swim about. They measured 5.μ8 to 8μ (.00022 to .00033-inch in diameter). After a while they become attached to some object, lose their flagella, elongate and subdivide, forming new growths of *Ulothrix*.—*The American Monthly Microscopical Journal.*

SELENOGRAPHICAL.

For the purpose of comparing drawings of lunar objects, it is proposed to circulate at frequent intervals, among observers, a portfolio containing sketches and descriptions of various formations, which will ultimately be presented to the Selenographical Society. To cover expenses, an annual subscription of 2s. 6d. will be required. Among those who have already signified their intention of joining in the movement are Rev. F. B. Allison, Mr. W. R. Birt, Mr. T. P. Gray, Rev. R. S. Hutchings, and the Rev. Dr. Richards. Those who are willing to add their names to the above list are requested to communicate with the editor of "SCIENCE."

BOOKS RECEIVED.

SEA MOSSES. A Collector's Guide and an Introduction to the Study of Marine Algæ, by A. B. HERVEY, A.M. S. E. Cassino, Boston, 1881.

We welcome this excellent book, published at a seasonable moment, which will make it doubly appreciated by the public.

To the thousands who are now making a temporary home within the sound of the surf and who love the sea, seeking its presence for rest of spirit or health of body, the present work will be found a welcome companion and guide, opening up a new channel for the pleasant passage of leisure hours. No longer need the idler watch the incoming and outgoing of the tides with listless indifference, or be weary of the beating of sleepless waves, as they go tumbling among the rocks.

The author prepares the way for another pleasure which "this great and wide sea" can give us, besides that which she offers to our fancy and our dreams. In the contemplation and study of the exquisitely beautiful flora which she nurtures in her ample waters.

If you become acquainted with these plants, their beauty, delicacy and grace, and know their names, habits and history, you will admit the sea has added a new charm to your existence.

There may be no royal road to knowledge, but Mr. A. B. Hervey has certainly selected the shortest and most agreeable path by which the tyro may acquire a practical knowledge of the department of Cryptogamic Botany, included in the study of the most beautiful of Marine Algæ, the Sea Mosses.

The publishers have done justice to Mr. Hervey's work, and have produced a handsome printed book of nearly 300 pages, with twenty full-page colored illustrations of the most beautiful of the Sea Mosses, which will be found of great value to the student engaged in these studies.

No person of intelligence residing within reach of the sea, should remain without a copy of this work.

PROF. S. P. LANGLEY has made the following calculation:—A sunbeam one square centimeter in section is found in the clear sky of the Alleghany Mountains to bring to the earth in one minute enough heat to warm one gramme of water by 1° C. It would therefore, if concentrated upon a film of water 1-500th of a millimetre thick, 1 millimetre wide, and ten millimetres long, raise it 83⅓ in one second, provided all the heat could be maintained. And since the specific heat of platinum is only 0.0032, a strip of platinum of the same dimensions would, on a similar supposition, be warmed *in one second* to 2603°C.—a temperature sufficient to melt it!

NOTES.

FAURE batteries are now made with flat plates, the rolling up of the sheets having been found to produce many cracks in the minium.

FROM exact experiments, M. Mascart finds that the intensity of current capable of producing in one second the electrolysis of the equivalent of a substance expressed in milligrammes is equal to 96.01 webers.

REMSEN has again investigated the action of finely-divided iron in inducing the formation of cyanide when nitrogen is passed over a hot mixture of carbon, iron, and an alkaline metal; he finds that freshly reduced iron induces a large formation of cyanide, but that iron after keeping for some time loses this power.

THE PHYSIOLOGICAL EFFECTS OF MATE.—Maté, or Paraguayan tea, is known to be extensively used in South America, and almost universally in Brazil, the common practice being to pour boiling water on some of the powder (consisting of ground leaves and twigs of certain species), then to suck the infusion through tubes provided with strainers. MM. d'Arsonval and Conty have recently inquired into the action of this substance, administering it to dogs, either by injecting into the veins or by introduction into the stomach, and they have observed a remarkable effect of it on the gases of the blood. It dimishes the carbonic acid and oxygen both of the arterial and of the venous blood to a large extent, sometimes a third or even half of the normal quantity. This action, which is less intense during digestion, and has no necessary relation to phenomena of excitation of the sympathetic nerve-system, is somewhat obscure as to its "mechanism," but its existence proves directly the importance and nutritive value of the aliment in question, which, consumed in such large quantities in South America, is almost unknown in Europe.

PROF. IRA REMSEN, of the Johns Hopkins University, Baltimore, has been lately experimenting as to whether the chemical behavior of a metal is in any way influenced by magnetic action, and has obtained some interesting results. The best effects were got by placing a shallow, thin iron vessel holding copper sulphate solution over the poles of a magnet. Out of the magnetic field the solution would deposit a uniform coating of copper, but in the field the lines marking the outlines of the poles were sharply distinguished as depressions in the deposit. In this case a permanent magnet was used capable of supporting 55 lbs. With an electro-magnet still more striking effects were observed. There was no deposit of copper on a narrow space marking the outline of the poles. Within this the deposit was fairly uniform, but outside the copper was deposited in irregular ridges running at right angles to the lines of force, and apparently coincident with the lines marking the equi-potential surfaces. By increasing the power of the electro-magnet, the action is intensified, and the area affected is broadened. The cause of the phenomenon has not yet been elucidated.

PROF. E. LOMMEL describes in *Wied. Ann.* a new polarising apparatus in which two plates of platinocyanide of magnesium, cut perpendicularly to the optic axis, are used as polariser and analyser, just as in the tourmaline pincette. Such a section of this crystal transmits a blue light, which, when the angle of incidence exceeds 2°, it is found to be perfectly polarised in the plane of incidence, and it therefore can be used, if tilted to that extent out of perpendicularity to the axis, as a polariser for a pencil of parallel blue rays. One curious point in respect to the behavior of a thin film thus prepared is the following: Let ordinary non polarised light be looked at through the crystal while the latter is normal in the line of sight. A white central spot, perfectly circular in form, and non-polarised, is observed in the middle of a blue field, which is polarised at every point radially. The only other crystals which can be used for polarising pincettes are the tourmaline and herapathite (iodo-sulphate of quinine); the point of difference between these and the platino-cyanide of magnesium is that while the two former (which are negative crystals) absorb the ordinary ray, and must therefore be cut parallel to the optic axis, the latter absorbs the extraordinary ray, and must therefore be cut at right angles to the optic axis.