

**NOTES ON THE LIFE HISTORY AND HABIT OF THE GREENISH SPIDER MITE,
PORCUPINYCHUS ABUTILONI G. NOV., SP. NOV., (ACARINA: TETRANYCHIDAE)**

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Porcupinychus abutiloni, a new genus and species reported from Karachi* is an extremely destructive pest of *Abutilon indicum*. The rearing technique for tracing the life history is given. A detailed account of the immature stages is also described and illustrated. The incubation period of the egg ranges from 4-7 and the larval stage lasts 4-6 days. The protonymphal period varies from 5-6 days and the deutonymphal from 4-6. The longevity of female ranges from 11-13 days. The complete life cycle from egg to adult takes an average of 21 days.

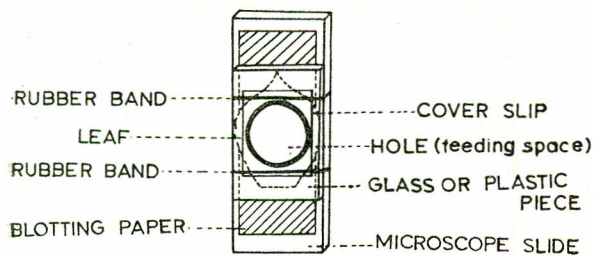
Introduction

The greenish spider mite, *Porcupinychus abutiloni* g. nov., sp. nov. is known to attack the *Abutilon indicum* (Indian Mallow). The leaves of the host plant are usually infested with this pest. Large masses of eggs are seen on the lower surface of leaves mainly in depressions along the mid-rib and lateral veins. The mites damage the plant by piercing the leaves with their stylet-like chelicerae and draining out the cellular contents near the puncture. The infested leaves prematurely wither and drop from the host plant.

Materials and Method

The following cavity slide method was used for tracing the life history of the new mite:

Cavity Slide Method (Fig. 1).—A fresh leaf of the host plant was kept on a blotting paper which in turn was placed on a microscope slide. The



Mites Rearing Cavity Slide

Fig. 1.— Mites rearing cavity slide.

blotting paper was kept regularly wet to keep the leaf fresh for some days. The leaf was covered by a piece of glass with a hole, one inch in dia-

meter. This hole provided the feeding space for the mites. The microscope slide, glass piece and cover slip were kept in position by two rubber bands. In the feeding space, adult mites were placed for egg laying. After the laying of eggs the mites were destroyed. The life history records were maintained from the generations coming out of these eggs. The mites and its immature stages were transferred to a cavity slide by means of a fine camel hair brush. The leaf was changed with another if it dried up. Counting, separating and observing of various stages of mites were made under a microscope.

Observations and Results

Habitat and Nature of Damage.—Both adult males and females and their young stages are usually found on either side of the leaves specially on young leaves. Their feeding causes white patches on the leaves which in case of heavy infestations may extend all over the surface. When the leaves begin to wither, the mites leave them and establish themselves by migrating on the other fresh ones. Extensive feeding on the leaves causes them to drop. If the mites are not controlled, the resulting loss of leaves inhibits the growth of plants completely.

LIFE HISTORY

The life history of *Porcupinychus abutiloni* g. nov., sp. nov. was carried out under laboratory conditions (temperature ranges between 80-90°F., relative humidity fluctuated from 60-80 percent).

Oviposition.—The female usually begins oviposition within one or two days after emergence. The eggs are laid in masses on either side of the leaves mainly along the mid-ribs and lateral veins. They are protected by the hairy nature of the

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leaves. On an average a single female lays 12 to 14 eggs in 24 hours.

Egg (Fig. 2).—The egg is smooth, transparent, somewhat spherical in shape. Its colour is dull white when freshly laid, but turns into brownish

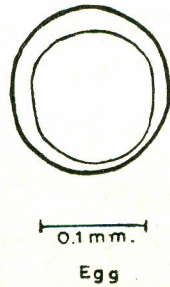


Fig. 2.—Egg of *Porcupinychus abutiloni* g. nov., sp. nov.

red at the time of hatching. The average diameter is 154μ . The incubation period varies from 4-7 days depending upon the prevailing temperature.

Larva (Fig. 3).—The newly hatched larva is 203μ and 140μ in length and breadth, respectively. It is somewhat oval in shape and light yellow in color. Upon feeding it becomes round and changes from pale yellow to greenish colour. There are two pairs of dorsal setae, arising from tuber-

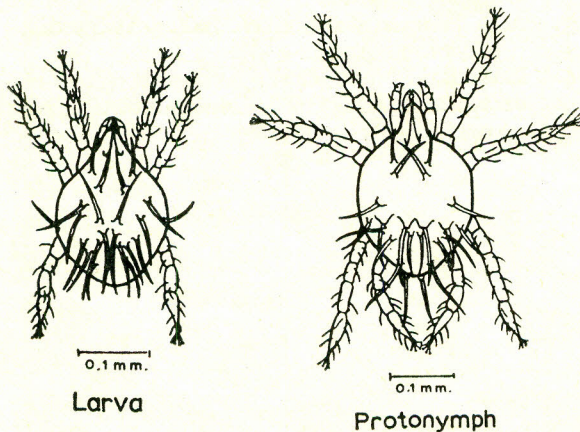


Fig. 3.—The developmental stages of *Porcupinychus abutiloni* g. nov., sp. nov.

cles. A pair of crimson red eyes are present on propodosoma. It has three pairs of legs, all of them bear their tip three pairs of knobbed ten-

hairs. After 3-4 days it stops feeding and undergoes a resting stage. In this condition it remains motionless for 1-2 days. After casting off skin the eight legged nymph emerges out of it. The larval period lasts for 4-6 days.

Protonymph (Fig. 3).—The protonymph emerges out of the larval stage by a transverse splitting of the larval skin. It moves actively and is phytophagous in feeding habit. It is oblong measuring 254μ in length and 164μ in breadth. The protonymph differs from that of larva mainly in having 4 pairs of legs. Its colour is variable, being fluctuated by the food consumed. It has also two pairs of dorsal setae. It also undergoes a quiescent condition, where it remains for 1-2 days. The duration of protonymph varies from 5-6 days.

Deutonymph (Fig. 4).—The deutonymph is 294μ long and 196μ wide. It has four pairs of legs, one pair of red spotted eyes and twenty two dorsal setae.

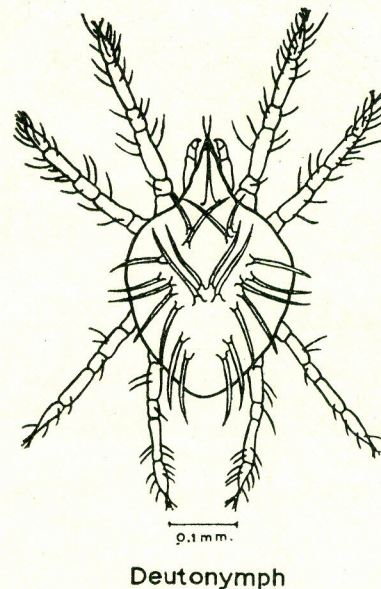


Fig. 4.—Deutonymph of *Porcupinychus abutiloni* g. nov., sp. nov.

The difference between the protonymph and the deutonymph is mainly of size. Male and female deutonymph is now distinguishable; the female is deep green in colour with round posterior end of the body, while the male is comparatively smaller in size, yellowish green in colour with a pointed abdomen. As compared to female, it has longer legs. The male deutonymphs are usually seen moving around the female deutonymph. At the end of this active deutonymphal stage it enters into

an immotile condition and in due course molts into the adult mite. The duration of deutonymphal stage lasts from 4-6 days.

Adult Female (Fig. 5).—It is oval in shape. Average length, excluding palpus, and breadth is

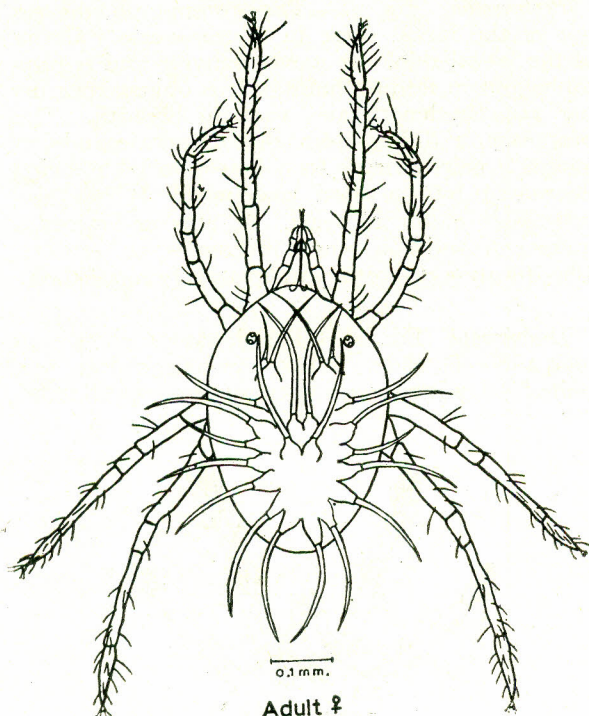


Fig. 5.— Adult female of *Porcupinychus abutiloni* g. nov., sp. nov.

549 μ and 330 μ , respectively. There are twenty-two long and very prominent dorsal setae, arising from conspicuous elevated tubercles.

Adult Male (Fig. 6).—Adult male is comparatively much smaller than female, averaging 426 μ and 210 μ in length and breadth, respectively.

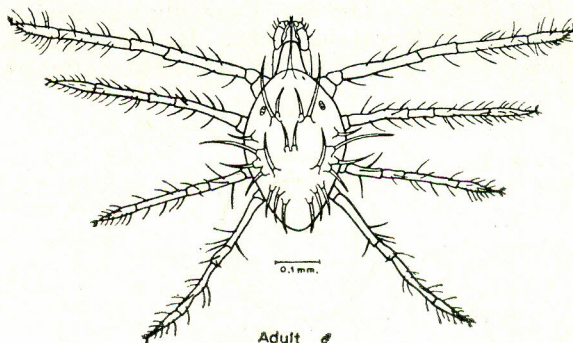


Fig. 6. — Adult male of *Porcupinychus abutiloni* g. nov., sp. nov.

The body is somewhat narrow with a pointed abdomen, bearing the same number of dorsal setae as in female.

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