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A NEW SPECIES OF *NEOCYPHOLAELAPS* (ACARI : AMEROSEIIDAE) FROM BROOD COMBS OF THE INDIAN HONEY BEE (1)

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SUMMARY

Neocypholaelaps apicola n. sp. is described from specimens found in brood combs of the Indian honey bee, *Apis cerana indica* Fabr., from Pakistan. A list of known species of *Neocypholaelaps* is included. Adult bees were found infested also by the tracheal mite, *Acarapis woodi* (Rennie). *Dermatophagoides pteronyssinus* (Trouessart), a house dust mite responsible for house dust allergy or asthma, is reported for the first time from the brood combs of *A. cerana indica*.

Samples of brood combs and diseased Indian honey bees (*Apis cerana indica* Fabr.) were received recently from Mr. Rafiq Ahmad of the Pakistan Research Council, Honey Bee Management Project, Islamabad, Pakistan. They had been sent to Dr. H. Shimanuki of the Bioenvironmental Bee Laboratory, P.P.I., U.S.D.A., Beltsville, Maryland, for diagnosis of honey bee diseases, parasites and pests. Upon examination, the bees were found to be affected by the acarine disease caused by the tracheal mite, *Acarapis woodi* (Rennie). The brood combs were found infested also by a new species of *Neocypholaelaps* described here. The mites were present in considerable numbers, but it is not known these mites are causing trouble in beehives. *Dermatophagoides pteronyssinus* (Trouessart), a house dust mite responsible for house dust allergy or asthma, was found in the brood combs of *A.*

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indica for the first time. This allergenic mite has been reported by HARAGSIM *et al.* (1978) from hives of *A. mellifera* in Europe.

Members of the genus *Neocypholaelaps* occur on bees, in hives, on certain Lepidoptera, and on various tropical and subtropical flowers. The are probably pollen feeders; the unmodified chelicerae suggest non-parasitic feeding habits, the relationship between the mites and insects being one of phoresy. The mites use the insects chiefly as means of dispersal. Six of the ten known species of the genus are associated with honey bees *(Apis* and *Trigona);* see list of *Neocypholaelaps* species. Mites associated with honey bees have been reported as being troublesome in hives. Two species, *Tropilaelaps clareae* Delfinado & Baker and *Varroa jacobsoni* Oudemans, are serious pests of honey bees. Any mite found associated with honey bees should be regarded with significance.

TABL. 1. — *List of* Neocypholaelaps *species.*

Species	Collected from	Distribution
N. africana Evans, 1963	*Trigona tomentosa* Flowers of *Spathodea campanulata* *Apis mellifera*	Angola (Africa) Queensland (Australia) Papua New Guinea
N. ampullula (Berlese), 1910	*A. cerana indica* Coconut inflorescence	Java, Malaya
N. apicola n. sp.	*A. cerana indica* brood combs	Pakistan
N. cocos Evans, 1963	Coconut inflorescence	Guadalcanal
N. favus Ishikawa, 1968	*A. mellifera* hive	Japan, Czechoslovakia
N. hongkongensis Mo, 1969	Danaid butterfly	Hong Kong
N. indica Evans, 1963	*A. cerana indica, A. mellifera* *Eucalyptus* flowers, butterflies	Ceylon, India, Nepal, Hong Kong, S. China, Burma, Taiwan
N. linquisti Prasad, 1968	Noctuid moth, pierid butterfly	Hawaii, Hong Kong
N. novaehollandiae Evans, 1963	*A. mellifera*	New Zealand
N. stridulans (Evans), 1955	Coconut & betel-nut palm *(Areca catechu)* inflorescences	India, Java, Malaya, Philippines

Diagnosis : This species has the normal characteristics of *Neocypholaelaps* species : 29 pairs of setae on the dorsal shield of the adult and deutonymph, and 25 pairs in the protonymph; edentate chelicerae; modified hyaline pilus dentilis; and movable slender corniculi. But *N. apicola* is distinguished immediately from all other species by the form of setae on the dorsal shield : setae i_4 are minute in the adult and deutonymph (Figs. 1, 3, 7), well developed in the protonymph (Fig. 8); i_3, i_5, and Z_2 in the female are small; these setae are well developed in the male, deuto- and

protonymphs. Other characteristics such as the form of the anal shield and chaetotaxy of legs I-IV are typical of the genus. The only exception to the adult leg chaetotaxy occurs on femur I, which has 11 setae on *apicola,* 12 on other species. The male anal shield is unique in form, being kidney-shaped.

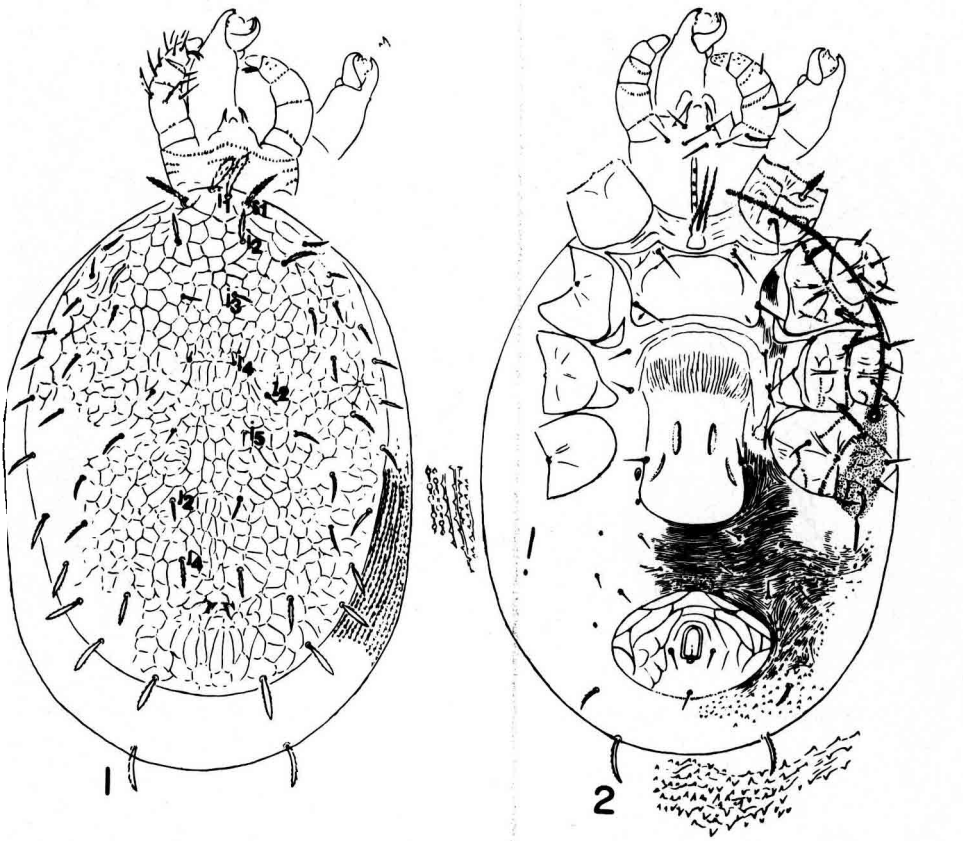

FIG. 1 and FIG. 2. — *Dorsum (1) and venter (2) of* Neocypholaelaps apicola *n. sp. female.*

DESCRIPTION

Female. — Lenght of idiosoma 433-444 microns, width 308-331 microns. Dorsal shield with 29 pairs of setae; surface ornamentation sculptured reticulate, most recticulations deeply impressed. Chaetotaxy and form of setae as shown in Fig. 1. Dorsal setae i_4 minute, difficult to discern; i_3, i_5, and Z_2 small, simple or sparsely barbed; all other dorsal setae well developed, lanceolate

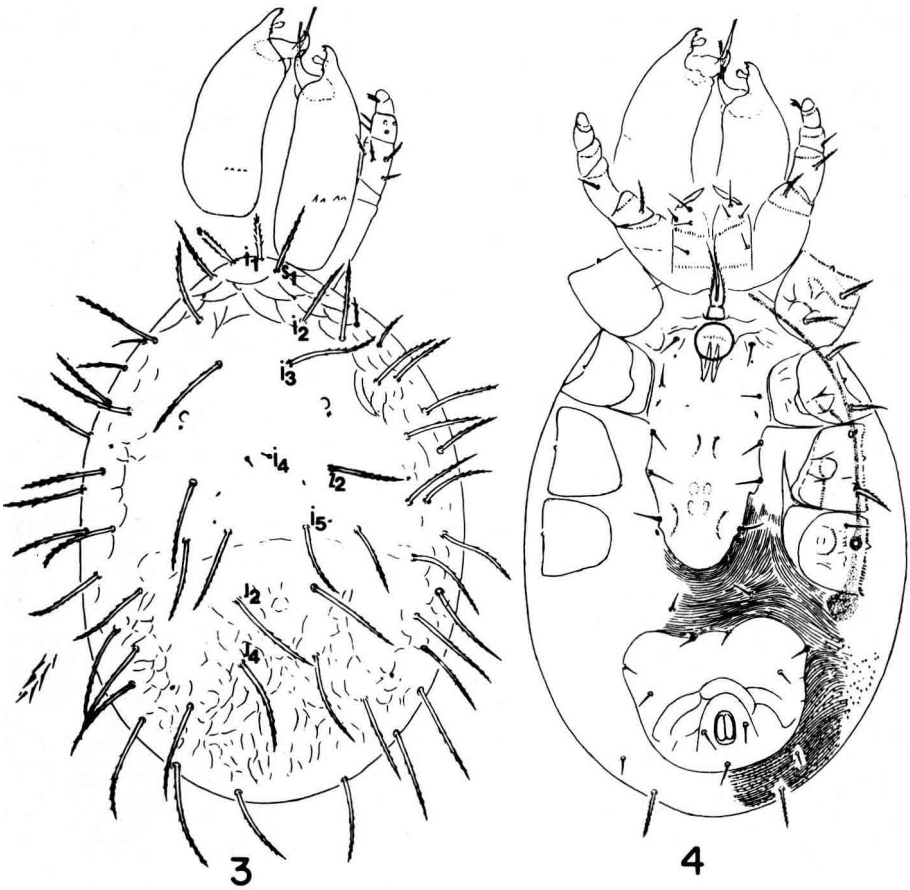

FIG. 3 and FIG. 4. — *Dorsum (3) and venter (4) of* Neocypholaelaps apicola *n. sp. male.*

or sublanceolate, serrate, of varying lenght and thickness; setae J_3 lacking. Integument surrounding dorsal shield markedly granulate-denticulate. Venter as shown in Fig. 2. Tritosternum with subquadrate base, pilose laciniae. Sternal shield considerably broader than long, with two pairs of setae; setae st_3 and st_4 situated on integument. Genital shield tongue-shaped, with one pair of setae. Anal shield ovoid; surface lightly reticulate; with simple, subequal post- and para-anal setae. Integument of opisthosoma finely striate, granulate-denticulate; with four pairs of simple setae similar to anal setae, and one pair of sublanceolate, serrate setae; adanal setae considerably well developed, sublanceolate, serrate. Posterior part of peritremal shield well developed, parallel to margin of coxa IV; peritremes slender, extending anteriorly beyond coxae I level of setae i_1. Chelicerae short; apex of fixed digit bidentate, with modified hyaline

lobed pilus dentilis; movable digit hooked, edentate. Corniculi movable, convergent, tapered. Deutosternum with two files of 4-5 denticles. Palpal apotele two-tined. All legs with well developed pulvilli and paired claws; arrangement of setae characteristic of *Neocypholaelaps* (EVANS, 1963). Number of setae on femur, genu and tibia as follows : I, 11-12-12; II, 10-11-10; III, 6-9-8; IV, 5-9-9. Coxae I-III each with two setae; coxa IV with one seta. Trochanters I-IV with 6-5-5-5 setae respectively.

Male. — Lenght of idiosoma 405-410 microns, width 279-291 microns. Dorsal shield ornamentation and form of setae differing considerably from that seen in female. Dorsal shield pattern consisting of short irregular lines and network along margin, which diminishes toward middle of shield but with few craterlike spots at middle posterior to setae i_4; with 29 pairs of setae, most setae well developed, long and slender, serrate, tapered; setae i_4 differing markedly in form, minute, difficult to discern. Chaetotaxy and form of dorsal setae as shown in Fig. 3; setae J_3 lacking. Venter as shown in Fig. 4. Tritosternum with subquadrate base, pilose laciniae. Sternogenital shield with five pairs of setae; slightly narrowing posteriorly, with rounded posterior margin. Anal shield large, kidney-shaped; surface ornamented with weak network pattern at posterior 1/2; with simple, subequal post- and para-anal setae; five pairs of simple, subequal opisthogastric setae, of which three pairs situated on anal shield; adanals well developed as in

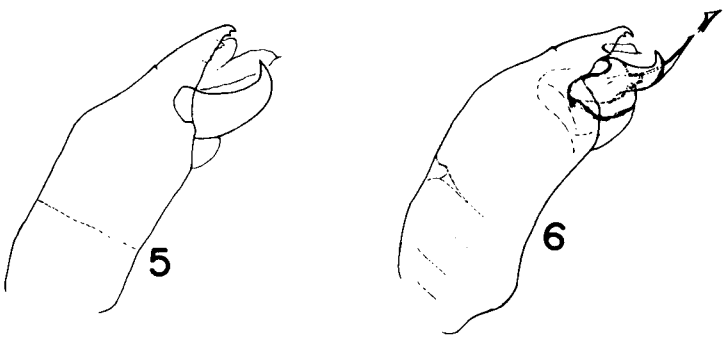

FIG. 5 and FIG. 6. — *Enlarged chelicera of* Neocypholaelaps apicola *n. sp. female* (5) *and male* (6).

female, stout, serrate. Integument of opisthosoma finely striate, minutely granulate-denticulate. Peritremes extending anteriorly to level of setae S_1. Chelicerae short; apex of fixed digit bidentate, with modified hyaline peglike pilus dentilis; movable digit hooked, edentate; spermatodactyl of characteristic form : slender and tubelike distally, with suckerlike tip (Fig. 6). Leg chaetotaxy similar to that of female; postero-dorsal and-lateral setae on femur and genu of all legs more robust than in female. Number of leg setae same as in female.

FIG. 7 and FIG. 8. — *Dorsum of* Neocypholaelaps apicola *n. sp. deutonymph* (7) *and protonymph* (8)

Deutonymph. — Dorsal shield with 29 pairs of setae; form and distribution as shown in Fig. 7; setae i_4 minute; all other setae well developed, stout and strongly serrate; surface of shield lightly ornamented with reticulate pattern.

Protonymph. — Dorsal shield with 25 pairs of setae, typical number in *Neocypholaelaps* species; form and distribution of setae as shown in Fig. 8; all setae, including i_4 well developed, long and tapered, sparsely barbed or serrate; form of these setae, except i_4, similar to that seen in male.

Larva. — Unknown.

Type specimens

Holotype, female; paratypes, 86 females, 10 males; found in *Apis cerana indica* brood combs from Rawalpindi, Pakistan, collected by M. DELFINADO-BAKER, March 20, 1982. In the collection of United States National Museum and Natural History, Beltsville, Maryland.

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ZUSAMMENFASSUNG

EINE NEUE ART VON *NEOCYPHOLAELAPS* (ACARI : AMEROSEIIDAE) AUS BRUTWABEN DER INDISCHEN HONIGBIENE

Neocypholaelaps apicola n. sp. wird auf Grund von Exemplaren beschrieben, die in Brutwaben der Indischen Biene, *Apis cerana indica* Fabr. aus Pakistan gefunden wurden.

Eine Liste der bekannten Arten von *Neocypholaelaps* wird angefügt.

Außerden wurde in erwachsenen Bienen die Tracheenmilbe *Acarapis woodi* (Rennie) gefunden.

Dermatophagoides pteronyssinus (Trouessart), eine im Hausstaub lebende Milbe, die für Hausstaub-Allergien oder Asthma verantwortlich sein kann, wird zum ersten Mal aus Brutwaben von *Apis cerana indica* beschrieben.

RÉSUMÉ

UNE NOUVELLE ESPÈCE DE *NEOCYPHOLAELAPS* (ACARI, AMEROSEIIDAE) PRÉSENT DANS LES RAYONS A COUVAIN DE L'ABEILLE INDIENNE

Neocypholaelaps apicola n. sp. est décrit d'après les exemplaires trouvés dans les rayons à couvain de l'abeille indienne (*Apis cerana indica* Fabr.) au Pakistan. Une liste des espèces connues de *Neocypholaelaps* est donnée. Par ailleurs, on a trouvé chez des abeilles adultes l'acarien des trachées, *Acarapis woodi* (Rennis). *Dermatophagoides pteronyssinus* (Trouessart), acarien vivant dans la poussière des maisons et responsable d'allergie à la poussière ou d'asthme, est mentionné pour la première fois dans les rayons à couvain d'*Apis cerana indica*.

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