of Rafinesque probated in November of that year.

R. ELLSWORTH CALL.

BROOKLYN, N. Y., March 14, 1901.

LUNAR HALO.

TO THE EDITOR OF SCIENCE: On February 25, 1901, there was visible in this locality a lunar halo of rather peculiar form. After vain attempts to find an explanation of it the writer asks the privilege of an appeal to the readers of SCIENCE. This phenomenon consisted of an elliptical ring around the moon with axes apparently about six degrees and nine degrees respectively. The principal axis of the ellipse was vertical while the terminator of light on the moon's surface made an angle of about 45 degrees with the horizon. The moon was about half way down in the southwest and half full. A southeast breeze was blowing and very thin fleecy clouds could be seen passing over the face of the moon. The ring persisted for fifteen minutes or more.

The peculiar orientation of the terminator and major axis is the difficult part to explain. One might expect an elliptical though perhaps ill-defined ring from an elongated source of light, but why should the major axis be inclined to the terminator?

C. M. BROOMALL.

MEDIA, PA., March 23, 1901.

SHORTER ARTICLES.

THE LARGEST KNOWN DINOSAUR.

THE Field Columbian Museum paleontological expedition of the past summer was fortunate in securing a number of Dinosaur bones belonging to an animal unique both in size and in proportions. These bones consist of a femur, a humerus, a coracoid, the sacrum, an ilium, a series of seven presacral vertebræ, two caudal vertebræ, and a number of ribs. Part of this collection has been placed on exhibition and the remainder will follow from time to time as the work of preparation proceeds.

The most striking characteristic of this animal, so far developed, is the relative length of the front and hind legs. While the humerus of *Brontosaurus excelsus* Marsh is a little more than two-thirds as long as the femur, the humerus of the individual in question is decidedly the longer bone of the two.

The femur is a stout bone with expanded condyles and a head not constricted from the shaft. The specimen is somewhat crushed antero-posteriorly, but otherwise in a fine state of preservation. Its greatest length parallel to the axis of the shaft is 80 inches (2,003 m.), which is six inches longer than the femur of Marsh's *Atlantosaurus*. The humerus is broad at the proximal end, but unusually slender in the shaft. It has suffered somewhat from weathering, so that the entire surface of the distal end has flaked away, leaving a firm chalcedony core. In this condition its length is equal to that of the femur; with the articular end complete it would probably exceed it by two or more inches. Its present length is greater by 23 inches than the longest humerus hitherto known to science.

The coracoid is broad and straight at the scapular articulation, but less massive than that of *Brontosaurus*. The sacrum is made up of four coossified vertebræ, having small lateral cavities in the centra. A complete rib, presumably from about the sixth presacral vertebræ, measures more than nine feet in length. Some of the thoracic ribs have a secondary tubercle, and also a foramen leading to a cavity in the shaft. However, these may not prove to be constant characteristics.

The similarity of the femur to that of *Atlantosaurus*, together with the presence of but four vertebræ in the sacrum, suggests that this animal may belong to that group. The writer does not feel justified in creating a new genus until the material shall have been sufficiently worked out to make an accurate determination possible. However, the evidence at hand is sufficent to show that we have here to do with an animal which differs radically from any well-known Dinosaur. The extraordinary length of the humerus, together with the size of the coracoid, suggests an animal whose shoulders would rise high above the pelvic region, giving the body something of a giraffe-like proportion. The relatively smaller size of the anterior caudal vertebræ indicates a lesser development of the tail than is common among the sauropod