

The Caenidae in the Collection Ulmer, Hamburg (Insecta: Ephemeroptera)

PETER MALZACHER

Abstract

The Caenidae (Ephemeroptera) of the Collection Ulmer, deposited in the Zoologisches Museum Hamburg are listed. Remarks on the different species are given.

Key words: Ephemeroptera, The Caenidae, Collection Ulmer, Hamburg.

Introduction

Recently I revised the species of the genus *Caenis* from the Oriental region (Malzacher 2015). Within the bounds of this investigation I also examined material from the Collection G. Ulmer deposited in the Zoological Museum of the University of Hamburg. From this material three new species are described. Moreover the Ulmer material contains a new species of the genus *Caenoculis* that will be described in a revision of this genus and two palearctic *Caenis* species from the surroundings of Peking, collected by C. F. Wu (descriptions in preparation). Herein a table with all examined species of the Ulmer collection is given with remarks on the different species.

Results

Table 1. The Caenidae species of the Collection G. Ulmer

Jar	Number	Country / island	Locality	Date	Quantity	Species	Rem. no.
		Java	Buitenzorg	II/III. 14	20 ♀♀	<i>Caenis nigropunctata</i>	1
nigr 1		Java	Buitenzorg	13.III.21	11 ♂♂	<i>Caenis nigropunctatula</i>	2
nigr 1	B 12	Java	See Telaga Warna,	21.IV.28	2 la	<i>C. cf. nigropunctatula</i>	2
nigr 1	F32A	Sumatra	Fort de Kock	13.III.29	few ♂♂	<i>Caenis nigropunctatula</i>	2
nigr 1		Sumatra	Kalung (Kamang)	XII. 913	few ♂♂	<i>Caenis nigropunctatula</i>	2

Table 1. (cont.)

nigr 1	FM7d	Sumatra	Tjurup, Musi-Gebiet	6.V.29		<i>Caenis spec.</i>	
nigr 1	FR 1h	Sumatra	Ranau-Abfluß Wadi Kuala	19.I.29		<i>Caenis spec.</i>	3
nigr 1	FR2	Sumatra	Ranau, Urwaldbach	20.I.29		<i>Caenis spec.</i>	3
nigr 1		Sumatra	Balige, Tobasee	3.IV.29	25 ♂♂	<i>Caenis nigropunctatula</i>	2
nigr 1		Sumatra	Balige	IV.29		<i>Caenis nigropunctatula</i>	2, 3
nigr 2		Java	Buitenzorg	IX.28	2 ♀♀	<i>C. cf. nigropunctatula</i>	2, 5
nigr 2		Java	Klakah	XI.28	10 ♂♂	<i>Caenis ulmeriana</i>	2
nigr 2		Sumatra	Sinkarak	III.29	2 ♀♀	<i>C. cf. nigropunctatula</i>	2,3,5
nigr 2		Sumatra	Sinkarak	II.29	2 ♂♂, ♀♀?	<i>Caenis ulmeriana</i>	2
nigr 2	FR 11a	Sumatra	Ranau	28.I.29	3 ♂♂	<i>Caenis ulmeriana</i>	2
nigr 2	R4c	Sumatra	lake Ranau	21.I.29	2 la	<i>Caenis nigropunctatula</i>	2
nigr 2	FT 15	Sumatra	Pangururan, lake Toba	12.IV.29	1 ♂	<i>Caenis nigropunctatula</i>	2
nigr 2	R9	Sumatra	Ranau See	23.I.29	800 ♂♂	<i>Caenis ranauensis</i>	2
nigr 2	R26	Sumatra	Ranau See	28.I.29	56 ♂♂, 5 ♀♀	<i>Caenis nigropunctatula</i>	2
nigr 2	R26	Sumatra	Ranau See	28.I.29	65 ♂♂, 7 ♀♀?	<i>Caenis ulmeriana</i>	2
nigr 2	R18a	Sumatra	Ranau See	28.I.29	20 la	<i>Caenis nigropunctatula</i>	2
nigr 3	FZ	Bali	Munduk	12.VI.29	1 ♂	<i>Caenis ranauensis</i>	2
nigr 3	Fy7m	Java	Tjobodas, Kali Tjiwalen	10.VII.29	5 la	<i>Caenoculis javanensis</i>	4
nigr 3	Y22	Java	Tjobodas, Kali Tjiwalen	13.VII.29	1 la	<i>Caenoculis javanensis</i>	4
nigr 3	L7b	Java	Ranu Lamon- gan,	12.X.28		<i>Caenis spec.</i>	
cib		Uganda	Shambe, white Nile	9.II.13		<i>Caenis cf. brevipes</i>	6, 7
cib			Gebel Achmed Aga	22.III.13		<i>Caenis brevipes</i>	6, 7

Table 1. (cont.)

spec	M11	China	Peking	June ?	1 ♂, 1 ♀, 1 la	<i>Caenis</i> sp. n. 1	6, 8
spec	M11	China	Peking		2 la	<i>Caenis</i> sp. n. 1	6, 8
spec	M22	China	Peking	May	1 la ♀	<i>Caenis</i> sp. n. 2	6, 9
spec	M22	China	Peking		1 la ♂	<i>Caenis</i> sp. n. 2	6, 9
spec		Ethiopia	Serpent lake, stream	6.X.26	18 la	<i>Afrocaenis major</i>	6, 0
spec		Russia	Saratow		12 la	<i>Caenis</i> spec.	6
spec		Germany	Diemel, Fulda		10 la	<i>Caenis rivulorum</i>	6, 1
		Philippines	Biliran	21.X.15	16 ♂♂	<i>Caenis philippinensis</i>	12

Remarks

1. All type specimens of *Caenis nigropunctata* described by Klapálek (1905) are females in dried condition. An identification on the base of modern differential-diagnostic features is therefore impossible.
2. The redescription of *Caenis nigropunctata* by Ulmer (1939) is based on the here examined material mainly collected in the year 1929. The investigation reveals that it contains three new *Caenis* species: *Caenis nigropunctatula*, *C. ranauensis* and *C. ulmeriana* (descriptions see Malzacher 2015). A try to identify one of these species as *C. nigropunctata* Klápálek by a COI comparison was not successful.

C. nigropunctatula belongs to a group of species with a single apical spine on forceps. Segments II to IV of fore tarsus are apically-broadened and the eggs show two epithemata of the so called coiled-rope-type, *C. perpusilla* subtype (Malzacher 2015, figs 1 and 9).

In *C. ranauensis* apex of forceps is rounded, often with short bumps or projections of different shape (Malzacher 2015, fig. 3).

C. ulmeriana belongs to a group of species with an apical tuft of long spines on forceps. Penis ventrally with a tongue-shaped lamella. Segments II to IV of fore tarsus with two apical tongue-shaped processes (Malzacher 2015, fig. 4).

3. In Ulmer (1939) no *Caenis* records are listed for these localities.

4. For this locality *C. nigropunctata* is listed, although these larvae differ strongly from those described as *C. nigropunctata* by Ulmer. Specimens belong to the genus *Caenoculis* Soldán, 1986 and will be described as a new species (Malzacher, in preparation).

Caenoculis belongs to the subfamily Brachycercinae. Larvae are characterized by moderate ocellar tubercles, very long lateral processes on abdominal segments IV-VII, ventral side of operculate gill with a band of microtrichia consisting of short transverse rows. Imagines possesses a broad prosternum and long sickle-shaped and pointed male forcipes with well developed forceps muscle.

5. The eggs show epithemata of the so called coiled rope type like the eggs of *C. nigropunctatula* (see Malzacher 2015, fig. 9). The females therefore could belong to this species.
6. Localities are not situated in the Oriental region.
7. *Caenis brevipes* Kimmins, 1956 is widely distributed all over the African continent. The males show forcipes with apical tufts of spines and long triangular penis lobes (see Malzacher 1993).
8. *Caenis* sp. n. 1 (Malzacher, in preparation) is known only from the surroundings of Peking. Larvae show a moderately indented hind margin of sternum IX and conspicuous coxal processes. Males possesses long and narrow forcipes apically rounded with few short spines and a rectangular penis.
9. *Caenis* sp. n. 2 (Malzacher, in preparation), also from the surroundings of Peking, seems to be the sister of the West and Central palearctic species *Caenis robusta* Eaton, 1884. Both species share the characters: operculate gill of larva with a band of microtrichia consisting of short transverse rows, imagines with very long lateral processes on abdominal segments and short triangular male forcipes.
10. *Afrocaenis major* Gillies, 1977, with very large eyes in the males, is common in East Africa (see Malzacher 1993).
11. *Caenis rivulorum* Eaton, 1884, a common West palearctic species (see Malzacher 1986).
12. *Caenis philippinensis* Ulmer, 1924, only known from the locus typicus Bilaran, Philippines (see Malzacher 2015).

Acknowledgements

My special thanks go to the colleagues from the Zoologisches Museum Hamburg, in particular to Dipl.-Biol. Kai Schütte, for leaving me the material for investigation.

References

- KLAPÁLEK, F. (1905): Plecopteren und Ephemeriden aus Java, gesammelt von Prof. K. Kraepelin 1904. – Mitt. Naturhist. Mus. Hamburg **22**: 103-107. Hamburg.
- MALZACHER, P. (1986): Diagnostik, Verbreitung und Biologie der europäischen *Caenis*-Arten (Ephemeroptera: Caenidae). – Stutt. Beit. Naturkunde (Ser. A) **387**: 1-41. Stuttgart.
- MALZACHER, P. (1993): Caenidae der äthiopischen Region (Insecta, Ephemeroptera). Teil 2. Systematische Zusammenstellung aller bisher bekannten Arten. – Mitt. schweiz. ent. Ges. **66**: 379-416. Zürich.
- MALZACHER, P. (2015): Revision of the Oriental species of the genus *Caenis* Stephens 1835 (Insecta: Ephemeroptera: Caenidae). – Stutt. Beit. Naturkunde A, Neue Serie **8**: 27-47. Stuttgart.
- ULMER, G. (1939): Eintagsfliegen (Ephemeroptera) von den Sunda-Inseln – Arch. Hydrobiol., Suppl.-Bd. **XVI**: 444-692. Stuttgart.

Author's address:

DR. PETER MALZACHER, Friedrich-Ebert-Straße 63, 71638 Ludwigsburg, BR Deutschland (e-mail: malzacher.lb@t-online.de).