

## Cyclamen Mite, *Phytonemus pallidus* (Banks) (Arachnida: Acari: Tarsonemidae)<sup>1</sup>

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### Introduction

The cyclamen mite, *Phytonemus pallidus* (Banks), (family Tarsonemidae), was first noticed in New York in 1898 and in Canada in 1908. The cyclamen mite was described by Banks (1901) as *Tarsonemus pallidus* from leaves of greenhouse chrysanthemums at Jamaica, New York. Today, it is generally distributed throughout the country. Ewing (1939) considered *Tarsonemus fragariae* Zimmerman and *T. destructor* Reuter to be synonyms of *T. pallidus* Banks. Beer (1954) placed it in the genus *Steneotarsonemus*. However, Linquist placed in it the genus *Phytodromus* in 1987.

The mites are often found on the corms of cyclamens in storage and are thus transported by trade. It has been spread on plants in unopened leaflets and on the tubers of cyclamen to all parts of the world. This mite requires high humidity and avoids light. It overwinters in the adult stage in the temperate zone. It is widely distributed throughout North America, Hawaii, Europe and Asia.

### Synonymy

*Tarsonemus pallidus* Banks, 1901: 294.

*Tarsonemus fragariae* Zimmerman, 1905: 91.

*Steneotarsonemus pallidus* (Banks), Beer, 1954: 1267.

*Phytodromus pallidus* (Banks), Lindquist, 1987: 291.

### Description

This is one of the smaller mites that attacks ornamental plants. The adult female mite is yellowish brown, 250 $\mu$  to 260 $\mu$  long, with hind legs reduced to slender threadlike structures. The male is approximately 75% the size of the female. On the adult males the fourth pair of legs are modified and are used to transport the pupae or adult females.

The eggs are relatively large (125 $\mu$  X 75 $\mu$ ). They are elliptical, opaque, smooth and nearly twice as long as wide (Jepperson, Kefer and Baker, 1975).

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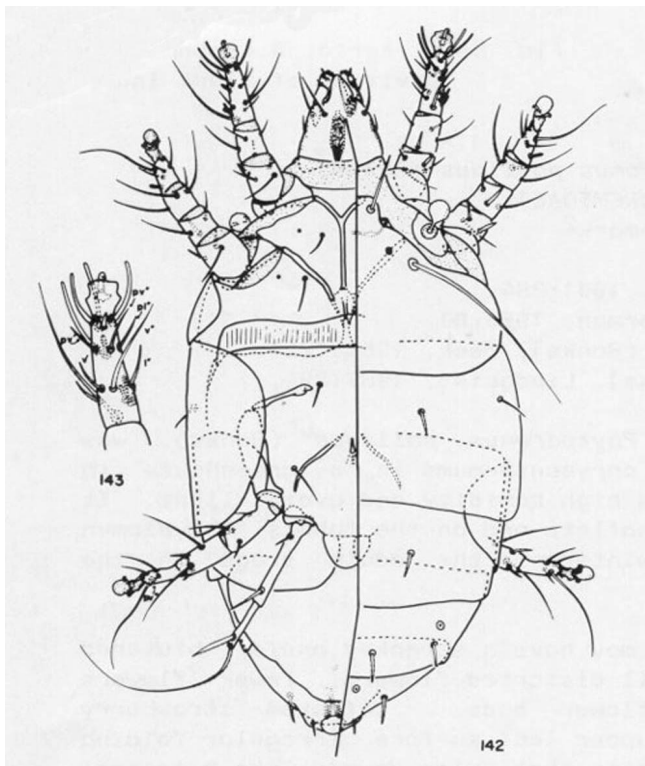
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The larvae are opaque white with a peculiar triangular enlargement at the posterior end of the body. The pupae are non motile.

The mouthparts consist of stout, paired palpi of indistinct segmentation inserted on the apical portion of the capitulum. It also includes the slender, styliform, paired chelicerae which are inserted into plant cells.

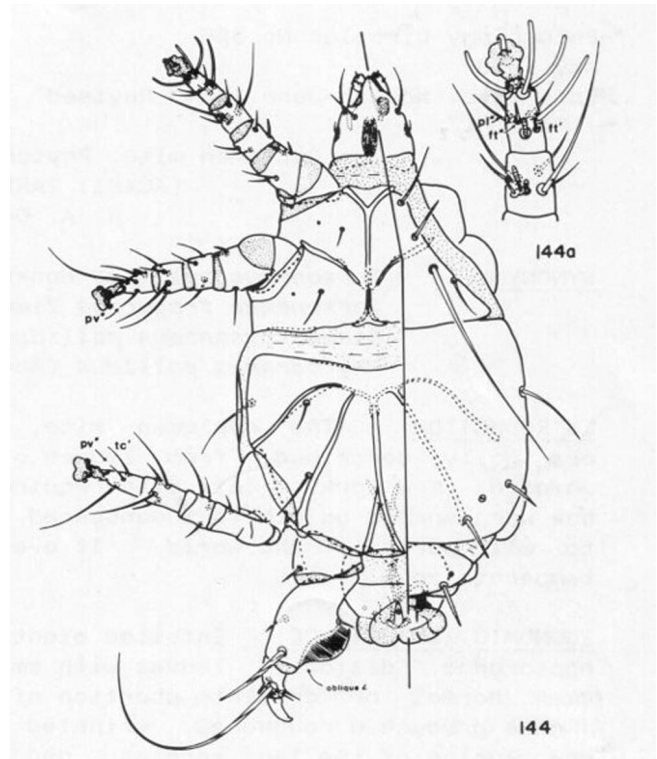
The layman may confuse the cyclamen mite with the broad mite, *Polyphagotarsonemus latus* (Banks), but the broad mite is broader, smaller, and moves much faster.



**Figure 1.** Adult female cyclamen mite, *Phytonemus pallidus* (Banks). Credits: James F. Price, University of Florida

### Life Cycle

One to three eggs are laid per day in clusters of two to three, with a total of 12 to 16 per life span. The duration of the egg stage is three to seven days, one to four days for the larvae, two to seven days for resting pupae or one to three weeks per generation (Smith and Goldsmith, 1936).



**Figure 2.** Adult male cyclamen mite, *Phytonemus pallidus* (Banks). Credits: Dr. E.E. Lindquist, Division of Plant Industry

### Hosts

Pest of many ornamental flowers and shrubs such as Cyclamen, African violet, begonia, gerbera, ivy, chrysanthemums, geranium, fuchsia, larkspur, petunia, snapdragon, and other greenhouse grown plants. If the humidity is high, field grown strawberries also may be infested.



**Figure 3.** A strawberry plant damaged by cyclamen mite, *Phytonemus pallidus* (Banks). Leaf petioles are short, blades are small, thickened and wrinkled, and total growth is stunted. Credits: James F. Price, University of Florida

## Economic Importance

Infested plants may have a streaked and/or blotched appearance, distorted leaves with small distorted flowers, fewer flowers than normal or complete abortion of flower buds. Infested strawberry plants produce a roughened, wrinkled upper leaf surface, irregular folding and fluting of the leaf margins, and veins that bulge upward like blisters. Plants with mild injuries assume a dense appearance because petioles fail to elongate. A heavy infestation will kill African violets and cyclamens by dwarfing the leaves at the crown, and some leaves fail to open.



**Figure 4.** Strawberry leaves and flowers damaged by cyclamen mite, *Phytonemus pallidus* (Banks). The flowers are dead. Credits: James F. Price, University of Florida



**Figure 5.** Damage to *Impatiens* sp. by the cyclamen mite, *Steneotarsonemus pallidus* (Banks). Credits: University of Florida

Unless African violets are examined carefully periodically, the cyclamen mite can be overlooked easily and cause damage by sucking out plant juices, causing cells to collapse and providing an entry for

plant diseases, resulting in damage such as leaf curling and leaf dying, before the mites are observed.

Great care should be taken to avoid introducing this pest into greenhouses on plants, hands, or clothes. The mites also are transferred from plant to plant in the routine cultural practices, by drafts of air, by close proximity of plants, or on clothes or hands. Since cyclamen mites are parthenogenetic, one will soon produce a mite colony large enough to cause damage and spread to surrounding plants (Garman 1917).

## Survey and Detection

Look for distorted, dwarfed, irregular folding of leaves, thickening of leaves or shortening of petioles.



**Figure 6.** One normal, large undamaged strawberry leaf compared with three leaves damaged by cyclamen mite, *Phytonemus pallidus* (Banks). Credits: James F. Price, University of Florida

## Management

The egg, larvae, pupae and adult stages are often well protected from chemical control in the leaf and/or flower buds. Mites on planting stock may be completely killed by immersion in water at 43.5 C (110 F) for 30 minutes.

See the following for more information:

Insect Management Guide for Landscape Plants (<http://edis.ifas.ufl.edu/IG013>)

Insect Management Guide for Strawberries (<http://edis.ifas.ufl.edu/IN400>)

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