



10500 Furnace with Solid-State Control

## **NEW ORDER OF RELIABILITY**

New solid-state controller, Dubuque IV, raises reliability to a new level . . . long life silicon controlled rectifier and transistor establishes positive reliability . . . No tube replacement.

#### PROPORTIONING BUILT-IN

Automatic proportioning action accurately compensates for temperature lag and overshoot in furnace . . . cyclic temperature variations are minimized.

# QUICK RESPONSE HEATING ELEMENTS

Special "low-mass" elements respond quickly to controller demand . . provide balanced heat distribution. New features combine to give highest dollar value in a small furnace

Chamber size—5½" W x 3%" H x 6½" D 1093C (2000F) Model\_\_\_\_\_\_\$352 1177C (2150F) Model\_\_\_\_\_\$363





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## Psychology and Health Care

John Walsh (News and Comment, 3 Dec. 1971, p. 1003) reports on "Health manpower training: Funding levels at issue" and describes certain inherent problems of fiscal, political, and manpower balance. Both Walsh's comment and the legislation that was enacted omit realistic consideration of a major health profession—psychology.

In terms of hospital beds, patients affected, community services provided, professionals involved, or funds expended-to say nothing of social cost -mental disorders constitute a very major and substantial health problem. Yet the current national-level proposals for health insurance and the broad range of existing prepaid health coverage largely exclude or seriously limit coverage for mental disorder. These proposals and existing coverage commonly exclude the services of psychologists or fail to recognize psychologists as the independent health practitioners that they are-licensed in 44 states and the District of Columbia and represented by a national organization of over 33,000 members, the American Psychological Association.

If there is any doubt that psychology has major substantive relevance and capacity to deliver in this arena, or that mental disorder is not a major health problem, I would recommend a review of the ten reports (published as separate texts by Basic Books, New York) of the Joint Commission on Mental Illness and Health appointed by President Kennedy. Six of these texts were authored, and one coauthored. by psychologists, perhaps evidence both of the preeminent scope of knowledge which my profession has to contribute to this field and its documented willingness to participate in the resolution of health problems at the national level. HERBERT DÖRKEN

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## **Research Management**

In the editorial (1 Oct., p. 11) that was excerpted from the 1945–1946 Carnegie Institution yearbook (1), Vannevar Bush seems to imply that fundamental research cannot be managed, but only supported, with the management of a program left to the scientist conducting the research. Quite the con-

trary! Experience in industry has repeatedly shown that the scientist conducting the research is frequently the poorest choice as manager due to his lack of objectivity, or removal from personal involvement. It has been far more successful for the manager to be a separate person from the researcher, although also a scientist.

The "managed" approach has also more successfully kept the final objective in clear focus. The alternative course, as advocated by Bush, frequently results in a diffuse approach, which either never comes to grips with the central problem, or takes a considerably longer time to do so.

The managed approach is not without its disadvantages or risks. But even Bush's "eminent" scientists must make judgments and take the chance of making a wrong choice. The central issue is to make sure that the managers or management groups are properly staffed. If the scientists are anywhere as eminent as Bush contends, they should have no difficulty convincing their managers of the wisdom of their choices. None of us likes to be called to account for our work and forced to justify the direction we have chosen. But in the balance, this is preferable in the case of any national commitments we might choose to make, now or in the future.

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#### Reference

1. Report of the President, Carnegie Inst. Washington Yearb. 45, 1-13 (1946).

## The College Professor

Because the AAAS has recently made efforts to reform its governance, I decided to read the list (18 Feb., p. 804) of AAAS officers, committees, and representatives. An intriguing pattern began to emerge; of the scores of academic men and women listed, only two are affiliated with an undergraduate college (if we regard Dartmouth, the City College of New York, and Queens College as entities greater in scope and size than a "college"). Of these two, Rhoda Dorsey, who is on the Committee on Minorities in Science, is apparently a representative not only of the majority sex in America but also of a significant minority in academia, the college professor. The other, Donald Aitkin, is on the Youth Council.

Why does the AAAS have active



participation from all components of its membership save from those colleges that do not grant doctorates? These institutions represent an important segment of our educational system, and prepare many of our future teachers, doctors, and (hopefully) scientifically aware citizens. I hope that the AAAS officers will recognize that science is not the province only of the university, the corporation, and the government.

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#### **Machine Translation**

H. Wallace Sinaiko comes to substantially the same conclusion in his letter (17 Dec., p. 1182), "Translation by computer," as that of a National Academy of Sciences-National Research Council committee in 1966. The members of that committee (chairman John R. Pierce, John B. Carroll, Eric P. Hamp, David G. Hays, Charles F. Hockett, Anthony G. Oettinger, Alan Perlis) are gratified at this confirmation.

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## Reference

1. Language and Machines, Computers in Translation and Linguistics, report of the Automatic Language Processing Advisory Committee (Publ. No. 1416, National Research Council, Washington, D.C., 1966).

## **Lunar Basalts**

We agree with most of Allen L. Hammond's review (Research News, 25 Feb., p. 868) of the history and structure of the moon. However, there is one important point that should be clarified. He says, "Within this period, two major phases of thermal evolution have been identified: (i) widespread melting that apparently occurred about the time of the moon's formation; and (ii) partial melting beginning as early as 4.1 billion years ago to form basalts enriched in potassium, rare earth elements, and phosphorus (KREEP basalts), and somewhat later, flooding of preexisting basins with lava to form the lunar maria between 3.1 and 3.7 billion years ago." He makes other remarks that are not clear about the times at which the basalts were formed.



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