

PHALAEOPSIS MITE, TENUIPALPUS PACIFICUS BAKER¹
H. A. DENMARK

INTRODUCTION: PRITCHARD (1949) REFERS TO TENUIPALPUS PACIFICUS BAKER AS THE PHALAEOPSIS MITE. THIS FLAT RED MITE IS ONE OF THE MOST DESTRUCTIVE TO BE FOUND ON ORCHIDS UNDER FLORIDA GREENHOUSE CONDITIONS. IT FEEDS ON THE LEAVES OF ORCHIDS BUT DOES NOT SPIN A WEB. APPARENTLY IT IS AN INTRODUCED SPECIES ON ORCHIDS FROM THE TROPICS.

DISTRIBUTION: T. PACIFICUS WAS DESCRIBED FROM SPECIMENS INTERCEPTED AT HOBOKEN, NEW JERSEY, FROM THE CANAL ZONE ON PHALAEOPSIS STUARTIANA IN 1943 (BAKER). KNOWN DISTRIBUTION: AUSTRALIA, ENGLAND, GERMANY, HOLLAND, JAVA, PANAMA, PHILIPPINES, SIAM, AND THE UNITED STATES. IN THE UNITED STATES IT IS FOUND IN CALIFORNIA AND FLORIDA. IT IS PROBABLY FOUND WHEREVER ORCHIDS HAVE BEEN IMPORTED DIRECTLY FROM SOUTH AND CENTRAL AMERICA. IN FLORIDA IT HAS BEEN RECORDED FROM THE FOLLOWING COUNTIES: BROWARD, COLLIER, DADE, DUVAL, GADSDEN, HILLSBOROUGH, LAKE, ORANGE, PALM BEACH, PINELLAS, POLK, ST. LUCIE, SARASOTA, SEMINOLE AND VOLUSIA.

HOSTS: IT IS MOST SPECIFIC TO ORCHIDACEAE AND POLYPODIACEAE. KNOWN HOSTS OF ORCHIDACEAE: AERIDES, CATLEYA, CYPRIPEDIUM, DENDROBIUM, GRAMMATOPHYLLUM, ONCIDIUM, PHALAEOPSIS AND SACCOLABIUM; OF POLYPODIACEAE: DAVALLIA FEJEENSIS AND PLATYCERIUM SP.

ECONOMIC IMPORTANCE: MANY OF THE FALSE SPIDER MITES ARE POLYPHAGUS, BUT T. PACIFICUS IS RESTRICTED TO ORCHIDACEAE AND POLYPODIACEAE. THIS MITE HAS NEEDLELIKE CHELICERAL STYLETS THAT PIERCE THE EPIDERMIS AND REMOVES THE CHLOROPHYLL, CAUSING THE PLANT TISSUE TO BECOME SILVERY IN APPEARANCE AND LATER TO TURN RUSTY BROWN. THE WHITE MOLT SKINS REMAIN ON THE LEAF AND ARE CONSPICUOUS AGAINST A RUSTY BROWN LEAF. THE MITE FEEDS AND BREEDS ON BOTH SIDES OF THE LEAF, BUT PREFERS THE LOWER SURFACE. ELONGATE REDDISH EGGS ARE LAID ON THE SURFACE OF THE LEAF, USUALLY ALONG THE MIDRIB. THE EGGS HATCH IN ABOUT THREE WEEKS INTO THE LARVAL STAGE WHICH HAS THREE PAIRS OF LEGS. ALL OTHER STAGES HAVE FOUR PAIRS OF LEGS. THE LARVA MOLTS INTO THE PROTONYMPH IN ABOUT TWO WEEKS. THE PROTONYMPH MOLTS INTO THE DEUTONYMPH IN ABOUT TWO WEEKS AND TO THE ADULT STAGE IN ABOUT TWO WEEKS, ACCORDING TO DOSSE (1954). THE LIFE CYCLE IS APPROXIMATELY TWO MONTHS DEPENDING UPON THE TEMPERATURE AND HUMIDITY. THERE ARE SEVERAL GENERATIONS PER YEAR.

DESCRIPTION: THE LENGTH OF FEMALE, INCLUDING THE ROSTRUM, IS 312 MICRONS AND 190 MICRONS WIDE. THE THIRD, TERMINAL, PALPAL SEGMENT IS SMALL WITH ONE SHORT STRAIGHT SETA AND ONE LONGER SLIGHTLY CURVED SETA (FIG. 1). THESE CHARACTERS CANNOT BE SEEN ON UNMOUNTED SPECIMENS. THE HYSTEROSOMA HAS FOUR PAIRS OF NONFLAGELLATE SETAE AND ONE PAIR OF FLAGELLATE SETAE CAUDALLY (FIG. 2). THE LENGTH OF THE MALE, INCLUDING THE ROSTRUM, IS 269 MICRONS AND 150 MICRONS WIDE, AND HAS THE SAME GENERAL APPEARANCE AS THE FEMALE, EXCEPT SMALLER AND NARROWER (FIG. 3).

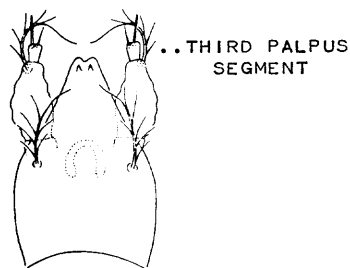


FIG. 1. GNATHOSOMA WITH PALPI (AFTER BAKER).

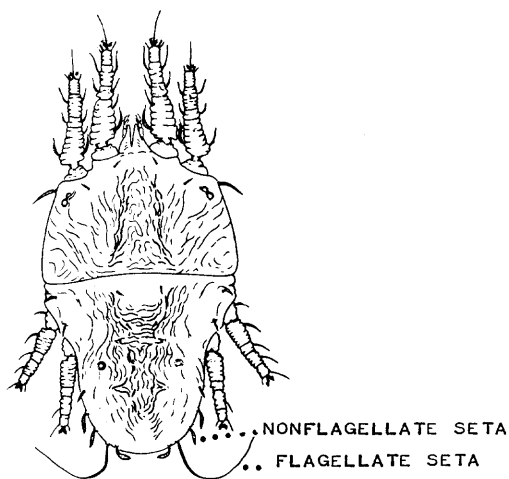


FIG. 2. ADULT FEMALE (AFTER BAKER).

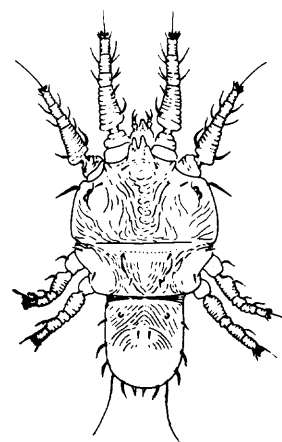


FIG. 3. ADULT MALE (AFTER BAKER).

CONTROL: THE RECOMMENDED CONTROL ACCORDING TO THE UNIVERSITY OF FLORIDA IFAS DEPARTMENT OF ENTOMOLOGY AND NEMATOLOGY IS: CHLOROBENZILATE 25% WP, 1 TABLESPOON TO 1 GALLON OF WATER OR 1 LB. TO 100 GALLONS; DIMITE, 1 TEASPOON TO 1 GALLON OR 1 PT. TO 100 GALLONS; ETHION 23-25% EC, 2 TEASPOONS TO 1 GALLON OR 2 PT. TO 100 GALLONS; KELTHANE 18% EC, 2 TEASPOONS TO 1 GALLON OR 2 PT. TO 100 GALLONS; KELTHANE 18% WP, 2 TABLESPOONS TO 1 GALLON OR 2 LBS. TO 100 GALLONS; META-SYSTOX-R 25% EC, 2 TEASPOONS TO 1 GALLON OR 2 PT. TO 100 GALLONS.

LITERATURE CITED:

- DOSSE, GUDO. 1954. TENUIPALPUS ORCHIDARUM PARFITT NUN AUCH IN DEUTSCHEN GEWACHSHAUSERN. ZEITSCHR. ANGEW. ENT. 36:304-315.
- PRITCHARD, A. EARL. 1949. CALIFORNIA GREENHOUSE PESTS AND THEIR CONTROL. CALIFORNIA AGR. EXP. STA. BULL. 713:1-71.
- PRITCHARD, A. EARL AND EDWARD W. BAKER. 1952. THE FALSE SPIDER MITES OF CALIFORNIA (ACARINA: PHYTOP-TIPALPIDAE). UNIV. CALIFORNIA PUBLS. ENT. 9(1):1-93.

¹CONTRIBUTION No. 132, ENTOMOLOGY SECTION