one course in some area of zoology. In addition, he must be interested in histochemistry, either in teaching and/or in research. Living and travel expenses for 20 selected participants will be funded by a grant from the National Science Foundation. *Deadline for applications: 1 May.* (Dr. Burton J. Bogitsh, Box 1733, Station B, Vanderbilt University, Nashville, Tennessee 37203)

Advanced Study in Gerontology, University of Southern California, 17 June–29 July. For graduate students and professional people in the aging field. The institute will be conducted in three 2-week sessions. Students may attend for 2, 4, or 6 weeks. The first 2-week session will consist of a general survey course on concepts and issues in gerontology; the second will cover human physiology and aging, aging and personality, urban ecology and aging, and introduction to scientific computing; the third will cover implications of urban ecology for architecture, behavior, brain, and aging, aging and the family,