

A NEST-MAKING PSYLLID, EUPHALERUS NIDIFEX, IN FLORIDA<sup>1</sup>  
HOMOPTERA:PSYLLIDAE

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**INTRODUCTION:** THIS PSYLLID IS ABUNDANT ON JAMAICA DOGWOOD, PISCIDIA PISCIPULA, IN THE SOUTHERN TIP AREA OF FLORIDA. NEW GROWTH OF THE HOST PLANT IS SOMETIMES KILLED BY HEAVY PSYLLID INFESTATIONS. CONSISTENTLY SEVERE ATTACKS BY THIS PSYLLID AND OTHER INSECTS ACCOUNT FOR THE RARE USE OF JAMAICA DOGWOOD AS AN ORNAMENTAL AND SHADE TREE IN ITS HABITAT RANGE.

**BIONOMICS:** THIS PSYLLID IS KNOWN AS A NEST-MAKING PSYLLID BECAUSE EACH NYMPH CONSTRUCTS ITS OWN "HOUSE" OR PROTECTIVE COVERING IN WHICH IT GROWS. THERE ARE RECORDS OF 100 NESTS PER LEAF. THE NYMPH INSERTS ITS MOUTHPARTS INTO PLANT TISSUE THROUGH AN OPENING AT THE BASE OF THE NEST. SCHWARZ (1904A) WROTE THAT THE WALLS OF THE STRUCTURE ARE COMPOSED OF FINE, COTTON-LIKE THREADS, FIRMLY FASTENED TO THE LEAF. HE ADDED THAT THE NESTS WERE OF A STICKY NATURE WHEN INHABITED BY THE NYMPHS BUT OLD SPECIMENS BECAME BRITTLE IN TIME. PSYLLID NESTS LOCATED ON THE WINGED SEED POD AND ON THE LEAF OF JAMAICA DOGWOOD ARE SHOWN IN FIGURES 1 AND 2, RESPECTIVELY. A SIZEABLE OPENING IN EACH NEST RESULTS WHEN THE LAST STAGE (5TH INSTAR) NYMPH USES THE ARMATURE AT THE APEX OF THE ABDOMEN TO SAW A HOLE LARGE ENOUGH TO ALLOW ESCAPE. THE NYMPH ANCHORS ITSELF ON THE OUTSIDE, THE SKIN SPLITS OPEN, AND THE ADULT EMERGES. NYMPHS HAVE BEEN COLLECTED DURING ALL SEASONS OF THE YEAR IN EXTREME SOUTH FLORIDA, BUT SEEM HEAVIEST IN SPRING. DR. F. C. CRAIGHEAD (CORRESPONDENCE AUG. 30, 1965) WROTE THAT THERE WAS SERIOUS KILLING OF NEW GROWTH ON JAMAICA DOGWOOD, PARTICULARLY IN THE FLAMINGO AREA OF EVERGLADES NATIONAL PARK. HE ADDED THAT THIS PSYLLID WAS PREVALENT IN THE FLORIDA KEYS, ESPECIALLY KEY LARGO. HE COLLECTED A SAMPLE IN APRIL 1965 JUST AS THE FIRST FLOWERS WERE OPENING, AND NOTICED THAT THERE WAS MUCH ABORTION OF NEW GROWTH AT THIS TIME.

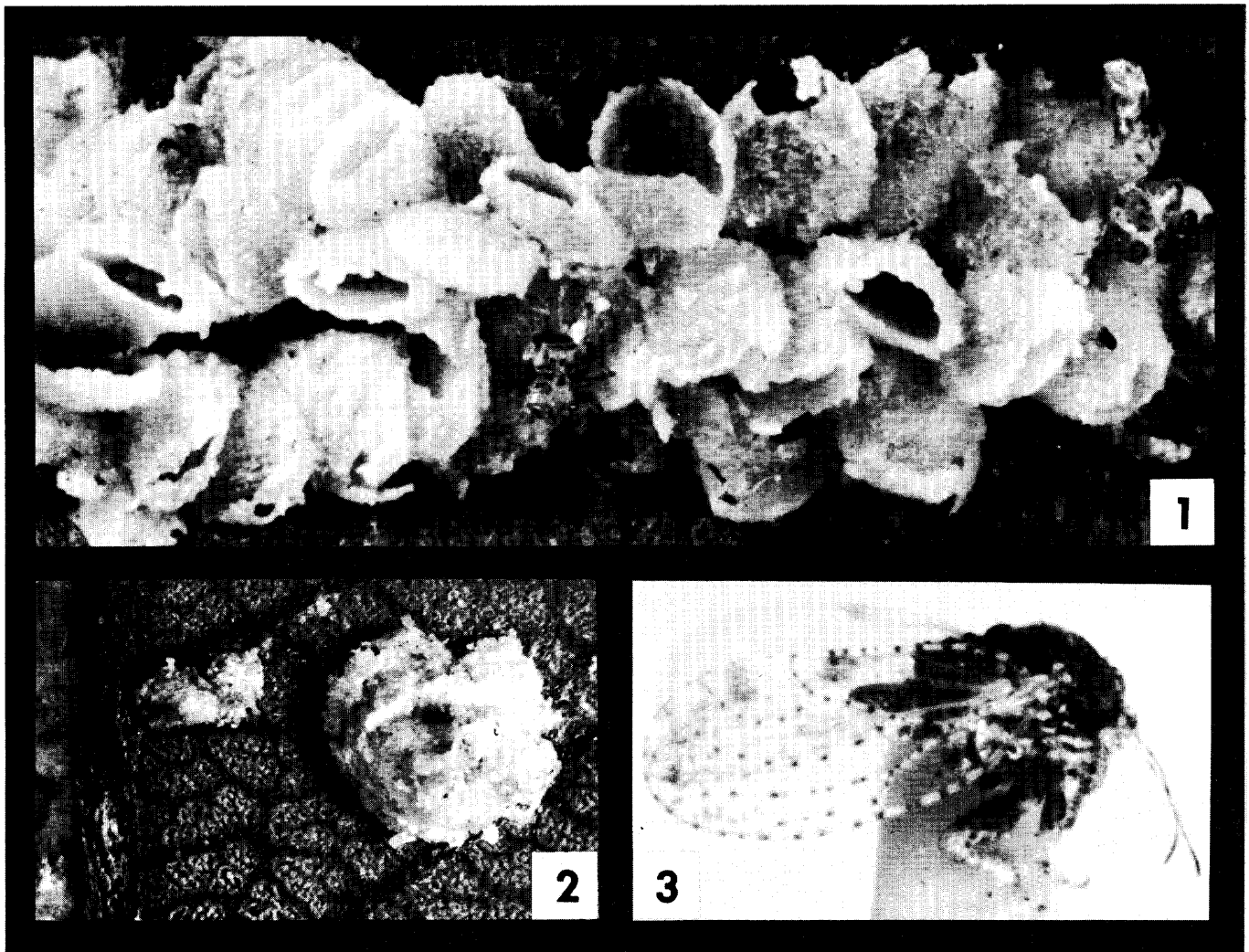


FIG. 1. NESTS AND CAST SKINS OF EUPHALERUS NIDIFEX (ASHMEAD) ON JAMAICA DOGWOOD.  
FIG. 2. NESTS OF E. NIDIFEX ON LEAF OF JAMAICA DOGWOOD, PISCIDIA PISCIPULA.  
FIG. 3. ADULT MALE E. NIDIFEX: 35X

**IDENTIFICATION:** THE WHITE NESTS OF THIS PSYLLID ARE HIGHLY CONSPICUOUS; THEY RESEMBLE SMALL BIVALVE SHELLS OR CERTAIN PLANT SCALES. SCALES, HOWEVER, DO NOT MAKE EMERGENCE OPENINGS AS DO THESE PSYLLIDS. THE LATER INSTAR NYMPHS OF PSYLLIDS ARE DISTINGUISHED BY TWO PAIRS OF WING BUDS. FIG. 4 SHOWS NESTS AND A CAST SKIN OF A FIFTH INSTAR NYMPH. ADULT SPECIMENS OF E. NIDIFEX (FIG. 3) ARE 1.9 TO 2.5 MM IN LENGTH; GENERAL COLOR IS GREENISH WHITE, WITH REDDISH BROWN STREAKS; ENTIRE BODY, LEGS, AND WINGS ARE SPECKLED WITH BROWN OR BLACK SPOTS; ANTENNAE ARE TIPPED WITH BLACK ON EACH SEGMENT; FOREWINGS WITH SPOTS AND OFTEN WITH BROWNISH PATCHES ON THE MEMBRANE. THIS IS THE ONLY U. S. SPECIES COVERED WITH DARK SPOTS AND THE ONLY EUPHALERUS IN THE EASTERN U. S. THE CLOSEST RELATIVES, ACCORDING TO THE LITERATURE, ARE E. OSTREOIDES CRAWFORD FROM BRAZIL, E. CHAMPIONI LAING FROM GUATEMALA, AND E. ANTILLENIS CALDWELL & MARTORELL FROM PUERTO RICO.

**HOSTS:** THE KNOWN HOST IS JAMAICA DOGWOOD OR FLORIDA FISHPOISON-TREE, PISCIDIA PISCIPULA (L.) SARG. SOME OF ITS SYNONYMS ARE PISCIDIA ERYTHRINA, P. COMMUNIS, ICHTHYOMETHIA PISCIPULA, AND I. COMMUNIS. LITTLE (1953) GIVES THE RANGE OF THIS TREE AS SOUTHERN FLORIDA, WEST INDIES, AND EASTERN MEXICO SOUTH TO HONDURAS. DIVISION OF PLANT INDUSTRY (FLA.) HAS SEVERAL UNCONFIRMED RECORDS OF GEIGER-TREE, CORDIA SEBESTENA, AS HOST.

**DISTRIBUTION:** THERE IS SOME DOUBT ABOUT THE DISTRIBUTION OF E. NIDIFEX BECAUSE NON-U. S. RECORDS IN THE LITERATURE MAY NOT BE VALID. SCHWARZ (1904b) WROTE THAT HE ORIGINALLY FOUND THIS PSYLLID "ON THE ISLAND OF KEY WEST, FLA., IN APRIL, 1887, BUT SUBSEQUENTLY (IN 1903) BRED IT IN GREAT NUMBERS FROM LARVAL CASES FOUND AT THE SAME PLACE AND AT CAYAMAS, CUBA, ON THE LEAVES AND SHOOTS OF PISCIDIA ERYTHRINA." CRAWFORD (1914) DISCUSSED DIFFERENCES

BETWEEN THE SPECIMENS FROM CUBA AND THOSE FROM FLORIDA. HE ALSO NOTED THAT ONE FEMALE FROM BELIZE, BRITISH HONDURAS, CLOSELY RESEMBLED THE FLORIDA FORMS. SINCE THEN THERE HAVE BEEN REPORTS OF NIDIFEX FROM THE VIRGIN ISLANDS AND FROM PUERTO RICO. CALDWELL AND MARTORELL (1951) DESCRIBED E. ANTILLENIS FROM PUERTO RICO AND PLACED THE CUBAN, THE VIRGIN ISLANDS, AND PUERTO RICAN RECORDS OF NIDIFEX IN SYNONYMY UNDER ANTILLENIS. NO MENTION WAS MADE OF THE BELIZE SPECIMEN. IT MAY BE THAT NIDIFEX RANGES ONLY IN THE SOUTHERN TIP AREA OF FLORIDA, BUT UNTIL A MORE COMPREHENSIVE STUDY IS MADE, CAUTION MUST BE EXERCISED ON PRECISELY DEFINING NIDIFEX. ONE PROBLEM FACING FUTURE WORKERS IS THAT THE TYPE OF NIDIFEX IS "SUPPOSEDLY LOST." THIS WAS MENTIONED BY CALDWELL AND MARTORELL WHO THEN ASSUMED THAT SCHWARZ DID HIS REARING WORK IN FLORIDA AND THAT THE TYPE WAS ALSO FROM THERE.

**SELECTED REFERENCES:**

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FIG. 4. NESTS & CAST NYMPHAL SKIN OF E. NIDIFEX.