

an Oregon junco (*Junco hyemalis oregonus*) and a Vigor's wren (*Thryothorus bewickii spilurus*) which were engaged in a spirited dispute. They made frequent passes at each other as they darted about the branches of a small tree, sometimes the junco and sometimes the wren being the aggressor. Presently a rufous hummingbird (*Trochilus rufus*) appeared upon the scene, and dashing fearlessly at the belligerents quickly put them both to flight. The wren came my way and alighted on a brush pile not ten feet distant, whither he was hotly pursued by the hummer. The latter overtaking him buzzed vigorously about his ears, while the wren with a fuddled demeanor endured it for a moment and then sought relief in the depths of the brush heap.

J. M. EDSON.

New Whatcom, Wash., Sept. 13.

## NEW FIRE FROM THE LIGHTNING STROKE.

PROFESSOR O. F. COOK, of Huntington, L. I., who has returned from a journey in Liberia, gave the writer a most interesting account of a custom of the Golas of that country. The Golas apparently do not use fire sticks, but preserve fire carefully. When fire follows a stroke of lightning they hasten to secure a light from it, and putting out all the fires in the village, kindle them again from the new fire.

Lightning is very common in the Gola country, where in certain seasons there are five or six thunder storms in one day.

I regard this one of the most important contributions to the question of the origin of fire, and it shows an unexpected attitude towards the fire from lightning.

WALTER HOUGH.

U. S. National Museum, Oct. 17, 1893.

## NOTES AND NEWS.

MR. L. C. WOOSTER, who for a year past has been in charge of the Kansas Educational Exhibit at the World's Exposition, has charge of the Science Department in the State Normal School of North Dakota at Mayville. Mr. Wooster has occupied a similar position in the Normal School at Whitewater, Wis.

—Mr. L. B. Avery, who for four years past has been at the head of the Science Department of the State Normal School at St. Cloud, Minn., has accepted the Presidency of the North Dakota State Normal at Mayville.

—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1894, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1894. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

—Two articles in the November number of the *Atlantic Monthly* will be of particular interest to teachers. These are Horace E. Scudder's "School Libraries," and Ernest Hart's "Spectacled Schoolboys."

## BOOK-REVIEWS.

The Science of Mechanics. By DR. ERNST MACH. Translated by T. J. McCormack. Chicago, The Open Court Publishing Co., 1893. 534 p., 12 mo. \$2.50.

THIS interesting and learned work is the result of a mathematician's study of the historical development of the science of pure mechanics—the mechanics of the mathematician, as distinguished from the mechanics of the engineer and the artisan. It is a critical and historical exposition of the fundamental principles of mechanics as rendered by Archimedes, Leonardo, Ubaldi, and Stevinus, in earlier times, and by Guericke, Boyle, Galileo, Newton and their successors in recent times. The development of the principles of statistics by the ancients and the im-

## FOSSIL RESINS.

This book is the result of an attempt to collect the scattered notices of fossil resins, exclusive of those on amber. The work is of interest also on account of descriptions given of the insects found embedded in these long-preserved exudations from early vegetation.

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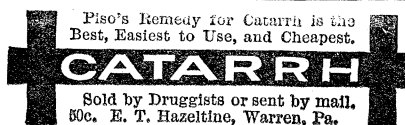
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proved statements of the same principles by later writers are traced in a very interesting manner. The progress made in the production of a science of dynamics is similarly exhibited, and the methods of exposition and proof adopted by Galileo, Newton, Huygens and the latter mathematicians are compared in a most instructive discussion. The construction of the science of mechanics, as now defined by the mathematician, is traced historically and logically, and this discussion is closed by a very suggestive chapter on the economy effected by the precision of thought and expression which the science of mechanics illustrates and promotes. The closing chapter on the relation of this science to other departments of learning is peculiarly interesting, and is the only approach to metaphysical treatment in the book of any branch of the subject. A table of titles of the works of the great writers to whose treatises reference has been made is a valuable feature. The book will interest every mathematician.

**The Locomotive Catechism.** By ROBERT GRIMSHAW. Spon & Chamberlain, New York. 362 p. 12mo. \$2.00.

THIS is one of those useful little books which are frequently supplied the artisan with the intention of giving him "practical" information in the most thoroughly pep-tonized form. The catechetic form is given the work in order that every idea may be distinctly grasped and question and answer impressed upon the mind permanently. It is a kind of book which is often much derided; but there is no question in the minds of those most familiar with their field, that they are well adapted to the use of the class of slow readers and inexperienced students to whom they are addressed. Their extensive sale and the

fact that an author and his publishers venture to bring into the market a new work in a field already so long and so well occupied by the older and more familiar "Forney's Catechism of the Locomotive" are sufficient proof of a call for them. This little book is full of valuable information for the locomotive driver and his fireman, and for all who are interested in the steam-engine and its construction, even though not professionally. It is freely illustrated and will probably find extensive sale.

**Outlines of Surveying and Navigation, for Public Schools and Private Study.** By JAMES PITCHER, A.M. Syracuse, N. Y. C. W. Bardeen, 1893. 34 p. 12mo. 50 cents.

THIS little book is intended to be used as a primer "to give the learner a brief outline of one of the most useful and delightful of occupations." It gives the elementary mathematical theory of the subject, and by the aid of the most elementary mathematics. The book is prepared "for the fireside as well as the school," and will probably find many interested readers and students among the boys on the farm, as well as among scholars in the high schools. The text is well expressed, the examples well chosen, and the illustrations satisfactory. The author concludes: "The foregoing pages have been prepared in the hope of contributing something to the increased intelligence of the boys and girls of our State and nation. Intelligent patriotism and piety will insure the success and the stability of our government"; and he appends Washington's "Farewell Address" as the best lesson in patriotism. Were all books written by authors of the same spirit and of equal patriotism, our boys would profit by the fact greatly, and our country gain commensurately.

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For Sale.—A collection of fossil Rhinoceros bones (Antelope's fossiger Cope.) from the Loup Fork Territory, and all the bones of one fore and one hind leg, the representative vertebrae and ribs, and a nearly complete skull, with complete lower jaws. All the bones of the limbs are perfect. Price \$250. Address Dept. of Paleontology, University of Kansas, Lawrence.

For Exchange.—Books and pamphlets on geology, ornithology, conchology, and entomology. State what line and I will send list. I want Odonota from any locality, and literature on this group. M. J. Elrod, Ill. Wes. Univ., Bloomington, Ill.

For Sale.—The remains of three individuals, one young and two adult, of *Elephas Americanus* found in Jasper Co., Mo. The remains comprise most of the skeletons, and comparatively little restoration would have to be done. The bones are in a good state of preservation and have not been worked out. For terms and further information address E. O. Hovey, 239 Center St., New Haven, Conn.

Bird skins scientifically prepared, with full data, in exchange for species from the U. S. not in my collection. Address G. Smith, 2918 Lafayette St., Denver, Colo.

For Sale.—Holmes' System of Surgery by Packard. 3 vols., calf, 1881, new, for \$15.00. (regular price, \$21.00.) Hares' System of Practical Therapeutics. 3 vols., calf, 1891, new, for \$12.00. (regular price, \$18.00.) Dr. Ashmead, 45 Macdougall St., New York.

### Wants.

**WANTED.**—A copy of Mascart & Joubert's *Lessons in Electricity and Magnetism*, Vol. I. Address R. W. Clawson, Vanderbilt University, Nashville, Tennessee.

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