

add the matter necessary to bring his work up to date in science, within square brackets (as in Stephen's edition of "Blackstone's Commentaries"), or as notes, or even as an appendix, the whole work to be in the hands of an efficient committee. The proposition was very cordially received, and I should like to hear what English men of science think of the matter. The book is of the freshest, brightest nature; even as a small boy I delighted in it; and my own idea is that de Saussure, though necessarily behind the giant strides of modern knowledge, made so very few mistakes that re-publication would not have the same dangers for his reputation as it might for that of a mere mediocrity.

MARSHALL HALL

Vernex-Montreux, Canton Vaud, Switzerland, August 19

"Report of an Unusual Phenomenon Observed at Sea"

I CAN supply a second instance of the "unusual phenomenon observed at sea," communicated by the Hydrographer of the Navy to NATURE, vol. xxi. p. 291.

One night in April, 1875 (I cannot give the exact date, as my notes were lost in the ship) H.M.S. *Bulldog* was lying becalmed in a glassy sea off a point of land a few miles north of Vera Cruz, when a line of light appeared along the northern horizon, and unaccompanied by the least breath of wind, swept towards and past the ship, in a series of swift luminous pulsations, precisely similar to those described by Mr. Pringle. Acting on the old sea formula, "observed a phenomenon, caught a bucketful," we dipped up some of the water, and found noctiluca and crustaceans in it. These may have supplied the luminosity, but if so, the exceedingly swift-travelling cause of their stimulation would still remain unaccounted for.

A squall accompanied by incessant thunder and lightning overtook the ship the same night.

EDWARD L. MOSS

Rathgar, Dublin, August 19

Boring Molluscs

THE following extract from Prof. Joseph Leidy's paper on "Vertebrate Remains, chiefly from the Phosphate Beds of South Carolina," which appeared in NATURE, vol. xx. p. 354, will serve in aid of the solution of the still open question, By what means do the boring molluscs penetrate hard rocks?—"The fossils mainly consist of the harder parts of the skeleton and of teeth, usually more or less water-worn, indicating shallow seas and an active surf to which they were exposed. Many of them exhibit the drilling effects of boring molluscs, especially those which are supposed to have been derived from the tertiary marl rock, the operation of drilling apparently having been performed both before and during the time the fossils were imbedded in the rock. Only enamel, or the enamel-like dentinal layer such as is found investing the crown of the teeth of sharks, appears to have been a protection against the drilling power of the borers."

Were the burrows produced by the solvent action of an acid, there is no reason why the enamel should have arrested the solvent rather than the dentine, although it might yield more slowly to it; but its refractory behaviour under friction accounts for the Pholades and Terebines being nonplused; while their distance from fruitless efforts affords an instructive example of pure *instinctive* action, *i.e.*, reflex action "the prompting to which is given by sensations."

PAUL HENRY STOKOE

Beddington Park

Intellect in Brutes

A CORRESPONDENT of yours tells a tale (NATURE, vol. xx. p. 338) about a cat ringing a bell to be let in. Without any wish of "topping" this tale, I think the following will go far to demonstrate the existence of a thinking power in the brute brain, if indeed that fact is ever doubted:—

Some relatives of mine living in Sussex owned a very intelligent dog of somewhat doubtful breed, having, however, a decided touch of the French poodle in his composition. In addition to this animal they also had a favourite cat. For some time they were bothered in the way your correspondent describes by runaway knocks, instead of rings, as in his case; however, they discovered that the cat had learnt to stand on her hind legs and reach the knocker which was low on the door, and to knock distinct and separate double knocks until she was admitted. This in itself was curious, but a short time after they discovered this fact they discovered another still more curious. They were in the habit of turning the dog

out every evening for an airing. It invariably happened that if the cat was out of the house at the same time, that a short time after the dog was turned out they would hear a knock at the door. On its being opened both animals would be found outside and would immediately come in, the dog always allowing the cat to precede him. There seems to be no doubt that the dog finding out that the cat could obtain entrance was in the habit of searching for her when he wanted to come in, and either waiting till she was ready to knock at the door, or of inducing her to do it to please him. I can myself vouch for the above facts.

W. H. KESTEVEN

Holloway, August 13

MR. LAYARD's letter mentioning the bell-ringing cat leads me to send the following account of a wise old Scotch collie with which I was personally acquainted. Toby, belonging to my friend Mr. T. F. Hancock, formerly of Tyes Place, Staplefield, Sussex, was passionately fond of his vocation, but at the same time made much of in the parlour. On one occasion, while lying in front of the fire in the dining-room, he heard sheep going by the house along the farm-road. He ran to the window-seat and then to the door, at the same time looking imploringly at my friend's sisters, as if to beg them to let him out. This, however, they declined to do, and after one or two journeys between window and door, he ran to the long, old-fashioned bell-pull, rang the bell, stood at the door, and bolted out and round into the kitchen as soon as the servant appeared.

After this Toby was constantly employed during meals to ring the bell, and I have myself often made him perform the operation, which was always accompanied by a good deal of barking. My friend has a more than life-sized painting of this wise dog, painted by the late Charles Hancock, the animal-painter.

One more instance of reasoning I will relate. A few months ago my wife and I were bathing a cocker dog in the stream flowing through the grounds of St. Helen's, Cockermouth. We threw a croquet-ball into deep water, and the dog was to bring it to shore. But the ball was rather large for the size of her mouth, and as often as she snapped at it the ball glided away. After vainly endeavouring to grip the ball, we watched her suddenly give over, and begin pawing it with her fore-feet until she brought it into shallow water, when she easily made the capture, and brought the ball to the bank. The same was repeated several times. It is unnecessary to say that this was not the result of teaching.

J. CLIFTON WARD

Keswick, August 14

As your pages have for some time drawn attention to such inquiries, I wish to ask if any one ever saw a favourite dog, or other animal, stop to gaze at a rainbow? We have never heard of such a case; but if ever encountered a record in your pages is invited.

BENJ. ALVORD

Washington, August 7

CONTENTS

	PAGE
THE BRITISH ASSOCIATION AT SHEFFIELD	405
Section A—Mathematical and Physical—Opening Address by G. Johnstone Stoney, M.A., F.R.S., Secretary to the Queen's University in Ireland	407
Section D—Biology—Department of Anatomy and Physiology—Address by P. H. Pye-Smith, B.A., M.D., Vice-President of the Section	408
Department of Anthropology—Address by Edward B. Tylor, D.C.L., F.R.S.	413
Section G—Mechanical Science—Opening Address by J. Robinson, Pres. Inst. Mech. Eng., President of the Section	417
ON RADIANT MATTER. By WILLIAM CROOKES, F.R.S. (<i>With Illustrations</i>)	419
NOTES	423
OUR ASTRONOMICAL COLUMN:—	
Dr. Johann Lamont	425
The Satellites of Mars	425
GEOGRAPHICAL NOTES	425
LETTERS TO THE EDITOR:—	
How did Eozoon Originate, and is Graphite a Proof of Organic Beings in the Laurentian Period?—OTTO KUNTZE	425
Unobserved Impressions.—C. J. MONRO	426
Insect Swarms.—J. CLARKE HAWKSHAW	426
Animal Rights.—EDWARD B. NICHOLSON; GEORGE J. ROMANES, F.R.S.	427
Alpine Clubs.—Capt. MARSHALL HALL	427
"Report of an Unusual Phenomenon Observed at Sea."—EDWARD L. MOSS	428
Boring Molluscs.—PAUL HENRY STOKOE	428
Intellect in Brutes.—Dr. W. H. KESTEVEN; Rev. J. CLIFTON WARD; BENJ. ALVORD	428