explained. Chapter V. treats of the solution of trigonometrical equations. Then the formulæ for the solution of right and oblique triangles are given in full, and a lot of theorems on inscribed and escribed circles with a large number of exercises. Finally, on page 166, the first right triangle is solved, by logarithms of course! Then follow the other cases in the solution of triangles.

The last two chapters of the plane trigonometry treat very properly of the construction of trigonometric tables and De Moivre's theorem. In a foot-note, De Moivre is called a French geometer. It is true he was born in France, but he should rather be styled an English mathematician. In another note (page 91), speaking of the Naperian system, the author says it is so called from the inventor, Baron Napier. He should have said it is so called in honor of the inventor of logarithms. He gives the date of the introduction of Briggsian logarithms as 1615. They were suggested to Briggs in 1615, or about that time, but they could not be said to have been introduced until two years later. It is odd that in such a small number of historical references the author should have contrived to make so many mistakes. He calls arc sin, etc., the French, when he might have described it as the continental notation. Referring to addition and subtraction logarithms, he names only J. Zech, Berlin, as compiler of such tables. One would expect reference to Gauss, if to any one. There are numerous minor points which are quite worthy of commendation, but, on the whole, in the writer's opinion, the trigonometry is not nearly as satisfactory as other volumes in the series.

AMONG THE PUBLISHERS.

THE Open Court Publishing Co. will issue for the holidays "Truth in Fiction, Twelve Tales with a Moral," by Paul Carus.

—Besides the serials which begin in the November and December numbers of the magazine, *The Century* has in preparation for the ensuing year many other important features, only a few of

which can be mentioned here. "Good Roads" will be one of the subjects, the important matters of street-paving and railroad-crossings being treated by men well qualified to discuss the questions. Papers on educational institutions and methods in America are in preparation.

— The December Atlantic will contain a description of being "Alone on Chocorua at Night," by Frank Bolles, author of "Land of the Lingering Snow."

— A semi-centenarian: America's venerable and only weekly eclectic, Littell's Living Age. This standard weekly is the oldest concentration of choice periodical literature printed in this country. It holds a unique position in the magazine world—a monthly that comes every week—a single magazine that contains the cream of all. Those who desire a thorough compendium of all that is admirable and noteworthy in the literary world will be spared the trouble of wading through the sea of reviews and magazines published abroad; for they will find the essence of all compacted and concentrated here. Its prospectus for 1893 presents some special attractions and is well worth attention in selecting one's reading-matter for the new year.

— With the number for November, 1892, The Century Magazine began a new volume. In November is also given the first instalment of "The Letters of Two Brothers." This series consists of extracts from letters which passed between the late General Sherman and his brother, Senator Sherman, at critical periods in American History, and are edited by General Sherman's daughter. Other serials beginning in this number are on "Science and the Bible;" the first paper, "Does the Bible Contain Scientific Errors?" being by Professor Shields of Princeton; to be followed by "The Effect of Scientific Study upon Religious Beliefs." The December Century will be a thorough-going Christmas number, full of Christmas stories, Christmas poems, etc., and with many full-page and other illustrations.

Dyspepsia

Dr. T. H. Andrews, Jefferson Medical College, Philadelphia, says of

Horsford's Acid Phosphate.

"A wonderful remedy which gave me most gratifying results in the worst forms of dyspepsia."

It reaches various forms of Dyspepsia that no other medicine seems to touch, assisting the weakened stomach, and making the process of digestion natural and easy.

Descriptive pamphlet free on application to Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

For sale by all Druggists.

Exchanges.

[Free of charge to all, if of satisfactory character. Address N. D. C. Hodges, 874 Broadway, New York.]

For sale or exchange.—A Stevens' new model pocket shot-gun, 44 cal., with 22-cal. rifle barrel. Just the thing for collecting birds and small mammals. Will exchange for a 22-cal. cane-gun or good books on ornithology. Write for particulars, stating what you have for exchange. R. C. McGREGOR, 2841 Champa st., Denver, Col.

For sale.—A very fine stone sword (?) so named by myself. It is perfect—15 inches in length, a little over 2 inches in width, and ½ inch thick. It is of a dark slate color, perhaps limestone, and is the largest implement of the kind known. Some fifteen years ago, when it was not mine, I was offered \$40 for it; since that time it has come into my possession; that price will now buy it. Address Rev. C. FOSTER WILLIAMS, Ashwood, Tenn.

For exchange. — Fine specimens of Wis. freshwater pearls. I want books or papers on marine and fresh-water algæ; also classified specimens of same. I will exchange for Smithsonian reports or crystallized minerals. D. M. ANDREWS, Dodge Centre, Minn.

For Sale or Exchange.—The undersigned has a lot of first-class duplicate bird's skins and sets of eggs, both rare and common, for sale or acceptable exchange. Also about two hundred second class skins and five hundred eggs, suitable for study specimens, at very low figures. The latter, for starting a collection, are as good as the best, embracing all classes and nearly all families. Also about forty species of fossils, principall. Devonian. MORRIS GIBBS, M.D., Kalamazoo, Mich.

For Exchange—"The Birds of Kansas,"—Goss, for Gray's Anatomy, or Medical Dictionary. Must be in good condition. Address, J. H. SIMPSON, Buchtel College, Akron, Ohio.

Wants.

A POSITION is desired in the South, preferably the Gulf States, where I can teach the sciences. Can also instruct in other branches. Salary only nominal, as I am simply desirous of employment while spending the winter in the South. A private family preferred, but will accept regular school work if not too confining. MORRIS GIBBS, M.D., Kalamazoo, Mich.

WANTED.—By well-qualified and experienced science master and associate of the Royal School of Mines, London, aged 26 (at present in England), a mastership in technical college or university for any of the following subjects: Engineering sciences, geology and mineralogy, physics, chemistry and metallurgy, etc., etc. Can provide excellent references and credentials: Apply, J. G., 17 Sussex St., Rochdale, England.

METALLURGICAL CHEMIST will give instruction in the metallurgy and chemical analysis of iron and steel. Complete or special courses applying to the manufacture of pig irons and steels, as well as to their uses. Address "METALLURGIST," care Science.

A GRADUATE of the University of Pennsylvania and a practical mineralogist of twenty years' experience desires to give his services and a cabinet of 25,000 specimens, all named, with about the same number of duplicates, in minerals, crystals, rocks, gems, fossils, shells, archæological and ethnological specimens and woods to avy institution desiring a fine outfit for study. The owner will increase the cabinet to 50,000 specimens in two years and will act as curator. Correspondence solicited from any scientific institution. J. W. Hortter, M.D., Ph.D., San Francisco, Cal., General P. O. Delivery.

CHEMIST AND ENGINEER, graduate German Polytechnic, Organic and Analytical, desires a position in laboratory or chemical works. Address 2131/2 E. 7th Street, New York, care Levy.

The American Geologist for 1893.

Edited by Prof. S. Calvin, University of Iowa; Dr. E. W. Clayfole, Buchtel College; John Eyerman, Lafayette College; Dr. Persifor Frazer, Penn Hort. Soc.; Prof F. W. Cragin, Colorado College; Prof. Rob't T. Hill, U. S. Irrigation Survey; Dr. Andrew C. Lawson, University of California; Frank D. Knowlton, U. S. National Museum; Joseph B. Tyrrell, Geol. Sur. of Canada; E. O. Ulrich, Minnesota Geological Survey; Prof. I. C. White, University of West Virginia; Prof. N. H. Winchell, University of Minnesota. Now in its Xth volume. \$3.50 per year. Sample copies, 20 cents. Address

THE GEOLOGICAL PUBLISHING CO., Minneapolis, Minn.