

Phalaenopsis Mite, *Tenuipalpus pacificus* Baker (Arachnida: Acari: Tenuipalpidae)¹

H. A. Denmark²

The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

Pritchard (1949) refers to *Tenuipalpus pacificus* Baker as the phalaenopsis mite. This flat, red mite is one of the most destructive 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. It can also be a pest of ferns.

Distribution

Tenuipalpus pacificus was described from specimens intercepted at Hoboken, New Jersey, from the Canal Zone on *Phalaenopsis stuartiana* in 1943 (Baker).

The known distribution is Australia (New South Wales) (CSIRO 2004), Brazil (De Moraes and Freire 2001), England, Germany, Holland, Java, Panama, Philippines, Siam, South Africa, and the United States.

In the United States, it has been recorded in California, Hawaii (Anonymous 2002), and Florida. It is probably found wherever orchids have been imported directly from South and Central America.



Figure 1. Adult female *Tenuipalpus pacificus* Baker.

Description

The length of the adult 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. These characters cannot be seen on unmounted specimens. The hysterosoma has four pairs of non-flagellate setae and one pair of flagellate

1. This document is EENY377 (originally published as DPI Entomology Circular 74), one of a series of the Entomology and Nematology Department, UF/IFAS Extension. Original publication date October 2006. Revised April 2010, November 2015, and October 2021. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication. This document is also available on the Featured Creatures website at <http://entnemdept.ifas.ufl.edu/creatures/>.

2. H. A. Denmark, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Gainesville, FL.

setae caudally. The length of the adult male, including the rostrum, is 269 microns and 150 microns wide, and has the same general appearance as the female, except smaller and narrower.

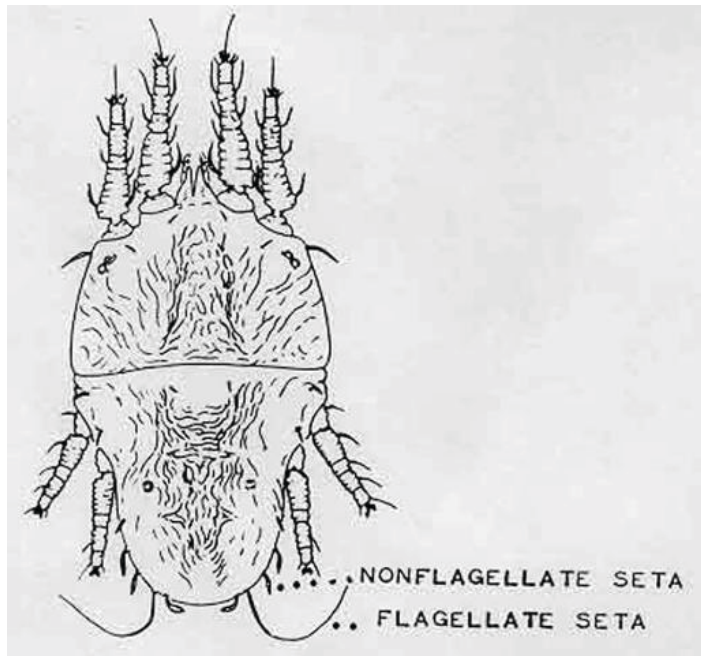


Figure 2. Adult female phalaenopsis mite, *Tenuipalpus pacificus* Baker. Credits: Division of Plant Industry

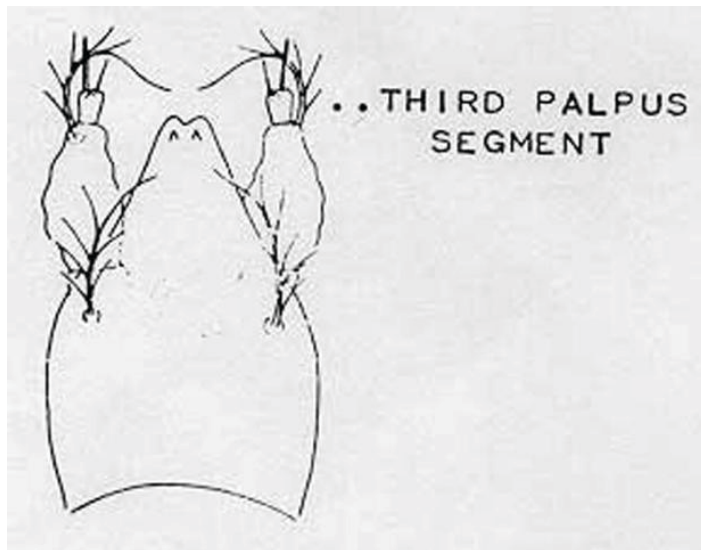


Figure 3. Gnathosoma with palpi.

Biology

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 spans approximately two months, depending on

the temperature and humidity. There are several generations per year.

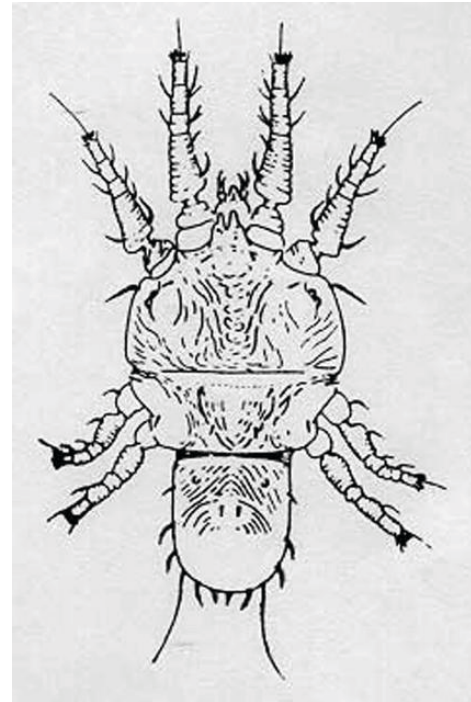


Figure 4. Adult male phalaenopsis mite, *Tenuipalpus pacificus* Baker. Credits: Division of Plant Industry

Hosts

This mite is host specific to the Orchidaceae and Polypodiaceae plant families.

Known hosts of Orchidaceae: *Aerides*, *Cattleya*, *Cypripedium*, *Dendrobium*, *Grammatophyllum*, *Oncidium*, *Phalaenopsis* and *Saccolabium*.

Known hosts of Polypodiaceae: *Davallia fejeensis* and *Platyserium* sp.

Economic Importance

Many of the false spider mites are polyphagous, but *Tenuipalpus pacificus* is restricted to Orchidaceae and Polypodiaceae. This mite has needle-like, cheliceral stylets that pierce the epidermis and remove chlorophyll, causing the plant tissue to become silvery in appearance and later to turn rusty brown. The white molted skins remain on the leaf, conspicuous against the rusty-brown leaf. The mite feeds and breeds on both sides of the leaf, but prefers the lower surface.

Selected References

Anonymous. (2002). *Tenuipalpus pacificus*. Bishop Museum-Hawaiian Arthropod Checklist (<http://hbs.bishopmuseum.org/checklist/species.asp?grp=&taxID=-820917862>) (5 November 2015).

Cating RA, Hoy MA, Palmateer AJ. 2010. "Silwet L-77 improves the efficacy of horticultural oils for control of biosduval scale *Diaspis boisduvalii* (Hemiptera: Diaspididae) and the flat mite *Tenuipalpus pacificus* (Arachnida: Acari: Tenuipalpidae) on orchids." *Florida Entomologist* 93: 100–106.

CSIRO. (2004). *Tenuipalpus pacificus* Baker. CSIRO Entomology. http://www.ento.csiro.au/aicn/name_s/b_3952.htm (9 October 2018)

De Moraes GJ, Freire RAP. (2001). "A new species of *Tenuipalpidae* (Acari: Prostigmata) on orchid from Brazil." *Zootaxa*. (9 October 2018)

Dosse G. 1954. "*Tenuipalpus orchidarum* Parfitt nun auch in deutschen Gewachshäusern." *Zeitschrift fuer Angewandte Entomologie* 36: 304–315.

Pritchard AE. 1949. "California greenhouse pests and their control." *California Agricultural Experiment Station Bulletin* 713: 1–71.

Pritchard AE, Baker EW. 1952. "The false spider mites of California (Acarina: Phytoptipalpidae)." *University of California Publications Entomology* 9: 1–93.