colleagues are unable to. I believe that I can organize the voluminous quantity of material that is important in medicine much more effectively by utilizing "understanding" to the extent to which it exists, and in many areas that is quite considerable. My principal objection to the way in which medicine is taught in the US is the emphasis on memory alone rather than on fundamentals. I believe that medical science, physicians and patients would be much better served if the opposite were true.

Like every well-established discipline, medicine has its strong traditions and biases, and one cannot expect a viable effort for change to arise spontaneously with that profession. I had expected that the infusion of hard scientists, physicists in particular, into medicine would accelerate this process. I am confident, however, that Yaes's viewpoint represents a minority opinion in the community of scientists retrained in medicine.

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Molecular spectroscopy

In Search and Discovery (July, page 17), PHYSICS TODAY presented an interesting discussion of a fascinating topic in molecular spectroscopy. The theory of clustering in levels of high angular momentum in SF_6 and the resolution of the resulting extremely small splittings combine to form a very nice piece of research in this field. It is hoped that the editors will continue to expand their coverage of molecular spectroscopy so as to include some of the many other advances being made in the subject.

There are in the article two particular points to which I would like to draw your attention. First, the essence of the clustering phenomenon is contained in the article by A. J. Dorney and J. K. G. Watson, *J. Mol. Spectrosc.* **42**, 135 (1972). Since this article presented the original discussion on the subject well before the cited "first indication" of clustering, it would have been most appropriate to include this paper in the list of references.

Second, there seems to be some confusion regarding "the violation of a hitherto sacrosanct selection rule of molecular spectroscopy; different symmetry states will become so mixed that the symmetry species designation is no longer a valid quantum-state label." Contrary to the implications of the term "hitherto sacrosanct," the breaking of this selection rule has been observed many times over the years in a variety of molecules including CH_4, OPF_3 and CH_3SiH_3, using a variety of techniques including molecular-beam magnetic resonance, molecular-beam electric resonance and nuclear spin relaxation. The first mention (to my knowledge) in the literature of such symmetry-breaking is to be found in C. H. Anderson and N. F. Ramsey, *Phys. Rev.* **149**, 14 (1966). The first direct observation of such symmetry-breaking transitions was reported in I. Ozier, P. N. Yi, A. Khosla and N. F. Ramsey in *Phys. Rev. Lett.* **24**, 642 (1970). Although the experimental circumstances are somewhat different than those in the SF_6 work, the quantum mechanical principles are identical.

It is recognized that in the context of your recent article this point regarding the symmetry-breaking in molecules other than SF_6 does not require in-depth discussion. However it is also felt that your readers should not be left with the impression that the symmetry selection rule has been "hitherto sacrosanct," or has not been previously discussed or observed.

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Redshift debate

I found your Search and Discovery article on the redshift (December, page 17) very interesting. Grote Reber (the radioastronomy pioneer) and I have been advocating the Compton effect interpretation of the redshift for years, for different reasons. If you think such professional astronomers as Geoffrey Burbidge and Halton Arp have problems getting their papers published, you can imagine how difficult it is for people who are not in the club! However, Reber and I both managed to get published about 17 years ago—Reber in the *Journal of the Franklin Institute*,[1] and I in *Solar Physics*.[2] Reber concluded[3] that the Compton effect caused the redshift, to explain the very bright night sky at very long wavelengths (hectometric). I used this explanation for the solar redshift and the quasar redshift.

I've come to the conclusion that quasars are among the most intrinsically dim nearby stars instead of being the most intrinsically bright distant objects, as generally thought. They have a redshift on the order of a million times as large as the solar redshift, and therefore are surrounded by an electron cloud about a million times as large as the solar corona. The redshifts alone reduce their energy by a factor of about three, which shifts their luminos-

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