

science may, however, be hastened by a fresh look from the right vantage point. A regrouping of existing talents and an opening of channels between present scientific disciplines might allow that. It was in this belief that the Neurosciences Research Program was formed in 1962. Supported by federal grants, this international, interuniversity organization began by holding a continuing series of workshops, conferences, and lectures to draw out what was known about nervous systems at many levels and about behavior. Some of the results of these conferences have been published in the first volume of a projected annual series entitled *Neurosciences Research Symposium Summaries* (M.I.T. Press, 1966).

An essential feature of the workshops was that people already successful in the "simpler" biology should meet and draw out the experts in fields of the neurosciences. The workshops were in fact a tooling up for the month-long conference that was held in Boulder, Colorado, during the summer of 1966. The book reviewed here is a result of that conference.

The conference participants were from several countries and from many scientific disciplines. All are experts in their own fields. Morning lectures, afternoon workshops, informal conferences—all these went on for more than four weeks. The articles in this book, according to the editors, are not the lectures originally laid before the conference, but were modified by the response of the participants, their questioning, and the interaction. They are in part the pearls they were meant to be and in part the grains of sand for making into pearls.

The book is lengthy, almost 1000 pages, with 67 articles appearing in seven major sections. The titles of the sections give an idea of the scope of the book: Components of the Nervous System, Molecular Biology, Molecular Biology of Brain Cells, Neuronal Physiology, Brain Correlates of Functional Behavioral States, Brain Correlates of Learning, Interdisciplinary Topics.

Many of the articles are excellent and not only give a good survey of a subject but are written by starting at the beginning and defining terms so that an outsider can begin to look in. This is not true of them all. In any case, the lists of references are extremely useful to anyone who wants to delve further. If there is a single major criticism, it is that the articles do not show sufficient effects of the month-

long interaction. Many of the ones on molecular biology, for example, are written just as they might have been for any other occasion, with very little attempted tie-up to the major business at hand. This is meant less as a criticism of the contributors than as an indication of the gap between some of the disciplines represented and the neurosciences. If the gap was closed or narrowed by the conference, it is not well reflected in the writings.

The reviewer of such a book has to ask several questions: What was the goal of the book? Did it reach it? If it did not is it worthwhile anyhow?

The goal is very ambitious: to help lay the beginning of a new science of the nervous system. Whether the book achieves this goal or not, it is a sign of the concern and interest in it and as such may be one of the precursors of success.

I believe two kinds of people are being attracted to neurosciences now. One is the—how shall I call him?—romanticist attracted by the truism mentioned at the beginning of this review. Among the other kind are the new biologists made arrogant by their collective successes, sniffing and walking around the subject, fascinated by it, looking for a soft spot, a place where an attack might be effective. For the latter at least, this book is required, for in it they will be able to see what is going on and begin to make their own judgments and, one hopes, the attack.

EDWIN S. LENNOX

*Salk Institute,
La Jolla, California*

Books Received

Advances in Alicyclic Chemistry. Vol. 2. Harold Hart and G. J. Karabatsos, Eds. Academic Press, 1968. xiv + 269 pp., illus. \$15.

Advances in Astronomy and Astrophysics. Vol. 6. Zdeněk Kopal, Ed. Academic Press, New York, 1968. xv + 322 pp., illus. \$17.50.

Advances in Control Systems. Theory and Applications. Vol. 6. C. T. Leondes, Ed. Academic Press, New York, 1968. xiv + 321 pp., illus. \$15.

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Analysis in the Chemical Industry. L. A. Haddock. Pergamon, New York, 1968. xii + 220 pp., illus. \$5.50. Commonwealth and International Library.

Analytical Calorimetry. Proceedings of the American Chemical Society Symposium, San Francisco, April 1968. Roger S. Porter and Julian F. Johnson, Eds. Plenum, New York, 1968. x + 322 pp., illus. \$15.

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Animals for Research. A Directory of Sources of Laboratory Animals, Fluids, Tissues, Organs, Equipment and Materials. National Academy of Sciences, Washington, D.C., ed. 7, 1968. viii + 125 pp. Paper, \$3.25. NAS Publication No. 1678.

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An Atlas of Biological Ultrastructure. John D. Dodge. Elsevier, New York, 1968. 80 pp., illus. \$10.50.

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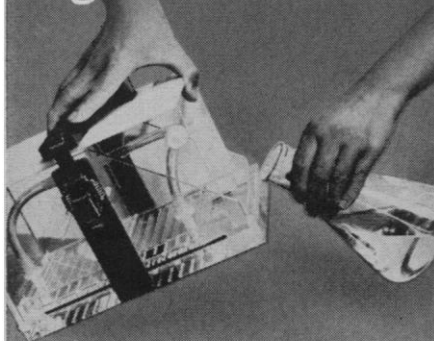
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Autobiography of Charles Caldwell, M.D. Harriot Warner, Ed. Da Capo (Plenum), New York, 1968. xii + 458 pp.

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\$14.50. Reprint, with a new introduction by Lloyd G. Stevenson, of the 1855 edition.

The Behavioral Sciences and the Federal Government. National Academy of Sciences, Washington, D.C., 1968. xviii + 110 pp. Paper, \$3.25. NAS Publication 1680.

Beyond Economics. Essays on Society, Religion, and Ethics. Kenneth E. Boulding. University of Michigan Press, Ann Arbor, 1968. x + 306 pp. \$9.50.

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Bullying the Moqui. Charles F. Lummis. Robert Easton and Mackenzie Brown, Eds. Prescott College Press, Prescott, Ariz., 1968. xii + 132 pp., illus. \$7.50.

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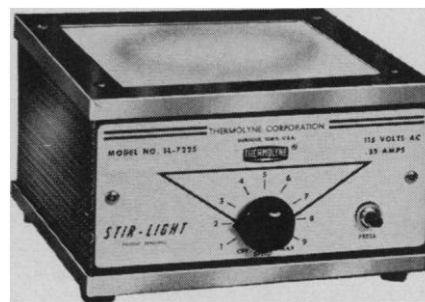
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The Chemistry of Titanium and Vanadium. An Introduction to the Chemistry of the Early Transition Elements. R. J. H. Clark. Elsevier, New York, 1968. xii + 327 pp., illus. \$23.50.

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By C. MILNER, R. E. HUGHES, C. H. GIMINGHAM, G. R. MILLER and R. O. SLATYER. 88 pages, illus. \$1.25

Practical Guide to Study of Productivity of Large Herbivores (No. 7)
By FRANK B. GOLLEY and HELMUT K. BUECHNER. 360 pages, illus. \$6.25

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The Cultivation of Parasites In Vitro—Taylor and Baker. 384 pages, illus. \$12.75

Weed Control Handbook—Fryer and Evans.

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Environmental Factors in Terrestrial Ecology—Wadsworth. 288 pages, illus. \$9.50

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Animal Bones in Archeology—Ryder. (February, 1969)

Practical Meat Inspection—Wilson. (December, 1968)

Plant Cells—Clowes. (January, 1969)

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Harold J. Alford, for the W. K. Kellogg Foundation. Wiley, New York, 1968. x + 158 pp., illus. \$5.95.

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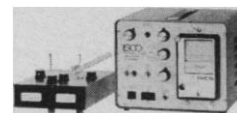
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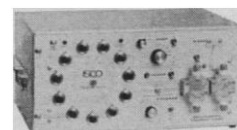
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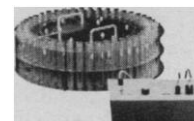
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tory. Harper W. Frantz and Lloyd E. Malm. Drawings by Roger Hayward. Freeman, San Francisco, ed. 2, 1968. x + 373 pp., illus. Paper \$4.75. A Series of Books in Chemistry.

Ethical Issues in Medicine. The Role of the Physician in Today's Society. E. Fuller Torrey, Ed. Little, Brown, Boston, 1968. xiv + 434 pp. \$7.50.

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Fine Structure of Cells and Tissues. Keith R. Porter and Mary A. Bonneville. Lea and Febiger, Philadelphia, ed. 3, 1968. viii + 200 pp., illus. \$9.75.

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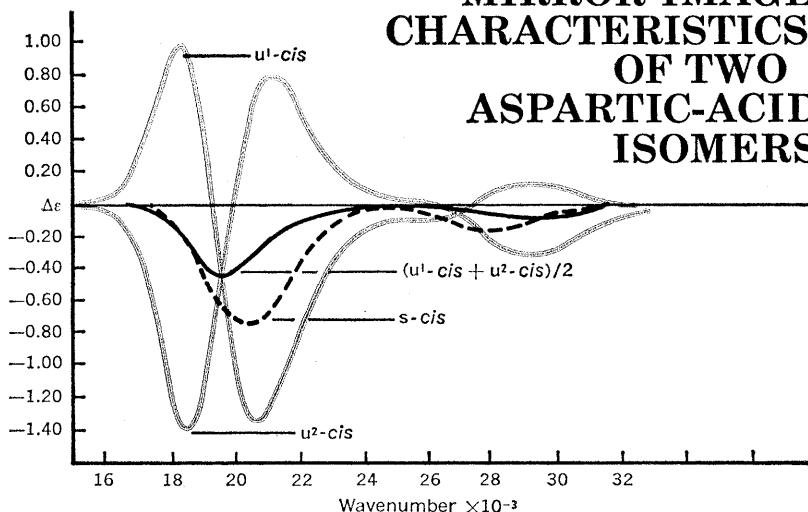
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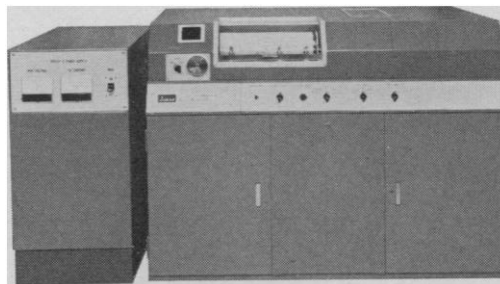


Aspartic acid, with its three donor sites, can form a variety of hard-to-identify chelate isomers. The circular-dichroism profiles drawn here, plotted from data gathered by a Durrum-Jasco CD recorder, are typical of the molecular detective work* that can be achieved with this versatile instrument.

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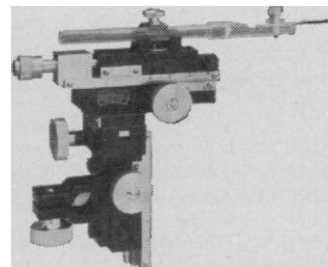


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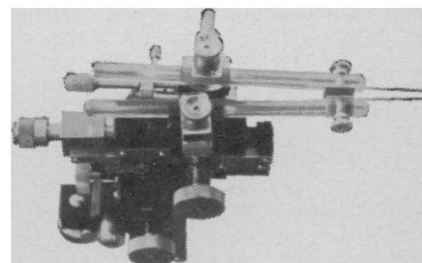


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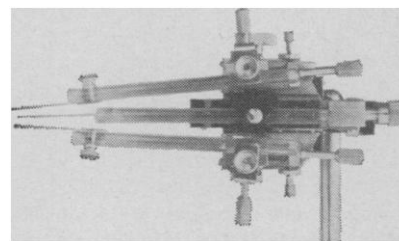
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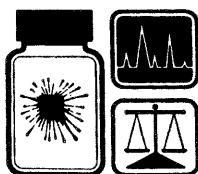


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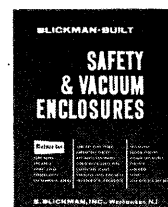
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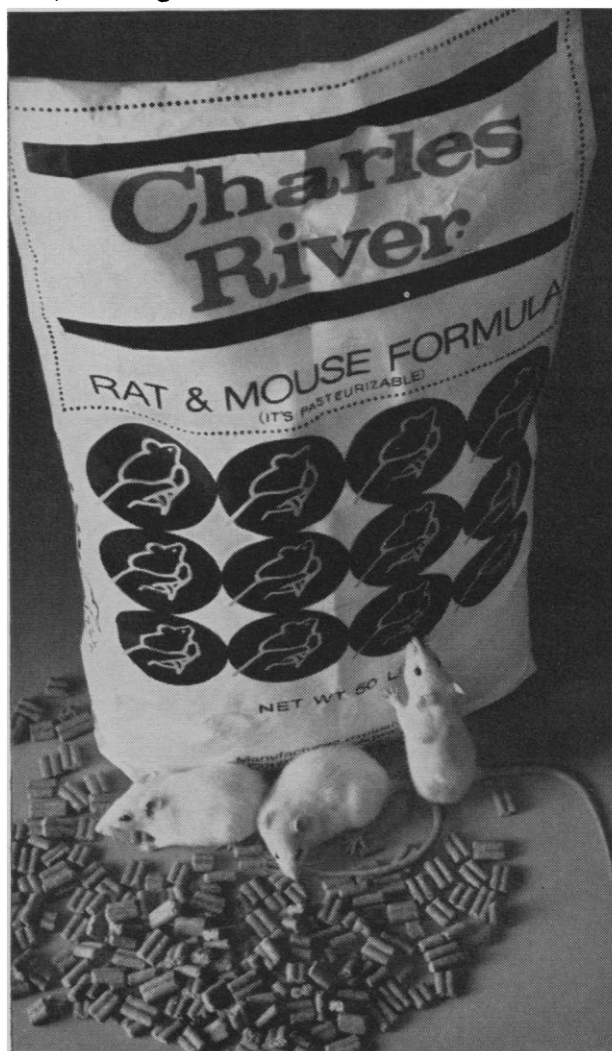
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