

SHORT COMMUNICATIONS

HIRSTIONYSSUS STOLICZKAI SP.N. (ACARINA: HIRSTIONYSSIDAE) FROM THE HIGH ALTITUDE REGION OF EAST HINDU KUSH (AFGHANISTAN)*

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Abstract. A description is given of the mite *Hirstionyssus stoliczkai* sp.n., collected from *Alticola roylei* in the Ishmurkh Darrah Valley (East Hindu Kush, Afghanistan).

During the first Czechoslovak expedition to East Hindu Kush in 1965 (Afghanistan, Vakhan Region) zoological and parasitological studies were carried out in the high altitude region visited (Daniel 1966). Among parasitic mites collected from small mammals a new species *H. stoliczkai* was found and is described below.

Hirstionyssus stoliczkai sp.n.

Female (Holotype): Idiosoma oval, 623 (613—798) long, 402 (396—509) wide (all dimensions in μm ; dimensions of two paratypes are given in brackets).

Dorsum (Fig. 1 A, B): Dorsal shield 604 (597—600) long, 393 (345—364) wide, egg-shaped, with posterior margin widely rounded or slightly elongated (Fig. 1B). On the shield there are 26 pairs of setae (in one female paratype setae ET_1 , ET_2 and S_4 are placed outside the shield, so that the number of setae on shield is 23 pairs) (Fig. 1B). Anterior and anterolateral setae longer (30—36) than posterolateral setae (15—20) and M_{11} (25—27). Setae in D series measure 10—15. Uncovered integument bears another 16 pairs of setae, of which posterolateral ones have a fine lateral barb, likewise setae in posterior part of shield (S_8 , D_8 , M_{11}).

Venter (Fig. 1 C): Sternal shield in medial part 48 (43—48) long, at the level of St_3 144 (144—145) wide, with concave posterior margin, invagination with a suggested lyre-like shape reaches the level of two thirds of distance between St_2 and St_3 (Fig. 1F). Anterolateral part of shield with fine chain-like punctation. Setae St_3 placed on shield, the longest from sternal setae (40). Setae St_1 and St_2 measure 35, MSt 32, genital setae 24. Genital shield 124 (129—131) wide, from the level of genital setae 121 (126—139) long, with a finely streaked structure.

Anal shield egg-shaped, 119 (111—123) long, 86 (76—86) wide, cribrum with 4 rows of fine teeth. Adanal setae 23 (25—28), postanal seta 25 (23—25). Uncovered integument bears about 25 pairs of setae 22—25 long. Posteriorly to anal shield a pair of long setae (30—35) with a fine lateral barb. Ventral setae smooth, only the seta in posterior part

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of opisthosoma with a fine lateral barb. Stigmata placed between coxae III and IV, peritreme reaches the level of coxa I centre. Peritrematal platelet narrow, winding round coxa IV and combining with oblong triangle-like metapodal platelet.

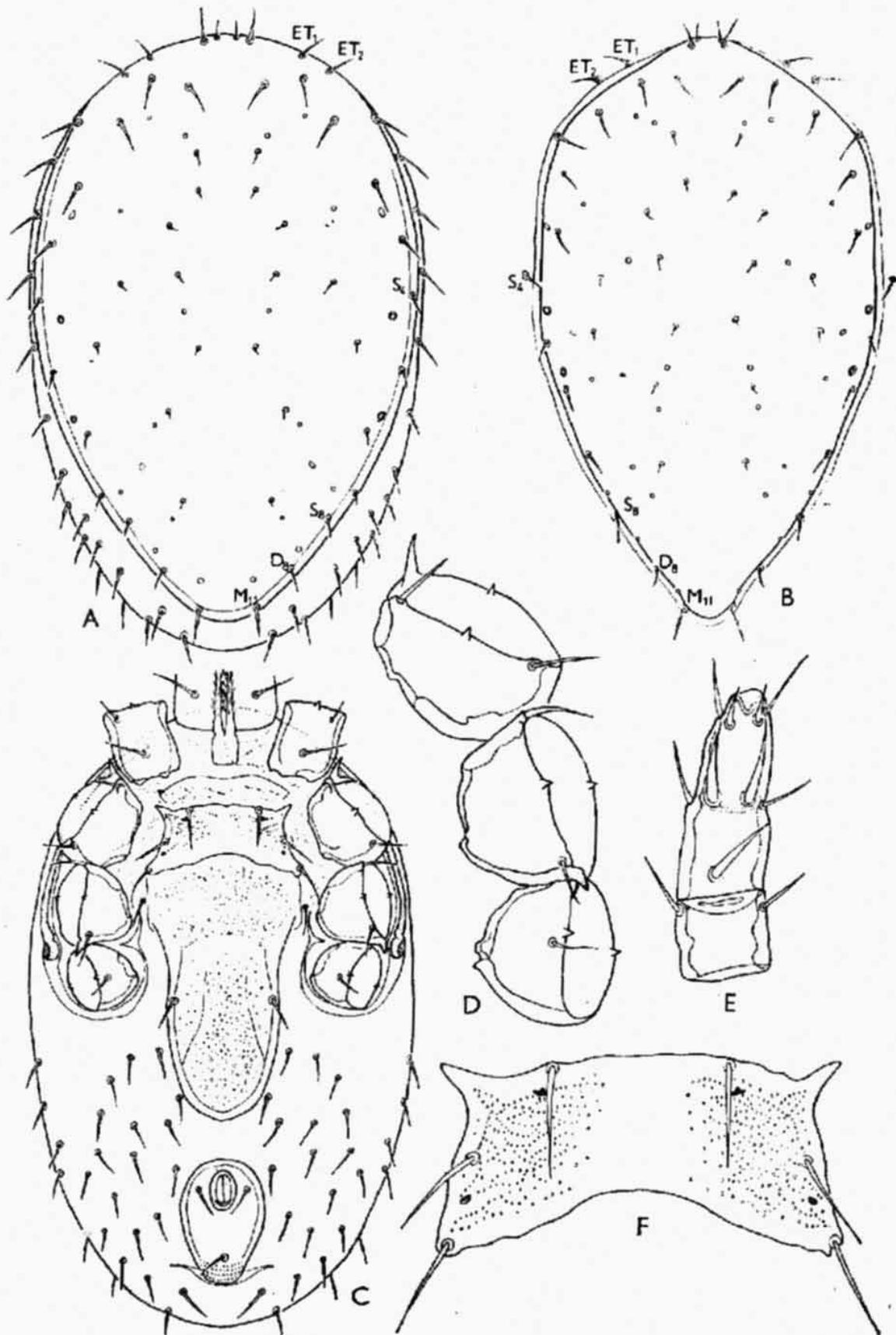


Fig. 1. *Hirstionyssus stoliczkai* sp.n., female: A — dorsal view; B — dorsal plate of paratype female, showing variability in the form of plate and in the position of ET₁, ET₂ and S₄ setae; C — ventral view; D — coxae II—IV; E — tarsus II ventrally; F — sternal plate.

Gnathosoma: Deutosternum with 23 denticles arranged in alternating double file. Gnathosomal setae smooth, 30 long; proximal hypostomal setae 23 and 15, distal ones 23 long. Chelae edentate, movable digit 55 long.

Legs (Figs. 1 D, E): Coxa II with one anterodorsal spur, coxa III with one postero-marginal spur, coxae I and IV without spur; formula of coxal spurs 0-1-1-0. Coxal setae setiform, unchanged. Apical setae on tarsus II setiform, not claw-like.

Type series: Female holotype and one female paratype from *Alticola roylei* (Gray), Ishmurkh Darrah, Hindu Kush Mts., Vakhn Region, Afghanistan, 3900 m elev., 25. 7. 1965. One female paratype from the same host and locality, 24. 7. 1965 — all lgt. M. Daniel.

Hirstionyssus stoliczkai sp.n. is closely related to the species *H. gudauricus* Razumova, 1957, described from *Microtus gud* Sat. and later found in abundance on members of the genus *Alticola* and distributed from the Carpathians across Caucasus, Tian-Shan and Altai Mts. to the Trans-Baikal region (Senotrusova and Kapitonov 1972). The new species, however, differs from it in the absence of second spur on coxae III and the formula of its coxal spurs is 0-1-1-0, while in *H. gudauricus* it is 0-1-2-0. In *H. stoliczkai* also the shape of sternal shield, particularly its posterior margin bent in the shape of a lyre, with invagination reaching at least two thirds of the distance between St_2 and St_3 will make a better differentiation of this species from *H. gudauricus*, in which the posterior margin is slightly, but regularly concave and the invagination reaches at most the middle distance between St_2 and St_3 .

The Ishmurkh Darrah Valley is running from south to north and connects the region of the main mountain ridge (with elevations above 6000 m) with the Ab-i-Pjandj Valley separating Hindu Kush from Pamir. The front of glacier is at the altitude of 3800 m. The hosts *Alticola roylei* were captured at the altitude of 3900 m in large scree-strewn slopes in the western part of the valley. In some places, particularly just below rocky scarps where the scree sliding had been stopped, there were isolated small grassy patches with which the occurrence of small mammals was associated. Besides *Alticola roylei* (Gray) these places were sporadically inhabited by *Ochotona roylei* (Ogilby) and *Marmota caudata* (Jacquemont).

Derivatio nominis: The species has been named in honour of the outstanding Czech naturalist Ferdinand Stoliczka to whom much credit is due for the studies on nature of Asian high altitude mountain ranges and who died in 1874 during his third expedition to that region.

HIRSTIONYSSUS STOLICZKAI SP.N. (ACARINA: HIRSTIONYSSIDAE)
ИЗ ВЫСОКОГОРНОЙ ОБЛАСТИ ВОСТОЧНОГО ГИНДУКУША
(АФГАНИСТАН)

Ф. Дусбабек и М. Даниел

Резюме. Дано описание клеща *Hirstionyssus stoliczkai* sp. n., от *Alticola roylei* добытой в долине Ишмурх Дарра (Восточный Гиндукуш, Афганистан).

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A. A. Zemskaya: Paraziticheskiye gamazovye kleshchi i ikh meditsinskoe znachenie. (Parasitic gamasid mites and their medical importance) Moscow, Publishing House Medicina, 1973, pp. 1—167

A. A. Zemskaya, the scientific worker of the Gamaleya Institute of Epidemiology and Microbiology, Academy of Medical Sciences of the U.S.S.R., belongs to the outstanding Soviet acarologists. Her lifework is aimed above all at the research of gamasid mites and their importance as carriers and vectors of pathogenic germs in the natural foci of infection. In her publication we find the literary data as well as her own years-long results and experiences covering these problems.

In the first chapter the general characteristics of the superfamily Gamasoidea are described. A great care is paid to the morphology of all developmental stages and to elucidation of all details decisive for the species determination. The commentary includes many schematic figures. We find further a summary of the biology of gamasid mites, types of their parasitism, degrees of the haematophagy, seasonal distribution and brief characteristics of the habitats. A brief survey of the geographical distribution closes the chapter.

Next chapter deals with the medical importance of gamasid mites in general, as regards the direct infestation of man and effect of dermatitides, as well as their importance in the natural foci of infection. The main part of the chapter consists of the tables illustrating the relation between gamasid mites and other different pathogens including 37 species of mites and 18 causative agents of infection (viruses, rickettsiae, bacteria, spirochaetae). This relation of mites to the causative agent of infection is classed in 5 categories: 1) the causative agent of infection was isolated, 2) the ability of a mite to be infected was determined, 3) the ability to preserve the infection and to transfer

it by bite, 4) the ability to preserve the infection and to transfer it by contamination, 5) the trans-ovarian transfer of infection was determined.

The third chapter including a list of single species forms the chief part of the book. The superfamily Gamasoidea is here conceived and, with some modifications, divided into families according to Bregetova (*Gamazovye kleshchi, Oprodeliteli po faune SSSR*, Pub. AN SSSR, Moscow—Leningrad, 1956), from which 5 families are mentioned (Dermanyssidae — including 4 species, Macronyssidae — 3 species, Hirstionyssidae — 6 species, Haemogamasidae — 7 species, Laelaptidae — 14 species). For every species mentioned, the brief characteristics, list of hosts, geographical distribution, biology, development (including the description of particular developmental stages), medical importance, control and protection is given. The text is completed by 5 tables; to less significant species a list of hosts and geographical distribution is added. These lists include other 55 species of the family Hirstionyssidae and Haemogamasidae and genera *Haemolaelaps*, *Laelaps* and *Myonyssus*.

The book forms in many points a supplement to the monography by N. G. Bregetova (1956) and brings a great number of concrete data enabling the solution of an always actual problem of the importance of gamasid mites in natural foci of infection. The book is clear and well arranged in an instructional way and it will be a valuable contribution to the literature on acarology. Unfortunately, the low number of copies edited (2,900) will not allow its larger distribution.

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