

physics and chemistry in the remaining part of the book. Electricity is dealt with in sixteen pages of this part, and chemistry in twenty-eight pages. Most of the illustrations are line drawings, and will not be attractive to the young people for whom the book is intended; for few natural history objects can be well represented by outline sketches, and children often have a difficulty in understanding them.

In the preface the editor, referring to the object of the book, suggests that it should be especially useful in "the junior classes in schools." But few teachers who have had experience in giving instruction to such classes would approve of the order in which some of the subjects are dealt with. For instance, the first chapter deals with the difficult subject of classification of animals, and leaving out of account the fact that the scheme of classification described is somewhat old-fashioned, we think it pedagogically wrong to begin the study of natural history by classifying the animal kingdom. Teachers may, however, find the volume useful in providing information for lessons on natural history objects, and suggesting experiments in physics and chemistry.

Notes from a Diary in Asiatic Turkey. By Lord Warkworth, M.P. Pp. xvi + 268. (London: Edward Arnold, 1898.)

THE author of this book, now Earl Percy, travelled by several of the main routes and some unfrequented ways of Asiatic Turkey in 1897. He shows himself to be a wide-awake politician, an instructed antiquarian, and something of a sportsman; hence the narrative necessarily deals with matters from a point of view somewhat remote from the scientific. The book is charmingly got up, gracefully written, and illustrated by some choice reproductions of good photographs, one of which represents a dervish with a dagger thrust through both cheeks and apparently insensible to pain. Throughout the journey, indeed, there seems to have been very little objection on the part of the people to allow themselves and their belongings to be photographed, a result doubtless of the infiltration of Western ideas even into the remoter parts of the Turkish empire. Incidentally, one or two points of scientific interest are touched upon. The strange idea is noted that the honey of a district near Erzerum is not only poisonous when taken in large quantities, but that if the red water-melon is eaten at the same meal with some of the honey, death would result from the formation of large crystals in the stomach. A curious statement is made as to the extent of the occasional inundations of Lake Van, one of the natives declaring that the water had recently risen as much as 400 feet, a degree of flood which the author prudently views as an exaggeration. The discovery of a spring "bubbling over with a copious flow of liquid sulphur" (p. 204) would certainly be interesting, but it probably was no more than water impregnated with sulphuretted hydrogen.

As an intelligent, modest, and serious account of an interesting journey in a country still difficult of access, this book deserves very hearty commendation, and it would be gratifying to believe that all members of Parliament could make so good a use of their holidays as Lord Percy has done.

Lectures on Theoretical and Physical Chemistry. By J. H. van 't Hoff. Translated by R. A. Lehfeldt. Part I. Chemical Dynamics. Pp. 254. (London: Edward Arnold.)

TO what has already been said regarding the French edition of this excellent work (NATURE, p. 458) there is little to add. The translation is accurate, the few slips that occur being mostly referable to the original, and easy of detection. As to paper and printing the book leaves nothing to be desired, although perhaps this result has been attained at the expense of a wider popularity which the book might have enjoyed had its price been lower.

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LETTERS TO THE EDITOR.

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Experiment to Illustrate the Zeeman Effect.

PROF. A. GRAY has kindly called my attention to his Royal Institution lecture of April 29, 1898, in which, nearly a year ago, he pointed out the analogy between a pendulum with a gyrostat in its bob, and the molecule of a gas vibrating in a magnetic field, which I called attention to in my recent letter (p. 509).

GEO. FRAS. FITZGERALD.

Trinity College, Dublin, April 5.

Formation of Egg-capsules in Gasteropoda.

THE function of the sole-gland of the foot in certain divisions of the Gasteropoda seems hitherto to have remained unknown. None of the works I have been able to consult give a definite account of the function of the organ. This sole-gland appears from the literature to exist only in the dioecious Azygobranchia, whereas the more anterior marginal gland of the foot is found both in these and in Pulmonata and Opisthobranchia.

On the other hand, I have been unable to find any published account of the origin and formation of the horny capsules, in which the ova of most Azygobranchia are deposited and contained during their development. Many writers seem to assume that these capsules are formed in the generative duct, which is not the case.

I have recently satisfied myself that these two gaps in our knowledge of the Mollusca are really one; in other words, that the egg-capsules are formed by the sole-gland, and that the latter is really the nidamental gland. I first discovered this in the common whelk *Buccinum undatum*, which I found in numbers in the act of spawning on the shores of Falmouth Harbour in November 1897. Pulling away the animals from the stones to which they adhered, I found incompletely formed capsules in the cavity of the sole-gland, and saw that the "spawn" was formed and deposited by the "foot." The ova are probably transferred to the cavity of the gland, before the closure and deposition of the capsule. I have recently verified the same fact in the same locality in another species, namely *Murex erinaceus*. In this case the capsule is long and narrow in shape, and I saw it in an imperfectly matured though fully formed condition, drawn out of the aperture of the sole-gland, when I detached a specimen in the act of spawning.

Lacaze Duthiers has shown that the float of *Fanthisa* is formed by a glandular depression of the foot corresponding to the sole-gland, and Johannes Thiele maintains that the egg-capsules of this animal, attached to the float, are produced also by a certain portion of this gland. Simroth, however, believes with Lacaze Duthiers that the "cocoon" or capsules are derived from the sexual organs. I have no doubt Thiele is right, but he does not appear to have extended his doctrine to other forms than *Fanthisa*.

The function of the sole-gland being thus established, the question arises whether there is not a difference in the structure or size of the gland between the male and female, since the male does not produce egg-capsules. This and other questions I must leave to be investigated in future. Not knowing when I may have leisure to make a more detailed study of the subject, I wish to make known the main fact, which can be easily verified by the observation of living Prosobranchs in the act of spawning.

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The Natural Prey of the Lion.

WHAT constitutes the natural prey of the lion in his wild state is, I believe, a disputed point. The majority of people, probably, are of opinion that he is extremely fastidious in his tastes; others, again, assert that he will eat almost anything. Certainly, it is only reasonable to suppose that a lion sufficiently under the impulse of hunger will eat "almost anything"!

Years ago I was present on more than one occasion when animated discussions on this point took place between two notable African ecclesiastics—both since dead—Bishop Smythies