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Notes on marine Haloveliinae from the Philippine Islands, with descriptions of three new species
(Heteroptera, Veliidae)

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Abstract

Key words: Veliidae, Haloveliinae, *Halovelia*, *Haloveloides*, new species, new records, checklist, Bohol, Camiguin, Mindoro, Cebu, Panay, Siquijor, Philippines.

Three new marine veliid species belonging to the subfamily Haloveliinae are described from the Philippines: *Halovelia sumaldei* **sp. nov.** (from Bohol), *Haloveloides lansburyi* **sp. nov.** (from Camiguin), and *Haloveloides christyae* **sp. nov.** (from Mindoro). New distribution records of the following species are presented: *Halovelia bergrothi* ESAKI, 1926, *Halovelia esakii* ANDERSEN, 1989, and *Haloveloides femoralis* ANDERSEN, 1992. A check list of Philippine Haloveliinae is added.

Zusammenfassung

Von den Philippinen werden drei marine Veliidae aus der Unterfamilie Haloveliinae neu beschrieben: *Halovelia sumaldei* **sp. nov.** (von Bohol), *Haloveloides lansburyi* **sp. nov.** (von Camiguin) und *Haloveloides christyae* **sp. nov.** (von Mindoro). Neue Funde der folgenden Arten werden gemeldet: *Halovelia bergrothi* ESAKI, 1926, *Halovelia esakii* ANDERSEN, 1989, und *Haloveloides femoralis* ANDERSEN, 1992. Eine Liste der philippinischen Haloveliinae ist beigefügt.

Introduction

Marine insects are of increasing entomological interest. Still, few entomologists are aware of the tropical inshore marine diversity in a number of water bug groups. The taxonomy of marine water striders (Gerromorpha) has been studied recently by most authors, after several decades, when interest was focused on the "sea skaters" of the genus

Halobates (Gerridae: Halobatini). The greatest progress has been made in the past fifteen years and is almost entirely due to specialised collectings. A revision of the surprisingly varied marine tribe Stenobatini (Gerridae), including descriptions of several new species from the Philippines, was presented by POLHEMUS & POLHEMUS (1996).

In the Veliidae, marine or brackish water species are common in the subfamily Haloveliinae, although a few species also occur in the Microveliinae (Xiphoveloidea HOBERLANDT, 1950, Ethiopean; *Mangrovelia* LINNAVUORI, 1977, Ethiopean; *Husseyella* HERRING, 1955, Neotropical) and in the Rhagoveliinae (*Trochopus* CARPENTER, 1898, Neotropical) (ANDERSEN 1982).

ANDERSEN (1989a, b, 1992) reviewed the taxonomy and generic status of *Halovelia* BERGROTH, 1893 ("coral bugs") and *Haloveloides* ANDERSEN, 1992. *Xenobates* ESAKI, 1927, the third marine genus of the subfamily Haloveliinae, which includes also two limnic genera, was treated by LANSBURY (1989, 1996), and is now revised by N.M. ANDERSEN. LANSBURY (1989, 1996) presented numerous invaluable data on the biology of marine Gerromorpha.

Several research trips to the Philippines (in 1992 - 1997) by the author were mainly focused on freshwater habitats, and less attention was paid to marine habitats. Nevertheless, seven marine species of Haloveliinae were collected, four new to science. A species belonging to *Xenobates* (in a broader sense then presently defined; ANDERSEN, pers. comm.) was collected in Bohol and Siquijor and will be described by N.M. ANDERSEN in his revision. The other three species are described in this paper.

Four genera of Haloveliinae occur in the Philippines. Beside the three marine genera, *Strongylovelia* ESAKI, 1924, is the single recorded freshwater genus. Its Philippine species and subspecies were recently described by LANSBURY & ZETTEL (1997). The stream inhabiting genus *Entomovelia* ESAKI, 1930, is known from Borneo and may occur in undisturbed mountain habitats in Palawan, but is so far not recorded. A key presented by GAPUD (1986) is useful to separate Veliidae from other aquatic and semiaquatic Heteroptera. Generic keys for Veliidae and Haloveliinae were presented by ANDERSEN (1982, 1992) and HECHER (1998) and may serve for the distinction of the Philippine genera. Presently 18 species and subspecies of Haloveliinae are known from the Philippine Islands (see checklist at the end of this paper). All marine Haloveliinae are apterous.

Abbreviations: CJP = Coll. J.T. POLHEMUS, Colorado Entomological Museum, Englewood, U.S.A.; CNT = Coll. N. NIESER, Tiel, The Netherlands; CZW = Coll. H. ZETTEL, Vienna, Austria; NMW = Natural History Museum Vienna, Austria; OUM = Oxford University Museum, England, U.K.; UPLB = Museum of Natural History, University of the Philippines, Los Baños, Philippines.

Acknowledgements

My special thanks are due to Dr. Ivor LANSBURY (Oxford) for the gift of several New Guinean Haloveliinae species necessary for comparison and for suggestions to improve the manuscript. Dr. Nils M. ANDERSEN (Copenhagen) provided me with useful informations. I am very much obliged to Mrs. Jessamyn RECUENCO-ADORADA, Prof. Dr. Victor P. GAPUD, and Prof. Dr. Augusto C. SUMALDE (all in UPLB) who supported my field work in the Philippines.

Descriptions

Halovelia sumaldei sp. nov. (Figs 1 - 6)

Holotype ♂: "PHILIPPINEN: Bohol\ Baliau, E Tagbilaran\ Küste [= coast], 25.11. 1996 \ leg. H. Zettel (109)" (UPLB); paratype: 1 ♂, same locality data (NMW).

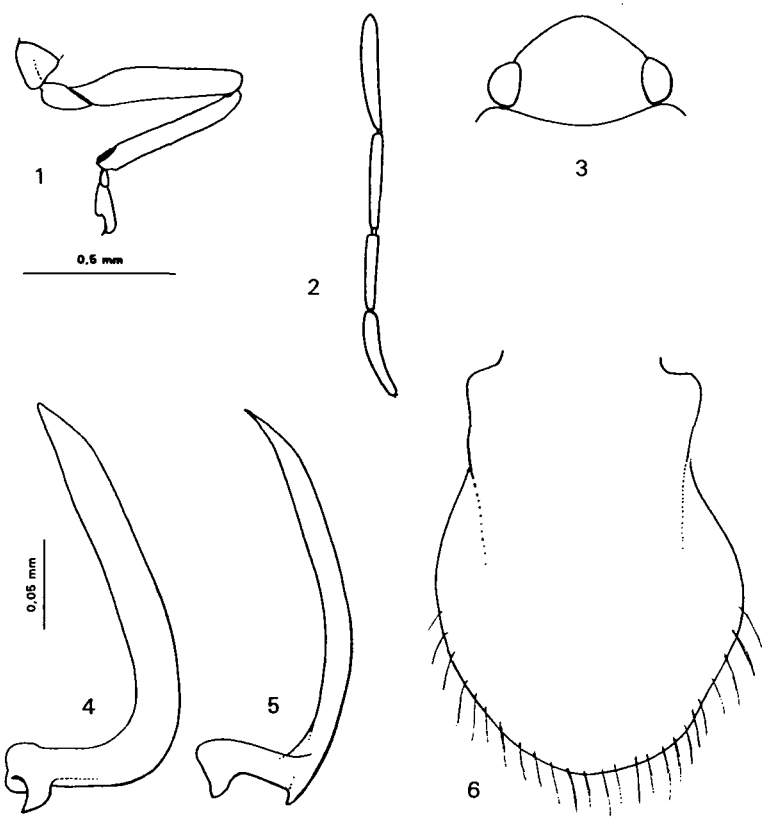
Description of male: Body length 1.74 - 1.80 mm; body width 1.08 - 1.12 mm; length

of mesotibia 0.85 - 0.87 mm; length of second antennal segment 0.25 - 0.26 mm; body broadly ovate.

Colour black, on vertex with an indistinct reddish patch; antennae and legs brownish black; pubescence generally black, tending to greyish on ventral surface of body and legs, distinctly grey along midlines of tergites and sternites and on laterotergites 7.

Head width about 0.65 times head width across eyes; eye width 0.2 times total head width (Fig. 3); relative lengths of antennal segments (segment 2 = 1): 1.1 : 1 : 1.25 : 1.5; segment 1 much shorter than head and more slender than segment 4 (Fig. 2); hind margin of pronotum indistinct laterally.

Relative lengths of leg segments (mesotibia = 100): profemur 65; protibia 64; protarsus 7+18; mesofemur 103; mesotibia 100; mesotarsus 36+28; metafemur 71; metatibia 69; metatarsus 12+21; grasping comb of protibia 0.16 times tibia length (Fig. 1); maximal width of metafemur 1.2 times maximal width of mesofemur.



Figs. 1 - 6: *Halovelia sumaldei* sp. nov., male: **1**) foreleg, ventral view, **2**) antenna, **3**) head, dorsal view, **4**) left paramere, lateral view, **5**) left paramere, anterio-dorsal view, **6**) proctiger, dorsal view (pilosity omitted, if not diagnostic).

Abdomen without modifications; parameres long, slightly crossing each others dorsally; blade of paramere parallel-sided, relatively wide, then apically tapered to an acute tip (Figs. 4), slightly bowed in anterio-dorsal view (Fig. 5); proctiger nearly evenly rounded (Fig. 6).

Female: unknown.

Comparative notes: *Halovelia sumaldei* sp. nov. is similar to *H. corallia* ANDERSEN, 1989 (from North Australia and Papua New Guinea) and shares with this species a long third antennal segment (Fig. 2), normal sized eyes (Fig. 3), a simple abdominal venter, and a very short grasping comb, which is only one sixth of the tibia length (Fig. 1). *Halovelia sumaldei* is slightly larger than *H. corallia* (body length of males 1.74 - 1.80 mm versus 1.58 - 1.63 mm) and males have broader parameres (Figs. 4, 5). The similar *H. halophila* ANDERSEN, 1989 (from Sumbawa and Borneo) is larger (body length of males 2.00 mm), has a slightly longer grasping comb, and an apically less acute paramere. In both species the head is longer in relation to head width than in *H. sumaldei* sp. nov.

Etymology: This species is named after Prof. Dr. Augusto Sumalde, director of the Museum of Natural History in Los Baños, who enables the field work of the author by a remarkably unbureaucratic and fruitful cooperation.

Distribution: Bohol.

Habitat notes: *Halovelia sumaldei* was only found in one locality on the south coast of Bohol, occuring in a concrete outflow entering the sea. Despite an intensive search, only two specimens were found amongst a large aggregation of *Xenobates* sp. collected at low tide in very shallow calm rocky pools connected to sea. *Xenobates* were also common in adjacent localities with mangrove.

Haloveloides lansburyi sp. nov. (Figs 7 - 12)

Holotype (♂): "PHILIPPINEN: Camiguin\ Tupsan, Küste [= coast]\ 18.11.1996\ leg. H. Zettel (100)" (UPLB); paratypes: 18♂♂ 15♀♀, same locality data (CJP, NMW, OUM, UPLB).

Description of male: body length 1.66 - 1.82 mm (inclusively the more or less protruded genital segments); body width 0.75 - 0.80 mm; length of mesotibia 1.16 - 1.22 mm; length of second antennal segment 0.24 - 0.26 mm; body fusiform.

Colour black, vertex yellowish brown (except inner eye margin and frequently midline anteriorly black), hind margin of pronotum medially yellowish brown; ventral parts of head, prosternum, ventromedian parts of mesosternum, metasternum, and sternites, and all acetabula yellowish to yellowish brown; antennae and legs blackish, coxae and bases of trochanters yellowish, bases of femora brownish; pubescence greyish, with quite distinct patches of dense silverish pubescence on posterior part of mesonotum and tergites (2), 3, 4, and 7; pronotum with weak silverish or golden pubescence in yellowish area.

Head width about 0.65 times head width across eyes; eye width 0.26 times total head width; relative lengths of antennal segments (segment 2 = 1): 1.25 : 1 : 1.5 : 1.35; segment 1 slightly longer than head and equal in width to segment 4 (Fig. 7); hind margin of pronotum indistinct laterally.

Relative lengths of leg segments (mesotibia = 100): profemur 50; protibia 44; protarsus 4+13; mesofemur 122; mesotibia 100; mesotarsus 46+30; metafemur 68; metatibia 52; metatarsus 6+14; protrochanter without apical protuberance; protibia apically with a row of spiny bristles (Fig. 9); maximal width of metafemur 1.1 times maximal width of mesofemur.

Abdomen without ventromedian carina, but with distinct median impression from distal half of sternite 3 to sternite 6; sternite 7 flattened; ventral part of segment 8 with a weak circular impression; paramere small and simple, bar-shaped (Fig. 12); proctiger with pronounced basolateral wings, semicircular (Fig. 11).

Description of female: body length 1.84 - 2.00 mm; body width 0.96 - 1.06 mm; length of mesotibia 1.30 - 1.38 mm; length of second antennal segment 0.20 - 0.22 mm; body rhomboid, larger and relatively broader than in male.

Colour and pubescence similar as in male except lateral margins of mesonotum and connexiva yellowish brown, and silverish hair patches located on tergites 2, 3, (5), 6, and 7 (segment 7 usually not visible); structures differing as following:

Antennal segment 3 shorter, 1.3 times as long as segment 2; relative lengths of leg segments (mesotibia = 100): profemur 45; protibia 40; metafemur 61; metatibia 49; metatarsus 6+13; others as in male; protibia without row of spiny bristles; maximal width of metafemur slightly smaller (0.9 times) than maximal width of mesofemur.

Abdominal venter simple; connexiva strongly convergent, touching each other on segment 7, and usually covering tergite 7, caudally with acute tips, each with a tuft of long, dark hairs; laterotergites nearly vertical (Fig.8,10); tergite 8 with a basomedian tuft of long black hairs; tergite 8 and proctiger vertical, covering a major part of gonocoxae (Fig. 8).

Comparative notes and discussion: The lack of a tubercle or spine on the protrochanter of male, the presence of quite distinctive patches of silverish hairs on the dorsal surface, and the ratio of mesotibia/mesotarsus allies *H. lansburyi* sp. nov. with *H. femoralis*, although these species are easy to distinguish: males by the distinctly thickened metafemur of *H. femoralis*, which is only slightly thickened in *H. lansburyi* sp. nov., females by the upward directed tufts of hairs on connexiva 7 and on tergite 8 of *H. lansburyi* sp. nov. (Fig. 8), lacking in *H. femoralis*. Similar hair tufts are found within *Haloveloides* only in females of *H. cornuta* ANDERSEN, 1992 (from Luzon: Zambales) but this species differs in most other diagnostic characters, e.g. in a spine on protrochanter of male, and in a long, curved paramere. The shape of the paramere of *H. lansburyi* sp. nov. (Fig. 12) is similar to that of *H. danpolhemi* ANDERSEN, 1992 (from Palawan), a species which differs in males by a tubercle on protrochanter and a dense tuft of spiny hairs subapically on protibia. A strong reduction of parameres is found in three species, i.e. *H. femoralis*, *H. danpolhemi*, and *H. lansburyi* sp. nov. This fact may indicate a closer relationship of these species, if the simple protrochanter in a proposed monophylum [*femoralis+lansburyi*] is a reversal character.

Etymology: This species is named after Dr. Ivor LANSBURY for his interesting studies on the biology of marine Gerromorpha.

Distribution: Camiguin.

Habitat notes: Specimens were collected on brackish zone of a small stream flowing from the Macao Cold Springs, Tupsan village, a few metres from the sea, where a few remnants mangrove were present. The specimens occured only in the very shallow waters and were therefore difficult to catch with the net. No other haloveliine species was found in that locality.

Haloveloides christyae sp. nov. (Figs 13 - 18)

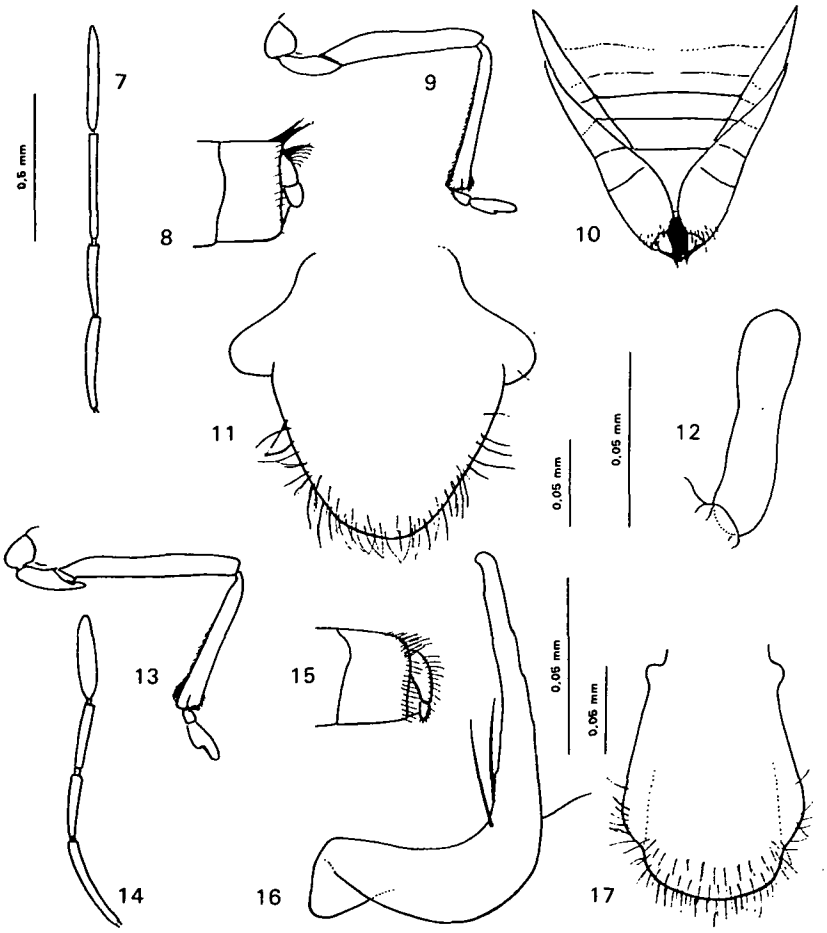
Holotype (♂): "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste [= sea coast], 24.11.\ leg.H.Zettel 1993 (32)" (UPLB); paratypes: 6♂♂ 1♀, same locality data (NMW, UPLB); 10♂♂ 3♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste, 13.11.1994\ leg. H. Zettel (63)" (CJP, CZW, UPLB).

Description of male: body length 1.70 - 1.81 mm; body width 0.78 - 0.82 mm; length of mesotibia 1.36 - 1.40 mm; length of second antennal segment 0.21 - 0.23 mm; body fusiform.

Colour black, vertex yellowish brown (except inner eye margin and sometimes midline anteriorly black), hind margin of pronotum medially yellowish brown; antennae and legs blackish, acetabula, coxae, and base of trochanters yellowish brown; pubescence silverish grey, without distinct patches of dense silverish pubescence, as short silvery hairs nearly

evenly distributed all over the dorsal surface of thorax and abdomen.

Head width about 0.65 times head width across eyes; eye width 0.23 times total head width; relative lengths of antennal segments (segment 2 = 1): 1.6 : 1 : 1.2 : 1.4; segment



Figs. 7 - 17: 7 - 12) *Haloveloides lansburyi* sp. nov.: 7) antenna of ♂, 8) tip of abdomen of ♀, lateral view, 9) foreleg of ♂, ventral view, 10) abdomen of ♀, dorsal view, 11) proctiger of ♂, dorsal view, 12) left paramere, lateral view; 13 - 17) *Haloveloides christyae* sp. nov.: 13) foreleg of ♂, ventral view, 14) antenna of ♂, 15) tip of abdomen of ♀, lateral view, 16) left paramere, lateral view, 17) proctiger of male, dorsal view (pilosity omitted, if not diagnostic).

1 slightly longer than head and much more slender than segment 4 (Fig. 14); hind margin of pronotum indistinct laterally.

Relative lengths of leg segments (mesotibia = 100): profemur 43; protibia 39; protarsus 4+10; mesofemur 122; mesotibia 100; mesotarsus 43+32; metafemur 70; metatibia 57; metatarsus 5+14; protrochanter with an apical protuberance; protibia apically with a patch of spiny bristles (Fig. 13); maximal width of metafemur equal to maximal width of mesofemur (1.0 times).

Abdomen with a ventromedian carina on sternites 2 - 6, highest on sternite 4, and with erect pilosity on sternites 2 - 4; sternite 7 and ventral part of segment 8 flattened; paramere medium-sized, hooked, with a few long hairs in middle of length, with apical part slender and weakly indented (Fig. 16); proctiger elongated, distally rounded (Fig. 17).

Description of female: body length 1.99 - 2.09 mm; body width 0.98 - 1.06 mm; length of mesotibia 1.38 - 1.54 mm; length of second antennal segment 0.19 - 0.22 mm; body rhomboid, larger and relatively broader than in male, appendages relatively shorter (Fig.18).

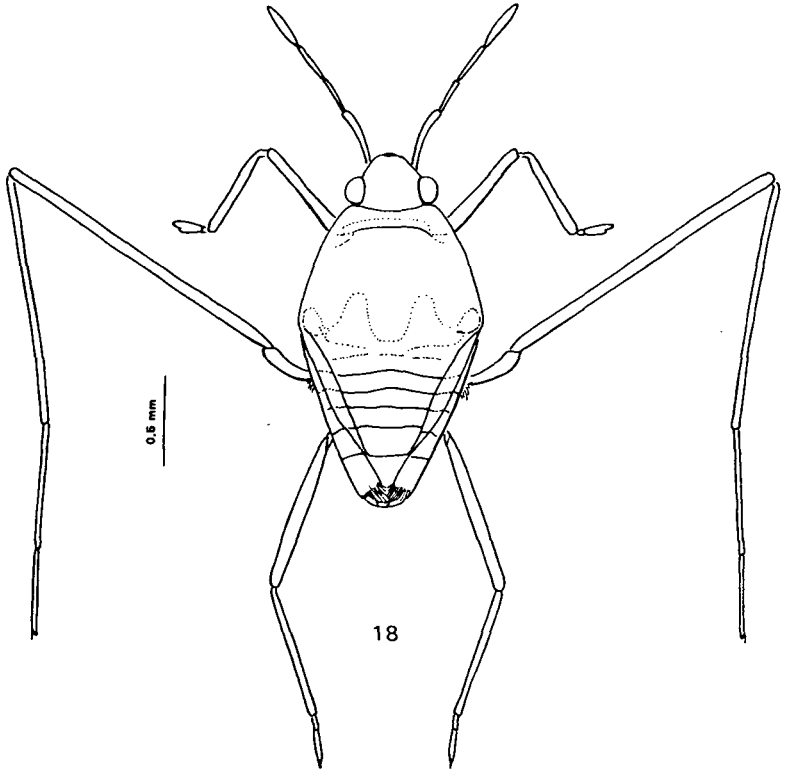


Fig. 18: *Haloveloides christyae* sp. nov., female, habitus (pilosity omitted, if not diagnostic).

Colour and pubescence as in male; structures differing as following: Antennal segment 1 slightly longer, 1.7 times as long as segment 2; relative lengths of leg segments (mesotibia = 100): protarsus 4+12; mesofemur 125; mesotarsus 50+35; metatibia 54; metatarsus 6+15; others as in male; protrochanter simple; protibia without patch of spiny bristles.

Abdominal venter simple; connexiva strongly convergent, nearly touching each other on segment 7, there with rectangular tip, which with longer, semi-erect, silverish-grey pilosity; laterotergites nearly vertical (Fig. 18); tergite 8 and proctiger vertical, covering gonocoxae (Fig. 15).

Comparative notes and discussion: This species was previously regarded as possibly conspecific with *H. papuensis* (ESAKI, 1926) by N.M. ANDERSEN and by the author. But by direct comparison with specimens of *H. papuensis* from Papua New Guinea several distinctive characters could be pointed out, which are now regarded as important enough to describe *H. christyae* sp. nov.: body pubescence silverish to whitish in *H. christyae* sp. nov., but yellowish to brownish in *H. papuensis*; parameres of male more slender in *H. christyae* sp. nov. (Fig. 16) than in *H. papuensis*; female of *H. christyae* sp. nov. with mesonotum less impressed, metanotum without hair tuft, and laterotergites with short pilosity, female of *H. papuensis* with mesonotum largely impressed posteriorly, metanotum with distinct hair tuft, and laterotergites 6 - 7 with long, erect pilosity. *Haloveloides papuensis* is recorded from New Guinea, the Bismarck Archipelago, and the Solomon Islands (ANDERSEN 1992, LANSBURY 1989).

There is a striking similarity in the paramere structures of *H. papuensis*, *H. browni* (LANSBURY, 1989), *H. sundaensis* ANDERSEN, 1992, and *H. christyae* sp. nov. and of *Strongylovelia* species (comp. LANSBURY & ZETTEL 1997: figs. 66-75), in general shape and in the typically indented distal part. Whether these indentations are an autapomorphic character of Haloveliinae, or may indicate an origin of the marine *Haloveloides* from limnic, *Strongylovelia*-like ancestors, is difficult to decide, as there are two strong trends in Haloveliinae to modify the paramere: a strong reduction of parameres in *Entomovelia* and some *Haloveloides* species (see above), and an elongation of parameres in *Halovelia*. An cladistic analysis of several other characters - as planned by N. Moller ANDERSEN - will be necessary, after a clearance of the phylogenetic position of the genus *Xenobates*.

Etymology: This species is named after my friend Mrs. Christy CARDINAL, who loaned me her umbrella for collecting marine water striders in the midday heat.

Distribution: Mindoro Oriental.

Habitat notes: The type series was collected from intertidal pools connected with open sea. Specimens were found sheltering at the edge of dead coral reefs. The site is about 50 metres along coast from Sabang Beach, where a large ledge extends seawards forming a breakwater. *Haloveloides christyae* sp. nov. was found together with *Halovelia bergrothi*, *H. esakii*, and the gerrid species *Halobates proavus* WHITE, 1883, and *Halobates* sp. (near *maculatus* SCHADOW, 1922).

New records of previously described species

Halovelia bergrothi ESAKI, 1926

Material examined: 10♂♂ 5♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste, 24.11.\ leg.H.Zettel 1993 (32)" (NMW, UPLB); 4♂♂ 5♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Küste, 10.4.1994\ leg. H. Zettel (61)" (NMW, UPLB); 3♂♂ 3♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste, 13.11.1994\ leg. H. Zettel (63)" (CZW); 3♂♂ "PHILIPPINEN: Panay, Antique\ N san Jose d.B., Dara-\ yunan Resort, 20.-21.3.\ leg. H. Zettel 1994 (42)" (NMW); numerous ♂♂ and ♀♀ "Philippinen: Siquijor\ E San Juan, Meeresküste\ 2.3.1997\ leg. H. Zettel (123)" (CNT, CZW, OUM, NMW, UPLB).

Remarks: All records cited in this paper are from intertidal coral reefs. Site 32 (= 61, 63) is described under *Haloveloides christyae* sp. nov.; site 42 is a very similar habitat. Site 123 is a large, intertidal (?) coral reef in more than 50 m distance from the coast line. Females are much larger than males. ANDERSEN (1989a) discusses the intraspecific regional variability of this widely distributed species in detail; after this paper, Philippine specimens are distinctly larger than specimens from other areas.

Distribution in the Philippines: Previous records are from Luzon ("Port Binanga"), Mindanao (Davao), and Palawan (ANDERSEN 1989a), new records from Mindoro (Oriental), Panay (Antique), and Siquijor.

General distribution: Widely distributed from Indochina and the Philippines to Papuasia and New Caledonia, extending onto the islands of Micronesia and the Samoan Islands (ANDERSEN 1989a).

Halovelia esakii ANDERSEN, 1989

Material examined: 5♂♂ 5♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste, 24.11.\ leg.H.Zettel 1993 (32)" (NMW, UPLB); 4♂♂ 4♀♀ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Küste, 10.4.1994\ leg. H. Zettel (61)" (NMW, UPLB); 2♂♂ "PHILIPPINEN: Mindoro or.\ Puerto Galera, Sabang\ Meeresküste, 13.11. 1994\ leg. H. Zettel (63)" (CZW); 3♂♂ 2♀♀ "PHILIPPINEN: Panay, Antique\ N san Jose d.B., Dara-\ yunan Resort, 20.-21.3.\ leg. H. Zettel 1994 (42)" (NMW); 2♂♂ 5♀♀ "PHILIPPINEN: Palawan\ Sabang, 0 m, Küste\ 29.3.1994\ leg. H. Zettel (52g)" (NMW, OUM).

Remarks: All records cited in this paper are from intertidal coral reefs.

Distribution in the Philippines: Previous records from Luzon (Zambales), Mindanao (Zamboanga del Sur), Mindoro (Oriental), and Palawan (ANDERSEN 1989a), a new area record from Panay (Antique).

General distribution: widely distributed in the Malesian and Papuasian Regions, mainly east of Wallace' Line, from the Philippines, Sulawesi and the Lesser Sunda Islands to the Northern Moluccas, New Guinea and the Solomon Islands (ANDERSEN 1989a).

Haloveloides femoralis ANDERSEN, 1992

Material examined: numerous ♂♂ and ♀♀ "PHILIPPINEN: Palawan\ 20 km W P. Princesa\ Tacduan Area, Tacduan riv.\ lg.Zettel,25.3.1994(49a[b])" (NMW, UPLB); numerous ♂♂ and ♀♀ "PHILIPPINEN: Cebu\ Matutinao, Kawasan Falls\ 0 - 1 m, 30.11.1996\ leg. H. Zettel (112a)" (CZW, OUM, UPLB); numerous ♂♂ and ♀♀ "Philippinen: Cebu\ Matutinao, Kawasan Falls\ 0 m, 23.-24.2.1997\ leg. H. Zettel (116a)" (CZW, UPLB).

Remarks: Both localities cited were river mangroves at the sea. Locality no. 49 is the type locality, erroneously referred to "Pactuan Beach, 40 km S of Puerto Princesa" in both, locality labels and original description. But the name of the locality is "Tactuan", which is about 40 km along the main road to southern Palawan (surrounding the bay of Puerto Princesa), but located about 20 km west of Puerto Princesa. Site 112a (= 116a) is the very small remnant of a river mangrove along the stream coming from the Kawasan Falls at Matutinao, which is in the lower section disturbed by the influence of an electric power plant.

Distribution in the Philippines: Previous records from Palawan (ANDERSEN 1992), and newly recorded from Cebu.

General distribution: endemic to the Philippine Islands.

Checklist of Haloveliinae recorded from the Philippines

Species and subspecies marked with an asterisk are only known from the Philippines. Call-signs refer to new records presented in this study.

Strongylovelia palawanensis LANSBURY & ZETTEL, 1997* - Palawan, Busuanga
Strongylovelia philippinensis philippinensis LANSBURY & ZETTEL, 1997* - Luzon
Strongylovelia philippinensis sibuyana LANSBURY & ZETTEL, 1997* - Sibuyan
Strongylovelia philippinensis boholensis LANSBURY & ZETTEL, 1997* - Bohol
Strongylovelia philippinensis bukidnonica LANSBURY & ZETTEL, 1997* - Mindanao
Strongylovelia mindoroensis LANSBURY & ZETTEL, 1997* - Mindoro
Strongylovelia cebuana LANSBURY & ZETTEL, 1997* - Cebu
Haloveloides christyae sp. nov.* - Mindoro!
Haloveloides brevicornis ANDERSEN, 1992 - Palawan
Haloveloides danpolhemi ANDERSEN, 1992* - Palawan
Haloveloides cornuta ANDERSEN, 1992* - Luzon
Haloveloides femoralis ANDERSEN, 1992* - Cebu!, Palawan
Haloveloides lansburyi sp. nov.* - Camiguin!
Xenobates sp. - Bohol!, Siquijor!
Halovelia sumaldei sp. nov.* - Bohol!
Halovelia bergrothi ESAKI,1926 - Luzon,Mindoro!,Panay!,Siquijor!,Mindanao, Palawan
Halovelia esakii ANDERSEN, 1989 - Luzon, Mindoro, Panay!, Mindanao, Palawan
Halovelia lannae ANDERSEN, 1989 - Mindanao, Palawan

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Literaturbesprechung

SCHMID-EGGER, C., RISCH, S. & NIEHUIS, O. 1995: Die Wildbienen und Wespen in Rheinland-Pfalz. - Fauna und Flora in Rheinland-Pfalz, Beiheft 16, GNOR-Eigenverlag, Landau. 296 S., 74 Farbfotos, 22 Verbreitungskarten.

Diese Publikation belegt einmal mehr den Aufschwung, den die faunistische Bearbeitung der Aculeaten - insbesondere der Wildbienen - derzeit bei uns erlebt. Durch die zunehmende Berücksichtigung dieser Insektengruppen bei Naturschutzplanungen wird natürlich der Bedarf an umfassenden Faunenverzeichnissen immer größer. Es ist das Verdienst der Autoren, in mühevoller Kleinarbeit durch Auswertung von Literatur und Sammlungen die diesbezügliche Lücke für Rheinland-Pfalz geschlossen zu haben. Daraus haben sie ein Buch gemacht, das nicht nur eine Fülle von Informationen über die 416 Wildbienen- und 403 Wespenarten von Rheinland-Pfalz enthält, sondern auch durch die zahlreichen Farbfotos sehr attraktiv gestaltet ist. Zahlreiche Tabellen und Verbreitungskarten ausgewählter Arten runden das Werk ab.

Einleitend werden die Lebensräume innerhalb der naturräumlichen Gliederung von Rheinland-Pfalz beschrieben und mit Farbfotos illustriert. Im Hauptteil folgt dann die kommentierte Artenliste. Dabei wird neben der Auflistung der Nachweise und den ökologischen Angaben vor allem die Bestandessituation oft ausführlich diskutiert; taxonomische Probleme werden erfreulicherweise nicht ausgespart, sondern kritisch dargelegt. Bei den gefährdeten Arten (46 %) wird eine Einstufung in eine der üblichen Rote-Listen-Gefährdungskategorien vorgenommen, wobei sich die Autoren der Problematik solcher Zuordnungen durchaus bewußt sind. Im Schlußteil werden schließlich Gefährdungsursachen und mögliche Schutzmaßnahmen dargestellt. Gelegentlich nicht ganz glücklich formulierte Angaben (so baut z.B. *Anthidium strigatum* keine „Mörtelnester" - gemeint ist wohl: „mörtelt" Harznester) schmälern jedoch in keiner Weise den Wert des vorliegenden Werkes, das den an Stechimmen interessierten Entomologen aller (Bundes-) Länder wärmstens empfohlen werden kann.

Johannes SCHUBERTH

HÖLLDOBLER, B. & WILSON, E.O. 1995: Ameisen - Die Entdeckung einer faszinierenden Welt. - Birkhäuser Verl. Basel. 288 S., 35 Farb-, 34 Strich- und 48 sw-Abbildungen.

Zu Ameisen haben die meisten Menschen ein zwiespältiges Verhältnis: sie sind lästig (in Haus und Garten), nützlich (im Wald), schwierig (zu bestimmen), bizarr (unter dem Mikroskop), unheimlich (durch so „menschliche" Eigenschaften wie Kolonisation, Sklavenhaltung, Kriegsführung usw.), gerade deshalb aber auch so faszinierend. Mit dem Buch der beiden führenden Ameisenforscher Bert HÖLLDOBLER (Universität Würzburg) und Edward O. WILSON (Harvard University) liegt nun endlich eine populärwissenschaftliche Naturgeschichte der Ameisen vor. Es ist in gewisser Weise eine zusammenfassende Volksausgabe der vielfach gerühmten Monographie "The Ants", die 1990 von den gleichen Autoren veröffentlicht wurde und für die sie mit dem Pulitzer-Preis ausgezeichnet wurden. Das vorliegende Buch wurde übrigens auch schon ausgezeichnet - als „Wissenschaftsbuch des Jahres".

Auf ebenso spannende wie unterhaltsame, nie jedoch oberflächliche Weise wird der Leser in die Welt der Ameisen entführt, wobei die Forschungsarbeiten der beiden Autoren den Schwerpunkt bilden. Gerade dadurch kommen aufregend authentische Schilderungen zustande. In einem Anhang werden praktische Tips zum Sammeln, Präparieren, Beobachten und Halten von Ameisen gegeben. Die zahlreichen Farbfotos und farbigen Zeichnungen sind von ebenso hervorragender Qualität wie die Strichzeichnungen und rasterelektronenmikroskopischen Aufnahmen. Ein faszinierendes Buch über eine faszinierende Welt.

Johannes SCHUBERTH

Tierparadies Südafrika. - Verlag Das Beste, Stuttgart-Zürich-Wien, 1997. 272 S.

Dieser fantastische Bildband ist ein wahrlicher „Augenreißer"; er besticht in erster Linie durch seine brillianten und originellen bis genialen Farbfotos. Dies ist nicht verwunderlich, denn in der bildliste der Fotografen tauchen nur die „wohlklingenden" Namen der Spitzenfotografen auf. Der Inhalt des Buches ist nach den verschiedenen Lebensräumen (u.a. Buschland und Baumsavanne, Wälder, Berge, Wüste, Flußlandschaften) gegliedert, in denen die Wildtiere zu Hause sind; „Verbreitungskarten" informieren, wo diese Landschaftstypen im südlichen Afrika zu finden sind.

Besser läßt sich die Schönheit der Wildtiere Afrikas kaum dokumentieren.

Roland GERSTMEIER

HEATHER, B. & ROBERTSON, H. 1997: The Field Guide to the Birds of New Zealand. - Oxford University Press, Oxford. 432 S.

Weit über den ursprünglichen Anspruch eines „field guide" (es sollte soviel Information in Form von Bildern und Text enthalten sein, daß ein Vogel bestimmt werden kann, nicht mehr) hinausgehend, beinhaltet dieser „Feldführer" sehr viel detailliertere Informationen über geographische Variationen, Verbreitung, Populationsgrößen, Naturschutz, Brutverhalten, allgemeine Verhaltensweisen und Ernährung von 328 neuseeländischen Vogelarten. Die perfekten und künstlerisch sehr ansprechenden Farbzeichnungen zeigen auf 74 Tafeln vielfach auch Flugbilder, Geschlechtsdimorphismen und Jugendkleider, so daß eine eindeutige Bestimmung keine Probleme bereiten sollte. Kleine Verbreitungskarten zeigen für die meisten Arten das Vorkommen in Neuseeland auf.

Ein gewichtsmäßig nicht ganz leichter, dafür umso informativerer Feldführer.

Roland Gerstmeier

KLAUSNITZER, B. 1997: Die Larven der Käfer Mitteleuropas. Bd. 4, Polyphaga Teil 3. - Goecke & Evers im Gustav Fischer Verlag, Jena. 370 S.

Mit unglaublicher Energie treibt der Autor die Komplettierung der Larvenbände des „Freude-Harde-Lohse" voran, so daß wir bereits den 4. Band vorliegen haben. Er beinhaltet folgende Familien: Ptiliidae, Leptinidae, Silphidae, Agyrtidae, Scydmaenidae, Scaphidiidae, Dasyceridae, Micropeplidae, Pselaphidae, Cantharidae und Cerambycidae sowie als Nachtrag die Gattung *Aphodius* und einige Ergänzungen zu den bisher erschienenen Bänden. Besonders erfreulich ist die Vorlage einer Bestimmungstabelle für die Larven der Cerambycidae, deren Imagines eine zunehmende Rolle in der Umweltforschung und -begutachtung spielen. Sehr zu begrüßen ist auch die sofortige Einarbeitung von aktuellen Nachträgen und Ergänzungen, so daß der Leser nicht „ewig" auf spätere Supplementbände warten muß.

KLAUSNITZER's Konzept ist durchdacht und die Umsetzung durch den Verlag perfekt - hier kann man nur großes Lob aussprechen. Roland GERSTMEIER

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