Atlas of Japanese Vegetation. With explanatory text. Edited by Prof. M. Miyoshi. Set xiii., plates 86–92, pp. 6: *Coast Vegetation of Middle Japan.* Set xiv., plates 93–101, pp. 7: *Mountain Vegetation of Northern Japan.* (Tokyo: L. P. Maruya and Co., Ltd.; London: W. Wesley and Son. 1909.)

THE series of botanical plates illustrating Japanese vegetation, of which the two sets under notice are late numbers, are phototype reproductions illustrating plant-landscapes and a few cultivated plants, arranged for the most part topographically. The thirteenth set contains photographs of a temperate region, in which *Pinus Thunbergii* is a typical tree along the coast. It is shown with a foreground in one case of *Rosa rugosa,* and in another of *Calystegia soldanella.* Another photograph represents a broad expanse of the Calystegia, and two plates show a curious segregation of male and female plants of *Carex macrocephala.* The nine plates forming the fourteenth set are taken from three different mountains. Two photographs taken on Mount Azuma depict *Rhododendron Albrechtii* and a natural double-flowered variety of *Rhododendron brachycarpum.* The scenes from Mount Iide include a fine spread of *Phyllodoce aleutica* interspersed with *Geum dryadoides,* and an association of *Geranium davuricum* with *Adenophora polymorpha.* Mount Iwate is the station which provides an unexpected combination of *Rhododendron kamtschaticum* and *Pinguicula vulgaris.* The illustrations, measuring about nine inches by six inches, are remarkably sharp and well defined, and are highly creditable to Prof. M. Miyoshi and Mr. G. Nakhara, who are responsible for the original negatives.

Actualités scientifiques. By Max de Nansouty. Pp. 380. (Paris: Schleicher Frères, 1909.) Price 3.50 francs.

THIS interesting "annual" of M. Max de Nansouty, the sixth to appear, will be welcomed by the general reader anxious to acquaint himself, in as pleasant a manner as possible, with the more popular of the recent advances in science. It is natural in this issue to see great prominence given to the problems in connection with aviation and to electricity in its applications, but readers will find that most branches of science have been drawn upon to produce an interesting miscellany. The volume may be recommended specially to students of science anxious to keep up their French without neglecting their own special work unduly.

Mathematical Tables: with Full Tables of Mathematical and General Constants. By R. W. M. Gibbs and G. E. Richards. Pp. 17. (London: Christophers, n.d.) Price 8*d.* net.

THESE conveniently arranged tables provide all that pupils in ordinary secondary schools and technical classes require in their mathematical and science lessons. They include logarithms and antilogarithms, natural and logarithmic sines and cosines, tangents and cotangents, and tables of formulæ and data.

Weighing and Measuring. A Short Course of Practical Exercises in Elementary Mathematics and Physics. By W. J. Dobbs. Pp. ix+176. (London: Methuen and Co., 1910.) Price 2*s.*

THOUGH there is little that is new either in the method or contents of this book, teachers will find here a clear, well-arranged set of practical lessons on the measurement of length, area, volume, mass, and density. An abundant provision of questions—original and otherwise—has been made, especially for candidates in the Army Qualifying Examination.

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.]*

A Sponge with a Siliceous and Calcareous Skeleton.

IN Willey's "Zoological Results," part iv., 1900, J. J. Lister described certain small columnar coral-like organisms from 35–100 fathoms off Lifu and Funafuti as calcareous sponges. He named them *Astrosclera willeyana,* and, on account of their isolated position, placed them in a new family—Astroscleridæ. The skeleton was formed of minute calcareous spherules, separate above, but welded below into solid walls and blocks, the spherules being formed each in a single cell.

Recently Dr. C. W. Andrews obtained from 46 fathoms off Christmas Island four more specimens of this sponge. A decalcified section showed that Astrosclera was probably a siliceous Ectyonine sponge, for its canal walls were bristling with spiny nail-shaped siliceous spicules (Fig. 2). I concluded that this siliceous sponge had formed a supplementary calcareous skeleton from foreign particles which had been picked up from outside, so extremely improbable did it seem that a sponge could secrete both lime and silex. Later preparations, however, have shown

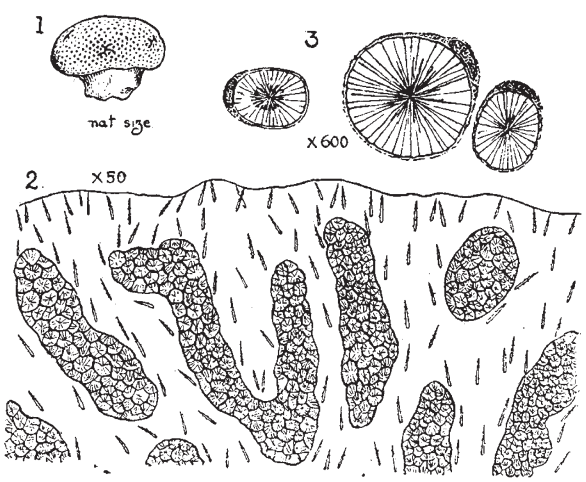

FIG. 1.—A specimen of *Astrosclera willeyana,* Lister. Natural size.
FIG. 2.—Section showing laminæ and masses of calcareous spherules, and nail-shaped siliceous spicules. ×50.
FIG. 3.—Nucleated cells containing calcareous spherules. ×600.

me that Lister was right, and that each spherule (apparently of conchite) is formed in a single cell (Fig. 3).

Fig. 1 is that of a living specimen and not of a dead stock, and yet I can find no trace of anything else than sponge tissue and spherule cells. Further, the superficial stellate grooves which are excavated in the calcareous mass are formed by the terminal exhalant canals of a sponge.

I continue to regard Astrosclera as a siliceous sponge, though I have just become aware that an eminent German zoologist has a very different opinion concerning its nature. Assuming that my theory is correct, Astrosclera may possibly owe its unique character to an ancestral habit of picking up foreign particles—in this case—of calcareous detritus, for the sponge has only been found on coral reefs. Some of the lime would dissolve and become re-crystallised in the connective tissue cells. When once this character had been acquired, the clumsy method of the sponge choking itself up with débris would be replaced by the more "scientific" process of elaborating lime direct from the sea water. I hope soon to set forth in detail the *pros* and *cons.* of this theory.

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