

simple consideration of the energy relations involved. If the law were true, all reactions which give oxygen at ordinary temperatures should give it in the form of ozone. The fact that some such reactions give ordinary oxygen while others give ozone is doubtless connected, in some cases, at least, with the structure of the reacting compounds as well as with their inherent energy. And no one has thus far told us how a satisfactory account of matters connected with chemical structure can be given without the aid of the atomic theory.

One hesitates to criticize a book of such surpassing excellence and one destined to be so very useful. But those very qualities which have made Professor Ostwald so much beloved by all of his acquaintances and which have given him such an extraordinary hold on his students, seem to lead some of them to accept almost without question everything which he writes and it seems right that a divergent view should sometimes find expression.

WILLIAM A. NOYES.

#### SCIENTIFIC JOURNALS AND ARTICLES.

*The American Naturalist* for February contains articles on 'The Unity of the Gnathostome Type,' by Howard Ayers; 'Old Age in Brachiopoda—a Preliminary Study,' by H. W. Shimer; and 'The Habits of *Necturus maculosus*,' by A. C. Eycleshymer. Dr. Ayers concludes that the Marsipobranchs are true Gnathostomata and that the only living Acraniate is *Amphioxus*. Dr. Shimer's article gives a summary of the principal characters that accompany old age in the brachiopods and includes many illustrations of typical examples besides presenting suggestions as to their origin and meaning. Professor Eycleshymer discusses the habits of *Necturus* at some length, giving much new and interesting information in regard to its nests and breeding habits. We quite agree with him that any specimen over a foot in length is unusually large.

*The University Bulletin*, University of Michigan, for December, 1905, contains the report of the curator of the museum. Mr. Adams is to be complimented upon having

accomplished much with a small expenditure of money and on having done much by collecting, and rearranging and labeling the museum collections, to promote its efficiency. The chief accessions were 131 skins of mammals, representing 23 species, and 298 birds of 111 species.

*Colorado College Publications*, Science Series, No. 46, is devoted to an annotated list of 'The Mammals of Colorado,' by E. R. Warren. This contains a very considerable amount of information compressed into a few pages and is accompanied by a bibliography.

*The Quarterly Record of Additions* to the Museum of Hull, England, is an excellent device for economical and extensive publication. Objects of interest are described in the *Eastern Morning News*, electrotypes made of the articles, and each quarter these are combined and issued in pamphlet form as one of the museum publications.

#### SOCIETIES AND ACADEMIES.

##### THE BIOLOGICAL SOCIETY OF WASHINGTON.

THE 412th regular meeting was held on February 17, 1906, with Vice-president Palmer in the chair and thirty-two persons present.

Professor Paul Bartsch presented a paper on 'Variation in the Shell of *Goniobasis virginica*, with an Outline for Breeding Experiments.' He described and illustrated with lantern slides the wide differences among individuals of this species. Collections from the vicinity of Mount Vernon in tidewater subject to an occasional slight salinity are constant in form. Those from the Shenandoah at Harpers Ferry likewise show little variation, though plainly recognizable from the Mount Vernon representatives of the species. About Washington the shells show extreme variation. Intergrades everywhere exist and the subspecific groups all run together. Without attempting to account for these variations, experiments were proposed calculated to throw light on the subject. These consisted substantially in transplanting the local forms and studying their progeny under the new conditions. In the Shenan-