only a gleaning; and it seems reasonable to allow that those that are tired and wearied should have some rest. Nay it may happen, though I wish it may be otherwise, that the sloth of the next age may exceed the industry of the present."

RAYMOND BOWERS
Cornell University

Smithsonian is international

In your October article, "The Deutsches Museum and How it Succeeds," the statement is made (page 50) that the Smithsonian Institution is "concerned only with accomplishments in the United States." One would not expect such a statement from anyone who had actually seen the exhibits of science and technology in this museum; for the visitor to the exhibits of the physical sciences, for example, would see, as he entered, exhibits relating to Jesse Ramsden (English), Ptolemy (Greek), Willebrod van Roijen Snell (Dutch), Johannes Kepler (German) and a number of other "foreigners" before he encountered anything American. Indeed the editorial in the same issue of PHYSICS TODAY quotes the label from one of our exhibits dealing with Galileo Galilei! It is true that we have few original objects from such eminent Europeans, but this is also true of the Deutsches Museum—and indeed of all others.

Inasmuch as your magazine may have given its readers the impression that the Smithsonian is not interested in science and technology except as they relate to the United States, I am sure that you will want to enter a correction. The Museum of History and Technology of the Smithsonian is a comprehensive historical museum. This means that we cover more than science and technology. In a survey made in 1965 we estimated that 184 000 square feet is devoted to science and technology (against 420 000 in the Deutsches Museum and 171 000 in the Chicago Museum of Science and Industry, neither of which is a comprehensive historical museum). Our exhibits of science and technology deal with the history of those fields per se. In one respect our museum undoubtedly gives the impression of national bias. Historic objects of American origin naturally tend to come here, and objects of foreign origin are difficult for us to obtain. An exhibit here will consequently have a disproportionate number of objects of American origin. Precisely the same observation can be made of the Deutsches Museum and, indeed, of all "science" museums.

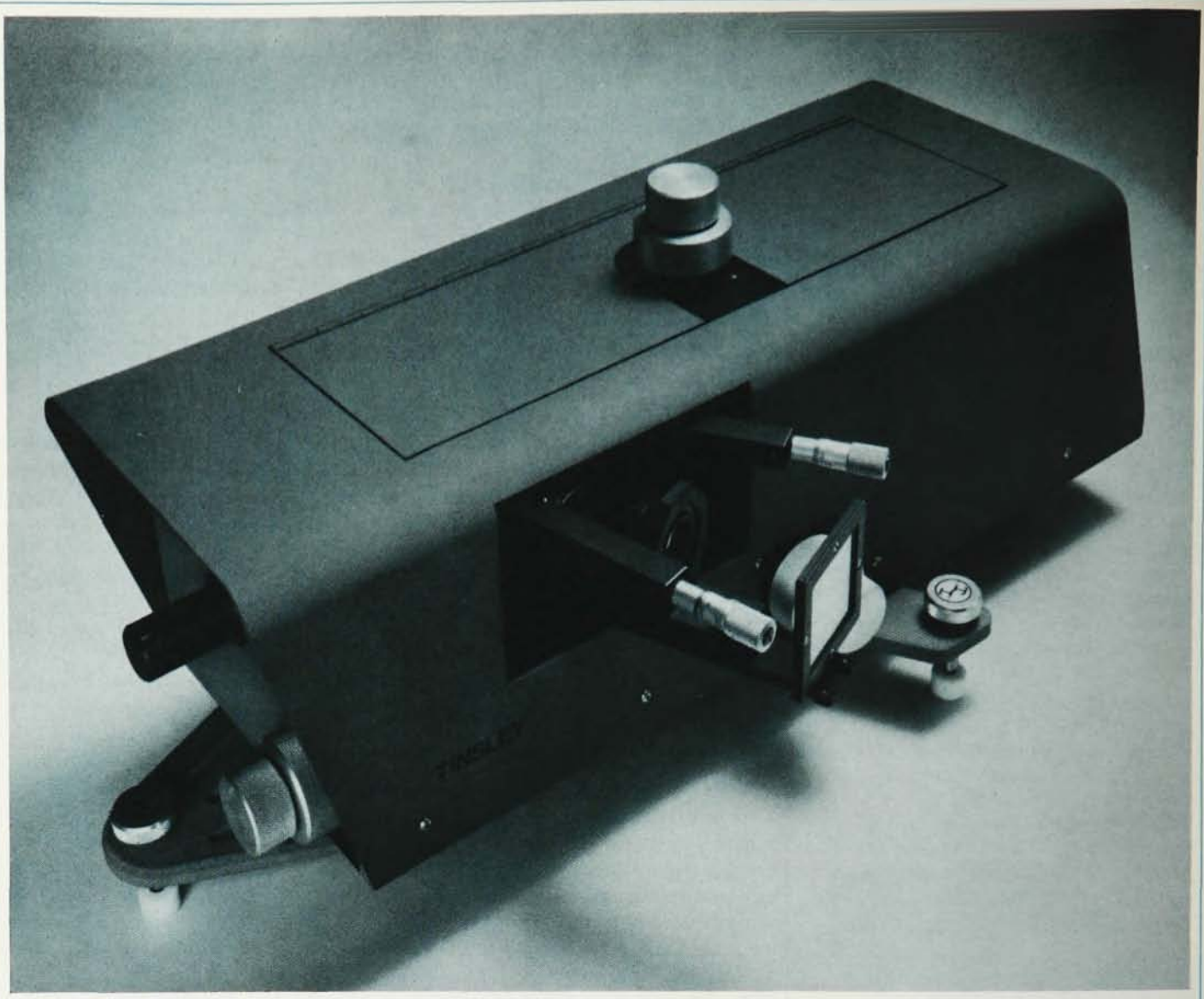
ROBERT P. MULTHAUF
Director, Museum of History and Technology
Smithsonian Institution

Few and inadequate telescopes

In his July column your man Phimsy unwittingly touches a tender nerve when he writes, ". . . but astronomers' telescopes come in sizes unthought of when I was a boy," and later states, "I looked in vain for a picture of an extraordinary 200-inch telescope." Although radio telescopes are often measured in feet, meters and even acres and the Russians are well along toward completion of a 236-inch (6-meter) reflector, in 1921 the Mt Wilson astronomer Francis Pease thought of and designed optical telescopes larger than anything now under construction. I suggest that an extraordinary 200-inch telescope might be defined as a second American 200-inch and that the absence of such a telescope—or a third or fourth such or even a couple substantially larger—is not only extraordinary but also not a matter of indifference to either astronomers or physicists.

The Palomar 200-inch was financed *40 years ago* on the basis of outstanding successes with ever-larger reflectors that revolutionized astronomy. Since then—nothing larger or even as large. No other science can "boast" of such a miserable record. Consider what physics would have been like if accelerators had been limited to their 1928 dimensions.

The American Astronomical Society is doubling in membership about every six years. The appallingly few and inadequate observing facilities have resulted in an ever-growing number of theorists over-discussing an inadequate number of observations. Nevertheless astrophysics has never been so exciting or promised greater research rewards—so much so that a group of astrophysicists trained as physicists has recently applied to the Council of the American Physical Society for the formation of a division of high-energy astrophysics. Quasi-stellar objects of one kind or another and the incredible pulsars are asking questions in fundamental physics that can only be an-



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swered by a marked increase in numbers of very large optical telescopes at superior sites. As Allen Sandage has stated in his recent Halley Lecture on Observational Cosmology (*The Observatory* **88**, 91–106, 1968), "To fail because of lack of facilities is to lose the promise of the subject, which is nothing less than the time scale of genesis."

JOHN B. IRWIN
Steward Observatory,
University of Arizona

Reviews, alerts and archives

In his article on reviews (PHYSICS TODAY, September, page 27) Conyers Herring called attention to the useful role that might be played by commissioned reviews written perhaps by review fellows (to suggest a title). This is an excellent idea, which I would like to see extended as well to shorter reviews in the specialist journals (among which include the sections of *The Physical Review*). These mini-reviews would be invaluable to the specialist and to authors of the more encyclopedic review and would be much easier to prepare.

A deliberate policy of commissioning reviews with a rational choice of topics cannot fail to improve on the uneven and haphazard performance of the *Reviews of Modern Physics*. Let us hope, however, that the recent statements by the editor elect do not imply, as they seem to, that the title should become *Data Reviews of Modern Physics*. There is a lot more to physics than the critical evaluation of measurements in well established fields as can be seen by looking at *Soviet Physics Uspekhi*.

Specialist book reviews should really go into the specialist journals where they can assume their proper length rather than being crammed into PHYSICS TODAY. British journals carry book reviews which are much appreciated.

In connection with retrieving articles, three simple reforms would help a great deal. Even if the key words are revamped later, a compulsory keyword set attached to titles now would make computer-assisted information retrieval much easier. (After all, any future system can absorb the old one in the computer program.) Full addresses (including the zip-code num-