

under its own conditions of life; and if the nesting-instinct varies ever so little, when a bird is placed under new conditions, and the variations can be inherited, of which there can be little doubt—then natural selection in the course of ages might modify and perfect almost to any degree the nest of a bird in comparison with that of its progenitors in long past ages. Let me take one of the most extraordinary cases on record, and see how selection may possibly have acted; I refer to Mr. Gould's observation* on the Australian Megapodidæ. The *Talegalla lathamii* scrapes together a great pyramid, from two to four cart-loads in amount, of decaying vegetable matter; and in the middle it deposit its eggs. The eggs are hatched by the fermenting mass, the heat of which was estimated at 90° F., and the young birds scratch their way out of the mound. The accumulation propensity is so strong that a single unmated cock confined in Sydney annually collected an immense mass of vegetable matter. The *Leipoa ocellata* makes a pile forty-five feet in circumference and four feet in height, of leaves thickly covered with sand, and in the same way leaves its eggs to be hatched by the heat of fermentation. The *Megapodius tumulus* in the northern parts of Australia makes even a much larger mound, but apparently including less vegetable matter; and other species in the Malayan Archipelago are said to place their eggs in holes in the ground, where they are hatched by the heat of the sun alone. It is not so surprising that these birds should have lost the instinct of incubation, when the proper temperature is supplied either from fermentation or the sun, as that they should have been led to pile up beforehand a great heap of vegetable matter in order that it might ferment; for, however the fact may be explained, it is known that other birds will leave their eggs when the heat is sufficient for incubation, as in the case of the Fly-catcher which built its nest in Mr. Knight's hot-house.† Even the snake takes advantage of a hot-bed in which to lay its eggs; and what concerns us more, is that a common hen, according to Professor Fischer, "made use of the artificial heat of a hot-bed to hatch her eggs."‡ Again Réaumur, as well as Bonnet,

* *Birds of Australia, and Introduction to the Birds of Australia*, 1848, p. 82.

† Yarrell's *British Birds*, vol. i, p. 166.

‡ Alison, article "Instinct" in *Todd's Cyclop. of Anat. and Physiol.*, p. 21.