been carefully brought up to the level of recent researches. The methods of the separation of active principles, such as morphine and atropine, from the crude substances, and their reactions, are not given.

Prof. Bentley does not undertake to give more than the most general indication of the action of the remedies he has so fully described. All that is said of rhubarb, for instance, under the heading of medicinal action, is that "it possesses tonic and slightly astringent properties, and in large doses it acts as a purgative." This is a very good system for pharmaceutical students, and according to some authorities for medical students also at the commencement of their career. But it manifestly encourages learning by rote. What impression of definiteness or value does the word "tonic," for example, represent in the mind of the juvenile reader? Of course none.

Again, whilst we acknowledge that Prof. Bentley has on the whole confined himself to an account of the actions of the various drugs on the healthy organism, we must object to the heading "Medicinal Properties," which is put before the paragraphs descriptive of these. A drug has an action quite apart from the circumstance that it may be employed as a "medicine," *i.e.* in relation to the treatment of disease.

The book contains a number of beautiful illustrations of plants and drugs. It is remarkably free from typographical errors, and the style of its production reflects credit on the publishers.

Catalogue of the Fossil Mammalia in the British Museum (Natural History). Part V., containing the Group Tillodontia, the Orders Sirenia, Cetacea, Edentata, Marsupialia, Monotremata; and a Supplement. By Richard Lydekker, B.A., &c. (London: Printed by order of the Trustees, 1887.)

WITH this part Mr. Lydekker completes his laborious and very meritorious work of cataloguing the large collections of Mammalian fossil remains in the British Museum.

The named species are 719 in number, and are arranged under 301 generic and 100 family headings, 106 out of this total being regarded as not to be distinguished from existing forms.

Rich as is the collection in the British Museum, it is very far from including all the known existing fossil forms of Mammalia; but, failing any treatise on such, this work will be of the greatest assistance to all workers in this field. Though at the commencement of his Catalogue Mr. Lydekker did not give descriptions of all the forms detailed, yet, as it proceeded, he somewhat altered his method, giving some of the more important distinctive characters, and so the value of the work to the student has been increased.

A volume of this nature is not capable of being described in any detail, and it will suffice to add that it will be quite a necessary book of reference in the library of a biologist.

Lehrbuch der Histologie. Von Dr. Philipp Stohr, a. o. Professor der Anatomie zu Wurzburg. (Jena: Gustav Fischer, 1887.)

THIS is an excellent little treatise on the same lines as Ranvier's larger "Traité Technique d'Histologie" and Prof. Schäfer's smaller "Essentials of Histology." The various tissues are systematically described with clear and well selected wood-cut illustrations; and after each section of the systematic description a full and careful account is given of the best methods of preparation, which will enable the student to verify the descriptive account. The microscopic structure of the chief organs is treated in the same way. The directions as to *technique* are not merely those suitable for an elementary student, but such as will be useful to one who is advancing in the direction of original research. The figures are, with the exception of a few diagrams, actual representations of what the student should be able to obtain by the particular mode of preparation recommended. An introductory chapter treats of the arrangement of the laboratory, and the apparatus and reagents necessary. E. R. L.

A Treatise on Photography. By Captain Abney, R.E., F.R.S. (London: Longmans, Green, and Co., 1888.)

THE appearance of a fifth edition of this well-known book is sufficient proof of its popularity, and no trouble seems to have been spared by the author to make this issue a success. The volume has been thoroughly revised, and much new matter added. The author gives the results of his researches, communicated to the Royal Society, on the "Effect of the Spectrum on the Haloid Salts of Silver;" concluding with a chapter on celestial photography, and photography with the microscope.

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 intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Coral Formations.

I HAVE read Captain Wharton's paper on "Coral Formations" (p. 393), and the letters of Mr. John Murray and Mr. G. C. Bourne in your issue of March 1.

There is, doubtless, room for difference of opinion as to this important and many-sided question, but I think the balance of evidence is in favour of Mr. Murray's view as to the formation of lagoons.

In this connection the fact that carbonate of lime is soluble in water had been practically overlooked, and its increased solubility in sea-water seems to have been unnoticed before Mr. Murray formulated his views as to their formation. The active life in coral reefs is practically outwards (assuming a shape similar to fairy rings on grass), leaving the central portion more or less dead, or with wide spaces of coral sand and only scattered patches of living animals. The organic matter in this dead coral, by its oxidation, produces carbonic acid, which dissolving in the sea-water exalts its solvent action on the carbonate of lime, now more or less in an amorphous condition.

Reducing such a question to figures has a great advantage, and is often the only way of arriving at a safe conclusion. With assistance derived from the Scottish Marine Station, I have lately been conducting some experiments on the solubility of carbonate of lime in sea-water, the results of which may interest the readers of NATURE at the present time.

The experiments were conducted with sea-water of specific gravity 1·0265 (obtained from the German Ocean 20 miles from land), and at temperatures of from 70° F. to 80° F., which reefs require. The corals used were several species of *Porites*.

Dead or rotten coral exposed to sea-water under these circumstances is soluble to the extent of 5 to 20 ounces per ton.

Take now a reef with a lagoon already formed, half a mile in diameter. This will give an area of about 600,000 square yards, and supposing the water to be 3 feet deep and only one-sixth part of this to be in actual contact with the dead coral, we have 100,000 tons exerting its solvent action. This would give, were the sixth part of the lagoon water to be expelled and replaced with fresh sea-water at each tide, and taking the solvent action at only 10 ounces to each ton, an amount of carbonate of lime removed equal to about 3000 tons each year.

I do not insist that such an amount of carbonate of lime *must* year by year be removed from the lagoon, but I think these experiments show that the carbonate of lime so removed may easily exceed any additions to the lagoon by secretions of