signed and discordances noted. It may be, however, that the plates will later prove more useful than was anticipated in this direction. Certainly a comparison would be interesting with the Harvard Arequipa plates, on which Bailey has detected numerous variable stars, and the periods of some might thereby be accurately fixed.

A chapter of the work, in parallel Spanish and English, is devoted to each cluster, furnishing all the necessary data of measurement, the relative positions, and comparison with other, visual, measures where existent. Excellent charts are given of all the clusters. At the time of the lamented death of Dr. Gould, a year ago, one-half (pp. 248) of the volume had been printed, and the computations of the remainder were practically complete. But the unfinished portion of the manuscript has been carefully prepared after the original plan by Mr. G. E. Whitaker, to whom Dr. Gould makes acknowledgment for ten years of efficient service, under the general supervision of Dr. S. C. Chandler, and the whole volume may be fairly 'regarded as coming complete from the hand of its author.'

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CURRENT NOTES ON PHYSIOGRAPHY.

THE ASSAM EARTHQUAKE OF JUNE, 1897.

A report on the earthquake of June 12, 1897, in the Province of Assam has lately been published by the government of India in the form of a number of letters from local officers, English and native. The shocks occurred in the Khasi hills, famous as the district of the heaviest known rainfall; they are ascribed to faulting, entirely independent of volcanic action, of which there was no trace. Many ancient monolithic monuments were broken, or even torn out of the earth; their previously undisturbed condition being taken as evidence that no such earthquake had visited the region since their erection. In many villages the heavier houses were thrown down or badly injured, and had not most of the inhabitants been out of doors after a rainy morning the loss of life would have reached a greater number than is now reported, 1542. Among the hills much damage was done by landslides occasioned by the shocks; hillside paths were thus carried away, villages destroyed, and many people killed in the valley fields. In the plains to the south many deep cracks and crater-like pits were opened. One of the cracks was a mile long, two or three feet wide and 16 feet deep. Two persons lost their lives by being engulfed in such cracks. The pits average six feet in diameter and are spread around with sand that was thrown out by jets of water. In the Sylhet plains, traversed by numerous water courses, most of the villages are on the belt of higher floodplain close to the streams, and there much loss was caused by the slipping of the banks into the channels. Cholera and fever followed the earthquake, by reason of the disarrangement of water supply and drainage.

THE MOODUS NOISES.

A correspondent of the New York *Sun* states that the "famous and mysterious disturbances of the lower Connecticut valley, the 'Moodus noises,' are being heard again" after a silence of twelve years. The Indians knew of them before the coming of white men. For twenty years, up to 1729, the villagers thereabouts heard the noises almost continuously, 'shaking the houses and all there is in them.' They were again heard in 1852 and 1885. On the recent recurrence there was a sound like a clap of thunder, followed for some two hours by a roar like the echoes of a distant cataract. A day later there was a crashing sound like heavy muffled thunder, and a roar not unlike the wind in a tempest. The ground was shaken, causing houses to

tremble and crockery to rattle, 'as though in an earthquake.' In view of the compressed condition of the rocks in the Monson quarries, described by Niles some years ago, these indications of local disturbance are of much interest and deserve special study from local observers. The region is one of deformed crystalline rocks, but all the disturbances that can be dated geologically are of great antiquity. The nearest comparatively modern disturbances are in the Cretaceous and Tertiary strata of the islands south of New England.

PHYSIOGRAPHY OF MARYLAND.

THE first volume issued by the Maryland Geological Survey contains a sketch of the physiography of the State with hypsometric and geological maps. A good illustration of the natural use of the term 'plateau' as indicative of relative and not absolute altitude is found in its application to the Piedmont region, next inward from the coastal plain. Its highest part in Parrs ridge is under a thousand feet elevation. Sugarloaf mountain seems to be a well defined monadnock, surmounting the plateau. The major drainage of this region is in young valleys that show little relation to the underlying rocks; their streams give evidence of having been superposed through a cover of sedimentary strata which may have been the westward extension of the present costal plain, but "the broad fertile limestone valleys to which the present drainage has become partially adjusted are a striking feature of the area." We venture to express a hope that the fuller study of physiographic features promised for later volumes will not be addressed so much to 'those who may seek a home in Maryland' as to the teachers in the schools of the State, from whom the future citizens are to learn what the State really is.

TARR'S FIRST BOOK OF PHYSICAL GEOGRAPHY.

TARR'S Elementary Physical Geography has been found too advanced by many teachers; hence a smaller book has been prepared. In most respects it presents a good view of the subject, especially where the treatment turns toward the geological side; but in a number of instances it fails to 'start at the beginning and make everything thoroughly clear.' There is not a clear recognition of what is essential and what is unessential in a physical geography. The astronomical pages contain a number of purely astronomical matters, valuable as general information but here occupying space that could be better used by expanding the description and explanation of strictly geographical topics. The treatment of light is too physical and too advanced for a First Book. The chapter on the earth's crust is avowedly geological, so much so that the beginner cannot really appreciate it. For the student of geography it is better not to cross these geological bridges until they are encountered on his geographical journey. Under the lands many good lessons are taught, but process receives relatively more attention than form; and in spite of the importance which process deserves, this seems a mistake in a book that should be essentially geographical.

There are a number of careless inaccuracies of statement. It is said of hurricanes that "their birthplace is near the tropics" (p. 116). "The north magnetic pole lies to the southwest of the true North Pole" (p. 54). The redundant 'this' is too common; for example, 'in lieu of this inability to really conceive this' (p. 27). The treatment of the tides is not lucid; two sentences beginning with 'therefore' are followed by a third, whose conclusion will leave still in the dark those teachers who are puzzled about what they call 'that tide on the other side of the earth.' In these latter respects the book bears too evident marks of hasty preparation.

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