

other feathered giants of New Zealand were discovered. Their dimensions have at least destroyed the force of this particular objection. The magnitude of the impressions of the feet of a heavy animal, which has walked on soft mud, increases for some distance below the surface originally trodden upon. In order, therefore, to guard against exaggeration, the casts rather than the mould are relied on. These casts show that some of the fossil bipeds had feet four times as large as the ostrich, but not perhaps much larger than the *Dinornis*.

The eggs of another gigantic bird, called *Æpiornis*, which has probably been exterminated by man, have recently been discovered in an alluvial deposit in Madagascar. The egg has six times the capacity of that of the ostrich; but, judging from the large size of the egg of the *Apterix*, Professor Owen does not believe that the *Æpiornis* exceeded, if indeed it equalled, the *Dinornis* in stature.

Among the supposed bipedal tracks, a single distinct example only has been observed of feet in which there are four toes directed forwards. In this case a series of four footprints is seen, each 22 inches long and 12 wide, with joints much resembling those in the toes of birds. Professor Agassiz has suggested that it might have belonged to a gigantic bipedal batrachian. Other naturalists have called our attention to the fact, that some quadrupeds, when walking, place the hind foot so precisely on the spot just quitted by the fore foot, as to produce a single line of imprints, like those of a biped; and Mr. Waterhouse Hawkins has remarked that certain species of frogs and lizards in Australia have the two outer toes so slightly developed and so much raised that they might leave tridactylous footprints on mud and sand. Another osteologist, Dr. Leidy, in the United States, observed to me that the pterodactyl was a bipedal reptile approaching the bird so nearly in the structure and shape of its wing-bones and tibiae, that some of these last, obtained from the Chalk and Wealden in England, had been mistaken by the highest authorities for true birds' bones. May not the foot, therefore, of a pterodactyl have equally resembled that of a bird? Be this as it may, the greater number of the American impressions agree so precisely in form and size with the footmarks of known living birds, especially with those of waders, that we shall act most in accordance with known analogies by referring most of them at present to feathered, rather than to featherless bipeds.

No bones have as yet been met with, whether of pterodactyl or bird, in the rocks of the Connecticut, but there are numerous coprolites; and an ingenious argument has been derived by Dr. Dana from the analysis of these bodies, and the proportion they contain of uric acid, phosphate of lime, carbonate of lime, and organic matter, to show that, like guano, they are the droppings of birds, rather than of reptiles.

Some of the quadrupedal footprints which accompany those of birds are analogous to European *Cheirotheria*, and with a similar disproportion between the hind and fore feet. Others resemble that remarkable reptile, the *Rhyncosaurus* of the English Trias, a creature having some