

when it swerved, and came towards the ground in a different direction, alighting as though it were in possession of its natural powers, some hundreds of yards from the place whence it rose. On going to the spot where it had settled, it was found to be alive and crouching in the long grass. The keeper ran in and placed his hand on it, when the bird struggled and tried to get away; he killed it seeing that it was wounded. On examining the bird immediately after I found that it had been struck by two pellets of No. 6 shot, one of which had penetrated the pectoral muscles, but had not injured the cavity; the lungs and other viscera were uninjured. The other pellet had entered behind and below the left eyeball, and, passing forward, had emerged on the other side, passing above the upper mandible. The brain was uninjured, but the lower part of the left eyeball was cut and distended with blood. There was no other injury. No doubt the shock had confused the bird, and caused its strange flight, which, though upward, was very different in its character from that of ordinary towering where the lungs are perforated, and unconsciousness is the result of the circulation of non-aërated blood.

J. FAYRER

Meteors

PERMIT me to point out to Mr. J. M. Hayward (NATURE, Nov. 8, p. 30) that his observation of the large meteor of November 4 possesses no scientific value, inasmuch as he has omitted to mention the important features of its appearance. The time is given as "just now" (or November 4), and the broad path of fire which this fine meteor discharged upon its course must have been situated *somewhere* in the south-east, for your correspondent states he saw it "on turning to the south-east."

I had endeavoured to show in NATURE of the preceding week (Nov. 1, p. 6) that these delightfully vague forms of expression as applied to meteors are wholly inadequate, and, as such, cannot receive any attention at the hands of those who investigate these phenomena.

Had Mr. Hayward given us the essential details of his observation, it might have proved very valuable, for a large meteor (perhaps identical with the one he refers to) was observed at many places on the night of November 4. As recorded at Chelmsford, Bath, and Bristol the paths were:—

Time.	Mag.	From	To	Observer.
h. m.		δ	δ	
1883.				
Nov. 4...10 14...	= 9 ...	8 S. 20	355 S. 30	H. Corder, Chelmsford.
Nov. 4...10 12...6 x 7...	33 S. 6 ...	9 S. 23	J. L. Stothert, Bath.	
Nov. 4...10 12... > 7...	36 N. 13...	16 S. 19	W. F. Denning, Bristol.	

The several estimates of brilliancy are very discordant, but the time and paths agree so closely that there is little doubt the observations refer to the same meteor.

Another fine meteor was seen here on October 26 at 9h. 17m. It gave a succession of four lightning-like flashes. Path from α 288 δ 56° + to α 333° δ 59° +. This was not the only fireball visible that night, for I see by NATURE (November 8, p. 44) that "On October 26 at about 7 p.m. a splendid meteor was seen in the district of Hernösand, Sweden." It appeared "with a blinding white lustre in the zenith and travelling very rapidly down to the horizon." In this case again we have to deplore the extremely vague manner of the description. Had the precise direction of flight been given, it would have been interesting to determine whether this fireball belonged to the same stream as the equally fine one recorded at Bristol on the same night.

W. F. DENNING
Bristol, November 10

THE meteors during October have been numerous, and the most of them proceeded from some point in Auriga. With the exception of about nine days of unfavourable weather, I have seen several meteors night and morning throughout October, but they were generally small and transient. I have counted fifty-two from 10 p.m. of October 3 to 4.30 a.m. of the 4th, many of them large and of several seconds' duration. The largest of these passed slowly from the first bright star on the left of Capella, in Auriga, to a point about 1° below α Cygni. The smallest of them blinked rapidly before the eye in the zenith over the Milky Way, which, this night, was the principal theatre of their display. From 3.30 to 4.30 a.m. I counted forty of the fifty-

two meteors. From 1 a.m. to 4 of October 8 I observed very brilliant meteors. One at 2.25 a.m. darted from about 1° above Capella and disappeared at a point $\frac{1}{2}$ ° from Phad in the Plough, without exploding and without leaving any trace of light behind. It was as large as Venus. At 2.40 a.m. a very large and brilliant meteor dashed out from a point midway between Capella and the first bright star to its right in Auriga, and sped along above the Pleiades and Aries through the Square of Pegasus, and exploded 3° beyond it, leaving no fire in its wake. October 15, 11.38 p.m., a very unusual meteor sailed slowly from β Ceti to within 1° of Betelgeux, in the right shoulder of Orion. After travelling two-thirds of its journey, it exploded into four, three of which formed the head of an arrow, and the fourth adorned its tail, all the four sending out bright nebulous light behind them. At 2.50 a.m., October 26, a large ball of fire (bolide), apparently seven inches in diameter, illumined the heavens with great brilliancy as it descended from about midway between the third and fourth bright stars on the left of Capella, exploding twice during the last half of its journey, and disappearing just as it reached the moon. It had no tail. It was seen by some of the Paisley night police, and one of them was frightened that it would dash the moon out of the heavens. This bolide had no detonation in either of its two explosions, and the last of it was only about the size of Jupiter. One policeman describes it as a large fiery ball of the size of the full moon, but this is an exaggeration. The extraordinary meteor of October 15, after its explosion, was described by an observer as a well-formed arrow of flaming fire, followed by a ball of fire with a tail. To me it appeared to resemble the head and body of a fish, as well as the form of an arrow.

DONALD CAMERON

Mossvale, Paisley, November 6

ON the evening of Saturday last, at 10.12 p.m., a remarkable meteorite was observed close to Trinity College, Glenalmond, in Perthshire. It presented the appearance of a bright spherical ball, which moved horizontally from east-north-east to west-south-west at a height roughly estimated at 300 feet. When it began to curve downwards it disappeared from view, but it left behind it a luminous trail of great brilliancy, which was seen for fully forty seconds, its brilliancy gradually diminishing till it entirely faded away.

W. BESANT LOWE

Trinity College, Glenalmond, Perth, November 12

"Anatomy for Artists"

I AM quite unable to do as your correspondent "An Art Student" suggests, for the second edition of the above-named book has been just issued. I may add, however, that the reasons which led me deliberately to adopt the plan alluded to in regard to the illustrations of the bones still remain, in my opinion, sound, and I trust that the majority of my readers of the past, present, and future editions have not been and will not be "discouraged" by the effort which I desire them, for their own sakes as students, to make.

JOHN MARSHALL

10, Savile Row, W., November 12

P.S.—It seems that I ought to have two "letters of reference" attached to myself, for I am not "Dr." but "Mr." Marshall.

Earthquake

NATURE on October 25 contained notices of shocks of earthquake which were felt at a quarter to one o'clock on the night of October 19 (11h. 20m. Greenwich M.T.) at Cadiz and other places on the coast of Andalusia. I have information that about 17h. 45m. later these shocks, which were travelling from east to west, had apparently reached Bermudas. In a letter just received from ex-Chief Justice Darrell, dated October 22, he remarks:—"A very unusual event occurred here on the 20th of this month, in a shock of an earthquake, which however was slight; no life was lost, nor serious damage done to buildings; but the shock, which lasted less than a minute, at about a quarter past one p.m. was universally and unmistakably felt throughout the colony. It is said to be only the third time that any earthquake has been experienced in Bermuda in the last forty years." A quarter past one in Bermuda would be about four and a half minutes past five at Greenwich, requiring, if the shocks originated in the same wave, a rate of transmission of about 158 geographi-