

the geological survey, the excellence of the work of our coast-survey, now justly the highest pride of our nation's science, would deteriorate. As it stands, it may fearlessly challenge comparison with similar work by any European nation in precision, elegance, and economy. Its work is for all time.

A RECORD of the opening and closing of navigation at York Factory, Hudson's Bay, extending from 1828 to 1880, has been communicated by W. Woods of the Hudson's-Bay company. The latest date of open water in spring is June 1; the earliest closing of navigation, Nov. 3. The earliest opening was May 4; the latest closing, Dec. 9. The season, then, extends over from five to seven months, with an average of six months open water. The time when navigation would be available is limited, however, by the time of open water in Hudson's Straits, by which the bay is reached. This comprises only July, August, and September, and possibly part of October; but exact advices are not yet attainable. The question of the navigability of the Hudson's-Bay route to Europe is of vast importance for the settlers of Manitoba and the Saskatchewan; since, if it be available, they can, by a comparatively short railway-transit, reach tidewater with their crops, which otherwise cannot possibly compete with those of the north-western United States. It is understood that a trial is to be made of the route, and that a reconnoissance of Hudson's Bay, of which there are no good charts, will shortly be attempted.

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 deep-sea fish, *Malacosteus*.

IN reading the translation of Mr. Filhol's article on the deep-sea fishes collected by the *Talisman* (*Science*, May 23), I have been somewhat surprised by recognizing, in A. Tissandier's figure of *Malacosteus niger*, an old acquaintance, the source of which may be observed in *Bost. journ. nat. hist.*, vi. plate v.

While upon this subject of *Malacosteus*, it may be interesting to note, that, in several specimens of *M. niger* now in the National museum, the slender band connecting the tongue with the mandibular symphysis, which has long been regarded as a tangled hyoid

barbel, is really not free at either end, and may be only a muscle concerned in the movement of the lower jaw. I have not yet been able to find a true hyoid barbel. The pectoral contains three rays instead of five, as counted by Dr. Ayres; and the caudal is forked, and not convex.

TARLETON H. BEAN,
Curator department of fishes.

U. S. national museum, May 28.

[By an oversight on our part, we neglected to state that the illustrations of the two articles in No. 68 on deep-sea fishes were copied in part from *La Nature*, and in part from *Science et nature*. Those on p. 621 came from the latter journal, the others from the former, but not all of them in connection with the article translated. — Ed.]

A bad habit of the fox-squirrel (*Sciurus niger*, var. *ludovicianus*).

Madison people pride themselves not a little on the number and tameness of their fox-squirrels, which are found by scores in the shade-trees of the capitol park and the residence streets of the city. Protected by a special ordinance, they have multiplied rapidly, and scarcely know what fear is, running along before one, on the sidewalk or fence, and occasionally even stopping, and allowing themselves to be touched, in the hope of getting a nut. We consider them decidedly more ornamental and worthy of good treatment than the ubiquitous blue-jay or sparrow, and never tire of watching their pretty ways. But to-day I noticed several engaged in far less commendable business than hiding, or opening acorns.

While passing under a row of elms, my attention was attracted by a number of short twigs lying on the sidewalk. About a hundred were counted under the first tree. They were of nearly uniform size, six or eight inches long, including the young growth of the season and a short piece of last year's wood, with one or two bunches of the nearly ripe fruit.

After a gale in the early fall, the ground under the white elms is sometimes covered with leafy branches of about the same size, which separate by a joint at the site of a former winter bud, like the so-called brittle branches of poplars and willows, which they also resemble in being a sort of natural cuttings, serving in part for propagation.¹ In the present instance, however, the ends of the twigs did not show the smooth surface of those which fall naturally; and, as there was no indication of the work of a pruner, I turned my attention to the top of the tree, where it was directed by a twig falling just as I looked up. Following its course, I saw a squirrel, comfortably seated on one of the upper branches, busily at work on the fruit of a second twig, which was soon dropped for another. No less than five were broken off in a single minute; and, while I watched, the falling twigs averaged one a minute. They were dexterously snapped off just below the fruit-cluster, a bite or two often helping in the operation. The seed was removed from each of the small samaras by a single adroit cut on one side; and, long before the rifled branch had reached the ground, another was undergoing the same fate. The dinner of this one squirrel

¹ Frank devotes a few pages of his *Krankheiten der pflanzen* (pp. 34, 35) to this spontaneous pruning, which he considers a means of removing weakly twigs, after their vegetative period is ended. Its occurrence is mentioned as especially noticeable in *Taxodium*, *Quercus*, *Populus*, and *Salix*, but not by any means confined to these genera.