

THE GENUS LEUCOSPIS FABRICIUS IN FLORIDA¹
(HYMENOPTERA, CHALCIDOIDEA, LEUCOSPIDAE)

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INTRODUCTION: THE SUPERFAMILY CHALCIDOIDEA, WHICH INCLUDES AN IMMENSE COMPLEX OF MOSTLY SMALL OR MINUTE PARASITIC WASPS, COMES ONLY TO THE ATTENTION OF SPECIALISTS IN HYMENOPTERAN SYSTEMATICS OR BIOLOGICAL CONTROL. THE GENUS LEUCOSPIS IS AN EXCEPTION TO THIS RULE, AS ITS MEMBERS ARE CONSPICUOUS FOR THEIR LARGE SIZE (6.0-16.0 MM) AND BRIGHT, YELLOW OR RED AND BLACK LIVERY. THE SPECIES IN LEUCOSPIS ARE SLUGGISH AND SPEND MUCH TIME VISITING FLOWERS, SO THAT PLANT INSPECTORS AND OTHER INTERESTED PERSONS RATHER FREQUENTLY COLLECT THEM FOR IDENTIFICATION.

LIFE HISTORY: LEUCOSPIS PARASITIZES THE NESTS OF A VARIETY OF SOLITARY BEES BELONGING TO THE FAMILY MEGACHILIDAE (LEAF CUTTER BEES AND RELATIVES). THE FEMALE WASP EMPLOYS HER LONG OVIPOSITOR TO PERFORATE THE WALL OF THE HOST NEST (ENCLOSED, FOR EXAMPLE, IN A HOLLOW STEM OR TWIG) AND THEN PLACES HER EGG IN A CELL OCCUPIED BY A BEE LARVA. SOON AFTER OVIPOSITION, THE LEUCOSPIS GRUB HATCHES AND PROCEEDS GRADUALLY TO DEVOUR THE LARVAL BEE. CONSEQUENTLY, LEUCOSPIS MIGHT BE REGARDED AS AN INJURIOUS PARASITE, SINCE IT ATTACKS BEES WHICH ARE USEFUL FOR POLLINATING. THERE IS DOUBT THAT LEUCOSPIS EVER REACHES SUCH ABUNDANCE AS TO REDUCE MARKEDLY THE POPULATION OF ITS HOSTS. ACTUALLY, PARASITES OF THIS TYPE, WHICH MAINTAIN THEMSELVES IN EQUILIBRIUM WITH THEIR VICTIMS, MAY BE REGARDED AS BENEFICIAL TO THE HOST AS A SPECIES SINCE, WITHOUT THEIR CONTROLLING ACTION, THE HOST MIGHT BECOME SO ABUNDANT AS TO ENDANGER ITS FOOD SUPPLY OR SOME OTHER VITAL ENVIRONMENTAL FACTOR.

DESCRIPTION: THE GENUS LEUCOSPIS MAY BE RECOGNIZED BY THE FOLLOWING COMBINATION OF DIAGNOSTIC CHARACTERS: HIND-FEMUR MUCH ENLARGED AND ARMED WITH A ROW OF TEETH ALONG ITS LOWER BORDER; HIND-TIBIA ARCHED; FORE-WINGS FOLDED LENGTHWISE AT REST (AS IN VESPOID WASPS); TEGULAE PROLONGED NARROWLY FORWARD ALONG SIDES OF MESOSUTUM; OVIPOSITOR BENT UPWARDS AT LEAST A SHORT DISTANCE AND OFTEN REFLEXED AND EXTENDED FAR FORWARD ALONG THE MEDIAN LINE OF THE GASTRIC DORSUM.

DISTRIBUTION: LEUCOSPIS RANGES THROUGHOUT MOST OF THE WORLD BUT IS BEST REPRESENTED IN THE TROPICS. THE UNITED STATES HAS ONLY FIVE SPECIES, AND FOUR OF THESE OCCUR IN FLORIDA. THE FOLLOWING KEY, BASED ON MATERIAL IN THE FLORIDA STATE COLLECTION OF ARTHROPODS, WILL SERVE TO DISTINGUISH OUR LOCAL SPECIES.

- 1 HIND-FEMUR ARMED BENEATH WITH A FEW, VERY LARGE AND ELONGATE TEETH (FIG. 2); DORSAL 1/2 OF OUTER FACE OF HIND-COXA EXTENSIVELY SMOOTH, POLISHED, AND IMPUNCTATE; OVIPOSITOR VERY SHORT AND ERECT, ITS EXPOSED PORTION 0.12-0.17 AS LONG AS THE GASTER (FIG. 4); A PAIR OF YELLOW OR REDDISH SPOTS ON VERTEX..... 1. L. SLOSSONAE WELD
- 1' HIND-FEMUR ARMED BENEATH WITH MANY SMALL TEETH (FIG. 3); DORSAL 1/2 OF OUTER FACE OF HIND-COXA UNIFORMLY DENSELY PUNCTATE; OVIPOSITOR MUCH LONGER AND BENT FORWARD OVER THE DORSUM OF THE GASTER, ITS EXPOSED PORTION 0.40-1.0 AS LONG AS THE GASTER (FIG. 1); NO YELLOW MARKINGS ON VERTEX 2
- 2 OCCIPITAL CARINA UNIFORMLY SHARP AND HIGH ACROSS TOP OF HEAD; PROPODEUM WITH A VERY HIGH MEDIAN LONGITUDINAL CARINA (FIG. 6A); OVIPOSITOR REACHING FORWARD AT MOST ONLY AS FAR AS TO NEAR MIDDLE OF 2ND GASTRIC TERGITE (APPARENT 1ST TERGITE), ITS EXPOSED PORTION 0.40-0.56 AS LONG AS GASTER; PRONOTUM PREDOMINANTLY TO WHOLLY PALE RED; PROPODEUM WHOLLY PALE RED 2. L. ROBERTSONI CRAWFORD
- 2' OCCIPITAL CARINA OF PROPODEUM LOWER (MORE OR LESS AS IN FIG. 6B); OVIPOSITOR REACHING FORWARD TO WELL BEYOND MIDDLE OF 2ND GASTRIC TERGITE, ITS EXPOSED PORTION 0.67-1.0 AS LONG AS GASTER (FIG. 1); PRONOTUM BLACK WITH RED OR YELLOW MARKINGS; PROPODEUM MOSTLY OR AT LEAST EXTENSIVELY DARK 3
- 3 PRONOTUM WITHOUT A SUBAPICAL TRANSVERSE CARINA; OVIPOSITOR REACHING FORWARD TO AS FAR AS A LITTLE BASAD OF HIND-MARGIN OF SCUTELLUM, ITS EXPOSED PORTION 0.90-1.0 AS LONG AS GASTER; TERGITES 5 & 6 EACH WITH A BROAD APICAL BAND OF SILVERY PUBESCENCE; SCUTELLUM ENTIRELY BLACK 3. L. BIRKMANI BRUES
- 3' PRONOTUM WITH A SUBAPICAL TRANSVERSE CARINA (FIG. 5); OVIPOSITOR REACHING BASAD NO FARTHER THAN TO BASE OF GASTER OR APEX OF PROPODEUM, ITS EXPOSED PORTION 0.67-0.75 AS LONG AS GASTER (FIG. 1); TERGITES 5 & 6 WITHOUT AN APICAL BAND OF SILVERY PUBESCENCE; SCUTELLUM WITH A BROAD TRANSVERSE YELLOW OR RED BAND 4. L. AFFINIS SAY

1. L. SLOSSONAE WELD, 1922. U. S. NATL. MUS. PROC. 61(6):11.

DISTRIBUTION: L. SLOSSONAE IS RECORDED FROM GEORGIA AND FLORIDA. THE FLORIDA STATE COLLECTION OF ARTHROPODS HAS 32 SPECIMENS FROM THE FOLLOWING COUNTIES: ALACHUA, BRADFORD, CITRUS, CLAY, DADE, LEON, LEVY, NASSAU, AND VOLUSIA. COLLECTING DATES ON THIS MATERIAL RANGE FROM MARCH TO DECEMBER, BUT MOST SPECIMENS WERE TAKEN BETWEEN MAY AND SEPTEMBER.

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HOST: ANTHIDIELLUM SP. (HYMENOPTERA, APOIDEA, MEGACHILIDAE).

FLOWER RECORDS: CASSIA BRACHEATA, CEANOOTHUS MICROPHYLLUS, CITRUS PARADISI, CROTALARIA LANCEOLATA, CYRILLA RACEMIFLORA, DESMODIUM STRICTUM, MELILOTUS ALBA, PTEROCAULON UNDULATUM, RHUS COPALLINUM, AND SOLIDAGO MICROCEPHALA.

2. L. ROBERTSONI CRAWFORD, 1909. ENT. SOC. WASH. PROC. 11:51.

DISTRIBUTION: L. ROBERTSONI OCCURS IN FLORIDA AND ALABAMA. THE FLORIDA STATE COLLECTION OF ARTHROPODS HAS 11 SPECIMENS FROM THE FOLLOWING COUNTIES: ALACHUA, CLAY, HIGHLANDS, AND MONROE. COLLECTING DATES ARE FROM MARCH TO OCTOBER.

HOST: UNKNOWN.

FLOWER RECORDS: PTEROCAULON UNDULATUM, RHUS COPALLINUM, AND SOLIDAGO MICROCEPHALA.

3. L. BIRKMANI BRUES, 1925. PSYCHE 32:23.

DISTRIBUTION: L. BIRKMANI, ORIGINALLY DESCRIBED FROM TEXAS, SINCE HAS BEEN COLLECTED IN FLORIDA, CALIFORNIA, AND MEXICO. IN THE FSCA IS A SINGLE FEMALE OBTAINED FROM A STEINER TRAP AT ONA IN HARDEE COUNTY ON AUGUST 4, 1967.

HOST: UNKNOWN.

FLOWER RECORDS: NONE.

4. L. AFFINIS SAY, 1824. IN KEATING, NARR. LONG'S 2ND EXPED., APP. P. 327.

DISTRIBUTION: L. AFFINIS IS OUR MOST COMMON AND BEST KNOWN SPECIES OF LEUCOSPIS AND OCCURS THROUGHOUT MOST OF THE UNITED STATES AND SOUTHERN CANADA. FLORIDA SPECIMENS SOMETIMES ARE DISTINGUISHED SUBSPECIFICALLY UNDER THE NAME FLORIDANA CRESSON, BECAUSE THEY NORMALLY HAVE THE PALE MARKINGS OF THE BODY REDDISH, RATHER THAN YELLOW AS IS USUAL FOR NORTHERN MATERIAL. IN THE FSCA ARE 27 SPECIMENS OF AFFINIS FROM THE FOLLOWING COUNTIES: ALACHUA, COLLIER, DADE, HIGHLANDS, LEVY, MONROE, ORANGE, AND SARASOTA. COLLECTING DATES EXTEND FROM MARCH TO DECEMBER.

HOSTS: NUMEROUS SPECIES OF ANTHIDIUM, ASHMEADIELLA, DIANTHIDIUM, HOPLITIS, MEGACHILE, OSMIA, AND STELIS (HYMENOPTERA, APOIDEA, MEGACHILIDAE).

FLOWER RECORDS: FLAVERIA LINEARIS, ILEX CASSINE, MELILOTUS ALBA, PERSEA AMERICANA, POLYGONUM HYDROPIPEROIDES, PYRACANTHA SP., RHUS COPALLINUM, AND SOLIDAGO PETIOLATA.

LITERATURE CITED:

WELD, C. J. 1922. STUDIES OF CHALCID-FLIES OF THE SUBFAMILY LEUCOSPIDINAE, WITH DESCRIPTIONS OF NEW SPECIES. PROC. U. S. NATL. MUS. 61(6):1-43.

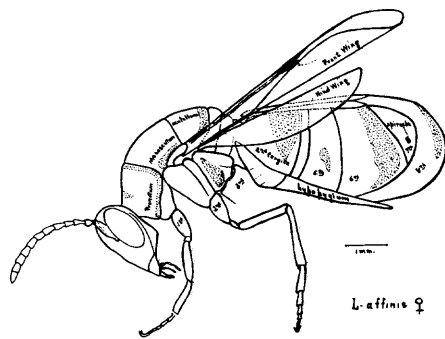


FIG. 1. L. AFFINIS ♀. LATERAL VIEW OF WHOLE INSECT.

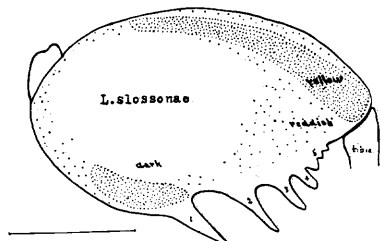


FIG. 2. L. SLOSSONAE. LATERAL VIEW OF HIND-FEMUR.

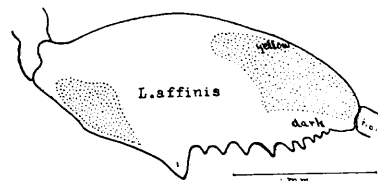


FIG. 3. L. AFFINIS. LATERAL VIEW OF HIND-FEMUR.

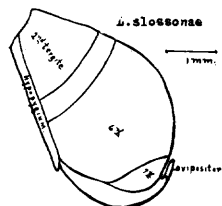


FIG. 4. L. SLOSSONAE ♀. LATERAL VIEW OF GASTER, SHOWING VERY SHORT OVI-POSITOR CHARACTERISTIC OF THIS SPECIES (COMPARE FIG. 1).

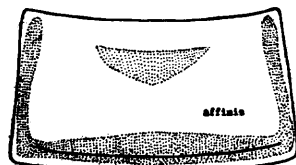


FIG. 5. L. AFFINIS. DORSAL VIEW OF PRONOTUM, SHOWING THE SUBAPICAL TRANSVERSE CARINA.

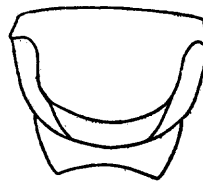


FIG. 6A. L. ROBERTSONI. DORSAL VIEW OF SCUTELLUM, METANOTUM, AND PROPODEUM.

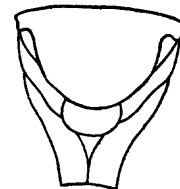


FIG. 6B. L. AFFINIS. DORSAL VIEW OF SCUTELLUM, METANOTUM, AND PROPODEUM.