

FOOD.

From an economic standpoint the supreme test as to the beneficial or injurious nature of a very large number of our birds is adjudged from a knowledge of their food habits, more especially if their value as an article of food or for manufacturing purposes is important. To be wholly beneficial a species must feed upon that which is directly or indirectly injurious and in a manner entailing the least possible damage to that which may be utilized by man. Few birds will be found to meet all of the requirements of so exacting a standard, and if the good overbalance the bad qualities, or even if their habits are of a neutral or doubtful character, they should be protected as far as it is possible to do so. Recent investigations conducted by the United States Agricultural Department warranted the statement that "Judged by the results of stomach examinations of the Downy and Hairy Woodpecker and Flicker, it would be hard to find three other species of our common birds with fewer harmful qualities." The Flicker differs from all other Woodpeckers in being more terrestrial. Being equally adept in foraging above or upon the ground, it has a much greater variety of food to select from, consequently waxes fat, is more numerous and covers a greater area than any other member of the family in North America. There is little difference in the nature of its food and feeding habits, north, east, south or west; though of course being somewhat more insectivorous in the warmer climes during the colder months. It is almost completely insectivorous from the latter part of March until well into June. Ants form the staple food however. Professor Beal of the United States Nation Museum, places it at about 75 per cent. of the insect food or 45 per cent. of the whole matter for the year. It is often discovered standing over a colony, catching the ants as they emerge or digging vigorously into the soil with its sharp pickax to unearth them, its bill being almost constantly coated with earth from this

habit. In Michigan it seems to have a preference for the mound-building ants (Purdy). In Georgia there are myriads of small red ants which infest every path and byway in summer and one cannot help noticing their funnel-shaped abodes; upon these ants it wages eternal warfare so that its flesh becomes so thoroughly impregnated with the pungent odor so peculiar to these little insects as to be clearly perceptible when removing the skin. It also preys upon a black ant found under the bark of dead trees, but as they are not so plentiful as the former, they do not predominate as an article of food (Smith). I have the result of an examination of twenty-five stomachs, including seven taken from juveniles, collected in DeKalb County, Georgia, by Mr. Robert Windsor Smith. Every month in the year is represented with the exception of May, August and November. In all but two, quantities of either red or black ants were found, with a fair amount of undetermined fragments of *Coleoptera* in ten, one contained a mole cricket in addition to the ants, another three grubs and a large black ground beetle, while the October bird had eaten its fill of gumberries, the same fruit being found with an assortment of insects in the two September birds. Somewhat to my surprise the January bird had eaten the largest number of insects, its stomach being distended with the 841 ants, fragments of 2 ground beetles and 8 pieces of white gravel (299 small red ants, 492 small winged ants, 40 pupa, 3 mound-building ants, 7 ants—species undetermined). The seven young birds had left the nest, though occasionally fed by adults, and were taken between June 28th and July 18th—five in '98 and two in '99. All contained red ants with the addition of wild cherries in them, and beetles in a fourth. A small quantity of white gravel found in all or nearly all young. The stomach of one taken on July 12th contained several pieces of red gravel, in addition to quite a quantity of the usual white flint, and another that two days later had swallowed a splinter of weather-beaten wood, probably their first attempts to feed themselves. In Iowa it is often seen darting after insects in the manner of Flycatchers. Stomachs examined have invariably contained remains of Carabid and Scarabid beetles, with the skins of Lepidopterus' larvæ and numerous ants (Jones).

In Pennsylvania I have found as much as 157 large black

ants, 7 May beetles, and a large green larva in a single stomach. Large grubs, crickets and red ants are commonly found. I think there should be no question regarding the inestimable services rendered in keeping within reasonable limits the numerous varieties of ants. In Indiana it not only devours large quantities of mature insects, but their eggs, larvæ and chrysalides (Gaines). Wilson says it also feeds upon woodlice. Grasshoppers when in season form no inconsiderable portion of its food. In early spring and early fall its manner of feeding on the ground is to collect in small, loose flocks, travelling back and forth along the edges of a wood, around a hillside or in a meadow; silently clearing the group of its insect pests, only flying up when disturbed or satisfied; in this manner often mixing in with the Meadowlarks, and in the West extending well out on the prairies at a considerable distance from timber or trees of any kind.

As a correspondent suggests, birds, like other bipeds, only "scratch for a living" when necessity makes it compulsory. Whether its system demands a change of diet or to put its young in the way of feeding themselves or from sheer laziness, it becomes largely frugivorous from late July to November or until its departure, feeding upon the fruit, as it ripens, of the wild strawberry, raspberry, serviceberry, mulberry, red cherry, dewberry, blackberry, huckleberry, elderberry, pokeberry, black cherry, grape, dogwood, black alder, wild plum, hawberry, gum and hackberry; a perfect profusion and succession of wild fruit; often to the almost entire exclusion of insect life, growing fat upon the pulp diet. It is noted by Mr. Robert Windsor Smith that when the bird is gorged with berries but little gravel is found in its stomach; this also applies to many others of our so-called insectivorous birds. I have known it to eat so largely and continuously of certain small fruits that the stain of the highly colored juices would penetrate and saturate the intestines, abdomen, and even dye the bases of the feathers a rich red or purple; particularly so when pokeberries are indulged in. It is extremely fond of the fruit of this plant, and in this connection I wish to state that Dr. W. E. Rotzell has given some attention to the effects of pokeberries upon birds (*Hahnemannian Monthly*, '91, p. 790). An extract of this fruit has been prescribed for obesity under

the generally accepted theory that it acts as an anti-fat agent, but the result of his examination tends to prove that wild birds which were gorged with the berries were always in good condition and frequently quite fat.

When the gumberries ripen in September and October, the sour gumtree (*Nyssa Sylvatica*) is the centre of attraction, and its fruit the staple food. If the Flicker is fond of other fruits it loves the gumberry. At this period of its existence it is in the very best of condition, and hundreds are annually shot for food and sport, being, as a southern observer says, fully as good eating as Doves. Many a country boy's first game has been this large, handsome and palatable bird while it was gluttonously feeding upon gumberries. Picture if you can a calm, hazy, autumnal sky, a cool, green, swampy meadow in which grows an old gum tree with its deep-green wax-like leaves already turning to scarlet; the boy creeping Indian fashion from bush to bush or along the old worm fence; the slight degree of uncertainty highly magnified makes it all the more fascinating to him. The murderous report of the old musket loaded with a generous and well-rammed charge of coarse black powder and large shot, the whirl of many wings followed immediately by the scream of the wounded, appeals but momentarily to his better nature. Stimulated by excitement he hurriedly gathers the dead, wrings the necks of the wounded, and retires within easy gunshot. In a few minutes the Warblers, Cedarbirds and Thrushes appear, shortly followed by the Robins; the Flickers scattered to the four winds, call from tree to tree, and finally a young male, totally lacking in experience, flies straight for the tree on galloping wings. He sees nothing suspicious, and after a lusty, long-drawn call, which apparently means "all's well," plunges deep into the foliage to greedily partake of the tempting banquet. The bulk now come trooping in, racing with the Blue Jays, and the clatter becomes deafening when "bang" goes the gun, down come several more victims, and again the survivors go scurrying away, only to return as before and repeat the experience, gradually becoming more and more wary, until those that are left become so wild and alert as to defy the gunshot range. Unfortunately this slaughter does not end with the boys, but is often carried on more or less systematically by

the so-called sportsman, but I am happy to say not nearly as frequently as formerly, in this section at least.

Of course the Flicker occasionally tastes of the cultivated fruits and grains, such as the blackberry, cherry and mulberry, and corn in the milk ; but so seldom as to call forth no complaint. In Illinois he is far less destructive in this respect than his red-headed relative (Gault). The only serious damage reported comes from Farboro, N. C., where he is quite destructive to the peanut crop while the nut is maturing, congregating in great numbers in the fields and playing havoc, often making half a dozen holes near a vine probing for the soft kernel. During the month of August, however, it resorts in great numbers to corn fields in quest of corn worms (Foxhall). Maynard says it is very fond of over-ripe pears and apples. In the North, as the season wanes, the trees, shrubs, bushes and vines become stripped of their fruit, for the Flicker is not the only bird foraging, and the bulk retire southward, leaving the hardy winter resident, usually an old male, to adapt itself to the existing conditions, be what they may, and becomes everything but carnivorous (Bowles). Almost omnivorous, its maw receives the dried or frozen remnants of the wild fruits already named ; also the berries of the red cedar, hawthorn, mountain ash and woodbine ; the seeds of the sumac, poison ivy, clover, grass, and various weeds ; as well as acorns, beechnuts, corn from shocks, and oats, wheat and rye from stacks ; while ants, beetles and larvæ are sought from bark and wood of decayed trees and stumps or gleaned from the bare ground or creek banks. During the winter of '87-'88 a single male took up his quarters in a corn crib near Grinnell, Iowa, and waxed fat on the corn and oats in the bins, but succumbed to a temperature of 20° below zero on the 14th of January (Jones). In Michigan its winter food seems to consist mostly of corn, for where there is a field of corn standing only there the Flicker is found. It also resorts to corn cribs, and probably a few beechnuts and acorns, as well as such insects as can be had are eaten (Purdy). Apparently the Flicker performs the same service in Michigan as the Crow does in eastern Pennsylvania for the slothful farmer, but doubtless less thoroughly. Further south it fares better during the colder season. Near Raleigh, N. C., it feeds upon the waste peanuts

on the ground after the crop has been gathered ; also on the berries of holly and cedar (Brimley). According to Baker, specimens from Florida often contain the berries of the cabbage palmetto. The large amount of insect food secured by a Georgia bird in January has been already commented upon.

It is presumed that where a large number of telegraph poles are perforated or honey-combed, it is not always with the intention to nest, but that the motive is most often suggested by the humming of the wires which it probably mistakes for the boring of insects. It must be admitted, however, that this occurs almost wholly in treeless localities like Cape Cod and Nantucket, Mass., and the great plains of the West. It performs a good service in scattering the seeds of many useful plants and trees, not among the least of which is the pokeberry, whose young and tender shoots are so highly esteemed in the culinary art. It doubtless assists in the spread of the poison ivy (*Rhus radicans*) and poison shumac or poison dogwood (*R. vernix*), since it eats the berries in the fall and winter seasons.