

It should be further noticed that in nearly every instance where the name of an Eastern Atlantic species has been adopted for species of our Western Atlantic fauna, even in those from deep water, Dr. Dall has either changed it or given additional varietal names, sometimes only for the very insufficient reason of differences in size, as in the instance of *Kellia suborbicularis* (Mont.) (p. 889), where only two specimens have been recorded from the coast: Thompson's *Gouldii* from New Bedford harbor and one from Massachusetts Bay, off Salem, U. S. F. C. (Verrill and Bush, 1898).

Such great dissimilarities exist in the hinges of the five figured species referred to the genus *Erycina* as to render it improbable that they can be retained in so close generic relation.

All these doubtful points will doubtless be satisfactorily adjusted by Dr. Dall in his more extended discussion of the subject, which is to appear in the Trans. Wag. Inst., Philadelphia, Vol. III., Pt. 5.

The *Lasæa rubra* Montagu quoted from Bermuda (p. 876) was found there abundantly by Professor Verrill and party, 1898. Compared with specimens from Guernsey it is found to have a much more swollen form with very large, swollen umbos, and attains twice the size of any of our numerous English examples. In one valve, anterior to the beak, there is a short, deep, socket, not sunken below the surface of the hinge-margin, but formed by two thin, triangular, raised teeth, nearly parallel—the outer one next to, and parallel with, the dorsal margin, and the inner one, much longer, diverging from the beak and curving outward from the inner edge of the moderately wide margin, the highest point of each being near the distal end. In front of this is a small, little prominent tooth on the inner edge of the hinge-margin, directly under, but separated from, the beak. There is also a similar socket, a considerable distance behind the beak, but it is longer and the two teeth are less triangular and but little raised, the upper or outer one scarcely discernible; within, and somewhat in front of this, separated and diverging from it, and running backward from the beak, is the sunken socket, to which a long, conspicuous, white resilium is attached. In other words,

the hinge-margin broadens out distally, forming a triangular-shaped ledge at the side of this inner tooth, which has a concave side in which the resilium lies. In the English *rubra* the resilium is amber color and the teeth are not so strongly developed as in Bermuda specimens of the same size. In the opposite valve of the former there are three prominent teeth, the lateral ones well separated from the dorsal margin, which fit into these sockets and a corresponding resilium-pit. This distinct species may take the name *Lasæa Bermudensis*, sp. nov.

In the second article Mr. Hedley gives in his preface an interesting account of the atoll of Funafuti and the positions and conditions under which the various forms of mollusks are found, calling attention to the peculiarity in their lack of development, they being of smaller size than the representatives of the species from other localities. He also calls attention to the great difficulties encountered in preparing his article, owing to the great paucity of descriptive material.

Of the two-hundred and ninety-seven species, besides varieties, enumerated, about thirty-seven are described as new. Three new genera are also introduced (*Obtortio*, p. 412, type *Rissoa pyrrhacme* Melvill and Standen; *Cotumax*, p. 436, type *C. decollatus* sp. nov.; and *Thetidos*, p. 472, type *T. morsura* sp. nov.). The first is probably erroneously referred to Turbonillidæ, as there is nothing in the description or figure to suggest such a relation, so that a careful study of the animal is needed before such a question can be correctly determined. The second is placed with the Cerithiidæ, its nearest ally, *Cerithiopsis*; while the third is an addition to the Mangilliinæ but seems synonymous with *Nassarina* Dall (1889). Although the few figures given are unfortunately crude and coarse, they are of sufficiently large size to bring out the characters necessary for identification.

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Über die thermo- und piezo-elektrischen Eigenschaften der Krystalle des ameisensauren Baryts, Bleioxyds, Strontians und Kalkes, des Schwefelsauren Kalis, des Glycocolis, Taurins und

*Quercits.* W. G. HANKEL, Abhand. der math.-phys. Classes der K. Sächs. Gesell. der Wissen. Bd. XXIV. Pp. 471-496.

In this, the twenty-first paper by Professor Hankel describing his electrical investigations of crystals, the object, as before, is to determine the character and relative intensities of the electric charges developed at different parts of the crystals under the influence of temperature change or of pressure. From this distribution of the positive and negative charges conclusions can be drawn as to the true structural symmetry of the crystals. The methods were presumably those followed in previous investigations, as they are not described.

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#### SCIENTIFIC JOURNALS AND ARTICLES.

The *Physical Review* for August contains the following articles :

'The Specific Heat of Solutions which are not Electrolytes,' by William Francis Magie.

'An Interferometer Study of Radiations in a Magnetic Field,' II., by John C. Shedd.

'The Effect of Magnetization upon the Elasticity of Rods,' by J. S. Stevens and H. G. Dorsey.

'On Freezing and Boiling Water Simultaneously,' by R. W. Quick.

*Bird Lore* for August opens with an article by R. Kearton, one of the most successful of the many photographers of wild animals, on 'Photographing Shy Wild Birds and Beasts at Home,' in which are explained some of the devices used by the Kearton Brothers. 'Two Nova Scotia Photographs,' by C. Will. Beebe, show in a very beautifully surrounded nest of Junco and a sleeping nighthawk. 'In the Spartina with the Swallows,' by O. Widmann, treats of a vast Western swallow roost in this writer's usual charming style and is accompanied by some interesting views. Bradford Torrey tells of 'Watching the Bittern Pump' and the various 'departments' are well filled, among the articles being a 'Round Robin' signed by well-known ornithologists, entitled 'Hints to Young Students' and justly deprecating the wholesale slaughter of birds and collecting of eggs under the impression that this alone is ornithology.

#### DISCUSSION AND CORRESPONDENCE.

##### ON GRADUATE STUDY.

IN the article, in *SCIENCE* for August 4th, 'Doctorates Conferred by American Universities,' in which you speak of the comparatively small number of university doctorates in the humanities, is found the following statement: "Our educational system is largely based on the study of language, and in view of the great number of teachers required it appears that they are satisfied with a less adequate education than is the case in the sciences." Every suggestion that looks toward improvement in the preparation of teachers, especially of the teachers in secondary schools, who seem most vulnerable in qualification in languages, should be warmly welcomed, but I am sure, however, that not all university teachers will agree with the conclusion quoted above.

It is certainly true, as your comparative table shows, that in American universities more candidates seek the degree of Doctor of Philosophy in the sciences than in the humanities, but it does not, therefore, necessarily follow that the persons who are engaged in teaching the humanities in our better colleges and universities 'are satisfied with a less adequate education' than is the case with their colleagues in the sciences, nor should a teacher's qualifications be measured by the number of degrees he possesses. As is well understood, language teachers often feel that they can do graduate work to better advantage in Europe, where they are constantly surrounded, as it were, by the very things they are studying; in fact, some American institutions decline to consider the applications of candidates for positions in French and German who have not studied abroad. These facts, and the additional fact that we now have better scientific laboratories in this country than was formerly the case, would perhaps partly explain the inequality in the number of doctorates conferred by American universities in the humanities and in the sciences. In this connection it is interesting to note that of the American students engaged in the study of these subjects at the University of Berlin during the summer semester of 1897 (I have no later statistics at hand) nearly twice as many were study-