

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.

— The seventh volume of "Chambers's Encyclopædia," which has just appeared, ranges from Maltebrun to Pearson. Geographical articles are the most prominent feature of the volume, there being descriptions of no less than seventeen of the American States and Territories, together with articles on Mexico, New Zealand, several of the Canadian provinces, and the cities of Paris, New York, Moscow, and many others. The articles on the different parts of the United States are by American writers, and a few other articles are also from American pens. Besides the geographical papers mentioned, there are various other articles of interest to men of science. Professor P. G. Tait treats of "Matter," Dr. J. P. Steele of "Medicine," and Dr. John Murray describes the Pacific Ocean and the Mediterranean Sea. The Rev. E. B. Kirk treats of the moon and of meteors, Professor James Geikie of mountains and of paleontology, Dr. Buchan of meteorology, etc. Literature and history are less fully represented; but there are papers on novels, newspapers, mythology, etc., and sketches of Mills, Milton, Napoleon, and many less noted men. Among the most important papers in the volume are those on Mohammed and the religion he founded, written by Professor Emmanuel Deutsch and Rev. John Milne; while the longest of all the articles, we believe, is on the subject of the navy. Other noticeable papers treat of painting, music, parliament, numismatics, and, in short, of all important topics in this part of the alphabetical list. The volume is characterized by the same qualities that we have noted in the earlier ones, clearness and conciseness combining to convey a

large amount of information in available form and in moderate space. Published in this country by J. B. Lippincott Co., Philadelphia.

— While engaged in explorations on behalf of the Geological Survey of Canada in 1889 and 1890, Mr. J. B. Tyrrell discovered an area of Silurian rocks on the north-east side of Lake Winnipegosis, on Cedar Lake, and on the Saskatchewan River below Cedar Lake. From these rocks an interesting series of fossils was obtained, some of which are apparently new to science. Of these latter, four of the most characteristic or important species are described and illustrated in a pamphlet just issued by J. F. Whitteaves, entitled "Descriptions of Four New Species of Fossils from the Silurian Rocks of the South-eastern Portion of the District of Saskatchewan."

— In the August *Popular Science Monthly*, Hon. Carroll D. Wright discusses the value of statistics, explaining how tables of figures should be used, and showing how they are sometimes made to give false evidence; Dr. Andrew D. White, in his article entitled "From Fetich to Hygiene," presents a terrible picture of the ravages of epidemics in times when prayers and processions were the only means relied upon to check them; Mr. S. N. D. North concludes "The Evolution of the Woolen Manufacture," with dyeing and finishing processes, and some general features of the industry (fully illustrated). The same number contains the first of a series of illustrated articles on "Dress and Adornment."

Publications received at Editor's Office,
June 24-July 14.

CHAMBERS'S ENCYCLOPÆDIA. New ed. Vol. VII. Maltebrun to Pearson. Philadelphia, Lippincott. 828 p. 4°. \$3.
DUCHOCCHOIS, P. C. Photographic Reproduction Processes. New York, Scovill & Adams Co. 121 p. 8°. \$1.
HORNADAY, W. T. Taxidermy and Zoological Collecting. New York, Scribner. 362 p. 8°. \$2.50.
PERKINS, F. C. Cornell University and her General and Technical Courses. New York, Wiley. 73 p. Oblong, 6¼x9¼. \$1.50.

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— Among the more recent publications of the American Book Company is "Advanced Lessons in English Grammar," by W. H. Maxwell, superintendent of public instruction in Brooklyn. It is intended for use in higher grammar classes. It is the third volume of Maxwell's English series, and the work embraces all the theory and practice necessary during the last two years of a grammar school course, or throughout a high school course. It is intended to serve the double purpose of a text-book and a book of reference. A valuable feature of the book is the chapter on

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