of climate which accompanied the Ice Age. This would point to a period of great instability in the lithosphere during Pleistocene times, which is admitted by geologists. Still, it is not easy to imagine the immense geographical transformations which this supposition involves. Moreover, the disappearance of the ice sheet and the relief of pressure which this afforded should, according to the doctrine of isostasy, cause the land which had lain beneath it to rise, whereas the author thinks it has, since the ice age, been pressed below the ocean as much as 12,000 ft. There are evidently so many difficulties connected with the case, that the problem of the ice age still remains without a satisfactory solution.

It may not be without interest to name the various causes which have been put forward to account for climatic variations in geological times. They are: variation in the intensity of the sun's radiation; the passage of the earth through hot and cold zones of space; alteration in the position of the earth's axis; variation in the eccentricity of the earth's orbit; presence of varying quantities of carbonic acid gas in the atmosphere; the extensive alterations in the geographical distribution of land accompanied by variation in land heights. Alternations of land and sea are now one of the best established of geological facts, and probably a solution of the problem lies along these lines. H. L. C.

Lunar Topography

Named Lunar Formations

By Mary A. Blagg and K. Müller. Drawn up by them for Commission 17 and approved at the Meeting of the International Astronomical Union held at Cambridge, Massachusetts, in 1932. Vol. 1: Catalogue. Pp. xii+196. Vol. 2: Map of the Moon. By W. H. Wesley and Mary A. Blagg, based on the Fiducial Measures of S. A. Saunder and J. Franz. Pp. 15. (London: Percy Lund, Humphries and Co., Ltd., 1935.)

WHEN Galileo and his contemporaries examined the moon with the newly invented telescope, they found a surface covered with a variety of formations of which they made rough charts. To these formations there were added later the names of terrestrial objects as well as those of famous men, many of whom had no connexion with selenography or even astronomy. Hevel (1647) was the first to name lunar objects; his example being followed by other selenographers, who adopted the names already given, altered them, or added new ones according to their unfettered discretion. The whole structure of lunar nomenclature has thus been built up in a most haphazard way.

The resulting confusion from this isolated action became so great that a committee was appointed by the International Astronomical Union, and to Miss Blagg and Dr. K. Müller was given the task of collating the names on the maps of Mädler (1834), Neison (1876) and Schmidt (1878), but, for some reason, use was not made of Goodacre's large map (1910).

The two volumes now under review show that this great task has been efficiently accomplished and a work of reference produced which must form the standard for a long time to come. Vol. 1 has a foreword by Sir Frank Dyson, chairman of the committee, which gives the history of the effort and the scope of the committee's task. This volume consists of a catalogue of the *named formations* and deals with no less than 677 objects against Neison and Goodacre's list of about 520. Each page shows, in columnar form, the chosen designation, the position of each object based on Saunder's and Franz's measures, a list of symbols which indicate the character of the object measured and mapped, and so forth. The great difficulties inherent in work of this nature have been successfully overcome.

The second volume is a map of the moon in atlas form, the disc being divided into fourteen areas; but no indication is given of the scale in relation to the moon's diameter. This part of the work is not so satisfactory, arising from the fact that the drawing of the map is the work of two people and their methods of delineation are totally dissimilar. Mr. W. H. Wesley completed the four inner areas in his usual artistic manner, but his death unfortunately prevented him from completing the whole of the maps.

The main purpose of the committee has been efficiently carried out, and the statistical information will be found invaluable to anyone interested in such matters. The student of lunar details, with which selenography is now concerned, will probably not find much help from this source.

W. GOODACRE.