

At this point the surface is said to have rolled like the groundswells of the ocean, springs were muddied and in some cases ceased to flow for a short time after the shock occurred, and a landslide of considerable proportions and a big rock rolled down off the face of Wolf Creek Mountain. The latter is no indication of great intensity, for the slopes of the mountain are so steep that a slide is liable to start at any time, and the blocks of sandstone have frequently such a precarious foothold that they will start with the slightest disturbance.

In the valley of Wolf Creek the testimony regarding the direction from which the explosions came is conflicting. Some thought that they came from immediately beneath, and some were equally certain that they came from the south—from the base of Wolf Creek Mountain. At Pearisburg there is a general agreement that the sounds and shocks always came from the west, or from the base of Angels' Rest. The shocks which I experienced at Pearisburg seemed to come from a little north of west, or from the direction of the Narrows, and they also appeared to come horizontally. In the Sugar Run region the general verdict was that they came from the north—from under Pearis Mountain, or from the west—from Big Horse Gap. In the vicinity of Pearisburg and Sugar Run the springs were disturbed, but not to the same extent as in the valley of Wolf Creek.

Pearis and Wolf Creek Mountains represent the two sides of a syncline whose point is formed by Angels' Rest. The strata of this basin are only slightly flexed, and it seems strange that it should be the seat of earth tremors. But when it is considered that the great fault along Wolf Creek valley dips toward the south at about 30 degrees it will be seen that the syncline is comparatively shallow and overlies the plane of the fault. Therefore, it seems probable that, instead of originating in the

mountain proper, the disturbance came from movement along the fault plane underneath the mountain.

Movement along this fault plane is the only hypothesis I could formulate to account for the phenomena, but if such movement occurred it must have been so slight as to be unrecognizable at the surface. The reason for the pronounced disturbance in and about Pearisburg is presumably the cavernous condition of the limestone in that region, apparently causing it to act as a sounding board, magnifying the sounds and vibrations. Newport is also reported to have suffered considerably from the shocks; this can be accounted for by the hypothesis of movement on the fault, on which it also is located.

M. R. CAMPBELL.

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#### BOTANICAL NOTES.

##### DISTRIBUTION OF GOVERNMENT BOTANICAL PUBLICATIONS.

It may not be generally known that there are many valuable publications from the several botanical divisions of the Department of Agriculture which may be obtained gratis or by the payment of a merely nominal sum. The Superintendent of Documents has issued a handy list of the publications now in his hands, with prices affixed. It will well repay every botanist not regularly receiving these publications to look over this list and secure valuable books and papers for but a slight cost.

A similar list has been issued by the Librarian of the Geological Survey of Canada (Ottawa), which contains the titles of many pamphlets and maps of much botanical value. The prices here again are very reasonable.

##### BAILEY'S LESSONS WITH PLANTS.

PROFESSOR BAILEY has again earned the gratitude of the public by bringing out a

new book upon plants. It need not be said to those who have read his books that this is not like other books on plants. It is new in matter, in illustrations and in method. We cannot make out whether or not it is to be used as a text-book. It is too full of suggestions for the humdrum of the ordinary class-room use. Perhaps its greatest value will be in affording stimulating suggestions to both teacher and pupil in primary and secondary schools.

The titles of the chapters are not so different from those in the familiar text-books of a generation ago. Thus we have 'Studies of Twigs and Buds,' 'Studies of Leaves and Foliage,' 'Studies of Flowers,' etc., but when we look at the treatment we find a newness and freshness which tell of the master who wrote the suggestive pages. The illustrator (Professor Holdsworth) and the publishers (The Macmillan Company) have done their share to give the book an attractive appearance.

CHARLES E. BESSEY.

#### CURRENT NOTES ON ANTHROPOLOGY.

##### ETHNOLOGIC MATERIAL FROM INDIA.

THE distinguished ethnologist Professor Bastian, after celebrating his seventieth birthday with eclat in Berlin two years ago, took a fresh start in his studies by going to India and adjacent regions, where he has been ever since, collecting most industriously all sorts of valuable knowledge. Many of his observations he has given out in a plain form in two volumes called 'Lose Blätter aus Indien,' published at Batavia. These are new contributions to the psychological ethnology which he has so earnestly advocated. I may dare to translate (no easy matter) from his preface to show the meaning of these studies: "The whole intellectual wealth of mankind, up to the most transcendental speculations, can be reduced to a minimal quantity of elementary

thoughts, each potentially pregnant with magical powers, unfolding into the most varied national mental products, and satisfying the physical longings in every direction, under the correlation of cosmical harmonies, with which the processes of thought themselves are in necessary union."

In this spirit Professor Bastian takes up the mythology and philosophy of the far East, its ethics, its legends and its religious rites, throwing new light on what is old, and adding much that is novel and striking. To the reader who likes hard reading and deep thinking, the work may be commended as sure to satisfy.

##### ANCIENT VARIETIES OF DOGS.

THE first domesticated mammal seems to have been the dog. In the Swiss Society of Natural History, last year, Professor Studer read a paper on ancient European dogs. The oldest variety was the so-called peat dog. It belongs to the neolithic period. There were four other varieties known in the bronze period, and in that of the lake dwellings. Direct descendants of these are the German hunting hounds, the shepherd dog and the poodle.

In America there is little evidence that any dog was trained for hunting. In the far north the Eskimo dog was a beast of draught, the only one known to the Red Race. The dogs of Mexico and Central America seem to have been principally raised for food or ceremonial sacrifices. In Peru there were several varieties under domestication, two of which have been clearly distinguished.

It is noteworthy that although in many American tribes the dog was a sacred or mythical animal in the legends, he was not regarded with affection, but with dislike and aversion, a fact strongly brought out by von Tschudi.

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