

laid on wet cloth are beginning to give distinct evidence of the production of cups. The probability at present is that *S. varium* is the Sclerotium of a Peziza, nearly allied to *Peziza tuberosa*.

A. STEPHEN WILSON

North Kinnundy, Aberdeen, July 30

P.S.—Since the above was written I have discovered amongst growing potatoes great numbers of *S. varium* with the completed fungus attached to them. It is a yellowish-brown Peziza of various diameters up to half an inch. I send you a box of specimens.—A. S. W.

#### "Zoology at the Fisheries Exhibition"

IN NATURE, vol. xxviii, p. 289, is an article upon the zoology of the Fisheries Exhibition, in which the writer states that some of the corals exhibited by Lady Brassey belong to me and are not that lady's property. Will you permit me to emphatically assert that not a single coral in the case belongs or ever did belong to myself, and that every specimen was procured by Lady Brassey during her voyages in the *Sunbeam*.

What is meant by the words "gratuitous inventions" I cannot understand; the new species were carefully compared with those in the British Museum, also with those obtained during the *Challenger* expedition, and with the works of Lamarck, Dana, Milne-Edwards, Moseley, and others.

It is possible that the commissionaire in charge may have, in dusting the collection, shifted some of the labels, but the fact remains that Lady Brassey's collection of corals is the only one in the Exhibition which gives any information either upon the nomenclature or habitat of the specimens exhibited.

204, Regent Street, W., August 4 BRYCE-WRIGHT

#### "The Student's Mechanics"

I HAVE no wish to quarrel with the review you have printed of my book, "The Student's Mechanics;" and I have to thank the reviewer for drawing attention to one omission, namely, the failure to explain fully the second law of motion, as related to the two methods of measuring force. But I should be glad to be allowed a few words to explain my treatment of Accelerating and Moving force. One of my objects was to clear away, by full explanation, the confusion which no doubt sometimes exists as to those terms; and this I could not have done if I had omitted them altogether. It will be long before a reader of works on mechanics can safely remain ignorant of their meaning; and indeed the discussions of force as causing change of velocity simply (as in kinematics), and as causing change of momentum, are still kept so much apart that terms to indicate the distinction do not seem out of place. Nor do I see any confusion likely to arise between "acceleration" and "accelerating force": the one is the actual change of velocity in a given time, the other is the force which causes that change. The latter is measured by the former, but it is not the same thing. In Art. 422 the word "accelerating" is simply used in opposition to "retarding," in the sense of that which increases velocity instead of diminishing it: I know no other word in use for the same purpose. Lastly, the proof in Art. 359 was given precisely to supply the omission to which your reviewer calls attention, and which does exist in the ordinary proofs that no velocity is lost in passing round a smooth curve. I there show that the sum of such losses, in a given time, is indefinitely small compared with the sum of another set of quantities, which sum is itself finite; hence the first sum may properly be neglected.

WALTER R. BROWNE

#### Sand

As explained in my note on p. 245, I had not the advantage of perusing Mr. Waller's paper on "Sand." Mr. Gardner, in his notice of it gave the first place to "distinguishing with certainty by the aid of the microscope sand that has been worn by the action of wind from sand that has been for long exposed to surf, and this again from sand brought down from torrents." I assumed this was its primary object. In this I am in error. Mr. Waller says his "paper was to show that chalk flints had scarcely any place in the formation of sand." Had I known this was the purpose of his writing I would not have troubled you with any remarks, as I entirely agree with Mr. Gardner when he says, as in p. 225: "The coast-line occupied by flint shingle is almost limited to portions of Western Europe, and is relatively insignificant."

I am glad to learn that Mr. Waller has a more comprehensive

object in view, and that a large series of sands from modern and ancient formations are being examined microscopically, and shall be glad to supply portions of specimens of the soils and subsoils of Australia and New Zealand which contain sand, and were examined under the microscope ten years ago, to compare their form and appearance with similarly situated soils from Europe.

JAMES MELVIN

#### Treble Primary Rainbow

ON Sunday, July 15, as a heavy thunderstorm was passing away from over this place, a brilliant rainbow appeared a little to the south of east about 5.45 p.m. There was a complete primary arch and a nearly perfect secondary one, and on being led to examine the former in consequence of its appearing unusually broad, it appeared to be made up of three bows, one directly below the other. The red of the spectrum being repeated three times was what drew my attention to this point. The two lower bows appeared smaller than the top primary arch. Thinking I must be suffering from some optical illusion, I got my wife, brother, and my little girl of nine, all to look carefully at the rainbow, and found that they all saw three distinct bows in the primary arch, in addition to the secondary arch. Is not this an unusual occurrence?

R.

Bexley, Kent, July 21

[This is merely the well-known phenomenon called *spurious bows*, which has not yet found its way into the "popular" class of text-books, though the principles of its explanation were long ago pointed out by Young. The full theory was given by Airy, and found to coincide with the very exact measurements of Hallows Miller. When the raindrops are all of the same size, each wave-length in the rainbow has one principal maximum with an infinite number of subsidiary maxima of rapidly-decreasing brightness. These lie *inside* the chief maximum in the *primary* rainbow, and *outside* it in the secondary.—ED.]

#### FUEGIAN ETHNOLOGY

IN Guido Cora's *Cosmos* for May, 1883, Lieut. Bove, of the Italian Antarctic Expedition, supplies some interesting details on the little known inhabitants of Tierra del Fuego, amongst whom he spent some time in the spring of the present year. He speaks highly of the English missionaries stationed at Ushiwaya, in Beagle Channel, who have succeeded in introducing a few rudimentary notions of human culture amongst several tribes hitherto supposed to be quite irreclaimable. As had long been suspected, the archipelago is found to be occupied not by one but by three distinct races, the Alacalufs in the west, the Onas in the east, and the Yagans in the south. Of these the Yagans, who stretch from the north side of Beagle Channel southwards to Cape Horn, appear to be the true aborigines. They have been driven to the southernmost and most inhospitable islands by the Onas and Alacalufs, both intruding from the mainland. The Onas, who are clearly of Tehuelche origin, penetrated from Patagonia across the eastern arm of Magellan Strait, into the large island of King Charles South Land (Eastern Tierra del Fuego), which they now hold almost exclusively. In the same way the Alacalufs, of Araucanian stock, made their way from the Chilean Andes, across the western arm of Magellan Strait, into the western islands, which they now occupy from Cape Pillar to Stewart Island, at the Pacific entrance of Beagle Channel. They number scarcely more than 2000 altogether, while the Yagans and Alacalufs are estimated by the English missionaries at about 3000 each, giving 8000 for the whole archipelago.

Although now representing the most aboriginal element, the Yagans themselves would appear to belong originally to the same Chilean family as the Alacalufs, the points of difference being easily explained by their longer isolation from the parent stock and by the more unfavourable climatic conditions of their present homes. From numerous measurements taken by Bove, they seem to be much below the middle height, although still nearly as tall as the Araucanians of the mainland. Of these the