

to no bird,—if indeed any moral quality whatever can be discovered in their actions. It is true that a cat tortures a mouse, and seems to delight in inflicting pain. I cannot but believe, however, that the cat is unconscious of the mouse's misery; that what she enjoys is not the suffering of her victim, but the exercise of her natural powers. Excessive destructiveness, as when cats or weasels kill more animals than they can devour, is very frequent; but it implies neither cruelty (in a moral sense) nor mere wantonness; it is a legitimate result of their rapacious nature, and for the rest, the animals may have a natural preference for some part of their prey, as the blood or brains, to secure enough of which they take more lives than they would if they fed upon the whole of the flesh. In the case of the Shrike, moreover, it is certainly the rule that the bodies are impaled after death, not while still struggling in the clutches of the captor. Analogy goes for something in natural history; and the analogy of the Shrikes' shambles to the storehouses of various birds is too obvious to have escaped attention. I think the right clue to the curious habit is thus found. Many birds lay up stores of provisions, like mice and squirrels. Among those of this country, birds of the Corvine tribe, as Crows and Jays, are conspicuous in this respect. The 'thievishness' of the Raven and Magpie in confinement is notorious; but it is simply the excessive development or perversion of their habit of hoarding food that makes them steal and hide away articles of no possible use to them, such as jewellery and silverware. The Californian Woodpecker offers another notable instance of stowing up food, as it does with infinite pains. I have seen branches of trees studded thickly with acorns, each stuck tightly by itself in a little hole bored by the bird for its reception. In other instances, the same bird has been known to insert acorns in the natural crevices of wood. These facts relate indeed only to the hoarding of fruits or inanimate objects; but we see a still closer resemblance to the habit of the Shrikes in the curious practice of the Red-headed Woodpecker, a versatile bird, one of whose singular traits has just been told by Mr. H. B. Bailey, of New York. This writer narrates* that a correspondent of his observed a Woodpecker's frequent visits to an old oak post, which on examination was found to present a large

crack, in which the bird had inserted about a hundred live grasshoppers, and wedged them in so firmly that they could not escape. Some farmers showed him other posts which had been put to the same purpose. This was certainly a laying-up of stores for future use, for the writer states that the Woodpecker later began to eat his hoard, and that at length only a few shrivelled dead 'hoppers were left. Wilson has observed, furthermore, that Jays and Shrike's retain similar habits in confinement; the Jay filling every seam and chink in his cage with grain and bread-crumbs, and the Shrike 'nailing' neat, insects and the bodies of such birds as may be thrown to him. I have had my doubts in this matter; and still, after observing Shrikes carefully in various parts of the country, must admit that the matter is not finally narrowed down to a simple question of hoarding. Too many bodies are stuck up, too promiscuously, and too few are made use of afterward, for us to consider it simply as a piece of the bird's thrift. I suppose the habit of impaling, considered simply as such, and without reference to ulterior purposes subserved, may have been gradually acquired as the result of the Shrike's physical organization—the relatively little force of grasping with his feet he possesses, in comparison with the power of his beak. The talons of a Hawk, for example, are very effective instruments, not only for striking and killing prey, but also for holding it while it is torn by the beak. The Shrike has much less prehensile power; it strikes with the beak, and devours as best it may. A Nuthatch, for example, will take an acorn to a crack in the bark, and wedge it there while it hammers away at it with the bill. Such a habit of fastening its prey having been acquired, as something entirely unconnected with the storing up of provisions, may then have been turned to account as a means of securing its prey for future use, and thus become the usual way of making a hoard. It is certain, however, that the Shrike makes no great use of his hoard; and that he sometimes impales and sometimes not, apparently at his caprice. He is just as likely to eat a grasshopper as to stick one. He spits his victims as often when food is plenty as when it is scarce; and the majority of the bodies gibbeted are left to wither and be blown away, or be eaten up by the bugs. On one occasion, when I watched a Shrike closely for some time, I saw him impale a number of grasshoppers in

* Bull. Natl. Ornith. Club, iii. no. 2, April, 1878, p. 97.