

## SCIENTIFIC NOTE

LATE SEASON SOYBEAN LOOPER (LEPIDOPTERA: NOCTUIDAE) POPULATION REDUCTION BY WESTERN PALM WARBLERS—On 8 October 1973, many small birds were observed in a one-hectare soybean field which was being sampled weekly to monitor insect pest populations at the Auburn University Plant Breeding Unit at Tallahassee, AL. The bird population was estimated to be between 100 and 125, and individuals were observed to be actively moving through the soybeans in a series of rapid, short-distance flights, pecking frequently at leaves and stems. When disturbed, they would retreat to nearby trees, but would return within 5 minutes to resume feeding.

Two of these birds were collected on 9 October and returned to the laboratory for identification and examination of stomach contents. They were identified by Dr. Julian Dusi, ornithologist in the Auburn Univ. Dept. of Zoology-Entomology, as Western Palm Warblers, *Dendroica palmarum palmarum* (Gmelin) (Passeriformes: Parulidae). This species is known to migrate northward through Alabama in the spring during March and April, cross the lower Appalachians, and move up the Mississippi River Valley into Canada, where its breeding range extends from central Ontario to British Columbia. This route is reversed from early September to late October, with the birds eventually reaching Florida, Cuba, the West Indies, and the Yucatan where they overwinter (A. C. Bent. 1953. Life Histories of North American Wood Warblers. Smithsonian Institution, USNM Bul. 203, 734 p.). Feeding occurs along the migratory route wherever food sources are found. Insects constitute the majority of the diet. During migration, this species has been noted to congregate in areas of an abundant food supply and to effectively eliminate such food supplies before moving on (F. M. Chapman. 1970. The Warblers of North America. Appleton, New York, 306 p.).

In this study, gut analysis revealed large numbers of medium sized soybean loopers, *Pseudoplusia includens* (Walker), in one stomach and an assortment of loopers and other arthropods, including a chrysomelid beetle, a lacewing larva, and spiders, in the second. At the time of collection, soybean looper populations, as determined by standard shake cloth sampling, were recorded at ca. 6.6 larvae/row meter of soybeans, with larval size classes being distributed from second through fifth instars. Within 3 days, the larval population was reduced to ca. 0.3 larva/row meter in the sample field, and no birds remained in the area.

Western Palm Warblers have been recorded previously as taking "cotton worms" and "celery leaf-tyers" in Florida cotton and celery crops, respectively (A. H. Howell. 1932. Florida Bird Life. Florida Dept. of Game and Fresh Water Fish, 579 p.). The observations reported here suggest that they can serve as effective predators of soybean pests as well, under the proper circumstances. However, no other comparable incident has been observed by the author since 1973. The fortuitous nature of this encounter suggests that bird predation may, in some circumstances, account for otherwise unexplainable reductions in insect population numbers. The relatively short feeding period of several days could easily be missed when weekly population samples are taken.

In the situation described, impact of predation on soybean looper dam-

age was minimal since pod fill was already complete, and the plants were in the early leaf senescence stage. In addition, since the soybean looper does not overwinter in central Alabama, population reduction at this late date would have little impact on succeeding generations, assuming that the resident pest population perishes rather than migrates southward. In more southerly locations where soybeans are produced, late season bird predation could possibly provide economic benefit. At any rate, utilization of this food source provided an energy source which aided in the southern migration of the warblers. Alabama Agricultural Experiment Station Journal Series #15-82341.—JAMES D. HARPER, Dept. of Zoology-Entomology, Auburn University, AL 36849 USA.