of Balfour's work, and can only enhance the respect which all biologists feel for him.

[NOTE. — Since writing this notice, I have learned of the paper since published by Gaffron upon Peripatus (*Schneider's Zoologische beiträge*, i. 33). The original I have not seen, but only a notice in the *Biologisches centralblatt*, iii. 319. From the latter it appears that Gaffron has independently observed many of the facts discovered by Balfour, and in some respects has added to them. The following is the abstract of his description of the heart. "As in the tracheate arthropods, it lies in a special pericardial sinus, completely embedded in a cellular mass, most developed laterally. Its walls are perforated by fissures, corresponding to the body-segments, and which must be sought in the upper half of the tube. Along the dorsal median line runs a round cord, which is held (probably wrongly) to be a nerve. The pericardial sinus and the body-cavity communicate through numerous oval openings in the septum."]

CHARLES SEDGWICK MINOT.

LETTERS TO THE EDITOR.

Prairie warbler in New Hampshire.

Several seasons ago the prairie warbler (Dendroeca discolor Bd.), was found nesting at Northfield in New Hampshire, in June I believe, though I cannot give the exact date. Two of the nests, however, and an egg, are preserved, and place the identity beyond question.

The locality was a high, bush-grown pasture in the vicinity of a town; and the nests were pitched about head-high from the ground, in the crotch of a thorn-bush. The birds made no demonstrations at the approach to their haunts, but retired noiselessly, seeking to screen themselves from view. One nest contained three eggs, a second four. They are substantially the same, finely and firmly wrought, cup-shaped structures, with a well-turned rim. In the latter instance, the external depth is 2½ inches, the internal 1¼; outer diameter 2½, inner 1½. The nest is composed essentially of bark strippings, Andromeda chiefly, fine grass, and blasted vegetable fibre intermingled, and lined with hairs and the reddish filaments of Polytrichum. The exterior is covered with much cobweb silk and some soft compositaceous substance, which serves to compact the whole and secure it in position.

The egg is pointed at one end, dull white, rather finely and sparsely specked with lilac and marble markings, aggregating in a circle about the crown, measures .68×.50 inches, resembling occasional specimens of the chestnut-sided warbler.

So far as I am aware, there is no previous authentic record of this warbler breeding north of Massachusetts in New England. F. H. HERRICK.

Kalmia.

In your issue for Aug. 17, Dr. Abbott doubts if Kalmia grows sufficiently large to be used for making spoons. The abundant thickets of Kalmia latifolia, beautiful but troublesome, are among the clearest recollections of my youth in southern New Hampshire. This shrub is there familiarly known as 'spoonhunt;' and its stems, near the ground, are not infrequently three or four inches in diameter.

CHAS. H. CHANDLER.

Ripon, Wis., Aug. 23, 1883.

Letters in a surface film.

Can any one suggest an explanation of the phenomenon described below?

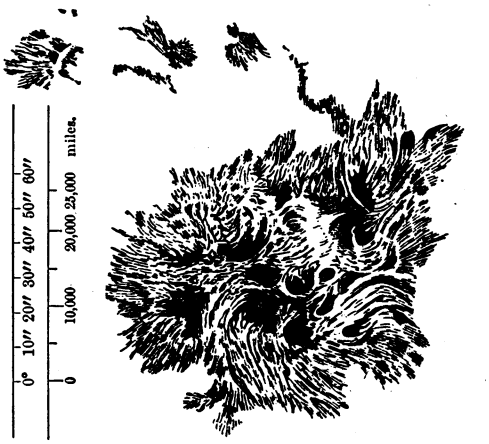
In a box four feet square, and sunk five feet below the surface of the ground, was a water-meter connected with pipes for supplying a factory. Over the face or dial of this meter was a cast-iron cover, on the outside of which the maker's name was inscribed in raised letters. During the spring thaws, the box was half full of surface-water, submerging the top of the meter some eight or ten inches. After a time a greasy film collected on the water, and in this film appeared a counterpart of the raised letters. That it was not a reflection or other optical illusion, was proved by carefully introducing a shovel under these filmy letters, when they were raised and taken outside of the box, being still visible.

In the course of a few hours, fresh letters would appear on the surface. A. P. H.

Boston, Aug. 28, 1883.

An interesting sun-spot.

Owing to a misunderstanding, the scale given with the sketch of a sun-spot, in the letter from S. P. Langley and F. W. Very (SCIENCE, ii. 266), was



printed too large. We reproduce the illustration showing the spot, with a corrected scale. — ED.

A CRITIQUE OF DESIGN ARGUMENTS.

A critique of design arguments. A historical review and free examination of the methods of reasoning in natural theology. By L. E. HICKS, Professor of geology in Denison university, Granville, Ohio. New York, *Charles Scribner's Sons*, 1883. 11 + 417 p. 8°.

THAT men can talk about the most serious problems without passion, is certainly shown by our author, whose candor and excellent aims have already been recognized on all hands. For the rest, we must regard the book with mixed feelings. When we undertook to read it, we did not go forth to see a reed shaken by the wind, nor did we find such; we did not venture to look for a prophet, nor did we find one: but we were prepared for just a