

tractions and value of the work of astronomers. The Science itself now appeals to a constituency of students and readers daily increasing in numbers and importance. Evidence of this gratifying fact is easily obtained. There is at the libraries an ever-growing demand for standard astronomical works, some of them by no means intended to be of a purely popular character. Some of the most influential and conservative magazines on both sides of the Atlantic now find it to be in their interest to devote pages of space to the careful discussion of new theories, or to the results of the latest work of professional observers. Even the daily press in some cities has caught the infection, if infection it may be called. There are in New York, Philadelphia, St. Louis, and other centres of population on this continent leading newspapers which, every week or so, publish columns of original matter contributed by writers evidently able to place before their readers in an attractive form articles dealing accurately, and yet in a popular vein, with the many-sided subject of astronomy.

Readers and thinkers, may, no doubt, be numbered by thousands. So far, however, as astronomy is concerned, the majority of readers and thinkers is composed of non-observers, most of whom believe they must be content with studying the theoretical side of the subject only. They labor under the false impression that unless they have telescopes of large aperture and other costly apparatus, the pleasures attaching to practical work are denied them. The great observatories, to which every intelligent eye is directed, are, in a measure, though innocently enough, responsible for this. Anticipation is ever on tiptoe. People are naturally awaiting the latest news from the giant refracting and reflecting telescopes of the day. Under these circumstances, it may be that the services rendered, and capable of being rendered, to Science by smaller aper-

tures may be overlooked; and, therefore, this article has been written for the purpose of putting in a modest plea for the "common telescope."

The writer trusts it has been shown that expensive telescopes are not necessarily required for practical work. His advice to an intending purchaser would be to put into the objective for a refractor, or into the mirror for a reflector, all the money he feels warranted in spending, leaving the mounting to be done in the cheapest possible manner consistent with accuracy of adjustment, because it is in the objective, or in the mirror, that the *value* of the telescope almost wholly resides. On this subject, the writer consulted Mr. S. W. Burnham, then of Lick Observatory, the most eminent of all discoverers of double-stars, an observer who, even as an amateur, made a glorious reputation by the work done with his favorite six-inch telescope. Mr. Burnham in reply, kindly wrote: "You will certainly have no difficulty in making out a strong case in favor of the use of small telescopes in many departments of important astronomical work. Most of the early telescopic work was done with instruments which would now be considered as inferior to modern instruments, in quality as well as in size. You are doubtless familiar with much of the amateur work in this country and elsewhere done with comparatively small apertures. The most important condition is to have the refractor, whatever the size may be, of the highest optical perfection, and then the rest will depend on the zeal and industry of the observer."

Incidentally, it may be mentioned that much most interesting work may be done even with an opera-glass, as a few minutes' systematic observation on any fine night will prove. Newcomb and Holden assert that "if Hipparchus had had even such an optical instrument, mankind need not have waited two thousand years to know the nature of the Milky Way, nor