In the next ten chapters the authors discuss various factors that may influence the quantities measured. These factors include, among others, the humidity in the plant; the grade, length, and fineness of fiber used in manufacture; and typical changes in machine operation. Again adequate and typical data are presented, the calculations are illustrated, and the results are evaluated for practical use.

The remaining 14 chapters discuss textile testing methods and instruments; for each quantity, practical data, drawn from normal textile experiments or operations, are presented together with the necessary calculations, evaluations, and appropriate recommendations. The book concludes with a number of informative tables—for example, names and descriptions of common textile defects, their sources and causes, and places of responsibility.

The authors adequately attain their objective of providing a book for practical use by executives, technologists, and students of textiles.

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Stars and Stellar Systems. vol. 1, *Telescopes*. Gerard P. Kuiper and Barbara M. Middlehurst, Eds. University of Chicago Press, Chicago, Ill., 1961. xv + 255 pp. Illus. $8.50.

Tools of the Astronomer. G. R. Miczaika and William M. Sinton. Harvard University Press, Cambridge, Mass., 1961. viii + 294 pp. Illus. $7.75.

In the burgeoning society of scientific instruments, astronomical telescopes are real aristocrats. Among the parvenus—the synchrotrons, transistors, nuclear magnetic resonance spectrometers, and the like—the present generation of telescopes stand apart as the obvious, direct, lineal descendants of the instruments which first searched the skies three and a half centuries ago. Galileo or Newton would have no great difficulty in recognizing a modern telescope or in comprehending its purpose. This is because the instrument is essentially a simple one, with the simple function of forming images of celestial objects. Sometimes the emphasis is on images of large scale; more often nowadays it is on high light flux.

Compared with most research tools, the astronomical telescope has certainly shown a remarkably well-ordered, slow, and steady evolution. Even individual telescopes are long-lived compared with most research instruments: more than 50 years after its erection by George Ellery Hale, the 60-inch reflector on Mount Wilson is still in nightly demand for astronomical research. All this is not to deny that there have been important advances in the art of telescope-making. The moving parts of the Hale telescope weigh 530 tons; but the 17-foot mirror is figured to such perfection and it is mounted and moved with such delicacy, that it is regularly capable of concentrating within a 50-micron circular image 80 percent of the light of a star on its optical axis and of maintaining the shape and position of the image for hours as the star moves across the sky.

Side by side with the increasing refinement of telescopes, and with their growth in size and light-gathering power, there has occurred a vigorous development of the instruments that are auxiliary to telescopes. Here the pace has accelerated in recent years, and we have seen the emergence of entirely new techniques. Among all the receptors used with the 60-inch telescope on Mount Wilson, only the eye remains as it was 50 years ago; and the eye is virtually never used for observations. The photographic plates, the photometers, the spectrographs—all the paraphernalia of detection and measurement—are vastly different now, and much better.

The Kuiper-Middlehurst book limits itself to telescopes themselves, leaving the description of the auxiliary equipment to another of the proposed nine-volume compendium of stellar astronomy and astrophysics. Thirteen authors contribute chapters describing the various kinds of modern astronomical telescopes that are useful in these areas; radio telescopes are included. Two of the most interesting chapters discuss astronomical "seeing" (that is, atmospheric effects on image quality) and observatory site selection. Each author writes authoritatively. The volume is addressed to astronomers, or to others who have training in science or engineering.

The Miczaika-Sinton book, on the other hand, addresses itself to the nonprofessional reader, the college undergraduate, or the astronomy buff. Moreover, it includes a discussion of the various kinds of detectors, of solar telescopes, and of the numerous auxiliary devices that are used in astronomy: the spectrographs, photometers, measuring engines, and so forth.

If any criticism is leveled at these volumes, it could be on the score that neither makes it quite clear just how much the design of a telescope is ultimately governed by the properties of the detector used with it. There are revolutionary developments afoot in detector technology now, and these are likely to have a major impact on the design of future telescopes. But whether or not they clearly herald such imminent changes, these are both first-rate books. Especially at this time, when so many in other branches of science and engineering have found a sudden incentive to learn about astronomical instruments, *Telescopes* and *Tools of the Astronomer* are certain to be well received and widely used.

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Russian for Scientists. Dennis Ward. Macmillan, New York, 1960. 204 pp. $3.95.

This compact manual aims to help beginners achieve adequate skill in reading scientific texts. The materials on grammar are presented capably, clearly, and in judicious sequence. In his treatment of forms, the author emphasizes "markers"—that is, distinctive graphic features—an approach which I find to be generally successful. Illustrative sentences for translation from Russian to English (but not from English to Russian) are abundant and varied, with ample and excellent vocabulary help given on the spot. The table of verbs included in the index will be useful to some. The end vocabulary is excellent and complete. The entire work, including the printing, demonstrates great care.

I recommend two minor improvements that could be made as additions in the appendix. Aside from three selections in the middle of the book there are no "readings" with connected discourse. I would like to see the student rewarded with a few morsels to read (with some aids) before he "graduates." Since so much attention is given to the markers, I believe that an alphabetical index of them would be useful.

Here are some recommended vo-