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Stenus attenboroughi nov.sp. and records of *Stenus* LATREILLE, 1797 from New Guinea (Coleoptera, Staphylinidae)

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A b s t r a c t : A new species of the genus *Stenus* LATREILLE is described: *Stenus attenboroughi* nov.sp. (West-Papua: Cyclops Mts.). Remarks on *Stenus amor* (West-Papua: Biak Island) are given and new faunistic data of *Stenus agricola*, *Stenus balkei*, *Stenus hypostenoides*, *Stenus piliferus obesulus*, *Stenus prismalis*, *Stenus rorellus cursorius* and *Stenus sepikensis* from West-Papua are provided.

K e y w o r d s : West-Papua, new species, Cyclops Mountains, Foja Mountains, insect taxonomy

Introduction

New Guinea is the second largest island on Earth and, more importantly, a biodiversity hotspot (MITTERMEIER et al. 2003). About 150 species of the genus *Stenus* have been described from New Guinea (PUTHZ 2016), but this largely unexplored island most likely has many more undiscovered species. Amongst previously unidentified *Stenus* specimens from West-Papua, a new bluish species was found, which is described in this paper. Additionally, faunistic data of seven other *Stenus* species from West-Papua is provided.

Material and methods

Morphological studies were carried out using a stereoscopic microscope (Lomo MBS-10) and a compound microscope (Euromex BB.1153.PLI). The images of the genitalia were obtained using a Touptek Digital Camera (ToupCam LCMOS series 14 MP). The high-resolution image of the paratype of the new species was obtained using a Digital Camera (Sony Alpha 7 II), with a Canon MP-E 65 mm objective. The images were edited using Helicon Focus and Adobe Lightroom software. Measurements (in mm) were made by using an ocular micrometer. The genitalia are embedded in Euparal (soluble in alcohol).

The following acronyms are used:

BL..... length of body
DE..... average distance between eyes
EL..... maximal length of elytra
EW..... maximal width of elytra
FBL..... length of forebody (head, pronotum, elytra)
HT..... holotype
HW ..... head width

PL ..... pronotal length
PM ..... proportional measurements
PTT ..... paratypes
PW ..... pronotal width
SL ..... sutural length of elytra

The material referred to below is deposited in the following collections:

cM..... private collection Tobias Mainda, Nauen, Germany
NHMW ..... Natural History Museum Vienna, Austria
SMNK ..... State Museum of Natural History Karlsruhe, Germany
SMNS ..... State Museum of Natural History Stuttgart, Germany
ZSM..... Bavarian State Collection of Zoology, Munich, Germany

Results

Stenus attenboroughi nov.sp. (Figs 1-3)

http://zoobank.org/urn:lsid:zoobank.org:act:646F487F-B3F5-44BF-9CBA-E55ABBD316F5

Type material examined: Holotype ♂: "West-Papua: Sentani, Cyclops Mountains, loamy and mossy wall, stream, 440 m, 2°32'10.52"S 140°30'46.71"E, 18.05.2019" [cM]. Paratypes (11♂♂, 17♀♀): Same collecting data as the HT [cM, 1♂/1♀ NHMW, 1♂/1♀ SMNK, 1♂/1♀ SMNS, 1♂/1♀ ZSM].

Description: Measurements of the HT (in mm): BL: 4.70, DE: 0.48, FBL: 2.20, EL: 0.90, EW: 0.75, HW: 0.78, PL: 0.63, PW: 0.55, SL: 0.68. Measurements of the 10 ♂♂ PTT (in mm): BL: 4.55-4.70, DE: 0.47-0.50, FBL: 2.20-2.36, EL: 0.88-0.95, EW: 0.80-0.83, HW: 0.78-0.83, PL: 0.60-0.65, PW: 0.55-0.60, SL: 0.55-0.63. Measurements of the 17 ♀♀ PTT (in mm): BL: 4.50-4.70, DE: 0.48-0.53, FBL: 2.30-2.35, EL: 0.85-0.975, EW: 0.73-0.83, HW: 0.78-0.83, PL: 0.58-0.68, PW: 0.55-0.58, SL: 0.63-0.68.

Habitus as in Fig. 1. Macropterous, metallic blue-green-violet, shining, with metallic hue, without microsculpture; maxillary palpi, legs and antennae orange, last segments infuscate; labrum aeneous.

Head 1.04 times broader than elytra, median portion of frons about half as wide as lateral portions, elevated, not reaching the high of the inner eye margin. Median portion separated from lateral portions by two narrow lateral furrows. Punctation dense and coarse, diameter of punctures larger than basal cross-section of antennomere III. Antennae moderately slender, when reflexed not extending to the posterior margin of pronotum.

Pronotum 1.15 times as long as broad, broadest in the posterior third, sides towards anterior margin straight, towards posterior margin concavely narrowed. Punctation coarse and very dense, partly coalescent, largest punctures in dorsal middle as large as basal diameter of antennomere III, interstices much narrower than diameter of punctures. Legs slender; metatarsomere I as long as the combined length of metatarsomeres II–V and longer than metatarsomere V.

Fig. 1: Habitus of *S. attenboroughi* nov.sp., male paratype.

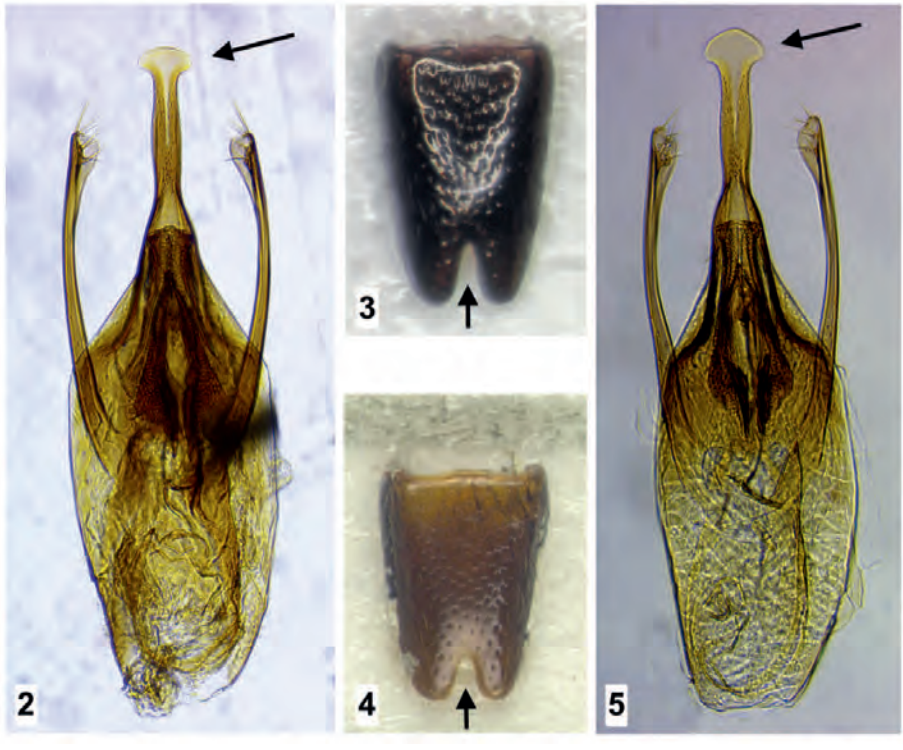
Elytra 1.2 times as long as broad, humeral angles prominent, sides nearly parallel, suture unmodified. Punctation coarse and dense, not coalescent, punctures about as large as those on pronotum, interstices narrower than diameter of punctures.

Abdomen cylindrical; basal impressions of tergites I-III deep; punctation very fine, nearly invisible, interstices much wider than diameter of punctures.

M a l e : Femora slightly dilated, tibiae simple. Sternites III–V unmodified, sternite VI broadly impressed in posterior half, with long erect setae; sternite VII broadly impressed, sides of impression extending posteriorly, densely set with long erected setae; sternite VIII with a narrowed notch in posterior fivth (Fig. 3); sternite IX serrate apicolaterally; tergite X with rounded posterior margin. Apical portion of aedeagus (Fig. 2) spatula-like enlarged, median lobe with two long expulsion-bands; internal sac asymmetric; parameres shorter than median lobe, with seven setae apically.

F e m a l e : Sternite VIII with rounded posterior margin; valvifera serrate apicolaterally; tergite X with rounded posterior margin.

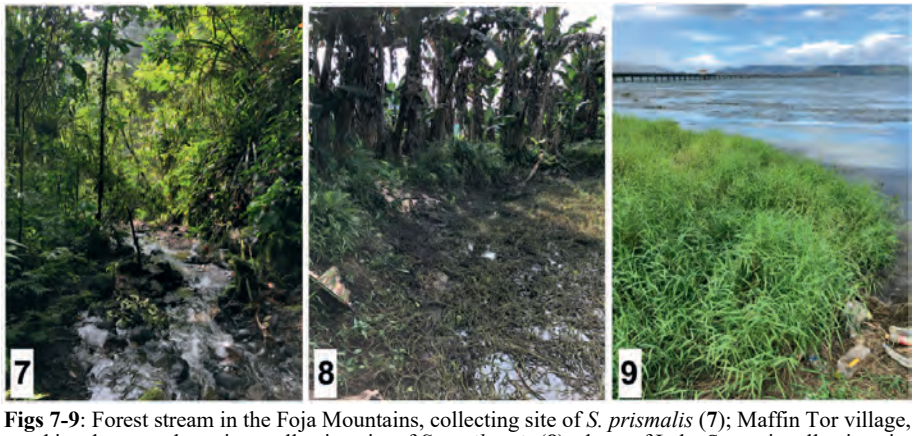
D i f f e r e n t i a l d i a g n o s i s : This species belongs to the group of *Stenus prismalis* FAUVEL, 1878. In this group *Stenus attenboroughi* nov.sp. is closely related to *Stenus anteros* PUTHZ, 2016 (Papua New Guinea: Haia), from which it is distinguishable by the male sexual characters (Figs 4, 5) and by sparser punctation of tergite V. From *S. aglaia* PUTHZ, 1969 (Solomon Islands: Guadalcanal and Savo Isl.) it is distinguished by a finer abdominal punctation and the male sexual characters, from *S. amor* PUTHZ, 1971 (Biak Island) by a shorter metatarsomere I. It is distinguished from *S. eros* PUTHZ, 2016 (West-Papua: Manokwari Prov.) by the male sexual characters and by a shorter metatarsomere I, from *S. aphrodite* PUTHZ, 1969, *S. fretus* LAST, 1970 and *S. cupido* PUTHZ, 1971 only by the different male sexual characters.



Figs 2-5: Aedeagus of *S. attenboroughi* nov.sp. (**2**) and *S. anteros* (**5**); Sternite VIII of *S. attenboroughi* nov.sp. (**3**) and *S. anteros* (**4**).

E t y m o l o g y: The new species is named in honor of Sir David Attenborough, whose outstanding documentaries have made the beauty of the natural world accessible to millions of people. But they have also shown how vulnerable our planet is and that its biodiversity is critically endangered, if humanity does not change its current course.

Fig. 6: Collecting site of *S. attenboroughi* nov.sp. and *S. hypostenoides* in the Cyclops Mountains, West-Papua.



Figs 7-9: Forest stream in the Foja Mountains, collecting site of *S. prismalis* (**7**); Maffin Tor village, pond in a banana plantation, collecting site of *S. sepikensis* (**8**); shore of Lake Sentani, collecting site of *S. agricola* and *S. piliferus obesulus* (**9**).

Remark on *Stenus amor*

S. amor has been described by PUTHZ (1971) after one single female from Biak Island. Later PUTHZ (1994) described the respective male after specimens from Ambon. PUTHZ (2016) then described a further species (*S. eros*) from the Birdshead Peninsula, located

between Ambon and Biak. During the last ice age, New Guinea, some of its surrounding islands, and Australia formed the continent Sahul. But there was never a land-bridge to Biak or Ambon in the last 100,000 years (HARRISON et al. 2006; PRATT et al. 2015).

S. amor, *S. eros* and *S.* cf. *amor* from Ambon have one common characteristic that distinguishes them from the other similar species (including *S. attenboroughi* nov.sp.): The metatarsomere I is nearly as long as the combined length of metatarsomeres II–V and longer than metatarsomere V. In the other similar species the length of metatarsomere I is only as long as the combined length of metatarsomeres II and III. However, females of this 'species complex' are currently very hard distinguishable. Their distribution on two isolated islands suggests that the specimens from Ambon may belong to an undescribed species. As long as males of *S. amor* from Biak Island remain unknown, this question must stay open.

Collecting data of other *Stenus* species

Stenus agricola PUTHZ, 1972

Material examined: 1♂, 2♀♀: West-Papua, Sentani Airport, Lake Sentani, 2°35'22.00"S 140°31'55.58"E, overgrown shore (grass), 09.06.2019.

This species was found at the overgrown shore of Lake Sentani between grass, which was submerged under water. It was collected together with *S. piliferus obesulus*.

Stenus balkei PUTHZ, 2016

Material examined: 3♂♂, 4♀♀, West-Papua, Foja Mountains, 2°28'18.14"S 138°46'27.98"E, 350 m, Timua river, loamy wall, 29.05.2019.

The species was collected on the steep wall of the Timua river. There the species lives on loamy ground and between rocks.

Stenus hypostenoides PUTHZ, 1971

Material examined: 1♂: West-Papua, Cyclops Mountains, 2°32'10.52"S 140°30'46.71"E, 440 m, loamy and mossy wall, stream, 18.05.2019; 1♂: West-Papua, Foja Mountains, 2°26'27.87"S 138°46'27.283, 280 m, Timua river, small loamy waterfall, 27.05.2019; 3♀♀: West-Papua, Foja Mountains, 2°28'18.14"S 138°46'27.98"E, 350 m, Timua river, loamy bluish grey wall, 29.05.2019.

This species was collected together with *S. attenboroughi* nov.sp. in the Cyclops Mountains, where it lives in the same habitat. In the Foja Mountains it was only collected on bluish grey loamy walls in the valley of the Timua river, where it lives together with *S. balkei* and *S. prismalis*.

Stenus piliferus obesulus FAUVEL, 1878

Material examined: 13♂♂, 16♀♀: West-Papua, Sentani Airport, Lake Sentani, 2°35'22.00"S 140°31'55.58"E, overgrown shore (grass), 09.06.2019.

Stenus prismalis FAUVEL, 1878

Material examined: 2♂♂; West-Papua, Foja Mountains, 2°26'27.87"S 138°46'27.283"E, 280 m, Timua river, small loamy waterfall, 27.05.2019; 4♂♂, 6♀♀: West-Papua, Foja Mountains, 2°27'32.37"S 138°46'30.19"E, 300 m, forest stream, stones and moss, 28.05.2019; 2♂♂, 2♀♀: West-Papua, Foja Mountains, 2°28'18.14"S 138°46'27.98"E, 350 m, Timua river, loamy bluish grey wall, 29.05.2019; 1♀: West-Papua, Foja Mountains, 3km S Bore village, 2°21'55.09"S 138°46'52.11"E, Timua river, riverbank, 04.06.2019; 1♀: West-Papua, Cyclops Mountains, 2°33'13.15"S 140°34'34.32"E, 300 m, waterfall, 01.07.2019.

Stenus rorellus cursorius L. BENICK, 1921

Material examined: 2♂♂, 3♀♀: West-Papua, Sarmi distr., Togonfo village, 2°15'05.45"S 138°51'25.23"E, sandbank of Tor river, 23.05.2019.

Stenus sepikensis LAST, 1970

Material examined: 2♂♂, 6♀♀: West-Papua, Sarmi distr., Maffin Tor village, 1°57'35.52"S 138°54'50.15"E, muddy pond in a banana plantation, 06.06.2019.

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Zusammenfassung

***Stenus attenboroughi* nov.sp. und Nachweise von *Stenus* LATREILLE, 1797 aus Neu Guinea (Coleoptera: Staphylinidae).** Eine neue Art der Gattung *Stenus* LATREILLE wird beschrieben: *S. attenboroughi* nov.sp. (West-Papua: Cyclops Mts.). Anmerkungen zu *Stenus amor* (West-Papua: Biak Island) werden gegeben und neue faunistische Nachweise von *Stenus agricola*, *Stenus balkei*, *Stenus hypostenoides*, *Stenus piliferus obesulus*, *Stenus prismalis*, *Stenus rorellus cursorius* und *Stenus sepikensis* aus West-Papua veröffentlicht.

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