they will find their food-supply, and opportunity to develop. In this view of the matter, the development of such non-homologous parts for analogous purposes is of great morphological interest. The analogy with the young Meloïds will doubtless be found to go still farther, in that the young Bombyliid

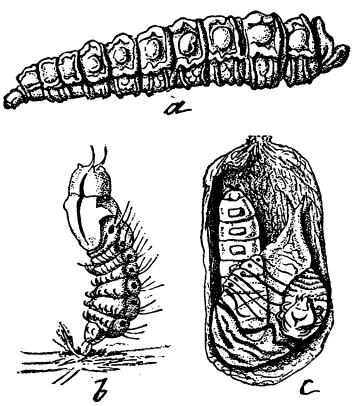

FIG. 3. — *a*, full-grown larva; *b*, pupa-shell; *c*, larva issuing from pupa of Rhizotragus. (After Handlirsch.)

will hibernate and otherwise live for a long time without food, waiting patiently for the hatching and growth of its intended victim, which growth may be very rapid among lamellicorns and pectinicorns, as I have shown in the case of Passalus cornutus (*5 Mo. ent. rep.*, 55), in which full larval development from the egg requires but six weeks. C. V. RILEY.

LETTERS TO THE EDITOR.

[*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*]

The Lake-Superior rocks.

IN SCIENCE for Feb. 9, Mr. Selwyn refers to what he regards a 'mistake' of mine, in quoting him as believing that the trap and sandstone of Lake Superior are of the age of the Huronian. The statement was made on the authority of his report for 1877–78, p. 14 A., where, in his general classification, he has placed in the Huronian "the typical or original Huronian of Lake Superior, and the conformably — or unconformably, as the case may be — overlying upper copper-bearing rocks." I could not, of course, in 1881, state what Mr. Selwyn may believe in 1883, regarding the trap and sandstone of Lake Superior. A fair inspection of the Tenth annual report of the Minnesota survey, which he criticises, would have shown him that that opinion was quoted from him in 1877–78, since his report for that year is given as authority for the statement on the following page. Still, I am very glad to be re-enforced in the views which I have advocated in my reports since 1872, first promulgated by Messrs. Foster and Whitney, by the distinguished authority of the director of the Canadian survey. I concur with him in the sweeping affirmation, "that there is, at present, no evidence whatever of their holding any other place in the geological series" than that of the 'Potsdam and primordial Silurian;' and I would also add, that there is much incontestible evidence that they *can hold no other*.

In SCIENCE for March 9, Mr. Irving has misquoted and misrepresented my views in three respects: 1. That I have *strenuously refused* to believe in the unconformability of the sandstone and trap at Taylor's Falls in the St. Croix valley; 2. That, after my visit to the valley in 1881, I *confess to the unconformity;* and, 3. That I have *argued a difference of age* between the 'eastern sandstone' of the south shore of Lake Superior, and that of the St. Croix valley.

In respect to the first of these, it is only necessary to refer to the First report of the Minnesota survey (p. 69, 70), where the unconformity of the St. Croix sandstone on the trap and sandstones is made a strong point in the argument for separating the two under different names.

Secondly, I should hardly regard that a 'confession,' in 1881, which is the same that I advocated in 1872, and, in the interim, on all suitable occasions.

Thirdly, as to the difference of age between the sandstones of the St. Croix valley and those of the eastern southern shore of Lake Superior, probably Mr. Irving has misapprehended my argument in the Tenth report, Minnesota survey. Instead of ranking them of different age, I have grouped them as of the same age (p. 134), and call special attention to the fact, that the late investigations of Dr. Rominger, as well as the paleontological discriminations of Mr. Billings, go to show their identity. I have, however, a strong inclination to concur with Mr. Irving in the opinion that the 'Animikie group' of Thunder Bay is the equivalent of the original Huronian, and have already expressed reasons for such a supposition (Tenth report, p. 95). Some further examination in the northern part of Minnesota is still necessary to establish the parallelism. N. H. WINCHELL.

Minneapolis, Minn., April 2.

Venturesome spiders.

In the summer of 1882, while engaged for the U. S. coast and geodetic survey in the triangulation of New Hampshire, I witnessed an exhibition of tight-rope, or perhaps I ought to say slack-rope, performance, that somewhat surprised me at the time, and which may, perhaps, be of interest to your readers. It was upon the summit of one of our New-Hampshire hills, some 1,400 feet above sea-level, bearing the name of Blue Job. The air was clear, and the sky partially overcast with cumuli clouds, with a very light breeze from the east. After completing a series of measurements upon an angle, I stepped for a moment to the western side of my observatory (a small wooden structure, with shutters opening breast-high for observation); and, standing near the north-western corner of the building, I observed, starting out suddenly, and at almost the same instant, three spiders, each spinning out his single thread as he went, lying, back downwards, upon nothing but the air, and sailing off at an angle of, perhaps, 10° to 15° above the horizon, as if bound to some other sphere. The rate of motion was not more than a third or half metre per second; and as the air was very clear, and I soon had the advantage of a bright cloud for a background, I was able to watch the dark specks for a long distance. One of them made a partial failure, if his object was a long voyage, for he came to the ground within ten or fifteen metres; while the other two went on and up as far as the unaided eye could follow them, or perhaps I should say one of them did, for at last I was obliged to relinquish one, to be sure of holding the other in view. The distance to which the one was followed could not have been, I think, less than fifty metres.

The question arises, How did they do it? They went, it is true, in the direction of the wind, what there was of it; but this was so light that I judged at