The fully automatic Model 119 is the simplest of all Amino Acid Analyzers to use

This is the sensible amino acid analyzer. It is simple in design, modestly priced, and its single-column methodology gives results which rival anything done in two columns.

The Model 119 is also versatile. It can handle a variety of methodologies, and accessories permit physiological fluid analyses and stream division. In addition, you can get your results printed directly in amino acid concentrations by using the new System AA Computing Integrator.

Simplicity in operation and maintenance. Excellent resolution and repeatability. Half the sample size required by two-column methods. 30-sample capacity for automatic over-the-weekend runs.

Find out more about these and other features that make the Model 119 the outstanding value in amino acid analyzers. Write for Data File 119-7 to Spinco Division, Beckman Instruments, Inc., 1117 California Avenue, Palo Alto, California 94304.

And the price is right: $18,400

Beckman INSTRUMENTS, INC.
The second volume of this informative series of half-hour conversations between scientists and science journalists is now available. Scientists talk about their work with particular insight into a variety of topics of interest and concern. These twelve dialogues have been compiled by the AAAS and edited on to six audiotape cassettes and packaged in an attractive album.

1. The Dilemma of Prisons, Dr. John P. Conrad, Dr. Edith E. Flynn, Mr. J.D. "Sonny" Wells with William Hines
2. Science and Sociology of Weather Modification, Dr. J. Eugene Haas, Dr. Thomas F. Malone with Peter Calamai
3. New Dimensions in Human Genetics, Dr. Leon E. Rosenberg, Dr. Michael M. Kaback, with Barbara J. Culliton
4. Children and Environment: A New View, Dr. Jerome Kagan with Judy Randal and Edward Edelson
5. Energy Rationing, Dr. Earl Cook, Dr. Samuel Z. Klausner with William Hines
6. Forest Ecology and Management, Dr. Gene Likens, Dr. Arnold W. Bolle with Edward Edelson
7. Environment and Cancer, Dr. C.S. Muir, Dr. Marvin Schneiderman with Edward Edelson
8. Patterns of Discovery, Dr. Benjamin Bederson, Dr. John K. Hulm with Edward Edelson
9. The Limits of Growth: A Debate, Dr. Dennis Meadows, Dr. S. Fred Singer with David Perlman
10. Tragedy of the Commons Revisited Dr. Garrett Hardin with Richard D. Lyons and Edward Edelson
11. Understanding Perception, Dr. Richard L. Gregory with Edward Edelson and Barbara J. Culliton
12. Exploring the Universe, Dr. Halton Arp, Dr. Herbert Friedman with Allen L. Hammond

The price of Speaking of Science Volume 2 is $34.95 to AAAS members and $39.95 to non members (both plus postage and handling). To order your copy of this interesting and exciting volume complete the order blank below.

---

Please send me ______ albums of Speaking of Science Volume 2 at $39.95 each, $34.95 for AAAS members (both plus $1.50 postage and handling).

____ check enclosed ______ please bill me

name (please print)

address

city, state & zip

American Association For the Advancement of Science
1515 Massachusetts Avenue, N.W.
Washington, D.C. 20005
Dept. SM
Since the genetic code is linear, why aren't we all shaped like spaghetti?

We are just beginning to understand how nature creates three-dimensional molecules on a linear framework. Biologists have found that in at least one case, evolution has devised a protein hinge to swing the parts into place. This is just one of many exciting discoveries explained in Ernest Borek's new book, THE SCULPTURE OF LIFE.

Borek, acclaimed for his achievements in both molecular biology and science writing, tells about: the truth behind the old wives' tale that children grow in their sleep; the hardy microbe that lives happily in nuclear reactors; the virus that beat Buckminster Fuller to an idea by several million years; the prospects for genetic engineering and human cloning;... THE SCULPTURE OF LIFE is essential reading for anyone interested in man's understanding and control of nature.

ERNEST BOREK
THE SCULPTURE OF LIFE

Hardcover $10.00, Paperback $2.95
At bookstores or from
COLUMBIA UNIVERSITY PRESS
136 South Broadway, Irvington, N.Y. 10533

LETTERS

Community Mental Health

In the article (News and Comment, 17 Aug. 1973, p. 638) describing the experiences of Georges Reding in the community mental health program in Franklin County, New York, Constance Holden seems to miss the point and, in so doing, loses the opportunity to get across a very important principle of community work. Rather than demonstrating that "Any doctor who tangles with the politics of established medicine is likely sooner or later to get his wings clipped," she simply demonstrates that, if someone speaks and acts in a manner likely to provoke others, he will be successful, and if those provoked are in a position to do something about it, they will.

In this era of the community mental health movement, Reding's approach to patient care could hardly be considered a "threat" to the establishment. Quite the contrary, many of his activities were very much in tune with the spirit of this movement. His work in orienting hospital staffs to the care of the psychiatric patient is a fine example. However, before the value of a distinct psychiatric program in a hospital was recognized, physicians hospitalized acutely ill psychiatric patients on general medical wards; this practice still continues on an informal basis in many communities that lack psychiatric services. The rationale for developing separate medical and surgical wards in a hospital is to concentrate the resources and programs most likely to be needed by each kind of patient in one place. In the case of psychiatric patients, this enables the staff to develop a therapeutic program for the patients as a group, and to make their entire day a health-directed experience, rather than simply leaving them to fritter away their time between doctors' visits.

The concepts Reding espoused in the areas of preventive care, crisis intervention, the use of "primary caretakers," and the importance of follow-up, are all strongly emphasized in community mental health programs. That these are concepts that have been slow in gaining acceptance and difficult to implement does not diminish the importance that "establishment" psychiatry attributes to the development of such services. It is unfortunate that Reding did not provide for the same kind of painstaking education of community leaders regarding what mental health is all about, and why he was doing what he was doing, that he appeared to give the hospital staffs.

One of the most important lessons to be learned by the community psychiatrist, one unfortunately not taught in traditional residency and psychoanalytic training programs, is that, while the community will accept innovation, because its proponent places it under the medical mantle, "The doctor says so," that is simply not enough. If an innovation is to be accepted, it must be presented in the marketplace of ideas with persuasive arguments showing why it is better than competing ideas. This component of community education, so strongly emphasized in community mental health, is too often neglected by those who do not appreciate its importance.

It seems to me that the Franklin County legislators were simply saying: With all our faults, we are muddling through as best we can. Their willingness to support a mental health program at all suggests that not only did they recognize those faults but they wanted to do something to overcome them. On finding themselves stuck with someone intent on proclaiming virtue throughout the county and on using that stance as justification for dispensing with the basic respect that we all owe our fellow men and which is central to what mental health is all about, they reacted in a manner that is hardly surprising.

The positions of at least a few of those people who were so freely criticized should have been presented in Holden's report. In a situation like this, both sides of the argument deserve a hearing.

SIMON L. AUSTER
Fairfax--Falls Church Community Mental Health and Mental Retardation Services Board,
4100 Chain Bridge Road,
Fairfax, Virginia 22030

The ideas espoused by Georges Reding, while perhaps innovative for Franklin County, New York, have been used in a number of variations in many different communities. Perhaps the most innovative idea is that he would try to be successful while at the same time alienating large elements of the community. (This too has been tried many times, and it did not work then either.) In community mental health work, as in most other systems, success cannot be attained without first having some harmony with the people who...
provide the funds (the county officials) and with other important dispensers of similar services (local physicians, and so forth). Antagonizing these elements, regardless of the correctness or brilliance of the ideas, almost always leads to failure. Successful people in community mental health, the Peace Corps, and VISTA (as well as in many other systems, such as universities) have had to learn these skills, or find other tools which do not demand such patience, tact, and diplomacy, or find other situations in which they may be more insulated from their deficiencies in these areas. Even if the idea is right, the proper timing and necessary community support must be there or the idea must wait. (One can also learn that despite one's expertise sometimes the idea itself is not right and one's own judgment needs to be modified by others. It is a good, humbling, enriching experience.)

Robert L. Procter
Division of Mental Health and Retardation Services,
State Office Building,
Topeka, Kansas 66612

Constance Holden's allegation that the resistance to change is stronger in small rural communities is unsupported. Her report suggests that the medical community of Franklin County rejected Reding's ideas; the fact may be that they rejected Reding's personality and approach—not his ideas.

I have been deeply involved in setting up life-style clinics for the poor in four northern counties including Franklin County. Our services include well-child care, preventive dentistry, family planning through Planned Parenthood, nutritional advice, and transportation to and from the clinic. All services are provided without charge to the patient. Evaluation of preschool children is carried out by nurse-pediatricians. These clinics represent a radical change in health care delivery.

We have opened one clinic in Franklin County and plan very shortly to open another in Hogansburg, New York, a village on the St. Regis Indian Reservation. Contrary to Holden's statement concerning resistance to change, we have found the physicians of Franklin County extremely cooperative. Our efforts have been spearheaded by Barbara Maguire, coauthor with Reding of the report of his experiment published in the New England Journal of Medicine (1).

I admire Reding's work very much. I believe he has made a major contribution. Certainly his work deserves careful scrutiny by others in the psychiatric field. Nonetheless, it seems quite clear that Holden's conclusions are not at all supported by facts. It appears that Reding was not rejected by the establishment, but rather his rejection may have been an autoimmune phenomenon initiated by his treatment of other physicians.

George S. Sturtz
North Country Children's Clinic, Inc.,
Doctors Park, 199 Pratt Street,
Watertown, New York

References

Scientists as Economists

The controversy which has developed about Forrester's world model (Letters, 22 June, p. 1236) interests and surprises me. One would gather from some critics, in Science and elsewhere, that Forrester and his colleagues had performed a positive disservice to mankind, and to the free world in particular, by publishing their results. In my view, any attempt to make a national or a world model which will enable us to assess, however imperfectly, the possible future, is of immense value.

Keynes showed the governments of the world how to avoid the full consequences of deep economic depression. No one has yet shown how the vicious effects of the present inflation, which is playing havoc with the economies of all the democratic world, may be reversed or softened. And it is this rapid decrease in the value of money which has brought penury to science, as well as insuperable problems to governments. For most of us, the real standards of living are falling. No effort to understand why is wasted.

I suggest that if more scientists interested themselves in these complex economic questions, instead of leaving them to accountants and financiers, a growing ability to develop measures which would stabilize economies would inevitably develop. Techniques which led to the present worldwide economic mess are not necessarily those which will lead to a solution.

M. L. Oliphant
Government House,
Adelaide, South Australia
A 100-watt bulb consumes as much power as the magnet in our NMR Spectrometers.

Since Perkin-Elmer's entire line of NMR Spectrometers employs permanent magnets, the only power required for the magnet is for thermostatting and supplying the Golay coils*.

They need no troublesome cooling water and no noisy water refrigerator.

In fact, the savings in operating costs alone could pay for the cost of the instrument in as little as 7 years.

But economical operation is only one of the many benefits you get with our permanent magnet Spectrometers. Others are: unmatched resolution stability; amazing ease of setup; and high throughput.

If you are planning to add to your current NMR capabilities or just getting into NMR, it will pay you to get more information on the entire Perkin-Elmer line of permanent magnet NMR Spectrometers.

Instrument Division, Perkin-Elmer Corporation, Main Avenue, Norwalk, Conn. 06856.

*Perkin-Elmer patent numbers 3,515,979 and 3,622,869.

The Model R32 NMR Spectrometer is the first high-field instrument designed with the chemist in mind. This 90 MHz Spectrometer for $^1$H, $^{19}$F and $^{31}$P studies combines rugged construction, high stability and ease of operation. A Triple Resonance Accessory provides automatic field frequency lock and makes double resonance experiments such as spin tickling and IN-DOR part of the day's routine.

Variable temperature operation down to $-100 \, ^\circ C$ is achieved without the use of liquid nitrogen.

Model R24 A. 60 MHz $^1$H NMR Spectrometer. Digital sweep X-Y recording system. Best buy in low-cost field.

Model R22. 90 MHz multi-nuclear NMR Spectrometer. Features CW as well as FT capabilities.

Model R26. New $^{13}$C FT NMR Spectrometer. 10 mm sample tube. Built-in pulse unit. Greatest bargain in $^{13}$C NMR.

Model R12. Versatile 60 MHz NMR Spectrometer. Can be equipped to solve the most demanding NMR problems.

PERKIN-ELMER
Committed to helping your samples tell you more.
The Chemistry of the Transuranium Elements

This book provides an up-to-date account of the chemistry of the transuranium elements. Particular attention is also given to physical and nuclear-physical data. None of the other elements show such close correlations between chemistry and physics as the transuranium elements.

The work is divided into two parts. The first part deals with transuranium elements within the larger group of actinides and stresses analogous and different behaviors, e.g., as compared to the lanthanides. Ten chapters describe the preparation, stability, and application of the isotopes and elements, the electronic configuration (which has only recently been established unequivocally), valences and coordination chemistry, metallurgy, organometallic and analytic chemistry, as well as separation procedures and behavior in solution and in the solid state. The first part is rather an accurate description and a representation of common and contrasting features of the actinides than a compilation of details. It therefore contains an up-to-date review of all actinide elements including thorium, protactinium and uranium.

The second part describes the preparation and properties of the individual transuranium elements neptunium (Z = 93) to hahnium (Z = 165) and contains predictions about the chemistry of the superheavy elements. All these chapters follow a common scheme: discovery, preparation and production of the isotopes, metallurgy, solid state chemistry, organometallic chemistry, chemistry in aqueous solutions, separation procedures, and analytical chemistry. Numerical values of the literature have been critically selected. Numerous tables, figures and diagrams are supplementing the text.

This monograph shows that our knowledge of some of the transuranium elements is greater as compared with that of many non-radioactive, classical elements; remaining gaps and problems are clearly indicated. This book is of interest to nuclear chemists and physicists as well as to inorganic chemists who will certainly appreciate it as a survey of an important and relatively new branch of inorganic chemistry.