

pest as follows: "Investigations carried over a period of two years have shown that in cities the insect is controlled chiefly by three factors: non-hatch of eggs, starvation of the larvae hatching from eggs laid on buildings, and insect parasites. In the forest, however, a totally different condition exists, and there we find that birds and ants are responsible for holding the insect at par and preventing it from reaching a state of outbreak."

Although this writer did not observe birds preying upon the tussock moth in cities, the reviewer has observed robins feeding freely upon the larvae in Washington, D. C.. Mr. Dunstan reports that in the forest "practically every egg-mass laid above the snow-line (and over ninety per cent of them are) had been either partially or wholly destroyed by birds." (p. 119.) Observation of the kinds of forest birds feeding on larvae proved impossible, but by exposing larvae where they would be accessible to birds and apparently to no other enemies it was found that the supplies regularly disappeared, sometimes at the rate of 25 to 30 caterpillars a day. Birds are credited with destroying half of the larvae hatching in forests.

In the United States twelve species of birds are now known to feed upon one stage or another of the tussock moth, and the list does not include a single species of the groups (such as Paridae) that must be concerned in the extensive destruction of the eggs of the insect pointed out by Mr. Dunstan.

Lace-wing flies (*Chrysopidae*).—In an exhaustive paper on The Biology of the Chrysopidae,<sup>1</sup> a very fair attitude in general is taken relative to the value of protective adaptations of these insects. Of the adults it is said that the color "so closely simulates their environment that considerable protection is afforded. But more striking is the repellent odor of most species. This odor is sickening and very objectionable . . . but . . . is only a partial protection from the insects' enemies, though predacious enemies have been observed to be less serious than parasitic ones." It is interesting to note that stomach examination by the Biological Survey so far has revealed 17 species of birds as predators upon Chrysopidae, most of them taking adults, but 5 having eaten larvae. The nighthawk led in the attack on lace-wings, ten birds having taken these flies, in numbers up to 10 and 12 to a meal. The fact that such groups of birds as the Caprimulgidae and Hirundinidae have been developed as practically indiscriminate feeders on flying insects would indicate that these insects have few or no qualities really noxious to the birds.—W. L. M.

**Success in Prairie Tree Planting.**—In an interesting bulletin<sup>2</sup> with the foregoing title, relating to trees for the prairies of Manitoba, Saskatchewan, and Alberta, it is clearly brought out that a valued part of the success with trees is the attraction of birds. "The birds build in them and flocks

<sup>1</sup> Smith, Roger C. Mem. 58, Cornell Agr. Exp. Sta. (June, 1922) 1923, p. 1330

<sup>2</sup> No. 72, Forestry Branch, Can. Dept. Interior, by Norman M. Ross, 34 pp., 1922.

of birds come to them that we never saw before the trees were there," writes one settler. Others mention the same point and two farmers note that the trees are a protection to poultry against hawks.—W. L. M.

**Another Insect Birds Should not Eat.**—Proponents of theoretical biology probably never will cease to put on record *suppositions* as to remarkable protective adaptations, but with this premise it should follow that those in possession of pertinent *facts* ought to be at least equally persistent in exploiting them. The instance in mind at the present time concerns the red-humped apple caterpillar (*Schizura concinna*), a black and yellow striped larva with red head and hump, which is highly gregarious, and can spray a liquid containing formic acid—in a word, a form that has about all the attributes of an "especially protected" species. Concerning it the statement has recently been made that "it is not likely that a sparrow or any other small predaceous enemy would repeat an attack on the caterpillar after receiving a quantity of highly irritating secretion in its eyes or mouth."<sup>1</sup> Sparrows usually are not especially important enemies of large caterpillars, but if a protective function of the red-hump's secretion against birds in general is implied by the remark quoted, we must say it is not supported by the facts. The Robin, Olive-backed Thrush, both species of Cuckoos, Ruffed Grouse, and Broad-winged Hawk are known to feed on this caterpillar. As to risking a second experience with the red-hump's spray it must be said that no fewer than 11 of these larvae have been found in a single stomach of the Broad-winged Hawk, 12 in that of a Black-billed, and 25 in that of a Yellow-billed Cuckoo. As the red-hump is a noteworthy pest of apple-trees all of the birds mentioned deserve credit in an economic sense also for feeding on the insect.—W. L. M.

### The Ornithological Journals.

**Bird-Lore.** XXV, No. 2. March–April, 1923.

Two Nest-Studies of McCown's Longspur. By A. D. DuBois—Illustrated by admirable photographs.

The Nest on the Rain-Pipe. By P. C. Samson.—Detailed study of a Robin's nest.

Some Robins and their Nests. By Edw. R. Warren.

Love of Home is Characteristic of Robins. By E. H. Eves.

Ducky, an Orphan Robin. By Jessie Ferguson.

A Story of an Albino Robin. By F. M. Tuttle.

Cardinal Friendships.—Two accounts of attachment of captive Cardinals for their owners.

The migration table treats of the Orchard Oriole with a plate by Fuertes.

April in the Marshes, by A. A. Allen, in the School Department, is an admirable article with beautiful illustrations.

<sup>1</sup> Detwiler, J. D., Can. Ent. 54, No. 8, Aug., 1922, p. 187.