

Hawksbourne, femur, and tibia with metatarsals and a distal phalanx, and various other vertebrae, teeth and phalanges. The jaw of a very young *Megalosaurus* which evidently perished very shortly after its escape from the egg. The tibia, supposed scapula, and various other bones and teeth of *Megalosaurus*, the ribs, vertebrae, and teeth of *Hylaeosaurus*. The jaw and other remains of a young *Suchosaurus cultridens* not long escaped from the shell, and teeth of *Suchosaurus*, a fine vertebrae of Streptospondylia type found with the "Great Horsham Iguanodon," and a femur of a young crocodile. The muzzle and portions of jaws, teeth, vertebrae, scutes, and various other bones of *Goniopholis crassidens*. This specimen shows the succession of three teeth. This specimen was borrowed in 1842 by a well-known palaeontologist for the purpose of illustration and description. Three artists were employed, who executed five quarto plates of the various portions, but they have never yet been published. Seventeen specimens have not been returned. A younger and very beautiful specimen of *Goniopholis crassidens* in its matrix of stone is missing from this collection. It was borrowed shortly after the above specimen and lithographed at once. It has unfortunately made its escape from custody. It is clear from the specimens shown that the armour of *Goniopholis* was far more perfect than that of any other living or extinct crocodilian. The toothed and imbricated scutes were in connection with others of a hexagonal or pentagonal shape, which were suturedly united. The abdominal scutes overlapped each other on one side. Besides these there are several bones of Pterodactyl, the vertebrae, ribs and teeth of Plesiosaurus, a fine jaw of a beaver, various pubic and tympanic bones, and the pubic bone of a saurian described by Dr. Mantell, bones of turtles and many other bones, too numerous to mention, and some of most gigantic size, and in a wonderful state of preservation. This collection is the property of Mr. Holmes, who is also the discoverer of them.

Many of the bones are altogether unknown, and their inspection may throw some light on the kind of animals to which they belong.

THOMAS WM. COWAN

Horsham, Jan. 5

Earthquake in Argyllshire

I BEG to forward to you a letter from the principal light-keeper at Dhu Heartach Lighthouse, addressed to Mr. Cuningham, Secretary to the Board of Northern Lighthouses.

The Dhu Heartach is a trap rock about fifteen miles to the W.S.W. of Iona, in Argyllshire, which is the nearest land. It is 220 feet long and about 30 feet high, the tower, which is of granite, being raised to the height of 130 feet above the sea. The rock is everywhere surrounded by deep water, and is of an elliptical form. During the erection of the tower fourteen stones, each of two tons, which had been fixed in the tower by joggles and portland cement at the level of 37 feet above high water, were torn out and swept off the rock into deep water.

Although the tower is much subject to impact from the waves, in spite of its height above the sea, yet neither my brother nor I have any doubt that the light-keepers are right in tracing the shock to an earthquake. Perhaps some of your readers may have experienced the shock in other places.

Edinburgh, Jan. 16

THOMAS STEVENSON

"Dhu Heartach Lighthouse, Jan. 7, 1874

"Sir,—I beg leave to inform you of the following rare occurrence:—On the evening of the 6th inst. at 8.13 p.m. (local time), Mr. Leith and I were sitting in the kitchen, when we heard a rumbling noise, followed by a tremulous motion, which lasted about two seconds. On going to the light-room, Mr. McAllister (who was on watch at the time) states that the noise resembled the booming of a cannon, and the tremulous motion was very apparent. A fresh gale from W.S.W. was blowing at the time, but there was no sea striking the rock to cause the concussion; in fact there was less sea than had been for some days previous. When a heavy sea strikes the tower, it has quite a different effect, and cannot be mistaken for anything else. There was neither thunder nor lightning at the time; barometer steady at 29.06; thermometer 46°; weather hazy.

"I can offer no suggestion as to the cause, unless it proceeded from a slight shock of earthquake: the rumbling noise and tremulous motion indicated such. One thing we are all confident of, it was not from a sea striking the rock. I have no wish to be at all sensational, but I have thought it right to send you the above details, as the same may have been felt in other parts of the country, and this may tend to corroborate it.

(Signed)

"JAMES EWING

"To the Secretary, Northern Lighthouse Office, Edinburgh."

Telegraphing Extraordinary

THERE appears to have been a misprint in your article "Telegraphing Extraordinary (Jan. 15).

It is there stated that the speed of the automatic instrument is but 200 letters a minute. This speed can be reached by *hand-signalling*, a very usual speed being 170 letters; and perhaps the writer intended to say that 200 letters, or 40 words, was the utmost limit of *un-automatic* service, which would be correct.

Post Office, Jan. 10

R. S. CULLEY

[In contrasting the work obtained out of the Wheatstone "high speed" automatic service in use by the General Post Office in this country with that of the new American instrument, by a slip of the pen the word "letters" was substituted for "words;" but in giving 200 words as the speed over a circuit of similar length to that between Washington and New York, a maximum under most favourable circumstances of insulation of the wires was recorded.]

Practically the average working speed obtained on a circuit of from 300 to 400 miles in length, by the Wheatstone, does not exceed 90 words or about 450 letters per minute, and with the Morse about 25 words, or 130 letters. On circuits between 200 and 300 miles the Wheatstone Automatic Service may be considered practically to average 120 words, or about 600 letters per minute. The American instrument transmits from 1,200 to 2,500 words a minute over a 300 mile circuit.—ED.]

Echo at Maidenhead

THERE is a railway-bridge over the Thames at Maidenhead which is said to be of a wider span than any other in England. While standing beneath this arch, we hear the echo of a sound repeated fourteen or fifteen times with tolerable distinctness. From the first to the fourteenth echo occupies about five seconds. The sounds become, of course, less and less loud, but, at the same time, the *pitch* of the note is raised, and has at last risen three quarters of a tone as indicated by a delicate instrument which gives quarter-tones. As I have not seen a similar fact noticed in any work on Sound, I shall be glad if any of your readers can give an explanation.

I may add, that this echo repeats distinctly the sound of the letter *s*, which is not usually the case.

J. P.

Belmont, Dartmouth

Flight of Birds

DURING the hurricane of October 6, 1873, I was residing on the west shore of Biscayne Bay, South Florida. In the early part of the gale, and while it was approaching its height, I noticed overhead innumerable "man-of-war hawks." They seemed to be "laying-to" (to use a nautical phrase), with but little motion of their wings; their heads were towards the wind, but instead of moving backwards they seemed to drift off in a line calculated to take them directly away from the storm-centre.

A short time ago I communicated these facts to the secretary of the Smithsonian Institution, who immediately informed me that what I had observed was new to him, and probably to the scientific world, and he advised me to send a copy of my letter to you. The learned secretary also wrote a flattering approval of my suggestion that the behaviour of the birds under consideration might be explained on the theory of "natural selection." I have forgotten the exact wording of my letter, but the idea embodied in it was that during a cyclone the "man-of-war hawk" profits by the experience of its ancestors, an experience which has become organised in the race, and which enables them to make the best possible adjustment to the circumstances which surround them.

Kasson, Minn., Dec. 28, 1873

HORACE B. PORTER

Vivisection

ASSUREDLY "the worthy and humane Huxley" stands in no pressing need of the testimonial of Mr. G. W. Cooke (*NATURE*, vol. ix. p. 202) to his worth and humanity. (By the way, I thought at first that the gratuity came from the generosity of Mr. E. W. Cooke, whose amusing vivisections, in his "Grotesque Animals," could offend nobody.) Still less does the practice of vivisection stand in need of such encouragement as is given to it in the leading article in *NATURE*, vol. ix. p. 177. With such a champion as Mr. Ray Lankester, there is no