

branch of scapula somewhat longer than inner branch (endo-scapula), but not so long as in *T. major*; digits not so much webbed as in *T. major*; number of phalanges of fore-limb, 2, 3, 3, 3, 2; shell not so elongated.

Terrapene ornata L.—Quadrato-jugal absent; cervicals very short; upper branch of scapula of the same length as inner branch (endo-scapula); digits without distinct web; number of phalanges of fore-limb, 2, 2, 2, 2, 2; shell rounded.

I have had no opportunity yet to examine fully *Terrapene cinosternoides* Gray (*trivialis* Ag.) and *Terrapene mexicana* Gray. *T. cinosternoides* is near *T. ornata*. It may perhaps show a rudimentary quadrato-jugal and a slight reduction in the number of the phalanges. I have only seen the two stuffed types of *Terrapene mexicana* Gray in the British Museum. They also resembled *T. ornata*. It would be very interesting to study the osteology of these forms. Besides, it is important to examine specimens from the intermediate localities, like Florida and South Carolina, to see how these forms agree with *T. major* and *T. carolina*.

I should be very much obliged to anybody who would send me specimens from different States of the country.

Terrapene is one of the plastic genera, and the examination of a great number of specimens from different localities doubtless will show some interesting results. G. BAUR.

Clark University, Worcester, Mass., March 27.

BOOK-REVIEWS.

The Theory of Light. By THOMAS PRESTON. London and New York, Macmillan. 8°. \$3.25.

EVERY one who has attempted to look up the literature of any scientific subject knows how laborious is the search through endless volumes of the Transactions and Proceedings of learned societies and of scientific periodicals. With some branches of science it may be impossible to make a book occasionally that shall give the existing state of the science; but with physical science this is from time to time attempted, and it was the object which Professor Preston had in view in producing his "Theory of Light."

It was his hope, and we think it has been realized, to furnish an accurate and connected account of the most important optical researches, from the earliest times up to the most recent date. Complicated mathematical theories have been avoided; yet the mathematical theory, which is so essential, has, in an elementary form, as well as the experiments on which it is founded, been given in sufficient detail to enable the student who has the necessary knowledge of the higher mathematics to take up with profit the original papers recently elaborated by various English and foreign writers.

All physicists are acquainted with the important researches, carried out in the last few years by Professor Hertz, which have proved experimentally the long-suspected close connection between light and electricity, and many will be glad to find in this volume a concise account of the results of these researches.

Outlines of General Chemistry. By WILHELM OSTWALD. Tr. by James Walker, Ph.D. London and New York, Macmillan. 8°. \$3.50.

PROFESSOR OSTWALD is professor of chemistry in the University of Leipzig; and the translator of this work, Dr. Walker, is assistant in the chemical department of the university of Edinburgh. The author undertook to write a book which would meet the requirements of the student who, while not intending to devote himself to the detailed study of general chemistry, still wishes to follow intelligently the progress recently made in this important branch of science. The progress to which the author refers might be said to be that in the physics of chemistry.

The book is divided into two parts, — the first, on the chemical laws of mass; and the second, on the chemical laws of energy. In the first part we are told of what we know about mass, of the properties of gases, of the properties of liquids, of solutions, of the properties of solids, and of the theory of chemical compounds. It will be seen that nearly all these are subjects which are on the border-line between physics and chemistry; for instance, in the

chapter on the properties of liquids, the author treats of their general properties, of the relations between the gaseous and liquid states, of boiling-points, of volume relations of liquids, of refraction in liquids, of rotation of the plane of polarization, of surface tension, of internal friction, and of the specific heat of liquids. In the second part, under the general heading of "The Chemical Laws of Energy," the subjects treated are, thermo-chemistry, photo-chemistry, electro-chemistry, chemical dynamics, and chemical affinity.

The amount of progress that has been made of late years in these physico-chemical researches is considerable, and we are fortunate in having the results brought together and summarized in so good a book. The author is to be commended for having avoided one error which many a writer is induced to make. Few chemists have had much mathematical training, so that they would find it difficult or impossible to follow the mathematical discussion of physical problems. In such cases Professor Ostwald has not sought to introduce a laborious proof based on elementary mathematics, but has chosen to give simply the result.

Die Kosmologie der Babylonier. By P. JENSEN. Straasburg, 1890.

Die Fluthsagen. By RICHARD ANDRÉE. Braunschweig, 1891.

THE study of comparative mythology is constantly teaching us how wide spread over the earth's surface are the same infantile explanations of natural phenomena. As soon as a tribe reaches a certain stage of intellectual culture, — and that by no means a high one, — it is sure to frame some theory, under the guise of a narrative or story, to account for the existence of the world about it.

One of the most ancient, and for that reason most interesting, of these stories of creation, is that of the Babylonians, of which we have a new and very accurate rendering by Jensen. It is a part of his general work on the cosmology of the Babylonians, the whole of which is characterized by great learning and acuteness. He refutes satisfactorily the opinion of those who have maintained that the creation legend of Babylon was derived from the "Sumerian" column of the inscriptions, though their opinion would have amounted to little if Halévy's suggestion is correct, that the Sumerian script is merely an esoteric alphabet of the general Semitic language of the country.

Jensen's comparison of the Babylonian creation myth with that contained in the first part of the Book of Genesis illustrates with additional force how closely the biblical text follows the older and more detailed Euphrates myth. "In both narratives (Babylonian and biblical) the sequence of events is absolutely the same. A greater similarity would deserve the name of a translation. The Bible has taken up the Babylonian creation legends, suppressing what was specifically Babylonian, and transforming what was mythologic and polytheistic into a monotheistic form" (p. 306).

In the Babylonian legend the Creator appears as *Marduk*, who is probably a personification of the morning sun (the light-bringer), who rises over the boundless ocean (*tiamat*), conquers the chaos of night, and separates the heavens above from the earth beneath.

Jensen also supplies a more accurate translation of the Babylonian flood-myth, correcting a number of errors in Professor Haupt's rendering, and adding valuable suggestions concerning the original text. Thus, the hero of the myth, referred to by Haupt and others as *Samas-napistim* (the "Sun of Life"), is transliterated by Jensen *Sit-napistim* ("he whose life was saved"), a much more appropriate appellation. The biblical story of Noah and the Flood is, as is well known, merely a version of the Babylonian myth.

The origin, distribution, and affiliation of the flood myths all over the world are the topics discussed by the well-known ethnologist, Dr. Richard Andrée, in his "Fluthsagen." It is an interesting collection of material, but scarcely up to what we might expect from so widely read an authority. The portions on America are particularly weak. He depends for the Algonquin flood myth on Squier's inaccurate reproduction of the "Walum-Olum," evidently not knowing Brinton's elaborate reproduction and translation of that unique record. Nor does he refer to the

same author's analysis of the American flood myths in his "Myths of the New World."

We do not expect much from European writers when they deal with American subjects; but certainly Andrée should have turned to Jensen's work, rather than to Haupt's, for his version of the Babylonian myth.

Passing over these shortcomings in his authorities, the scheme of the volume is satisfactorily carried out. After narrating briefly the myths from the various continents, he shows that they have no one common origin, though many are borrowed from others, as the biblical is borrowed from the Babylonian. The natural events that prompted their invention are described at some length; but the psychological elements at the base of many of them are not adverted to. While his work is thus a useful contribution to the subject, it falls short in several important points of what it should be.

AMONG THE PUBLISHERS.

AMONG the contents of *Outing* for April, 1891, may be mentioned "Whaling among the Esquimaux," by H. L. Aldrich; "The Athletics of Ancient Greece," by Dr. Harold Williams; "Evolution in Yacht-Building," by Capt. M. Roosevelt Schuyler; and "Composite Photography," by W. I. Lincoln Adams.

— In *The Atlantic Monthly* for April, we note Mr. Lowell's "Note: An Unexplored Corner of Japan," and Francis Parkman's second paper on "The Capture of Louisbourg by the New England Militia." One of the most important papers in the number is "Prehistoric Man on the Pacific Coast," by Professor George Frederick Wright of Oberlin, in which he gives us the results of his investigations on the subject of the Nampa Image. The Hon. S. G. W. Benjamin, for some years United States minister to Persia, has a timely consideration of "The Armenians and the Porte."

—"The Soldier's First Aid Handbook," by Capt. and Assistant Surgeon William D. Dietz, U.S.A., just published by John Wiley & Sons, consists in the main of a series of lectures delivered to members of the hospital corps and company bearers, and covers the ground indicated in existing army orders. No claim is made for originality, but the author has succeeded in presenting his subject in the form best adapted for his purpose, and in a manner calculated to make it useful to the medical officer in the preparation of his lectures to enlisted men. The work will also be of use to line officers, who, in command of detachments, may have to meet emergencies in the absence of the surgeon.

— Mr. Francis A. Shoup has published a work entitled "Mechanism and Personality," in which he endeavors to harmonize the latest biological theories with the metaphysics of Kant and Lotze. We cannot say, however, that the work is very successful, the author's ideas being too vague and confused, and his views on some points too uncertain. Thus he includes under the term "personality" not only the mind, but the body, and he repeatedly confounds the relation between the mind and its various states with that between the one and the many. Indeed, he expressly says that this conception of the mind is the keynote of his book, which is obviously a mistake. The relation between the mind and its states is that of substance and attribute, and not that of number. Other examples of confused and mistaken thought might easily be pointed out; yet the book contains some good points, and is much simpler in style than the majority of philosophical works. It is published by Ginn & Co.

— The February number (No. 49) of the *Riverside Literature Series* (published quarterly during the present school year at 15 cents a single number, by Houghton, Mifflin, & Co., Boston) contains Part I. of "Hans Andersen's Stories," newly translated. This book contains eleven stories, among which are "The Ugly Duckling," "The Princess on the Pea," "The Little Match-Girl," and "The Constant Tin Soldier." The publishers have felt that too little attention has been paid hitherto to the importance of bringing to children of the lowest-reader grades as good literature as has been supplied for the higher grades, and with this end in view they have this year issued the numbers of the *Riverside Literature*

Series especially for the second-reader grade. To quote from the account of Andersen and his work in the preface of the translator, "It is this nice sympathy held by Andersen with the peculiar phase of childhood which makes his writings so eminently fit for the reading of children: in entering his world they do not pass out of their own, but enlarge it, for by the means of his art they are introduced to the larger art of imaginative literature."

— Messrs. Houghton, Mifflin, & Co. announce that they have recently published an entirely new Atlantic portrait of Mr. James Russell Lowell. This new portrait replaces one which, although a favorite for some years, is not now a good likeness of Mr. Lowell. The new portrait is from a photograph taken by Gutekunst in 1889, and is an almost full-face likeness of the poet, the head being slightly turned towards the left.

— In view of the approaching centennial of the founding of the Patent Office in Washington, James Shepard's article, "The United States Patent System," in the *New England Magazine* for April, will be of interest to many. Mr. Shepard's article sheds light upon many of the knotty points which make our patent laws such a mystery to inventors, and such a gold-mine to their legal advisers. The article urges with special strenuousness the crying necessity of extending the existing facilities of the Patent Office, and enlarging the staff of this much-overburdened department.

— Some years ago, while prosecuting investigations along scientific lines, which resulted in a number of publications in English and in German, Professor Gore of the Columbian University experienced in reading technical German those difficulties which usually come to students who have studied only literary German. In the absence of any adequate aid for acquiring proficiency in the former style, he decided to prepare a handbook for technical German, and during repeated residences in Germany he collected material. In the light of this experience, he has prepared a "German Science Reader," which will be issued next month by D. C. Heath & Co. This book will contain an introductory chapter on the peculiarities of construction of technical German, followed by a graded collection of short essays on all branches of science, with notes, and a vocabulary of scientific words.

— The April number of the *Quarterly Journal of Economics* will contain two articles on the application of the doctrine of economic rent to capital and labor as well as to land,—one by Professor J. B. Clark of Smith College, and the other by J. A. Hobson of London,—the two writers having come to similar results independently and simultaneously. Professor Adolph Wagner of Berlin contributes an important article on Marshall's "Principles of Economics," and Dr. William Cunningham reviews Gross's work on the "Gild Merchant." There will be an unusual number of shorter articles and communications, the regular bibliography, and a survey of the social and economic legislation of the several States in 1890, prepared by W. B. Shaw of Albany.

— Messrs. Macmillan & Co. will shortly be issuing Landor's "Imaginary Conversations," in six volumes, the first to be issued in April, and the remainder at intervals. It is hoped that the whole publication will be completed by December. The edition is by Mr. C. G. Crump, who edited the "Pericles and Aspasia" for the Temple Library Series. The text will be a reprint from the complete edition of Landor's works published in 1876, compared with previous editions, and a bibliography is added to each conversation showing the various forms in which it was originally published. There will be short explanatory notes. A limited edition on large paper will also be published.

— In *The Century* for April, in the California Series, Mr. Julius H. Pratt gives a description of the emigration to California by way of Panama in '49. The pictures are striking, having been drawn by Gilbert Gaul, after originals made from life by an artist in 1850. In this connection is a paper of historical value by the late Gen. J. C. Frémont on his own part in the "Conquest of California." Several briefer papers on the general subject accompany the more important contributions of the series. In this number *The Century's* Mountain-Climbing Series, appropriate to the summer season, is begun, with papers on two separate expeditions