length by ninety in breadth. It was also perceived in the island of Cyprus.

April 19.—Edward Herbert Bunbury, Esq., A.M., Fellow of Trinity College, Cambridge; Henry Boase, M.D., of Burton Crescent; and Thomas Jervis, Esq., Hon. East India Company's Engineers; were elected Fellows of this Society.

A paper was read, entitled "A description of the Cranium of the *Toxodon Platensis*, a gigantic extinct mammiferous species, referrible by its dentition to the *Rodentia*, but with affinities to the *Pachydermata* and the *Herbivorous Cetacea*;" by Richard Owen, Esq., F.R.S., Hunterian Professor of Anatomy to the Royal College of Surgeons.

The author premises his anatomical description of the present fossil, by an abstract from Mr. Darwin's account of the geological structure of the district in which the cranium was found, from which it appears that it was imbedded in a whitish argillaceous earth, forming part of the banks of the Sarandis, a small stream entering the Rio Negro, and about 120 miles distant to the north-west of Monte Video.

The foundation of the whole surrounding country is granitic, but covered, often to a considerable thickness, by a reddish argillaceous soil, containing small calcareous concretions.

The cranium in question equals in size that of the hippopotamus, measuring two feet four inches in length, and one foot four inches in extreme breadth.

The form of the skull is elongate, depressed, and chiefly remarkable for the strength and wide expanse of the zygomatic arches, and the aspect of the occipital foramen and occipital region of the skull, which slopes from below upwards and forwards. The maxillary portion of the skull is compressed laterally, narrow, with large intermaxillary bones, slightly dilated at their extremity.

The teeth consist of molars and incisors. The latter are four in number in the upper jaw, the two middle ones very small, the two external ones very large, curved, and with their sockets extending backwards in an arched direction, through the intermaxillary bones to the maxillary, and terminating, without diminishing in size, immediately anterior to the grinding teeth, where the large persistent pulps of these incisors were lodged. In form and relative size these teeth must have resembled the *dentes scalprarii* of the *Rodentia*.

The molar teeth no less present a close approximation in their form and structure to the molar teeth of the herbivorous rodents; as is demonstrated in the detailed descriptions of one of these teeth found by Mr. Darwin in another locality, but belonging to the same species of *Toxodon*, and to an individual of the same size as that to which the cranium here described belonged; and of a portion of another molar lodged in one of the sockets of the same cranium. The molar teeth are seven in number on each side of the upper jaw, and from the form of the sockets appear to have corresponded with each other in structure.

After this description of the teeth, the form, proportions, disposition and connections of the different bones of the cranium are pointed out; and the structure of the osseous cavities subservient to the organ of sense is adverted to, and deductions as to the aquatic habits of the Toxodon are founded on these observations.

So far as regards the form and position of the external aperture of the bony nostrils, and of the occipital condyles, and the slope of the plane of the occipital region of the skull, the same arguments might be advanced for referring the *Toxodon* to the mammiferous group containing the Dugong, as have been recently urged in reference to the *Deinotherium*, but the existence of air-cells or sinuses in the superior parietes of the cranium in the *Toxodon*, show that the cranial characters above alluded to, are not conclusive as to the cetaceous nature of an extinct mammal.

The general conclusions respecting the affinities which the *Toxodon* bears to existing orders of mammalia, so far as opinions can be formed from the portion of the skeleton preserved, are summed up by the author as follows:

So far as dental characters have weight, the *Toxodon* must be referred to the rodent order; but from this order it deviates in the relative position of the supernumerary incisors, and in the number and direction of the curvature of the molars.

It again deviates in the transverse direction of the joint of the lower jaw, and in the relative position of the glenoid cavities and zygomatic arches. In the aspect of the plane of the occipital foramen, and occipital region of the skull, in the form and position of the occipital condyles,—the aspect of the plane of the bony aperture of the nostrils, and in the thickness and texture of the osseous parietes of the skull, the *Toxodon* deviates both from the *Rodentia* and existing *Pachydermata*, and manifests an affinity to the *Dinotherium* and the *Cetaceous* order.

The author observes, however, that the development of the nasal cavity and the presence of frontal sinuses, render it extremely improbable that the habits of the *Toxodon* were so exclusively aquatic as would result from the total absence of hinder extremities, and concludes, therefore, that it is a quadruped, and not a Cetacean; and that it manifests an additional step in the gradation of mammiferous forms leading from the *Rodentia*, through the *Pachydermata* to the *Cetacea;* a gradation of which the water-hog of South America (*Hydrochærus Capybara*) already indicates the commencement amongst existing *Rodentia*, of which order it is interesting to observe this species is the largest, while at the same time it is peculiar to the continent in which the remains of the gigantic *Toxodon* were discovered.

May 3.—The Rev. Baden Powell, A.M., F.R.S., Savilian Professor of Geometry in the University of Oxford, was elected a Fellow of this Society.

A paper was first read, entitled "A Sketch of the Deposits contain-