

ECONOMIC IMPORTANCE: APHROPHORA, AN UNCOMMON GENUS IN FLORIDA, INCLUDES SOME SPECIES THAT ATTACK PINE (PINUS SPP.); HOWEVER, NO LARGE SCALE DAMAGE HAS BEEN REPORTED IN THIS STATE.

DISTRIBUTION AND DISCUSSION: APPARENTLY THREE SPECIES OF APHROPHORA ARE KNOWN TO OCCUR IN FLORIDA. ONE OF THESE IS THE PINE SPITTLEBUG, A. PARALLELA (SAY), OF WHICH WE HAVE TWO RECORDS. NYMPHS AND ADULTS ON LOBLOLLY PINE, PINUS TAEDA (L.), WERE COLLECTED BY PROFESSOR L. A. HETRICK, UNIVERSITY OF FLORIDA, ON APRIL 26, 1960, SOUTHWEST OF OTTER CREEK, LEVY COUNTY. THE NYMPHS WERE FAIRLY ABUNDANT UNDER COPIOUS MASSES OF SPITTLE ON THE TERMINALS OF SAPLING SIZED TREES. THIS WAS REPORTED BY THE USDA COOPERATIVE ECONOMIC INSECT REPORT 10(19):362 IN 1960. PROF. HETRICK ALSO RECOVERED A SINGLE FEMALE FROM A BLACKLIGHT (ULTRA-VIOLET) TRAP AT AUSTIN CARY MEMORIAL FOREST, NORTHEAST OF GAINESVILLE, ALACHUA COUNTY, MAY 22, 1963. TO THE AUTHOR'S KNOWLEDGE, THESE ARE THE ONLY KNOWN FLORIDA RECORDS. BEYOND FLORIDA THE CLOSEST LOCALITY APPEARS TO BE BILLYS ISLAND, OKEFENOKEE SWAMP, GEORGIA. TWO COLLECTIONS FROM THIS LOCALITY AND FLORIDA'S LEVY COUNTY SPECIMENS ARE IN THE U. S. NATIONAL MUSEUM, (PERSONAL CORRESPONDENCE WITH MISS LOUISE M. RUSSELL, APRIL 5, 1963). METCALF (1962), COVERING THE LITERATURE THROUGH 1955, LISTED NORTH CAROLINA AND ARKANSAS AS THE SOUTHERNMOST LOCALITIES. POSSIBLY THE PINE SPITTLEBUG IS SLOWLY BECOMING ENTRENCHED IN NORTH FLORIDA IN ISOLATED POCKETS. TELL-TALE MASSES OF SPITTLE ON PINE WOULD BE A. PARALLELA. THIS SPECIES REACHES ITS GREATEST ABUNDANCE IN THE PINE REGIONS AROUND THE GREAT LAKES AND THE UPPER PART OF APPALACHIAN MOUNTAINS.

APHROPHORA QUADRINOTATA (SAY) HAS A DISTRIBUTION SIMILAR TO A. PARALLELA, AND MUST BE CONSIDERED RARE IN FLORIDA, EVEN THOUGH IT IS "THE MOST ABUNDANT OF THE EASTERN SPECIES." IT WAS REPORTED IN NORTH FLORIDA BY BALL (1899), AND SUBSEQUENT AUTHORS CITE THIS REPORT RATHER THAN NEW FINDS OF THEIR OWN, IN ARTICLES INVESTIGATED BY THE AUTHOR. NEITHER THE FLORIDA STATE COLLECTION OF ARTHROPODS NOR THE U. S. NATIONAL MUSEUM HAS ANY FLORIDA SPECIMENS OF A. QUADRINOTATA.

THE THIRD SPECIES IS THE SARATOGA SPITTLEBUG, APHROPHORA SARATOGENSIS (FITCH). AUTHORITIES HAVE DISAGREED ABOUT THE SPECIFIC CONCEPT AND DISTRIBUTION OF A. SARATOGENSIS. BALL (1934) WROTE THAT IT WAS "ABUNDANT ALONG THE APPALACHIAN MOUNTAINS FROM ONTARIO AND NOVA SCOTIA TO SOUTHERN FLORIDA WEST THROUGH PENNSYLVANIA AND NEW YORK TO NORTHERN WISCONSIN WHERE IT IS ABUNDANT IN THE PINE BARRENS, THEN TO VANCOUVER, BRITISH COLUMBIA, BERKELEY AND FRESNO, CALIFORNIA." ON THE OTHER HAND, WALLEY (1928) AND DOERING (1941) HAVE SUGGESTED THAT THE WESTERN AND SOUTHERN FORMS INVOLVE DIFFERENT SPECIES, THE FORM FOUND FROM THE DISTRICT OF COLUMBIA SOUTH AND WEST TO FLORIDA AND ARKANSAS IS CALLED A. DETRITUS (WLK.). MOORE (1956) PROPOSED THAT A. DETRITUS IS A SYNONYM OF A. SARATOGENSIS INFERRING THAT THE SARATOGA SPITTLEBUG HAS A COMPLETE NORTH TO SOUTH DISTRIBUTION. SEVERAL RECORDS OF THIS SPECIES ARE KNOWN FOR NORTHERN FLORIDA. THE FOLLOWING COUNTY RECORDS COME PRIMARILY FROM THE DIVISION OF PLANT INDUSTRY, THE UNIVERSITY OF FLORIDA, AND THE U. S. NATIONAL MUSEUM: ALACHUA, BAKER, COLUMBIA, DUVAL, JACKSON, LEON, LEVY, AND PUTNAM. THE SOUTHERNMOST LOCALITY IS AT SANFORD IN SEMINOLE COUNTY. ADULTS HAVE BEEN TAKEN FROM APRIL 1 INTO NOVEMBER IN FLORIDA.

HOSTS: BOTH NYMPHS AND ADULTS OF THE PINE SPITTLEBUG FEED ON PINE, OR LESS COMMONLY ON OTHER CONIFERS, WHEREAS ONLY THE ADULTS OF THE SARATOGA SPITTLEBUG FEED ON CONIFERS, PRINCIPALLY PINE. ACCORDING TO THE LITERATURE, THE NYMPHS OF THE LATTER SPECIES FEED PRIMARILY ON SWEETFERN, MYRICA ASPLENIFOLIA L., SALIX SPP., RUBUS SPP., AND VIRGINIA CHAIN FERN, WOODWARDIA VIRGINICA (L.) SMITH, IN THE UNDERSTORY BELOW PINES, BUT OVER 30 ALTERNATE HOSTS HAVE BEEN RECORDED. AS NYMPHS COMPLETE THEIR DEVELOPMENT ON THE ALTERNATE HOSTS, THEY TRANSFORM INTO ADULTS AND FLY TO PINE. THE FLORIDA STATE COLLECTION OF ARTHROPODS HAS RECORDS OF YOUNG ADULTS CAUGHT ON SUCH HOSTS AS MELILOTUS, ERIGERON, MEDICAGO, AND QUERCUS. EWAN (1961) WROTE THAT FIFTH-INSTAR NYMPHS PREFER WOODY HOSTS, BUT THAT THE MAJORITY OF EARLY-INSTAR NYMPHS ARE FOUND ON SUC-CULENT HERBACEOUS PLANTS. A. QUADRINOTATA IS ABUNDANT ON WEEDS AND SHRUBS BOTH AS NYMPHS AND ADULTS.

<sup>1</sup>CONTRIBUTION No. 32, ENTOMOLOGY SECTION.

KEY TO FLORIDA SPECIES OF APHROPHORA:

- 1. EACH ELYTRON WITH TWO HYALINE AREAS ON OUTER MARGIN SEPARATED BY A DARK BAND; LENGTH USUALLY 7 TO 8 MM, RARELY MORE, FIG. 1-----QUADRINOTATA (SAY)  
EACH ELYTRON A SUFFUSION OF BROWN OR TAN, LACKING DISTINCT HYALINE AREAS SEPARATED BY A DARK BAND; LENGTH USUALLY OVER 8 MM, FIGS. 2 AND 3-----2
- 2. VERTEX AT MIDDLE TWO-THIRDS AS LONG AS WIDTH BETWEEN EYES; FACE BULBOUS; SCUTELLUM WITH CENTRAL AREA HAVING A CONCENTRATION OF DARKLY PIGMENTED PUNCTURES; DORSAL SILHOUETTE RATHER BROAD, OVOID; NYMPHS ON PINE, FIGS. 2 AND 4-----PARALLELA (SAY)  
VERTEX AT MIDDLE NOT MORE THAN ONE-HALF AS LONG AS WIDTH BETWEEN THE EYES; FACE CONVEX BUT NOT BULBOUS; SCUTELLUM UNIFORMLY TAN; DORSAL SILHOUETTE MORE SLENDER, STEAMLINED; NYMPHS NOT ON PINE, FIGS. 3 AND 5-----SARATOGENSIS (FITCH)

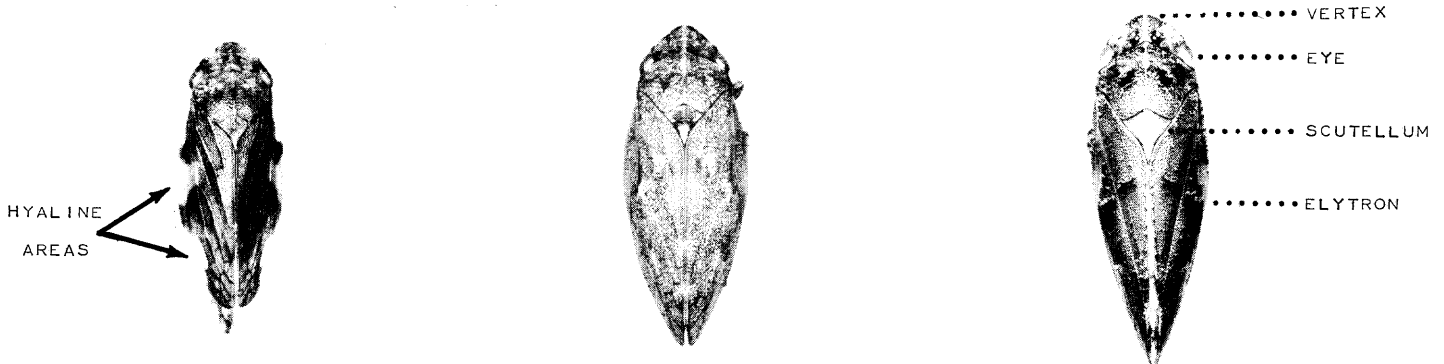


FIG. 1

A. QUADRINOTATA (SAY) ♀  
(APPROX. 4.4 TIMES ACTUAL SIZE)

FIG. 2

A. PARALLELA (SAY) ♀  
(APPROX. 4.1 TIMES ACTUAL SIZE)

FIG. 3

A. SARATOGENSIS (FITCH) ♀  
(APPROX. 4.5 TIMES ACTUAL SIZE)

FIG. 4.

A. PARALLELA (SAY)  
LEFT LATERAL ASPECT.  
ARROW POINTING TO  
BULBOUS FACE.

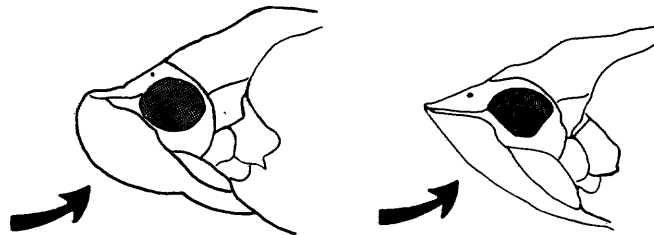


FIG. 5.

A. SARATOGENSIS (FITCH)  
LEFT LATERAL ASPECT.  
ARROW POINTING TO  
SLIGHTLY CONVEX FACE.

REFERENCES:

BALL, E. D. 1899. A REVIEW OF THE CERCOPIDAE OF NORTH AMERICA, NORTH OF MEXICO. IOWA ACAD. OF SCI., PROC. 6:204-226.

1934. THE SPITTLE INSECTS OF THE GENUS APHROPHORA OCCURRING IN THE UNITED STATES (HOMOPTERA: CERCOPIDAE). ENT. NEWS 45(7):175-179.

DOERING, K. C. 1941. A REVISION OF TWO GENERA OF NORTH AMERICAN CERCOPIDAE (HOMOPTERA). KANS. ENT. SOC., J., 14(3,4):102-134.

EWAN, H. G. 1961. THE SARATOGA SPITTLEBUG, A DESTRUCTIVE PEST IN RED PINE PLANTATIONS. U. S. DEPT. OF AGRICULTURE, FOREST SERVICE, TECH. BULL. NO. 1250.

METCALF, Z. P. 1962. GENERAL CATALOGUE OF THE HOMOPTERA, FASC. VII CERCOPOIDEA, PART 3, APHROPHORIDAE, 600 P.

MOORE, T. E. 1956. EVOLUTION OF THE HIGHER CATEGORIES OF CERCOPIDAE, WITH A REVISION OF THE NORTH AMERICAN SPECIES OF APHROPHORA (HOMOPTERA). DISS. ABS. 16:1743-1744. PROCESSED. (PH.D. THESIS, UNIV. OF ILLINOIS, PUB. 18, 175.

WALLEY, G. S. 1928. THE GENUS APHROPHORA IN AMERICA, NORTH OF MEXICO. CANAD. ENT. 60(8):184-192.