the cost of desalinization would be protected horticulture. The gross return per acre per year for commercial greenhouse carnation production in Colorado exceeds $100,000 with a capital investment of about $200,000, and a total yearly consumptive water utilization in excess of 6 acre-feet per year. There are Colorado producers paying more than $200 per acre-foot for domestic water, yet the resource is the cheapest raw material in ornamental production—as long as its quality is satisfactory. . . .

It would seem to me that we should explore methods of sweet water production other than straightforward seawater desalting. In certain situations, intensive horticultural production might afford a means of improving a country's foreign exchange—in Israel, for example. Where greenhouse production is feasible, why not recover the pure water transpired by plants? This requires, essentially, cheap power to remove latent heat. In certain circumstances, there is the possibility of using moderately saline or alkaline water in production. Unfortunately, the professionalism required in economic greenhouse production in this society is not any less than the professionalism required of an engineer to build, maintain, and operate a nuclear power facility. As soon as engineers realize that the "green thumb," "home lawn" variety of plant growing is not applicable to intensive agriculture, the better these schemes may be evaluated.

JOE J. HANAN
Department of Horticulture, Colorado State University, Fort Collins 80521

Esoteric Measurements

I would like to echo the objections of H. R. Catchpole (Letters, 4 July). He suggests that with a minimum of editing many articles could increase their potential readership by several-fold, and gave as an example the use of a binomial species designation with no mention of the common English name. My concern is similar.

Why must the simplicity of the metric system be cluttered up with pica-, giga-, and nano-? The English system has two disadvantages: the arbitrary ratios of the units and the arbitrary naming of the units. In most sciences, the *measurements* used avoid the first disadvantage ("parsecs" is an exception); the names of units seem to be getting more complex by the day. As a case in point (*1*), two time periods are mentioned in one paragraph (on page 14). One of the periods is 4.5 eons; the other is 3.8×10^9 years. If an eon is 10^9 years, then I know how these intervals are related. My trusty almanac does not list "eon" in the index, and my dictionary, published in 1947, says that an eon is an indefinitely long period of time, or comprises two or more *eras*.

The editors of *Science* could require that, if esoteric measurements are used, then when first used, they be defined in terms of fundamental units.

CHARLES BUCK
Department of Mathematics, Cleveland State University, Cleveland, Ohio 44115

Reference

1. H. Alfvén and G. Arrhenius, *Science* **165**, 11 (1969).

Unreliable Results

In the course of my work I have discovered that the Beckman No. 39183 single-probe electrode for *p*H meters does not give reliable results when used to measure the *p*H of tris buffers. A 0.10*M* tris chloride buffer which had been prepared to *p*H 8.7 was recorded as *p*H 9.3 when this particular electrode was employed. In answer to an inquiry, Beckman Instruments, Inc., has informed me that there is a reaction between tris buffers and the linen fiber used in their No. 39183 electrode.

In view of the great popularity of tris buffers and Beckman electrodes, I believe this information should be made available to the entire scientific community.

MICHAEL F. RYAN
Department of Biochemistry, University of Louisville, Louisville, Kentucky 40208

Slippery Polymers

The letter from Douglas Scott ("Slippery water in fire hoses," 27 June) describes yet another intriguing application of the turbulent frictional drag-reducing properties of the class of long, linear-chain polymers of high molecular weight such as carboxymethyl cellulose, polyvinylpyrrolidone, and polyethylene oxide. In high dilution (10 to 100 parts per million), they make petroleum and even ships' hulls slippery.

In our laboratory we have found these polymers make iodinated radiopaque media which are used for clinical vascular contrast injection studies so slippery that they require 20 percent less pressure for the same rate of delivery through small-bore heart catheters (slippery "dye" for medical "hoses").

HERBERT M. STAUFFER
Department of Radiology, Temple University, Philadelphia, Pennsylvania 19140

Phenomena of Psychic Research

Hudson Hoagland's editorial (14 Feb., p. 625) pointed out clearly the liability to deception, both unconscious and otherwise, of UFO observers and professional spirit mediums. His part in the investigation of the famous Margery spiritualist fraud 45 years ago is something for which modern psychologists should feel a sense of personal gratitude. All too often such time-consuming public service is not properly remembered and admired.

In order to place the foregoing in proper perspective, however, it is appropriate to say that the spirit mediums of past generations bear to present-day parapsychology a relationship analogous to that between the alchemists of the Middle Ages and the emerging science of chemistry in the 17th century. The cupidity, deceit, ignorance, and lack of discipline for which alchemy became legendary did not create, nor could it destroy, the underlying phenomenological reality which later became the object of scientific study.

Modern descendants of the early psychical investigators have brought to the criticism of extrasensory perception and psychokinesis experiments as much mathematical, psychological, and physical sophistication as we possess today, and still these phenomena continue to occur in a quasi-spontaneous fashion under good laboratory conditions with close attention to the rules of evidence which Dr. Hoagland mentions as essential to science. It would be interesting to be able to foresee when the scientists of the 21st century will say that this field had its Robert Boyle.

R. A. MCCONNELL
Department of Biophysics and Microbiology, University of Pittsburgh, Pittsburgh, Pennsylvania 15213