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.

A CONTINUOUS registering thermometer for recording the temperature of the body has just been described by its inventor, M. Marey. It consists of a brass tube communicating with a Bourdon manometer, containing oil, and closed. Any change of temperature, by altering the internal pressure, makes the curved manometer tube curl more or less, and to it is fixed an index which registers the movements by inscribing them on a recording cylinder. The thermometric bulb may be at some distance from the inscribing apparatus, being connected by a flexible tube of annealed copper. Two such bulbs may be applied to different parts of the body, even to the interior. It is possible therefore to note the relation between the temperatures of the interior and exterior of the body. If we remember rightly, an analogous but more portable instrument was suggested some time ago by Mr. Donald Macalister, but we are not aware whether his instrument is yet before the public.

SUN SPOTS.

The following record of observations made by Mr. D. P. Todd, Assistant, has been forwarded by Prof. S. Newcomb, U. S. Navy, Superintendent Nautical Almanac Office, Washington, D. C.

DATE, JUNE, 1881.	No. of New		Disappeared by Solar Rotation.		Reappeared by Solar Rotation.		Total Number Visible.		Remarks.
	Groups.	Spots.	Groups.	Spots.	Groups.	Spots.	Groups.	Spots.	
7, 5 p. m.	1	2	-----	-----	1	2	3	9	
11, 7 a. m.	2	20	-----	-----	-----	-----	4	40†	
12, 9 a. m.	2	5	1	3	1	2	5	45†	
15, 9 a. m.	2	10	1	5	1	3	7	50†	
16, 7 a. m.	0	0	0	0	0	0	7	40†	
18, 7 a. m.	0	0	2	10	0	0	5	25†	
19, 2 p. m.	0	0	0	0	0	0	4	15	
21, 10 a. m.	0	0	0	0	0	0	3	10	
22, 10 a. m.	0	0	0	0	0	0	2	5	
23, 8 a. m.	2	5	0	0	2	5	4	10	
24, 5 p. m.	0	7	0	0	0	0	4	17	
26, 1 p. m.	1	25†	1	2	1	15	4	40†	
29, 8 a. m.	1	25†	0	0	1	10	5	65†	Many of the spots small.
30, 9 a. m.	0	0	0	0	0	0	5	60†	Many of the spots small.

†Approximated.

Faculæ were seen at the time of every observation.

Published by order of the Secretary of War.

W. B. HAZEN, *Brig. & Bvt. Maj. Gen'l Chief Signal Officer, U. S. A*

METEOROLOGICAL REPORT FOR NEW YORK CITY FOR THE WEEK ENDING AUG. 20, 1881.

Latitude 40° 45′ 58″ N.; Longitude 73° 57′ 58″ W.; height of instruments above the ground, 53 feet; above the sea, 97 feet; by self-recording instruments.

AUGUST.	BAROMETER.					THERMOMETERS.									
	Mean for the Day.	Maximum.		Minimum.		Mean.	Maximum.				Minimum.				Maxi'm
	Reduced to Freezing.	Reduced to Freezing.	Time.	Reduced to Freezing.	Time.	Dry Bulb.	Dry Bulb.	Time.	Wet Bulb.	Time.	Dry Bulb.	Time.	Wet Bulb.	Time.	In Sun.
Sunday, 14.	29.686	29.778	12 p. m.	29.596	0 a. m.	71.3	78	3 p. m.	71	0 a. m.	66	12 p. m.	62	12 p. m.	140.
Monday, 15.	29.902	29.986	12 p. m.	29.778	0 a. m.	69.6	76	3 p. m.	66	2 p. m.	63	5 a. m.	60	5 a. m.	140.
Tuesday, 16.	30.031	30.062	10 p. m.	29.986	0 a. m.	66.3	71	1 p. m.	62	1 p. m.	59	12 p. m.	57	12 p. m.	134.
Wednesday, 17.	30.031	30.064	9 a. m.	30 000	12 p. m.	60.3	67	4 p. m.	60	5 p. m.	56	5 a. m.	55	5 a. m.	115.
Thursday, 18.	29.919	30.000	0 a. m.	29.890	12 p. m.	63.6	67	3 p. m.	62	10 p. m.	57	1 a. m.	57	1 a. m.	98.
Friday, 19.	29.786	29.890	0 a. m.	29.718	12 p. m.	67.0	70	3 p. m.	65	3 p. m.	64	3 a. m.	61	3 a. m.	114.
Saturday, 20.	29.651	29.718	0 a. m.	29.600	6 p. m.	73.7	81	4 p. m.	70	4 p. m.	66	4 a. m.	64	4 a. m.	144.

		Dry.	Wet.
Mean for the week	29.858 inches.	67.4 degrees	62.4 degrees.
Maximum for the week	at 9 a. m., August 17th 30.064 "	at 4 pm. 20th 81. "	at 0 am 14th, 71. "
Minimum "	at 0 a. m., August 14th 29.596 "	" 5 am. 17th 56. "	at 5 am 17th, 55. "
Range	.468 "	25. "	16. "

AUGUST.	WIND.					HYGROMETER.						CLOUDS.			RAIN AND SNOW.				OZONE.
	Direction.			Velocity in Miles.	Force in lbs. per sqr. feet.	Force of Vapor.			Relative Humidity.			Clear, 0 Overcast. 10			Depth of Rain and Snow in Inches.				
	7 a. m.	2 p. m.	9 p. m.	Distance for the Day.	Max.	Time.	7 a. m.	2 p. m.	9 p. m.	7 a. m.	2 p. m.	9 p. m.	7 a. m	2 p. m.	9 p. m.	Time of Beginning.	Time of Ending.	Duration. h. m.	Amount of water	0 10
Sunday, 14.	n. w.	n. n. w.	n. n. w.	213	4½	6.20 am	.543	.492	.462	79	53	65	2 cir. cu.	4 cir. cu.	9 cu.	-----	-----	-----	--	8
Monday, 15.	n. n. e.	n. n. e.	n. n. e.	234	7	2.00 am	.489	.532	.509	74	63	74	1 cir. s.	7 cir. cu.	4 cu.	-----	-----	-----	--	4
Tuesday, 16.	n. n. e.	e. n. e.	e. n. e.	151	2¼	10.20 am	.470	.462	.433	73	65	73	7 cir. cu.	10	1 cu. s.	-----	-----	-----	--	7
Wednesday, 17.	n. e.	e.	s. s. e.	145	5¾	9.00 am	.422	.460	.473	87	83	88	4 cir. cu.	10	10	11 p m	12 p m	1.00	.01	7
Thursday, 18.	n. n. e.	e. n. e.	n. n. e.	116	2	4.00 am	.456	.470	.483	88	73	78	10	9 cu.	10	-----	-----	-----	--	0
Friday, 19.	n.	n. n. w.	n. n. w.	83	¾	2.00 pm	.516	.564	.556	83	80	84	9 cu.	9 cu.	10	1 a m	2 a m.	1.00	.01	0
																11½ a m	12 m.	0.30	.01	1
Saturday, 20.	n. e.	n. e.	n. n. w.	73	2½	11.10 am	.556	.537	.628	84	54	72	8 cu.	3 cu.	7 cu.	-----	-----	-----	--	

Distance traveled during the week	1,015	miles.	Total amount of water for the week .03 inch.
Maximum force	7	lbs.	Duration of rain 2 hours, 30 minutes.

DANIEL DRAPER, Ph. D.

Director Meteorological Observatory of the Department of Public Parks, New York.