



FEEDING BY FOUR SPECIES OF MIGRATING BUTTERFLIES IN NORTHERN FLORIDA.—(Note). Four species of migratory butterflies (C. B. Williams, 1930, *The migration of butterflies*, Oliver and Boyd, London) were observed at the Univ. of Fla. experimental farm, Green Acres, Alachua Co., Florida in October 1975. The butterflies were the long-tailed skipper, *Urbanus proteus* (L.), the cloudless sulphur, *Phoebis sennae* (L.), the buckeye, *Junonia lavinia* (Cramer), and the gulf fritillary, *Agraulis vanillae* (L.). On 14 and 21 October, we observed butterflies encountering a mixed flower patch measuring approximately 23 X 32 m which was situated approximately 90 m south of a wooded area. The butterflies had to cross a portion of plowed field to reach the flower patch. The most abundant flowers (in order of abundance) were *Monarda punctata* L. (Labiatae), *Heterotheca subaxillaris* (Lam.) Britton and Rusby (Compositae), *Crotalaria* sp. (Leguminosae), and a yellow-flowered *Oenothera* sp. (Onagraceae). The first 2 species were by far the most numerous. The temperature on both days reached 29°C and the wind was variable from N to SE up to 7 m/s. We observed 1) numbers of butterflies landing in or passing through the flower patch, 2) numbers of butterflies arriving at and leaving the flower patch during 20-min periods in the morning and afternoon, 3) type of flower each butterfly landed on, and 4) activities of butterflies while in the flower patch.

The data for 1) and 3) are presented on Table 1. On 21 October during the morning (11:10-11:30 AM) and afternoon (4:15-4:45 PM) we observed nearly the same number of butterflies entering the patch from the N and NW as were leaving the patch flying SE. Only *P. sennae*, which seemed to prefer the relatively scarce *Oenothera*, did not land at least as often as it flew through. No butterflies were seen laying eggs, but observations indicated that almost all butterflies landing were feeding. This is the first report of these butterflies stopping to feed while migrating.

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TABLE 1. REACTION OF MIGRATORY BUTTERFLIES TO A FLOWER PATCH.

Butterfly	# Landing on plants	# Flying Through	% of those which landed on plants			
			<i>Monarda</i>	<i>Heterotheca</i>	<i>Oenothera</i>	Other
14 October						
3:00-4:00 PM						
<i>U. proteus</i>	216	42	No observations made			
<i>P. sennae</i>	3	31				
<i>J. lavinia</i>	4	2				
<i>A. vanillae</i>	7	7				
21 October						
six 20-minute periods from 12:05-3:55 PM						
<i>U. proteus</i>	152	32	75.7	14.5		9.8*
<i>P. sennae</i>	15	52	6.3		68.8	25.0
<i>J. lavinia</i>	3	2	100.0			
<i>A. vanillae</i>	10	7	50.0	30.0		20.0**

\*Includes 2 on *Crotalaria* sp., 3 on *Rubus* sp. leaf, and 1 on unidentified composite.

\*\*Includes 1 on *Crotalaria* sp.