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DESCRIPTION OF ONE NEW SPECIES OF THE WATER MITE  
GENUS *NILOTONIA* THOR, 1905 (ACARI, HYDRACHNIDIA)  
FROM IRAN

BY V. PESIC<sup>1</sup> & A. SABOORI<sup>2</sup>

(Accepted October 2005)

ACARI  
WATER MITES  
TAXONOMY  
NEW SPECIES  
IRAN

**SUMMARY:** *Nilotonia persica* n. sp. is described from the Yazd Province (Central Iran). It is the first representative of the subgenus *Manotonia* (K.Viets, 1935) from Iran. A key to females of the world species of the subgenus *Manotonia* is provided.

**RÉSUMÉ:** *Nilotonia persica* n. sp. est décrit de la province de Yazd (Central Iran). Il s'agit du premier représentant du sous genre *Manotonia* (K.Viets, 1935) d'Iran. Une clé des femelles du sous genre *Manotonia* est fournie.

#### INTRODUCTION

So far, 5 species of the genus *Nilotonia* Thor, 1905: *N. (Dartia) vietsi* Bader & Sepasgozarian, 1980, *N. (Dartia) boetgerri* Bader & Sepasgozarian, 1980, *N. (Dartia) iranica* Pesic, 2005, *N. (Tadjikodartia) emarginata* (Sokolow, 1948), and *N. (Dartiella) rackae* Bader & Sepasgozarian, 1980, are known from Iran (BADER & SEPASGOZARIAN, 1980; PANESAR, 2004; PESIC et al., 2005).

GERECKE (1992) indicates that *Manotonia* (K. Viets, 1935) might be redefined as a subgenus of *Nilotonia* characterized by the position of the male genital field and the features of the genital skeleton. PANESAR (2004) proposed reducing *Manotonia* to a subgenus of *Nilotonia* and to include the following species in *Manotonia*: *N. gracilipalpis* Lundblad, 1942, *N. muscicola* (Walter, 1935), *N. shivai* Panesar, 2004, *N. petri* Cook, 1979, *N. scutata* Cook, 1966, *N. tegulata* (Viets,

1951), *N. testudinata* (Cook, 1966), and *N. violacea* Lundblad, 1952.

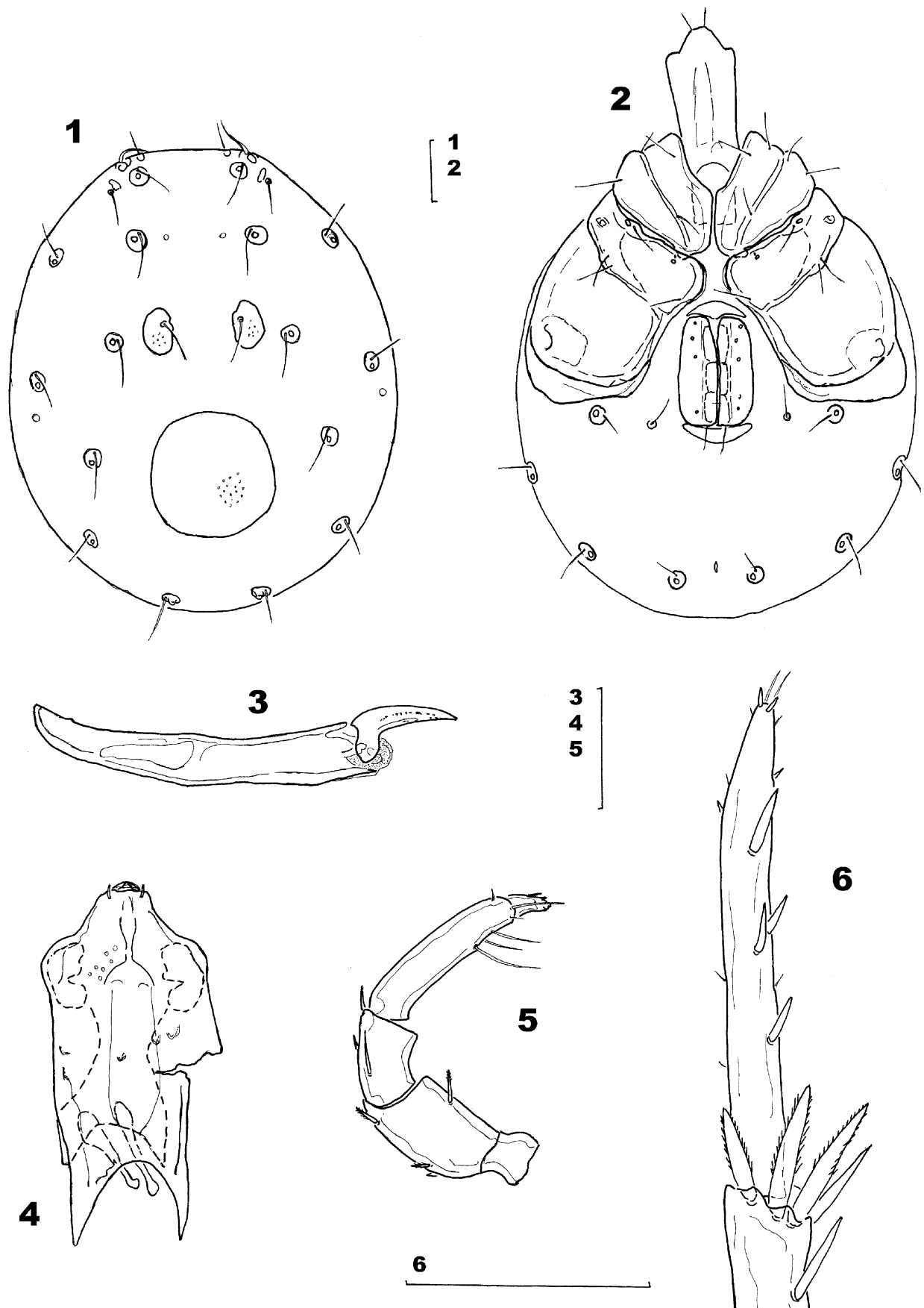
During a survey of the freshwater fauna of Iran, a new species of the water mite genus *Nilotonia* Thor, 1905 (*Nilotonia persica* sp. nov.) was collected. It is the second representative of the subgenus *Manotonia* described from Asia.

#### MATERIAL AND METHODS

Water mites were collected by hand netting, sorted on the spot from other living material, preserved in Koenike's fluid and dissected as described elsewhere (e.g. GERECKE, 1991). The holotype the new species is deposited in the Museum of the Natural History of Podgorica (Montenegro). In the section "Type material" collecting site abbreviations derive from the geographical database of Vladimir Pesic (Podgorica).

1. Department of Biology, Faculty of Sciences, University of Montenegro, 81000 Podgorica, Serbia and Montenegro (email: pesicv@cg.yu).

2. Department of Plant Protection, College of Agriculture, University of Tehran, Karaj, Iran (email: saboori@ut.ac.ir).



FIGS. 1-6. *Nilotonia (Manotonia) persica* n. sp. female: 1. — idiosoma, dorsal view; 2. — idiosoma, ventral view; 3. — chelicera; 4. — gnathosoma; 5. — palp; 6. — IV-L-6. Scale Bars = 0.1 mm.

All measurements are given in  $\mu\text{m}$ . The following abbreviations are used: *Ac-1* = first acetabulum, *Cx-1* = first coxae, *L* = length, *I-L-6* = Leg I, sixth segment, *P-1* = palp, first segment, *postoc* = postocularia, *V* = ventralia, *Vgl* = ventro-glandularia, *W* = width.

## RESULTS

### *Nilotonia (Manotonia) persica* sp. nov. (FIGS. 1-10, TABLE 1)

Type material: Holotype: female, dissected and slide mounted in Hoyer's fluid. Iran: IR42 Yazd Province, Pandar spring (rheohelocrenic) in Pandar vil-

lage (ca. 31°28'N 54°12'E, 96 km from Yazd), 2840 m asl., 5 Aug. 2003, leg. Pesic. Paratypes: one female, IR41 Yazd Province, Lah stream (first order brook) in Sang Deraz village, (ca. 31°28'N 54°12'E, 96 km from Yazd.), 2838 m asl., 5 Aug. 2003, leg. Pesic, preserved in Koenike's fluid.

*Diagnosis:* Female: Idiosoma L 757-792; dorsal shield relatively large (L/W 211-220/206-208); postgenital sclerite not enlarged; P-4 with minute ventral tubercles, chelicera relatively more slender (L/H ratio 7.8-8.2); L-IV-6 apically with a pair of rudimentary claws; claws on the other legs with a clawlet on outer side and one rudimentary peg-like clawlet on inner side.

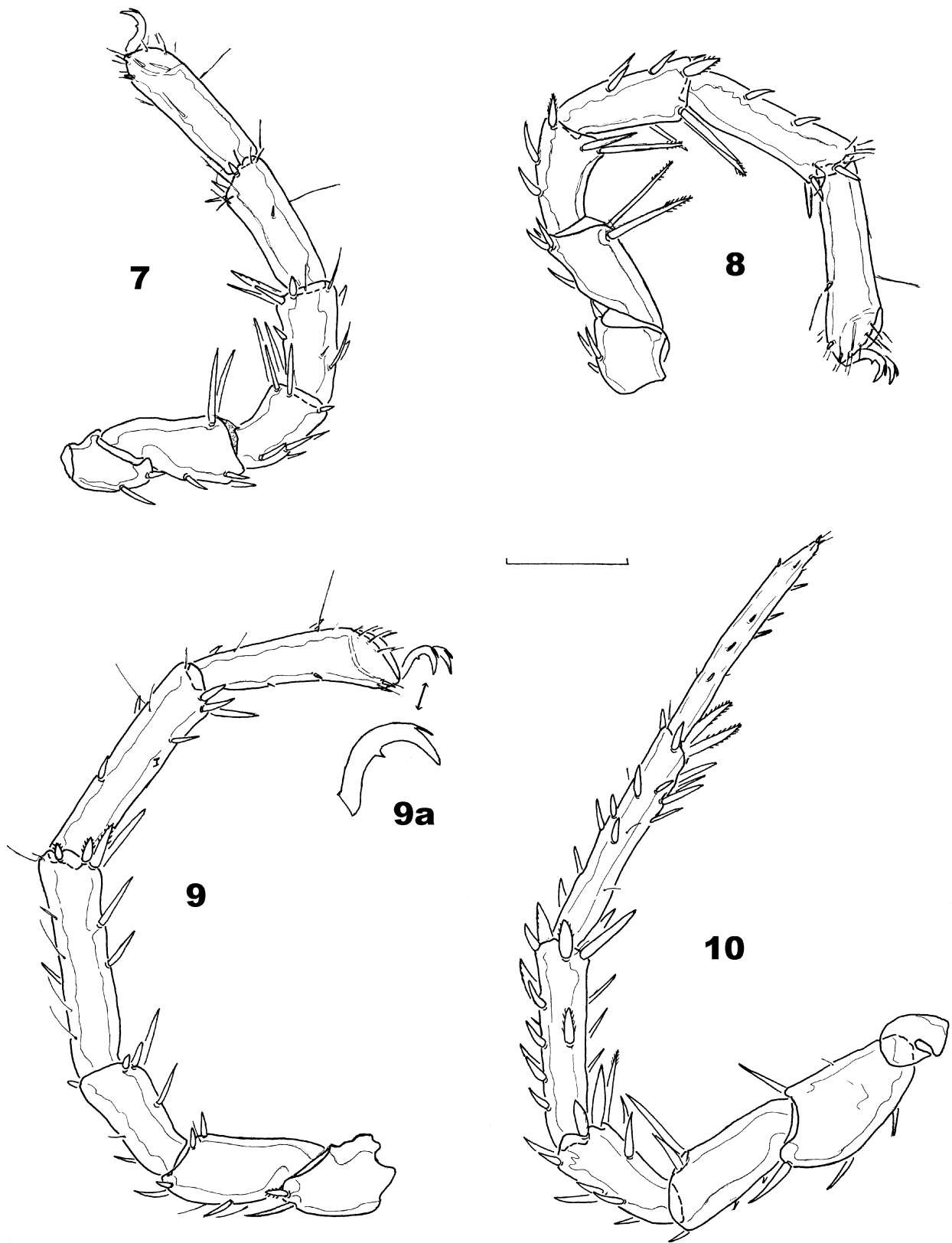
|         | Leg segments, dorsal L       |      |       |      |
|---------|------------------------------|------|-------|------|
|         | I-L                          | II-L | III-L | IV-L |
| Segm.1  | 54                           | 67   | 83    | 142  |
| Segm.2  | 76                           | 79   | 100   | 102  |
| Segm.3  | 86                           | 95   | 108   | 120  |
| Segm.4  | 104                          | 118  | 192   | 175  |
| Segm.5  | 125                          | 150  | 197   | 204  |
| Segm.6  | 135                          | 170  | 175   | 202  |
| Total L | 580                          | 679  | 855   | 945  |
|         | Dorsal L (% of total length) |      |       |      |
| Segm.1  | 9.3                          | 9.9  | 9.7   | 15.0 |
| Segm.2  | 13.1                         | 11.6 | 11.6  | 10.7 |
| Segm.3  | 14.8                         | 13.9 | 12.6  | 12.6 |
| Segm.4  | 17.9                         | 17.4 | 22.5  | 18.5 |
| Segm.5  | 21.6                         | 22.0 | 23.0  | 21.6 |
| Segm.6  | 23.3                         | 25.0 | 20.5  | 21.4 |

TABLE 1: *Nilotonia (Manotonia) persica* sp. nov. Leg measurements (L = length).

*Description:* Female (some measurements of paratype are given in parentheses): Length 792 (757), width 650 (600), soft bodied. Position of eyes and glandularia as in other species of the genus. Dorsal view (FIG. 1): in the anterior part of the dorsum a pair of roundish sclerites, formed by the fusion of postocularia with a pair of postfrontalia, in its posterior part a single, oval dorsal shield, 220 (211) in length, 208 (206) in width. Ventral view (FIG. 2): posterior coxal groups rounded and with posterior secondary sclerotization; suture lines between third and fourth suture incomplete; coxoglandularia 3 fused with Cx-3; coxoglandularia 4 not fused with the secondary sclerotization of Cx-4. Genital field is placed in a

genital bay formed by the Cx-4, 220 (225) in length, 129 (128) in width, with three pairs of acetabula, individual genital flaps 179 (172) in length, 64 (63) in width, praegenital sclerite halfmoon-shaped 100 (97) in width; excretory porus at a distance of 192 from the postgenital sclerite. Excretory pore smooth, ventroglandularia 3 lying separate in the membranous cuticula.

Gnathosoma (FIG. 4) ventral L 295 (300), H 136, L/H 2.2; chelicera (FIG. 3) L 345 (341), L/H ratio 7.8 (8.2), cheliceral claw L 89 (94), basal segment/claw L ratio 2.9 (2.6); palp: total L 400 (389), dorsal length: P-1 29 (30), P-2 113 (113), P-3 79 (74), P-4 154 (139), P-5 34 (33), relative length (in parentheses % of total



FIGS. 7-10. *Nilotonia (Manotonia) persica* n. sp., female: 7. — I-L; 8 = II-L; 9. — III-L, 9a. — claw; 10. — VI-L. Scale bar = 0.1 mm.

length): P-1 7.3 (7.7), P-2 28.3 (29.1), P-3 19.8 (19.0), P-4 38.5 (35.7), P-5 8.5 (8.5); chaetotaxy of palps as in other species of the genus (FIG. 5): P-2 ventrally straight and smooth, ventral bristle relatively short, 27 (31) in length, ratio ventral L / bristle L 2.8 (2.5); P-4 with minute ventral tubercles.

Legs (TABLE 1): for shape and chaetotaxy of leg segments, see FIGS. 7-10; L-IV-6 apically with a pair of rudimentary claws (FIG. 6); claws on other legs with a clawlet on outer side and one rudimentary peg-like clawlet on inner side (FIG. 9a).

Male: unknown.

*Discussion:* Due to the similar extent of the sclerotization on the dorsum (two small postocularia platelets and a posteromedial platelet) and the ventrum (secondary sclerotization posterior to the Cx-4), *Nilotonia persica* sp. nov., is similar to *Nilotonia tegulata* K.Viets, 1951, *N. violacea* Lundblad, 1952, and *N. gracilipalpis* Lundblad, 1942. *N. persica* sp. nov., can be easily distinguished from *N. tegulata*, by the presence of one rudimentary peg-like clawlet on the inner side of claws on the anterior three pairs of legs and the medially rounded Cx-3 (straight in *N. tegulata*). *N. violacea* (in parentheses, data taken from LUNDBLAD, 1952), differs from *N. persica* sp. nov., in a slightly enlarged postgenital sclerite, a relatively shorter gnathosoma (vL 200), a relatively thicker chelicera (L/H ratio 4.96, calculated from figure), and a major idiosoma and palp dimensions (e.g. idiosoma L 860, L posteromedial platelet 235, genital flap L 224, palp total L 480).

*N. persica* sp. nov., differs from *N. gracilipalpis* (in parentheses, data taken from LUNDBLAD, 1942), in the presence of minute ventral tubercles on P-4, a more elongated gnathosoma, a relatively more slender chelicera (L/H ratio 6.0, calculated from figure), a shorter ventral bristle on P-2 (ratio ventral L / bristle L 1.7, calculated from figure), a slightly larger dorsal shield dimensions (L 175), and minor idiosomal and palpal dimensions (e.g. idiosoma L 1034, genital flap L 193, palp total L 492).

*Nilotonia shivai* Panesar, 2004, the second known *Manotonia* species described from Asia (south-western Himalayas), can be easily distinguished from all other species of the subgenus *Manotonia* by the combination of a single and large dorsal shield, a

slightly enlarged postgenital sclerite and a P-1 with dorsal seta (PANESAR, 2004).

*Etymology:* The species is named for its occurrence in Iran (Persia).

*Biology:* Probably crenobiontic or at least crenophilous species. The collecting sites refer to a rheohelocrenic spring (IR42) and to a particular situation where on a limited area, a rheohelocrenic and rheocrenic spring forms a first order brook (IR41); in both cases with considerable exposure to sunlight and with permanent water flow all through the year.

*Distribution:* Iran, only known from the Yazd Province.

KEY TO FEMALES OF THE WORLD SPECIES OF  
THE SUBGENUS *Manotonia* (K. Viets, 1935)

1. – Excretory porus «on small sclerotized tubercle»; no secondary sclerotization is present ventrally; the ventral margins of P-2 appears waved ..... *N. petri* Cook, 1979 (Ghana)
- 1'. – Excretory porus separate in the chitinous cuticle, without any sclerifications; secondary sclerotization is present ventrally; the ventral margins of P-2 not appears waved. .... 2
2. – Dorsum with platelets enlarged and fused in various ways. .... 3
- 2'. – Dorsum with two small postocularia platelet and a posteromedial plate. .... 5
3. – Dorsum with a single dorsal shield. .... 4
- 3'. – Dorsum with two-parted dorsal shield. .... *Nilotonia scutata* Cook, 1966 (Liberia)
4. – Postgenital sclerite slightly enlarged. .... *N. shivai* Panesar, 2004 (Himalayas, India)
- 4'. – Postgenital sclerite strongly enlarged ..... *N. testudinata* Cook, 1966 (Liberia)
5. – Claws on anterior three pairs of legs with one rudimentary peg-like clawlet on inner side. .... 6
- 5'. – Without rudimentary peg-like clawlet on inner side of claws on anterior three pairs of legs. (The unknown female of *N. muscicola* (Walter, 1935) (from Ivory Coast) may need to be keyed out; males differ from *M. tegulata* in well developed ventral tubercles on P-4, and a more enlarged postgenital sclerite). .... *N. tegulata* (K. Viets, 1951) (Africa-Algeria, Europe-Italy, Spain, Greece)
6. – P-4 with well developed ventral tubercles ..... *N. gracilipalpis* Lundblad, 1942 (Ethiopia)
- 6'. – P-4 with minute ventral tubercles. .... 7
7. – Postgenital sclerite slightly enlarged, chelicera relatively thicker L/H < 6.0. .... *N. violacea* Lundblad, 1951 (Kenya)
- 7'. – Postgenital sclerite not enlarged, chelicera relatively slender L/H > 7.0 ..... *N. persica* sp. nov. (Iran)

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