

THE LEAFHOPPER GENUS CARNEOCEPHALA IN FLORIDA
(HOMOPTERA: CICADELLIDAE)^{1/}

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ECONOMIC IMPORTANCE: THERE ARE THREE SPECIES OF CARNEOCEPHALA IN FLORIDA, AND TWO OF THESE ARE OF ECONOMIC IMPORTANCE. THE YELLOW-HEADED LEAFHOPPER, CARNEOCEPHALA FLAVICEPS (RILEY), IS A PROVEN VECTOR OF THE VIRUS MORSUS SUFFODIENS HOLMES THAT CAUSES PIERCE'S DISEASE OF GRAPES AND ALFALFA DWARF DISEASE (STONER 1953). MOREOVER, THIS LEAFHOPPER AND ITS CLOSE RELATIVE, CARNEOCEPHALA SAGITTIFERA (UHLER), OFTEN BECOME QUITE ABUNDANT ON PASTURE AND TURF GRASSES, PARTICULARLY BERMUDA GRASS, CYNODON DACTYLON (L.), AND A CERTAIN AMOUNT OF DISCOLORATION, STUNTING, AND PROTEIN LOSS RESULTS FROM THE FEEDING ACTIVITIES. BOTH C. FLAVICEPS AND C. SAGITTIFERA ARE ATTRACTED TO LIGHTS AND OFTEN SWARM IN GREAT NUMBERS AROUND HOUSE AND STREET LIGHTS, THEREBY BECOMING A NUISANCE. C. FLORIDANA (BALL) RARELY BECOMES ECONOMICALLY IMPORTANT.

DISTRIBUTION: C. FLORIDANA HAS BEEN COLLECTED ALONG THE COASTAL AREAS OF FLORIDA; ELSEWHERE, IT HAS BEEN REPORTED IN NORTH CAROLINA, GEORGIA, AND TEXAS, INCLUDING SOME LOCALITIES WELL INLAND. C. FLAVICEPS IS WIDELY DISTRIBUTED IN FLORIDA AND THE U. S. A. BUT IS ABSENT TO SCARCE IN THE NORTHERN TIER OF STATES. THE METCALF CATALOGUE (1965) ALSO LISTS RECORDS FOR MEXICO, JAMAICA, AND CUBA. THE RANGES OF FLAVICEPS AND SAGITTIFERA HAVE CONSIDERABLE OVERLAP, BUT SAGITTIFERA IS MORE WIDELY DISTRIBUTED AND ABUNDANT IN THE CARIBBEAN AREA.

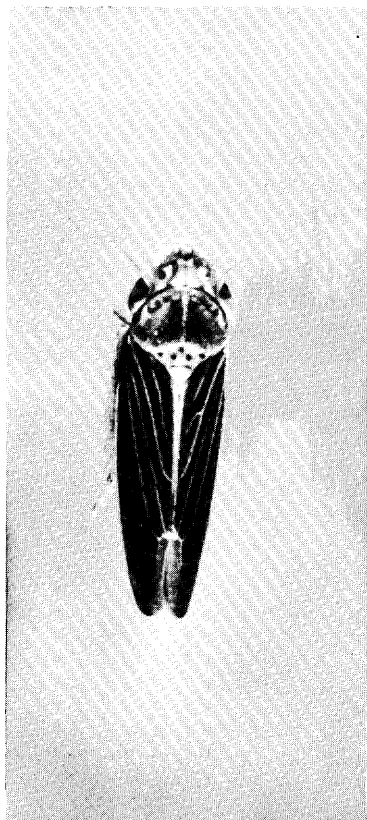


FIG. 1

C. SAGITTIFERA (UHLER)

♀ 12.4 X

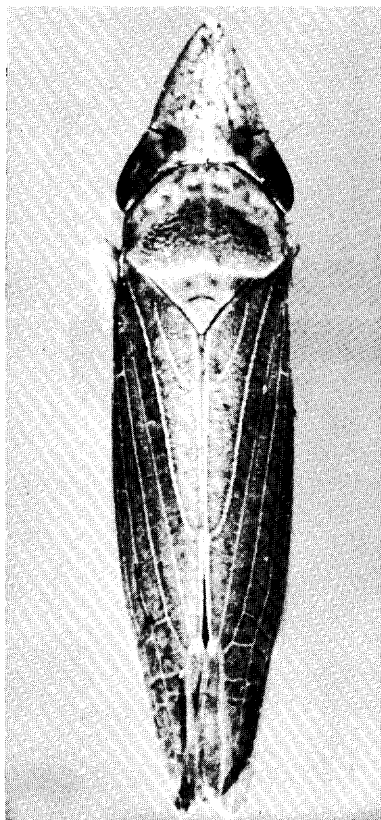


FIG. 2

C. FLORIDANA (BALL)

♀ 12.8 X

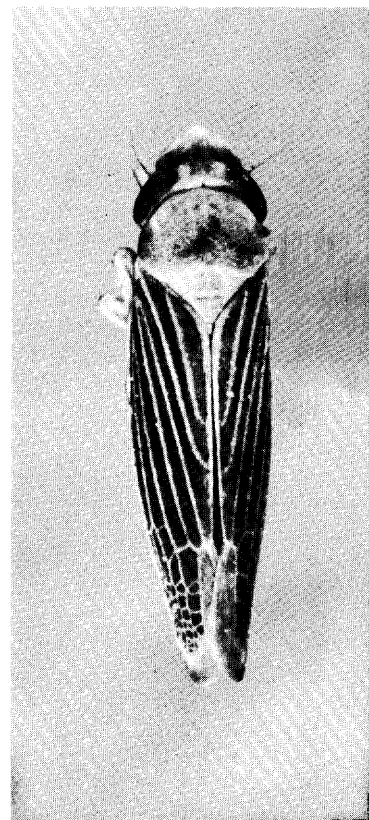


FIG. 3

C. FLAVICEPS (RILEY)

♀ 12.5 X

^{1/} CONTRIBUTION No. 66, ENTOMOLOGY SECTION.

IDENTIFICATION: CARNEOCEPHALA IS CLOSELY RELATED TO THE OTHER "SHARPSHOOTER" GENERA DRAECULACEPHALA AND HELOCHARA. SEVERAL SPECIES OF DRAECULACEPHALA ARE COMMON IN FLORIDA, AND THEY MAY BE DETERMINED BY USING THE EXCELLENT REVIEW BY YOUNG AND DAVIDSON (1959). THERE IS AN ISOLATED REFERENCE TO H. COMMUNIS FITCH RANGING SOUTHWARD INTO FLORIDA, BUT THIS SPECIES IS RARE IN FLORIDA. OUR CURRENT KNOWLEDGE OF THE SHARPSHOOTERS WILL BE GREATLY IMPROVED WHEN PROF. DAVID A. YOUNG, JR., OF NORTH CAROLINA STATE UNIVERSITY FINISHES HIS MONOGRAPH OF THIS LARGE GROUP. MOST OF THE SPECIES OF THE THREE GENERA UNDER CONSIDERATION ARE GREENISH AND LIVE ON GRASSES PRIMARILY. THE FOLLOWING KEY IS BASED ON THAT BY NOTTINGHAM (1932):

- 1. APEX OF ELYTRA NOT RETICULATED; MALE ANTENNAE ENLARGED AND PLATELIKE ON APICAL THIRD---HELOCHARA
- 1¹. APEX OF ELYTRA RETICULATED; MALE ANTENNAE NORMAL-----2
- 2(1¹). CROWN FLAT OR NEARLY SO, WITH DEFINITE MARGINS; FACE NEARLY STRAIGHT IN PROFILE, MARKED PARALLEL LINES ON EACH SIDE; MACROSETAE PRESENT IN AN IRREGULAR LONGITUDINAL SERIES ALONG THE LATERAL MARGIN OF EACH MALE PLATE; SETAE MORE CONSPICUOUS ON MALE PYGOFER-----DRAECULACEPHALA
- 2¹. CROWN CONVEX WITH MARGINS ROUNDING; FACE CONVEX AND USUALLY MOTTLED, PARALLEL LINES (IF PRESENT) SOMEWHAT MOTTLED AND SUBDUED; MACROSETAE USUALLY NOT PRESENT ON MALE PLATE (IF PRESENT, THEN SHORTER AND THINNER); SETAE INCONSPICUOUS ON MALE PYGOFER-----CARNEOCEPHALA

KEY TO FLORIDA SPECIES OF CARNEOCEPHALA

- 1. CROWN DISTINCTLY LONGER THAN PRONOTUM; LARGE SPECIES, FEMALES OVER 8 MM, MALES 6.5-7 MM; RESEMBLES DRAECULACEPHALA; SEVERAL CHARACTERS SOMEWHAT INTERMEDIATE BETWEEN CARNEOCEPHALA AND DRAECULACEPHALA; (FIG. 2)-----FLORIDANA (BALL)
- 1¹. CROWN SOMETIMES ABOUT EQUALLING BUT USUALLY SHORTER THAN PRONOTUM; SMALLER SPECIES, FEMALES NOT OVER 6.3 MM, MALES NOT OVER 5 MM (FIG. 1 AND 3)-----2
- 2 (1¹). APEX OF ELYTRA WITH MANY RETICULATIONS; LARGER (THE FEMALES 5 MM OR MORE, MALES 4.5 MM OR MORE); (FIG. 3)-----FLAVICEPS (RILEY)
- 2¹. APEX OF ELYTRA WITH FEW RETICULATIONS; SMALLER (THE FEMALES NOT OVER 4.5 MM, MALES NOT OVER 4 MM); (FIG. 1)-----SAGITTIFERA (UHLER)

BIONOMICS: C. FLORIDANA INHABITS TIDAL FLATS WHERE SUCH PLANTS AS SALICORNIA, BATIS, AND MONANTHOCHLOE MAY BE HOSTS. THERE ARE INLAND RECORDS OF FLORIDANA IN GEORGIA AND NORTH CAROLINA AND A REPORT OF "DAMAGING COTTON" AT MACON, GEORGIA. C. FLAVICEPS SWARMS ON BERMUDA AND ALLIED GRASSES AND HAS BEEN TAKEN ON A VARIETY OF CROPS, INCLUDING CUCURBITS, COTTON, OKRA, ALFALFA, BEANS, EGGPLANT, OATS, WHEAT, ETC. ADLERZ (1959) REPORTED FLAVICEPS IN BERMUDA GRASS COLLECTIONS FROM FEBRUARY THROUGH NOVEMBER (RECORDS OF FEBRUARY 1958-JULY 1959) IN THE LEESBURG AREA. IN 1961, HE REPORTED THAT FLAVICEPS COMPLETES ITS LIFE CYCLE IN 18 DAYS UNDER GREENHOUSE CONDITIONS. CRALL AND STOVER (1957) REPORTED THAT FLAVICEPS WAS 31% EFFICIENT AS A VECTOR OF PIERCE'S DISEASE VIRUS IN THEIR EXPERIMENTS WITH SUSCEPTIBLE GRAPES AT LEESBURG. C. SAGITTIFERA HAS BEEN TAKEN FROM A NUMBER OF HOSTS BUT SEEMS TO REACH PEAK ABUNDANCE ON BERMUDA GRASS. C. SAGITTIFERA AND FLAVICEPS ARE MOST COMMON DURING SUMMER AND AUTUMN, BECOMING SCARCE DURING WINTER AND EARLY SPRING UNDER FLORIDA CONDITIONS.

CONTROL: UNLESS THESE LEAFHOPPERS ARE UNUSUALLY ABUNDANT, INSECTICIDES ARE NOT RECOMMENDED. IF THE SITUATION WARRANTS, LOCAL AGRICULTURAL AUTHORITIES SHOULD BE CONTACTED FOR CONTROL INFORMATION.

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