

## Two new Philippine *Ochterus* LATREILLE (Insecta: Heteroptera: Ochteridae) and checklist of Philippine species

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### Abstract

Two new species of *Ochterus* LATREILLE, 1807 from the Philippines are described: *Ochterus luzonicus* sp.n. from Luzon and *O. zetteli* sp.n. from Busuanga (Palawan Province). A checklist of all Philippine species of *Ochterus* and their respective distribution records are presented.

**Key words:** Heteroptera, Ochteridae, *Ochterus*, new species, Luzon, Palawan, Busuanga, Philippines, checklist

### Zusammenfassung

Zwei neue Arten der Gattung *Ochterus* LATREILLE, 1807 werden von den Philippinen beschrieben: *Ochterus luzonicus* sp.n. von Luzon und *O. zetteli* sp.n. von Busuanga (Palawan Province). Eine Check-Liste aller philippinischen *Ochterus*-Arten samt ihrer bekannten Verbreitung wird präsentiert.

### Introduction

Very little is known about the southeast Asian species of the ochterid genus *Ochterus* LATREILLE, 1807. The cryptic habits of many species, such as mossy rocks along forested mountain streams and walls of waterfalls, have made it more difficult to observe them in the field to learn more about their biology and ecology. Not surprisingly, such specialized habitats can maintain only patchy, small populations of many species in areas where they occur. Early inventories of water bugs in the Philippines recorded the widespread species *O. marginatus* (LATREILLE, 1804) as the most common species, probably occurring throughout the country where its habitats are found, even rice paddies. According to RIEGER (1977) the Philippine populations have the status of a distinct subspecies, *O. m. insularis* RIEGER, 1977. A second species, *O. philippinensis* KORMILEV, 1971 was added to the Philippine fauna of this group (KORMILEV 1971). Since then seven more species were discovered and added to the list (GAPUD & SAN VALENTIN 1977, GAPUD 1981, 1995, NIESER & CHEN 1999). This paper presents two additional new species which are described from the Philippines.

Terminology follows previous articles of the author. The term "cicatrix" (pl.: "cicatrices") refers to a pair of oval impressions near the middle on the dorsum of the pronotum, which are closer to the anterior than to the posterior margin and are usually demarcated by a row of punctures around them.

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### Repositories

NHMW	Naturhistorisches Museum in Wien, Vienna, Austria	CZW	Coll. H. & S.V. Zettel, Vienna, Austria
UPLB	Museum of Natural History, University of the Philippines Los Baños, College, Laguna, Philippines	VPG	Coll. V.P. Gapud, Department of Entomology, University of the Philippines, Los Baños, College, Laguna, Philippines

### Description of new species

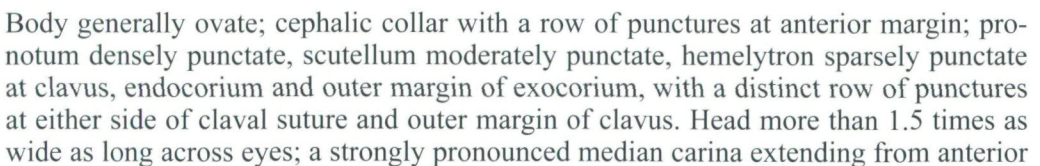
#### *Ochterus luzonicus* sp.n. (Figs. 1 - 7)

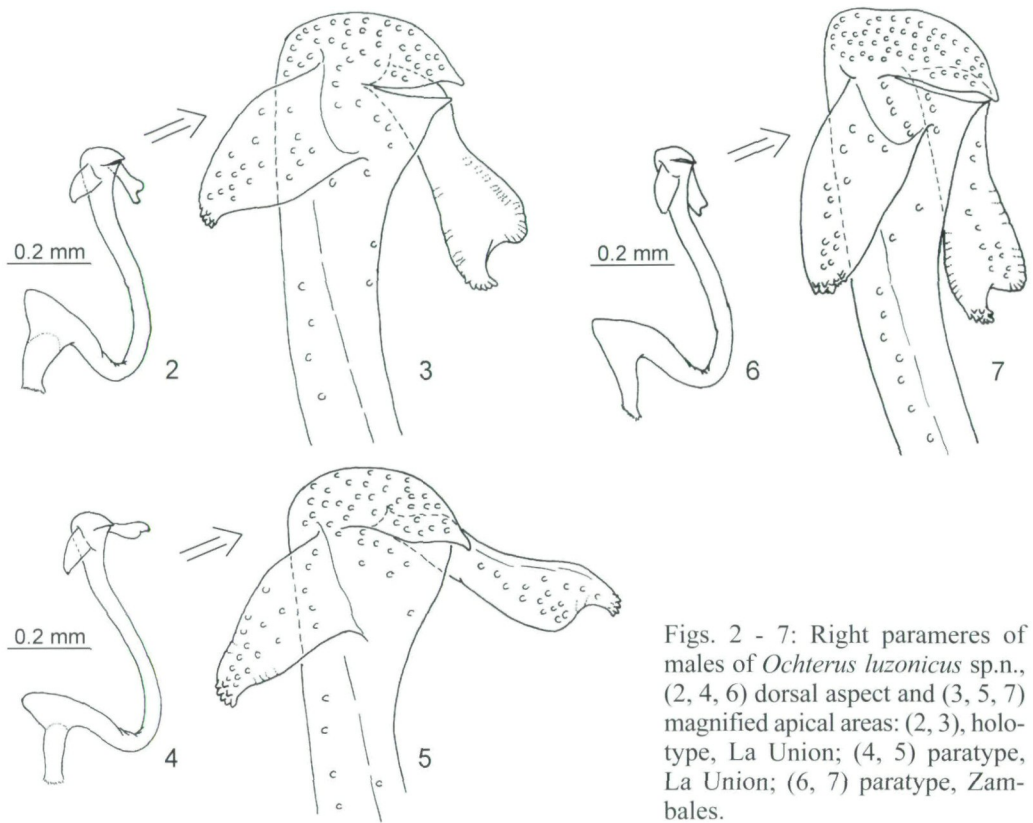
**Holotype** (♂): La Union: Bacnotan, Don Mariano Marcos Memorial State University, mountain stream, on wall of waterfalls, 17.03.2002, leg. V.P. Gapud (VPG); **allotype** (♀), same label data as holotype (VPG); **paratypes**: 7 ♂♂, 3 ♀♀, same label data as holotype (VPG, NHMW); 2 ♂♂, Zambales: Sta. Cruz, Acoje Mine Site, Balisbis Creek, 15.05.1977, leg. A.A. Barroso (UPLB).

#### Description:

**Male:** Body length 3.5 - 3.8 mm; greatest width across pronotal humeral angles 1.6 - 1.8 mm.

Body generally brownish black, becoming brown at outer margins of hemelytra and membrane area. Occipital area and frons shiny black, anteclypeus yellowish to yellowish orange; antennal segments I and II testaceous, often darker basally, III and IV brownish; labrum orange to brownish orange; bucculae fuscous; ventral surface of head largely fuscous, distally brownish orange; labial segments I and II dark brown, the latter brownish orange toward outer surface, III basally brownish orange and apically yellowish orange. Anterolateral pronotal margins with depressed area creamy white, brownish toward humeral angles; anterior half of pronotal area including cicatrices blackish brown, less so at posterior half, posterior margins brownish. Scutellum with yellowish apex. Basocostal margin of exocorium yellowish orange to brownish orange, reddish brown distally up to middle of membrane at outer margins; embolar fracture and R-M vein concolorous with hemelytron. Dorsal pruinosis greyish white to white, distributed as follows: on pronotum, a small lateral spot on each side near anterior angles, a small elongate spot at middle near anterior margin, an irregular band traversing outer side of cicatrix and extending posteriorly and inwardly around the latter and along inner margin of depressed area of anterolateral margin, a spot on each side of inner posterior side of cicatrix with an elongate middle spot between these spots; on scutellum, a large basal median spot and a subapical spot partly covering scutellar apex; on hemelytron, basal band and large middle spot on clavus often connected by thin band running along the row of punctures, endocorium with a small basal spot, followed by a large spot which merges into a band along basal third touching claval suture, a small spot thereafter and a middle spot, a small outer spot and a large spot at distal area of endocorium touches proximal row of membrane cells, followed by a large marginal spot posterior to the embolar fracture, an elongate spot near base of exocorium, an irregular spot beyond middle and a small spot anterior to the embolar fracture, irregular spots along 2nd cell of proximal row of membrane cells, distal row of cells and outer lateral margin and apical areas of membrane.





Figs. 2 - 7: Right parameres of males of *Ochterus luzonicus* sp.n., (2, 4, 6) dorsal aspect and (3, 5, 7) magnified apical areas: (2, 3), holotype, La Union; (4, 5) paratype, La Union; (6, 7) paratype, Zambales.

margin of cephalic collar to anterior margin of frons, transverse striations well developed, frons strongly depressed at middle on either side of carina, lateral margins subcarinate. Antennal segment I and II subequal, III and IV equal; antennal segments I and II 2 times as broad as III and IV.

Pronotum slightly more than twice as wide as long; anterior angles moderately excavate, contiguous with eyes; anterolateral margins moderately convex, the depressed area distinctly narrowed posteriorly; humeral angles narrowly rounded, almost subangulate; posterior margin trisinate, moderately sinuate laterally, more strongly so at median area.

Scutellum less than twice as wide basally as long. Hemelytron with greatest width traversing exocorium and subapical margin of clavus; claval suture reaching base of inner distal cell of membrane.

Right paramere (Figs. 2 - 7) with a broadly rounded capitolium, its hood tapering into an acute apex between bases of appendages; inner appendage 1.25 as long as outer appendage, but outer appendage broader than inner appendage at its greatest width, outer appendage widest at about middle of length and tapering apically, the apex multituberculate to almost multidentate, inner appendage with greatest width distally, terminating into a bilobed apex, its outer lobe multituberculate to almost multidentate, its inner lobe more or less rounded and without tubercles; hood fairly densely punctate, appendages sparsely punctate, inner appendage more sparsely so.

**Female:** Body length 4.0 - 4.3 mm; greatest width across pronotal humeral angles 2.0 - 2.2 mm. Characters same as in male except for sexual characters.

**Discussion:** *Ochterus luzonicus* sp.n. is identical with the previously thought "Zambales form" of *O. baltazarae* GAPUD and SAN VALENTIN, 1977 in terms of body coloration and distribution of dorsal pruinosis as well as the configuration of the right paramere of the male (Figs. 6, 7). The "Zambales form" is henceforth removed from *O. baltazarae* and is incorporated into *O. luzonicus* sp.n. This species is closely related to *O. baltazarae* in having a similar configuration of the right paramere of the male, but differs consistently from the latter in the pattern of body color and dorsal pruinosis. It appears now that the body color and distribution of dorsal pruinosis are fairly consistent among species of *Ochterus* with very slight intraspecific variations. Moreover, the pronotum of *O. baltazarae* is much broader and its anterolateral pronotal margins are strongly convex in contrast to the moderately convex margins in *O. luzonicus* sp.n. In terms of configuration of the right paramere, the affinities of this species would be with *O. baltazarae*, *O. philippinensis*, and *O. magnus*, with the last species being remotely related.

**Distribution:** Luzon: La Union, Zambales.

**Habitats:** *Ochterus luzonicus* sp.n. appears to prefer the wet rocky walls beside lightly flowing waterfalls along mountain streams. Three such waterfalls were visited in La Union which yielded a dozen individuals in a few hours. Of similar interest is that the large species, *O. magnus*, occurred together with *O. luzonicus* in the same habitat, cryptically positioned along the crevices lining the wet walls of the waterfalls. In that same trip, two dozen specimens of this large species were collected, which implied that this other species dominated the waterfalls habitat. The Zambales material of now *O. luzonicus* was collected much earlier (1977) along the low lying rocky banks of a stream with dripping water, which at the time was exposed to sunlight. It would seem that *O. luzonicus* can occupy smaller habitats than *O. magnus* which was encountered consistently along the walls of waterfalls.

### *Ochterus zetteli* sp.n. (Figs. 8 - 10)

**Holotype** (♂): Palawan: Busuanga Island, W. Borac, 31.01.1999, leg. H. Zettel (169) (UPLB); **allotype** (♀), same label data as holotype (UPLB); **paratypes**: 1 ♂, 1 ♀, same label data as holotype (CZW); 5 individuals (abdomen broken apically), same label data as holotype (CZW, NHMW, UPLB).

#### **Description:**

**Male:** Body length 4.35 - 4.4 mm; greatest width across pronotal humeral angles 2.25 mm.

Body generally brownish black, hemelytra dark reddish brown with darker areas on outer area of exocorium, middle area of endocorium and distal part of clavus, apical area of membrane brownish; occipital area and frons shiny black, anteclypeus yellowish, fuscous at outer margins; bucculae fuscous; ventral surface of head proximally brownish orange and distally fuscous; labial segment I dark brown, II basally dark brown and apically brownish orange, III basally brownish orange and rest of segment yellowish to yellowish orange, IV yellowish; antennal segments I and II testaceous, III and IV brownish. Anterolateral pronotal margins with depressed area narrowly fuscous at anterior area, the rest yellowish, the yellowish area broadened distally and becoming brownish toward humeral angles, posterior margins thinly lined at edges with yellowish to yellowish orange. Scutellum with



apex yellowish to yellowish orange; embolar fracture and R-M vein brownish orange to reddish brown. Dorsal pruinosis greyish to greyish white, seemingly distributed as follows: on outer margins of cephalic collar; on pronotum, covering outer areas of anterior margins reaching anterior angles, thinly lining borders of cicatrices but interrupted at posterior margin, a small spot near anterior margin at middle, most punctuations individually pruinose; on scutellum, a small middle spot at anterior margin; on hemelytron, clavus with irregular bands at basal and apical areas with pruinose punctuations, endocorium with two basal spots, followed by an irregular basal band along claval suture, a small elongate spot near R-M vein, a small transverse spot at middle, three to four closely situated spots anterior to proximal row of membrane cells, and a large spot near outer margin posterior to embolar fracture, exocorium with two to three irregular spots lining its length, the last spot anterior to embolar fracture, membrane with irregular spots on cells and apical areas.

Thoracic pleura fuscous; propleuron with proepisternum narrowly yellowish apically, proepimeron narrowly brownish orange apically, posterior propleural margin reddish brown; mesopleuron with apices of mesepisternum and mesepimeron brownish, posterior margin dark brown; metapleuron with outer and posterior margins brownish to brownish orange; prosternum and mesosternum fuscous, metasternum dark brown. Legs generally testaceous except brownish forecoxae, brownish to dark brownish femoral and tibial apices, and penultimate and last tarsal segments. Abdominal tergites brownish to brownish orange, concolorous; sternites brownish, concolorous.

Body generally ovate; cephalic collar with a row of fine punctures at anterior margin; pronotum and scutellum densely punctate; dense punctuations on inner area of exocorium, basal half of endocorium and base of clavus, a distinct row of punctuations on each side of claval suture. Head about 1.5 times as wide (across eyes) as short; median carina strongly pronounced from anterior margin of cephalic collar to middle of frons, weakening toward anterior margin of frons, transverse striations irregularly and obliquely rugose at occipital area, finely horizontal at frontal area. Antennal segment I slightly shorter than II, III and IV subequal; antennal segments I and II twice as broad as III and IV, the latter two segments densely setose.

Pronotum slightly more than twice as wide as long; anterior angles moderately excavate, contiguous with eyes; anterolateral margins weakly convex; humeral angles narrowly rounded; posterior margin moderately trisinate.

Scutellum about 1.5 as wide basally as long. Hemelytron with greatest width across exocorium and subapical margin of clavus, slightly more than width of membrane area; membrane with four proximal and three distal cells; claval suture reaching base of inner distal cell of membrane.

Right paramere (Fig. 9, 10) with a broadly rounded capitulum, hood tapering into a subacute apex between bases of appendages; inner appendage almost twice as long as outer appendage, strongly broadened distally with greatest width beyond middle, apically bilobed, with outer lobe narrowed apically and multituberculate at outer side up to apex, inner lobe broad and notched at inner side, without tubercles; outer appendage moderately broad, with subparallel sides, apex broadly rounded to subtruncate, shallowly crenulate apically and sparsely denticulate at outer apex.

**Female:** Body length 4.4 - 4.7 mm; greatest width across pronotal humeral angles 23.5 - 2.4 mm. Characters same as in male except for sexual characters.

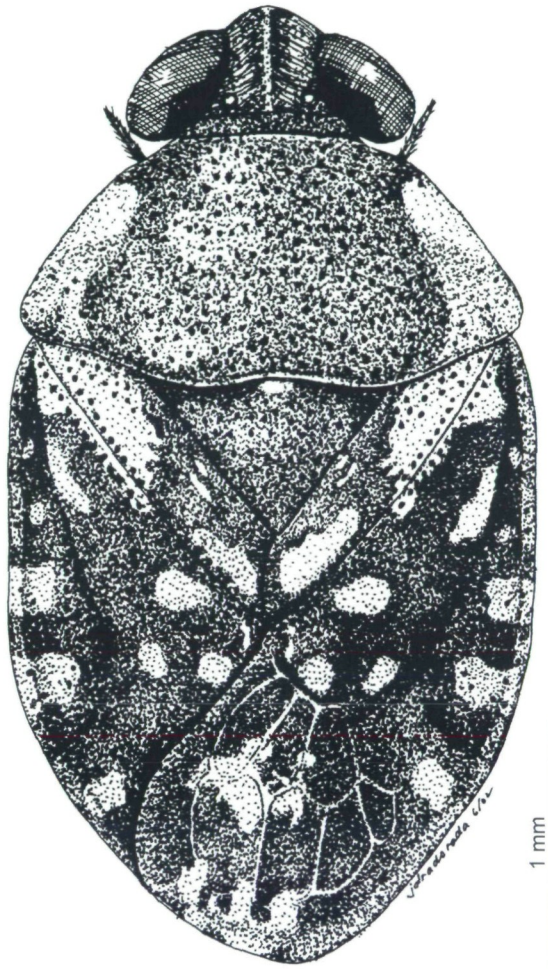


Fig. 8: Habitus of *Ochterus zetteli* sp.n., holotype, male, Palawan.

**Discussion:** *Ochterus zetteli* sp.n. is the second species of the genus recorded from the Palawan region (*O. marginatus* is the first species recorded by KORMILEV 1971), but is the first endemic species known from Busuanga Island. It differs from other Philippine species in the color pattern of the anterolateral margins and humeral angles of the pronotum and the distribution of dorsal pruinosisities. The illustrated habitus of this species (Fig. 8), however, could not account for all dorsal pruinosisities since they have been obscured as a result of exposure to ethyl acetate. For best results, future collections might consider using 70% ethyl alcohol or cyanide for killing adults. Nonetheless, *O. zetteli* sp.n. remains set apart from all known Philippine species in having a unique configuration of the right paramere of the male. Its affinities would perhaps be better found in species from Borneo and other greater Sunda islands.

**Distribution:** Palawan: Busuanga Island.

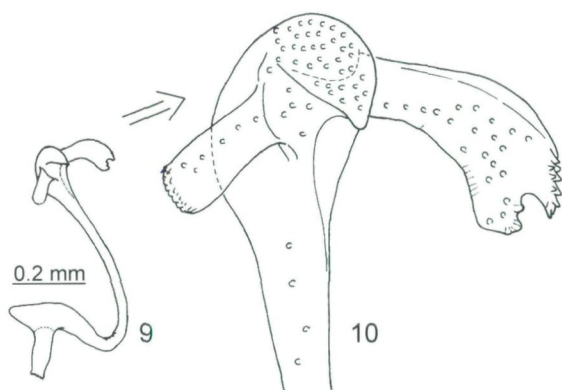


Fig. 9, 10: (9) Right paramere, and (10) magnified apical area of right paramere of *Ochterus zetteli* sp.n., holotype, male, Palawan.

**Habitats:** Specimens were collected on mosses growing at the sides of a small, about two meters high cascade of a streamlet flowing through forested land; when disturbed, most specimens remained in place or sluggishly ran to hide, but did not fly up (Zettel, pers. comm.).

**Etymology:** This species is named after my fellow scientist Dr. Herbert Zettel (Naturhistorisches Museum in Wien, Austria), for his numerous scientific contributions to the biodiversity of Philippine water bugs, and who at the same time was responsible for its discovery in Palawan.

### *Ochterus* sp.

**Material examined:** 1 ♀, Palawan: Puerto Princesa, Cabayugan River, rocky area, 31.03.2001, leg. H. Freitag (VPG); 1 ♂, same label data except from tributary of Cabayugan River, limestone, 21.04.2001, leg. H. Freitag (VPG).

### Description:

**Female:** Body length, 3.6 - 3.8 mm; greatest width across pronotal humeral angles, 2.0 mm.

Body generally dark brown to almost brownish black, similar to that of *O. zetteli* sp.n. except that more areas of pronotum and hemelytron are lighter colored as follows: on pronotum, anterolateral margins broadly creamy white to yellowish, such color continuing up to humeral angles, then inward toward lateral areas of pronotum, becoming light brown and touching outer posterior margins of cicatrix; on hemelytron, reddish brown on clavus and endocorium, dark brown at cells of membrane, brownish at apical area of membrane, exocorium dark brown to brownish black at its inner area and brownish orange at its outer margin, becoming yellowish toward basal area. Head color with occipital area, frons, clypeus, labrum, bucculae, and labium similar to that in *O. zetteli* sp.n. Dorsal pruinosis greyish white to white, distributed as follows: on cephalic collar pruinose at anterior and outer margins; on pronotum, with irregular pruinosis on anterior margin extending to anterior angles, thin median spot at anterior margin, cicatrices pruinose along margins with interruptions along anterior and posterior margins, outer pruinosis of cicatrix touching inner margin of depressed area of anterolateral margins; on scutellum, a small median spot at anterior margin, apex sparsely pruinose; on hemelytron, clavus with irregular basal band, a small middle spot and an irregular spot or band near apex, endocorium with two small closely situated spots near base, followed by a small



spot touching R-M vein then a small middle spot, a medium spot at apical area of endocorium and a small spot beside it near embolar fracture, an irregular spot near outer margin posterior to embolar fracture, membrane with irregular spots along cells and apical area of membrane, exocorium with two spots beyond middle and an almost inconspicuous small spot before middle close to R-M vein. Color of thoracic pleura and sternites similar to that in *O. zetteli* sp.n. except that posterior margins of pleura darker. Leg color same as in *O. zetteli* sp.n. Abdominal sternites dark brownish.

**Discussion:** While this species is very probably new, its male has to be studied to establish its uniqueness. However, in terms of body color and distribution of dorsal pruinosis, it is closely related to *O. zetteli* sp.n. but differs from the latter in having a largely lighter colored body especially at the hemelytral area, as well as, the broader spread of the yellowish to yellowish orange color at the pronotal anterolateral margins, humeral angles and outer areas of the posterior margin. Moreover, the depressed area of the anterolateral margins is shallow and not distinctly narrowed posteriorly. The dorsal pruinosis on the hemelytra are fewer and smaller.

**Distribution:** Palawan: Puerto Princesa.

### Checklist of Philippine species of *Ochterus* and distribution records (species and provinces in alphabetical order)

New records are marked by an asterisk (\*).

<i>Ochterus baltazarae</i> GAPUD & SAN VALENTIN, 1977	Quezon
<i>Ochterus barrosoi</i> GAPUD, 1981	Leyte
<i>Ochterus luzonicus</i> sp.n.	La Union*, Zambales
<i>Ochterus magnificus</i> GAPUD & SAN VALENTIN, 1977	Quezon
<i>Ochterus magnus</i> GAPUD & SAN VALENTIN, 1977	Cavite, Laguna, La Union*, Quezon
<i>Ochterus marginatus</i> (LATREILLE, 1804)	Abra, Agusan, Bataan, Benguet, Bontoc,
<i>ssp. insularis</i> RIEGER, 1977	Cebu*, Ilocos Norte, Ilocos Sur, Isabela*, Laguna, La Union, Leyte, Nueva Ecija, Oriental Mindoro, Misamis Occidental, Palawan, Quezon, Rizal, Romblon, South Cotabato, Surigao del Sur, Zambales, Zamboanga del Sur
<i>Ochterus pardalos</i> NIESER & CHEN, 1999	South Cotabato
<i>Ochterus philippinensis</i> KORMILEV, 1971	Occidental Mindoro
<i>Ochterus polhemusi</i> GAPUD, 1981	Benguet, Cavite, Cebu, Davao, Ilocos Sur, Isabela*, Laguna, La Union, Leyte, Negros Occidental*, Oriental Mindoro, Quezon, South Cotabato*, Surigao del Sur, Zambales
<i>Ochterus surigaoensis</i> GAPUD, 1995	Surigao del Sur
<i>Ochterus zetteli</i> sp.n.	Palawan
<i>Ochterus</i> sp.	Palawan

### Acknowledgements

I wish to thank Dr. Herbert Zettel (Naturhistorisches Museum in Wien, Austria) for his initiatives in making this contribution possible and for collecting the *Ochterus zetteli* material, Mr. Hendrik Freitag (Germany) for providing *Ochterus* sp. from Palawan, and Ms. Jessamyn Recuenco-Adorada (University of the Philippines Los Banos - NCPC) for the habitus illustrations of *O. luzonicus* and *O. zetteli*. I am also thankful for the assistance of Junifer Tabafunda and Erwin Espero in the collection of *O. luzonicus* from La Union.

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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

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