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## On two Thysanoptera (Insecta) of Nepal

by

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**S y n o p s i s :** Dieser Beitrag entsteht aus der neuen Auffassung des Autors betreffs der Gattungsverhältnisse innerhalb der Thripiden-Familie, bes. *Taeniothrips* AMYOT & SERVILE und verwandte Gattungen. Es handelt sich um zwei interessante Thysanopteren-Arten aus Nepal. *Taeniothrips janetscheki* PELIKAN, 1970, wird von *Taeniothrips* zu einer neuen Gattung als ihre Typus-Art überstellt. Diese Art wird revidiert mit vielen zusätzlichen Einzelheiten. *Krasibothrips* KUDO, 1977, fundiert auf *K. coluckus* KUDO, 1977, ist als jüngeres Synonym von *Paraballothrips* PRIESNER, 1935, zu betrachten. Die Verhältnisse zwischen *P. coluckus* (KUDO) und dem Genero-Typus *takahashii* PRIESNER, 1935, werden erklärt. Der Lectotypus von *takahashii* PRIESNER wird festgestellt und die Arten der Gattung besprochen.

PELIKAN (1970) described *Taeniothrips janetscheki* from the Nepal Himalaya. In the course of a revision of *Taeniothrips* the type material of this species has been re-examined from the Zoological Institute of the Innsbruck University. The species is found to be quite distinctive in several features which are at variance with the present concept of *Taeniothrips* AMYOT & SERVILE, 1843, necessitating its removal to a new genus, which is a very unusual relation of *Taeniothrips*. Phylogenetically the new genus seems to be a rather distant relation of *Taeniothrips*. Instead its affinities are to be looked for among the group of genera which possess a pair of dorsal apical setae on antennal segment I. Here again it is difficult to name any genus as closely related, since apart from other features noted in the description below, the morphological features associated with micropterism are unusual for these genera. The completely fused metascutum and scutellum are not met with in related forms. The combination of long interocellars (= interoculars) and very short posteroangular pronotal setae is also unique.

KUDO (1977) described *Krasibothrips* with a single species *K. coluckus* KUDO, 1977, from Nepal. The writer's restudy of *Paraballothrips* PRIESNER, 1935, has

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revealed a striking similarity between the type-species *P. takahashii* PRIESNER, 1935, and KUDO's species. *Krasibothrips* is here regarded a junior synonym of *Paraballothrips*.

The study of type-material of *janetscheki* and recording of many additional features afford the opportunity to give an English description of the species.

### **Himalthrips nov. gen.**

Type-species *Taeniothrips janetscheki* PELIKAN, 1970, Khumbu Himal, 3(3): 361-362.

Micropterous. Antennae 8-segmented; with forked sense cone on segments III and IV; segment I with 8 + 5 setae, with middorsal apical setae; setae on III 5, IV 5, V 6; II with dorsal seta based of areola; microtrichia present on segments III - VI. Head broader than long; with 2 - 3 pairs of dorsal interocular setae; major interocular setae (= intercellular pair) the longest dorsal head setae; postoculars uniserial, none especially developed. Mouth cone moderately developed, conical. Maxillary palps 3-segmented.

Pronotum broader than long; longer than head; each posterior angle with a pair of somewhat prominent setae (16 - 25  $\mu$ m long), shorter than major interocular (= intercellular) setae; none of the disc setae well developed; posterior margin with 4 pairs of setae inner to the major angulars. Fema entire, undivided; basantra membranous, without setae. Median pair of mesonotal setae inserted at same level as the submedian pair. Metascutum and scutellum fused. Mesoanepimeron with a sparse covering of microtrichia; katepimeron with one seta. Metaepimeron with 2 setae; episternum without setae; preepisternum with 2 setae. Spinula present on mesosternum, absent on metasternum. Mesothoracic sternopleural sutures present. Tarsi 2-segmented; legs unarmed. Wings reduced to short stubs.

Abdomen with laterotergite and pleurite areas marked out with sutures. Setal formula of intermediate terga: 2 + 1 m + 2 + 1 m; seta S6 on laterotergite area or between laterotergite and pleurite areas. Seta S1 on terga II - VIII short, wide apart. Terga without ctenidium. Postmarginal flange absent on terga and sterna; posterior margin of tergum VIII without processes, smooth; pleurite area with teeth posteriorly. Tergum IX with mediodorsal setae (md) well developed, 30 - 36  $\mu$ m long; fairly wide apart. Tergum X split longitudinally. Seta S4 not reduced on any tergum. Sternum II with 2 pairs of primary setae, III - VII each with 3 pairs, on II - VI all of these inserted at the posterior margin, seta S1 on VII in ♀ inserted at or near posterior margin. Male unknown.

*Himalthrips* is not closely related to *Taeniothrips* AMYOT & SERVILLE, and is separable by having head wider than long, dorsal apical setae on antennal segment I, very short setae on posterior angles of pronotum, median pair of mesonotal setae close to posterior margin, fused metascutellum and scutum, short and stout legs, seta S4 on abdominal terga VI - VIII not reduced, and different arrangement of setae on sternum VII. The shape of antennal segments III and IV is also different in *Taeniothrips*. Species of *Taeniothrips* further have fully winged individuals, so far as known.

**Himaphysalis janetscheki (PELIKAN, 1970), nov. comb.**

(Figs. 1 - 12)

*Taeniothrips janetscheki* PELIKAN, 1970, Khumbu Himal, 3(3): 361 - 362, figs. 1, 3. ♀. Holotype ♀: Nepal: Mingbo Valley 5500 m (Institut für Zoologie der Universität Innsbruck).

The species is redescribed below based upon a study of the holotype ♀ and a paratype ♀, as well as data from PELIKAN. This supplements the original description in German.

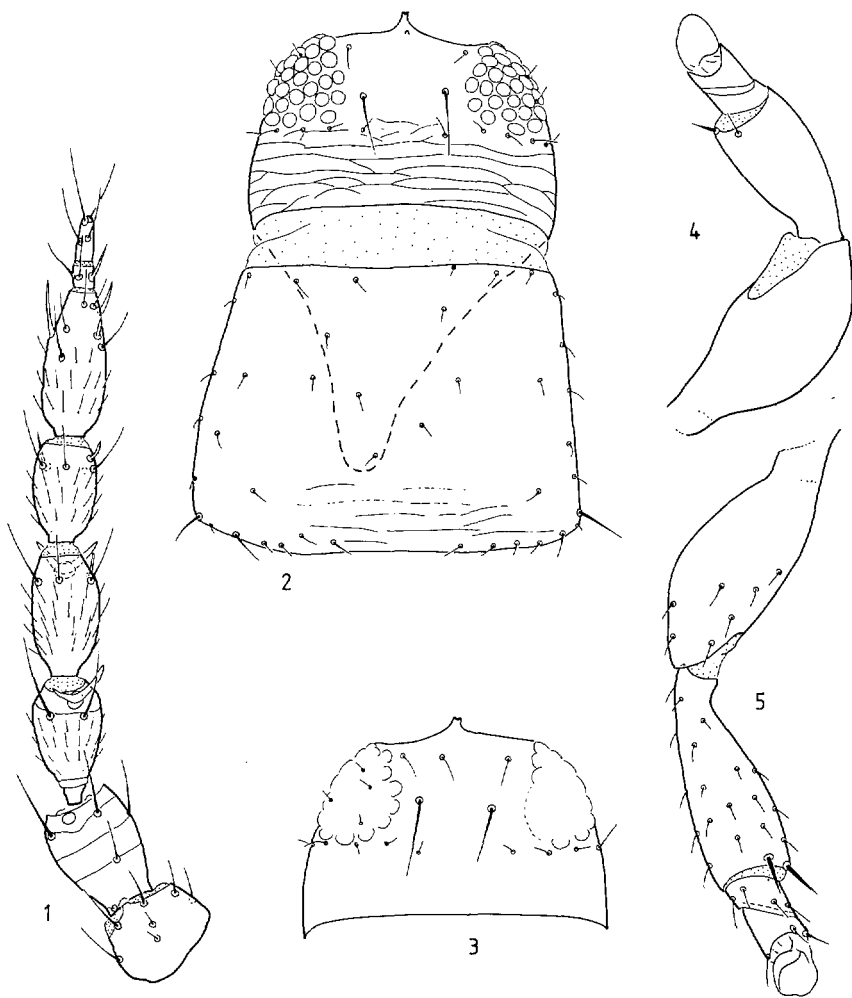
**F e m a l e** (micropterous): Body brown to dark brown. Legs gray brown; tibiae lighter at extreme base; all tarsi yellow, weakly shaded brown. Antennae nearly unicolorous, dark gray brown; segments I - III lighter. Wing stub gray. Body setae dark.

Head broader than long, L 90 - 100 µm, W at cheeks 140 - 144 µm; cheeks not swollen, very weakly corrugated. Occiput cross striate. Ocelli absent. Interocular (= interocellar) setae well developed, 32 - 34 µm long (PELIKAN: 38 - 46 µm); with 2 - 3 minor setae (= antecellar setae) anterior to the major dorsal interoculars. Postocular setae subequal, all weakly developed. Mouth cone conical, strongly narrowed in distal half, nearly pointed (but not long as stated by PELIKAN). Antennae 8-segmented, 220 - 225 µm long; L (and W) of segments: I 16 - 19 (30 - 32), II 33 - 37 (25 - 27), III 32 - 37 (20 - 22), IV 33 - 38 (20 - 22), V 30 - 35 (19), VI 44 - 47 (18 - 19), VII 7 (7), VIII 13 - 14 (5) µm. Setae on antennal segments: I 8 + 5, II 7, III 5, IV 5, V 6, VI 6 - 7, VII 3, VIII 6.

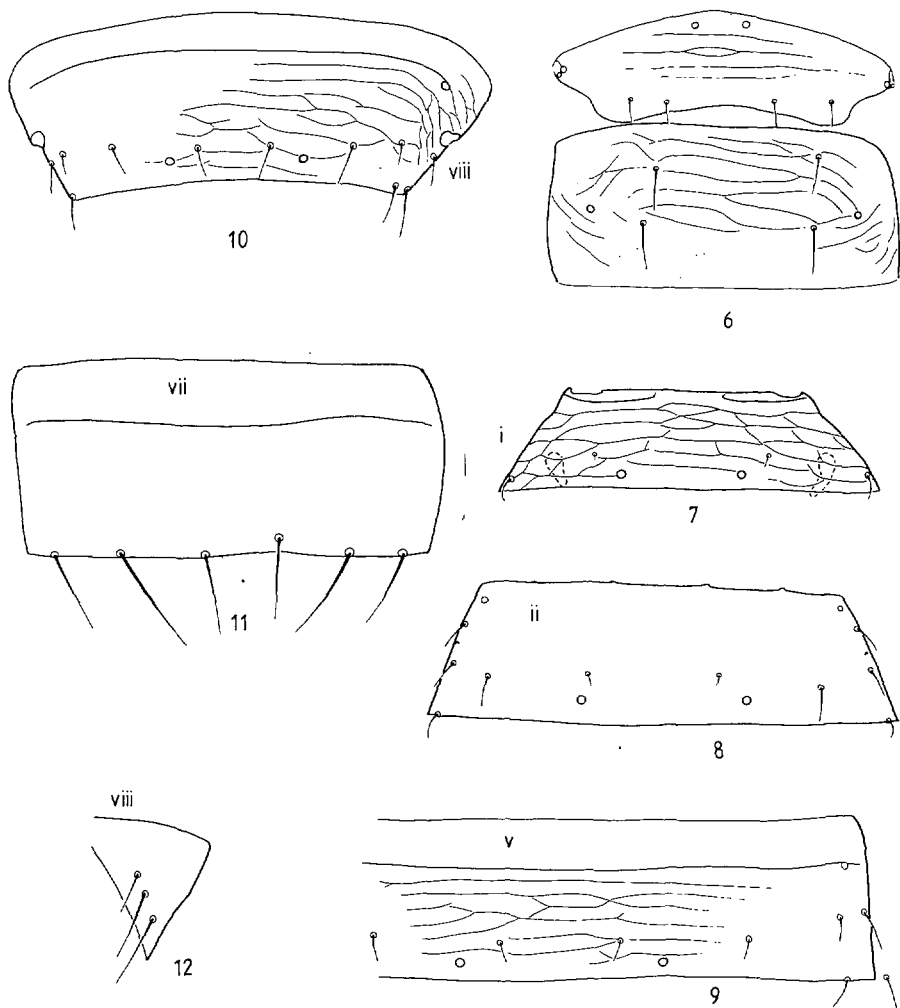
Pronotum with characteristic shape, narrowed anteriorly; L 115 - 140 µm, W 175 - 180 µm; surface sparsely setose with minute setae, sculpture practically absent, except for a few lines. Posteroangular setae, inner 16 - 19 µm long, outer 16 - 25 µm long (PELIKAN: inner 22 - 27 µm, outer 19 - 25 µm long); posterior margin inner to the major angulars with 4 pairs of setae (PELIKAN: 3 - 4 pairs), the innermost pair of these wide apart (60 µm) from each other. Mesonotum without lateral angular seta. Mesoanepimeron with a sparse covering of microtrichia; katepimeron with one seta. Metascutum and scutellum fused; surface with wide apart transverse striae (PELIKAN: surface smooth); anterior pair of metanotal setae 13 - 22 µm long, posterior pair 19 - 27 µm long; discal pores far laterad on either side. Metaepimeron with 2 setae, anterior seta 24 - 26 µm long, posterior (ventrolateral) seta 19 µm long; episternum without setae; preepisternum with 2 setae. Spinula present on mesosternum alone.

Wings rudimentary, reduced to short stubs, 44 - 55 µm long. Legs short and stout; fore tibia with one relatively strong seta at inner apical margin; fore femur 55 µm wide; hind tibia 110 µm long, without strong setae on inner margin, but with 2 strong setae at apex within.

Abdomen strongly conical at apex. Tergum I with one lateral seta on either side, 12 - 15 µm long, in addition to the median pair of rudimentary setae; spiracle on I 20 µm long, 10 µm wide at base, 6 µm wide at middle. Tergum II with 3 lateral marginal setae. Sterna without accessory setae. Setal formula: tergum I 1 + 1, II 2 + 1 m + 2, III - VII 2 + 1 m + 2 + 1 m. Sutures separating laterotergite and pleurite areas present;



Figs. 1 - 5: *Himalthrips janetscheki* (PELIKAN), ♀: 1 Antenna, dorsal. 2 Head and pronotum (holotype). 3 Head, dorsal, showing variation (paratype). 4 Fore leg. 5 Hind leg. Sculpture omitted in Figs. 3, 5; chaetotaxy and sculpture omitted in Fig. 4.



Figs. 6 - 12: *Himalthrips janetscheki* (PELIKAN), ♀. 6 Meso- and metanotum. 7 Abdominal tergum I. 8 Abdominal tergum II. 9 Part of abdominal tergum V. 10 Abdominal tergum VIII. 11 Sternum VII. 12 Right half of sternum VIII. Sculpture partly omitted in Figs. 9, 10; completely omitted in Figs. 8, 11, 12.

seta S 6 situated on laterotergite area on III - V, on VI and VII inserted between laterotergite and pleurite areas. Pleurites with teeth posteriorly, on VII with 3 pointed teeth, their number on others not clearly visible. Median discal pores on terga I - VIII close to posterior margin. Setae on tergum VIII: S3, 20  $\mu$ m long; S 6, 22  $\mu$ m long (PELIKAN: lateral setae 20 - 35  $\mu$ m long). Setae on IX: md 30 - 36  $\mu$ m long; S1, 109 - 128; S2, 115 - 130; S3, 92 - 122  $\mu$ m long; on X: S1, 98 - 106; S2, 90 - 98  $\mu$ m long. Tergum X split longitudinally almost to base. Ovipositor 215 - 230  $\mu$ m long. Total body length ca. 1 mm (partially distended).

**Material studied:** 1 ♀ (holotype), 1 ♀ (paratype), Nepal: Mingbo valley 5500 m, 16.V. - 4.VI.1961, Talschluß (= end of valley), Formolfalle (= formaldehyde trap); in the collection of the Zoological Institute of Innsbruck University, Austria).

The species was described from 3 ♀♀ micropterous. PELIKAN (1970) compared it with *Taeniothrips dealatus* PRIESNER, which however seems unrelated, and its position is discussed elsewhere (BHATTI, 1978).

### **Parabaliethrips PRIESNER, 1935**

*Parabaliethrips* PRIESNER, 1935, Stylops, 4(6): 125. Type-species *Parabaliethrips takahashii* PRIESNER, 1935, l.c., p. 125 - 126, by original designation from two species.

*Krasibothrips* KUDO, 1977, Kontyu, 45(1): 4. Type-species *Krasibothrips coluckus* KUDO, 1977, l.c., p. 5 - 8, by original designation and monotypy. **New synonymy.**

The type-species of *Krasibothrips* is similar to *takahashii* in many structural features, as is revealed by a study of *takahashii* and a comparison with KUDO's description and figures. The writer also has had an opportunity to see a ♀ of *coluckus* from Nepal from material of the Basel Museum now under study by Dr. Zur Strassen, through the kindness of Dr. Zur Strassen. *Krasibothrips* is here regarded as a junior synonym of *Parabaliethrips*. *P. coluckus* (KUDO) (**comb. nov.**) differs from *takahashii* in having better developed anterior pronotal setae.

Three species are included in *Parabaliethrips*: *coluckus* (KUDO, 1977) from Nepal, Malaya and Formosa; *grandiceps* PRIESNER, 1935, from Formosa; and *takahashii* PRIESNER, 1935 from Formosa. *P. takahashii* is represented in the PRIESNER collections by 2 ♀♀ 2 ♂♂ syntypes from Kankoo, Formosa (XI. 1930, *Liquidambar formosana*, R. TAKAHASHI), all mounted on the same slide. One female which has distended body is here designated as the lectotype. The other ♀ has contracted body.

*P. grandiceps* is not represented in the PRIESNER collection, and presumably may be in TAKAHASHI collection in Formosa. The series of minute setae along the distal half of paramere described and figured for *coluckus* by KUDO are not seen in a laterally mounted ♂ of *takahashii* with partly projected out hypophallus.

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## Abstract:

Two Nepalese thrips are discussed. *Taeniothrips janetscheki* PELIKAN, 1970, is removed from *Taeniothrips* and placed in a new genus as its type species. The species is redescribed with many additional features. *Krasiothrips* KUDO, 1977, based upon *K. coluckus* KUDO, 1977, is treated as a junior synonym of *Paraballothrips* PRIESNER, 1935. The relations of *P. coluckus* (KUDO) with *takahashii* PRIESNER, 1935, the generotype of *Paraballothrips*, are discussed.

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