

the task of lengthening the head roll of discoverers already given would be easy and pleasant. But to add to this lengthy list were needless, if not wearisome. Moreover the names referred to fairly indicate the chief sources of positive knowledge concerning the moon, and the progressive efforts by which that knowledge has been obtained. There is a wide difference between the "perspective glass" of Galileo, which made the moon look nine times larger, and modern telescopes with magnifying powers of six thousand diameters. The optical part alone of a great modern instrument costs a handsome fortune, and its mounting and outfit of accessory instruments are costly, taxing as they do the resources of mechanical engineering and scientific skill. With such well equipped observatories, and the accumulated records of a century at command, one might suppose that knowledge concerning the moon would be nearly perfect. But science moves at a slow pace, and is more bent on gathering facts for inductions than in forming crude inductions from imperfectly ascertained facts. The man of science has to curb imagination tighter than in other days, and has learned to speak on many subjects with more diffidence than did his predecessors. A hundred years ago the elder Herschel believed the moon to be inhabited, and after his time a learned man with an excellent telescope and keen vision—Gruithuisen, of Munich—wrote a scientific paper, entitled, *Entdeckung deutlicher spuren der Mondbewohner*—discovery of clear traces of the moon's inhabitants. It is not conceivable that such a paper could now be written in earnest. Since that paper was written such visionary notions have found little credence. The work of Beer and Mædler defined the legitimate boundary of lunar investigation.

An object 300 feet high and about a mile long is said to be approximately the minimum visible with a modern large refracting telescope, with usual low power ocular. With highest oculars, and best conditions of observation, a detached object, 40 feet high, projecting its shadow on a level surface might be perceptible. Beer and Mædler take $3\frac{1}{3}$ English miles to be the extreme distance at which a person of keen, unassisted vision can distinguish an object 6 feet high, and estimate that it would require a telescope to magnify 51,000 diameters to shew such an object on the moon. Not much more than a tenth part of such magnifying power is at present avail-