

contrast to the broad deep valleys in which the loess was deposited—valleys 3000 feet deep and 2 to 7 miles wide.

FRED. B. WRIGHT.

TIENTSIN, NORTH CHINA, May 30, 1900.

POWER OF THE EYE.

TO THE EDITOR OF SCIENCE: We often hear people say that they can merely by a steady gaze affect a person at a distance who is not looking at them; and some say that they are able to make one sitting in front turn the head in this way. Mr. Bell in his 'Tangweera' (p. 198) mentions this feeling when he says: "Presently I felt as if someone was looking at me, and, raising my head, saw a large puma standing ten yards off." To the physiologist it may seem uncalled for to investigate a manifest absurdity, but it has at least a practical value to explode a common error by direct experiment. I asked a young man, who is very confident of his powers, to stand, unknown to re-agent A, behind a book case, and look through a carefully concealed peep hole. I gave him the best opportunity, placing A about four feet from the hole and directly facing him, and I engaged A in mechanical writing. To the young man's confessed disgust and irritation he was unable to disturb A. My few experiments were negative in results. However, it may be that telepathic influence is exerted under certain conditions, and experiments with twins and others constantly *en rapport*, especially when under emotional stress and at critical junctures, might be worth trying. If there be nervous telepathy, this is, perhaps, as simple and common a form as any. If disturbance arose subconsciously the test would be that the tracings from an instrument to show nervous conditions should show large fluctuations coincidently with the times when the agent regards himself as successful.

HIRAM M. STANLEY.

CURRENT NOTES ON PHYSIOGRAPHY.

GLACIÈRES OR FREEZING CAVERNS.

A HANDSOME volume under the above title by E. S. Balch has just appeared (Allen, Lane and Scott, Phila., 1900, 337 pages, many illustrations). Nearly a third of the book is given

to a narrative of personal experiences in visiting 'ice caves' or freezing caverns in various parts of the world. Fifty pages follow on the causes of subterranean ice; the first suggested and simplest explanation, the cold of winter, being held sufficient against a variety of legendary and fanciful processes. The prevalent belief that freezing caves are colder in summer than in winter and that ice forms in the warm season is controverted by direct observation. The reason for this curious perversion of fact is probably to be found in the temperature contrasts between cavern and external air in summer and winter; the cavern air feeling colder than the open air in summer and warmer in winter. Thermometric records show, however, that cavern temperature is relatively constant all the year round. The whole story is that cold air enters from the outside in winter time and produces ice when there is water to freeze. This simple explanation is confirmed by the occurrence of *glacières* only in regions where the winter has temperatures below freezing. A compendious list of *glacières* occupies 100 pages; abstracts of many opinions concerning them, 40 more; and a good bibliography and index close the volume. The views of the ice stalagmites in the *glacière de Chaux-les-Passavant* in the French Jura are excellent, and the book as a whole is highly creditable to American geographical scholarship.

THE OLD MOUNTAINS OF MICHIGAN.

MONOGRAPH XXXVI, U. S. Geological Survey, by several authors, treating of the Crystal Falls iron bearing district of the upper peninsula of Michigan, contains an instructive account of physiographic features amid a great body of geologic and economic details. The items here abstracted are from chapters by Smyth and Clements. Although the district is partly underlain by resistant and deformed pre-Cambrian rocks of diverse structures, and partly by weak and gently inclined upper Cambrian sandstones, the most general aspect of its surface is that of a somewhat rolling plain with a gentle and uniform descent for about thirty miles from an altitude of 1800–1900 feet in the northwest to 1200–1300 in the southeast. The areas of harder rocks form broad swells of moderate relief, but

there are no commanding eminences; the widest panoramas from the hill tops extend but a few miles, and the general evenness of the skyline is usually broken only by remnants of the old forest, not yet cut or burnt. It is significant that the name 'mountain' has been applied by local surveyors to hillocks only 100 or 200 feet in local relief. The minor features are explained by the scouring action of the ice sheet on this preglacial peneplain. The areas of massive crystalline rocks have a surface mamillated with rocky knobs and pitted with hollows; the first are largely bare, the second are filled to their brim with ponds or quaking bogs. Ledges and scarps are found at the border of the stronger rocks, while the weaker rocks, eroded to a somewhat lower level, are covered with drift plains which are mostly followed by the main streams. The drainage is very immature, varying irregularly from standing water in lakes and sluggish meandering streams in swamps to flowing reaches in graded drift channels and rushing rapids on rocky ledges. The lakes have generally been reduced to a lower level than that of their original shore line; they are often surrounded by muskegs or reduced to 'hay marshes.' Swamps cover a large part of the surface, not only filling many basins and valley floors, but ascending gentle slopes to the spring line on the hillsides; their thick spongy carpet of moss retains sufficient moisture for the growth of cedars and other swamp-loving trees and shrubs.

This district is of interest as a sample of the geographic conditions that prevail over a vast area of the Laurentian highland in north-eastern Canada; an ancient mountainous region, reduced to moderate relief before the Cambrian strata were laid upon it, and since then remaining remarkably quiescent while so many changes were going on in other parts of the world.

WATERPOWER IN NORTH CAROLINA.

BULLETIN No. 8 of the North Carolina Geological Survey (Raleigh, 1899) is devoted to an account of the water powers of that State, contributed by several writers. The volume opens with a chapter on the general physiographic features of North Carolina, in which the essen-

tial peculiarities of coastal plain, piedmont plateau and mountain belt are well presented by J. A. Holmes. The fourth chapter, by the same author, discusses the geologic distribution of waterpower and refers the rapids and falls of the rivers to their controlling causes. In the mountains, falls are determined by irregular variations in the resistance of the crystalline rocks; here short ungraded rapids frequently alternate with longer graded reaches. The narrows and falls of the Yadkin in the piedmont plateau occur where the river crosses a belt of resistant schist between belts of weaker argillaceous slates. The Roanoke descends 85 feet in nine miles as it passes from the piedmont crystallines to the weak strata of the coastal plain. The Tar has an abrupt fall of 15 feet at Rocky Mount, some 20 miles east of the border of the piedmont area, where the river has cut down through the coastal plain strata upon a reef of schists and resistant granite. The greater number of pages is devoted to details of individual rivers. The volume is well illustrated by half-tone plates.

W. M. DAVIS.

BOTANICAL NOTES.

RECENT BOOKS FOR SECONDARY SCHOOLS.

PROFESSOR BARNES has prepared a little book under the title of 'Outlines of Plant Life,' for use in such secondary schools as cannot give as much time to the subject as is required by his earlier 'Plant Life.' He has omitted much of the minute anatomy 'upon the assumption that no laboratory work with the compound microscope is possible,' an unfortunate assumption in our opinion. However, the author does not reduce his work to this low plane, but freely introduces suggestions for microscopical studies quite at variance with his prefatory statement. The sequence of structural study is from the simple to the complex plants, considerably more than a hundred pages being given to this part of the subject. This is followed by about the same number of pages devoted to physiological studies, and sixty pages of ecological matter. It should be very helpful to teachers.

The same publishers (Holt & Co.) bring out a smaller edition of Professor Atkinson's 'Ele-