

A NEW PREDATORY MITE SPECIES OF THE GENUS *HEMICHEYLETIA* (CHEYLETIDAE: ACARINA) FROM PUNJAB, PAKISTAN

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A survey was carried out in pomegranate orchards of district Layyah, Punjab, Pakistan to explore mite fauna of that region. As a result of survey, a new species i.e., *Hemicheyletia tanosis* was recorded and described in detail here.

Keywords: *Hemicheyletia*, new species, pomegranate, Pakistan.

INTRODUCTION

The mites belonging to the genus *Hemicheyletia* (Cheyletidae) are predatory in nature and are of great economic importance in biological control of harmful mites. This genus was erected by Volgin in 1969 and designated *Paracheyletia bakeri* Ehara as its type species. Summers and Price (1970) combined the three genera of Volgin to simplify the systematics of this group and provided a key for 13 species included in this genus. Later Corpuz-Raros (1972), Qayyum and Chaudhri (1979), Rasool and Chaudhri (1979b), Mathur and Mathur (1981) added 4, 2, 2 and 1 new species to this genus.

Chaudhri and Akbar (1985) described 11 new species in this genus and made a comprehensive key for all the species of this genus. Razzaq *et al* (2001) described external features of *H. bakeri* (Ehara), found in citrus orchards of Japan.

A new species of this genus has been collected from district Layyah, Punjab, Pakistan and has been described in this paper.

MATERIALS AND METHODS

Mite of the genus *Hemicheyletia* (Cheyletidae) were collected from pomegranate (*Punica granatum*) plants by adopting sieve collection method. In this method, different parts of plants were removed and beaten in a sieve, held over a white piece of paper. The material thus collected on the paper was examined on the spot with help of a hand lens and mites were picked up with a camel hair brush or a moist needle and preserved in small vials containing 70% alcohol and a few drops of glycerine. Permanent slides were prepared by using Hoyer's medium under binocular microscope. The mounted specimens were identified by using a phase contrast microscope and sketches were prepared by using an ocular grid. The identification of species was done with the help of existing keys and literature. Terminology and chaetotaxy of body parts as adopted

by Volgin (1969) has been followed. All measurements were made in micrometers (μm).

RESULTS AND DISCUSSION

Hemicheyletia tanosis, new species (Fig. 1A-D)

Female

Dorsum: Body 287 μm long (without gnathosoma), 242 μm wide. Rostrum exposed part 27 μm long, superior and inferior adoral setae each one pair, 14 μm and 27 μm long, respectively, inferior twice as long as superior adoral setae. Protegmen 25 μm long densely dotted. Tegmen 55 μm long with broken striations in longitudinal lines (Fig. 1A). Relative length of rostrum, Protegmen and tegmen = 1: 0.9:2, respectively. Peritreme with 6 links on each side (Fig. 1A). Area between base of tegmen and anterior end of idiosma with broken transverse striations. Palp femor robust with dotted striations, 1 fan-like, 1 serrate and 2 simple setae, palp genu with 1 fan-like setae, Palp tibia with 1 serrate and 2 simple setae, palp tarsus with a minute solenidion in addition to 2 sickle-like and 2 comb-like setae, palp claw with 7 teeth. Outer and inner combs with 18 and 24 teeth, respectively (Fig. 1A). Eyes, one on each side, rounded, each encircled by 8 rows of concentric striations. Dorsal setae, 14 pairs including 1 pair humeral setae, all fan-shaped. Propodosomal shield with broken simple striations, lateral setae 4 pairs, median setae 2 pairs. Hysterosomal shield with broken, simple striations with 5 pairs lateral setae, median setae absent. Three pairs setae on membrane, out of these 1 pair posterior to hysterosomal shield, interscutal striations simple. (Fig. 1A).

Venter: Venter striated, striations simple. Ventral setae 20 μm long, serrate. Pregenital, paragenital and genital setae, 2 pairs, 1 pair and 2 pairs, respectively. Anal setae 3 pairs (2 serrate, 1 simple), post-anal setae absent (Fig. 1C).

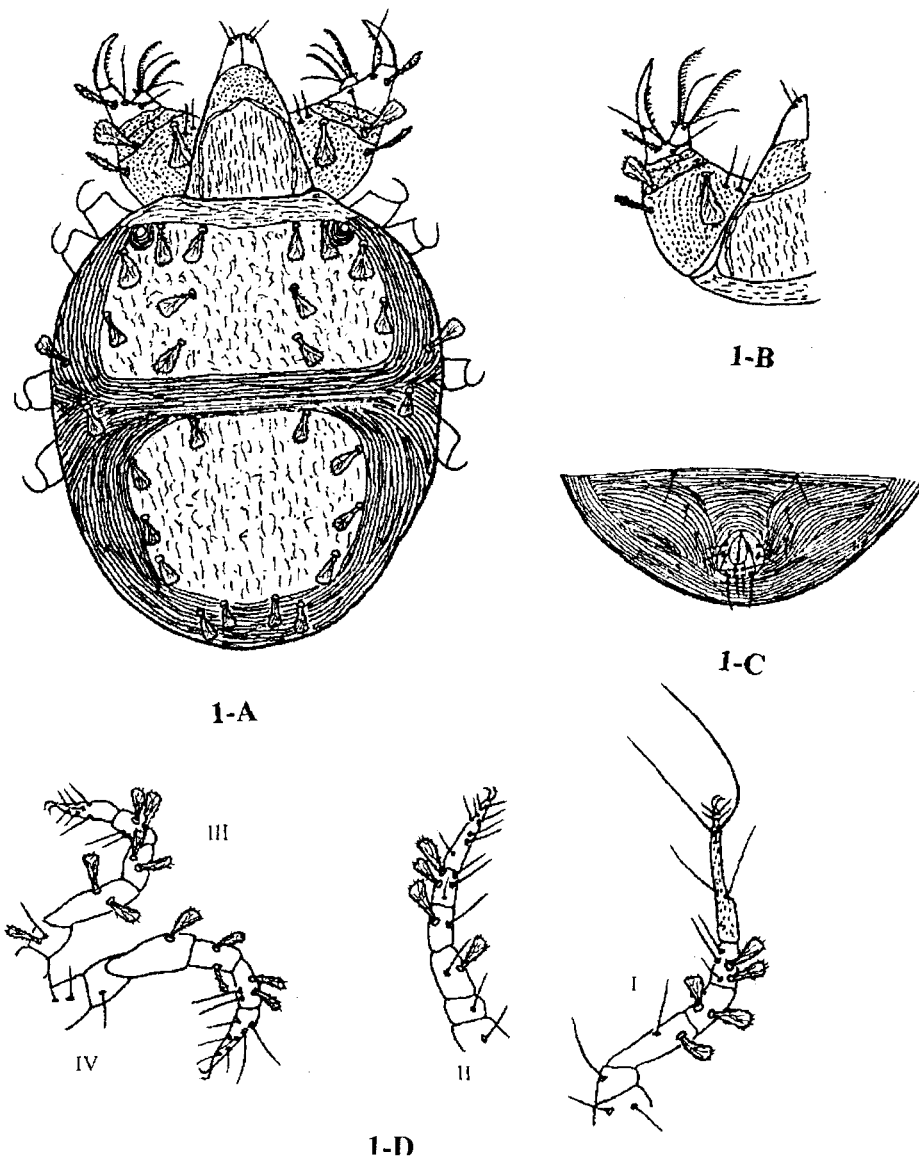


Fig. 1. *Hemicheyletia tanosis*, n.sp., A. Dorsal side; B, Palp; C, Anogenital area; D, Legs I-IV

Legs: legs I-IV measuring 195 µm, 132 µm, 155 µm, and 162 µm in length (Trochanter base to tarsus tip). Length ratio: Leg I/Idiosoma = 0.66. Setae and solenidia on legs I-IV segments: Coxae 2-1-2-2, Trochanters 1-1-2-1, Femora 2-2-2-1, genua 2-2-2-2, tibiae 5-5-4-4, tarsi 9-8-7-7, tibia I and II each with a solenidion. Tarsus I with longitudinal broken striations. Solenidion *wi* 40µm long, gaurd setae absent (Fig. 1D).
Type: Holotype female, collected from Chak 98/M.L., 14 km East of Karor, Layyah, on XX.VII.2002 (Muhammad Kamran) from pomegranate (*Punica granatum*) and deposited in the Acarology Research Lab, Deptt. of Agri. Entomology, University of Agriculture, Faisalabad.

REMARKS

This new species closely resembles *Hemicheyletia hastatus* Chaudhri and Akbar but following are points of differences in both the species:

- (1) In this new species, genu I and III each with 2 setae but in *H. hastatus*, genu I and III each with 3 setae.
- (2) In this new species, inner comb on palptarsus with 24 teeth but in *H. hastatus*, inner comb of palptarsus with 28 teeth.
- (3) In this new species, solenidion present on palptarsus but in *H. hastatus*, solenidion absent on palptarsus.
- (4) Length of solenidion *wi* on leg tarsus I is 40 µm in this species but in *H. hastatus* length of solenidion *wi* on leg tarsus I is 50 µm.
- (5) In this new species, length ratio: leg I/Idiosoma is 0.66 but in *H. hastatus*, this ratio is 0.56.

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