Persian Journal of Acarology, Vol. 2, No. 1, pp. 35–40.

Article

A new species of *Neotetranychus* Trägårdh (Acari, Prostigmata, Tetranychidae) from Thailand with a key to world species

Carlos H.W. Flechtmann

CNPq-Brazil Researcher, Departamento de Entomologia e Acarologia, Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo, 13418-900 Piracicaba, SP, Brazil; e-mail: *chwflech@usp.br*

Abstract

Neotetranychus lek **sp. nov.**, a spider mite collected in Thailand, is described and figured. A key to the world species of *Neotetranychus*, based on females, is presented.

Key words: mite, taxonomy, female, Trombidiformes, Acariformes

Introduction

A microscopic preparation of a spider mite was brought to our attention by Ms. Ploychompoo Konvipasruang, researcher from the Plant Protection Research and Development Office from the Department of Agriculture, Thailand. It proved to be a new species and is herein described, and a key to world species is presented. Measurements are given in micrometers.

***Neotetranychus lek* sp. nov.** (Figs. 1–6)

Diagnosis

Dorsal integument entirely striated, striae with small irregular lobes. Most dorsal setae (sc_1, sc_2 c_1, c_2, d_1, d_2, e_1, e_2, f_2) long , longer than longitudinal distance to basis of consecutive pair of setae, and set on strong tubercles. Smallest of the known species.

Female

Idiosoma 283 long, including gnathosoma 347 long, 255 wide.

Body outline near orbicular, only slightly longer than wide. Dorsal integument entirely striated, striae with small irregular lobes, longitudinal on propodosoma, irregularly transverse between setae c_1-c_1, d_1-d_1, f_1-f_1 and caudally, but longitudinal between setae e_1, and striae longitudinal around bases of tubercles of setae d_1 and e_1, forming a near diamond shaped pattern. Dorsum with 13 pairs of setae, setae c_3 situated more ventrally; setae c_3, f_1 and h_1 are the shortest; the remaining dorsal setae are long, reaching past the bases of setae next behind. Length of setae: v_2 38 and 40 apart; sc_1 67, 75 apart, sc_2 39; c_1 58, 45 apart, c_2 49, c_3 31; d_1 63, 55 apart, d_2 58; e_1 broken off, 40 apart, e_2 49; f_1 54, 71 apart, f_2 24; h_1 24, 22 apart, h_2 19 and h_3 18 (h_2 and h_3 ventral). Dorsal setae cylindrical, slightly expanded distally, thickly pubescent, inserted on strong tubercles. Two pairs of pore-like structures dorso laterally, in between setae $sc_2 - c_3$ and $c_3 - d_2$ (Fig. 1).

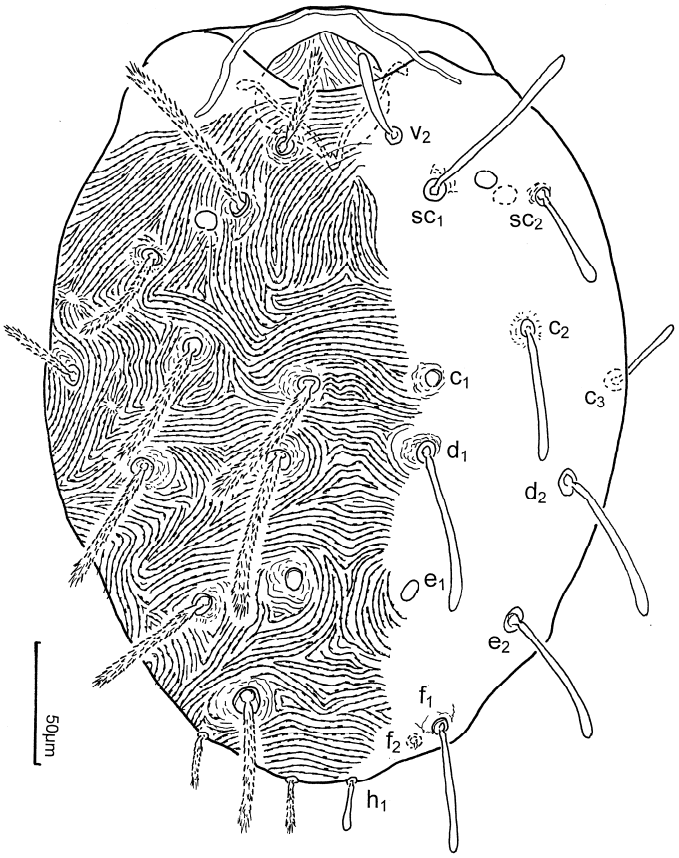


Figure 1. *Neotetranychus lek* **sp. nov.** (female). Dorsal view of idiosoma.

Gnathosoma: stylophore rounded anteriorly, longitudinally striated. Peritremes straight ending in a slightly expanded bulb. Terminal sensillum of palp (spinneret) as long as broad.

Ventrally: genital flap with arched striae; area immediately anterior to it with transverse striae. Medioventral striae without lobes.

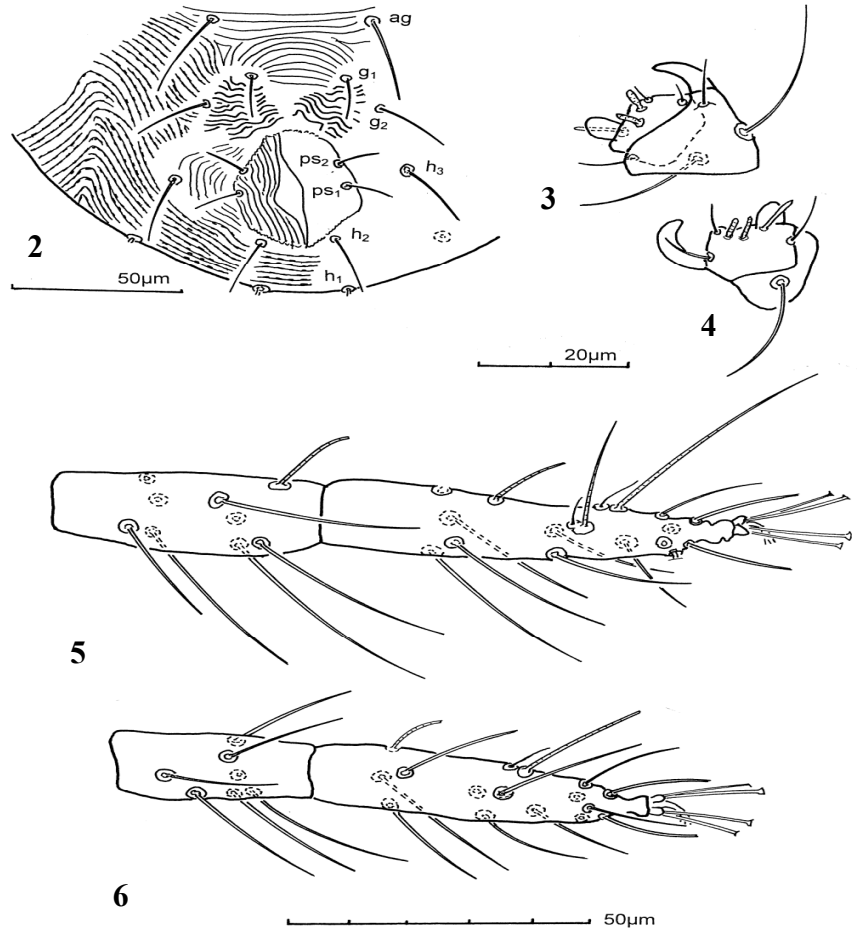
Legs: leg I longest, 268; leg II shortest, 172; leg III 190 and leg IV 202 long. The setae, solenidia in parentheses, are distributed on leg segments, from coxae to tarsi, as follows:

I - 2 – 1 – 9/10 – 5 – 8 (1) – 13 (1) + 2 duplexes
II - 2 – 1 - 7 – 5 – 7 – 13 (1) + 1 duplex
III - 1 – 1 – 4 - 4 – 6 – 10 (1)
IV - 1 – 1 – 3 – 3 – 6 – 10 (1)

Femur I presented 9 setae on one leg and 10 setae on the other.

Type material

female holotype, from (? – see remarks) cassava, *Manihot esculenta* Crantz (Euphorbiaceae), Rayong, Thailand, Sept. 22, 2011, coll. Pichate, on a microscopic preparation in the collection of Departamento de Entomologia e Acarologia, Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo, 13418-900 Piracicaba, SP, Brazil.



Figures 2–6. *Neotetranychus lek* **sp. nov.** (female). 2. Genitoventral area; 3 & 4. Palptarsus; 5. Tarsus and tibia of leg I; 6. Tarsus and tibia of leg II.

Etymology

The species is named for Mrs. Ploychompoo Konvipasruang whose nickname *Lek* is here used as the specific designation. *Lek* is a word from the Thai language and means small. In this way, it also refers to the small size of the mite. The species name is coined by apposition and in Thai *lek* is both masculine and feminine.

Remarks

The new species presents the same leg chaetotaxy as *Neotetranychus asper* Feres & Flechtmann, 2002, but differs in presenting a striate dorsal integument (ornamentation in calice shaped structures in *N. asper*.)

The one specimen on which the description is based was collected from a cassava leaf, amidst a population of the cassava green mite, *Mononychellus progressivus* Doreste, 1981 (speciments identified by Dr. T. Gotoh, Japan). Therefore, and although one species in the genus, *N. asper*, was described from an Euphorbiaceae (*Alchornea*

glandulosa Poepp.), cassava might not be the host plant of the new species; it could have drifted by wind dispersion from another host plant. That is, it remains to be ascertained that *N. lek* feeds and reproduces on cassava.

This is the first record of a species of *Neotetranychus* from Asia and now representatives from all inhabited continents are known: five species from the Americas, two species from Europe (including Armenia), one species from Cameroun (Africa), one species from Australia, and which can be separated by the following key.

Key to the world species of *Neotetranychus* Tragardh
(mainly based on females and partially on literature only)

1. Dorsal setiferous tubercles bearing setae c_1 c_2 d_1 d_2 e_1 and e_2 approximate, almost contiguous. Dorso central and dorso lateral hysterosomal setae about three quarts as long as body length not including gnathosoma..... *Neotetranychus victoriae* Davis, 1969
Australia
- Dorsal setiferous tubercles not contiguous; no dorsal histerosomal seta over half body length 2
2. Dorsal integument mostly striated, striated with small irregular lobes .....
..... *Neotetranychus lek* **sp. nov.**
Thailand (South East Asia)
- Dorsal integument almost entirely granulated, wrinkled, with calyx shaped structures or with reticulate lumps 3
3. Dosal integument with striae clustered into finely reticulate lumps .....
..... *Neotetranychus decorus* Meyer & Bolland, 1984
Cameroon (Africa)
- Dorsal integument almost entirely wrinkled or granulated 4
4. Dorsal setae bipectinate .....
..... *Neotetranychus raphidoseta* Aranda, 2002 in: Feres & Flechtmann, 2002
Brazil (South America)
- Dorsal setae more or less cylindrical, strongly pubescent or serrate 5
5. Spinneret (on palp tarsus) long, pointed, about eight times as long as wide .....
..... *Neotetranychus peniculus* Aranda, 2002 in: Feres & Flechtmann, 2002
Brazil (South America)
- Spinneret not over three times as long as wide 6
6. Spinneret as long as broad..... *Neotetranychus asper* Feres & Flechtmann, 2002
Brazil (South America)
- Spinneret two or three times as long as broad 7

7. Peritremes straight, ending in a bulb .....
..... *Neotetranychus granifer* Feres & Flechtmann, 2002
Brazil (South America)
- Peritremes distally hooked 8
8. Spinneret twice as long as broad; tibia of leg IV without solenidion; tarsus I with three tactile and one sensory seta proximal to duplex setae .....
..... *Neotetranychus gloriosus* Estebanes & Baker, 1966
Mexico (North America)
- Not as above; spinneret three times as long as broad 9

9. Aedeagus turned dorsad at a right angle, tapering .....
..... *Neotetranychus rubi* Tragardh, 1915
Sweden and Central Europe
- Aedeagus turned upward and tapering to a sigmoid apex .....
..... *Neotetranychus rubicola* Bagdasarian, 1956
Armenia

The characterization of the aedeagi of the males of *N. rubi* and of *N. rubicola* is based on drawings in Reck (1959).

Acknowledgements

I am indebted to Dr. Angsumarn Chandrapatya for providing laboratory and local transportation support during our visit to Kasetsart University, Bangkok, Thailand, and for her constructive input. And to Dr. Tea Arabuli and Dr. Maka Murvanidze for help with Russian literature.

References

Bagdasarian, A.T. (1956) K ustanovleniju novogo dlja fauny Armenii roda *Neotetranychus* (Tetranychidae) [On the record of a new for the fauna of Armenia genus *Neotetranychus* (Tetranychidae)]. *Doklady Akademii Nauk Armyanskoj SSR* 22(4): 183–186 (in Russian).

Davis, J.J. (1969) *Neotetranychus victoriae* sp.nov. (Acarina: Tetranychidae), a spider mite found on *Spyridium parvifolium* F.Muell. in Victoria. *Memoirs of the Queensland Museum* 15(3): 185–189.

Doreste, E. (1981) Acaros del genero *Mononychellus* Wainstein (Acari: Tetranychidae) asociados com la Yuca (*Manihot* spp.) en Venezuela. *Boletín de Entomologia Venezolana, N.S.,* 1 (10): 119–130.

Estebanes G., M.L. & E.W. Baker (1966) Arañas rojas de Mexico (Acarina: Tetranychidae). *Anales de la Escuela Nacional de Ciencias Biologicas, Mexico*, 15: 61–133.

Feres, R.J.F. & C.H.W. Flechtmann (2002) Four new *Neotetranychus* Trägårdh (Acari: Tetranychidae) from São Paulo State, Brazil. *Acarologia* 41(1 & 2): 215–226.

Meyer, M.K.P.S. & H.R. Bolland (1984) Tetranychoid mites (Acari: Prostigmata) from Cameroun and a survey of their chromosome complements. *Phytophylactica* 16: 209–220.

Reck, G.F. (1959) A key to the tetranychoid mites. *Fauna Transcaucasiana. Georgian SSR Academy of Sciences*, 1: 1–152 [In Russian].

Trägårdh, I. (1915) Bidrag till kännedomen om spinnkvalstren (*Tetranychus* Duf.), *Meddelande Nr. 109, Centralanstalten för försöksväsendet pa jordbruksomradet Entomologiska avdelningen,* 20: 1–60.

Received: 30 June 2012
Accepted: 15 July 2012

گونهٔ جدیدی از *Neotetranychus* Trägårdh (Acari, Prostigmata, Tetranychidae) از تایلند همراه با کلید شناسایی گونه‌های جهان

چکیده

گونه جدید کنهٔ تارتن جمع‌آوری شده از تایلند به نام *Neotetranychus lek* **sp. nov.** توصیف و ترسیم می‌شود. کلید گونه‌های جنس *Neotetranychus* (ماده) ارایه می‌شود.

تاریخ دریافت: ۱۳۹۱/۴/۱۰

تاریخ پذیرش: ۱۳۹۱/۴/۲۵