THE MARTIN-MOSQUITO MYTH
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Although we often pride ourselves on being an educated and technically advanced society, there are still many myths which are perpetuated concerning wildlife. One such myth, which has been widely accepted by amateur and some professional ornithologists, is the belief that Purple Martins eat large numbers of mosquitoes. This myth has been accepted to the point that local governments have subsidized the construction and maintenance of martin houses in order to decrease mosquito populations.

Kale (1968) traced the history of this myth and summarized evidence which refutes it. This evidence consisted of the food habits and the feeding behavior of the martin, as well as pertinent aspects of mosquito biology. Wade (1966, cited in Kale, 1968) simply calculated the number of mosquitoes that a martin would eat to sustain itself on such a diet. The calculations were based on the metabolic rate of the bird and the food value of the mosquitoes. These calculations are not in question. What is in question is the validity of the assumption that mosquitoes comprise a significant part of the diet of the Purple Martin. The statement that mosquitoes are eaten by martins has been made by several authors Forbush, 1929; Sprunt, in Bent, 1942; Humphrey, in Wetmore, 1964) without adequate discussion, thus furthering the confusion over the role of mosquitoes in the Purple Martin’s diet.

Food habits of the Purple Martin have been reported by only two researchers, and neither found mosquitoes to form a large part of the diet. Beal (1918) found the diet to contain 23 percent Hymenoptera, 15 percent Hemiptera, 12 percent Coleoptera, and 16 percent Diptera (the order which includes the mosquitoes). The martins also ate Lepidoptera and Odonata. Similarly, Johnston (1967) studying martins in Kansas, reported a similar monthly diet for the period April to August. Coleoptera comprised 32 to 68 percent of the monthly diet, Hemiptera 2 to 28 percent, Hymenoptera 2 to 35 percent, Diptera 3 to 20 percent, Homoptera 0 to 17 percent, Lepidoptera 0 to 14 percent, and Odonata 0 to 1 percent of the monthly diet. Of the Diptera eaten, Culicinae (the subfamily to which mosquitoes belong) was 3 percent of the diet in April, but was not eaten thereafter.

The feeding behavior of the Purple Martin and the basic biology of mosquitoes exclude the possibility of a large mosquito kill by martins. Martins frequently feed at 100 to 200 feet above the ground (Johnston and Hardy, 1962), although they may feed as low as 50 feet (Johnston, 1967). On the other hand, mosquitoes spend the day resting on vegetation close to the ground (Bidlingmayer, 1964). Most mosquitoes are nocturnal or crepuscular whereas martins are diurnal. Therefore, both the periods of activity and the areas (heights) of activity fail to overlap sufficiently to allow efficient foraging for mosquitoes by the martins.

In addition to lack of evidence for mosquito eating by martins, available evidence indicates that even if they did eat mosquitoes, martins would not be an effective control. Kale (1968) points out that a conservative estimate of mosquito production per brood is several million adults per acre of water. Even
seasonally wet areas frequently provide time for the production of several broods, and polluted environments may have a production several orders of magnitude greater than unpolluted areas. Thus even if each martin ate 2,000 mosquitoes per day, a normal sized colony of martins would barely make a dent in the mosquitoes produced in a single acre of standing water.

Kale (1968) also pointed out that not only are Purple Martins not an effective means of mosquito control, they potentially could add marginally to the mosquito problem. By their presence, martins may attract mosquitoes as they are a source of a blood meal for the mosquitoes. Also, since they do eat a few Odonata (dragonflies), which eat mosquitoes, they are preying on a predator of mosquitoes, resulting possibly in a mosquito increase. It is probable that both of these negative effects are minimal and should in no way affect the choice to encourage martins in an area.

Although martins are not an effective means of mosquito control, it is probable that they eat a great many other harmful insects. Beal (1918) found that pest species eaten included both cotton-boll and clover weevils. Sprunt, in Bent (1942) summarizing the work of previous researches, reported that martins ate fireworms which are destructive to cranberries. Additionally, the Lepidoptera (moths) and Homoptera (leafhoppers which suck plant juices) eaten undoubtedly also contain large numbers of injurious species.

Myths and legends frequently die slowly. This particular myth is no exception. It has been 15 years since Kale’s article, and still the myth lives on. Myths are especially long-lived when the populace has a strong desire to believe them. This appears to be the case with the martins. Even before Europeans came to America, American Indians attracted martins by putting up gourds for them to nest in (Sprunt, 1949). Generations of Americans have followed suit by putting up gourds or more elaborate martin houses. Because the species is desirable, it is easy to ascribe positive qualities to it. This, coupled with the fact that many people have a desire for biological controls of pests rather than chemical, makes people willing to accept the myth without careful scrutiny.

Although Purple Martins do not decrease mosquito populations, they have many redeeming qualities. As Kale (1968) concludes, “The Purple Martin is one of our most beautiful and friendly birds. It daily consumes a large number of insects. Its aesthetic qualities alone recommend it highly to man. There is no need to ascribe to the martin abilities greater than those it already possesses in order to encourage its protection and propagation.”

Acknowledgements

We would like to thank Russell E. Mumford for review of the manuscript and Bobby Witcher for inspiration.

Literature Cited


Wade, J. L. 1968. What you should know about the Purple Martin. Giggsville, IL. Trio Manufacturing Co.