

The Pterosaur Database

This is a representation of a popular text which was transcribed in 2002 subject to the constraints of British Copyright law. This paper is provided for information and may not be copied or published without permission.

Figurier L, 1891, The World Before the Deluge, Cassell and Company

This is a short extract on the pterosaurs taken from this leather bound text on fossils of the different geological periods. The pterosaurs appear in the chapter “Jurassic Period” with the page heading “The Lias” on pages 233-237. The text is translated from the French.

Another strange inhabitant of the ancient world, the Pterodactylus (from πτερόν, a wing, and δάκτυλος, a finger), discovered in 1828, made Cuvier pronounce it to be incontestably the most extraordinary of all the extinct animals which had come under his consideration; and such as, if we saw them restored to life, would appear most strange and dissimilar to anything that now exists. In size and general form, and in the disposition of character of its wings, the fossil genus, according to Cuvier, somewhat resembles the modern bats and vampires, but had its beak elongated like a bill of a woodcock, and armed with teeth like the snout of a crocodile; its vertebrae, ribs, pelvis, legs, and feet resemble those of a lizard; its three anterior fingers terminate in long hooked claws like that of the fore-finger of the bat; and over its body was a covering, neither composed of feathers as in the bird, nor hair as in the bat, but probably a naked skin; in short, it was a monster resembling nothing that has ever been heard of upon earth, except the dragon of romance and heraldry. Moreover, it was probably noctivagous and insectivorous, and in both these points resembled the bat; but differed in having the most important bones in its body constructed after the manner of those of reptiles.



Fig. 105. – Pterodactylus crassirostris.

“Thus, like Milton’s fiend, all-qualified for all services and all elements, the creature was a fit companion for the kindred reptiles that swarmed in the seas, or crawled on the shores, of a turbulent planet:

“The Fiend,
O’er bog, or steep, through strait, rough, dense, or rare,
With head, hands, wings, or feet, pursues his way,
And sinks, or swims, or wades, or creeps, or flies.
Paradise Lost, Book II., line 947.

“With flocks of such creatures flying in the air, and shoals of Ichthyosauri and Plesiosauri swarming in the oceans, and gigantic Crocodiles and Tortoises crawling on the shores of Primæval lakes and rivers – air, sea, and land must have been strangely tenanted in these early periods of our infant world.”¹



Fig. 106. – Pterodactylus brevirostris.

The strange structure of this animal gave rise to most contradictory opinions from the earlier naturalists. One supposed it to be a bird, another a bat, and others a flying reptile. Cuvier was the first to detect the truth, and to prove, from its organisation, that the animal was a Surian. “behold,” he says, “an animal which in its osteology, from its teeth to the end of its claws, presents all the characters of the Surians; nor can we doubt that their characteristics existed in its integuments and softer parts, in its scales, its circulation, its generative organs: it was at the same time provided with the means of flight; but when stationary it could not have made much use of its anterior extremities, even if it did not keep them always folded as birds fold their wings. It might, it is true, use its small anterior fingers to suspend itself from the branches of trees; but when at rest it must have been generally on its hind feet, like the birds again, and like them it must have carried its neck half-erect and curved backwards, so that its enormous head should not disturb its equilibrium.” This diversity of opinion need not very much surprise us after all, for, with the body and tail of an ordinary mammal, it had the form of a bird in its head and the length of its neck, of the bat in the structure and proportion of its wings, and of the reptile in its smallness of its head and in its beak, armed with at least sixty equally sharp-pointed teeth, differing little in form and size.

Zoologists have described thirteen distinct species, varying in size from a snipe to a cormorant. Of these, *P. crassirostris* (Fig. 105) and *P. brevisrostris* (Fig. 106), were both discovered in the Lias of Solenhofen. *P. macronyx* belongs to the Lias of Lyme Regis.

The Pterodactyle was, then, a reptile provided with wings somewhat resembling those of a bat, and formed, as in the Mammal, of a membrane which connected the body with the excessively elongated phalanges of the fourth finger, which served to expand the membrane that answered the purpose of a wing. The Pterodactyle of the Liassic period was, as we have seen, an animal of small size; the largest species in the older Lias beds did not exceed ten or twelve inches in length, or the size of a raven, while the later forms found fossil in the Greensand and Wealden beds must have measured more than sixteen feet between the tips of the expanded wings. On the other hand, its head was of enormous dimensions compared with the rest of the body. We cannot admit, therefore, that this animal could really fly, and like a bird, beat the air. The membranous appendages which connected its long finger with its body was rather like a parachute than a wing. It served to moderate the velocity of its descent when it dropped on its prey from a height. Essentially a climber, it could only raise itself by climbing up tall trees or rocks, after the manner of lizards, and throw itself thence to the ground, or upon the lower branches, by making use of its natural parachute.

The ordinary position of the Pterodactyle was probably upon its two hind feet, the lower extremities being adapted for standing and moving on the ground, after the manner of birds. Habitually, perhaps it perched in trees; it could creep, or climb along rocks and cliffs, or suspend itself from trees, with the assistance of its claws and feet, after the manner of existing Bats. It is even probable, Dr. Buckland thought, that it had the power of swimming and diving, so common to reptiles, and possessed by the Vampire Bat of the island of Bonin. It is believed that the smaller species lived upon insects and the larger preyed upon fishes, upon which it could throw itself like the sea-gull.

The most startling feature in the organisation of this animal is the strange combination of two powerful wings to the body of a reptile. The imagination of the poets long dwelt on such a combination; the *Dragon* was a creation of their fancy, and it played a great part in fable and in pagan mythology. The Dragon, or flying reptile, breathing fire and poisoning the air with its fiery breath, had, according to the fable, disputed with man the possession of the earth. Gods and demigods claimed, among their most famous exploits the glory of having vanquished this powerful redoubtable monster.

The text continues – pterosaurs are mentioned in the section on the “Middle Oolite” on pages 256 and 259.

Another reptile allied to the Pterodactyle lived in this epoch – the *Rhamphorhynchus*, distinguished from the Pterodactyle by its long tail. The imprints which this curious animal has left upon the sandstone of the period are impressions of the feet and the linear furrow made by its tail. Like the Pterodactyle, the *Rhamphorhynchus*, which was about the size of a crow, could not precisely fly, but aided by the wing (a sort of natural parachute formed by the membrane connecting the fingers with the body), it could throw itself from a height upon its prey. Fig. 119 represents a restoration of this animal. The footprints in the soil are an imitation of those which accompany the remains of the *Rhamphorhynchus* in the Oolitic rocks, and they show the imprints of the anterior and posterior feet, and also the marks made by the tail. This tail was very long, far surpassing in length the rest of the vertebral column, and consisting of more than thirty vertebrae – which were at first short, but rapidly elongated, retaining their length for a considerable distance, and then gradually diminishing in size.

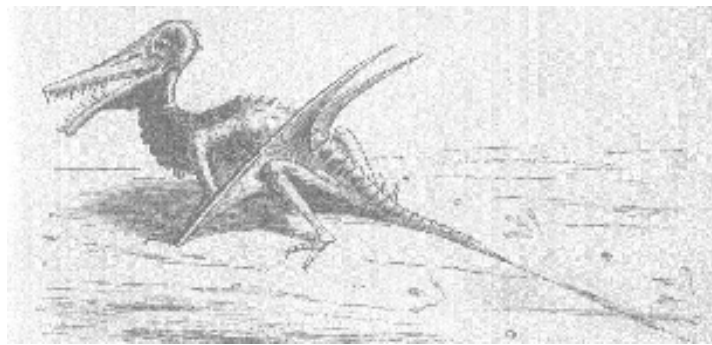


Fig. 119. – *Rhamphorhynchus* restored. One-quarter natural size.

Footnotes.

1. Professor Buckland on the Pterodactylus. “Trans. Geol. Soc.,” 2nd Series, vol. iii., p. 217.