

Some years ago I saw something similar in an eastern State. A hemlock tree, two feet in diameter, had a small streak of bark taken off one side from the top down for ten or twelve feet, and then the whole body of the tree was shattered, and as much as six feet of it scattered in every direction, and the top was left standing erect on the stump. There were no marks on the tree below the splintered part.

In both cases there seemed to be no evidence of cracks or defects previous to the explosion.

P. J. FARNSWORTH.

Clinton, Iowa, June 28.

The Relations of the Eastern Sandstone of Keweenaw Point to the Lower Silurian Limestones.

ONE of the assistants (Mr. W. L. Honnold) of the Michigan Geological Survey has been engaged in the study of the relations of the limestone west of L'Anse to the eastern or supposed Potsdam sandstone of the copper-bearing range. This locality is described in Jackson's Report (1849, pp. 399, 452), Foster and Whitney's Report (part 1., 1850, pp. 117-119), and in Rommger's Report (1873, I. part 3, pp. 69-71); and the limestone considered from its fossils to be Trenton or some adjacent Lower Silurian strata. It was inferred by Jackson that the limestone underlies the sandstone, but by the other observers that it overlies it, although no direct contact was seen.

Excavations made by Mr. Honnold's party and reported by him have developed the contact of the two formations, and show that the two form a synclinal or oblong basin-shaped fold, with the limestone overlying, and in direct contact with the sandstone. The existence of this fold in the sandstone, as well as in the limestone, removes the difficulty previous observers have had in reconciling the obviously tilted limestone with the supposed horizontal sandstone, and proves that the eastern sandstone exposed here is of Lower Silurian age, and older than this limestone.

At the point of contact of the two formations, exposed by excavation, the sandstone and limestone appear to be conformable, and they are seen to constantly agree in dip and strike. The contact between the two formations is abrupt, without any beds of passage, although the upper layers of the sandstone contain considerable carbonate of lime and magnesia, and the lower layers of the limestone much silica.

These observations are considered to be confirmatory of the commonly received view of the Potsdam age of the eastern sandstone; while the contorted state of the sandstone, extending at least a mile and a half west from the limestone locality, may have weight in deciding the relative age of the eastern sandstone and the copper-bearing rocks.

A careful study of the fossils will be made and additional field work done, when the results will be published in detail.

M. E. WADSWORTH.

Michigan Mining School, Houghton, July 3.

AMONG THE PUBLISHERS.

THE J. B. Lippincott Company announce as in press, "Harmony of Ancient History," by Malcolm Macdonald; "Chambers's Encyclopædia," Vol. VIII. (entirely new edition, revised and rewritten); "The Chemical Analysis of Iron," by Andrew Alexander Blair (new edition); and "A Hand-Book of Industrial Organic Chemistry," by S. C. Sadtler.

—"Whatever else we may think of this Russian censorship," says a writer in the *Pall Mall Budget*, "it must at least be admitted that its officials do their work conscientiously. A few copies of Miss Hawker's 'Mademoiselle Ixe' were recently posted to various addresses in Russia. They are now coming back to the senders with the word *Défendu* stamped on their covers. One of these returned copies now lies before me. Its leaves are cut from end to end, and evidently the book has been handled and read. Moreover, on turning over the pages, I find red pencil marks placed at various passages in the earlier part of the story. After a time they stop. The censor saw, I suppose, that it was a clear case for prohibition, and did not trouble to score the obnoxious sentiments any further. It is a compliment, however, to the

authoress that he read the story to the end—as I judge by marks of another kind."

—Dr. Paul Carus has issued, through the Open Court Publishing Co., a new edition of his "Fundamental Problems." The body of the work is not altered much; but an appendix of a hundred pages is added, in which the author enters into a quite extended discussion of some of the questions that the book raises, and replies to some of his critics. Those who agree with his general views on philosophy he treats with respect, though stoutly maintaining his own views in opposition to others; but those who have attacked his fundamental principles he treats testily and with scant courtesy. His doctrine is in no respect modified in the new edition, but remains the same rank materialism as before—a materialism not in the least disguised by calling it "monism." It is stated, too, in the same dogmatic language, in the new edition as in the old, thus: "It is undeniable that immaterial realities can not exist. The thing exists by its being material" (p. 86). Dr. Carus's book will doubtless please those of his way of thinking; but it will do nothing towards converting any one who holds opposite views.

—Leach, Shewell, & Sanborn, of New York and Boston, have just published "The Number-System of Algebra," by Professor Henry B. Fine of Princeton. The theoretical part of the book is an elementary exposition of the nature of the number-concept, of the positive integer, and of the "four artificial forms of number which, with the positive integer, constitute the 'number-system' of algebra, viz., the negative, the fraction, the irrational, and the imaginary." The point of view of the author is the one first suggested by Peacock and Gregory, that algebra is completely defined formally by the laws of combination to which its fundamental operations are subject: that, speaking generally, these laws alone define the operations; and that the operations define the various artificial numbers, as their formal or symbolic results. The historical part of the volume contains a review of the history of the most important parts of elementary arithmetic and algebra.

—No. 38 of the Scovill Photographic Series, just published, is "Photographic Reproduction Processes," by P. C. Duchochois (New York, Scovill & Adams Co., \$1.) It makes a neat octavo volume of 121 pages, and is a practical treatise on photo-impressions without silver salts, for the use of photographers, architects, engineers, draughtsmen, and wood and metal engravers. The author describes, in language readily understood by both amateur and professional, all the processes employed to reproduce plans, designs, engravings, *clichés* on paper, wood, glass, and metal plates; besides giving a complete description of the urantotype, aniline, platinotype, and improved carbon processes. The authors quoted are almost "legion," but the quotations are judiciously made; and as the point in view is to show results, as well as how to achieve them in the most direct way, the quotations are of immediate benefit to the reader without detracting in the slightest from the credit due the person quoted from, due credit being given in each instance.

—A recent issue of the Johns Hopkins Press is a pamphlet on the "Public Lands and Agrarian Laws of the Roman Republic," by Andrew Stephenson. It begins with a brief account of the land belonging to early Rome, the *Ager Romanus* and the *Ager Publicus*, followed by a general description of the Roman colonies, whose history is inseparably bound up with that of the land. The author then proceeds to describe in considerable detail the various agrarian laws, from the Lex Cassia to the establishment of the empire. To give a thoroughly satisfactory account of the Roman land laws apart from the general history of the republic is hardly possible; but, allowance being made for that drawback, Mr. Stephenson's work is worthy of praise. It is somewhat dry in style, but it gives evidence not only of a careful study of the facts but of a good deal of thinking about the facts. We like in particular the care with which the author expounds the character and meaning of the various laws under review, the circumstances which led to their enactment, and the actual effect they had. Mr. Stephenson informs us in his preface that this monograph is intended, not merely as a study in Roman history, but also as the precursor of a book on agrarian movements in recent times and in nations nearer home.