SCIENCE

6 October 1972

Vol. 178, No. 4056

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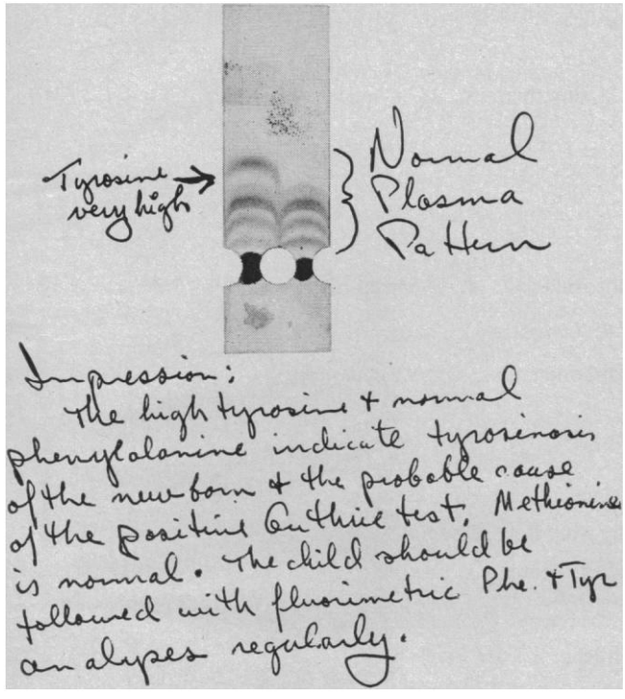

Learning how to screen for odd metabolites

Paul Tocci, Ph.D., of Miami, Fla. is an assistant professor of pediatrics and director of a biochemical genetics laboratory. He offers these observations concerning the above thin-layer chromatogram of a plasma sample from a 14-day-old female infant.

Tocci has had more experience in this matter than most prospective users of KODAK CHROMAT/O/SCREEN Analysis Kits, having contributed heavily to their availability for the rapid, low-cost screening of patients for abnormalities that involve amino acids, sugars, or catecholamines.

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Call for collaborators

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An indication of interest should be addressed to Dr. D. B. Glass, Eastman Kodak Company, Rochester, N.Y. 14650.

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SCIENCE

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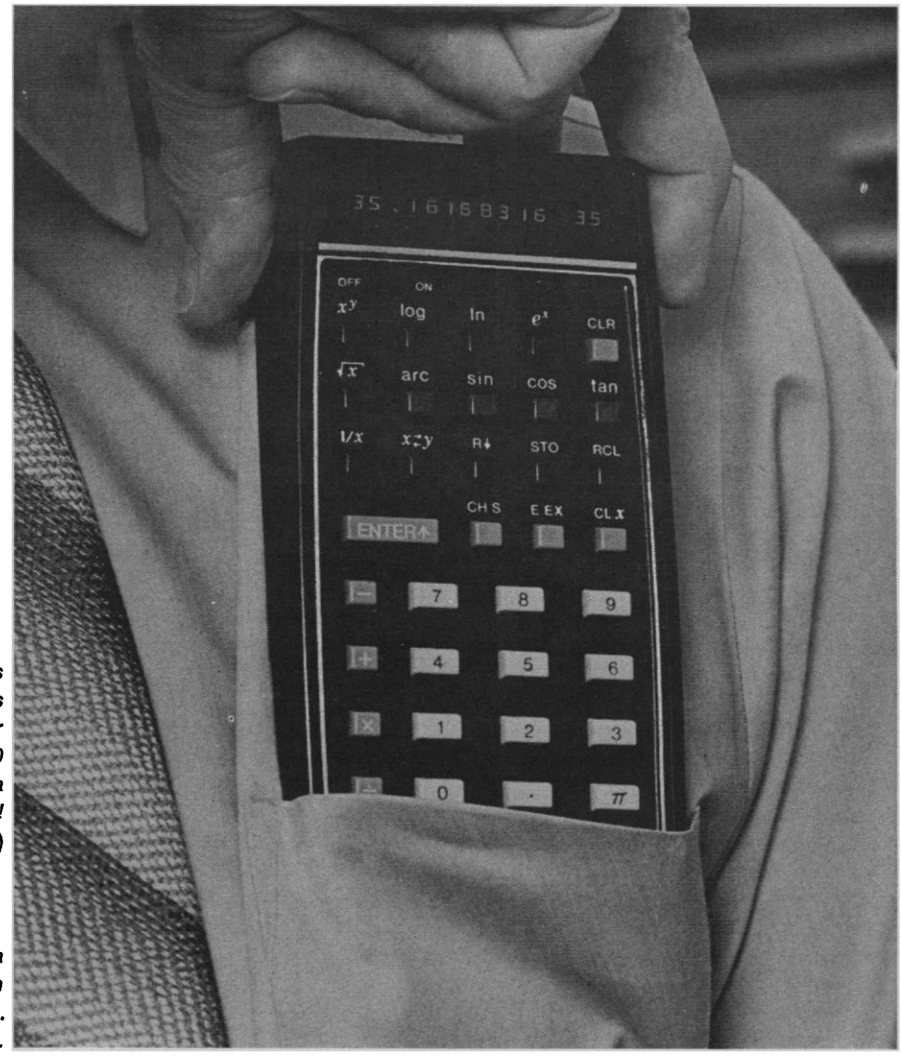
COVER

Salton Sea and Imperial Valley of California looking toward Arizona. The valley is lengthening at up to 5 centimeters per year by crustal spreading motions on the San Andreas, San Jacinto, and Elsinore fault systems. See page 15. [Gemini V photo, courtesy of NASA and Department of Geography, University of California, Riverside]

Some things are changing for the better.

Many people know us as an instrument manufacturer: we make more than 2,000 products for measurement, test and analysis. Others know us as a computer company: more than 10,000 own our programmable calculators and computers. We prefer to think that our business is to serve measurement, analysis and computation needs . . . in science, industry, medicine and education. That is the rationale behind every new instrument, computer or system that we tell you about in these ads. This month:



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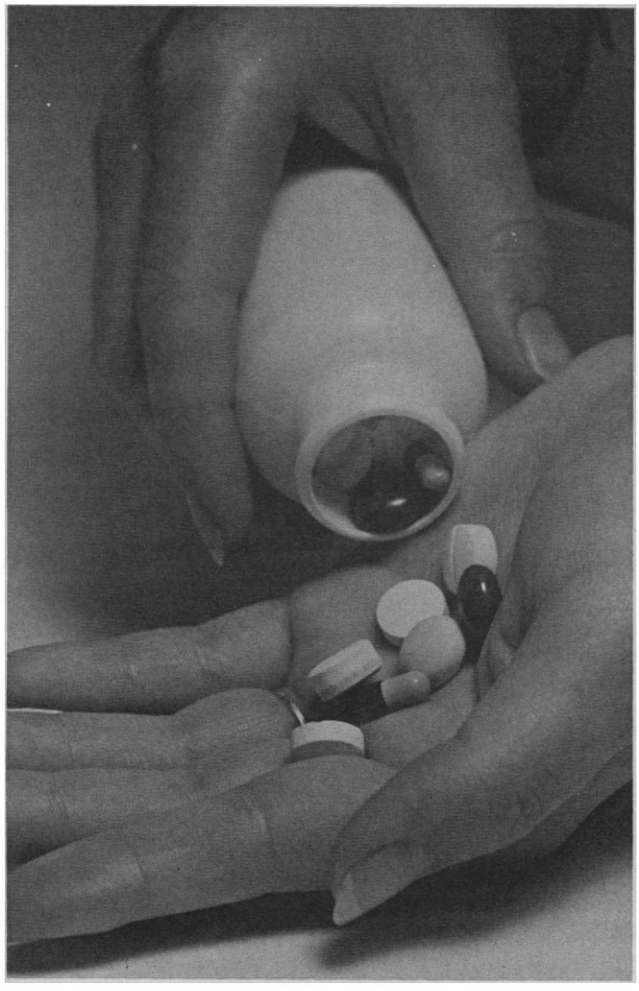

A faster, more efficient way to analyze drugs.

Not much can happen – neither emergency treatment for a drug overdose victim, nor prosecution of the pusher – until the drug has been positively identified. In large cities, where drug emergencies often reach into the hundreds daily, the chemist faces an enormously difficult problem, especially with traditional methods of chemical analysis. But there is a better way.

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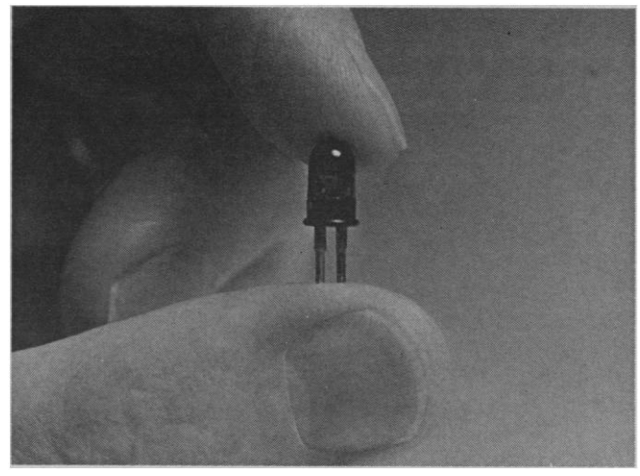

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Paulo was recently halted when it was recognized that the large concentrations of students in a dormitory are not politically expedient. The buildings reportedly will be converted into classrooms and offices.

HULDA GROBMAN
Department of Education, Brooklyn College, City University of New York, Brooklyn 11210

Marine Discoveries

In his report of 23 June (News and Comment, p. 1312), Wade attributes the discovery of the Hudson River's submarine canyon and the discovery of the Gulf of Mexico offshore submarine salt domes to W. Maurice Ewing, who has recently announced his intention to retire as director of the Lamont-Doherty Geological Observatory. Ewing is one of the most prodigious workers in marine geophysics, submarine geology, and oceanography that the world has ever seen. Unfortunately, he did not arrive early enough on the scene to have discovered the submarine Hudson Canyon, and many workers have contributed to the discovery of submarine salt domes in the Gulf of Mexico.

During the years 1842–44, the U.S. Coast and Geodetic Survey (USC&GS) was surveying the approaches to New York (*1*). The results of the survey were reported by Pourtales and commented on by Lindenkohl. Both of these gentlemen were employed by the USC&GS. Lindenkohl said:

> The sea bottom off the entrance to New York lower bay is characterized by features peculiar to that region. These include:
> 1. A well defined submarine valley.
> 2. An area of clay bottom extending about 100 miles seaward.
> 3. A deep ravine at the edge of the continental slope.

J. W. Spencer, in 1905 (*2*), credits J. D. Dana with being the first to recognize the submerged channel as that of the Hudson River,

> formed when the continent stood at a greater altitude above the sea than it does now. . . . But the discovery of the canyon was first announced by Prof. A. Lindenkohl in 1885. . . .

The earliest reference I could find to submarine salt domes in the Gulf of Mexico is the work of Francis P. Shepard (*3*), published in 1937. He had been working just prior to that on board the USC&GS *Hydrographer*, which was under the command of Captain F. S. Borden. Shepard stated that, "Altogether at least 26 submarine domes have been recognized." Shepard goes on to say in his summary:

> All lie either near the outside of the continental shelf or on the upper portion of the continental slope. . . . The salt domes are not only related to the outer portion of the Mississippi submarine trough, but they are found also all along the outer edge of the continental shelf for at least 180 miles west of the Mississippi passes. . . .

In 1947, the U.S. Geological Survey, with the sponsorship of the Office of Naval Research, under the direction of Henry Joesting, conducted a gravity survey in the Gulf of Mexico, during which several salt domes were discovered. The resulting gravity map was placed on open file by the Geological Survey in late 1947 or early 1948.

In 1957, Lankford and Curray (*4*) speculated that Stetson Bank in the Gulf of Mexico was a surface expression of the salt dome. Ewing began to report on his salt dome discoveries in 1962 (*5*). He and others on board the *Vema* discovered Sigsbee Knolls during *Vema* cruise 3 in 1954. During *Vema* cruise 17, in January 1961, they studied 20 structures by seismic reflection, profiling those which were judged by them to be piercement salt domes. Also, in 1962, Ewing (*6*) and others reported that

> Salt domes existed in a narrow zone approximately midway between the scarps (Sigsbee Scarp–Campeche Shelf Scarp). Twenty-one structures . . . strongly resembling and identified as piercement salt domes were discovered.

In 1968, the *Glomar Challenger* drilled into some of the domes of Sigsbee Knolls, of which there are more than 150 known. Ewing participated in this work (*7*). At hole No. 2, he and others reported the following results:

> Below 136 meters of Pleistocene and Pliocene pelagic sediments, a typical cap rock with gypsum, sulfur, limestone, oil, gas and traces of anhydrite was found. The presence of deep salt beds, probably Jurassic in age, is strongly suggested. This hole was abandoned and plugged, since there were rigid instructions to avoid any possibility of an uncontrolled flow of oil.

There are many other references to these salt domes in the Gulf of Mexico. These will suffice to show that many participated in their discovery.

GORDON LILL
National Ocean Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland

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"Women's Lib"

Arguments for "women's lib" appear in many publications. I can accept the shallow, subjective stuff in other periodicals, but certainly *Science* should publish arguments other than those for equal pay and maternity leave.

How about extended leave to provide offspring with the love, discipline, and care that young mammals need? Surely biologists can describe the needs of mammalian offspring generally, and the needs of man's offspring specifically.

Are certain women (a minority, I am sure) trying to repeal another of nature's laws? Haven't we bought ourselves enough problems by trying to diverge in various directions from the highways nature intended?

Women certainly deserve fair and enlightened treatment; but what should it be? What can it be—without bringing up more children who will become problems for all of us to contend with?

R. G. LYNCH

8121 Stickney Avenue,
Wauwatosa, Wisconsin 53213

Bureaucracy

The publication "Interim Description and guidelines for proposal preparation," sent to me by the National Science Foundation in reply to a letter of inquiry concerning grants under the RANN (Research Applied to National Needs) program, must represent a new high in the bureaucratization of science funding.

Even after an initial letter of inquiry, with a general description of the contemplated research, it is still necessary to submit a preliminary proposal. This preliminary proposal itself imposes formidable requirements, including an abstract, narrative (containing a "discussion of the implications of the proposed research for national needs or societal problems"), research plan, management plan (including "a schedule indicating major accomplishment milestones foreseen in achieving the research objective"), related programs and activities of the organization, related programs in other organizations, dissemination of research results ("It is particularly important to identify the potential beneficiaries or users of the anticipated research results and to plan for effective information transfer to them . . ."), as well as the usual vitae and bibliographies, current support, applications to other federal agencies, and budget. However, this preliminary proposal is still to be treated only as a basis for discussion regarding the development of a formal proposal if "review indicates that the project would be a strong competitor for support by the RANN program."

Aside from the demands on the researcher's time imposed by this excessively cumbersome procedure, are not national needs likely to change considerably before the research gets done? An accelerated, rather than prolonged, application period would seem to be a more logical way to get at urgent societal problems.

MEYER CHESSIN

Department of Botany,
University of Montana,
Missoula 59801

Courtesy

All those except hermits are probably aware of the current crises in job openings and funding. May I call attention to a concomitant, perhaps resultant, crisis in courtesy—courtesy among educational institutions.

Many colleges respond to job inquiry letters with Silence. If this is not an extreme in rudeness and discourtesy, it is certainly at least a failure to empathize with the job-seeking individuals in a poor job market.

Some may suggest an economic justification for this silence, but when $6 for postcards plus a little time for printing a form letter saying "No, thank you" could relieve some of the anxieties of 100 applicants, the economic argument seems difficult to accept.

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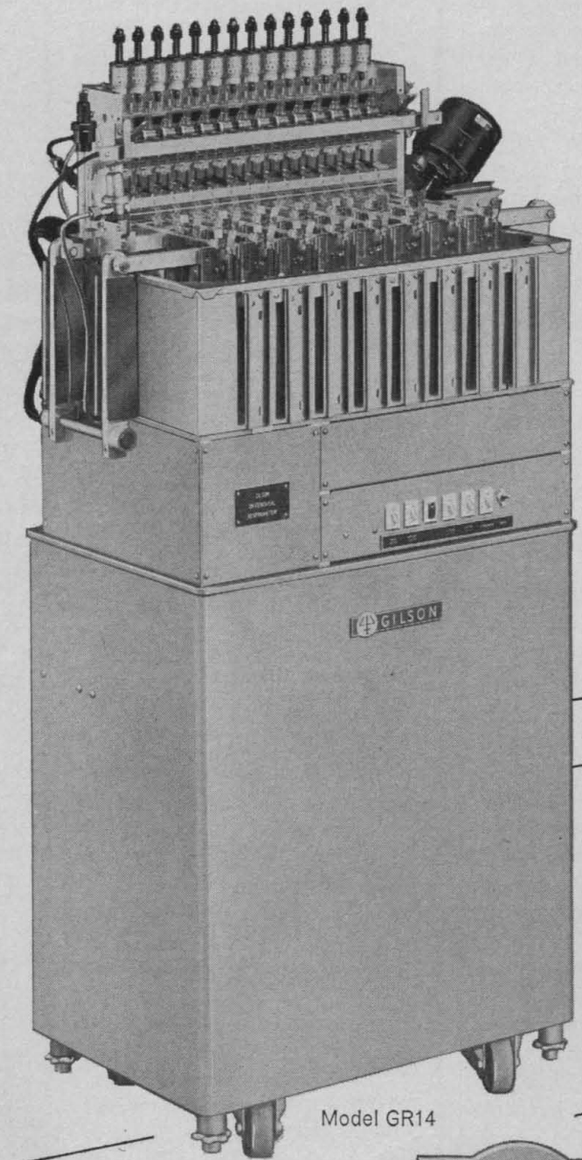

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6 October 1972, Volume 178, Number 4056 **SCIENCE**

Latin American Aspirations

The great disparities among standards of living in the world during the 1950's and 1960's touched the consciences of many people, and foreign aid programs, such as that of the United States, were politically feasible. The passage of time has eroded popular support and, correspondingly, the national commitment has diminished. The reality of widespread poverty remains. If the poorer countries are to develop, they must do so largely by their own efforts. The example of Japan, with its very limited resources, makes it clear that effective use of science and technology is crucial to, and can facilitate, development.

This example has not been lost on leaders of Latin America. For example, the presidents of the American republics, at a meeting held in Punta del Este in April 1967, sounded the hopeful note that "Latin America will share in the benefits of current scientific and technological progress so as to reduce the widening gap between it and the highly industrialized nations in the areas of production techniques and of living conditions."

In May 1972, another meeting sponsored by the Organization of American States was held, this time in Brasilia. This was a Conference on the Application of Science and Technology to Latin American Development (CACTAL). A report on the conference* provides a comprehensive outline of the many legitimate aspirations of our southern neighbors.

". . . scientific and technological policies must be geared to the permanent objectives of economic growth, social justice and enhancement of culture."

"The objectives . . . should include narrowing the technological gap, eliminating technological dependence on the developed countries and advancing toward the creation of indigenous technologies."

"Scientific and technological development . . . should give preferential attention to the needs of both rural and urban marginal sectors and to the development of the most dynamic sectors of the economy that make intensive use of advanced technologies."

This is only a small sample of their aspirations. A reality is that in Latin America there are a total of only 50,000 scientists and engineers (a few percent of the number in the United States). Moreover, scientists are not effectively employed in industry. If the Latin American countries are to make substantial progress toward the fulfillment of their aspirations, they must succeed in bringing to bear on the task much larger intellectual and other resources than have heretofore been employed.

One method is to utilize outside resources: for example, the transfer of technology through foreign investment. The CACTAL report seems to restrict that avenue, for it recommends restrictions on the operations of foreign firms that those firms would be reluctant to accept.

The Latin American countries might try to utilize some of the bounteous resources of scientists and engineers in developed countries. This would require an unprecedented degree of cooperation on the part of the Latin Americans and a willingness to provide conditions that would permit effective tackling of problems. On their part, scientists and engineers are by inclination problem-solvers, and many of them would be greatly attracted by new challenges. At the June 1973 AAAS–CONACYT meeting in Mexico City, many matters vital to Latin America will be discussed—among them, technology transfer. The occasion might well serve as a crossroads where problems and problem-solvers get together.—PHILIP H. ABELSON

* Specialized Conference on the Application of Science and Technology to Latin American Development, *Final Report* (General Secretariat, Organization of American States, Washington, D.C., 1972).

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