

Scientists Find Destructive Insects 100 Miles At Sea

The corn earworm - *Heliothis zea* Boddie - may not win any popularity contests, but it is a strong contender as an Olympic champion at "free flight." This moth can fly nonstop across 100 miles of water. To prove it, two entomologists of USDA's Agricultural Research Service equipped traps with ultraviolet lamps and placed

them on unmanned oil drilling platforms 100 miles offshore in the Gulf of Mexico; the corn earworm, with other crop-destructive Lepidoptera, found the mark. In an experiment designed to test the flight range of various pest insect species, battery-operated, black-light insect traps were installed 20, 46, 66, and 100 miles off-

shore between Morgan City and Jeanerette, La. The traps captured more than 100 species of adult insects from 7 different orders. Their common names make a shopping list in reverse for vegetable lovers: beet armyworm, cabbage looper, velvet bean caterpillar, corn earworm. ARS entomologist Robert D. Jackson, U.S. Sugarcane Laboratory, Houma La., also cites the fall armyworm, large cotton leafworm, black cutworm, tobacco budworm, and the granulate cutworm as species captured. At the Southern Grain Insects Laboratory, Tifton, Ga., entomologist Alton N. Sparks reports that all four traps captured corn earworms - 27 at 20 miles, 16 at 46 miles, 8 at 66 miles, and 3 at 100 miles. The distance covered by insects in flight has long been studied by entomologists. Many eradication experiments have been conducted with the assumption that isolation of a few miles was sufficient. "We discovered in 1972 that

the corn earworm could be captured in light traps on a television tower from 25 ft. to 1,047 ft. above ground," said Dr. Sparks. "Trapping records led us to believe that corn earworms were capable of attaining controlled flight altitudes in excess of 1,000 ft. throughout the normal flight season." Controlled flight is flight controlled by the insect, but which may be assisted by the winds. "We also found that the insect migrated a distance of at least 18 miles in one night and at least 45 miles in one to four days." This flight capability is particularly important because *Heliothis zea* is a prime target for suppression. Former ARS entomologist Clinton L. Allen, currently a commercial helicopter pilot at Lafayette, La., observed the presence of insects many miles out into the Gulf. Dr. Sparks and Dr. Jackson, using a leased helicopter from the U.S. Geological Survey, followed this "tip" with a study to determine both the species of the insect and the distance from land the insects had traveled. The researchers placed funnel-type traps 15 in. in diameter and 18 in. high on four unmanned oil platforms in the Eugene Island area of the Gulf, 30 miles wide and extending 150 miles south of the Louisiana coast. A 1-qt. collecting container was placed below the funnel; one-half was filled with diesel oil or formalin solution to kill the captured insects. A 15-watt black-light lamp was secured in the center of four baffles. The lamps were energized by a 12-volt battery controlled by a photocell to operate between sunset and sunrise. All traps were placed on the platforms for 6 weeks during the fall. Cooperating oil field personnel on adjacent manned platforms exchanged and charged the batteries and changed the collecting containers. Entomologists Sparks and Jackson concluded that the majority of captured moths were traveling on a south-bound cool front. "Regar-

dless of that," said Dr. Sparks, "these travels must have been controlled flights. Rig locations are clumped around salt domes on the Gulf floor - we could fly 10 minutes by helicopter without sighting a rig - and light traps are generally ineffective over a long distance." Why conduct the experiment 100 miles over water? The trapping experiment clearly indicated that much larger isolation areas may

be required for successful eradication programs. "We know, for instance, that the insects in this experiment did not originate 10 miles away," said Dr. Jackson. "There's no in-between. And they were still able to react to stimuli - such as light - after flying many miles." Destructive insects like corn earworms, the soybean looper, and the cabbage looper can reinfest areas from much greater distances than researchers had previously assumed.



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Klassy Klippers

The Landisville Klassy Klippers Club met on July 3 at the Centerville Junior High School. Sarah Roth presided over the meeting with Linda Barrett giving the pledge. Sue Grim gave a report on her trip to the 4-H Leadership Congress at Penn State. Debra Gregory gave a demonstration on modeling. Demonstrations were also given by Cindy Harr, Suzanne Coley, Debbie Risser, Janelle Gingrich, Linda Barrett and Debbie Hoover.

Nancy Mays
News Reporter

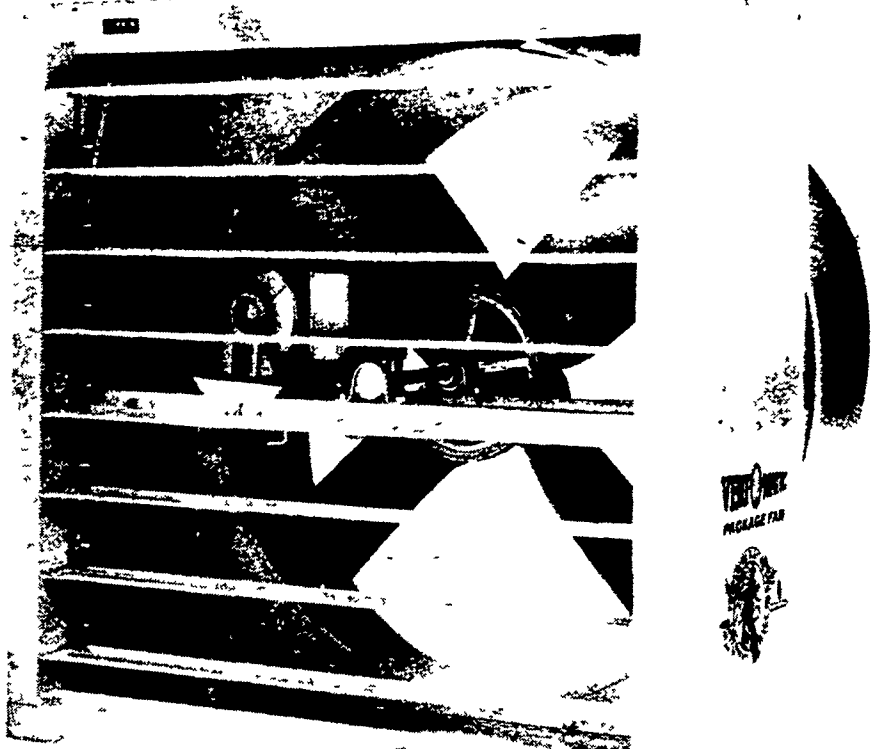
Busy Bakers

The 4-H Busy Bakers Club met recently at the Church of God in Mt. Joy. Officers elected to lead the club were Gail Bukowski, president; Melissa Thompson, vice-president; Lorretta Burkhart, secretary; Valeria Fahmstock, treasurer; Diane Martin and Karen Mummau, game leaders and Jodi Baker, song leader. The Club will be meeting every Tuesday at the Church of God for their meetings throughout the next six weeks.

Crystal Sweigart
News Reporter

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