

pair was interrupted by the appearance of another female Bluebird in the vicinity of the nest. I did not see the stranger arrive but found it fighting furiously with the crippled female. Both birds were darting at one another and striking with their bills. Sometimes they clashed in mid-air, sometimes on the willow branches. I did not have to watch them long to realize that the crippled female was on the defensive and suffering as a result of the onslaught. Finally, after five minutes of such warfare, the belligerents suddenly grappled with their bills and feet and fell somewhat heavily into the wet grass where they continued in an even more desperate struggle. When I approached to within three feet, their attention was so occupied that they did not notice me. I saw that the crown of the crippled bird was featherless and bleeding and was being persistently pecked by the opponent. As I bent over the birds the marauding female discovered me. Frightened, it attempted to escape from the other which was blindly though viciously gripping its under plumage and thus holding it down. Eventually I started to pick up the two birds but as soon as I touched both of them they separated hurriedly and flew away in opposite directions. During the entire contest, the male Bluebird, until I approached the females, was perched on the top of the willow tree and seemed absolutely indifferent to the struggle. Afterwards it remained on a nearby telephone wire apparently possessed of the same attitude.

The next day I saw a pair of Bluebirds still at the nesting hole. But my binoculars revealed that the legs of the female were perfectly normal. In the ensuing weeks the pair successfully reared their young in the Woodpecker hole. Thus all evidence seemed to indicate that the crippled female, while normal as far as its nesting abilities were concerned, was unable to overcome its physical handicap in defending itself against an aggressive, wandering, normal female desirous of securing either a nesting site or mate or both.—OLIN SEWALL PETTINGILL, JR., *Middleton, Mass.*

#### **Notes on the Relation of the European Starling to Other Species of Birds.—**

Due to its quarrelsome habits and preference for nesting in holes and cavities the European Starling (*Sturnus v. vulgaris*) often comes into direct conflict with some of our native species of birds, particularly during the breeding season. On account of its omnivorous food habits the Starling may also indirectly affect the welfare of other birds.

Several interesting observations were made by the writer on the Starling's relations with other birds while he was engaged in a study of the distribution, habits, and economic status of the European Starling in Canada during the period 1932-35. Additional notes on this subject have been collected by the writer through personal correspondence and from important publications, particularly that of Kalmbach, 'The European Starling in the United States.'

Mr. M. Robinson, Algonquin Park, Ontario, reports Starlings having evicted two pairs of Arctic Three-toed Woodpeckers which had nested in his vicinity for five years. The Woodpeckers returned the next year, but were driven away again.

Wm. H. Moore, of Scotch Lake, New Brunswick, writes, "Some people covered their Martin houses with sacking to keep the Starlings out until the other birds were ready for nesting and in passing through Centreville County, several Starlings were observed sitting in trees adjacent to the blanketed Martin houses."

Wallace Havelock Robb, Kingston, Ontario, reports Starlings as plucking out the eyes of adult Robins with which they were feeding.

In June 1934 a Bluebird's nest was located by the writer in a telephone pole. The female bird was found dead on the nest, her head badly pecked and with all the eggs broken. The male bird was still in the vicinity. From this same cavity a Star-

ling's nest had been taken two years previously. It seems probable that Starlings may have killed this bird in an effort to appropriate the nesting site for themselves.

It has been reported to the writer that, in the spring of 1933, Starlings were seen destroying the hanging nest of a Baltimore Oriole near St. Thomas, Ontario. Several writers have cited similar examples of Starlings destroying the eggs and young or appropriating the nests of other species of birds such as Martins, House Wrens, Robins, English Sparrows and Domestic Pigeons.<sup>1</sup> Kalmbach when dealing with this question writes, "These instances, of course, picture the Starling at its worst . . . . In the case of the Starling, many of the nest despoiling activities occur in the dooryard, where they are almost certain to come under human observation."

Due to its omnivorous habits the Starling consumes much wild fruit in winter (unpublished data) and consequently it is decreasing the amount of food formerly available to birds migrating north in the spring as well as those native species which spend the winter in the north. The Starling is a voracious feeder on ground insects (writer's unpublished data) and in this respect may compete with the Robin; the Meadowlark and other species. However, it is doubtful if much weight can be placed upon this point, since Starlings, in general, feed in rather small groups during the spring and summer and since there is generally an abundance of insect life. Again, Kalmbach<sup>2</sup> indicates that after considering the relative worth of the species concerned, the Starling's taking of other bird's food is not at all alarming. He writes, "After carefully weighing all the evidence available, it is safe to state that, in the Northeastern States, the Starling is economically the superior of the Robin, the Catbird, the Red-winged Blackbird, the Grackle, the Cowbird or the English Sparrow. This leaves the Meadowlark as the only highly desirable species materially affected by this competition for food."

It would appear that in view of the Starling's questionable relations with other birds the future of some native species of birds may be threatened. However, these birds, such as the Bluebird and Flicker will possibly find safe nesting places in most localities farther away from the abode of man, in whose vicinity the Starling seems determined to be. Musselman<sup>2</sup> reports that he has had marked success with Bluebirds occupying nesting boxes which he has set up on posts over a five mile stretch. Since the Bluebird is a smaller bird the Starling could not enter these houses, due to the small entrance hole.

It may be noted that no appreciable decrease in the numbers of Bluebirds and Flickers has been evident during the past few years, even in those areas where the Starlings are abundant. The Starling's unfriendly relations with other birds may often warrant condemnation. However, the writer is of the opinion that the effect of these habits may often be more apparent than real. We have numerous instances at hand concerning similar questionable relations on the part of other species of birds. Much study of this problem is necessary before we can pass judgement on these activities of the Starling.—M. S. FERGUSON, *University of Illinois, Urbana, Illinois.*

**Worm-eating Warbler in Maine.**—On September 1, 5 and 12, 1935, a single Worm-eating Warbler (*Helminthos vermivorus*) was seen in a flock of migrant Warblers on Hog Island, in Wood Pond near Jackman, Somerset Co., Maine. It was not seen previous to this although we had been observing birds on the island all summer. I have been familiar with this species for many years at Ridgefield, Conn., and in

<sup>1</sup> Kalmbach, E. R. 1928. The European Starling in the United States. *Farm. Bull.* 1571: 1-27, 8 fig.

<sup>2</sup> Musselman, T. W. 1934. Help the Bluebirds. *Bird Lore.* 36: 9-13.