

OUR BOOK SHELF

The Spectroscope and its Work. By Richard A. Proctor. Society for Promoting Christian Knowledge. (London : 1877.)

IN a little work of 127 pp. Mr. Proctor has clearly and logically explained the principles of the science of spectroscopy, and has given a sketch of the main results of spectroscopic research into the nature of the sun, stars, and nebulae.

One of the features of this book is, we think, the logical manner in which the principles of spectroscopic analysis are developed from the facts gained by observation and experiment; the steps of the various reasonings are succinctly but clearly stated; this is a point of much importance. In too many so-called scientific text-books there is a loose and illogical method of connecting facts, and conclusions drawn from these facts; by the perusal of such books the general reader is either strengthened in his prejudged conviction that science teaching is of little or no value as a mental exercise, or he is taught, often almost unconsciously, to believe that the generalisations of science and the facts of science rest upon exactly the same evidence. Another feature in Mr. Proctor's little book is the adoption, necessarily to but a limited extent, of the method of historically developing the facts of the science of which he treats. The leading steps in the history of the most important advances in spectroscopy are traced, frequently by quotation from the classical memoirs of the great workers in the science.

The book is divided into eight chapters, headed respectively "Analysis of Light," "Dark Spaces in the Spectrum," "Various Order of Spectra," "Interpretation of Solar Spectrum," "Solar Prominences, &c.," "Spectra of Stars, &c.," "Atmospheric Lines in Solar Spectrum," "Measuring Motions of Recession and Approach."

Whether as an introduction to the fuller study of spectroscopic analysis, or as a work from which the general reader may gain a clear, and, so far as it goes, complete view of the science, Mr. Proctor's work is deserving of the warmest recommendation.

M. M. PATTISON MUIR

The Great Thirst Land; a Ride through Natal, Orange Free State, Transvaal, and Kalahari Desert. By Parker Gillmore. (London : Cassell, Petter, and Galpin.)

CAPTAIN GILLMORE'S work is disappointing. The title suggests Major Butler's "Great Lone Land," but the result of a comparison of the two works would not be very favourable to Capt. Gillmore's. He has nothing new to tell the geographer, and many of the hunting stories are comparatively tame. The work is unnecessarily large, and could with advantage be compressed to half its present size. Still there are a number of observations on the Boers and the natives which will interest many, and there are a few good lion stories. The book is handsomely got up.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Strychnia and its Antidote

THE following circumstance I think worth noticing. Wanting to banish some mice from a pantry, I placed on the floor at night a slice of bread spread over with butter in which I had mixed a threepenny packet of "Battle's vermin killer," which contains

about a grain of strychnia along with flour and prussian blue. The following morning I was roused by a servant telling me that a favourite skye terrier was lying dead. I found that the mice had dragged the slice of bread underneath the locked door and that the dog had thus got at it and eaten part equal to about one-sixth of a grain of strychnia; it lay on its side perfectly rigid; an occasional tetanic spasm showed that life was not quite extinct. Having notes of the experiments made by direction of the British Medical Association last year, on the antagonism of medicines, and wherein it was conclusively proved that a fatal dose of strychnia could be neutralised by a fatal dose of chloral hydrate, and that the minimum fatal dose of the latter for a rabbit was twenty-one grains, I at once injected under the dog's skin forty-five grains of the chloral in solution, my dog being about twice the weight of a rabbit. In a quarter of an hour fancying the dog was dead, as the spasms had ceased and it lay apparently lifeless, I moved it with my foot, when it at once struggled to its feet and shortly after staggered to its usual corner by the parlour fire; it took some milk, and except for being quieter than usual seemed nothing the worse for the ordeal it had passed through.

That the fatal effects of a poisonous dose of strychnia was thus counteracted so successfully by what I should say was a poisonous dose of chloral, given hypodermically, is an interesting fact verifying the experiments I alluded to. Without such experiments on the lower animals, a medical man might often be found standing by helpless to aid his fellow-man under similar effects of poison.

Sudbury, Suffolk, February 27

J. SINCLAIR HOLDEN

Age of the Sun in Relation to Evolution

I THINK I may be permitted to point out that Dr. Croll has missed what I had intended to be the main feature of my criticism of his article on the "Age of the Sun in Relation to Evolution." I should therefore wish to reiterate that, in his theory, he takes no account of the proper motions of the stars in space. If it be true that suns or stars have been formed by the collision of bodies possessed of great energy, proper motion can be none other than the unused and unconverted energy of the original components. Supposing the forces, before impact, to be equal and opposite in direction, there can be no misunderstanding that the result will be the *entire* conversion of the "motion of translation to molecular motion," i.e., heat; but this, according to the law of chances, must be of exceedingly rare occurrence. Yet, from our knowledge of the motions of the stars in space, this, or something very like this, has invariably occurred. Surely here is a *reductio ad absurdum*. In conclusion I will merely state that I have never yet claimed to have suggested a theory reconciling the age of the sun with prevailing opinions in geological science or with the hypothesis of evolution. Having felt the difficulty, I have endeavoured in some measure to stretch the interval wherein these may have had time to effect their changes, but I have not claimed to have succeeded to the desired extent. I am not, therefore, interested in replying to the former part of Dr. Croll's letter, and indeed, with certain minor reservations, have no hesitation in subscribing to it.

JOHN J. PLUMMER

Orwell Dene, Nacton, February 28

The Zoological Station at Naples

PERMIT me to correct some statements made in NATURE, vol. xvii. p. 329. The small steam launch was given to the Zoological Station by the Berlin Academy of Science, in exchange for a working table in the laboratory, which is to be placed at the disposal of the Academy for ten years. The Prussian government subscribed 300*l.* towards the expenses of the launch, which was built by Messrs. J. Thornycroft, Church Wharf, Chiswick, and has proved an excellent little craft.

As to the publications of the Zoological station, the *Prodromus Faune Mediterraneae* will be a compendium of all the species hitherto observed in the Mediterranean, and recorded in scientific works. Its publication is mainly intended to facilitate the nomenclature of the chief work, the "Fauna and Flora of the Gulf of Naples and the Neighbouring Seas," which is to appear in monographs. The *Prodromus* has been undertaken by Prof. T. Victor Carus, whose great knowledge both of zoological literature and classification will answer its exactitude and completeness.

The first monograph to be published is not on the *Elanophora*.