

Siemens machine, and the spring which it works, are arranged on a walnut cross-piece. In addition, it is held by stretched ropes, which may be tightened at pleasure by tension, and which connect the four extremities of the framework with the upper and lower cross-pieces of the car. When rotating with great velocity, the vibrations are avoided by this method of attachment.

The use of such a machine in the car of a balloon is comparatively simple. When every thing has been prepared on the ground, there is nothing to do but to plunge a little copper fork into the mercury-cup of the commutator, and the screw begins to turn.

From fear of fire, and from the change of position, which affects the altitude of the balloon when once poised in the air, the operator must have no manual work to do: electricity alone supplies all the fundamental conditions of the aerostatic motor-force. After the winter, when favorable weather comes, the first electric balloon will again take its flight.

GASTON TISSANDIER.

A NEW AND STRANGE DINOSAUR.

PROFESSOR MARSH continues his studies of the Jurassic dinosaurs of America by giving, in the last number of the *American journal of science*, an account of a new family of Sauropoda founded upon the genus *Diplodocus*, which he places between the Atlantosauridae and the Morosauridae. The chevrons of the caudal vertebrae, which have both anterior and posterior branches, have suggested the name *Diplodocus*; and the ischia of the pelvic girdle are intermediate in form and position between the families heretofore recognized, the shaft being straight, and not twisted nor apically expanded.

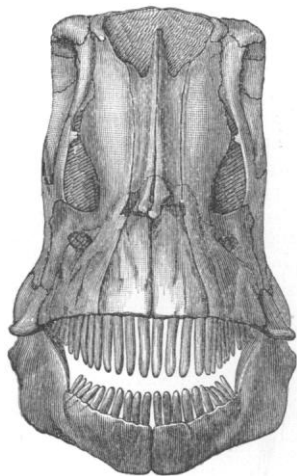


FIG. 2. — The same skull, front view.

But the best preserved portion is the skull, of which we reproduce Professor Marsh's excellent figures. It was of moderate size, the figures being one-

sixth the natural size, and showing clearly the characteristic features. It has two pairs of ante-orbital openings, the small front pair not having been seen before in dinosaurs. The brain inclines backward, and has a very large pituitary body, enclosed in a

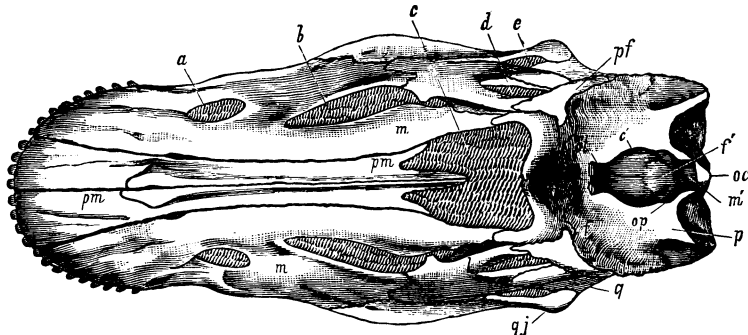


FIG. 3. — Skull and brain cast of the same, seen from above. *a*, aperture in maxillary; *b*, ante-orbital opening; *c*, nasal opening; *c'*, cerebral hemispheres; *d*, orbit; *e*, lower temporal fossa; *f*, frontal bone; *f'*, fontanelle; *m*, maxillary bone; *m'*, medulla; *n*, nasal opening; *oc*, occipital condyle; *ol*, olfactory lobes; *op*, optic lobe; *p*, parietal bone; *pf*, pre-frontal bone; *pm*, pre-maxillary bone; *q*, quadrate bone; *qj*, quadrato-jugal bone.

capacious fossa below the main brain-case, — a very different condition from that holding in the other families of Sauropoda. The size of the skull indicates an animal probably forty or fifty feet long: the weak dentition shows that it was herbivorous, and its food was probably such succulent vegetation as an aquatic life would enable it to procure.

In looking at these figures, and noting their strange resemblance to a horse's skull, one finds it hard at first to recall the fact that the nearest living allies of *Diplodocus* are the crocodiles.

THE FALSE PROPHET OF THE SUDAN.

THE religious movement in the Sudan has a special interest for ethnologists on account of its parallelism with the events by which the faith of Islam was originally propagated. A recent letter from Khartum informs us that Mohamed Ahmed, the Mahdi, was born at Dongola in the year 1260 of the hegira. His parents, Abdellahi and Amina, were poor, and had two older sons. From the age of seven he was taught in a Mussulman school to read, write, and commit to memory the Koran. At the age of twelve he knew the latter perfectly. In the same year his father died; but his brothers continued his education while he pursued studies of the Mussulman law, foreseeing eminence in store for him. After the death of his mother, having completed his studies, he repaired to the Isle of Aba on the White Nile, to be near his brothers, who were boat-builders. For nearly fifteen years he inhabited the isle, venerated as a holy man by all who knew him, before making claim to the title of Mahdi or Mussulman Messiah. He then wrote to all sheiks and grand dervishes of the region, that the prophet