



Pauling pushes vitamins for mental health.

Will vitamins replace the psychiatrist's couch?

Megavitamin therapy is turning up avid proponents and strong opponents

by Robert J. Trotter

"I told you so," says Linus Pauling about vitamin C and the common cold. And he hopes to be saying the same thing about vitamin B₃ and mental illness. But the way things stand now, the two-time Nobel Prize winning chemist may have to wait a while before he takes his bows.

Orthomolecular psychiatry, the term Pauling coined for the treatment of mental illness with massive doses of vitamins, is meeting strong resistance from establishment psychiatry. Only two percent of the nation's psychiatrists, estimates Pauling, use orthomolecular therapy. The National Institute of Mental Health has discouraged such treatment. And the American Psychiatric Association is preparing to release a task force report that says the theoretical basis for megavitamin therapy has been "found wanting" and attempts to prove its value have been "uniformly negative."

This reaction is natural. Since the time of Sigmund Freud, psychiatry has come to rely heavily on the psychological model of mental illness as an immaterial disorder or perversion of the intellect. But "psychotherapy has failed," says Pauling, and it is time to get back to the medical or scientific model. One way to do so, he feels, is with vitamins.

The relation of vitamins to mental illness has been evident since vitamins were discovered. Pellagra, for instance, is a vitamin-deficiency disease, and one symptom of it is psychosis. In 1937 researchers discovered that an adequate intake of niacin (a B-complex vitamin) could avert or cure both the disease and the psychosis. Similar treatment was applied to other forms of mental illness with varying amounts of success in the 1940's. Then in 1952, Humphry Osmond and A. Hoffer began giving niacin to patients diagnosed as schizophrenic. Their published results claimed significant improvement in these pa-

tients when compared to patients receiving a placebo. Even with these results, megavitamin therapy received little serious attention until 1968 when Pauling lent his support to the theory.

In an article in *SCIENCE* Pauling hypothesized "that the so-called gene for schizophrenia may itself be a gene that leads to a localized cerebral deficiency in one or more vital substances." Orthomolecular psychiatric therapy, he said, attempts to overcome this deficiency by providing "the optimum molecular environment for the mind, especially the optimum concentrations of substances normally present in the human body." Pauling cited the work of Osmond and Hoffer and then noted that mental illness can result from a low concentration in the brain of any of the following vitamins: thiamin (B₁), nicotinic acid or nicotinamide (B₃), pyridoxine (B₆), cyanocobalamin (B₁₂), biotin (H), ascorbic acid (C), and folic acid. Replacing shortages of these vitamins by orthomolecular or megavitamin therapy, he said, "may turn out to be the best method of treatment for many patients."

Early this year Pauling and David Hawkins of the North Nassau Mental Health Center in New York co-edited and published a volume titled *Orthomolecular Psychiatry*. In it, 37 articles by 30 authors set forth the theoretical, experimental and clinical background of orthomolecular psychiatry and how it relates to schizophrenia, alcoholism and mental disorders resulting from drug abuse. Hawkins describes how the orthomolecular approach can be applied inexpensively to large numbers of patients in a clinic setting. The book also contains a description of a self-help organization known as Schizophrenics Anonymous.

It was this kind of publicity that helped get megavitamins off the shelf and into the headlines. Megavitamin

therapy has become something of a fad in various parts of the country. But according to NIMH and the APA, it is not what the doctor called for. The most recent issue of NIMH's *SCHIZOPHRENIA BULLETIN* says the bulk of research evidence shows that megavitamin therapy adds nothing to the usual psychiatric treatments.

The APA comes down a little harder. The task force on vitamin therapy in psychiatry says the results and claims of megavitamin therapy have not been confirmed. It cites the work of several groups of psychiatrists and psychologists who do psychopharmacological research. Says the task force: "It is virtually impossible to replicate studies in which each patient receives a highly individualized therapeutic program with from one to seven vitamins in huge doses, plus hormones, special diets, other drugs and electroconvulsive therapy, which are added or subtracted not on the basis of proved biochemical abnormalities but rather on the basis of the clinicians' individual judgment as to the patient's needs. . . . It is also impossible to replicate studies in which as many as five years of treatment may be needed before results begin to appear." About orthomolecular therapy's reported successes, the task force says, "one must seriously doubt that the patients were all truly schizophrenic."

Possible long-range toxicity is considered by the task force to be "the truly important question arising from the prolonged megadosage administration of B₃." Toxic reactions in humans, the report says, include duodenal ulcer, abnormal liver function, hyperglycemia and extraordinary increases of serum uric acid. Another concern of the report is that mental health clinics may be put out of business by the creation of new orthomolecular clinics that may not offer the scope of services given by

OFF *the* BEAT

The meeting is the message

An innovative attempt to change the face of scientific meetings

Scientific meetings were originally intended to facilitate communication between scientists. Scientists read and discussed papers and came away with a general idea of what was happening in their field. But as the number of scientists and papers has increased, discussion and interaction have decreased. Some scientists feel that if this trend continues, scientific meetings will degenerate into nothing more than tax-deductible vacations with the importance of class reunions. The planners of one upcoming meeting have taken steps to drastically and substantially reverse the trend.

The meeting is the Ninth International Congress of Anthropological and Ethnological Sciences, to be held in Chicago from Aug. 28 to Sept. 8. Planners of the convention, held every five years, adopted at an interim meeting in 1971 a new format for their congress. The first week of the meeting will be held in Chicago and various other cities. Members will meet in Detroit, Milwaukee and Oshkosh, for example, to organize the formal sessions that will take place during the second week. Such preparations are necessary because papers will not be read aloud at the congress. They will be discussed. This is possible because most of the almost 2,000 papers that have been accepted have been reproduced and made available to members in advance. The sessions (lasting from two to eight hours) will open with brief statements from the authors. These will be followed by panel discussions and, finally, open discussion with members of the audience. Earphones and simultaneous translations will allow for total communication in all the languages represented.

To further unify the congress, one hotel, the Conrad Hilton, has been reserved for the second week of the meeting. Most of the 4,000 scholars expected to attend will stay there. All of the 95 sessions (including such topics as archaeoastronomy, cross-cultural perspectives on the women's movement, primate karyology and the causes and correlates of war) will be held there. The hotel's closed-circuit television will inform members of schedule changes or important events

and will also be used for continuous screening of old and new anthropological films.

The theme of the congress is *One Species, Many Cultures*. A goal is to have as many cultures as possible represented. As Sol Tax of the University of Chicago, president of the congress, puts it, a balanced view "requires the predominant presence of persons from developing countries." Many past international meetings have been dominated by scientists from industrialized countries because they could afford to travel. This meeting is intended to be more representative. Tax hopes at least 1,000 scholars at the congress will be Third World people. Almost \$300,000 has been raised to subsidize their travel and living expenses. Almost 100 nations, including China, are expected to be represented.

Much of the money to pay for the congress will come from advances on royalties from the books that will be produced. Because the papers are not being read at the sessions, they are not limited in length and can be more substantive, says Tax. These papers are being grouped into a set of books, *World Anthropology*, to consist of 70 to 100 volumes, that will be published next year by Mouton publishers in The Hague, Netherlands.

Special events have been scheduled to illustrate the idea of many cultures within one species. The congress has commissioned Gian Carlo Menotti to write an opera on the theme of cultural pluralism. Menotti says the opera will be a dramatic tragedy about Americans and Indonesians. There will also be an ongoing American folk concert produced by the Smithsonian Institution and an American arts and crafts fair including U.S. and Canadian material. Another week-long concert will project the main musical styles of various regions of the world, along with commentary giving the background of the item being played. Paintings and photographs from Africa, Australia, Europe and Latin America will be displayed. An anthropological film festival will run all week, and a book fair—in addition to publisher's exhibits—will sell used or overstocked books at reduced prices. A congress library will make unique books and documents available as well as copies of congress papers.

These and other innovative aspects of the congress are necessary, says Tax, because "of all disciplines, anthropology most requires inputs from all the world's cultures." He hopes the Chicago meeting will become a model for future meetings because "our international meeting every five years must do more than supply another place to meet colleagues and compare notes."

—Robert J. Trotter

more conventional clinics. And finally, the task force finds "deplorable" the massive publicity that megavitamin proponents promulgate via radio, the lay press and popular books.

"Deplorable from whose standpoint?" asks Pauling, who says he is happy to be making a contribution. "These are the same statements physicians made about what I said about vitamin C and the common cold. And it's quite clear," he told *SCIENCE NEWS*, "that the physicians were wrong. All the new evidence that has come out has shown that the statements I made were correct."

(Pauling is correct in saying that some research has come out in his favor. Studies in Czechoslovakia have found that vitamin C helps remove cholesterol from the body and therefore protects against atherosclerosis and heart attack [SN: 2/17/73, p. 106]. Studies with college students in Canada have shown that megadoses of vitamin C can protect against the common cold. Studies at the University of Texas suggest that even more vitamin C than Pauling calls for is necessary for good health and normal development [SN: 5/5/73, p. 290]. But this evidence does not convince everyone. Nutritionists still call for only one-tenth of what Pauling suggests. Pauling, however, is not talking about nutrition. Megavitamins, he says, have a therapeutic and pharmacological effect. Paul E. Johnson of the Food and Nutrition Board of the National Academy of Sciences says no one really knows what will finally come of the therapeutic and pharmacological use of megadoses of vitamin C. What is needed, he says, is an unbiased review of all the research on the subject. This has not been done.)

Pauling says more than 20,000 patients have received up to 8 grams of niacin and 4 grams of ascorbic acid a day, and there has been no evidence of long-term toxicity or the side effects mentioned by the APA task force. Pauling admits that diagnosing schizophrenia isn't easy but, "We accepted as schizophrenic patients who were diagnosed so by two psychiatrists."

Orthomolecular psychiatry is not aimed at destroying psychiatry or mental health clinics, Pauling emphasizes. Instead, megavitamins, are supposed to be auxiliary to the other therapeutic and prophylactic measures used by psychiatrists. They supplement, not replace, other therapeutic treatments. Why then does psychiatry seem reluctant to accept orthomolecular therapy? The old guard doesn't want to learn anything new, Pauling says, and "if the patients go back to a normal life faster, then the number of patients the psychiatrists have to treat will be less and there may be a danger to their income right there." □