No. XXXIII.—EXTINCT BIRDS. By R. H. TRAQUAIR, M.D., LL.D., F.R.S., Keeper of the Natural History Collections in the Museum of Science and Art, Edinburgh.

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[ABSTRACT.]

THE lecturer observed that comparative anatomy showed that birds were more nearly allied to reptiles than to mammals, however striking the external differences between them might be. Hence the late Professor Huxley had included birds and reptiles in one common group—the Sauropsida. Evolutionists believed that birds had originated from reptiles, though it was not known from what order of reptiles they were descended. The resemblances between birds and the Pterodactyles, or winged reptiles of the Jurassic epoch, were merely adaptive, but some of the likewise extinct order of Dinosauria had certainly bird-like osteological peculiarities.

It was, however, interesting to know that the oldest known fossil bird—the Archæopteryx of the Upper Jurassic—was more reptile-like than any later bird, inasmuch as it had teeth in its jaws, a less specialised anterior extremity, and the caudal part of the vertebral column was elongated and tapering. The Archæopteryx formed one of the three great divisions into which birds were classed by Huxley—namely, the Saururæ, or lizard-tailed; the other two being the Ratitæ, or ostrich-like birds, and the Carinatae, which included the overwhelming majority of living species.

The Ratitæ comprised the Ostrich, the Emu, &c., running birds with degenerate wings, and consequently incapable of flight. Remains referred to Ratitæ have been found in Tertiary strata, but the most complete were those from the more recent accumulations, such as the *Æpiornis*, or Giant Bird, of Madagascar, eggs of which have been found measuring 14 inches in length; and the huge Moas of New Zealand, some of which (*Dinornis maxima*) attained a height of 12 feet. The carinate birds had their breast-bone keeled, to afford attachment to the powerful muscles of flight, though some were flightless, and others have even lost the keel on their breast-bone. Their remains first appeared in the Cretaceous rocks, and it was also

interesting to note that among these ancient carinates, two forms—*Hesperornis* and *Ichthyornis*—had teeth in the jaws, like *Archæopteryx*. Fragmentary remains of extinct species of the principal types of carinate birds were found in strata of Tertiary age, so that these must already have been differentiated before the end of the Cretaceous epoch.

Many birds had, however, become extinct in comparatively recent times, of which the most interesting were certain large flightless birds, which lived upon islands uninhabited by man, or by large or predaceous mammals, and whose wings, not being required for the protection of their lives by flight, evidently ceased in the course of long ages to be functional. They were quite adapted to their surroundings as they were, but on the arrival of man with his domestic animals, they succumbed and disappeared. Such were the Dodo of Mauritius and the Solitaire of Rodriguez. Some birds had lost their power of flight, not by disusing their wings, but by using them for another purpose—namely, as paddles for swimming, as in the case of the Penguins and the Great Auk. The latter was now extinct, the last having been seen in 1844. Various birds living or breeding on islands have also become extinct in modern times, such as the Labrador Duck, the New Zealand Quail, the Hackled Pigeon of Mauritius, &c. In Great Britain some birds, as the Crane, Spoonbill, and Great Bustard, were now extinct as native breeding species, though stragglers might sometimes be found. Other British birds were threatened with extinction, such as the Great Skua, or “Bonxie,” and the Osprey.

In conclusion the lecturer urged the importance of the protection of our native birds which are in danger of extinction from one cause or another. Such Acts of Parliament as have already been passed for the purpose and were now in operation were having a wholesome effect in diminishing the destruction of our feathered friends, but it was to be hoped that still more would be done towards checking the wanton destruction of birds' nests that went on every season, and of the wanton shooting of sea-birds and water-birds on our coasts. There might be some species, such as the Rook, the Woodpigeon, and the Sparrow, whose undue multiplication it might be necessary to keep in check, but not to the verge of extinction, as in many ways these birds served a most useful end.