
日本新記録のIxodes pavlovskyi Pomerantzev(ダニ目,マダニ科)

中尾稔, 宮本健司, 北岡茂男
A new record of *Ixodes pavlovskyi* Pomerantzev from Hokkaido, Japan (Acari: Ixodidae)

Minoru Nakao,* Kenji Miyamoto* and Shigeo Kitaoka**

*Department of Parasitology, Asahikawa Medical College, Asahikawa 078, Japan
**Niigata Sangyo University, Kashiwazaki 945-13, Japan

(Received: February 27, 1992)

Key words: Ixodidae, *Ixodes pavlovskyi*, Hokkaido, new record.

**Abstract:** The ixodid tick species closely related with *Ixodes persulcatus* and *I. nipponensis* is recorded from Hokkaido, Japan, for the first time. The field-collected unfed adults and the laboratory-reared immatures are identified as *I. pavlovskyi* Pomerantzev that is new to Japan.

*Ixodes pavlovskyi* Pomerantzev (Acari: Ixodidae) is distributed in the Palearctic region, particularly the Far East and East Siberia (Filippova, 1955a), and until recently this species was unknown from Japan. The authors collected males and females of *I. pavlovskyi* by flagging vegetation in the forests of following localities of Hokkaido. This is the first record of *I. pavlovskyi* from Japan.

Two males and 7 females, May 17, 1990, Iwaoai (44°08’N, 142°44’E); 1 female, May 6, 1991, Jozankei (42°58’N, 141°09’E); 6 males and 10 females, May 11, 1991, Iwaoai; 13 males and 21 females, May 20, 1991, Iwaoai; and 2 males and 2 females, May 25, 1991, Asahikawa (43°43’N, 142°21’E). At these localities, many adults of *Ixodes persulcatus* Schulze and *Ixodes ovatus* Neumann were also collected.

To obtain the immature stages of Japanese *I. pavlovskyi*, 4 females from Iwaoai were fed on ears of a rabbit for 6–8 days. Each engorged female was placed in a 60×30×15 mm plastic box individually, and maintained at 25°C in a saturated humidity with 12 hr of light per day. The preoviposition, ovi-

---

*中尾 稔, 宮本健司: 旭川医科大学寄生虫学教室 (〒078 旭川市西神楽4丁目5号 3-11)
**北岡茂男: 新潟産業大学 (〒945-13 柏崎市軽井川 4730)
Fig. 1–8. Ticks of *L. baclonchyi*.
1: male dorsum, scale = 0.5 mm.
2: larval venter, scale = 0.1 mm.
3: female dorsum, scale = 0.5 mm.
4: male venter, scale = 0.1 mm.
5: nymphal dorsum, scale = 0.2 mm.
6: nymphal venter, scale = 0.2 mm.
7: larval dorsum, scale = 0.1 mm.
8: larval venter, scale = 0.1 mm.
Figs. 17–24  Coxa, spiracle and Haller’s organ of *I. paulovskyi*.

17: male coxae I–IV, scale = 0.2 mm. 18: male spiracle, scale = 0.1 mm. A, anterior; D, dorsal. 19: female coxae I–IV, scale = 0.2 mm. 20: female spiracle, scale = 0.1 mm. A, anterior; D, dorsal. 21: nymphal coxae I–IV, scale = 0.1 mm. 22: nymphal spiracle, scale = 0.05 mm. A, anterior; D, dorsal. 23: larval coxae I–III, scale = 0.05 mm. 24: male Haller’s organ, scale = 0.1 mm.
2.1–2.4, width 1.3–1.5. Length from palpal apices to posterior margin of basis capituli 0.54–0.57. Basis capituli 0.30–0.32 wide dorsally; tiny cornua present (Fig. 9). Palpi 0.43–0.45 long, 0.15–0.17 wide. Hypostome 0.25–0.26 long, dentation as in Fig. 10. Coxae I–IV each with a distinct external spur; coxa I with a short internal spur reaching to anterior margin of coxa II (Fig. 17). Legs I–IV with lengthy segments; largest length 0.70–0.79 (tarsus I). Hailer's organ anteriorly with 2 lengthy setae of 0.15–0.21 long (Fig. 24). Genital aperture between coxae III. Spiracular plates subcircular; greatest diameter 0.30–0.52 (Fig. 18).

**Female** (Figs. 3, 4, 11, 12, 19, 20). Legs and body excluding scutum and coxae pale brown (live specimen). Idiosomal length 2.4–2.6, width 1.6–1.7. Scutum 1.4–1.5 long, 1.1–1.2 wide; outline elliptical (Fig. 3). Length from palpal apices to cornua apices 0.78–0.86. Basis capituli (0.31–0.57 wide dorsally. Palpi 0.66–0.76 long, 0.19–0.21 wide. Hypostome acute at apex, 0.47–0.50 long; dental formula 4/4, 3/3, 2/2 (Fig. 12). Coxae I–IV each with a distinct external spur; coxa I with a long internal spur reaching to anterior 1/3 of coxa II (Fig. 19). Genital aperture between coxae IV. Spiracular plates subcircular; greatest diameter 0.27–0.35 (Fig. 20).

**Nymph** (Figs. 5, 6, 13, 14, 21, 22). Idiosomal length 1.2–1.3, width 0.8–0.9. Scutum 0.60–0.63 long, 0.58–0.63 wide. Scutal setae considerably shorter than postscutal ones (Fig. 5). Length from palpal apices to cornua apices 0.37–0.39. Basis capituli 0.24–0.25 wide dorsally. Palpi 0.32–0.33 long, 0.08–0.09 wide. Hypostome 0.20–0.22 long; dental formula 3/3, 2/2 (Fig. 14). Coxae I–IV each with a distinct external spur; coxa I with an internal spur reaching to anterior margin of coxa II (Fig. 21). Spiracular plates circular; diameter 0.16–0.17 (Fig. 22).

**Larva** (Figs. 7, 8, 15, 16, 23). Body excluding capitulum 0.58–0.60 long, 0.48–0.49 wide. Scutum 0.33–0.35 long, 0.33–0.37 wide. Length from palpal apices to posterior margin of basis capituli 0.19–0.20. Basis capituli 0.14–0.15 wide dorsally; cornua extended laterally (Fig. 15). Palpi 0.17–0.18 long, 0.04 wide. Hypostome 0.10–0.11 long; dental formula 3/3, 2/2 (Fig. 16). Body chaetotaxy (Figs. 7, 8); 5 scutal pairs (Sc₁–Sc₅) and 12 postscutal pairs (Md₁–Md₇, Cd₁–Cd₄, S₁) on dorsum; 13 pairs (St₁–St₅, Pm₁–Pm₄, Mv₁–Mv₄, Pa₁–Pa₉) on venter and 1 anal pair (A). Scutal setae shorter than postscutal ones (Fig. 7); Sc₅ 0.022–0.027 long, Cd₁ 0.034–0.045 long. Length of ventral setae, St₁ 0.049–0.057, Pa₁ 0.032–0.040. External spurs of coxae I and II distinctly longer than that of coxa III; coxa I with a long and acute internal spur reaching to anterior margin of coxa II (Fig. 23).

**Host.** In eastern Kazakhstan, the adults of *I. pavlovskyi* were found on birds, mainly *Turdus pilaris*, and its immatures were detected from many species of rodents and birds (Filippova and Ushakov, 1967; Ushakov and Filippova, 1968). In Japan, the authors collected the immature stages of *I. pavlovskyi* from the following rodents captured in Asahikawa: 4 larvae from 4 *Apodemus speciosus sinu*, June 26, 1991; 17 larvae and 2 nymphs from *Rattus norvegicus*, June 26, 1991.

**Key to the species closely related with *I. pavlovskyi* in Hokkaido**

In Hokkaido, *I. persulcatus* and *Ixodes nipponensis* Kitaoka et Saito are the species closely related with *I. pavlovskyi*. Key to the adult and immature ticks of these 3 species are as follows:

**Males**

1. Internal spur of coxa I long and acute, reaching to anterior 1/4–1/3 of coxa II .......................... *I. persulcatus*
2. Internal spur of coxa I short, reaching to anterior margin of coxa II ............. 2

**Larva**

1. Internal spur of coxa I short, reaching to anterior margin of coxa II ............. 1. *I. nipponensis*

**Females**

1. Internal spur of coxa I short, reaching to anterior margin of coxa II ............. 1. *I. nipponensis*
Internal spur of coxa I long and acute, reaching to anterior 1/3–1/2 of coxa II

2. External spur of coxa IV tiny; hypostome round at apex; legs blackish brown, postscutal idiosoma dark reddish brown

........................................... I. persulcatus
External spurs of coxae I–IV distinctly long; hypostome acute at apex; legs and postscutal idiosoma pale brown

........................................... I. pavlovsyki

Nymphs

1. Hypostome sharply pointed at apex

........................................... I. nipponensis
Hypostome round at apex

2. External spur of coxa IV considerably shorter than those of coxae I–III; scutal and postscutal setae almost equal in length to one another

........................................... I. persulcatus
External spurs of coxae I–IV long and subequal in length to one another; scutal setae shorter than postscutal ones

........................................... I. pavlovsyki

Larvae

1. Scutal and postscutal setae almost equal in length to one another

........................................... I. persulcatus
Scutal setae shorter than postscutal ones

2. External spurs of coxae I–III short and subequal in length to one another; internal spur of coxa I short, not reaching to anterior margin of coxa II

........................................... I. nipponensis
External spurs of coxae I and II distinctly longer than that of coxa III; internal spur of coxa I long and acute, reaching to anterior margin of coxa II

........................................... I. pavlovsyki

Acknowledgements

The authors are grateful to Dr. Nobuhiro Takeda, Department of Immunology and Parasitology, Fuku Medical School for valuable suggestions on identifying the species. Thanks are also due to Dr. N. A. Filippova, Zoological Institute, Academy of Sciences of the Russia for supplying the specimens of all stages of I. pavlovsyki from Kazakhstan, and to Mr. Kiyoshi Miyakawa, Central Laboratory for Medical Research, Ashikawa Medical College for his technical advice on scanning electron microscopy.

References


摘要

日本新記録のIxodes pavlovsyki Pomerantzev（ダニ目，マダニ科）

北海道道間町堅尾内，旭川市上野村，札幌市定山渓の森林でハタツリ玉により検生上から未吸血のマダニ類を採取したところ，シュルツェマダニやナナガマダニに類似した雌雄成虫を見発した。これらの成虫と実験室内飼育で得た幼若虫はシベリア大陵に分布するIxodes pavlovsyki Pomerantzev，1948と形態が一致したため，北海道からの新記録として報告した。北海道ではライム病が確認されたことにより，その媒介種であるシュルツェマダニを正確に同定する必要がある。I. pavlovsykiは検索表に示した特徴で，類似種のシュルツェマダニとナナガマダニから区別できる。