SCIENTIFIC NOTES

SPIDERS (ARANEAE) AND ANTS (HYMENOPTERA: FORMICIDAE) IN TEXAS SUGARCANE FIELDS

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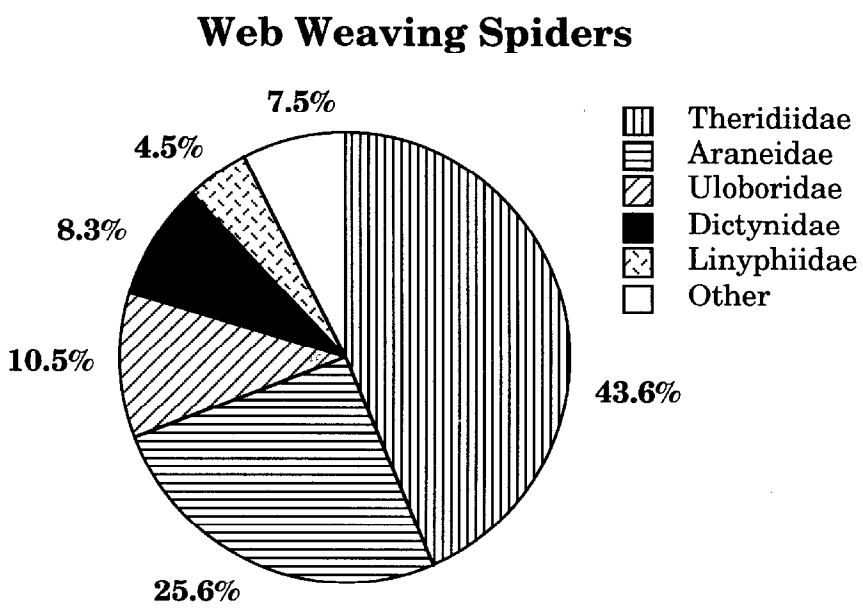
The collection, identification and significance of spiders and ants as biological control agents of insect pests in sugarcane ecosystems has been studied in Louisiana and Florida (Adams et al. 1981, Ali & Reagan 1986, Bessin et al. 1990, Charpentier et al. 1967, Fuller & Reagan 1988, Negm & Hensley 1969). However, similar research has not been completed in Texas sugarcane areas. Fuchs & Harding (1976) surveyed nine habitats in southern Texas for arthropod predators and found that over 50% of all predators collected were spider species. Detailed information could not be discerned from this study since spiders were identified only to order and ants were not sampled.

Spiders and ants were collected from irrigated Texas sugarcane production areas in Cameron, Hidalgo and Willacy counties from August 1990 to July 1991 (24 sample dates) using hand collections, aspirators and sweep nets. Diurnal samples were taken in fields (average size 15 ha) ranging in plant growth stage from stalk elongation to ripening. Pest managment in most fields was composed of less than 3 insecticide applications per season. Specimens were collected from sugarcane plants and the surrounding soil and identified to species when possible. Specimens were preserved in vials containing 75% isopropyl alcohol. No effort was made to quantify (e.g., specimen numbers per unit area) spider or ant populations.

Thirty-seven species of spiders and 43 genera from 18 families were identified. Nine families were web weaving spiders and nine were hunting spider families. The largest percentage of web weaving specimens belonged to the family Theridiidae (ca. 44%, n = 58, Fig. 1a). The most numerous theridiid species was *Tidarren haemorrhoidale* (Bertkau) (n = 23) (Table 1). The orb weaving Araneidae comprised about 26% of the total web weaving individuals (n = 34), with *Neoscona arabesca* (Walckenaer) the most frequently collected (n = 12). Of the hunting spiders, salticids comprised about 37% of the total collected, with *Phidippus audax* (Hentz) (n = 16), *Marpissa lineata* (C. L. Koch) (n = 8) and *M. pikei* (G. & E. Peckham) (n = 7) the most abundant (Fig. 1b, Table 1). The Lycosidae family represented 27% of the remaining taxa with *Pardosa delicatula* Gertsch & Wallace the most numerous species. The families Thomisidae, Clubionidae and Gnaphosidae were found less frequently among the hunting spiders (Fig. 1b).

Fourteen of the species collected in this study have also been collected in Louisiana sugarcane (Ali & Reagan 1985), where spiders have been documented to feed on eggs,

a.



b.

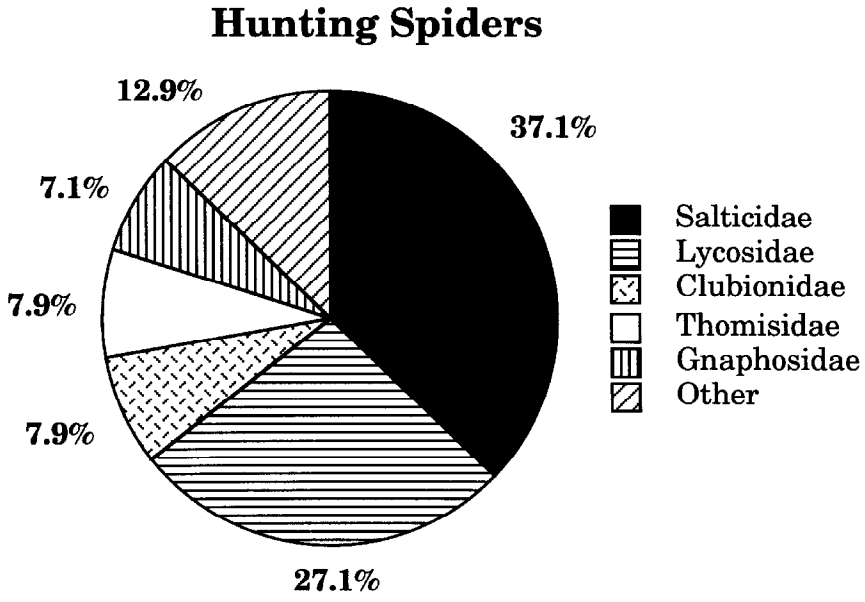


Fig. 1. Percentage of spider specimens collected from web weaving families (a) or hunting families (b) from southern Texas sugarcane ecosystems, 1990-1991.

larvae, and adults of the pyralid pest *Diatraea saccharalis* (F.) (Negm & Hensley 1969). Spiders are usually considered generalist predators, although evidence from the literature suggests spiders are more efficient biological control agents on mobile, visually acute prey insects (Breene et al. 1993). In Texas, these prey insects are represented by the potential pests *Perkinsiella saccharicida* Kirkaldy (Delphacidae) (Meagher et al. 1993) and *Leptodictya tabida* (Herrich-Schaeffer) (Tingidae) (Meagher et al. 1991).

TABLE 1. SPIDERS AND ANTS COLLECTED FROM SUGARCANE FIELDS IN CAMERON, HIDALGO, AND WILLACY COUNTIES, TEXAS, 1990-1991.

Araneae	
Anyphaenidae	
Aysha decepta (Banks)[1]	1
Aysha sp.	1
Total	2
Araneidae	
Acacesia hamata (Hentz)	1
Araniella displicata (Hentz)	1
Larinia directa (Hentz)	2
Mangora sp.	1
Metazygia zilloides (Banks)	4
Neoscona arabesca (Walckenaer)[1]	12
Neoscona utahana (Chamberlin)	2
Unidentified	11
Total	34
Clubionidae	
Castianeira descripta (Hentz)[1]	2
Cheiracanthium inclusum (Hentz)[1]	3
Clubiona sp.	4
Phrurotimpus sp.	1
Unidentified	1
Total	11
Dictynidae	
Dictyna annexa Gertsch & Mulaik	2
Dictyna bellans Chamberlin	6
Dictyna volucripes Keyserling	1
Dictyna sp.	2
Total	11
Gnaphosidae	
Micaria sp.	4
Unidentified	6
Total	10
Linyphiidae	
Ceraticelus sp.	2
Lepthyphantes sp.	1
Meioneta sp.	2
Unidentified	1
Total	6
Lycosidae	
Pardosa delicatula Gertsch & Wallace[1]	8
Trochosa shenandoa Chamberlin & Ivie	1
Unidentified	29
Total	38
Mysmenidae	
Calodipoena incredula Gertsch & Davis	3
Total	3
Nesticidae	
Eidmannella pallida (Emerton)[1]	2
Total	2
Oxyopidae	
Oxyopes sp.	9
Total	9

TABLE 1. (CONTINUED).

Philodromidae	
Tibellus duttoni (Hentz)	6
Total	6
Pholcidae	
Unidentified	3
Total	3
Pisauridae	
Pisaurina dubia (Hentz)[1]	1
Total	1
Salticidae	
Bellota wheeleri G. & E. Peckham	1
Eris limbata (Banks)	1
Habronattus coecatus (Hentz)[1]	2
Habronattus sp.	2
Marpissa formosa (Banks)	1
Marpissa lineata (C. L. Koch)	8
Marpissa pikei (G. & E. Peckham)	7
Metaphidippus galathea (Walckenaer)[1]	1
Metaphidippus sp.	1
Phidippus audax (Hentz)[1]	16
Thiodina sp.	2
Unidentified	10
Total	52
Tetragnathidae	
Leucauge venusta (Walckenaer)[1]	1
Tetragnatha sp.	1
Total	2
Theridiidae	
Achaearanea globosa (Hentz)	13
Achaearanea schullei (Gertsch & Mulaik)	6
Chrosiothes minusculus (Gertsch)	1
Euryopis sp.	1
Latrodectus mactans (F.)[1]	1
Theridion australe Banks	6
Theridion myersi Levi	1
Thymoites expulsus (Gertsch & Mulaik)[1]	1
Thymoites sp.	2
Tidarren haemorrhoidale (Bertkau)	23
Unidentified	3
Total	58
Thomisidae	
Misumenops dubius (Keyserling)	4
Misumenops sp.	5
Xysticus sp.	2
Total	11
Uloboridae	
Philoponella sp.	3
Uloborus glomosus (Walckenaer)[1]	11
Total	14
Total Araneae	273

TABLE 1. (CONTINUED).

Hymenoptera: Formicidae
Crematogaster clara Mayr
Forelius sp.
Hypoponera opaciceps (Mayr)
Paratrechina vividula (Nylander)
Pachycondyla harpax (F.)[2]
Pheidole sp.
Pogonomyrmex barbatus (F. Smith)
Solenopsis geminata (F.)

[1]Previously collected in Louisiana sugarcane ecosystems (Ali & Reagan 1985).
[2]Previously collected in southern Texas sugarcane (Huffman & Harding 1980).

The most numerous ant species of the seven species collected was the tropical fire ant, *Solenopsis geminata* (F.) (Table 1). The colonial behavior of this species precluded any meaningful analyses of numbers found, since many individuals were captured when a colony was located. A related species, *S. invicta* Buren, has been documented as an important predator of *D. saccharalis* in Louisiana sugarcane (Reagan 1986, Bessin et al. 1990). *Pachycondyla harpax* (F.), not collected in this study, was previously found in southern Texas sugarcane (Huffman & Harding 1980).

We thank Dr. Bill MacKay for identifying the ant species. Approved for publication as TA 31181 by director, Texas Agricultural Experiment Station.

SUMMARY

Hand, aspirator and sweep net surveys for spiders and ants in Texas sugarcane fields resulted in collection of 37 species of spiders (18 families) and 7 species of ants. This survey will provide the taxonomic basis to proceed with ecological studies detailing the interactions among spider and ant predators and sugarcane arthorpod pests.

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PARACHALEPUS BALY, 1885: A SYNONYM OF *CHALEPUS* THUNBERG, 1805 (COLEOPTERA: CHRYSOMELIDAE, HISPINAE)

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While working on a key to the New World genera of Hispinae (Coleoptera: Chrysomelidae), I examined the holotype of *Parachalepus brevicornis* Baly, 1885. Baly erected the monotypic genus *Parachalepus* for this species based solely on the 10-segmented antennae. From my examination of the holotype, the antennae are clearly 11-segmented. The error in the number of antennal segments may have arisen from the dirt on the holotype obscuring the antennal bases. When the dirt was removed the basal antennal segments were revealed. Since the specimen has 11-segmented antennae, this makes *Parachalepus* a junior subjective synonym of *Chalepus* Thunberg, 1805.

Baly (1885) provided a short description and an excellent illustration of *P. brevicornis* (Table 3, Fig. 3). The species is redescribed to enable workers to distinguish it from other species of *Chalepus*.

Measurements were taken with an ocular micrometer. Pronotal length and width were taken along the midlines. Elytral width was measured at the humeri. Elytral length was measured from the base to apex. Total length was measured from the base of the antennae to the apex of the elytra. In recording the label data from type specimens, a slash (/) divides data on different labels.

Chalepus brevicornis (Baly) **New Combination**

Parachalepus brevicornis Baly 1885:47-[Holotype: Cordova, Mexico, Hoege./ Sp. figured/ Type (white disk with red border)/ Godman-Salvin Coll., Biol. Centr.-Amer./ Parachalepus brevicornis Baly, Mexico (white rectangle with horizontal lines), deposited in British Museum (Natural History)]. Weise 1910:136, 1911a:24, 1911b:36; Uhmann 1957:83; Wilcox 1975:141.

DIAGNOSIS. **Head dark; pronotum orange with dark central vitta and lateral marginal vittae; elytra orange, apices may be black.**

DESCRIPTION. **Head**: reddish-brown; median sulcus absent; vertex impunctate; eyes margined in black; frons punctate, projecting at base of antennae; clypeus darker