

| | | | | | |
|----------|---|---|---------|-----------------------|----------------|
| SPIXIANA | 5 | 2 | 181-186 | München, 1. Juli 1982 | ISSN 0341-8391 |
|----------|---|---|---------|-----------------------|----------------|

Notes on Himalayan Stoneflies from the Collection of Zoologische Staatssammlung München

(Plecoptera)

By Ignac Sivec

Limnologische Flußstation des Max-Planck-Instituts für Limnologie, Schlitz

Abstract

Amphinemura minor n. sp. is described from Nepal Himalaya. Faunistical data based on study of a small collection of stoneflies from Zoologische Staatssammlung München are presented.

Among the first stoneflies from the Himalaya were those collected during several Everest Expeditions in the beginning of this century (KIMMINS 1947). After that time this region was closed to visitors for a long time. For the last thirty years Nepal Himalaya has again been open and several intensive biological studies have been done (HELLMICH 1971, MARTENS 1979).

Recent studies of HARPER (1974, 1975, 1976, 1977), SIVEC (1981), ZWICK (1977) and ZWICK & SIVEC (1980), revealed a number of new species of Plecoptera from the Himalaya, however stoneflies of this region are still not well known.

I had an opportunity to study a small collection of pinned specimens from Zoologische Staatssammlung München. I would like to thank Dr. E. G. Burmeister for loan of the specimens, and Mr. P. Ward for the comparative material of stoneflies from the British Museum.

List of species:

Fam. Taeniopterygidae

Mesyatsia sp. Fig. 1

Material: NEPAL: 2♀♀, Prov. Sagarmata, Dingpoche, 4400 m, 3.6.1964 (W. Dierl leg.); 9♀♀, East Chukhung, 4800-5000 m, 10.6.1964 (W. Dierl leg.).

Medium size dark brown species. Length of fore wings 11-12 mm. Ventral side of body and ventral parts of femora densely covered with long hairs. Wings brownish with dark venation. At the radio-medial crossvein a slightly expressed pale band. Head and pronotum dark brown. Antennae and palpi brown. First two segments of the antennae darker than rest. Pronotum trapezoidal with an indistinct pale reticular pattern and pale

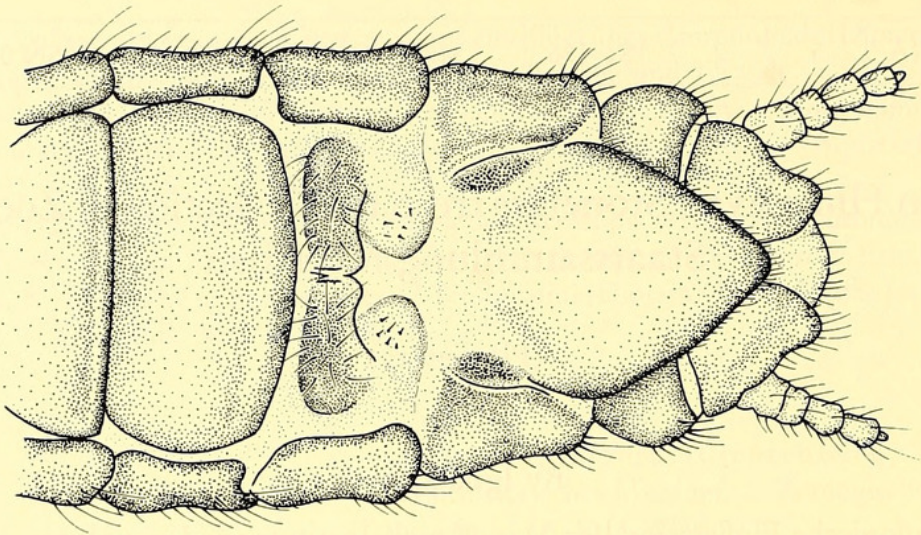


Fig. 1: *Mesyatsia* sp. : tip of ♀ abdomen.

posterior angles. Femora dark brown, tibiae with a dark band proximally. Abdomen dark brown.

Available specimens are unfortunately all females and we are not able to determine and associate this species to the others known in this genus.

Genital segments resemble *M. nigra* Zwick, however our specimens are smaller and much more hairy. Side lobes below genital opening are less expressed, lips of the genital opening only slightly emarginate. On the contrary, *M. nigra* Zwick has a well expressed cleft which seems to be the main difference to *M. thianshanica* (Zhiltzova) and *M. brodskii* Zhiltzova from the Tien Shan Mountains.

Despite large variations in *M. karakorum* Šamal (ZWICK & SIVEC 1980), our specimens probably belong to a different species. Discovery of ♂♂ will have to be waited for to decide on the status of the present specimens.

Fam. Capniidae

Capnia longicauda Zhiltzova

Capnia longicauda ZHILTZOVA, 1969, Rev. Ent. URSS, 48: 596, Figs. 1–4.

Material: NEPAL: 2♀♀, unter Jonsong Ha, 5300 m, 7.6.1930 (Himalaya expedition Dyhrenfurth).

Species with a rather late flying period compared to other *Capnia* species known from Himalaya.

Capnia montivaga Kimmins

Capnia montivaga KIMMINS, 1947, Ann. Mag. nat. Hist., (11) 13 (1946): 733, Fig. 9.

Material: NEPAL: 1♀, Khumbu Periche, 4350 m, 29.6.1963 (G. Ebert leg.).

Our specimen is identical with the type of Kimmins. The situation among Himalayan Capniidae is still not completely clear. *C. montivaga* Kimmins is described only from the female and could in future prove to belong to some other already known species.

Amphinemura minor n. sp. Fig. 2a-d.

Material: NEPAL: ♂ Holotype (pinned specimen, genitalia cleared in microvial), Province Sagar-mata, Bujan, Dudh Kosi Tal, 2900 m, 18.-19. 7. 1964 (W. Dierl leg.).

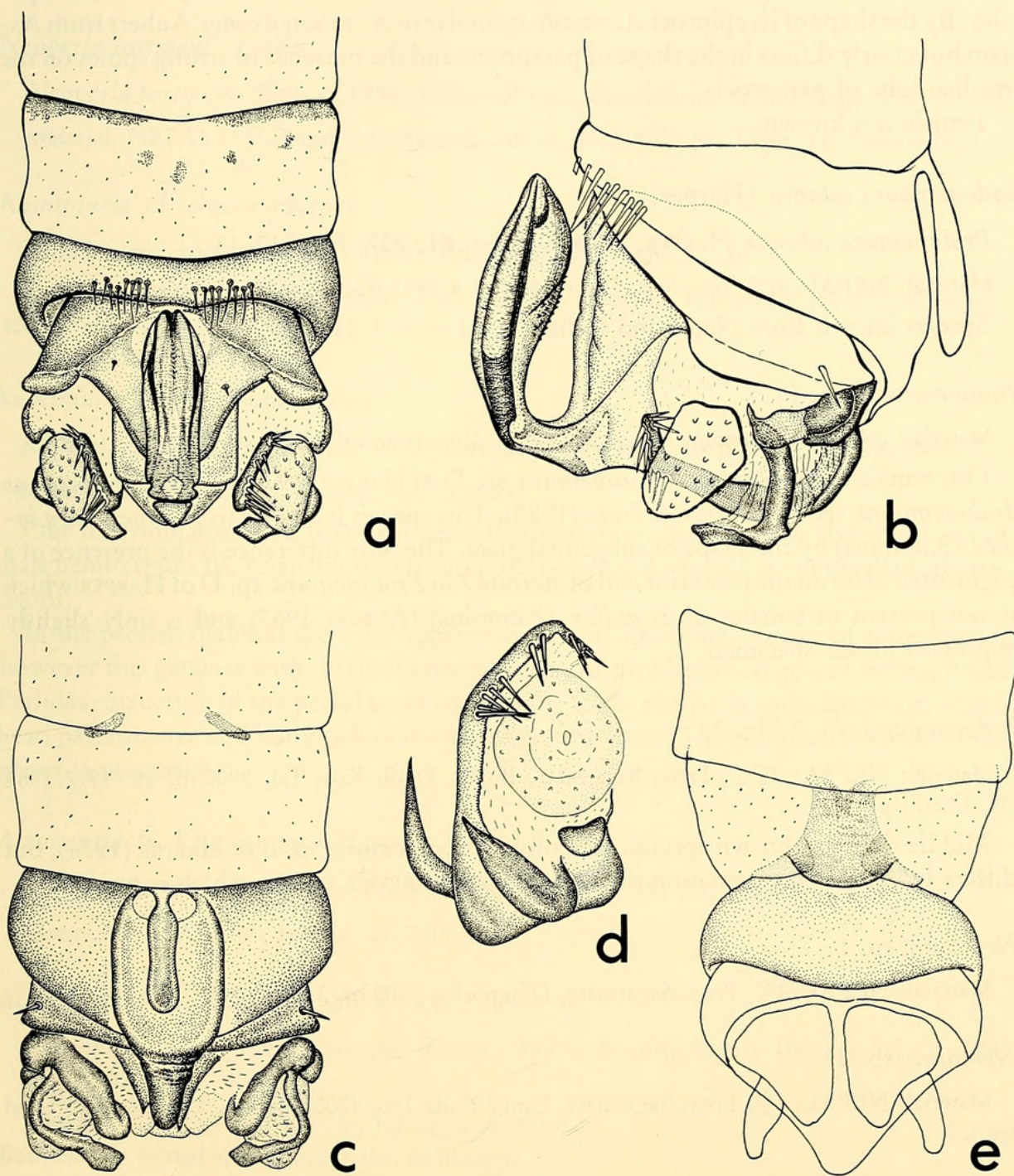


Fig. 2: *Amphinemura minor* sp. n. : tip of ♂ abdomen (a, dorsal; b, lateral; c, ventral), apical view of right paraproct (d); *Indonemoura* sp. 2 : tip of ♀ abdomen (e, ventral).

Small uniformly dark brown species, length of the fore wings 7 mm. Pronotum slightly wider than long, rugosity moderately expressed, angles rounded. Abdomen membranous except genital segments.

Male genitalia: Subgenital plate narrow and long, ventral vesicle long. Tergite 9 medially with a row of stronger setae on its posterior margin. Median and outer lobe of paraprocts narrowly sclerotized. Median lobe bearing apically a row of a strong large spines. Lateral lobe ending in a flat pointed tip. Epiproct simple, rather long and oval with a patch of short spinules on its ventral side.

A. minor has no close relatives among the already known Asian *Amphinemura* species. By the shape of its epiproct *A. minor* is similar to *A. talungdzongi* Aubert from Assam but clearly differs in the shape of paraprocts and the presence of strong spines on the median lobe of paraprocts.

Female not known.

Indonemoura adunca (Harper)

Protonemura adunca HARPER, 1974, Psyche, 81: 327, Figs. 12–14

Material: NEPAL: 1♂, Ting Sang La, 3800 m, 5.5.1962 (G. Ebert, H. Falkner leg.).

Species known from Nepal and India.

Indonemoura sp. 1

Material: INDIA: Umgebung Darjiling (coll. v. Rosen) no other data.

Our female corresponds to *Protonemura* sp. D of HARPER (1974) which is the same as *Indonemoura* sp. 1 of ZWICK & SIVEC (1980). This species is similar to *Indonemoura indica* (Kimmins) by the shape of subgenital plate. The only difference is the presence of a pigmented plate on the posterior end of sternite 7 in *Protonemura* sp. D of HARPER which is not present in females of *I. indica* (Kimmins) (AUBERT 1967) and is only slightly expressed in our specimen.

Indonemoura sp. 2 Fig. 2e.

Material: NEPAL: 2♀♀, Prov. Sagarmata, Bujan, Dudh Kosi Tal, 2900 m, 18.–19.7.1964 (W. Dierl leg.).

Middle size dark brown species. Resembles *Protonemura* sp. B of HARPER (1974), but differs by lack of pigmentation on sternite 7 in HARPER's species which is present.

Nemoura sp. 1

Material: NEPAL: 1♀, Prov. Sagarmata, Dingpoche, 4400 m, 3.6.1964 (W. Dierl leg.).

Nemoura sp. 2

Material: NEPAL: 1♀, Prov. Sagarmata, Umg. Tsola Tso, 4700–5000 m, 7.7.1964 (W. Dierl leg.).

Neoperla schmidi Aubert

Neoperla schmidi AUBERT, 1959, Mém. Soc. Vaudoise Sci. Nat., **12**: 88, Figs. 87–91.

Neoperla complicata SIVEC, 1980, Entomologica Basiliensia, **5**: 118, Fig. 24a–e; syn. according to ZWICK (1982).

Material: AFGHANISTAN: 1♀, Sarobi, 1100 m, 13.8.1961 (G. Ebert leg.).

Species described from Pakistan, known also from Nepal. New for Afghanistan!

Neoperla tortipenis Zwick

Neoperla tortipenis ZWICK, 1980, Entomologica Basiliensia, **5**: 125, Figs. 27c, 28a–d.

Material: NEPAL: 1♀, Rapti Tal, Megouli, 300 m, 29.3.1962 (G. Ebert, H. Falkner leg.).

Kamimuria cf. *crocea* Harper

Kamimuria crocea HARPER, 1976, Mushi, **49**: 29, Figs. 11–14.

Material: NEPAL: 1♂, Jiri, 1900 m, 15.5.1962 (G. Ebert, H. Falkner leg.); 2♂♂, Bhimpedi, 400 m, 4.–7.4.1962 (G. Ebert, H. Falkner leg.).

Kamimuria cf. *lutulenta* Zwick

Kamimuria lutulenta ZWICK, 1977, Entomologica Basiliensia, **2**: 116, Figs. 66–72.

Material: NEPAL: 3♂♂, Jubing, 4.–5.5.1964.

Our determinations are based on general colouration, head pattern and the shape of male hemitergites 10. Available descriptions of the penes do not allow for detailed comparisons.

In the present material there are apparently several additional species of *Kamimuria*, however this genus is without doubt one of the most problematical genera among Asian Perlidae. Structure of the penial cowl seems to be fairly similar in some species in which head pattern, size and body colouration are very different. The complete revision of the genus is necessary.

Acroneuria (s. l.) *personata* Harper

Acroneuria (s. l.) *personata* HARPER, 1976, Mushi, **49**: 25, Figs. 1–6.

Material: NEPAL: 1♀, Junbesi, 27.7.1964.

Acroneuria (s. l.) *distinguenda* Zwick

Acroneuria (s. l.) *distinguenda* ZWICK, 1977, Entomologica Basiliensia, **2**: 128, Figs. 102, 103.

Material: NEPAL: 4♂♂, 3♀♀, Jubing, 4.–6.5.1964.

Both closely related species occur also in Bhutan.

Acknowledgements

I am very grateful to Doc. Dr. P. Zwick for his help with the English manuscript. I also thank Prof. Dr. J. Illies for his help permitting me to conduct this study at the Limnologische Flußstation Schlitz.

References

- AUBERT, J. 1967: Les Nemouridae de l'Assam (Plécoptères). – Mitt. Schweiz. Ent. Ges., **39**: 209–253
- HARPER, P. P. 1974: New *Protonemura* (s. l.) from Nepal (Plecoptera; Nemouridae). – Psyche, **81**: 367–376
- — 1975: Quelques *Amphinemura* et *Nemoura* nouvelles du Népal (Plécoptères: Némouridés). – Nouv. Rev. Ent., **5**: 119–127
- — 1976: Plecoptera collected by the Hokkaido university expedition to the Himalaya, 1968. – Mushi, **49**: 25–33
- — 1977: Capniidae, Leuctridae, and Perlidae (Plecoptera) from Nepal. – Oriental Insects, **11**: 53–62
- HELLMICH, W. 1971: Research Scheme Nepal Himalaya, Nepal Research Center: Report 1971. – Innsbruck-München, 1971, 23 pp.
- KIMMINS, D. E. 1947: New species of Himalayan Plecoptera. – Ann. Mag. nat. Hist., **13**: 721–740
- MARTENS, J. 1979: Die Fauna des Nepal-Himalaya – Entstehung und Erforschung. – Natur und Museum, **109**: 221–243
- SIVEC, I. 1981: Contribution to the Knowledge of Nepal Stoneflies. – Aquatic Insects, **3** (4): 245–257
- ZHILTOVA, L. A. 1972: New for the Central Asia family Taeniopterygidae (Plecoptera). – Zool. Zhurn., **51**: 1815–1822
- ZWICK, P. 1977: Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museums in Basel (Plecoptera). – Entomologica Basiliensia, **2**: 85–134
- — 1982: Notes on Plecoptera (4). – Aquatic Insects, in print.
- — & I. SIVEC 1980: Beiträge zur Kenntnis der Plecoptera des Himalaya. – Entomologica Basiliensia, **5**: 59–138

Address of the Author:

Dr. Ignac Sivec,

Limnologische Flußstation des MPI für Limnologie, Schlitz.

permanent address:

Natural History Museum of Slovenia

Prešernova 20, Pob. 290, YU-61001 Ljubljana, Yugoslavia

Angenommen am 27. 1. 1982



Sivec, I. 1982. "Notes on Himalayan Stoneflies from the Collection of Zoologische Staatssammlung München (Plecoptera)." *Spixiana* 5, 181–186.

View This Item Online: <https://www.biodiversitylibrary.org/item/89565>

Permalink: <https://www.biodiversitylibrary.org/partpdf/65949>

Holding Institution

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Sponsored by

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Zoologische Staatssammlung München

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.