

all sorts of sounds, and yet that in a state of nature they never display these powers.*

As there is often much difficulty in imagining how an instinct could first have arisen, it may be worth while to give a few, out of many cases, of occasional and curious habits, which cannot be considered as regular instincts, but which might, according to our views, give rise to such. Thus, several cases are on record† of insects which naturally have very different habits having been hatched within the bodies of men—a most remarkable fact considering the temperature to which they have been exposed, and which may explain the origin of the instinct of the Gad-fly or *Cæstrus*. We can see how the closest association might be developed in Swallows, for Lamarck‡ saw a dozen of these birds aiding a pair, whose nest had been taken, so effectually that it was completed on the second day; and from the facts given by Macgillivray§ it is impossible to doubt that the ancient accounts are true of the Martins sometimes associating and entombing alive sparrows which have taken possession of one of their nests. It is well known that the Hive-bees which have been neglected “get a habit of pillaging from their more industrious neighbours,” and are then called corsairs; and Huber gives a far more remarkable case of some Hive-bees which took almost entire possession of the nest of a Humble-bee, and for three weeks the latter went on collecting honey and then regorged it at the solicitation, without any violence, of the Humble-bee.|| We are thus reminded of those Gulls (*Lestris*) which exclusively live by pursuing other gulls and compelling them to disgorge their food.¶

In the Hive-bee actions are occasionally performed which

* Blackwall's *Researches in Zoology*, 1834, p. 158. Cuvier long ago remarked that all the passerines have apparently a similar structure in their vocal organs; and yet only a few, and these the males, sing; showing that fitting structure does not always give rise to corresponding habits. [Concerning birds which imitate sounds when in captivity not doing so in a state of nature, see p. 222, where there is evidence of certain wild birds imitating the sounds of other species.—G. J. R.]

† Rev. L. Jenyns, *Observations in Nat. Hist.*, 1846, p. 280.

‡ Quoted by Geoffroy St. Hilaire in *Ann. des Mus.*, tome ix, p. 471.

§ *British Birds*, vol. iii, p. 591.

|| Kirby and Spence, *Entomology*, vol. ii, p. 207. The case given by Huber is at p. 119.

¶ There is reason to suspect (Macgillivray, *British Birds*, vol. v, p. 500) that some of the species can only digest food which has been partially digested by other birds.