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Supplement to the knowledge of ptyctimous mites of Neotropical Region (Acari: Oribatida)

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ABSTRACT. At 597 new localities, the representatives of 107 species of ptyctimous mites have been found: one species of Protoplophoridae, seven of Mesoplophoridae, 34 species of Euphthiracaroidae, and 65 species of Phthiracaroidae. One species *Austrophthiracarus valdiviaensis* sp. nov. is described and illustrated, while the hitherto information on three species has been supplemented with additional taxonomical notes and figures. *Phthiracarus brevisetae*, hitherto known from Nearctic, has been found for the first time in Costa Rica, *Phthiracarus bryobius*, found in Costa Rica and *Phthiracarus longulus*, found in Uruguay have been hitherto classified as Holarctic, *Austrophthiracarus latior* has been for the first time found in Brazil and should be hence considered as cosmopolitan. In total 33 species have been found at new localities and extended their ranges. Seventeen species have been known only from the original descriptions and classified as endemites, but their finding at new localities has changed their zoogeographical status. Three species *Mesoplophora* (*M.*) *permodica*, *P. brevisetae* and *P. setanus* hitherto assumed as introduced do Neotropical, have been classified as Nearctic and Neotropical.

Key words: acarology, taxonomy, zoogeography, new species, Oribatida, Neotropical Region.

INTRODUCTION

Ptyctimous mites have specific, ptychoidal construction of body. They are capable of folding the aspidosoma against the opisthosoma to protect their appendages and this way they avoid predation. Ptyctimous mites occur wherever there is decaying organic matter. They are secondary decomposers and as macrophytophagous they play an important role in mechanical fragmentation of organic matter.

The knowledge of ptyctimous mites of Neotropical Region has been summarised in my monograph (NIEDBALA 2004). This publication was followed by a few papers presenting descriptions of new species from Mesoamerica (NIEDBALA 2006), Ecuador (NIEDBALA and ILLIG 2007a, b), Cuba (NIEDBALA 2008). In the meantime I worked on subsequent samples with ptyctimous mites collected at many localities by different persons, mainly by Dr. SCHATZ, Dr. STARY and Dr. MAGOWSKI. In these new samples I found representatives of many known species and one new species.

Methods and terminology is based on that of NIEDBALA (2004). The names of localities are followed by the number of specimens found at a given locality (in parentheses).

DESCRIPTION OF NEW SPECIES

Austrophthiracarus valdiviaensis sp. nov.

(Figs 1. A-F)

DESCRIPTION

Measurements of holotype: prodorsum: length 232, width 162, height 75.7, sensillus 25.3, setae: interlamellar 32.9, lamellar 30.4, rostral 40.5; notogaster: length 404, width 257, height 263, c_1 , h_1 , ps_1 37.9–40.5, $c_1/c_2 - d_1 = 0.45$; genitoaggenital plate 88.5×88.5, anoanal plate 192×106. Prodorsum with sigillar fields indistinct but very narrow. Lateral carinae absent. Sensilli very short, with narrow pedicel and club-like head. Interlamellar, lamellar and rostral setae short, spiniform, rough, exobothridial setae the shortest.

Colour brown light. Cuticle well sculptured, dotted.

Notogaster with 22 pairs of very short, spiniform, rough setae. Setae c_1 and c_2 remote from anterior border, setae c_3 far from border. Ventral setae arranged in two rows, 2 pairs of superior and 4 pairs of inferior. Vestigial setae f_1 posteriorly of h_1 setae. Only two pairs of lyrifissures ia and im present.

Ventral region. Setae h of mentum slightly longer than distance between them. Genitoaggenital plates with nine pairs of genital setae with arrangement: 4+2: 3.

Anoanal plates each with six pairs of setae, two pairs anal and four pairs adanal. All almost equal in length.

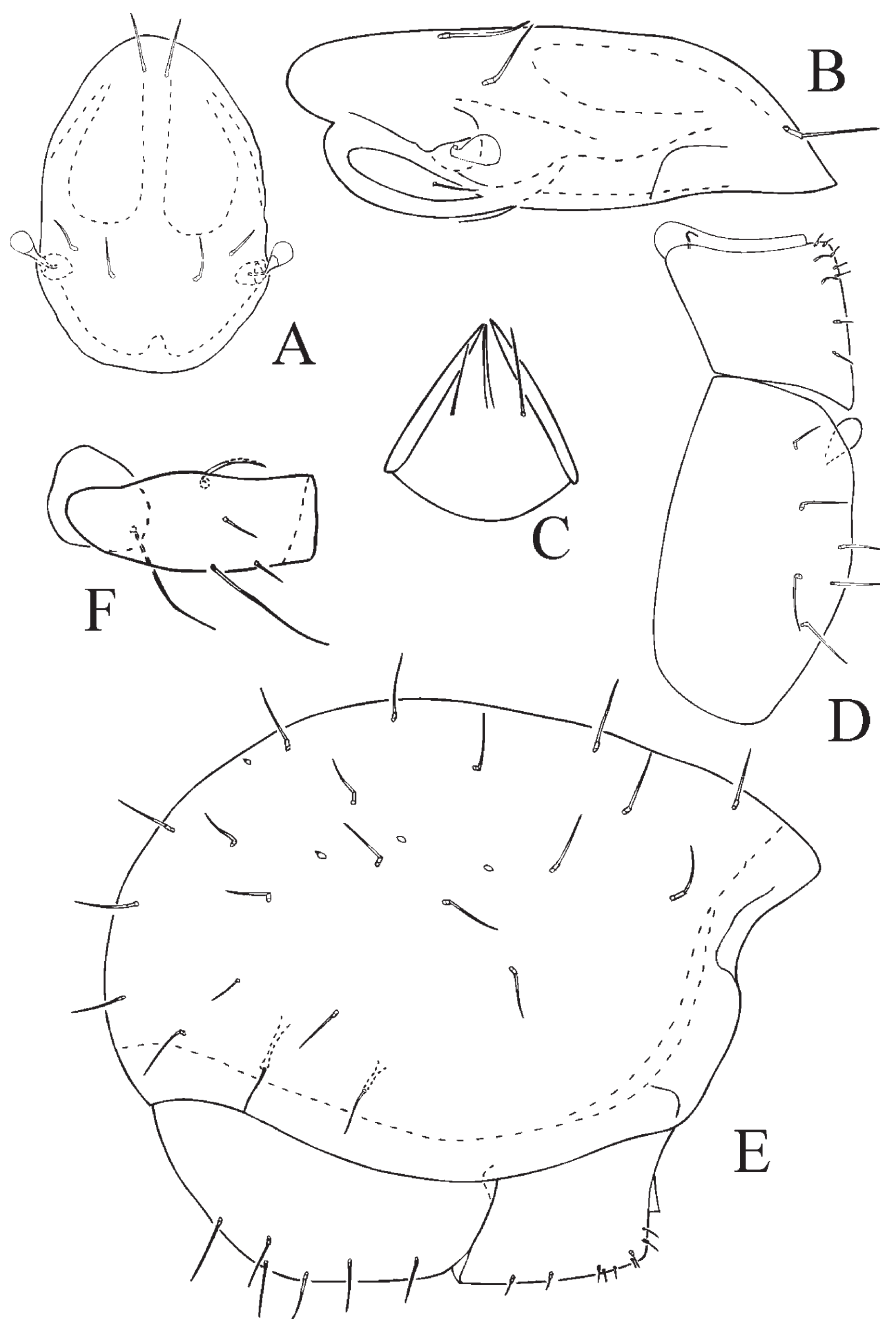
Legs. Formulae of setae and solenidia of “complete type”. Setae d of femora I situated in the middle of article. Setae v' and v'' distanced each from other.

MATERIAL

Holotype (in DATE). Patagonia, Chile, Los Lagos, Nahuel Huapi, Valdivia, Curinanco, S 39°43.251' W 73°23.809', litter from young forest with *Notofagus*, 03 II 2006, leg. W. Magowski.

ETYMOLOGY

The name of species is origin from Valdivia locality.



1. A-E. *Austrophthiracarus valdiviaensis* sp. nov., holotype. A – prodorsum, dorsal view; B – prodorsum, lateral view; C – mentum of infracapitulum; D – genitoaggenital and ano-adanal plates; E – opisthosoma, lateral view; F – trochanter and femur of leg I

COMPARISON

The new species is similar to some Neotropical species: *Austrophthiracarus equisetosus* (MAHUNKA, 1980), *A. diazae* (OJEDA, 1985) and *A. phaleratus* (NIEDBAŁA, 1982). However, it differs by the following characters: the short and club-like sensilli, the number of 22 pairs of notogastral setae, arrangement of ventral setae of notogaster and distanced setae v' and v'' of the femur I.

REMARK

The genus *Austrophthiracarus* is rather numerous in Neotropical Region. More than 20 species is known (NIEDBAŁA 2004).

LIST OF LOCALITIES

COCOS ISLAND, Costa Rica

- Cocos Island, Costa Rica, Bahía Yglesias near waterfall, 30 m a.s.l., open area, moss from rock, wet, 07 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Yglesias, near river, 15 m a.s.l., dense forest with deep litter layer, decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Yglesias near waterfall, 30 m a.s.l., under low trees, *Philodendron*, *Psychotria* and ferns, thin litter layer, leaf litter on roots 10–20 cm above ground, partially well decayed leaf litter and roots, wet, 07 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., thin litter layer, dry to moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, near Cerro Pelón, dense cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., deep litter layer, under uppermost layer, partially decayed leaf litter with roots and humus, moist to wet, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., epiphytic moss from *Cyathea*, mainly moist, part near bark, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Chatham, in grass above bay, 50 m a.s.l., partially well-decayed grass litter and moss along trail, dry to moist, 10 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, Bahía Chatham, at small waterfall on southern side of the bay, 15 m a.s.l., fern litter with humus on rocks, moist, 10 III 1996, leg. H. Schatz

- Cocos Island, Costa Rica, Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz
- Cocos Island, Costa Rica, 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz

GALAPAGOS ISLANDS, Ecuador

- Gardner Island near Española, near “summit”, Arid zone, 40 m a.s.l., under *Opuntia megasperma* var. *orientalis*, sample: cactus litter, dry to moist, 14 III 1987, leg. H. Schatz
- Isla Fernandina, moist highland – Fern–sedge zone, 800 m a.s.l., ferns, grasses, herbs, barren ground, 07 V 1991, leg. S. Abedrabbo
- Isla Fernandina, crater rim, fumarole, Fern–sedge zone, 1300 m a.s.l., under ferns, 08 V 1991, leg. S. Abedrabbo
- Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo
- Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo
- Isla Floreana, highland near caves under Cerro Asilo de la Paz, agricultural area, 340 m a.s.l., under *Furcraea cubensis*, *Lantana camara*, sample: leaf litter and pieces of wood, dry to moist, 17 I 1987, leg. H. Schatz
- Isla Isabela, Volcán Cerro Azul, top of the Volcano, (Upper Arid) moist highland, 1530 m a.s.l., ash, grasses, herbs, few cacti, 24 V 1991, leg. L. Baert, K. Desender, J.P. Maelfait
- Isla Isabela, Volcán Alcedo, southern crater rim, Upper edge of inner crater rim, *Psychotria* Fern–sedge zone, 1030 m a.s.l., under *Pteridium aquilinum* and *Ipomoea* sp., sample: decayed fern litter and humus, moist, 21 III 1988, leg. H. Schatz
- Isla Isabela, Volcán Alcedo, eastern crater rim, *Psychotria* Fern–sedge zone, 1125 m a.s.l., *Psidium galapageium*, *Tournefortia pubescens*, *Centella asiatica*, *Axonopus compresus*, *Commelina diffusa*, *Sida* sp., ferns and grasses, under *Psidium*, 24 VI 1991, leg. S. Abedrabbo
- Isla Isabela, Volcán Sierra Negra, Transition / *Scalesia* zone, 230 m a.s.l., under *Sapindus saponaria*, sample: decayed leaf litter with roots and soil, moist, 07 II 1987, leg. H. Schatz
- Isla Isabela, Volcán Alcedo, inside crater of fumarole, *Psychotria* Fern–sedge zone, 900 m a.s.l., under *Pteridium aquilinum*, sample: moss and roots, humus, moist, 22 III 1988, leg. H. Schatz
- Isla Isabela, Volcán Cerro Azul, Arid zone, 5 m a.s.l., open herb vegetation, 19 V 1991, leg. L. Baert, K. Desender, J.P. Maelfait
- Isla San Cristobal, Puerto Baquerizo Moreno, near electric power plant, Arid (*Piscidia*) zone, 100 m a.s.l. *Parkinsonia aculeata*, *Pennisetum* sp., 01 III 1992, leg. S. Abedrabbo
- Isla San Cristobal, east of lake El Junco, at the outlet of the lake, *Miconia* zone, 640 m a.s.l., under *Miconia robinsoniana*, sample: moss, roots and soil, moist, 01 I 1987, leg. H. Schatz
- Isla San Cristobal, Puerta Negra, Agricultural area, 400 m a.s.l., *Psidium guajava*, *Cyperus brevifolius*, *Centella asiatica*, *Pteridium aquilinum*, 01 III 1992, leg. S. Abedrabbo
- Isla San Cristobal, south of lake El Junco, Fern–sedge zone, 650 m a.s.l., under *Pteridium aquilinum*, sample: well–decayed fern litter, moist, 01 I 1987, leg. H. Schatz
- Isla Santa Cruz, agricultural area above Bellavista, 21 VI 1992, leg. J. Palacios Aguirre
- Isla Santa Cruz, agricultural area above Bellavista, 21 VI 1992, leg. J. Palacios Aguirre
- Isla Santa Cruz, north of Los Gemelos, at crater rim, *Scalesia* zone, 590 m a.s.l., grass and herbs, sample: litter with roots and soil, moist to wet, 08 III 1987, leg. H. Schatz
- Isla Santa Cruz, Media Luna Altura, ex barridor, 21 VI 1992, leg. J. Palacios
- Isla Santa Cruz, Media Luna, 21 VI 1992, leg. J. Palacios Aguirre

- Isla Santiago, La Centrál Pampa, moist highland, 700 m a.s.l., *Tournefortia rufo-sericea* with *Paspalum* sp. and *Salvia* sp., under *Tournefortia*, 07 VI 1991, leg. S. Abedrabbo
- Isla Santiago, western side, Los Aguacates: moist highland, 550 m a.s.l., forest of *Croton scouleri* and *Tournefortia rufo-sericea*, under *Croton*, 09 VI 1991, leg. S. Abedrabbo

MEXICO

- México, Yucatán Peninsula, Calakmul, Campeche, beside trail to ruins, 200 m a.s.l., dense lower Tropical Moist Forest, partially-decayed leaf litter with pieces of wood, moist, 07 II 2001, leg. H. Schatz
- México, Yucatán Peninsula, Quintana Roo, Kohunlich, 80 m a.s.l., secondary forest between Maya ruins, under bushes, partially-decayed leaf litter with pieces of wood, dry to moist, 07 III 2001, leg. H. Schatz
- México, Yucatán Peninsula, near pond on road to Calakmul, 150 m a.s.l., dense lower tropical forest, partially to well decayed leaf litter with pieces of wood leaf litter between buttressed roots, moist, 21 IX 2002, leg. H. Schatz
- México, Yucatán Peninsula, Calakmul, Campeche, 200 m a.s.l. dense lower tropical forest around Maya ruins, near Structure I, well-decayed leaf litter, moist, 21 IX 2002, leg. H. Schatz
- México, Yucatán Peninsula, near pond on road to Calakmul, 150 m a.s.l., dense lower tropical forest, partially to well decayed leaf litter, dry to moist, 21 IX 2002, leg. H. Schatz

GUATEMALA

- Guatemala, Rio Dulce, in Manatee Biotope Chocon Machacas, Hardwood tropical forest at Rancho, 5 m a.s.l., decayed leaf litter, moist, 02 II 1990, leg. H. Schatz
- Guatemala, Caribbean Coast near Livingston, at River Los Altares, Hardwood tropical rain forest, 10 m a.s.l. decayed leaf litter, moist, 08 VIII 1991, leg. H. Schatz
- Guatemala, Baja Verapaz, Quetzal Biotop south of Purulha / Coban, Cloud forest, 1600 m a.s.l., decayed leaf litter, moist, 19 II 1986, leg. H. Schatz
- Guatemala, Pochuta, slope of coffee culture, 1500 m, 04 II 2001, leg. E. Palik

BELIZE

- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under young palm, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter with roots below uppermost layer, wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, beside South Stann Creek, Tropical Moist Forest, 30 m a.s.l., well-decayed leaf litter with roots and humus, wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Cyathea* sp., Tropical Moist Forest, 35 m a.s.l., well-decayed leaf and fern litter with pieces of wood, moist to wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin, Hardwood tropical forest in Wildlife Sanctuary, Tropical Moist Forest, 50 m a.s.l., decayed leaf litter with roots and humus, moist, 12 II 1990, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 50 m a.s.l., moss from tree trunk with humus and decayed wood, moist to wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 40 m a.s.l., deep well-decayed leaf litter with roots, wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Schizolobium parahyllum*, Tropical Moist Forest, 35 m a.s.l., leaf litter between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, dense forest with many palms and tree ferns, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter, moist to wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Ficus*, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter with pieces of wood and roots between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz
- Belize, Maya Mountains, Cockscomb Basin near Guam Bank, near small river under *Atalea cohune* palm and large *Ficus*, Tropical Moist Forest, 30 m a.s.l., partially-decayed leaf litter below uppermost layer, wet, 24 II 1997, leg. H. Schatz

- Belize, Long Cay, Light House Reef, near coast line, 2 m a.s.l., dense tree and bush vegetation, well-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, partially-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz
- Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz

COSTA RICA

- Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, near swamp, well decayed leaf litter with pieces of wood and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz
- Costa Rica, Cordillera de Tilarán, Reserva Biologica Monteverde, Santa Elena, about 1700 m a.s.l., cloud forest, outer trail, well decayed leaf litter under Melastomataceae and *Xanthosoma jaquini*, moist, 13 II 1995, leg. H. Schatz
- Costa Rica, Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz
- Costa Rica, Cordillera Central, Volcán Barva, 2720 m, cloud forest along trail to Laguna Copey, partially decayed leaf litter, wet, 16 III 1996, leg. H. Schatz
- Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*, moist, 09 III 2004, leg. H. Schatz
- Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz
- Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter with pieces of wood and sand, moist, 09 III 2004, leg. H. Schatz
- Costa Rica, Cordillera Central, Volcán Barva, 2700 m, cloud forest near Laguna Barva, well decayed leaf litter between roots, moist, 16 III 1996, leg. H. Schatz
- Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter and sand, moist, 09 III 2004, leg. H. Schatz
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 14 IV–17 IV 2004, 03/B/BF
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 13 IV 2004, 03/WF/02
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 15 II–23 IV 2004, 03/B/AS
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II 2003, 05/WP/01
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BF
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01

- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/AM
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AS
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BM
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/BH
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 II 2003, 05/WF/02
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 III 2003, 05/WF/04
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BV
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AH
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 18 III 2003, 05/WF/03
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 IV–19 IV 2003, 05/WP/03
- Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 10 II–23 IV 2004, 03/B/BS
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 II 2001, 11/B/BH/020
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 II 2001, 11/WF/03/19
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/10
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 II 2001, 11/B/BE/118
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AM/094
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 13 IV 2001, 11/B/BV/107
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/39
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 II 2001, 11/WF/02/33
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/15
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/23
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/32
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/047
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- Costa Rica, Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio–OET–ALAS, 17 III 2001, 11WF/02/19
- Costa Rica, Prov. Heredia, 6 km SSE La Virgen, 1050–1150 m, 10°16'N 84°05'W, INBio–OET–ALAS transect, 09 III 2001 – 21 III 2001, 11/M/08/048
- Costa Rica, ALAS, Barva, transect 1500 m. rainforest, litter, 13 II 2005, leg. A. Szywilewska
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 IV 2002, 20/B/BV/098

- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III 2003, 05/F/02
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 23 II 2003, 05/TN/05
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/32
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/48
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/08
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/B/AH/104
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/BAS/108
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/38
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/13
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/20
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/41
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AS/096
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 13 IV 2001, 11/B/BV/106
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/25
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/11
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/29
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/31
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 III 2001, 11/WF/01/27
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 III 2001, 11/WF/01/48
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 8 II 2001, 11/B/AS/002
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 22 III 2001, 11/WF/03/39
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 17 III 2001, 11/WF/02/14
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/24
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 II 2001, 11/WF/02/22
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/49
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 8 II 2001, 11/B/AS/007
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/23

- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/14
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/16
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 III 2001, 11/WF/01/16
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 24 II 2001, 11/WF/01/04
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 IV 2001, 11/B/AS/119
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/26
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/28
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/40
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 II 2001, 11/B/AS/036
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 IV 2001, 11/WF/02/11
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 IV 2001, 11/WF/02/12
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/BV/090
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/AM/043
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/041
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 III 2001, 11/B/BS/076
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BM/052
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 I–23 II 2001, 11/WF/01/11
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/070
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/12
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/AS/040
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/47
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/30
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/19
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/13
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/17
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 and 23 II 2001, 11/WF/01/17
- Costa Rica, Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio–OET–ALAS, 17 III 2001, 11/WF/02/42

- Costa Rica, Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio–OET–ALAS, 17 III 2001, 11/WF/02/20
- Costa Rica, Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio–OET–ALAS, 17 III 2001, 11/WF/02/27
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 01 IV 2002, 20/B/BF/082
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/01
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 13 IV 2003, 05/B/BH/091
- Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/AM
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/25
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/06
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 12 and 15 IV 2002, 20/WF/04/47
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 14 and 17 II 2002, 20/WF/01/47
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/BV/026
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/BV/051
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/WF/02/20
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 19 and 21 II 2002, 20/WF/02/08
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/34
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/WF/02/14
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 20 IV 2002, 20/B/BH/105
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/10
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/B/BV/109
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 II 2001, 11/B/BE/017
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/04
- Costa Rica, Prov. Heredia, 6 km SSE La Virgen, 1050–1150 m, 10°16'N 84°05'W, INBio–OET–ALAS transect, 19 and 22 III 2001, 11/WF/03/023
- Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 II 2003, 05/F/01/06
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/066
- Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/112(/089, /036)
- Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/WF/04/43

PANAMA

- Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 130 m a.s.l., cleared forest with many vines, leaf litter, dry to moist, 24 I 1996, leg. H. Schatz
- Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 60 m a.s.l., dense undergrowth of *Monstera* and vines, well-decayed leaf litter and roots, with humus, dry to moist, 20 I 1997, leg. H. Schatz
- Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 100 m a.s.l., between buttressed roots, decayed leaf litter and pieces of wood, dry to moist, 24 I 1996, leg. H. Schatz
- Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz
- Panama, Panama Canal, Semaphor Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz
- Panama, Panama Canal, Sendero La Plantación at Rio Chico Masambi, along old trail, Tropical Moist Forest with secondary growth, many palms and *Carludovica*, 50 m a.s.l., well-decayed leaf litter with pieces of wood and humus under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz
- Panama, Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well-decayed leaf litter below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth, 100 m a.s.l., partially to well-decayed leaf litter under uppermost layer with pieces of wood, dry to moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 70 m a.s.l., partially-decayed leaf litter and pieces of wood below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 40 m a.s.l., under *Chrysophila nana*, partially well-decayed leaf litter under uppermost layer with humus, dry to moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., between buttressed roots, well-decayed leaf litter, moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well-decayed leaf litter with humus, moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, at small rivulet, Tropical Moist Forest, 60 m a.s.l., roots of *Selaginella* and leaves with undergrowth, moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 150 m a.s.l., between buttressed roots, deep litter layer (10 cm), decayed leaf litter with pieces of wood and humus below uppermost layer, moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 150 m a.s.l., partially-decayed leaf litter with pieces of wood and humus, dry to moist, 28 II 1996, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, above small rivulet, Tropical Moist Forest, 70 m a.s.l., decaying wood from rotten trunk, moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, near Encañada, Tropical Moist Forest, older forest, 60 m a.s.l., partially well-decayed leaf litter and pieces of wood under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, along small rivulet, Tropical Moist Forest, 60 m a.s.l., deep leaf litter with much humus and roots, moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth with *Bactris major*, 80 m a.s.l., well-decayed leaf litter under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz
- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, 80 m a.s.l., well-decayed leaf litter with decaying wood, dry, 28 I 1997, leg. H. Schatz

- Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest with palms, 80 m a.s.l., partially-decayed leaf litter and humus under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz
- Panama, Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz
- Panama, Panama Canal, Semaphor Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz
- Panama, Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest with thin litter layer, 60 m a.s.l., well-decayed leaf litter, dry, 28 I 1996, leg. H. Schatz
- Panama, Panama Canal, Sendero La Plantación at Río Chico Masambi, Tropical Moist Forest with secondary growth, 50 m a.s.l., under big tree between buttressed roots, well-decayed leaf litter and much humus, dry to moist, 24 I 1997, leg. H. Schatz
- Panama, Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed leaf litter (*Cecropia* leaves), moist, 25 I 1996, leg. H. Schatz
- Panama, Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with thin but continuous litter layer, leaf litter, dry to moist, 25 I 1996, leg. H. Schatz
- Panama, Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz
- Panama, Costa Abajo, north of Achiote near Piña, Tropical Wet Forest with many *Monstera* and *Philodendron*, 30 m a.s.l., thin, well-decayed leaf litter, moist, 26 I 1996, leg. H. Schatz
- Panama, Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz
- Panama, Costa Abajo, east of Piña, 5 m a.s.l., small dry forest stand along coast with Araceae and *Ficus*, well-decayed leaf litter with roots and humus below undecayed uppermost layer, dry to moist, 25 I 1996, leg. H. Schatz
- Panama, Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, under *Ficus* and *Ephylandra*, thin organic litter layer, partially-decayed leaf litter below uppermost layer, dry to moist, 25 I 1996, leg. H. Schatz
- Panama, Costa Abajo, old road to Piña, 150 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed, dense leaf litter under big trees, moist, 25 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., tree, epiphytic moss with thin humus layer in 2–3 m altitude, dry to moist, 20 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., under rotting tree, well-decayed leaf litter and humus, moist, 20 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., under rotting tree, organic litter and humus of bromelia, 20 I 1996, leg. H. Schatz
- Panama, Gamboa, Pipeline Road, Soberania National Park, south of Río Frijolito, Tropical Moist Forest, 50 m a.s.l., thin organic litter layer, decayed leaf litter and humus, moist to wet, 18 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces along trail under dense liana tangle, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf litter and humus and small pieces of wood, moist, 20 I 1996, leg. H. Schatz
- Panama, Gamboa, Pipeline Road, Soberania National Park, north of Río Frijolito, Tropical Moist Forest, in secondary growth, 60 m a.s.l., well-decayed leaf litter and roots, moist, 18 I 1996, leg. H. Schatz
- Panama, Gamboa, Pipeline Road, south of Río Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with humus, dry, 19 I 1997, leg. H. Schatz
- Panama, Gamboa, near swamp at Río Chagres, Tropical Moist Forest, 30 m a.s.l., leaf litter on surface, dry, 23 I 1997, leg. H. Schatz
- Panama, Gamboa, Pipeline Road, south of Río Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth under *Cecropia* and *Ochroma pyramidale*-Balsa, many palms, thin leaf litter layer and pieces of wood on surface, well-decayed leaf litter, dry, 19 I 1997, leg. H. Schatz
- Panama, Gamboa, Pipeline Road, Tropical Moist Forest, 50 m a.s.l., under *Heliconia* and *Ochroma pyramidale*-Balsa, well-decayed leaf litter and decayed wood, thin litter layer on surface, dry to moist, 18 I 1997, leg. H. Schatz

- Panama, Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces along trail near dense liana tangle, Tropical Moist Forest, 50 m a.s.l., partially-decayed leaf litter, moist, 20 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, near small rivulet, Tropical Moist Forest, 60 m a.s.l., on tree, algae, cyanobacteria, and moss, scratched from tree bark, dry to moist, 20 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., dense litter layer, well-decayed leaf litter with pieces of wood, dry to moist, 20 I 1996, leg. H. Schatz
- Panama, Soberania National Park, Camino de Cruces, small clearing with *Ceiba pentandra* and many palms, Tropical Moist Forest, 60 m a.s.l., well-decayed leaf litter with humus below uppermost layer, dry to moist, 20 I 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, dense forest with secondary vegetation, under Melastomataceae, 580 m a.s.l., well-decayed leaf litter with roots and humus, moist, 17 II 1996, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, interior of Parque Natural, 10 km south of coast, Tropical Moist Forest, 80 m a.s.l., well recovered secondary seasonal rain forest to transition forest with large *Cavannilesia*, *Panamá*, *Hura*, *Gnethum*, many young trees, partially well-decayed leaf litter below uppermost layer with humus, moist, 15 II 1997, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, 15 km south of coast, Tropical Moist Forest, 50 m a.s.l., secondary seasonal rain forest with many young trees and large *Cavannilesia* and *Ceiba pentandra*, well-decayed leaf litter below uppermost layer with humus and mouldy leaves, moist, 15 II 1997, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Alegre at northern end, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and many vines (*Mocuna*), well-decayed leaf litter of vines, dry to moist, 14 II 1997, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, 5 km north of Cana, in secondary growth, 530 m a.s.l., thin litter layer, well-decayed leaf litter and humus below uppermost layer, dry, 21 II 1996, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Premontane Rain Forest, below campsite and bamboo belt, 1500 m a.s.l., well-decayed leaf litter and humus below uppermost layer, moist, 20 II 1996, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, on top of mountain, Premontane Rain Forest with many palms (*Welfia*) and *Cyathea* ferns, many epiphytes, 1590 m a.s.l., thin litter layer, partially-decayed leaf litter (*Celusia*) with roots and humus, moist, 19 II 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, well-developed secondary forest above mine, 700 m a.s.l., deep litter layer, well-decayed leaf litter with roots and humus below uppermost layer, dry to moist, 22 II 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, in secondary growth with dense undergrowth, also *Cyathea* ferns along river to mine, 600 m a.s.l., thin litter layer, well-decayed leaf litter with pieces of wood and humus, dry to moist, 22 II 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth with palms (*Welfia*), 550 m a.s.l., well-decayed leaf litter with roots and humus, below wet surface, moist, 17 II 1996, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Tropical Wet Forest with palms, 700 m a.s.l., dense leave litter layer, well-decayed leaf litter with roots, dry to moist, 20 II 1996, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest, under palm (*Geonoma*), 1200 m a.s.l., well-decayed leaf litter and humus below uppermost layer, moist, 20 II 1996, leg. H. Schatz

- Panama, Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest below bamboo, 1220 m a.s.l., dense well-decayed leaf litter and humus under uppermost layer, moist, 20 II 1996, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Tropical Wet Forest, in small crevice, 900 m a.s.l., deep, very well-decayed leaf litter and humus, dry to moist, 20 II 1996, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, 17 km south of coast, Tropical Moist Forest, 70 m a.s.l., well recovered secondary seasonal rain forest with undergrowth, partially well-decayed leaf litter with mouldy pieces of wood, dry to moist, 15 II 1997, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well-decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz
- Panama, Darién, Golfo de San Miguel – Punta Patiño, 12 km south of coast, Tropical Moist Forest, 60 m a.s.l., in gap of older secondary forest, well-decayed leaf litter below uppermost layer with pieces of wood, moist, 15 II 1997, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Premontane Rain Forest, 1580 m a.s.l., bamboo leaf litter with decayed leaf litter and roots, humus, moist to wet, 19 II 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth, 530 m a.s.l., in deep litter layer, well-decayed leaf litter and pieces of wood, moist, 17 II 1996, leg. H. Schatz
- Panama, Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth with palms, 550 m a.s.l., very well-decayed leaf litter, moist to wet, 17 II 1996, leg. H. Schatz
- Panama, Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest with *Cyathea* ferns, 1580 m a.s.l., well-decayed, deep fern litter with humus, roots and pieces of fern leaves, moist to wet, 19 II 1996, leg. H. Schatz
- Panama, surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz
- Panama, Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz
- Panama, La Fortuna – Prov. Chiriquí, Cordillera Talamanca, at Rio Hornito, at small river, Lower Montane Rain Forest, 1120 m a.s.l., partially-decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, east of Caldera, premontane Wet Forest, 380 m a.s.l., dry forest, leaf litter with *Acacia* sp. spines below uppermost layer, dry, 06 II 1997, leg. H. Schatz
- Panama, Prov. Chiriquí, Isla Boca Brava south of David, northeastern side of the island, Deciduous Dry Forest, 20 m a.s.l., partially-decayed leaf litter, dry to moist, 05 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, dense leaf litter layer, Lower Montane Rain Forest, 1260 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz
- Panamá, Prov. Chiriquí – La Fortuna, Cordillera Talamanca, Sendero Rio Hornito, slope above river, dense leaf litter layer, Lower Montane Rain Forest, Cloud Forest, 1100 m a.s.l., partially-decayed leaf litter and humus, moist to wet, 09 II 2000, leg. H. Schatz
- Panama, La Fortuna, Cordillera Talamanca, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., partially-decayed leaf litter, moist to wet, 09 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., undecayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1280 m a.s.l., *Bromelia* roots with moss and humus from a fallen tree, about 25 m high, moist, 10 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1250 m a.s.l., epiphytic moss and *Bromelia* roots with humus from a fallen tree, about 15 m high, moist to wet, 09 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with pieces of wood between roots, dry to moist, 05 II 1997, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1150 m a.s.l., moss from bark with humus underneath, moist, 09 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz

- Panama, Prov. Chiriquí, surrounding of Boquete, Lower Montane Wet Forest, Sendero Los Quetzales, small patch of forest, 1750 m a.s.l., fern litter, moist, 05 II 1997, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., partially to well decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1220 m a.s.l., partially-decayed leaf litter, moist to wet, 19 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1240 m a.s.l., partially to well decayed leaf and bamboo litter, moist to wet, 19 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1250 m a.s.l., moss from bark, moist, 09 II 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well-decayed leaf and fern litter, moist to wet, 17 II 2004, leg. H. Schatz
- Panama, Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz
- Panama, Prov. Chiriquí, Cordillera Talamanca, La Fortuna, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., moss from tree at about 1 m altitude, moist to wet, 17 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, La Fortuna, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz
- Panama, Cordillera Talamanca, La Fortuna, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., well-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, under dwarf shrubs below transmitting aerials, Subalpine Paramo, 3333 m a.s.l., deep leaf litter with few moss and humus, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, edge of *Quercus*-forest beside sheep pasture, 2333 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus below uppermost layer, moist, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, bambus forest at La Nevera, 3150 m a.s.l., dense well-decayed bambus leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus*, 2470 m a.s.l., dense well-decayed leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus* and *Laurus* sp., 2600 m a.s.l., dense well-decayed leaf litter with humus, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., decayed leaf litter and humus, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, 1900 m a.s.l., epiphytic lichens and bark from trees, moist, 19 II 2000, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, *Quercus*-forest, 2200 m a.s.l., dense well-decayed leaf litter and humus, moist, 19 II 2000, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz

- Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2400 m a.s.l., well decayed leaf litter beside trunk, moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock with lichens and decayed leaf litter and humus layer, 1 m below previous sample, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2350 m a.s.l., dense well decayed leaf litter under *Quercus costaricensis*, moist, 21 II 2004, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., dense leaf litter between roots, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus*, 2800 m a.s.l., dense well-decayed leaf litter with moss and humus, moist, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, lower edge of *Quercus* forest at slope, 2270 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus, dry to moist, 04 II 1997, leg. H. Schatz
- Panama, Cordillera Talamanca, Volcán Barú, beside road to summit, Montane Rain Forest, bambus forest, 3250 m a.s.l., dense well-decayed bambus leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz
- Panama, Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispata*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz
- Panama, Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest on steep slope, 890 m a.s.l., under big tree, leaf litter, moist to wet, 10 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest above pasture, 880 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, 900 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest, 950 m a.s.l., deep litter layer, well-decayed leaf litter and humus under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, near Alto Piedras, at Cerro Tute, Premontane Wet Forest, dense forest with palms and secondary growth, at water cistern, 830 m a.s.l., very well-decayed leaf litter under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz
- Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Premontane Wet Forest, dense forest above pasture with *Ficus* sp., palms and *Heliconia*, 850 m a.s.l., thin litter layer, partially-decayed leaf litter and pieces of wood, moist, 10 II 1996, leg. H. Schatz
- Panama, Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, beside a small trail, under *Socratea*-palm, partially-decayed leaf litter with pieces of wood and humus, dry to moist, 12 II 1997, leg. H. Schatz
- Panama, Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 10 m a.s.l., Coastal Rain Forest with secondary growth, beside a small river, undecayed leaf litter under uppermost layer, moist, 12 II 1997, leg. H. Schatz

- Panama, Costa Arriba, Caribbean Coast, near Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, well-decayed leaf litter, dry to moist, 12 II 1997, leg. H. Schatz
- Panama, El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, along river, dense undergrowth with many young trees, 780 m a.s.l., between buttressed roots, well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz
- Panama, El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, along river, dense undergrowth with many young trees, 780 m a.s.l., between buttressed roots, very well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz
- Panama, El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, dense undergrowth and gap-vegetation, 830 m a.s.l., well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz
- Panama, Península Soná, Punta Catalina, Tropical Moist Forest beside beach, 5 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz
- Panama, Península Soná, north of Las Palmas, Tropical Moist Forest beside road, 180 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz
- Panama, Península Soná, south of Las Palmas, Tropical Moist Forest with *Ochroma pyramidale*, 200 m a.s.l., partially well-decayed leaf litter with few humus, dry to moist, 03 II 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well-decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 850 m a.s.l., young growth with *Colpotherinx cookii* palms, thin litter layer under Melastomataceae and ferns, partially well-decayed leaf litter, moist to wet, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 880 m a.s.l., in young growth, leaf litter with clayey humus, moist to wet, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 820 m a.s.l., above clearing of finca, dense forest with bamboo, well-decayed leaf litter, partially mouldy, below uppermost layer with big leaves, moist to wet, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 850 m a.s.l., near trail junction, dense primary forest with many *Cyathea*-ferns and palms, *Xalapeia*, *Bauhinia* and Melastomataceae, well-decayed leaf litter with clayey humus below uppermost layer, moist to wet, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 900 m a.s.l., bromelias from trees with roots and trunk, partially decayed, moist, partially wet, 30 I 1997, leg. H. Schatz
- Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 900 m a.s.l., different moss species from tree with partially decayed bark, moist, 30 I 1997, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach, 5 m a.s.l., partially-decayed leaf litter with sand, moist to wet, 04 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 10 m a.s.l., very well-decayed leaf litter between rocks, deep litter layer, moist, 01 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach under Melastomataceae and Cycadaceae, 5 m a.s.l., well-decayed leaf litter with sand, no humus layer, moist to wet, 04 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves 0 m a.s.l., well-decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in swampy forest with dense undergrowth, many lianas, 20 m a.s.l., well-decayed leaf litter, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz
- Panama, Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, 5 m a.s.l., undecayed leaf litter with sand, roots, and pieces of wood, very thin litter layer, moist, 01 II 1996, leg. H. Schatz

- Panama, Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 100 m behind beach, 20 m a.s.l., very well-decayed leaf litter and humus, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz
- Panamá, Bocas del Toro, Isla Colón, Tropical Moist Forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers
- Panama, Parque Natural Metropolitana, under *Anacardium excelsum* and *Carludovicia palmata*, Tropical Moist Forest, 110 m a.s.l., dense well-decayed leaf litter (*Anacardium* leaves) with humus below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz
- Panama, Parque Natural Metropolitana, Tropical Moist Forest, under *Pseudobombax septenatum*, 90 m a.s.l., partially-decayed leaf litter, moulded, below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz
- Panama, Fuerte Sherman forest near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., partially well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz
- Panama, Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., dense well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz
- Panama, Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest at Rio Chagres, 1 m a.s.l., partially-decayed leaf litter under uppermost layer with mud, dry to moist, 01 III 2004, leg. H. Schatz
- Panama, Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, in steep forest beside small beach near Fuerte San Lorenzo, 5 m a.s.l., well-decayed leaf litter and roots, dry to moist, 01 III 2004, leg. H. Schatz
- Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", 700 m a.s.l., dense well-decayed leaf litter under *Wercklea cochleana*, moist to wet, depth 10 cm, 03 III 2004, leg. H. Schatz
- Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", 720 m a.s.l., well-decayed leaf litter and *Heliconia* leaves, moist to wet, depth 4 cm, 03 III 2004, leg. H. Schatz
- Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz
- Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Las Ranas" at steep part south of small river, 700 m a.s.l., partially-decayed leaf and bamboo litter beside trail, moist to wet, depth 3 cm, 03 III 2004, leg. H. Schatz
- Panama, Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under palms, 35 m a.s.l., partially-decayed leaf litter with pieces of wood and soil, thin litter layer, dry to moist, 08 II 1996, leg. H. Schatz
- Panama, Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under *Bursera simaruba* and *Acacia bullhorni*, 35 m a.s.l., well-decayed organic litter, below uppermost layer, dry, 08 II 1996, leg. H. Schatz
- Panama, Madden Dam, Deciduous Dry Forest, under *Bursera simaruba* and palms, ferns, vines, 40 m a.s.l., partially-decayed leaf litter between rocks with pieces of wood and humus, dry to moist, 08 II 1996, leg. H. Schatz
- Panama, Madden Dam, Deciduous Dry Forest, 40 m a.s.l., well-decayed leaf litter and humus, below uppermost level, dry to slightly moist, 08 II 1996, leg. H. Schatz
- Panama, Buena Vista, 27 m a.s.l., litter of forest, 18 V 2006, leg. P. Łukasik
- Panama, Fort Sherman, 140 m a.s.l., some km from mouth of a canal, 05 V 2006, leg. P. Łukasik
- Panama, Azuero Peninsula, Sarigua, Dry Deciduous Forest with cacti, Premontane Dry Forest, 10 m a.s.l., partially-decayed leaf litter with pieces of wood, dry, 12 II 1996, leg. H. Schatz
- Panama, El Valle Antón, 630 m a.s.l., dense leaf litter, almost undecayed with humus, moist, 08 II 1996, leg. H. Schatz

CUBA

- Cuba, Province Cienfuegos, Yaguramas, forest, moder sample from deciduous wood, 02 X 1981, leg. J. Rusek
- Cuba, Camaguey, Sierra de Cubitas, semideciduous forest, litter, 26 XI 1996, leg. V. Lio

- Cuba, La Habana, Santa Cruz del Norte, Boca de Canasi, evergreen microphyllous forest, litter, 27 XI 1999, leg. A. Barro
- Cuba, La Habana, Santa Cruz del Norte, Boca de Conasi, evergreen microphyllous forest, soil, X 2002, leg. C. Vergara
- Cuba, La Habana, Santa Cruz del Norte, Jibacoa, Las Caletas semideciduous forest, litter, 20 VI 2002, leg. A. Vidal
- Cuba, La Habana, Bejucal–Madruga–Coliseo hills, litter of semideciduous forest, 10 XI 2002, leg. D. Prieto
- Cuba, La Habana, deciduous trees near Biological Faculty of University and near National Hotel, 03 VI 2004, leg. W. Niedbala
- Cuba, Matanzas, Cienaga de Zapata, sea grape forest (*Coccoloba uvifera*), litter, 28 X 2001, leg. D. Prieto
- Cuba, Matanzas, Bacunayagua, Habana slope, litter of semideciduous forest, 21 VI 2002, leg. D. Prieto
- Cuba, Sancti Spiritus, Topes de Collantes, litter of pines (*Pinus caribaea*) and ferns, 29 X 2002, leg. D. Prieto
- Cuba, 20 km S from National Motorway, Zapata Peninsular primary deciduous forest, 01 VI 2004, leg. W. Niedbala
- Cuba, 140 km W from La Habana, Fiesta Campesina, deciduous and palms trees, 01 VI 2004, leg. W. Niedbala

DOMINICAN REPUBLIC

- Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. L. Kaczmarek

VIRGIN ISLANDS

- Virgin Is., N 18°21.822' W 064°43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana

VENEZUELA

- Venezuela, Vicinity of Caracas, Parque Nacional El Avila Pico Avila, near summit, ca 2000 m, under shrubs, 15 IV 2006, leg. M. Liana
- Venezuela, Vicinity of Caracas, Parque Nacional El Avila Pico Avila, remote from summit, ca 2000 m, 15 IV 2006, leg. M. Liana

ECUADOR

- Ecuador, East Cordillera, 3 400 m, Papallacta valley, 19 IX 2004, leg. J. Wojtusiak
- Ecuador, slopes of Chiles Volcano, Golondrinas reserve, 2 400 m, cloud forest, 19 VI 1999, leg. Z. Szyn-dlar

BRAZIL

- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of decaying wood with termites with moss on the surface, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest near old building of former Parasitological Institute sample of rhizosphere and grass litter from the small meadow, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of litter and rhizosphere, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of decaying wood, 04 XI 2002, leg. J. Stary

- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of litter, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of brown decaying wood from lying trunk, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, deciduous forest above house where was my accommodation, sample of leaf litter, 07 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, 100 m from Museum of Microbiology, cocconut palm forest, sample of palm leaf litter, 07 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, 100 m from Museum of Microbiology, cocconut palm forest, sample of brown decaying wood, 07 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Instituto Butantan, artificial green near buiding of Entomologia and Parasitologia, sample of grass rhizosphere, 07 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Instituto Butantan, dense banana busch, sample of banana leaf litter, 15 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Butantan, near Laboratory of Parasitology and Entomology, sample of leaf litter from the fruit tree, 24 XI 2002, leg. J. Stary
- Brazil, São Paulo State, São Paulo, Butantan, near Hospital, group of leaf trees, sample of leaf litter 27 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of moss from the rock crevices, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of wet moss from the rock crevices, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of bush leaf litter growing on the rock wall, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between boulders, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between stones, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary
- Brazil, São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary
- Brazil, Parana State, Curritiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of rhizosphere of mosses and epiphytes on lying *Araucaria* trunk, 18 XI 2002, leg. J. Stary
- Brazil, Parana State, Curritiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of *Araucaria* litter, 18 XI 2002, leg. J. Stary
- Brazil, Parana State, Curritiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of brown decaying wood from *Araucaria* stump, 18 XI 2002, leg. J. Stary

CHILE

- Chile, Patagonia, S 39°43.251' W 73°23.809', Los Lagos, Nahuel Huapi, Valdivia, Curinanco, litter from young forest with *Notofagus*, 03 II 2006, leg. W. Magowski

- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Sector Correntoso, mixed forest, litter under *Notofagus*, 04 II 2006, leg. W. Magowski
- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Sector Correntoso, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski
- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski
- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Laguna Sargazo, mixed forest with *F. cupressoides*, mosses, 05 II 2006, leg. W. Magowski
- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Laguna Sargazo, mixed forest with *F. cupressoides*, mosses, 05 II 2006, leg. W. Magowski
- Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, mixed forest with *F. cupressoides*, wood dust from trunk, 05 II 2006, leg. W. Magowski

ARGENTINA

- Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski
- Argentina, Patagonia 001, S 54°48.907' W 68°32.543', Tierra del Fuego, Cerro Guanaco, mountain forest with *N. pumilio*, litter, 17 I 2006, leg. W. Magowski
- Argentina, Patagonia 003, S 54°49.355' W 68°33.408', Tierra del Fuego, Ushuaia, Cerro Guanaco, mountain forest with *N. pumilio*, litter, 17 I 2006, leg. W. Magowski
- Argentina, Patagonia 009, S 41°12.361' W 71°27.722', Rio Negro, Bariloche, Nahuel Huapi PN, Refugio Frey, near Van Titten, bamboo thicket, 26 I 2006, leg. W. Magowski
- Argentina, Patagonia 012, S 41°12.403' W 71°27.423', Rio Negro, Bariloche, Nahuel Huapi, Refugio Frey, near Van Titten, wood dust in forest, 26 I 2006, leg. W. Magowski

URUGUAY

- Uruguay, Patagonia 038, S 34°51.846' W 56°00.539', Montevideo, Alerce Andino, 20 km NE of Mtv, litter in mixed (pine+eucalyptus) forest, 10 II 2006, leg. W. Magowski
- Uruguay, Patagonia 040, S 34°51.846' W 56°00.539', Montevideo, Alerce Andino, 22 km NE from Mtv, litter of mixed (pine+eucalyptus) forest, 10 II 2006, leg. W. Magowski

LIST OF RECORDED SPECIES

Prototritia palaciosi MAHUNKA et MEJIA-RECAMIER, 1998

(Figs 2. A-C)

Measurements of specimen from new locality of Panama: prodorsum: length 177, width 131, height 81.0, sensillus 50.6, setae: interlamellar 25.3, lamellar 53.1, rostral 27.8; notogaster: length 252, width 222, height 202, c_1 seta 58.2; genitoaggenital plate 88.5×15.2, anoadanal plate 93.6×16.6

All characters are similar to description of Mahunka and Mejia-Recamier (1998) only the specimens from Panama have 7 pairs of genital and anal setae instead 8 pairs of these setae of specimens from Mexico.

Chaetome of legs (without tarsi): I: 1–5–5–5(1), II: 1–5–4–6(1), III: 2–3–4–5(1); IV: 2–3–4–3(1). Tarsi heterotridactylous.

Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 130 m a.s.l., cleared forest with many vines, leaf litter, dry to moist, 24 I 1996, leg. H. Schatz – (2 sp.); Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed leaf litter (*Cecropia* leaves), moist, 25 I 1996, leg. H. Schatz – (2 sp.).

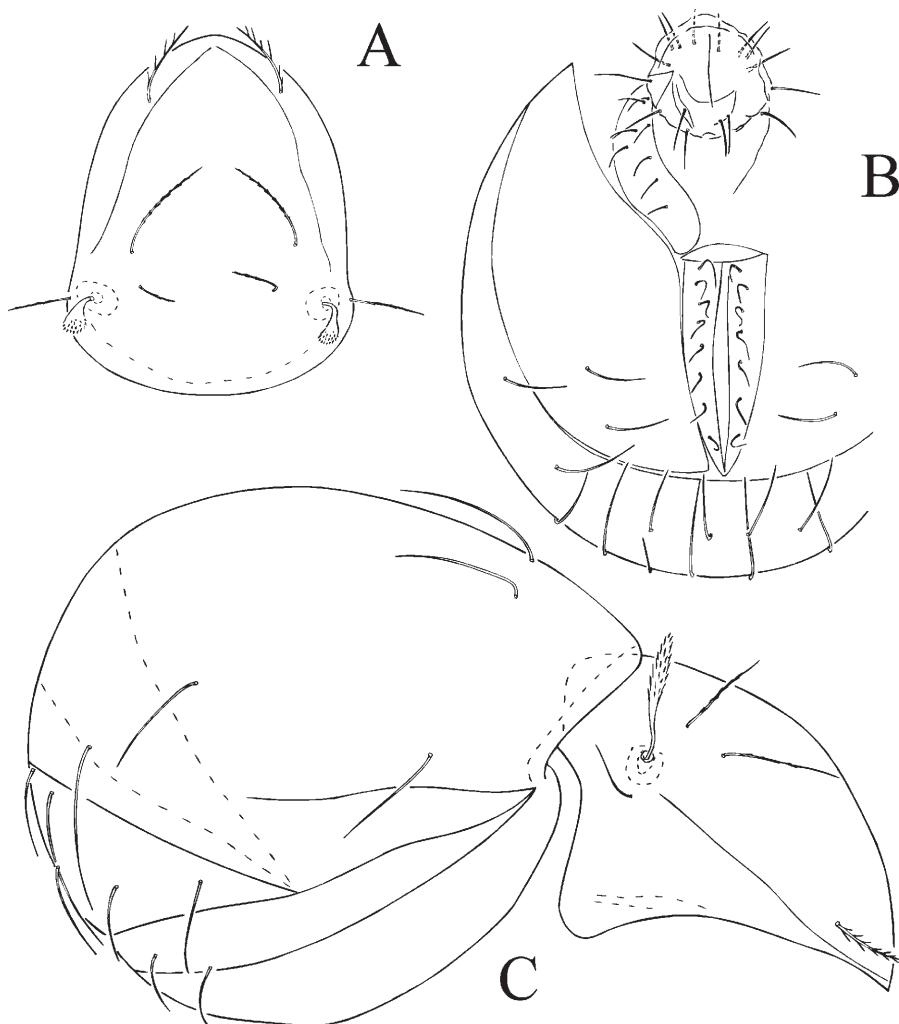
The first time found in Panama.

Distribution. Neotropical, Mesoamerica only.

***Mesoplophora (Mesoplophora) bacilla* NIEDBAŁA, 2004**

Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (1 sp.);

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/AM – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/BH – (40 sp.); Prov. Heredia, 11 km SE La



2. A-C. *Prototritia palaciosi* MAHUNKA et MEJIA-RECAMIER, 1998, specimen from Isla Taboga, Panama. A – prodorsum, dorsal view; B – ventral side of opisthosoma; C – lateral view of body

Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 II 2003, 05/WF/02 – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 III 2003, 05/WF/04 – (30 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AS – (8 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BM – (12 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BV – (15 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AH – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 18 III 2003, 05/WF/03 – (21 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 IV–19 IV 2003, 05/WP/03 – (5 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II 2003, 05/WP/01 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 10 II–23 IV 2004, 03/B/BS – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BF – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (3 sp.);

Ecuador, slopes of Chiles Volcano, Golondrinas reserve, 2 400 m, cloud forest, 19 VI 1999, leg. Z. Szyndlar – (14 sp.).

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian. The first time found in Belize and Costa Rica.

***Mesoplophora (M.) gaveae* SCHUSTER, 1962**

Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 13 IV 2004, 03/WF/02 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 15 II–23 IV 2004, 03/B/AS – (3 sp.).

Distribution. Pantropical.

***Mesoplophora (Mesoplophora) hauseri* MAHUNKA, 1982**

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II 2003, 05/WP/01 – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BF – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01 – (9 sp.);

Panama, Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (2 sp.); Buena Vista, 27 m a.s.l., litter of forest, 18 V 2006, leg. P. Łukasik – (5 sp.); Darién, Cana, Tropical Wet Forest, dense forest with secondary vegetation, under Melastomataceae, 580 m a.s.l., well-decayed leaf litter with roots and humus, moist, 17 II 1996, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Mesoamerican and Patagono–Andean.

***Mesoplophora (Mesoplophora) parabacilla* NIEDBALA, 2006**

Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest on steep slope, 890 m a.s.l., under big tree, leaf litter, moist to wet, 10 II 1996, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Panama.

***Mesoplophora (Mesoplophora) permodica* NIEDBALA, 1985**

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/AM – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AS – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BM – (5 sp.).

Distribution. Nearctic central and southern parts and Neotropical, Costa Rica and Venezuela. The first time found in Costa Rica.

***Mesoplophora (Mesoplophora) pusilla* SCHUSTER, 1962**

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*; moist, 09 III 2004, leg. H. Schatz – (1 sp.); Near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (120 sp.);

Panama, Soberania National Park, Camino de Cruces, small clearing with *Ceiba pentandra* and many palms, Tropical Moist Forest, 60 m a.s.l., well-decayed leaf litter with humus below uppermost layer, dry to moist, 20 I 1996, leg. H. Schatz – (30 sp.)

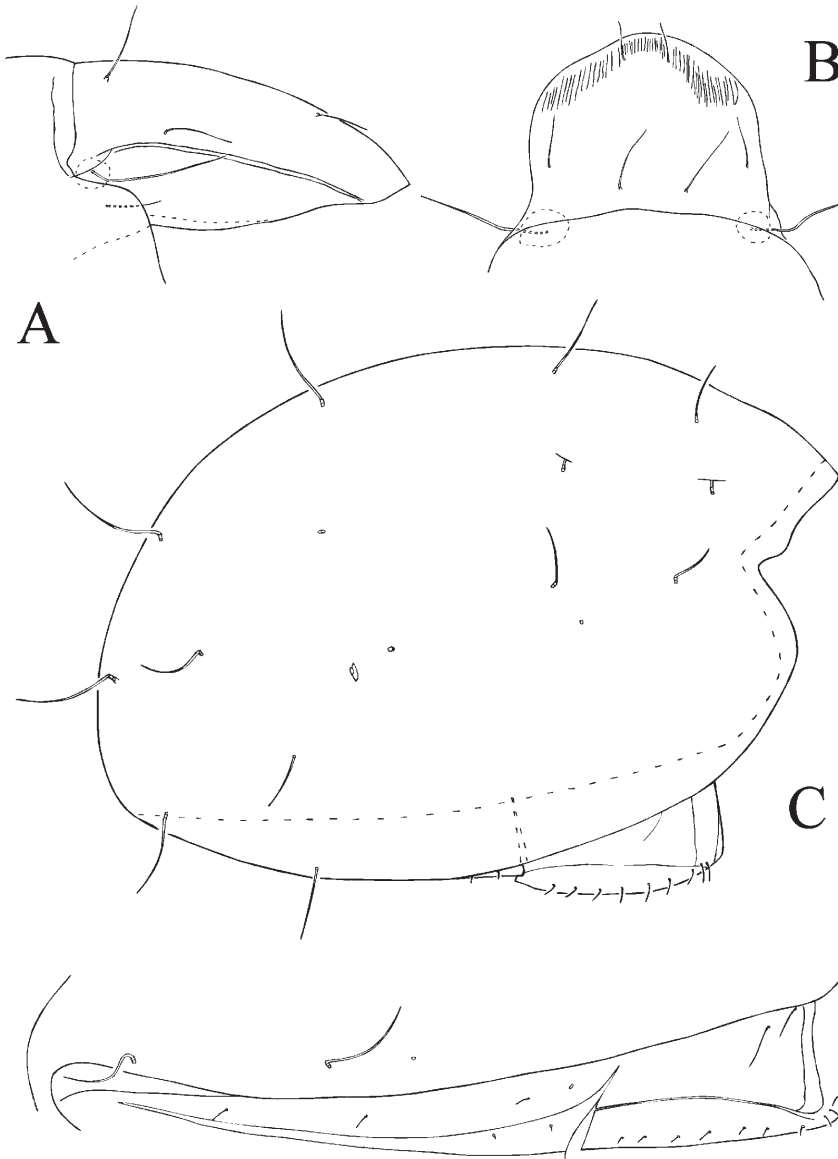
Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. Ł. Kaczmarek – (1 sp.).

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian. The first time found in Dominican Republic.

***Mesoplophora (Parplophora) bacula* NIEDBALA, 2003**

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 II 2001, 11/B/BH/020 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 II 2001, 11/WF/03/19 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/10 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 II 2001, 11/B/BE/118 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AM/094 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 13 IV 2001, 11/B/BV/107 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/39 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 II 2001, 11/WF/02/33 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/15 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/23 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/32 – (4 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/047 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/20 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/30 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BH/054 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/02 – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/BE – (9 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II 2004,

03/B/BE – (20 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BH – (120 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (50 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (50 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 13 IV 2004,



3. A-D. *Oribotritia alajuela* NIEDBALA, 2003, specimen of locality ALAS Barva, Costa Rica. A – prodorsum, lateral view; B – prodorsum, dorsal view; C – lateral view of opisthosoma; D – genitoaggenital and anoadanal plates, lateral view

03/WF/02 – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 10 II–23 IV 2004, 03/B/AH – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 10 II–23 IV 2004, 03/B/AM – (20 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 15 II–23 IV 2004, 03/B/AS – (18 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (ca 50 sp.).

Distribution. Neotropical, Mesoamerica.

***Oribotritia alajuela* NIEDBALA, 2003**

(Figs 3. A–D)

Measurements of specimen from locality of Costa Rica, under *Terminalia*: prodorsum: length 379, height 141, width 262, sensillus 126, setae: interlamellar 75.9, lamellar 53.1, rostral 55.7, exobothridial 53.1; notogaster: length 646, height 364, width 414, setae c_l 80.8, h_l and ps_l 167; genitoaggenital plate 162×65.6, anoadanal plate 293×25.2

These specimens are smaller than holotype. All characters are the same as in holotype except the implantation of c_l setae, remote from anterior border and anal setae situated close each other.

Costa Rica, ALAS Barva, transect 1500 m. rainforest, decayed wood with moss and epiphytes, 13 II 2005, leg. A. Napierala – (1 sp.);

Panama, Peninsula Soná, Punta Catalina, Tropical Moist Forest beside beach, 5 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Isla Boca Brava south of David, northeastern side of the island, Deciduous Dry Forest, 20 m a.s.l., partially-decayed leaf litter, dry to moist, 05 II 2000, leg. H. Schatz – (3 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz – (2 sp.); Barro Colorado Island, above small rivulet, Tropical Moist Forest, 70 m a.s.l., decaying wood from rotten trunk, moist, 28 I 1997, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, 40 m a.s.l., well-decayed leaf litter and humus, below uppermost level, dry to slightly moist, 08 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica.

***Oribotritia allocota* NIEDBALA, 2003**

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, near swamp, well decayed leaf litter with pieces of wood and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica and northern part of South America.

***Oribotritia attenuata* NIEDBALA et SCHATZ, 1996**

Cocos Island, Costa Rica, trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (1 sp.);

Costa Rica, Cordillera de Tilarán, Reserva Biológica Monteverde, Santa Elena, about 1700 m a.s.l., cloud forest, outer trail, well decayed leaf litter under Melastomataceae and *Xanthosoma jaquini*, moist, 13 II 1995, leg. H. Schatz – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16' N 84°05'W, 22 and 23 II 2001, 11/WF/01/45 – (2 sp.).

Distribution. Neotropical, Mesoamerica and Cocos Island.

***Oribotritia partita* NIEDBALA, 2003**

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/49 – (2 sp.);

Panama, Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, beside a small trail, under *Socratea*–palm, partially–decayed leaf litter with pieces of wood and humus, dry to moist, 12 II 1997, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest above pasture, 880 m a.s.l., deep litter layer, well–decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (2 sp.); Peninsula Soná, Punta Catalina, Tropical Moist Forest beside beach, 5 m a.s.l., partially well–decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 10 m a.s.l., very well–decayed leaf litter between rocks, deep litter layer, moist, 01 II 1996, leg. H. Schatz – (5 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz – (3 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest, 950 m a.s.l., deep litter layer, well–decayed leaf litter and humus under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz – (8 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves, 0 m a.s.l., well–decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz – (4 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1240 m a.s.l., partially to well decayed leaf and bamboo litter, moist to wet, 19 II 2004, leg. H. Schatz – (3 sp.); El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well–decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica.

***Oribotritia serrula* NIEDBALA et SCHATZ, 1996**

Cocos Island, Costa Rica, near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., epiphytic moss from *Cyathea*, mainly moist, part near bark, 09 III 1996, leg. H. Schatz – (1 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz – (3 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (4 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (5 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (1 sp.); Bahía Yglesias near waterfall, 30 m a.s.l., under low trees, *Philodendron*, *Psychotria* and ferns, thin litter layer, leaf litter on roots 10–20 cm above ground, partially well decayed leaf litter and roots, wet, 07 III 1996, leg. H. Schatz – (14 sp.); Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz – (8 sp.); Bahía Chatham, at small waterfall on southern side of the bay, 15 m a.s.l., fern litter with humus on rocks, moist, 10 III 1996, leg. H. Schatz – (23 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (3 sp.).

Distribution. Neotropical, Cocos Island.

***Oribotritia trisetosa* NIEDBAŁA et SCHATZ, 1996**

Cocos Island, Costa Rica, Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz – (2 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (6 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (8 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (1 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (7 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (3 sp.); 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (5 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (8 sp.); near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (8 sp.);

Panama, Bocas del Toro, Isla Colón, Tropical Moist Forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (1 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest on steep slope, 890 m a.s.l., under big tree, leaf litter, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica and Cocos Island.

***Mesotritia atractos* NIEDBAŁA, 2004**

Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski – (1 sp.).

Distribution. Neotropical, Brazil and Argentina only.

***Mesotritia breviseta* NIEDBAŁA et SCHATZ, 1996**

Cuba, La Habana, Santa Cruz del Norte, Boca de Canasi, evergreen microphyllous forest, litter, 27 XI 1999, leg. A. Barro – (1 sp.); La Habana, Bejucal–Madruga–Coliseo hills, semideciduous forest, litter, 10 XI 2002, leg. R. Rodríguez – (5 sp.); 20 km S from National Motorway, Zapata Peninsular primary deciduous forest, 01 VI 2004, leg. W. Niedbała – (2 sp.); La Habana, Bejucal–Madruga–Coliseo hills, litter of semideciduous forest, 10 XI 2002, leg. D. Prieto – (5 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Cuba.

***Mesotritia elegantula* STARÝ, 1992**

(Figs 4. A, B)

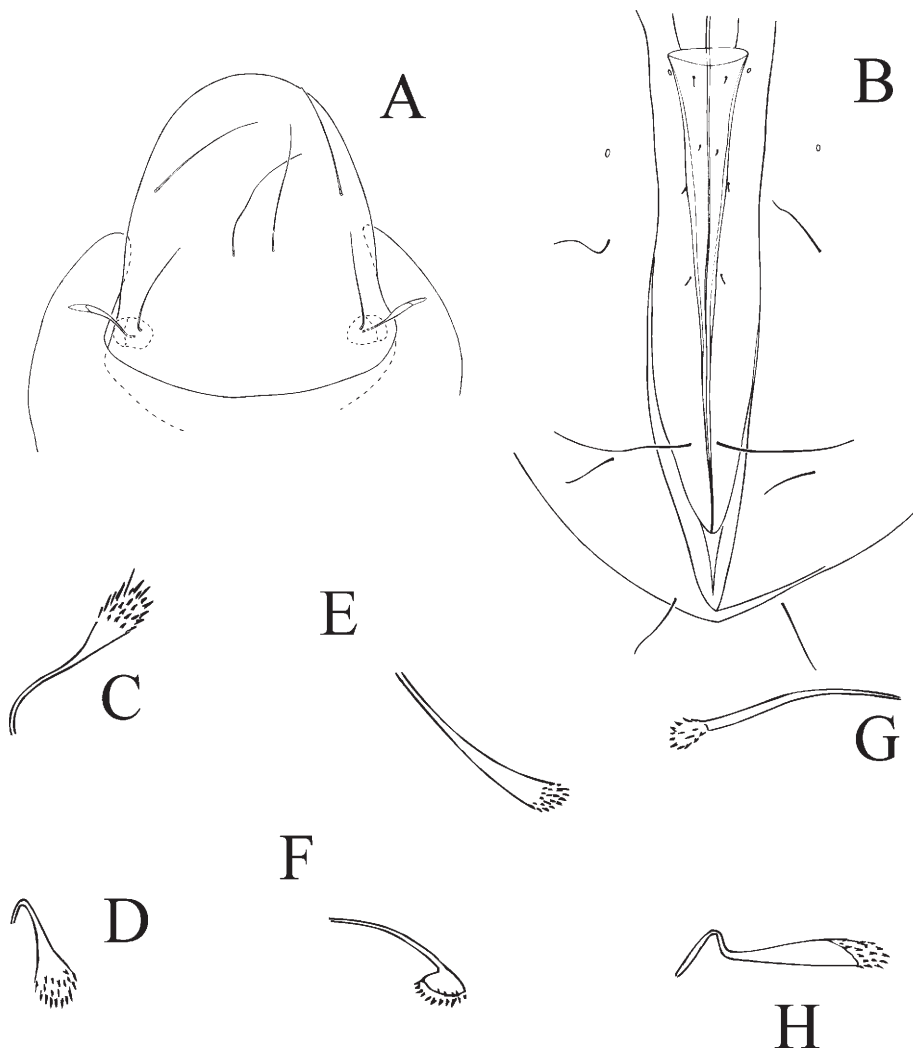
Cuba, Sancti Spiritus, Topes de Collantes, litter of pines (*Pinus caribaea*) and ferns, 29 X 2002, leg. D. Prieto – (1 sp.).

Distribution. Neotropical, Cuba only.

***Mesotritia nuda* (BERLESE, 1887)**

Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (1 sp.).

Distribution. Semicosmopolitan.



4. A, B. *Mesotritia elegantula* STARY, 1992, specimen from Sancti Spiritus, Cuba. A – prodorsum, dorsal view, B – ventral side with anoadanal plates. C-H. *Acrotrititia dinota* NIEDBALA and SCHATS, 1996, sensilli in different orientation of specimens from one population from Bahía Chatham, Cocos Island

Indotritia bellingeri NIEDBAŁA et SCHATZ, 1996

Galapagos Islands, Ecuador, Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (3 sp.); Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (2 sp.); Isla Santa Cruz, Media Luna, 21 VI 1992, leg. J. Palacios Aguirre – (1 sp.);

Mexico, Yucatán Peninsula, Quintana Roo, Kohunlich, 80 m a.s.l., secondary forest between Maya ruins, under bushes, partially-decayed leaf litter with pieces of wood, dry to moist, 07 III 2001, leg. H. Schatz – (1 sp.); Yucatán Peninsula, Calakmul, Campeche, 200 m a.s.l. dense lower tropical forest around Maya ruins, near Structure I, well-decayed leaf litter, moist, 21 IX 2002, leg. H. Schatz – (1 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, near swamp, well decayed leaf litter with pieces of wood and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (7 sp.); near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (5 sp.); Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (1 sp.)

Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (1 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispatha*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Alegre at northern end, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and many vines (*Mocuna*), well-decayed leaf litter of vines, dry to moist, 14 II 1997, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves 0 m a.s.l., well-decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz – (3 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in swampy forest with dense undergrowth, many lianas, 20 m a.s.l., well-decayed leaf litter, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz – (2 sp.); Barro Colorado Island, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (1 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.);

Cuba, La Habana, Santa Cruz del Norte, Jibacoa, Las Caletas semideciduous forest, litter, 20 VI 2002, leg. A. Vidal – (1 sp.); Matanzas, Bacunayagua, Habana slope, litter of semideciduous forest, 21 VI 2002, leg. D. Prieto – (3 sp.).

Distribution. Neotropical, broad, introduced to Florida.

Indotritia krakatauensis (SELLNICK, 1923)

Belize, Long Cay, Light House Reef, near coast line, 2 m a.s.l., dense tree and bush vegetation, well-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (22 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, partially-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (13 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (40 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (17 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (26 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (10 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (21 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (7 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter with pieces of wood and sand, moist, 09 III 2004, leg. H. Schatz – (1 sp.);

Panama, La Fortuna, Cordillera Talamanca, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispata*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (1 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., dense well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach under Melastomataceae and Cycadaceae, 5 m a.s.l., well-decayed leaf litter with sand, no humus layer, moist to wet, 04 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves 0 m a.s.l., well-decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (1 sp.);

Cuba, Matanzas, Ciénaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (5 sp.); La Habana, deciduous trees near Biological Faculty of University and near National Hotel, 03 VI 2004, leg. W. Niedbala – (3 sp.); 140 km W from La Habana, Fiesta Campesina, deciduous and palms trees, 01 VI 2004, leg. W. Niedbala – (6 sp.); La Habana, Santa Cruz del Norte, Boca de Conasi, evergreen microphyllous forest, soil, X 2002, leg. C. Vergara – (13 sp.);

Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. L. Kaczmarek – (3 sp.);

Virgin Island, N 18°21.822' W 064°43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (24 sp.).

Distribution. Pantropical. The first time found in Panama.

Euphthiracarus (Euphthiracarus) comteae MAHUNKA, 1982

Costa Rica, Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (1 sp.);

Panama, Bocas del Toro, Isla Colón, Tropical Moist Forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (4 sp.); Darién, Golfo de San Miguel – Punta Patiño, interior of Parque Natural, 10 km south of coast, Tropical Moist Forest, 80 m a.s.l., well recovered secondary seasonal rain forest to transition forest with large *Cavannilesia*, *Panamá*, *Hura*, *Gnethum*, many young trees, partially well-decayed leaf litter below uppermost layer with humus, moist, 15 II 1997, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 10 m a.s.l., very well-decayed leaf litter between rocks, deep litter layer, moist, 01 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (5 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well-decayed leaf and fern litter, moist to wet, 17 II 2004, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Mesoamerica, Costa Rica and Panama only.

***Euphthiracarus (Euphthiracarus) dlouhyorus* MAHUNKA, 1984**

Cocos Island, Costa Rica, trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., thin litter layer, dry to moist, 09 III 1996, leg. H. Schatz – (6 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (38 sp.);

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BE – (1 sp.);

Panama, Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus*, 2470 m a.s.l., dense well-decayed leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerican, Guyano–Brazilian and Cocos Island. The first time found in Panama, Costa Rica and Cocos Island.

***Euphthiracarus (Euphthiracarus) fusticulus* NIEDBAŁA et SCHATZ, 1996**

Cocos Island, Costa Rica, trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (1 sp.); Bahía Yglesias, near river, 15 m a.s.l., dense forest with deep litter layer, decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (1 sp.); Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz – (12 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (100 sp.); near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (4 sp.).

Distribution. Neotropical, Cocos Island.

***Euphthiracarus (Euphthiracarus) nasalis* NIEDBAŁA, 2004**

Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (28 sp.);

Panama, Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest on steep slope, 890 m a.s.l., under big tree, leaf litter, moist to wet, 10 II 1996, leg. H. Schatz – (7 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest above pasture, 880 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (2 sp.); Darién, Cana, Tropical Wet Forest, in secondary growth with dense undergrowth, also *Cyathea* ferns along river to mine, 600 m a.s.l., thin litter layer, well-decayed leaf litter with pieces of wood and humus, dry to moist, 22 II 1996, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest, 950 m a.s.l., deep litter layer, well-decayed leaf litter and humus under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz – (3 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Premontane Wet Forest, dense forest above pasture with *Ficus* sp., palms and *Heliconia*, 850 m a.s.l., thin litter layer, partially-decayed leaf litter and pieces of wood, moist, 10 II 1996, leg. H. Schatz – (2 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, 900 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Mesoamerica. The first time found in Costa Rica.

***Euphthiracarus (Euphthiracarus) serangos* NIEDBAŁA, 2003**

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/49 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BH – (31 sp.);

Panama, La Fortuna, Cordillera Talamanca, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest, 950 m a.s.l., deep litter layer, well-decayed leaf litter and humus under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz – (9 sp.).

Distribution. Neotropical, Mesoamerica only.

***Euphthiracarus (Euphthiracarus) tessellatus* NIEDBALA, 2003**

Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well-decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

***Euphthiracarus (Euphthiracarus) tumidus* NIEDBALA, 2003**

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/49 – (1 sp.);

Panama, El Copé, Premontane Rain Forest, Cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mezoamerica only. The first time found in Panama.

***Acrotritia ardua* (C.L. KOCH, 1841)**

Cocos Island, Costa Rica, trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (1 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (1 sp.);

Galapagos Islands, Ecuador, Isla Fernandina, moist highland – Fern–sedge zone, 800 m a.s.l., ferns, grasses, herbs, barren ground, 07 V 1991, leg. S. Abedrabbo – (1 sp.); Isla Fernandina, crater rim, fumarole, Fern–sedge zone, 1300 m a.s.l., under ferns, 08 V 1991, leg. S. Abedrabbo – (1 sp.); Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (1 sp.); Isla Isabela, Volcán Cerro Azul, top of the Volcano, (Upper Arid) moist highland, 1530 m a.s.l., ash, grasses, herbs, few cacti, 24 V 1991, leg. L. Baert, K. Desender, J.P. Maelfait – (1 sp.); Isla Isabela, Volcán Alcedo, eastern crater rim, *Psychotria* zone Fern–sedge, 1125 m a.s.l., *Psidium galapageium*, *Tournefortia pubescens*, *Centella asiatica*, *Axonopus compresus*, *Commelina diffusa*, *Sida* sp., ferns and grasses, under *Psidium*, 24 VI 1991, leg. S. Abedrabbo – (1 sp.); Isla San Cristobal, south of lake El Junco, Fern–sedge zone, 650 m a.s.l., under *Pteridium aquilinum*, sample: well-decayed fern litter, moist, 01 I 1987, leg. H. Schatz – (16 sp.); Isla Santiago, La Central Pampa, moist highland, 700 m a.s.l., *Tournefortia rufo-sericea* with *Paspalum* sp. and *Salvia* sp., under *Tournefortia*, 07 VI 1991, leg. S. Abedrabbo – (1 sp.); Isla Santiago, western side, Los Aguacates: moist highland, 550 m a.s.l., Forest of *Croton scouleri* and *Tournefortia rufo-sericea*, under *Croton*, 09 VI 1991, leg. S. Abedrabbo – (6 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 40 m a.s.l., deep well-decayed leaf litter with roots, wet, 24 II 1997, leg. H. Schatz – (6 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, dense forest with many palms and tree ferns, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter, moist to wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, under *Ficus*, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter with pieces of wood and roots between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz – (3 sp.); Maya

Mountains, Cockscomb Basin near Guam Bank, near small river under *Atalea cohune* palm and large *Ficus*, Tropical Moist Forest, 30 m a.s.l., partially-decayed leaf litter below uppermost layer, wet, 24 II 1997, leg. H. Schatz – (1 sp.);

Panama, Buena Vista, 27 m a.s.l., litter of forest, 18 V 2006, leg. P. Łukasik – (1 sp.); Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., tree, epiphytic moss with thin humus layer in 2–3 m altitude, dry to moist, 20 I 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispatha*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz – (5 sp.); Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (12 sp.); Fuerte Sherman forest near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., partially well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (12 sp.); Panama Canal, Semaphor Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Río Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (2 sp.); Fuerte Sherman forest at Mouth of Río Chagres near Colón, Caribbean Coast, Tropical Moist Forest, in steep forest beside small beach near Fuerte San Lorenzo, 5 m a.s.l., well-decayed leaf litter and roots, dry to moist, 01 III 2004, leg. H. Schatz – (2 sp.); Barro Colorado Island, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (3 sp.); Barro Colorado Island, along small rivulet, Tropical Moist Forest, 60 m a.s.l., deep leaf litter with much humus and roots, moist, 28 I 1997, leg. H. Schatz – (2 sp.);

Cuba, La Habana, Bejucal–Madruga–Coliseo hills, litter of semideciduous forest, 10 XI 2002, leg. D. Prieto – (1 sp.);

Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski – (5 sp.);

Uruguay, Patagonia, S 34°51.846' W 56°00.539', Montevideo, Alerce Andino, 20 km NE of Mtv, litter in mixed (pine+eucalyptus) forest, 10 II 2006, leg. W. Magowski – (4 sp.).

Distribution. Semicosmopolitan. The first time found in Uruguay and Cocos Island.

Acrotitia brasiliiana MAHUNKA, 1983

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET–ALAS transect, 09 II–23 IV 2005, 15/B/BV – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET–ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (1 sp.);

Panama, Panama Canal, Semaphor Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Cordillera de Talamanca, on ridge beside Río Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (1 sp.); Península Soná, Punta Catalina, Tropical Moist Forest, beside beach, 5 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, 15 km south of coast, Tropical Moist Forest, 50 m a.s.l., secondary seasonal rain forest with many young trees and large *Cavannilesia* and *Ceiba pentandra*, well-decayed leaf litter below

uppermost layer with humus and mouldy leaves, moist, 15 II 1997, leg. H. Schatz – (4 sp.); Costa Abajo, old road to Piña, 150 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed, dense leaf litter under big trees, moist, 25 I 1996, leg. H. Schatz – (4 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1280 m a.s.l., *Bromelia* roots with moss and humus from a fallen tree, about 25 m high, moist, 10 II 2000, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 820 m a.s.l., above clearing of finca, dense forest with Bamboo, well-decayed leaf litter, partially mouldy, below uppermost layer with big leaves, moist to wet, 30 I 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, surrounding of Boquete, Lower Montane Wet Forest, Sendero Los Quetzales, small patch of forest, 1750 m a.s.l., fern litter, moist, 05 II 1997, leg. H. Schatz – (2 sp.); Darién, Serranía de Pirre, Tropical Wet Forest with palms, 700 m a.s.l., dense leave litter layer, well-decayed leaf litter with roots, dry to moist, 20 II 1996, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, Soberania National Park, north of Rio Frijolito, Tropical Moist Forest, in secondary growth, 60 m a.s.l., well-decayed leaf litter and roots, moist, 18 I 1996, leg. H. Schatz – (5 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (1 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, in steep forest beside small beach near Fuerte San Lorenzo, 5 m a.s.l., well-decayed leaf litter and roots, dry to moist, 01 III 2004, leg. H. Schatz – (3 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in swampy forest with dense undergrowth, many lianas, 20 m a.s.l., well-decayed leaf litter, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz – (6 sp.); Barro Colorado Island, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (7 sp.); Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica and Guyano–Brazilian.

Acrotritia clavata MÄRKEL, 1964

Cocos Island, Costa Rica, near Cerro Pelón, dense cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., deep litter layer, under uppermost layer, partially decayed leaf litter with roots and humus, moist to wet, 09 III 1996, leg. H. Schatz – (1 sp.); trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (2 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., thin litter layer, dry to moist, 09 III 1996, leg. H. Schatz – (3 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., epiphytic moss from *Cyathea*, mainly moist, part near bark, 09 III 1996, leg. H. Schatz – (1 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz – (10 sp.); Bahía Yglesias near waterfall, 30 m a.s.l., under low trees, *Philodendron*, *Psychotria* and ferns, thin litter layer, leaf litter on roots 10–20 cm above ground, partially well decayed leaf litter and roots, wet, 07 III 1996, leg. H. Schatz – (15 sp.); Bahía Yglesias, near river, 15 m a.s.l., dense forest with deep litter layer, decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (4 sp.); Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz – (5 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (27 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (18 sp.); near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (28 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (3 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (9 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, near swamp, well decayed leaf litter with pieces of wood and sand under *Terminalia*, moist, 09

III 2004, leg. H. Schatz – (2 sp.); Cordillera de Tilarán, Reserva Biológica Monteverde, Santa Elena, about 1700 m a.s.l., cloud forest, outer trail, well decayed leaf litter under Melastomataceae and *Xanthosoma jaquini*, moist, 13 II 1995, leg. H. Schatz – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 II 2001, 11/WF/02/33 – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BH – (4 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (2 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BM – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BH/015 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/BV/095 – (1 sp.);

Panama, Darién, Cana, Tropical Wet Forest, dense forest with secondary vegetation, under Melastomataceae, 580 m a.s.l., well-decayed leaf litter with roots and humus, moist, 17 II 1996, leg. H. Schatz – (1 sp.); surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz – (5 sp.); Cordillera de Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (1 sp.); La Fortuna – Prov. Chiriquí, Cordillera Talamanca, at Rio Hornito, at small river, Lower Montane Rain Forest, 1120 m a.s.l., partially-decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz – (2 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well-decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 880 m a.s.l., in young growth, leaf litter with clayey humus, moist to wet, 30 I 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., undecayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, below campsite and bamboo belt, 1500 m a.s.l., well-decayed leaf litter and humus below uppermost layer, moist, 20 II 1996, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 820 m a.s.l., above clearing of finca, dense forest with Bamboo, well-decayed leaf litter, partially mouldy, below uppermost layer with big leaves, moist to wet, 30 I 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz – (5 sp.); Prov. Chiriquí, surrounding of Boquete, Lower Montane Wet Forest, Sendero Los Quetzales, small patch of forest, 1750 m a.s.l., fern litter, moist, 05 II 1997, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (1 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest at Rio Chagres, 1 m a.s.l., partially-decayed leaf litter under uppermost layer with mud, dry to moist, 01 III 2004, leg. H. Schatz – (1 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest, under palm (*Geonoma*), 1200 m a.s.l., well-decayed leaf litter and humus below uppermost layer, moist, 20 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., partially to well decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1240 m a.s.l., partially to well decayed leaf and bamboo litter, moist to wet, 19 II 2004, leg. H. Schatz – (11 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest below bamboo, 1220 m a.s.l., dense well-decayed leaf litter and humus under uppermost layer, moist, 20 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (2 sp.); El Copé, Premontane Rain Forest, Cloud forest, Sendero “Los Helechos”, 700 m a.s.l., dense well-decayed leaf litter under *Wercklea cochleana*, moist to wet, depth 10 cm, 03 III 2004, leg. H. Schatz – (2 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well-decayed leaf and fern litter, moist to wet, 17 II 2004, leg. H. Schatz – (14 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1220 m a.s.l., partially-decayed leaf litter, moist to wet, 19 II 2004, leg. H. Schatz – (4 sp.); Soberania National Park, Camino de Cruces, near small rivulet, Tropical Moist Forest, 60 m a.s.l., on

tree, algae, cyanobacteria, and moss, scratched from tree bark, dry to moist, 20 I 1996, leg. H. Schatz – (3 sp.); Costa Abajo, north of Achioté near Piña, Tropical Wet Forest with many *Monstera* and *Philodendron*, 30 m a.s.l., thin, well-decayed leaf litter, moist, 26 I 1996, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 900 m a.s.l., different moss species from tree with partially decayed bark, moist, 30 I 1997, leg. H. Schatz – (1 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.); El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, dense undergrowth and gap-vegetation, 830 m a.s.l., well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz – (1 sp.); El Copé, Premontane Rain Forest, Cloud forest, Sendero "Las Ranas" at steep part south of small river, 700 m a.s.l., partially-decayed leaf and bamboo litter beside trail, moist to wet, depth 3 cm, 03 III 2004, leg. H. Schatz – (6 sp.); El Copé, Premontane Rain Forest, Cloud forest, Sendero "Los Helechos", 720 m a.s.l., well-decayed leaf litter and *Heliconia* leaves, moist to wet, depth 4 cm, 03 III 2004, leg. H. Schatz – (13 sp.); El Copé, Premontane Rain Forest, Cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (9 sp.);

Virgin Island, N 18°21.822' W 064°43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (3 sp.);

Brazil, São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.).

Distribution. Neotropical, large distribution.

Acrotritia comteae MAHUNKA, 1983

Mexico, Yucatán Peninsula, Calakmul, Campeche, 200 m a.s.l. dense lower tropical forest around Maya ruins, near Structure I, well-decayed leaf litter, moist, 21 IX 2002, leg. H. Schatz – (1 sp.)

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, beside South Stann Creek, Tropical Moist Forest, 30 m a.s.l., well-decayed leaf litter with roots and humus, wet, 24 II 1997, leg. H. Schatz – (1 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*, moist, 09 III 2004, leg. H. Schatz – (12 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter with pieces of wood and sand, moist, 09 III 2004, leg. H. Schatz – (1 sp.);

Panama, Cordillera de Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., under rotting tree, well-decayed leaf litter and humus, moist, 20 I 1996, leg. H. Schatz – (3 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz – (3 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz – (2 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well-decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz – (2 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 40 m a.s.l., under *Chrysophila nana*, partially well-decayed leaf litter under uppermost layer with humus, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, Cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz – (10 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with humus, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, *Quercus*-forest, 2200 m a.s.l., dense well-decayed leaf litter and humus, moist, 19 II 2000, leg. H. Schatz – (4 sp.); Darién, Serranía de Pirre, on top of mountain, Premontane Rain Forest with many palms (*Welfia*) and *Cyathea* ferns, many epiphytes, 1590 m a.s.l., thin litter

layer, partially-decayed leaf litter (*Celusia*) with roots and humus, moist, 19 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with pieces of wood between roots, dry to moist, 05 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz – (2 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (6 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach under Melastomataceae and Cycadaceae, 5 m a.s.l., well-decayed leaf litter with sand, no humus layer, moist to wet, 04 II 1996, leg. H. Schatz – (18 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves 0 m a.s.l., well-decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz – (4 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2350 m a.s.l., dense well decayed leaf litter under *Quercus costaricensis*, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (1 sp.); Gamboa, near swamp at Rio Chagres, Tropical Moist Forest, 30 m a.s.l., leaf litter on surface, dry, 23 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (2 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, lower edge of *Quercus*-forest at slope, 2270 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus, dry to moist, 04 II 1997, leg. H. Schatz – (11 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (5 sp.); Darién, Golfo de San Miguel – Punta Patiño, 17 km south of coast, Tropical Moist Forest, 70 m a.s.l., well recovered secondary seasonal rain forest with undergrowth, partially well-decayed leaf litter with mouldy pieces of wood, dry to moist, 15 II 1997, leg. H. Schatz – (2 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 150 m a.s.l., between buttressed roots, deep litter layer (10 cm), decayed leaf litter with pieces of wood and humus below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz – (2 sp.); Soberania National Park, Camino de Cruces along trail near dense liana tangle, Tropical Moist Forest, 50 m a.s.l., partially-decayed leaf litter, moist, 20 I 1996, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, bambus forest, 3250 m a.s.l., dense well-decayed bambus leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 150 m a.s.l., partially-decayed leaf litter with pieces of wood and humus, dry to moist, 28 II 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, 12 km south of coast, Tropical Moist Forest, 60 m a.s.l., in gap of older secondary forest, well-decayed leaf litter below uppermost layer with pieces of wood, moist, 15 II 1997, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under palms, 35 m a.s.l., partially-decayed leaf litter with pieces of wood and soil, thin litter layer, dry to moist, 08 II 1996, leg. H. Schatz – (2 sp.); Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., dense litter layer, well-decayed leaf litter with pieces of wood, dry to moist, 20 I 1996, leg. H. Schatz – (1 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest with thin litter layer, 60 m a.s.l., well-decayed leaf litter, dry, 28 I 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, near Encañada, Tropical Moist Forest, older forest, 60 m a.s.l., partially well-decayed leaf litter and pieces of wood under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, under *Ficus* and *Ephylandra*, thin organic litter layer, partially-decayed leaf litter below uppermost layer, dry to moist, 25 I 1996, leg. H. Schatz – (1 sp.); Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth, 530 m a.s.l., in deep litter layer, well-decayed leaf litter and pieces of wood, moist, 17 II 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth with *Bactris major*, 80 m a.s.l., well-decayed leaf litter under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 80 m a.s.l., well-decayed leaf litter with decaying wood, dry, 28 I 1997, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 100 m behind beach, 20 m a.s.l., very well-decayed leaf litter and humus, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, Tropical Moist Forest, 50 m a.s.l., under *Heliconia*

and *Ochroma pyramidale*—Balsa, well-decayed leaf litter and decayed wood, thin litter layer on surface, dry to moist, 18 I 1997, leg. H. Schatz – (3 sp.);

Cuba, La Habana, Santa Cruz del Norte, Jibacoa, Las Caletas semideciduous forest, litter, 20 VI 2002, leg. A. Vidal – (1 sp.); Matanzas, Bacunayagua, Habana slope, litter of semideciduous forest, 21 VI 2002, leg. D. Prieto – (1 sp.); 20 km S from National Motorway, Zapata Peninsular primary deciduous forest, 01 VI 2004, leg. W. Niedbala – (3 sp.);

Venezuela, Vicinity of Caracas, Parque Nacional El Avila Pico Avila, near summit, ca 2000 m, under shrubs, 15 IV 2006, leg. M. Liana – (2 sp.);

Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski – (8 sp.).

Distribution. Pantropical. The first time found in Argentina.

Acrotritia curticephala JACOT, 1938

Mexico, Yucatán Peninsula, Calakmul, Campeche, beside trail to ruins, 200 m a.s.l., dense lower Tropical Moist Forest, partially-decayed leaf litter with pieces of wood, moist, 07 II 2001, leg. H. Schatz – (1 sp.);

Cuba, Matanzas, Ciénaga de Zapata, sea grape forest (*Coccoloba uvifera*), litter, 28 X 2001, leg. D. Prieto – (71 sp.); La Habana, deciduous trees near Biological Faculty of University and near National Hotel, 03 VI 2004, leg. W. Niedbala – (3 sp.).

Distribution. Semicosmopolitan. The first time found in Cuba.

Acrotritia diaphoros NIEDBALA, 2002

Uruguay, Patagonia, S 34°51.846' W 56°00.539', Montevideo, Alerce Andino, 22 km NE from Mtv, litter of mixed (pine+eucalyptus) forest, 10 II 2006, leg. W. Magowski – (1 sp.).

Distribution. Nearctic and Neotropical regions, Guyano–Brazilian and Patagono–Andean. The first time found in Uruguay.

Acrotritia dikra NIEDBALA et SCHATZ, 1996

Panama, surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz – (2 sp.);

Cuba, La Habana, Santa Cruz del Norte, Boca de Canasi, evergreen microphyllous forest, litter, 27 XI 1999, leg. A. Barro – (17 sp.); Camaguey, Sierra de Cubitas, semideciduous forest, litter, 26 XI 1996, leg. V. Lio – (4 sp.).

The first time found in Cuba, Panama.

Distribution. Nearctic, disjunctive, Neotropical broad.

Acrotritia dinota NIEDBALA and SCHATZ, 1996

(Figs 4. C-H)

Taxonomical remark. On the example of the specimens from Cocos Island I demonstrate the shape of the sensilli viewed from the dorsal and lateral aspects.

Cocos Island, Costa Rica, Bahía Chatham, in grass above bay, 50 m a.s.l., partially well-decayed grass litter and moss along trail, dry to moist, 10 III 1996, leg. H. Schatz – (1 sp.); trail to Cerro Yglesias, tropical

humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (1 sp.); 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (5 sp.); Bahía Yglesias near waterfall, 30 m a.s.l., under low trees, *Philodendron*, *Psychotria* and ferns, thin litter layer, leaf litter on roots 10–20 cm above ground, partially well decayed leaf litter and roots, wet, 07 III 1996, leg. H. Schatz – (1 sp.); Rica, Bahía Yglesias, near river, 15 m a.s.l., dense forest with deep litter layer, decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (6 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (2 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (100 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (3 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (3 sp.);

Panama, Prov. Chiriquí, east of Caldera, Premontane Wet Forest, 380 m a.s.l., dry forest, leaf litter with *Acacia* sp. spines below uppermost layer, dry, 06 II 1997, leg. H. Schatz – (1 sp.).

Distribution. Nearctic, southern part, Neotropical, Guyano–Brazilian. The first time found in Panama and Cocos Island.

Acrotitia meristos NIEDBALA, 2003

Galapagos Islands, Ecuador, Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (5 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Schizolobium parahyllum*, Tropical Moist Forest, 35 m a.s.l., leaf litter between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 40 m a.s.l., deep well–decayed leaf litter with roots, wet, 24 II 1997, leg. H. Schatz – (2 sp.);

Panama, Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, beside a small trail, under *Socratea*–palm, partially–decayed leaf litter with pieces of wood and humus, dry to moist, 12 II 1997, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, interior of Parque Natural, 10 km south of coast, Tropical Moist Forest, 80 m a.s.l., well recovered secondary seasonal rain forest to transition forest with large *Cavannilesia*, *Panamá*, *Hura*, *Gnethum*, many young trees, partially well–decayed leaf litter below uppermost layer with humus, moist, 15 II 1997, leg. H. Schatz – (4 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well–decayed leaf litter below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well–decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz – (1 sp.); Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 10 m a.s.l., Coastal Rain Forest with secondary growth, beside a small river, undecayed leaf litter under uppermost layer, moist, 12 II 1997, leg. H. Schatz – (10 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., between buttressed roots, well–decayed leaf litter, moist, 28 II 1996, leg. H. Schatz – (9 sp.); Darién, Serranía de Pirre, Tropical Wet Forest with palms, 700 m a.s.l., dense leave litter layer, well–decayed leaf litter with roots, dry to moist, 20 II 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well–decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz – (11 sp.); Azuero Peninsula, Sarigua, Dry Deciduous Forest with cacti, Premontane Dry Forest, 10 m a.s.l., partially–decayed leaf litter with pieces of wood, dry, 12 II 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest with palms, 80 m a.s.l., partially–decayed leaf litter and humus under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Costa Arriba, Caribbean Coast, near Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, well–decayed leaf litter, dry to moist, 12 II 1997, leg. H. Schatz – (6 sp.).

Distribution. Neotropical, Mesoamerica and Galapagos Islands. The first time found in Belize and Galapagos Islands.

***Acrotritia monodactyla* NIEDBALA, 2002**

Cocos Island, Costa Rica, Bahía Chatham, at small waterfall on southern side of the bay, 15 m a.s.l., fern litter with humus on rocks, moist, 10 III 1996, leg. H. Schatz – (31 sp.);

Galapagos Islands, Ecuador, Isla Isabela, Volcán Alcedo, southern crater rim, Upper edge of inner crater rim, *Psychotria* zone – Fern–sedge, 1030 m a.s.l., under *Pteridium aquilinum* and *Ipomoea* sp., sample: decayed fern litter and humus, moist, 21 III 1988, leg. H. Schatz – (1 sp.); Isla Isabela, Volcán Alcedo, inside crater of fumarole, *Psychotria* zone – Fern–sedge, 900 m a.s.l., under *Pteridium aquilinum*, sample: moss and roots, humus, moist, 22 III 1988, leg. H. Schatz – (2 sp.); Isla Santiago, La Central Pampa, moist highland, 700 m a.s.l., *Tournefortia rufo-sericea* with *Paspalum* sp. and *Salvia* sp., under *Tournefortia*, 07 VI 1991, leg. S. Abedrabbo – (1 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter with pieces of wood and sand, moist, 09 III 2004, leg. H. Schatz – (2 sp.);

Panama, Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth, 100 m a.s.l., partially to well-decayed leaf litter under uppermost layer with pieces of wood, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, 5 km north of Cana, in secondary growth, 530 m a.s.l., thin litter layer, well-decayed leaf litter and humus below uppermost layer, dry, 21 II 1996, leg. H. Schatz – (1 sp.); Darién, Serranía de Pirre, Tropical Wet Forest, in small crevice, 900 m a.s.l., deep, very well-decayed leaf litter and humus, dry to moist, 20 II 1996, leg. H. Schatz – (2 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 60 m a.s.l., dense undergrowth of *Monstera* and vines, well-decayed leaf litter and roots, with humus, dry to moist, 20 I 1997, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well-decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, 40 m a.s.l., well-decayed leaf litter and humus, below uppermost level, dry to slightly moist, 08 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Nearctic, southern part, Neotropical, Mesoamerica, Guyano–Brazilian, Galapagos Islands and Cocos Island. The first time found in Costa Rica, Galapagos Islands and Cocos Island.

***Acrotritia parallelus* NIEDBALA, 2003**

Panama, Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz – (5 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest above pasture, 880 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispatha*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí – La Fortuna, Cordillera Talamanca, Sendero Rio Hornito, slope above river, dense leaf litter layer, Lower Montane Rain Forest, cloud forest, 1100 m a.s.l., partially-decayed leaf litter and humus, moist to wet, 09 II 2000, leg. H. Schatz – (2 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with pieces of wood between roots, dry to moist, 05 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz – (5 sp.).

Distribution. Neotropical, Mesoamerica. The first time found in Panama.

Acrotrititia peruensis (HAMMER, 1961)

Venezuela, Vicinity of Caracas, Parque Nacional El Avila Pico Avila, near summit, ca 2000 m, 15 IV 2006, leg. M. Liana – (1 sp.); Vicinity of Caracas, Parque Nacional El Avila Pico Avila, remote from summit, ca 2000 m, 15 IV 2006, leg. M. Liana – (3 sp.).

Distribution. Neotropical, large distribution.

Acrotrititia refracta NIEDBALA, 1998

Panama, Darién, Serranía de Pirre, Premontane Rain Forest, 1580 m a.s.l., bamboo leaf litter with decayed leaf litter and roots, humus, moist to wet, 19 II 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, along small rivulet, Tropical Moist Forest, 60 m a.s.l., deep leaf litter with much humus and roots, moist, 28 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth under *Cecropia* and *Ochroma pyramidale*–Balsa, many palms, thin leaf litter layer and pieces of wood on surface, well-decayed leaf litter, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Premontane Wet Forest, dense forest above pasture with *Ficus* sp., palms and *Heliconia*, 850 m a.s.l., thin litter layer, partially-decayed leaf litter and pieces of wood, moist, 10 II 1996, leg. H. Schatz – (1 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest with *Cyathea* ferns, 1580 m a.s.l., well-decayed, deep fern litter with humus, roots and pieces of fern leaves, moist to wet, 19 II 1996, leg. H. Schatz – (3 sp.); Fort Sherman, 140 m a.s.l., some km from mouth of a canal, 05 V 2006, leg. P. Łukasik – (2 sp.).

Distribution. Pantropical.

Microtrititia simplex (JACOT, 1930)

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET–ALAS transect, 09 II–23 IV 2005, 15/B/BM – (1 sp.).

Distribution. Nearctic and Neotropical, Mesoamerica only. The first time found in Costa Rica.

Microtrititia tropica MÄRKEL, 1964

Cocos Island, Costa Rica, near Cerro Pelón, dense cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., deep litter layer, under uppermost layer, partially decayed leaf litter with roots and humus, moist to wet, 09 III 1996, leg. H. Schatz – (1 sp.); trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (11 sp.); Bahía Chatham, in grass above bay, 50 m a.s.l., partially well-decayed grass litter and moss along trail, dry to moist, 10 III 1996, leg. H. Schatz – (3 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (3 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (2 sp.);

Galapagos Islands, Ecuador, Isla San Cristobal, Puerta Negra, Agricultural area, 400 m a.s.l., *Psidium guajava*, *Cyperus brevifolius*, *Centela asiatica*, *Pteridium aquilinum*, 01 III 1992, leg. S. Abedrabbo – (1 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 50 m a.s.l., moss from tree trunk with humus and decayed wood, moist to wet, 24 II 1997, leg. H. Schatz – (6 sp.);

Costa Rica, Cordillera de Tilarán, Reserva Biológica Monteverde, Santa Elena, about 1700 m a.s.l., cloud forest, outer trail, well decayed leaf litter under Melastomataceae and *Xanthosoma jaquini*, moist, 13 II 1995, leg. H. Schatz – (1 sp.); Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (9 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BM – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 10 II–23 IV 2004, 03/B/AM – (2 sp.);

Panama, Barro Colorado Island, above small rivulet, Tropical Moist Forest, 70 m a.s.l., decaying wood from rotten trunk, moist, 28 I 1997, leg. H. Schatz – (2 sp.);

Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andono PN, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski – (3 sp.).

Distribution. Pantropical. The first time found in Belize, Chile and Galapagos Islands.

Phthiracarus anonymus GRANDJEAN, 1933

Galapagos Islands, Ecuador, Isla San Cristobal, east of lake El Junco, at the outlet of the lake, *Miconia* zone, 640 m a.s.l., under *Miconia robinsoniana*, sample: moss, roots and soil, moist, 01 I 1987, leg. H. Schatz – (1 sp.); Isla Santa Cruz, Agricultural area above Bellavista, 21 VI 1992, leg. J. Palacios Aguirre (hand sampling) – (1 sp.);

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/29 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AM/094 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/31 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BV/053 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BH/054 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 IV 2001, 11/B/BE/115 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/08 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, INBio–OET–ALAS transect, 10°11'N 84°07'W, 09 II 2002, 20/B/AH/011 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BM – (10 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/AS – (7 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BS – (29 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BE – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BV – (9 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BH – (10 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 22 II 2003, 20/WF/02 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/WF/04 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/01 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (11 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II 2002, 20/BIAM/012 – (12 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BE – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BM – (3 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET–ALAS transect, 09 II–23 IV 2005, 15/B/BV – (3 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/03 – (3 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N

84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/01 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/WF/04/14 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 II 2002, 20/B/BH/066 – (8 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BV/017 – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/AH/020 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/AS/055 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 IV 2002, 20/B/BM/080 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/BH/054 – (26 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BH/015 – (10 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03/27 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/AS/063 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/01/35 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/AS/018 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/BE/032 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/AS/013 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/01/21 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/01/03 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II 2002, 20/B/AS/010 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 27 III 2002, 20/B/BE/07 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 IV 2002, 20/B/BE/104 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 IV 2002, 20/B/BS/077 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/BV/070 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 12 and 15 IV 2002, 20/WF/04/28 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 17 II 2002, 20/WF/C1/36 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 10 III 2002, 20/B/BH/047 – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/BE/091 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/BV/072 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/BV/095 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/BV/029 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 IV 2002, 20/B/AS/103 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/WF/02/13 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 IV 2002, 20/B/AH/028 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II 2002, 20/B/BH/007 – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/AS/049 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03/03 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BV/023 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/WF/04/19 – (1 sp.);

Panama, La Fortuna, Cordillera Talamanca, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., well-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, Cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz – (8 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (6 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, dense leaf litter layer, Lower Montane Rain Forest, 1260 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (4 sp.); Cordil-

lera Talamanca near Volcán Barú, Montane Rain Forest, 2400 m a.s.l., well decayed leaf litter beside trunk, moist, 21 II 2004, leg. H. Schatz – (8 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz – (4 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (26 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz – (3 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1240 m a.s.l., partially to well decayed leaf and bamboo litter, moist to wet, 19 II 2004, leg. H. Schatz – (2 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well-decayed leaf and fern litter, moist to wet, 17 II 2004, leg. H. Schatz – (5 sp.).

Distribution. Semicosmopolitan.

Phthiracarus boresetosus JACOT, 1930

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, INBio-OET-ALAS transect, 10°11'N 84°07'W, 09 II 2002, 20/B/AH/011 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BM – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/AS – (12 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BS – (14 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BE – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BV – (12 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BH – (7 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 22 II 2003, 05/WF/02 – (7 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 22 II 2003, 20/WF/02 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/WF/04 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/BIAM/012 – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET-ALAS transect, 09 II–23 IV 2005, 15/WF/03 – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET-ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 23 II 2002, 20/B/BH/066 – (9 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/WF/03/31 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/BV/076 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/BE/039 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/B/AS/053 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 18 II 2002, 20/WS/02/37 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 II 2002, 20/B/BH/015 – (14 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/AH/043 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 23 III 2002, 20/B/AS/063 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 13 III 2002, 20/WF/03/10 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 27 III 2002, 20/B/BE/07 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 21 IV 2002, 20/B/BE/104 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/01/18 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/BS/077 – (13 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/BH/047 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 23 III 2002, 20/B/BV/072 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000

m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/B/BV/095 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/AS/075 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/BE/044 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/B/BH/007 – (22 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/B/AS/049 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/BS/081 – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/WF/03/03 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/B/BE/006 – (2 sp.);

Panama, surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz – (2 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz – (2 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus* and *Laurus* sp., 2600 m a.s.l., dense well-decayed leaf litter with humus, moist to wet, 04 II 1997, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, Cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz – (14 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (8 sp.); Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, *Quercus*-forest, 2200 m a.s.l., dense well-decayed leaf litter and humus, moist, 19 II 2000, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (60 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with pieces of wood between roots, dry to moist, 05 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well decayed leaf litter, moist, 20 II 2004, leg. H. Schatz – (21 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (20 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz – (3 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2350 m a.s.l., dense well decayed leaf litter under *Quercus costaricensis*, moist, 21 II 2004, leg. H. Schatz – (5 sp.); Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth with palms (*Welfia*), 550 m a.s.l., well-decayed leaf litter with roots and humus, below wet surface, moist, 17 II 1996, leg. H. Schatz – (1 sp.); Peninsula Soná, north of Las Palmas, Tropical Moist Forest beside road, 180 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz – (1 sp.).

Distribution. Semicosmopolitan.

Phthiracarus brevisetae JACOT, 1930

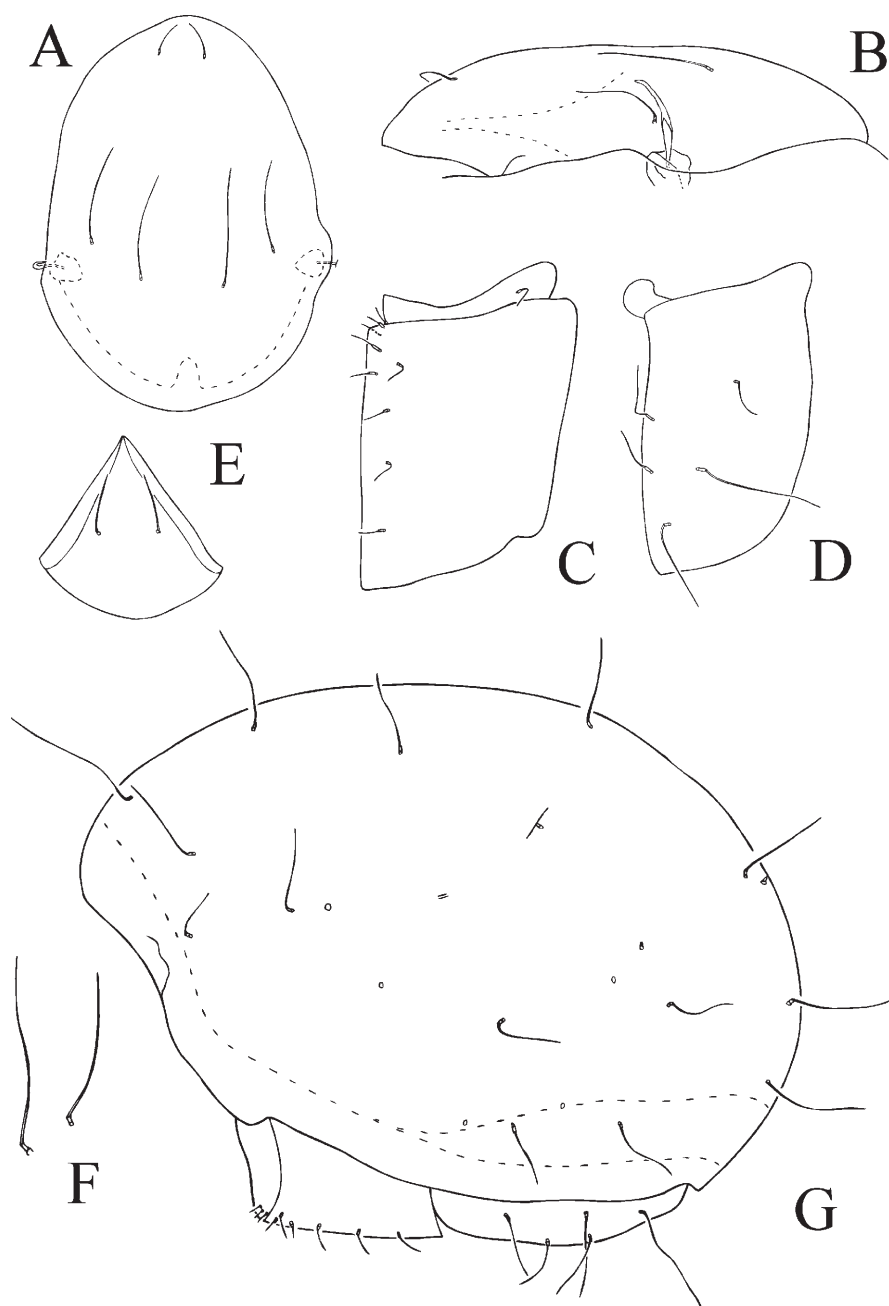
(Figs 5. A-G)

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET-ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (4 sp.).

Distribution. Nearctic and Neotropical, Mesoamerica only. The first time found in Costa Rica.

Phthiracarus bryobius JACOT, 1930

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET-ALAS transect, 09 II–23 IV 2005, 15/B/BE – (3 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W



5. A-G. *Phthiracarus brevisetae* JACOT, 1930, specimen from Prov. Heredia, Costa Rica. A – prodorsum, dorsal view; B – prodorsum, lateral view; C – genitoaggenital plate; D – anoadanal plate; E – mentum of infracapitulum; F – setae of notogaster; G – opisthosoma, lateral view

1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BM – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BV – (2 sp.).

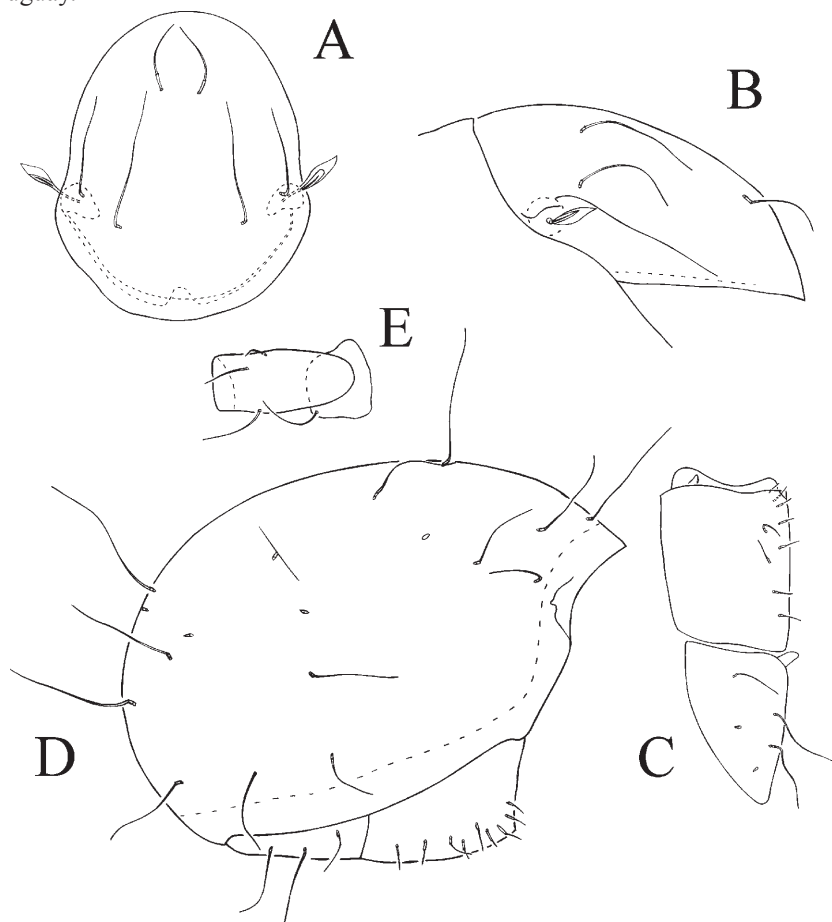
Distribution. Holarctic, probably introduced to Costa Rica. The first time found in Costa Rica.

***Phthiracarus longulus* (C.L. Koch, 1841)**

(Figs 6. A–E)

Uruguay, Patagonia, S 34°51.846' WO 56°00.539', Montevideo, Alerce Andino, 22 km NE from Mtv, litter of mixed (pine+eucalyptus) forest, 10 II 2006, leg. W. Magowski – (1 sp.).

Distribution. Holarctic, probably introduced to Uruguay. The first time found in Uruguay.



6. A–E. *Phthiracarus longulus* (C.L. Koch, 1841), specimen from Uruguay. A – prodorsum, dorsal view; B, prodorsum, lateral view; C – genitoaggenital and ano-adanal plates; D – opisthosoma, lateral view; E – trochanter and femur of leg. I

***Phthiracarus phoxos* NIEDBALA, 2006**

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest with palms and ferns, sample of leaf litter, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of decaying wood, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, 100 m from Museum of Microbiology, cocconut palm forest, sample of palm leaf litter, 07 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, 100 m from Museum of Microbiology, cocconut palm forest, sample of brown decaying wood, 07 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Instituto Butantan, dense banana bush, sample of banana leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense banana bush, sample of leaf banana litter, 15 XI 2002, leg. J. Stary – (1 sp.); Parana State, Curitiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of *Araucaria* litter, 18 XI 2002, leg. J. Stary – (3 sp.); Parana State, Curitiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of *Araucaria* litter, 18 XI 2002, leg. J. Stary – (8 sp.); Parana State, Curitiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of *Araucaria* litter, 18 XI 2002, leg. J. Stary – (2 sp.); Parana State, Curitiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of brown decaying wood from *Araucaria* stump, 18 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, São Paulo, Butantan, near Hospital, group of leaf trees, sample of leaf litter 27 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Butantan, near Hospital, group of leaf trees, sample of leaf litter leg. 27 XI 2002, J. Stary – (1 sp.).

Distribution. Neotropical, broad. The first time found in Brazil.

***Phthiracarus pygmaeus* BALOGH, 1958**

Cocos Island, Costa Rica, near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz – (6 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (4 sp.); 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (6 sp.); Bahía Chatham, on edge of forest above antenna, 90 m a.s.l., under *Celusia*, leaf litter with roots in thin litter layer, dry to moist, 10 III 1996, leg. H. Schatz – (1 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (2 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (22 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (4 sp.); Bahía Chatham, on edge of forest above antenna, 100 m a.s.l., *Celusia* and other tropical hardwood trees, ferns, deep litter layer, leaf litter with roots and humus, dry to moist, 10 III 1996, leg. H. Schatz – (7 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (3 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (3 sp.); trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (1 sp.)

Guatemala, Rio Dulce, in Manatee Biotope Chocon Machacas, Hardwood tropical forest at Rancho. 5 m a.s.l., decayed leaf litter, moist, 02 II 1990, leg. H. Schatz – (2 sp.)

Belize, Maya Mountains, Cockscomb Basin, Hardwood tropical forest in Wildlife Sanctuary, Tropical Moist Forest, 50 m a.s.l., decayed leaf litter with roots and humus, moist, 12 II 1990, leg. H. Schatz – (2 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 50 m a.s.l., moss from tree trunk with humus and decayed wood, moist to wet, 24 II 1997, leg. H. Schatz – (2 sp.); Long Cay, Light House Reef, near coast line, 2 m a.s.l., dense tree and bush vegetation, well-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (3 sp.)

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter and sand, moist, 09 III 2004, leg. H. Schatz – (2 sp.); Guanaacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (8 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AM/094 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 21 III 2001, 11/B/BM/082 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/BS/064 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BV/049 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/BS/085 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 8 II 2001, 11/B/AS/003 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BM/037 – (5 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 22 II 2001, 11/WF/03/26 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/BV/086 – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 III–20 IV 2003, 05/B/AM – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 III–20 IV 2003, 05/B/BE – (6 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 22 III 2003, 05/WF/04 – (8 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/AS – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/BM – (7 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/BV – (3 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/AH – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 18 III 2003, 05/WF/03 – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 16 IV–19 IV 2003, 05/WP/03 – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–23 IV 2004, 03/B/BF – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 18 II 2004, 03/WF/01 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II 2004, 03/B/BE – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–24 IV 2004, 03/B/BH – (8 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–23 IV 2004, 03/B/BM – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 10 II–23 IV 2004, 03/B/AH – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 10 II–23 IV 2004, 03/B/AM – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BV – (1 sp.);

Panama, Panama Canal, Semaphor Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., well-decayed leaf and fern litter, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.);

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of litter, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of brown decaying wood from lying trunk, 04 XI 2002, leg. J. Stary – (1 sp.); Brazil, Brazil, São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (8 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary – (9 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary – (2 sp.); Parana State, Curitiba, garden of Museum

of Natural History, dense *Araucaria* forest, sample of *Araucaria* litter, 18 XI 2002, leg. J. Stary – (1 sp.); Parana State, Curritiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of brown decaying wood from *Araucaria* stump, 18 XI 2002, leg. J. Stary – (1 sp.).

Distribution. Pantropical. The first time found in Belize and Guatemala.

***Phthiracarus setanus* JACOT, 1939**

Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.).

Distribution. Nearctic, disjunctive, Neotropical, broad. The first time found in Panama.

***Phthiracarus totus* NIEDBALA, 2003**

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 II 2003, 05/WF/02 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03 – (24 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01 – (6 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II 2004, 03/B/BE – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BH – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 13 IV 2004, 03/WF/02 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/AS – (1 sp.).

Distribution. Neotropical, Costa Rica and Brazil only.

***Plonaphacarus insignis* (BALOGH et CSISZÁR, 1963)**

(Figs 7. A–I)

Neophthiracarus insignis BALOGH et CSISZÁR, 1963;

Phthiracarus insignis: NIEDBALA 2004.

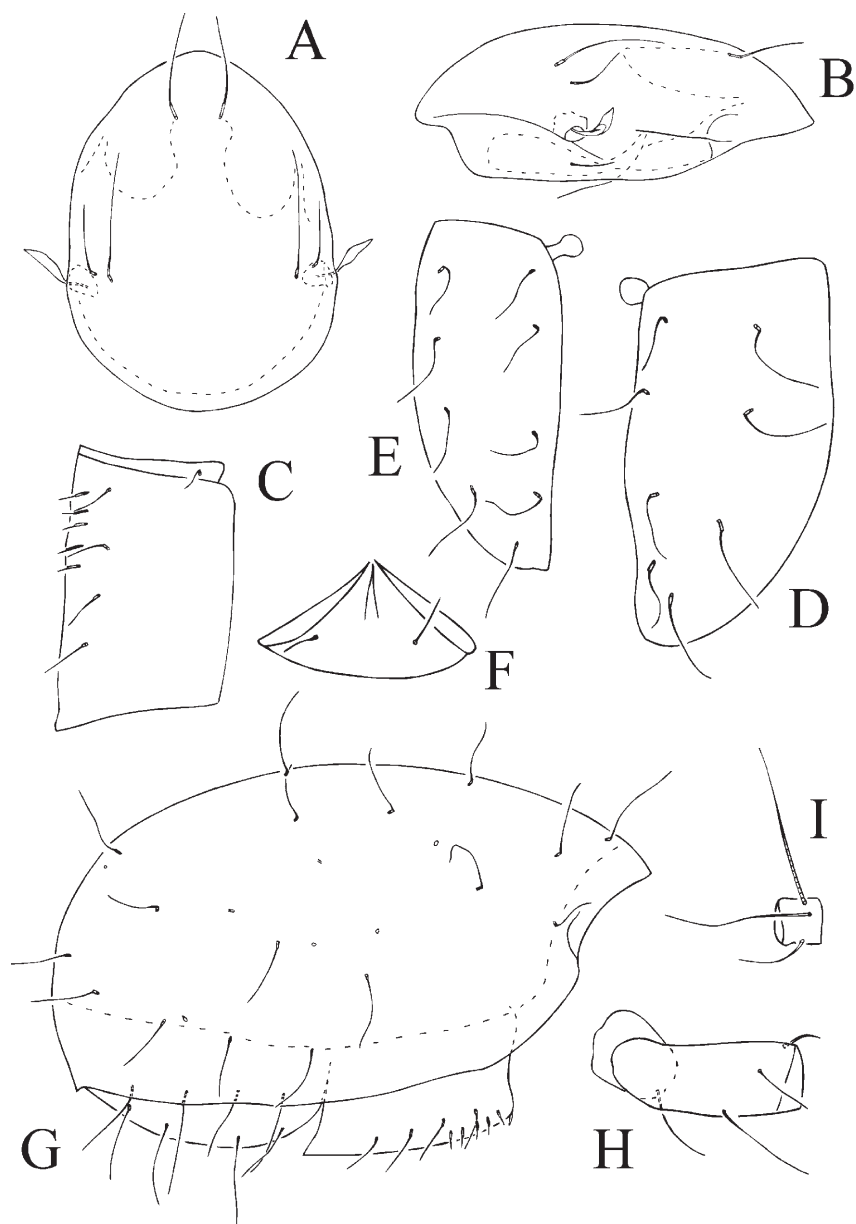
This species has been redescribed by NIEDBALA (2204) on the basis of the paratype and has been classified as belonging to the genus *Phthiracarus*, mainly because of the shape of the fine and filiform setae of the body. In this paratype the legs were destroyed. However, analysis of the individual found in the material of M. Hammer, collected in Argentina, has shown that setae *d* on tibiae of leg IV are long and independent of solenidions, therefore, this species should be included into the genus *Plonaphacarus*.

Below I give a description of the species on the basis of the redescription and features of the specimen from the collection of M. HAMMER.

Measurements of specimen from M. Hammer Collection: prodorsum: length 232, width 172, height 96, sensillus 32.9, setae: interlamellar 81.0, lamellar 32.4, rostral 43.0, exobothridial 27.8; notogaster: length 434, width 268, height 232, c_l 68.3, h_l 43.0, ps_l 35.4, $c_l/c_l - d_l = 0.66$; genitoaggenital plate 131x86, anoadanal plate 164x78.4.

Species with neotrichy of notogastral and adanal setae.

Colour brown light. Cuticle well sculptured, dotted.



7. A-I. *Plonaphacarus insignis* (BALOGH et CSZISZÁR, 1963), specimen from collection of M. Hammer. A – prodorsum, dorsal view, B – prodorsum, lateral view, C – genitoaggenital plate, D – left anoadanal plate, E – right anoadanal plate, F – mentum of infracapitulum, G – opisthosoma, lateral view; H – trochanter and femur of leg. I, I – tibia of leg IV

Prodorsum with visible sigillar fields. Lateral carinae very short. Sensilli very short, with narrow pedicel and club-like head pointed distally. Interlamellar setae considerably longer than other setae.

Notogaster with 17 pairs of short, fine and filiform setae ($c_1 < c_2 - d_1$). Additional setae in rows *h* and *ps*. Setae c_1 and c_3 on the anterior margin, setae c_2 remote from margin. Vestigial setae f_1 posteriorly of h_1 setae. Four pairs of lyrifissures *ia*, *im*, *ip*, *ips* present.

Ventral region. Setae *h* of mentum shorter than distance between them. Genitoag-genital plates with nine pairs of genital setae with arrangement: 9+5: 0. Right anoadanal plate with 9 pairs of setae, left plate with 8 pairs of setae, 4 pairs in paraxial margin, 4 or 5 pairs remote from margin.

Legs. Formulae of setae and solenidia of “incomplete type”. Setae *d* of femora I situated in the distal end of article. Setae *v*’ of femora I absent. Setae *d* on tibiae of leg IV are long and independent of solenidions.

Argentina, Nanguen 11: San Martin de los Argentina, Andes, 640 m, 9 X 1981, leg. Nielsen and Karsholt. – 1 sp.

Plonaphacarus kugohi (AOKI, 1959)

Cocos Island, Costa Rica, near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., epiphytic moss from *Cyathea*, mainly moist, part near bark, 09 III 1996, leg. H. Schatz – (2 sp.); Bahía Chatham, in grass above bay, 50 m a.s.l., partially well-decayed grass litter and moss along trail, dry to moist, 10 III 1996, leg. H. Schatz – (3 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz – (5 sp.); 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (10 sp.); near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (11 sp.); Bahía Chatham, at small waterfall on southern side of the bay, 15 m a.s.l., fern litter with humus on rocks, moist, 10 III 1996, leg. H. Schatz – (100 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (2 sp.);

Guatemala, Caribbean Coast near Livingston, at River Los Altares, hardwood tropical rain forest. 10 m a.s.l. decayed leaf litter, moist, 08 VIII 1991, leg. H. Schatz – (1 sp.); Baja Verapaz, Quetzal Biotop south of Purulha / Coban, Cloud forest. 1600 m a.s.l., decayed leaf litter, moist, 19 II 1986, leg. H. Schatz – (1 sp.);

Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, partially-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (73 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (8 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, under *Schizolobium parahyllum*, Tropical Moist Forest, 35 m a.s.l., leaf litter between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz – (3 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (12 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, near small river under *Atalea cohune* palm and large *Ficus*, Tropical Moist Forest, 30 m a.s.l., partially-decayed leaf litter below uppermost layer, wet, 24 II 1997, leg. H. Schatz – (9 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (3 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, near swamp, well decayed leaf litter with pieces of wood and sand under *Terminalia*, moist, 09

III 2004, leg. H. Schatz – (6 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*; moist, 09 III 2004, leg. H. Schatz – (14 sp.); near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (58 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter with pieces of wood and sand, moist, 09 III 2004, leg. H. Schatz – (9 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter and sand, moist, 09 III 2004, leg. H. Schatz – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 10 II–23 IV 2004, 03/B/BS – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BH – (100 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (110 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (8 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 10 II–23 IV 2004, 03/B/AH – (4 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 15 II–23 IV 2004, 03/B/AS – (3 sp.);

Panama, Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed leaf litter (*Cecropia* leaves), moist, 25 I 1996, leg. H. Schatz – (1 sp.); Cordillera de Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (2 sp.); Costa Arriba, Caribbean Coast 3 km east of Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, beside a small trail, under *Socratea*–palm, partially-decayed leaf litter with pieces of wood and humus, dry to moist, 12 II 1997, leg. H. Schatz – (1 sp.); Panama Canal, Sendero La Plantación at Rio Chico Masambi, along old trail, Tropical Moist Forest with secondary growth, many palms and *Carludovica*, 50 m a.s.l., well-decayed leaf litter with pieces of wood and humus under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (2 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth, 100 m a.s.l., partially to well-decayed leaf litter under uppermost layer with pieces of wood, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 70 m a.s.l., partially-decayed leaf litter and pieces of wood below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, small clearing with secondary growth, bamboo, *Bursera simaruba*, *Acrocomia panamensis*, *Acacia* spp., *Heliconia latispata*, *Cecropia peltata*, 60 m a.s.l., thin layer of organic litter, well-decayed leaf litter and humus, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach, 5 m a.s.l., partially-decayed leaf litter with sand, moist to wet, 04 II 1996, leg. H. Schatz – (7 sp.); Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (7 sp.); Costa Abajo, old road to Piña, 150 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed, dense leaf litter under big trees, moist, 25 I 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Alegre at northern end, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and many vines (*Mocuna*), well-decayed leaf litter of vines, dry to moist, 14 II 1997, leg. H. Schatz – (3 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (4 sp.); Panama Canal, Semaphor Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Gamboa, near swamp at Rio Chagres, Tropical Moist Forest, 30 m a.s.l., leaf litter on surface, dry, 23 I 1997, leg. H. Schatz – (3 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 10 m a.s.l., very well-decayed leaf litter between rocks, deep litter layer, moist, 01 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, under *Anacardium excelsum* and *Carludovicia palmata*, Tropical Moist Forest, 110 m a.s.l., dense well-decayed leaf litter (*Anacardium* leaves) with humus below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz – (2 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., dense well-decayed leaf litter and pieces of wood, dry to moist, 01 III

2004, leg. H. Schatz – (5 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well-decayed leaf litter with humus, moist, 28 II 1996, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach under Melastomataceae and Cycadaceae, 5 m a.s.l., well-decayed leaf litter with sand, no humus layer, moist to wet, 04 II 1996, leg. H. Schatz – (46 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in mangroves 0 m a.s.l., well-decayed leaf litter with humus, moist, 04 II 1996, leg. H. Schatz – (24 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (5 sp.); Barro Colorado Island, at small rivulet, Tropical Moist Forest, 60 m a.s.l., roots of *Selaginella* and leaves with undergrowth, moist, 28 I 1997, leg. H. Schatz – (1 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest at Rio Chagres, 1 m a.s.l., partially-decayed leaf litter under uppermost layer with mud, dry to moist, 01 III 2004, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, Soberania National Park, north of Rio Frijolito, Tropical Moist Forest, in secondary growth, 60 m a.s.l., well-decayed leaf litter and roots, moist, 18 I 1996, leg. H. Schatz – (9 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (10 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, in steep forest beside small beach near Fuerte San Lorenzo, 5 m a.s.l., well-decayed leaf litter and roots, dry to moist, 01 III 2004, leg. H. Schatz – (3 sp.); Barro Colorado Island, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (6 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well-decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruces along trail near dense liana tangle, Tropical Moist Forest, 50 m a.s.l., partially-decayed leaf litter, moist, 20 I 1996, leg. H. Schatz – (6 sp.); Costa Abajo, north of Achioté near Piña, Tropical Wet Forest with many *Monstera* and *Philodendron*, 30 m a.s.l., thin, well-decayed leaf litter, moist, 26 I 1996, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruces Tropical Moist Forest, 50 m a.s.l., dense litter layer, well-decayed leaf litter with pieces of wood, dry to moist, 20 I 1996, leg. H. Schatz – (2 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest with thin litter layer, 60 m a.s.l., well-decayed leaf litter, dry, 28 I 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, above small rivulet, Tropical Moist Forest, 70 m a.s.l., decaying wood from rotten trunk, moist, 28 I 1997, leg. H. Schatz – (2 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 100 m a.s.l., between buttressed roots, decayed leaf litter and pieces of wood, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.); Peninsula Soná, south of Las Palmas, Tropical Moist Forest with *Ochroma pyramidale*, 200 m a.s.l., partially well-decayed leaf litter with few humus, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, under *Ficus* and *Ephylandra*, thin organic litter layer, partially-decayed leaf litter below uppermost layer, dry to moist, 25 I 1996, leg. H. Schatz – (4 sp.); Panama Canal, Sendero La Plantación at Rio Chico Masambi, Tropical Moist Forest with secondary growth, 50 m a.s.l., under big tree between buttressed roots, well-decayed leaf litter and much humus, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth under *Cecropia* and *Ochroma pyramidale*–Balsa, many palms, thin leaf litter layer and pieces of wood on surface, well-decayed leaf litter, dry, 19 I 1997, leg. H. Schatz – (6 sp.); Gamboa, Pipeline Road, Tropical Moist Forest, 50 m a.s.l., under *Heliconia* and *Ochroma pyramidale*–Balsa, well-decayed leaf litter and decayed wood, thin litter layer on surface, dry to moist, 18 I 1997, leg. H. Schatz – (6 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.);

Cuba, Matanzas, Ciénaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (3 sp.);

Virgin Island, N 18°21.822' W 064°43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (8 sp.).

Distribution. Pantropical.

***Hoplothiracarus illinoisensis* (EWING, 1909)**

Costa Rica, Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (6 sp.);

Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. L. Kaczmarek – (4 sp.);

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of brown decaying wood from lying trunk, 04 XI 2002, leg. J. Stary – (3 sp.).

Distribution. Semicosmopolitan. The first time found in Costa Rica, Dominican Republic and Brazil.

***Steganacarus (Steganacarus) rafalskii* (NIEDBAŁA, 1981)**

Brazil, Parana State, Curitiba, 18 XI 2002, garden of Museum of Natural History, dense *Araucaria* forest, sample of rhizosphere of mosses and epiphytes on lying *Araucaria* trunk, leg. J. Stary – (1 sp.).

Distribution. Neotropical, endemic.

***Steganacarus (Steganacarus) tumidus* NIEDBAŁA, 2004**

Brazil, Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary – 1 sp. São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (4 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); Sao Paulo State, Instituto Butantan, dense banana busch, sample of banana leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.).

Distribution. Neotropical, endemic.

***Austrophthiracarus admirabilis* (NIEDBAŁA, 1982)**

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BM – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BE – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BV – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 IV 2002, 20/B/BM/080 – (2 sp.);

Panama, Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., decayed leaf litter and humus, moist to wet, 04 II 1997, leg. H. Schatz – (7 sp.); Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock with lichens and decayed leaf litter and humus layer, 1 m below previous sample, moist to wet, 04 II 1997, leg. H. Schatz – (18 sp.); Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock, moist to wet, 04 II 1997, leg. H. Schatz – (8 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., dense leaf litter between roots, moist to wet, 04 II 1997, leg. H. Schatz – (3 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

***Austrophthiracarus anceps* NIEDBAŁA, 2004**

Cuba, La Habana, Santa Cruz del Norte, Boca de Canasi, evergreen microphylous forest, litter, 27 XI 1999, leg. A. Barro – (1 sp.).

Distribution. Neotropical, Cuba, endemic.

***Austrophthiracarus darwini* (MAHUNKA, 1980)**

Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Laguna Sargazo, mixed forest with *F. cupressoides*, mosses, 05 II 2006, leg. W. Magowski – (1 sp.);

Argentina, Patagonia, S 54° 48.907' W 68°32.543', Tierra del Fuego, Cerro Guanaco, mountain forest with *N. pumilio*, litter, 17 I 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Patagono–Andean.

***Austrophthiracarus diazae* OJEDA, 1985**

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 12 and 15 IV 2002, 20/WF/02/34 – (3 sp.);

Panama, Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., dense leaf litter between roots, moist to wet, 04 II 1997, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Guyano–Brazilian and Patagono–Andean. The first time in Panama and Costa Rica.

***Austrophthiracarus dilucidus* (NIEDBALA, 1988)**

Ecuador, East Cordillera, 3 400 m, Papallacta valley, 19 IX 2004, leg. J. Wojtusiak – (1 sp.);

Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Laguna Sargazo, mixed forest with *F. cupressoides*, mosses, 05 II 2006, leg. W. Magowski – (1 sp.);

Argentina, Patagonia, S 54°49.355' W 68°33.408', Tierra del Fuego, Ushuaia, Cerro Guanaco, mountain forest with *N. pumilio*, litter, 17 I 2006, leg. W. Magowski – (2 sp.); Patagonia, S 41°12.361' W 71°27.722', Rio Negro, Bariloche, Nahuel Huapi PN, Refugio Frey, near Van Titten, bamboo thicket, 26 I 2006, leg. W. Magowski – (2 sp.); Patagonia, S 41°12.403' W 71°27.423', Rio Negro, Bariloche, Nahuel Huapi, Refugio Frey, near Van Titten, wood dust in forest, 26 I 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Patagono–Andean. The first time found in Argentina.

***Austrophthiracarus elisabathae* (NIEDBALA, 1982)**

Brazil, Sao Paulo State, Instituto Butantan, dense banana busch, sample of banana leaf litter, 15 XI 2002, leg. J. Stry – (1 sp.).

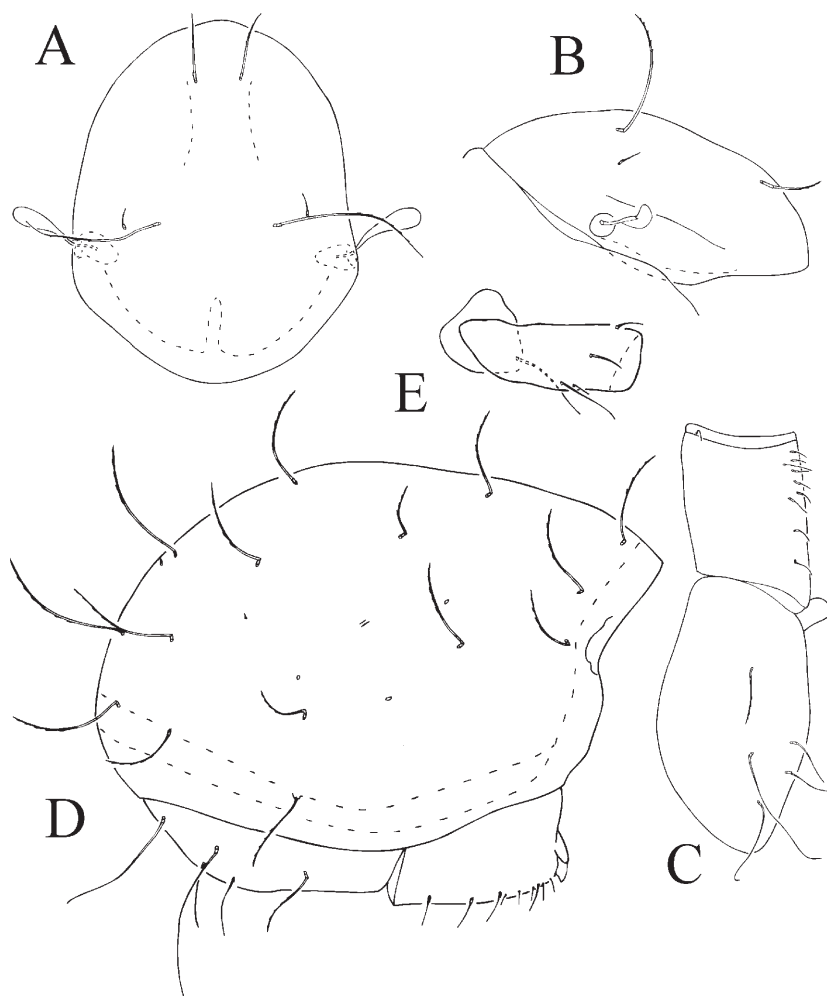
Distribution. Neotropical, endemic.

***Austrophthiracarus latior* (NIEDBALA, 1982)**

(Figs 8. A–E)

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest near old building of former Parasitological Institute sample of rhizosphere and grass litter from the small meadow, 04 XI 2002, leg. J. Stry – (3 sp.).

Distribution. The geographical element of this species remains unclear. The locality from Brazil permits to assume it as semicosmopolitan. The first time found in Brazil.



8. A-E. *Austrophthiracarus latior* (NIEDBALA, 1982), specimen from São Paulo State, Brazil. A – prodorsum, dorsal view; B – prodorsum, lateral view; C – genitoaggenital and ano-adanal plates; D – opisthosoma, lateral view; E – trochanter and femur of leg I

***Austrophthiracarus minisetosus* NIEDBALA 2004**

Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Sector Correntoso, mixed forest, litter under *Notofagus*, 04 II 2006, leg. W. Magowski – (5 sp.); Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Sector Correntoso, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski – (7 sp.); Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Laguna Sargazo, mixed forest with *F. cupressoides*, mosses, 05 II 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Chile, endemic.

Austrophthiracarus nexilis NIEDBAŁA, 2003

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II-21 IV 2002, 20/B/BS – (7 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/WF/04 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/01 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/01/34 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 II 2002, 20/WF/04/14 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 12 and 15 IV 2002, 20/WF/02/34 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 02 IV 2002, 20/B/AS/097 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/WF/03/27 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/01/35 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/BS/077 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/C1/36 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/AS/075 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/WF/03/26 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/WF/04/38 – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

Austrophthiracarus nitidus (PÉREZ-IÑIGO et BAGGIO, 1988)

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of decaying wood with termites with moss on the surface, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest with palms and ferns, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between boulders, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between stones, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (8 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (6 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense banana bush, sample of banana leaf litter, 15 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Instituto Butantan, dense banana bush, sample of banana leaf litter, 15 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Instituto Butantan, dense banana bush, sample of leaf banana litter, 15 XI 2002,

leg. J. Stary – (2 sp.); Parana State, Curritiba, garden of Museum of Natural History, dense *Araucaria* forest, sample of brown decaying wood from *Araucaria* stump, 18 XI 2002, leg. J. Stary – (1 sp.).

Distribution. Neotropical, endemic.

***Austrophthiracarus phaleratus* (NIEDBAŁA, 1982)**

Costa Rica, Cordillera Central, Volcán Barva, 2720 m, cloud forest along trail to Laguna Copey, partially decayed leaf litter, wet, 16 III 1996, leg. H. Schatz – (22 sp.); Cordillera Central, Volcán Barva, 2700 m, cloud forest near Laguna Barva, well decayed leaf litter between roots, moist, 16 III 1996, leg. H. Schatz – (70 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/WF/04 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/AS/042 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/B/BV/009 – (1 sp.);

Panama, Volcán Barú, beside road to summit, under dwarf shrubs below transmitting aerials, Subalpine Paramo, 3333 m a.s.l., deep leaf litter with few moss and humus, moist to wet, 04 II 1997, leg. H. Schatz – (18 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, bambus forest at La Nevera, 3150 m a.s.l., dense well-decayed bambus leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

***Austrophthiracarus retrorsus* NIEDBAŁA, 2003**

Costa Rica, ALAS, Barva, transect 1500 m. rainforest, litter, 13 II 2005, leg. A. Szywilewska – (4 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BE – (19 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BM – (26 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BV – (62 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/03 – (40 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (31 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W, 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/01 – (30 sp.).

Distribution. Neotropical, Costa Rica, endemic.

***Austrophthiracarus ridiculus* (MAHUNKA, 1982)**

Mexico, Yucatán Peninsula, Calakmul, Campeche, beside trail to ruins, 200 m a.s.l., dense lower Tropical Moist Forest, partially-decayed leaf litter with pieces of wood, moist, 07 II 2001, leg. H. Schatz – (2 sp.);

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 11 III 2001, 11/R6/DBM/003 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/38 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/22 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/10 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BV/051 – (6 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 21 II 2001, 11/B/BE/118 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/26 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 19 and 23 III 2001, 11/WF/03/18 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AH/068 – (1 sp.); Prov.

Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/05 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/BV/067 – (21 sp.); Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/02 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/38 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/09 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/AM/058 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/10 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/BV/069 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 II 2001, 11/B/BE/029 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/39 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 21 III 2001, 11/B/AM/084 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 II 2001, 11/WF/02/33 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/01 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/BE/087 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/22 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BV/050 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/07 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/25 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/BV/093 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/047 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/20 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/45 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/11 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/28 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/50 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/B/BE/105 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/31 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/37 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/18 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/140 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 II 2001, 11/B/BV/25 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/07 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/02 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/21 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 II 2001, 11/WF/03/26 – (1 sp.); Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio–OET–ALAS, 17 III 2001, 11/WF/02/19 – (1 sp.); Prov. Heredia, 6 km SSE Vía Virgen, 1050–1150 m, 10°16'N 84°05'W, INBio–OET–ALAS transect, 09 III 2001 – 21 III 2001, 11/M/08/048 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/03 – (3 sp.);

Panama, Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (5 sp.); surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below up-

permost layer, moist, 05 II 1997, leg. H. Schatz – (12 sp.); Prov. Chiriquí – La Fortuna, Cordillera Talamanca, Sendero Rio Hornito, slope above river, dense leaf litter layer, Lower Montane Rain Forest, Cloud Forest, 1100 m a.s.l., partially-decayed leaf litter and humus, moist to wet, 09 II 2000, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with pieces of wood between roots, dry to moist, 05 II 1997, leg. H. Schatz – (2 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, lower edge of *Quercus*-forest at slope, 2270 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus, dry to moist, 04 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz – (2 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., moss from tree at about 1 m altitude, moist to wet, 17 II 2004, leg. H. Schatz – (2 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth with *Bactris major*, 80 m a.s.l., well-decayed leaf litter under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, 40 m a.s.l., well-decayed leaf litter and humus, below uppermost level, dry to slightly moist, 08 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

Arphthycarus allocotos NIEDBAŁA, 2003

Costa Rica, Cordillera Central, Volcán Barva, 2720 m, cloud forest along trail to Laguna Copey, partially decayed leaf litter, wet, 16 III 1996, leg. H. Schatz – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 18 II 2004, 03/WF/01 – (4 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–24 IV 2004, 03/B/BH – (30 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 10 II–23 IV 2004, 03/B/AH – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 15 II–23 IV 2004, 03/B/AS – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/03 – (16 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (31 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/WF/01 – (10 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 II 2002, 20/B/AS/018 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 IV 2002, 20/B/BS/077 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, IV 2002, 20/B/BV/098 – (1 sp.);

Panama, Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under palms, 35 m a.s.l., partially-decayed leaf litter with pieces of wood and soil, thin litter layer, dry to moist, 08 II 1996, leg. H. Schatz – (1 sp.); Panama Canal, Semaphore Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, edge of *Quercus*-forest beside sheep pasture, 2333 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus below uppermost layer, moist, 04 II 1997, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus*, 2470 m a.s.l., dense well-decayed leaf litter below uppermost layer, moist to wet, 04 II 1997, leg. H. Schatz – (4 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, Cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., decayed leaf litter and humus, moist to wet, 04 II 1997, leg. H. Schatz – (9 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (7 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (18 sp.); Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, 5 km north of Cana, in secondary growth, 530 m a.s.l., thin litter layer, well-decayed leaf litter and humus below uppermost layer, dry, 21 II 1996, leg. H. Schatz – (2 sp.); Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, *Quercus*-forest, 2200 m a.s.l., dense well-decayed leaf litter and humus, moist, 19 II 2000, leg. H. Schatz – (5 sp.); Cordillera

Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (15 sp.); Fuerte Sherman forest at Mouth of Río Chagres near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., dense well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz – (1 sp.); Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock with lichens and decayed leaf litter and humus layer, 1 m below previous sample, moist to wet, 04 II 1997, leg. H. Schatz – (70 sp.); Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock, moist to wet, 04 II 1997, leg. H. Schatz – (13 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, lower edge of *Quercus*-forest at slope, 2270 m a.s.l., dense well-decayed leaf litter with pieces of wood and humus, dry to moist, 04 II 1997, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Mesoamerican and Patagono–Andean.

Arphthiracarus aulicius NIEDBALA, 2006

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of litter and rhizosphere, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, São Paulo, Instituto Butantan, deciduous forest above house where was my accommodation, sample of leaf litter, 07 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, São Paulo, Instituto Butantan, 100 m from Museum of Microbiology, coconut palm forest, sample of palm leaf litter, 07 XI 2002, leg. J. Stary – (1 sp.).

Distribution. Neotropical, endemic.

Arphthicarcarus inelegans (NIEDBALA, 1986)

Galapagos Islands., Ecuador, Isla Santa Cruz, Media Luna Alta, ex barridor, 21 VI 1992, leg. J. Palacios – (1 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Cyathea* sp., Tropical Moist Forest, 35 m a.s.l., well-decayed leaf and fern litter with pieces of wood, moist to wet, 24 II 1997, leg. H. Schatz – (1 sp.);

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III 2003, 05/F/02 – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/AM – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/BH – (120 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 23 II 2003, 05/TN/05 – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 II 2003, 05/WF/02 – (12 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 III 2003, 05/WF/04 – (25 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AS – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BM – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BV – (30 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 18 III 2003, 05/WF/03 – (7 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 IV–19 IV 2003, 05/WP/03 – (30 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II 2003, 05/WP/01 – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01 – (3 sp.);

Panama, Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, 5 km north of Cana, in secondary growth, 530 m a.s.l., thin litter layer, well-decayed leaf litter and humus below uppermost layer, dry, 21 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Pantropical.

Arphthycarus iubatus NIEDBALA 2003

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*, moist, 09 III 2004, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

Arphthycarus latebrosus (NIEDBALA, 1982)

Cocos Island, Costa Rica, trail to Cerro Yglesias along ridge, tropical humid forest, 250 m a.s.l., partially well-decayed leaf litter with roots and humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (1 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (2 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (1 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (1 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under young palm, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter with roots below uppermost layer, wet, 24 II 1997, leg. H. Schatz – (1 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (8 sp.); Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/32 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/48 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/08 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/B/AH/104 – (4 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/BAS/108 – (4 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/38 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/13 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/22 – (14 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 II 2001, 11/WF/03/19 – (5 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/10 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BV/051 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/20 – (7 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/26 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/18 – (4 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/41 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 9 IV 2001, 11/B/AS/096 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 13 IV 2001, 11/B/BV/106 – (13 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/25 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/11 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/29 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/38 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/31 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/

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INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/041 – (6 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 21 III 2001, 11/B/BS/076 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 III 2001, 11/B/BM/052 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 I–23 II 2001, 11/WF/01/11 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/070 – (10 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/12 – (4 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/AS/040 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/47 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 14 and 17 III 2001, 11/WF/02/30 – (3 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/19 – (7 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 17 III 2001, 11/WF/02/13 – (5 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 20 and 23 II 2001, 11/WF/01/49 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 22 III 2001, 11/WF/03/17 – (2 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/21 – (5 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 22 and 23 II 2001, 11/WF/01/17 – (4 sp.); Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio-OET-ALAS, 17 III 2001, 11/WF/02/42 – (1 sp.); Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio-OET-ALAS, 17 III 2001, 11/WF/02/20 – (1 sp.); Prov. Heredia, Est. Biol. La Selva, 1050–1150 m, 10°26'N 84°01'W INBio-OET-ALAS, 17 III 2001, 11/WF/02/27 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, INBio-OET-ALAS transect, 10°11'N 84°07'W, 09 II 2002, 20/B/AH/011 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BM – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/AS – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BS – (7 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BE – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BV – (12 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/B/BH – (24 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 23 II 2003, 05/TN/05 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 22 II 2003, 20/WF/02 – (9 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 16 III 2002, 20/WF/03 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 01 IV 2002, 20/B/BF/082 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/WF/04 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 17 II 2002, 20/WF/01 – (3 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 22 III 2003, 05/WF/04 – (25 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/AS – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 13 IV 2003, 05/B/BH/091 – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/BS – (30 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II–20 IV 2003, 05/B/BE – (5 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 18 III 2003, 05/WF/03 – (5 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 16 IV–19 IV 2003, 05/WP/03 – (30 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio-OET-ALAS transect, 17 II 2003, 05/WP/01 – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (7 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–24 IV 2004, 03/B/BH – (4 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–23 IV 2004, 03/B/BM – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W,

INBio-OET-ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (72 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/BIAM/012 – (29 sp.);

Panama, Panama Canal, Semaphore Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Cordillera de Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, under dwarf shrubs below transmitting aerials, Subalpine Paramo, 3333 m a.s.l., deep leaf litter with few moss and humus, moist to wet, 04 II 1997, leg. H. Schatz – (17 sp.); La Fortuna – Prov. Chiriquí, Cordillera Talamanca, at Rio Hornito, at small river, Lower Montane Rain Forest, 1120 m a.s.l., partially-decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 750 m a.s.l., clearing of finca, large epiphyte tree with *Celusia* and ferns, well-decayed leaf litter and pieces of wood, moist, 30 I 1997, leg. H. Schatz – (1 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 70 m a.s.l., partially-decayed leaf litter and pieces of wood below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach, 5 m a.s.l., partially-decayed leaf litter with sand, moist to wet, 04 II 1996, leg. H. Schatz – (6 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, 900 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with humus, dry, 19 I 1997, leg. H. Schatz – (2 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 850 m a.s.l., young growth with *Colpothrinax cookii* palms, thin litter layer under Melastomataceae and ferns, partially well-decayed leaf litter, moist to wet, 30 I 1997, leg. H. Schatz – (2 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1250 m a.s.l., epiphytic moss and *Bromelia* roots with humus from a fallen tree, about 15 m high, moist to wet, 09 II 2000, leg. H. Schatz – (2 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 820 m a.s.l., above clearing of finca, dense forest with Bamboo, well-decayed leaf litter, partially mouldy, below uppermost layer with big leaves, moist to wet, 30 I 1997, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2100 m a.s.l., partially decayed leaf litter with moss bamboo and humus, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, beside mouth of small river into Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., partially to well decayed leaf litter, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 850 m a.s.l., near trail junction, dense primary forest with many *Cyathea*-ferns and palms, *Xalapeia*, *Bauhinia* and Melastomataceae, well-decayed leaf litter with clayey humus below uppermost layer, moist to wet, 30 I 1997, leg. H. Schatz – (8 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest below bamboo, 1220 m a.s.l., dense well-decayed leaf litter and humus under uppermost layer, moist, 20 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1220 m a.s.l., partially-decayed leaf litter, moist to wet, 19 II 2004, leg. H. Schatz – (1 sp.); La Fortuna, Cordillera Talamanca, Continental Divide Trail, in dense forest, Lower Montane Rain Forest, 1200 m a.s.l., partially-decayed leaf litter, moist to wet, 09 II 2000, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, near Alto Piedras, at Cerro Tute, Premontane Wet Forest, dense forest with palms and secondary growth, at water cistern, 830 m a.s.l., very well-decayed leaf litter under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, at Rio Hornito, Lower Montane Rain Forest, 1120 m a.s.l., moss from tree at about 1 m altitude, moist to wet, 17 II 2004, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, in young growth with *Bactris major*, 80 m a.s.l., well-decayed leaf litter under uppermost layer, dry to moist, 28 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth under *Cecropia* and *Ochroma pyramidale*-Balsa, many palms, thin leaf litter layer and pieces of wood on surface, well-decayed leaf litter, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, under *Bursera simaruba* and palms, ferns, vines, 40 m a.s.l., partially-decayed leaf litter between rocks with pieces of wood and humus, dry to moist, 08 II 1996, leg. H. Schatz – (1 sp.); El Copé, Premontane Rain Forest, cloud forest, Sendero "Las Ranas" at steep part south of small river, 700 m a.s.l., partially-decayed leaf and bamboo litter beside trail, moist to wet, depth 3 cm, 03 III 2004, leg. H. Schatz – (1 sp.); El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", 720 m a.s.l., well-decayed leaf litter and *Heliconia* leaves, moist to wet, depth 4 cm, 03 III 2004, leg. H.

Schatz – (1 sp.); El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (1 sp.);

Cuba, Sancti Spiritus, Topes de Collantes, litter of pines (*Pinus caribaea*) and ferns, 29 X 2002, leg. D. Prieto – (29 sp.); La Habana, Bejucal–Madruga–Coliseo hills, litter of semideciduous forest, 10 XI 2002, leg. D. Prieto – (5 sp.).

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian. The first time found in Belize, Cuba and Cocos Island.

Arphthycarus mirandus (NIEDBAŁA, 1988)

Panama, El Copé, Premontane Rain Forest, Cloud forest, Sendero "Los Helechos", 720 m a.s.l., well-decayed leaf litter and *Heliconia* leaves, moist to wet, depth 4 cm, 03 III 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (4 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

Arphthycarus paraallocotos NIEDBAŁA, 2006

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/AM – (2 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/B/BV – (5 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/03 – (32 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (ca 50 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/01 – (20 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/25 – (6 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/WF/04/14 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/06 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BV/017 – (7 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 12 and 15 IV 2002, 20/WF/04/47 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/AH/020 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 14 and 17 II 2002, 20/WF/01/47 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/BV/026 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/BV/051 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/B/AS/053 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/WF/02/20 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 19 and 21 II 2002, 20/WF/02/08 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 18 and 21 II 2002, 20/WF/02/34 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 10 III 2002, 20/B/AH/043 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/AS/063 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/WF/02/14 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 21 II 2002, 20/B/AS/013 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000

m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 27 III 2002, 20/B/BE/07 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 10 III 2002, 20/B/BH/047 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 23 III 2002, 20/B/BV/072 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 IV 2002, 20/B/BV/095 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 21 II 2002, 20/B/BV/029 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 21 IV 2002, 20/B/AS/103 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 21 IV 2002, 20/B/AH/028 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 09 II 2002, 20/B/BH/007 – (5 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 20 IV 2002, 20/B/BH/105 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 18 and 21 II 2002, 20/WF/02/10 – (1 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio-OET-ALAS transect, 15 II 2002, 20/B/BV/023 – (1 sp.).

Distribution. Neotropical, Costa Rica, endemic.

Arphthycarus pararidiculus NIEDBALA 2003

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 15 IV 2001, 11/B/BV/109 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 23 II 2001, 11/WF/01/25 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 9 II 2001, 11/B/BE/017 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio-OET-ALAS transect, 10°16'N 84°05'W, 19 and 22 III 2001, 11/WF/03/04 – (1 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BM – (3 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio-OET ALAS transect, 09 II–23 IV 2005, 15/B/BV – (4 sp.);

Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1280 m a.s.l., *Bromelia* roots with moss and humus from a fallen tree, about 25 m high, moist, 10 II 2000, leg. H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1150 m a.s.l., moss from bark with humus underneath, moist, 09 II 2000, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well-decayed leaf litter with humus, moist, 28 II 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian. The first time found in Panama.

Arphthycarus parasaucius NIEDBALA, 2003

Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 130 m a.s.l., cleared forest with many vines, leaf litter, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.); surrounding of Boquete, Lower Montane Wet Forest, 1750 m a.s.l., well-decayed leaf litter and humus below uppermost layer, thin litter layer, moist, 05 II 1997, leg. H. Schatz – (3 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (12 sp.); Prov. Chiriquí, Isla Boca Brava south of David, northeastern side of the island, Deciduous Dry Forest, 20 m a.s.l., partially-decayed leaf litter, dry to moist, 05 II 2000, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Alegre at northern end, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and many vines (*Mocuna*), well-decayed leaf litter of vines, dry to moist, 14 II 1997, leg. H. Schatz – (2 sp.); Volcán Barú, ridge northwest of Boquete, Montane Rain Forest, 1900 m a.s.l., epiphytic lichens and bark from trees, moist, 19 II 2000, leg. H. Schatz – (3 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with

humus, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (37 sp.); Volcán Barú, summit, Subalpine Paramo, 3475 m a.s.l., moss cushions on shade side of rock, moist to wet, 04 II 1997, leg. H. Schatz – (5 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, elfin forest with moss and lichens on trees, 3300 m a.s.l., dense leaf litter between roots, moist to wet, 04 II 1997, leg. H. Schatz – (11 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 60 m a.s.l., dense undergrowth of *Monstera* and vines, well-decayed leaf litter and roots, with humus, dry to moist, 20 I 1997, leg. H. Schatz – (1 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 100 m a.s.l., between buttressed roots, decayed leaf litter and pieces of wood, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian.

***Arphthycarus pervalidus* NIEDBAŁA 2003**

Costa Rica, Prov. Heredia, 6 km SSE La Virgen, 1050–1150 m, 10°16'N 84°05'W, INBio–OET–ALAS transect, 19 and 22 III 2001, 11/WF/03/023 – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

***Arphthycarus pervicax* (NIEDBAŁA, 1984)**

Cuba, Province Cienfuegos, Yaguramas, forest, moder sample from deciduous wood, 02 X 1981, leg. J. Rusek – (1 sp.).

Distribution. Neotropical, Antilles only. The first time found in Cuba.

***Arphthycarus saucius* (NIEDBAŁA, 1988)**

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 II 2003, 05/F/01/06 – (1 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 II 2003, 05/WF/02 – (4 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 III 2003, 05/WF/04 – (8 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BV – (10 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II 2004, 03/B/BE – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 13 IV 2004, 03/WF/02 – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

***Arphthycarus sororius* (NIEDBAŁA, 1982)**

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*, moist, 09 III 2004, leg. H. Schatz – (10 sp.); near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (12 sp.);

Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (4 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2350 m a.s.l., dense well decayed leaf litter under *Quercus costaricensis*, moist, 21 II 2004,

leg. H. Schatz – (7 sp.); Darién, Serranía de Pirre, Premontane Rain Forest, dense cloud forest, under palm (*Geonoma*), 1200 m a.s.l., well-decayed leaf litter and humus below uppermost layer, moist, 20 II 1996, leg. H. Schatz – (6 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well-decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only.

***Arphthycarus sulcatus* NIEDBALA, 2004**

Panama, Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, dense leaf litter layer, Lower Montane Rain Forest, 1260 m a.s.l., partially-decayed leaf litter, moist, 09 II 2000, leg. H. Schatz – (5 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, along Rio Hornito, Lower Montane Rain Forest, 1250 m a.s.l., moss from bark, moist, 09 II 2000, leg. H. Schatz – (4 sp.).

Distribution. Neotropical, Panama, endemic.

***Protophthiracarus bernini* NIEDBALA, 1991**

Guatemala, Caribbean Coast near Livingston, at River Los Altares, hardwood tropical rain forest. 10 m a.s.l. decayed leaf litter, moist, 08 VIII 1991, leg. H. Schatz – (3 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Guatemala.

***Protophthiracarus clandestinus* NIEDBALA, 2003**

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (6 sp.);

Panama, Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, 2000 m a.s.l., partially to well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

***Protophthiracarus kyphos* NIEDBALA, 2004**

Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. Ł. Kaczmarek – (1 sp.).

Distribution. Neotropical, Antilles only. The first time found in Dominican Republic.

***Protophthiracarus oidematos* NIEDBALA, 2004**

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under young palm, Tropical Moist Forest, 50 m a.s.l., well-decayed leaf litter with roots below uppermost layer, wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, beside South Stann Creek, Tropical Moist Forest, 30 m a.s.l., well-decayed leaf litter with roots and humus, wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, under *Cyathea* sp., Tropical Moist Forest, 35 m a.s.l.,

well-decayed leaf and fern litter with pieces of wood, moist to wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 40 m a.s.l., deep well-decayed leaf litter with roots, wet, 24 II 1997, leg. H. Schatz – (3 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, under *Schizolobium parahyllum*, Tropical Moist Forest, 35 m a.s.l., leaf litter between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz – (1 sp.);

Panama, Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with secondary growth, well-decayed leaf litter (*Cecropia* leaves), moist, 25 I 1996, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 70 m a.s.l., partially-decayed leaf litter and pieces of wood below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz – (1 sp.); Panama Canal, Semaphor Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 30 m behind beach under Melastomataceae and Cycadaceae, 5 m a.s.l., well-decayed leaf litter with sand, no humus layer, moist to wet, 04 II 1996, leg. H. Schatz – (12 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (5 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in swampy forest with dense undergrowth, many lianas, 20 m a.s.l., well-decayed leaf litter, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Pseudobombax septenatum*, 90 m a.s.l., partially-decayed leaf litter, moulded, below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (7 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama and Belize.

***Protophthiracarus varablancus* NIEDBALA, 2006**

Costa Rica, Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/02 – (7 sp.); Prov. Heredia, 9 km NE Vara Blanca, 10°14'N 84°06'W 1450–1550 m, INBio–OET ALAS transect, 09 II–23 IV 2005, 15/WF/01 – (7 sp.).

Distribution. Neotropical, Costa Rica, endemic.

***Protophthiracarus varians* (JACOT, 1933)**

Brazil, São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.).

Nearctic southern and Neotropical, broad. The first time found in Brazil.

***Protophthiracarus varius* NIEDBALA et SCHATZ, 1996**

Galapagos Islands, Ecuador, Isla Santa Cruz, Agricultural area above Bellavista, 21 VI 1992, leg. J. Palacios Aguirre – (1 sp.);

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 16 III 2002, 20/WF/03 – (6 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (17 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 18 II 2004, 03/WF/01 – (6 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/

B/BH – (20 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–24 IV 2004, 03/B/BV – (15 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BM – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 13 IV 2004, 03/WF/02 – (3 sp.);

Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2300 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.);

Cuba, Sancti Spiritus, Topes de Collantes, litter of pines (*Pinus caribaea*) and ferns, 29 X 2002, leg. D. Prieto – (1 sp.).

Distribution. Neotropical, Mesoamerica, Guyano–Brazilian and Galapagos Islands. The first time found in Panama and Galapagos Islands.

***Notophthiracarus conspersus* NIEDBALA, 2006**

Costa Rica, Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/BV/041 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/070 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 20 II 2001, 11/B/AS/040 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/066 – (1 sp.); Prov. Heredia, 16 km SSE La Virgen, 1050–1150 m, INBio–OET–ALAS transect, 10°16'N 84°05'W, 15 III 2001, 11/B/AM/112(/089, /036) – (1 sp.);

Panama, Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 900 m a.s.l., bromelias from trees with roots and trunk, partially decayed, moist, partially wet, 30 I 1997, leg. H. Schatz – (1 sp.).

Distribution. Neotropical, Costa Rica, endemic.

***Notophthiracarus dilatatus* NIEDBALA, 2004**

Chile, Patagonia, S 39°43.251' W 73°23.809', Los Lagos, Nahuel Huapi, Valdivia, Curinanco, Patagonia, S 39°43.251' W 73°23.809', Los Lagos, Nahuel Huapi, Valdivia, Curinanco, litter from young forest with *Notofagus*, 03 II 2006, leg. W. Magowski – (3 sp.); Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andono PN, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Chile, endemic.

***Notophthiracarus mastigos* NIEDBALA, 2004**

Chile, Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, Sector Correntoso, mixed forest, litter under *Notofagus*, 04 II 2006, leg. W. Magowski – (2 sp.); Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andono PN, mixed forest, litter under *Austrocedrus*, 04 II 2006, leg. W. Magowski – (1 sp.); Patagonia, S 41°27.884' W 72°38.733', Los Lagos, Puerto Montt, Alerce Andino PN, mixed forest with *F. cupressoides*, wood dust from tronk, 05 II 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Chile, endemic.

***Notophthiracarus paraflagellatus* NIEDBALA, 2004**

Chile, Patagonia, S 39°43.251' W 73°23.809', Los Lagos, Nahuel Huapi, Valdivia, Curinanco, Patagonia, S 39°43.251' W 73°23.809', Los Lagos, Nahuel Huapi, Valdivia, Curinanco, litter from young forest with *Notofagus*, 03 II 2006, leg. W. Magowski – (11 sp.);

Argentina, Patagonia, S 41°12.361' W 71°27.722', Rio Negro, Bariloche, Nahuel Huapi PN, Refugio Frey, near Van Titten, bamboo thicket, 26 I 2006, leg. W. Magowski – (1 sp.).

Distribution. Neotropical, Patagono–Andean.

Notophthiracarus pedanos NIEDBAŁA, 2003

Costa Rica, Cordillera Central, Volcán Barva, 2720 m, cloud forest along trail to Laguna Copey, partially decayed leaf litter, wet, 16 III 1996, leg. H. Schatz – (26 sp.); Cordillera Central, Volcán Barva, 2700 m, cloud forest near Laguna Barva, well decayed leaf litter between roots, moist, 16 III 1996, leg. H. Schatz – (50 sp.);

Panama, Cordillera Talamanca near Volcán Barú, Lower Montane Rain Forest, Cloud forest, Sendero Los Quetzales, 2200 m a.s.l., partially decayed leaf litter and humus under *Magnolia sororum*, dry to moist, 21 II 2004, leg. H. Schatz – (1 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2400 m a.s.l., well decayed leaf litter beside trunk, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest, 950 m a.s.l., deep litter layer, well-decayed leaf litter and humus under uppermost layer, moist to wet, 10 II 1996, leg. H. Schatz – (6 sp.); Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (1 sp.); Volcán Barú, beside road to summit, Montane Rain Forest, cloud forest with *Quercus*, 2800 m a.s.l., dense well-decayed leaf litter with moss and humus, moist, 04 II 1997, leg. H. Schatz – (5 sp.).

The first time found in Panama.

Distribution. Neotropical, Mesoamerican and Guyano–Brazilian.

Notophthiracarus schizocomus (HAMMER, 1962)

Notophthiracarus niger MAHUNKA, 1980: BALOGH et BALOGH, 2002.

Atropacarus (Hoplophorella) cucullatus (EWING, 1909)

Galapagos Islands, Ecuador, Isla Santiago, western side, Los Aguacates: moist highland, 550 m a.s.l., Forest of *Croton scouleri* and *Tournefortia rufo-sericea*, under *Croton*, 09 VI 1991, leg. S. Abedrabbo – (1 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (12 sp.); near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, in *Pterocarpus officinalis* swamp, partially decayed leaf litter and sand, moist, 09 III 2004, leg. H. Schatz – (1 sp.)

Panama, Panama Canal, Semaphor Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 70 m a.s.l., partially-decayed leaf litter and pieces of wood below uppermost layer, dry to moist, 28 II 1996, leg. H. Schatz – (4 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, 900 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.); Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with humus, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, under *Anacardium excelsum* and *Carludovicia palmata*, Tropical Moist Forest, 110 m a.s.l., dense well-decayed leaf litter (*Anacardium* leaves) with humus below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, in swampy forest with dense undergrowth, many lianas, 20 m a.s.l., well-decayed leaf litter, deep litter layer, moist to wet, 04 II 1996, leg.

H. Schatz – (1 sp.); Prov. Chiriquí, La Fortuna, Cordillera Talamanca, Lower Montane Rain Forest, 1220 m a.s.l., partially-decayed leaf litter, moist to wet, 19 II 2004, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, 5 m a.s.l., undecayed leaf litter with sand, roots, and pieces of wood, very thin litter layer, moist, 01 II 1996, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under *Bursera simaruba* and *Acacia bullhorni*, 35 m a.s.l., well-decayed organic litter, below uppermost layer, dry, 08 II 1996, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Tropical Moist Forest, 50 m a.s.l., under *Heliconia* and *Ochroma pyramidale*–Balsa, well-decayed leaf litter and decayed wood, thin litter layer on surface, dry to moist, 18 I 1997, leg. H. Schatz – (3 sp.); Bocas del Toro, Isla Colón, Tropical Moist forest, Sendero Bluff Beach, 5 m a.s.l., well-decayed leaf litter and humus, dry to moist, 26 II 2004, leg. M. Akers – (1 sp.);

Cuba, Matanzas, Cienaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (65 sp.).

The first time found in Cuba.

Distribution. Semicosmopolitan.

***Atropacarus (Hoplophorella) frondeus* NIEDBALA, 2003**

Panama, Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., under rotting tree, organic litter and humus of bromelia, 20 I 1996, leg. H. Schatz – (1 sp.).

The first time found in Panama.

Distribution. Neotropical, Mesoamerica only.

***Atropacarus (Hoplophorella) hamatus* (EWING, 1909)**

Cocos Island, Costa Rica, Bahía Yglesias near waterfall, 30 m a.s.l., open area, moss from rock, wet, 07 III 1996, leg. H. Schatz – (3 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., epiphytic moss from *Cyathea*, mainly moist, part near bark, 09 III 1996, leg. H. Schatz – (2 sp.); Bahía Chatham, in grass above bay, 50 m a.s.l., partially well-decayed grass litter and moss along trail, dry to moist, 10 III 1996, leg. H. Schatz – (5 sp.); near Cerro Pelón, cloud forest with *Cyathea*, *Celusia*, thickly covered with bromelias and moss, 500 m a.s.l., between trees and ferns, deep leaf litter, moss, roots and humus, moist, 09 III 1996, leg. H. Schatz – (25 sp.); trail to Cerro Yglesias, tropical humid forest, 290 m a.s.l., near old tree, fern litter with roots and humus, dry to moist, 09 III 1996, leg. H. Schatz – (6 sp.); 200 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (18 sp.); Bahía Yglesias near waterfall, 30 m a.s.l., under low trees, *Philodendron*, *Psychotria* and ferns, thin litter layer, leaf litter on roots 10–20 cm above ground, partially well decayed leaf litter and roots, wet, 07 III 1996, leg. H. Schatz – (14 sp.); Bahía Yglesias, near river, 15 m a.s.l., dense forest with deep litter layer, decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (2 sp.); Bahía Yglesias, downstream of waterfall, 25 m a.s.l., dense forest with thin litter layer between rocks, leaf litter and humus, wet, 07 III 1996, leg. H. Schatz – (5 sp.); 180 m a.s.l., tropical humid forest, deep litter layer, leaf litter with roots under uppermost layer, moist to wet, 09 III 1996, leg. H. Schatz – (50 sp.); Bahía Chatham, at small waterfall on southern side of the bay, 15 m a.s.l., fern litter with humus on rocks, moist, 10 III 1996, leg. H. Schatz – (70 sp.); 220 m a.s.l., tropical humid forest, thin litter layer, partially decayed leaf litter with roots and humus in small cavity, moist, 09 III 1996, leg. H. Schatz – (14 sp.); Bahía Yglesias, near river, 10 m a.s.l., dense forest with deep litter layer, well decayed leaf litter in lower layer, wet, 07 III 1996, leg. H. Schatz – (3 sp.);

Galapagos Islands, Ecuador, Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (3 sp.); Isla Isabela, Volcán Cerro Azul, Arid zone, 5 m a.s.l., open herb vegetation, 19 V 1991, leg. L. Baert, K. Desender, J.P. Maelfait – (1 sp.);

Mexico, Yucatán Peninsula, Calakmul, Campeche, beside trail to ruins, 200 m a.s.l., dense lower Tropical Moist Forest, partially-decayed leaf litter with pieces of wood, moist, 07 II 2001, leg. H. Schatz – (2

sp.); Yucatán Peninsula, near pond on road to Calakmul, 150 m a.s.l., dense lower tropical forest, partially to well decayed leaf litter with pieces of wood leaf litter between buttressed roots, moist, 21 IX 2002, leg. H. Schatz – (2 sp.); Yucatán Peninsula, near pond on road to Calakmul, 150 m a.s.l., dense lower tropical forest, partially to well decayed leaf litter, dry to moist, 21 IX 2002, leg. H. Schatz – (7 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, under *Cyathea* sp., Tropical Moist Forest, 35 m a.s.l., well-decayed leaf and fern litter with pieces of wood, moist to wet, 24 II 1997, leg. H. Schatz – (3 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, Tropical Moist Forest, 40 m a.s.l., deep well-decayed leaf litter with roots, wet, 24 II 1997, leg. H. Schatz – (6 sp.); Long Cay, Light House Reef, near coastline, 2 m a.s.l., dense tree and bush vegetation, well-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (5 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (16 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (4 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (2 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (30 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (20 sp.);

Costa Rica, Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 III–20 IV 2003, 05/B/BE – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 22 III 2003, 05/WF/04 – (6 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/BV – (12 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 17 II–20 IV 2003, 05/B/AH – (2 sp.); Prov. Heredia, 11 km SE La Virgen, 450–550 m, 10°20'N 84°04'W, INBio–OET–ALAS transect, 16 IV–19 IV 2003, 05/WP/03 – (6 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II–23 IV 2004, 03/B/BF – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect, 15 II 2004, 03/B/BE – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 10 II–23 IV 2004, 03/B/AM – (2 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio–OET–ALAS transect 15 II–23 IV 2004, 03/B/AS – (2 sp.); Cordillera de Tilarán, Reserva Biológica Monteverde, Santa Elena, about 1700 m a.s.l., cloud forest, outer trail, well decayed leaf litter under Melastomataceae and *Xanthosoma jaquini*, moist, 13 II 1995, leg. H. Schatz – (8 sp.); Guanacaste, Parque Nacional Santa Rosa, 300 m a.s.l., dry forest, near bat cave along trail to beach, dry, partially decayed leaf litter, 14 II 1995, leg. H. Schatz – (9 sp.);

Panama, Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 130 m a.s.l., cleared forest with many vines, leaf litter, dry to moist, 24 I 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, canopy layer, about 20 m above ground 40 m a.s.l., Tropical Moist Forest, decayed wood, dry to moist, 29 I 1997, leg. H. Schatz – (2 sp.); Costa Abajo, old road to Piña, 180 m a.s.l., Tropical Wet Forest with thin but continuous litter layer, leaf litter, dry to moist, 25 I 1996, leg. H. Schatz – (1 sp.); Prov. Veraguas, Santa Fé, Cordillera Central, at Cerro Tute, Montane Wet Forest, dense forest above pasture, 880 m a.s.l., deep litter layer, well-decayed leaf litter with humus, moist to wet, 10 II 1996, leg. H. Schatz – (1 sp.); Peninsula Soná, Punta Catalina, Tropical Moist Forest beside beach, 5 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (1 sp.); Panama Canal, north of Contractor's Hill, Seasonal Deciduous Dry Forest, 60 m a.s.l., well-decayed leaf litter, moist, 28 I 1996, leg. H. Schatz – (2 sp.); Costa Abajo, 5 km east of Piña, 5 m a.s.l., Coastal Rain Forest with thin organic litter layer, 20 m a.s.l., well-decayed leaf litter under hardwood trees, moist, 26 I 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, near beach south of Punta Barro Colorado, 5 m a.s.l., Premontane Moist Forest, under *Hibiscus*, well-decayed leaf litter with pieces of wood, moist, 14 II 1997, leg. H. Schatz – (4 sp.); Fuerte Sherman forest near Colón, Caribbean Coast, Tropical Moist Forest, 20 m a.s.l., partially well-decayed leaf litter and pieces of wood, dry to moist, 01 III 2004, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (3 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., well-decayed leaf litter with humus, moist, 28 II 1996, leg. H. Schatz

– (2 sp.); Parque Nacional Chagres, Cerro Jefe, Montane Rain Forest, 820 m a.s.l., above clearing of finca, dense forest with Bamboo, well-decayed leaf litter, partially mouldy, below uppermost layer with big leaves, moist to wet, 30 I 1997, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruzes along trail under dense liana tangle, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf litter and humus and small pieces of wood, moist, 20 I 1996, leg. H. Schatz – (1 sp.); Fuerte Sherman forest at Mouth of Rio Chagres near Colón, Caribbean Coast, Tropical Moist Forest, in steep forest beside small beach near Fuerte San Lorenzo, 5 m a.s.l., well-decayed leaf litter and roots, dry to moist, 01 III 2004, leg. H. Schatz – (5 sp.); El Copé, Premontane Rain Forest, cloud forest, Sendero “Los Helechos”, 700 m a.s.l., dense well-decayed leaf litter under *Wercklea cochleana*, moist to wet, depth 10 cm, 03 III 2004, leg. H. Schatz – (7 sp.); Barro Colorado Island, 140 m a.s.l., deep litter layer, well-decayed leaf litter, partially moulded, with humus, below uppermost layer, moist, 28 II 1996, leg. H. Schatz – (2 sp.); Darién, Serranía de Pirre, Tropical Wet Forest, in small crevice, 900 m a.s.l., deep, very well-decayed leaf litter and humus, dry to moist, 20 II 1996, leg. H. Schatz – (2 sp.); El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, along river, dense undergrowth with many young trees, 780 m a.s.l., between buttressed roots, very well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz – (2 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, 5 m a.s.l., undecayed leaf litter with sand, roots, and pieces of wood, very thin litter layer, moist, 01 II 1996, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruzes along trail near dense liana tangle, Tropical Moist Forest, 50 m a.s.l., partially-decayed leaf litter, moist, 20 I 1996, leg. H. Schatz – (2 sp.); Costa Abajo, east of Piña, 5 m a.s.l., small dry forest stand along coast with Araceae and Ficus, well-decayed leaf litter with roots and humus below undecayed uppermost layer, dry to moist, 25 I 1996, leg. H. Schatz – (1 sp.); Madden Dam, Deciduous Dry Forest, along road near Rio Chagres, at rivulet, under palms, 35 m a.s.l., partially-decayed leaf litter with pieces of wood and soil, thin litter layer, dry to moist, 08 II 1996, leg. H. Schatz – (1 sp.); Panama Canal, north of Contractor’s Hill, Seasonal Deciduous Dry Forest with thin litter layer, 60 m a.s.l., well-decayed leaf litter, dry, 28 I 1996, leg. H. Schatz – (1 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, 100 m a.s.l., between buttressed roots, decayed leaf litter and pieces of wood, dry to moist, 24 I 1996, leg. H. Schatz – (2 sp.); Darién, Cana, Tropical Wet Forest, well-developed secondary forest above mine, 700 m a.s.l., deep litter layer, well-decayed leaf litter with roots and humus below uppermost layer, dry to moist, 22 II 1996, leg. H. Schatz – (2 sp.); El Valle Antón, 630 m a.s.l., dense leaf litter, almost undecayed with humus, moist, 08 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Pseudobombax septenatum*, 90 m a.s.l., partially-decayed leaf litter, moulded, below uppermost layer, moist to wet, 22 I 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (2 sp.); El Copé, Premontane Rain Forest, Cloud forest, Sendero “Los Helechos”, near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (5 sp.); Fort Sherman, 140 m a.s.l., some km from mouth of a canal, 05 V 2006, leg. P. Łukasik – (2 sp.); Buena Vista, 27 m a.s.l., litter of forest, 18 V 2006, leg. P. Łukasik – (2 sp.);

Cuba, Matanzas, Cienaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (90 sp.); 20 km S from National Motorway, Zapata Peninsular primary deciduous forest, 01 VI 2004, leg. W. Niedbala – (2 sp.);

Dominican Republic, 7 km NW from Puerto Plata, 20 m a.s.l., detritus under tree, rocks and wood dust, 16 XI 2004, leg. Ł. Kaczmarek – (8 sp.);

Virgin Island, N 18°21.822' W 064°43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (16 sp.);

Brazil, São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of moss from the rock crevices, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of wet moss from rock crevices, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of bush leaf litter growing on the rock wall, 09 XI 2002, leg. J. Stary – (6 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of bush leaf litter growing on the rock wall, 09 XI 2002, leg. J. Stary – (6 sp.); São Paulo State, rock above beach Praia dos Pedras, 1

km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.);

Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski – (7 sp.).

Distribution. Semicosmopolitan. The first time found in Dominican Republic.

***Atropacarus (Hoplophorella) singularis* (SELLNICK, 1959)**

Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter, moist, 02 III 2002, leg. H. Schatz – (2 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (4 sp.);

Cuba, Matanzas, Cienaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (46 sp.);

Virgin Island, N 18°21.822' W 064° 43.861' Waterleman Bay, 5k from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (2 sp.).

Distribution. Pantropical. The first time found in Belize.

***Atropacarus (Hoplophorella) stilifer* (HAMMER, 1961)**

Galapagos Islands, Ecuador, Isla Isabela, Volcán Sierra Negra, Transition / *Scalesia* zone, 230 m a.s.l., under *Sapindus saponaria*, sample: decayed leaf litter with roots and soil, moist, 07 II 1987, leg. H. Schatz – (1 sp.); Isla San Cristobal, Puerto Baquerizo Moreno, near electric power plant, Arid (*Piscidia*) zone, 100 m a.s.l. *Parkinsonia aculeata*, *Pennisetum* sp., 01 III 1992, leg. S. Abedrabbo – (1 sp.);

Guatemala, Rio Dulce, in Manatee Biotope Chocon Machacas, Hardwood tropical forest at Rancho. 5 m a.s.l., decayed leaf litter, moist, 02 II 1990, leg. H. Schatz – (1 sp.);

Belize, Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, partially-decayed leaf litter above sandy ground, dry to moist, 28 II 2001, leg. H. Schatz – (3 sp.); Long Cay, Light House Reef, interior of the island, 2 m a.s.l., dense tree and bush vegetation, deep, well-decayed leaf and humus litter in a small depression, moist, below surface, 28 II 2001, leg. H. Schatz – (3 sp.);

Panama, Panama Canal, Semaphor Hill, at Quebrada, Tropical Moist Forest, 160 m a.s.l., under giant trees, partially well-decayed leaf litter and roots under uppermost layer, dry to moist, 24 I 1997, leg. H. Schatz – (2 sp.); Darién, Cana, Tropical Wet Forest, dense forest with secondary vegetation, under Melastomataceae, 580 m a.s.l., well-decayed leaf litter with roots and humus, moist, 17 II 1996, leg. H. Schatz – (1 sp.); Cordillera de Talamanca, on ridge beside Rio Teribe west of Weksó, Premontane Rain Forest, 120 m a.s.l., dense forest, partially-decayed leaf litter with pieces of wood, moist to wet, 21 I 2000, leg. H. Schatz – (2 sp.); Darién, Golfo de San Miguel – Punta Patiño, 15 km south of coast, Tropical Moist Forest, 50 m a.s.l., secondary seasonal rain forest with many young trees and large *Cavannilesia* and *Ceiba pentandra*, well-decayed leaf litter below uppermost layer with humus and mouldy leaves, moist, 15 II 1997, leg. H. Schatz – (1 sp.); Prov. Chiriquí, Isla Boca Brava south of David, northeastern side of the island, Deciduous Dry Forest, 20 m a.s.l., partially-decayed leaf litter, dry to moist, 05 II 2000, leg. H. Schatz – (2 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth with much young trees, thin leaf litter layer and pieces of wood on surface with humus, dry, 19 I 1997, leg. H. Schatz – (1 sp.); Gamboa, near swamp at Rio Chagres, Tropical Moist Forest, 30 m a.s.l., leaf litter on surface, dry, 23 I 1997, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., thin organic litter layer, decayed leaf litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (2 sp.); Barro Colorado Island, Panama Canal, Tropical Moist Forest, 140 m a.s.l., between buttressed roots, well-decayed leaf litter, moist, 28 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, under *Anacardium excelsum* and *Carludovicia palmata*, Tropical Moist Forest, 110 m a.s.l., dense well-decayed leaf litter (*Anacardium* leaves) with humus below uppermost layer, moist to wet, 22 I

1996, leg. H. Schatz – (3 sp.); Darién, Cana, Tropical Wet Forest, in secondary growth with dense undergrowth, also *Cyathea* ferns along river to mine, 600 m a.s.l., thin litter layer, well-decayed leaf litter with pieces of wood and humus, dry to moist, 22 II 1996, leg. H. Schatz – (1 sp.); Peninsula Soná, north of Las Palmas, Tropical Moist Forest beside road, 180 m a.s.l., partially well-decayed leaf litter, dry to moist, 03 II 1997, leg. H. Schatz – (4 sp.); Soberania National Park, Camino de Cruces along trail under dense liana tangle, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf litter and humus and small pieces of wood, moist, 20 I 1996, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Soberania National Park, north of Rio Frijolito, Tropical Moist Forest, in secondary growth, 60 m a.s.l., well-decayed leaf litter and roots, moist, 18 I 1996, leg. H. Schatz – (16 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (5 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, at Punta Barro Colorado, about 200 south of coast, 20 m a.s.l., Premontane Moist Forest, well-decayed leaf litter with pieces of wood above humus, moist, 14 II 1997, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruces along trail near dense liana tangle, Tropical Moist Forest, 50 m a.s.l., partially-decayed leaf litter, moist, 20 I 1996, leg. H. Schatz – (2 sp.); Soberania National Park, Camino de Cruces, Tropical Moist Forest, 50 m a.s.l., dense litter layer, well-decayed leaf litter with pieces of wood, dry to moist, 20 I 1996, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., secondary growth under *Cecropia* and *Ochroma pyramidale*–Balsa, many palms, thin leaf litter layer and pieces of wood on surface, well-decayed leaf litter, dry, 19 I 1997, leg. H. Schatz – (3 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (5 sp.); Bocas del Toro, Isla Bastimentos, Coastal Rain Forest, 100 m behind beach, 20 m a.s.l., very well-decayed leaf litter and humus, deep litter layer, moist to wet, 04 II 1996, leg. H. Schatz – (5 sp.); Gamboa, Pipeline Road, Tropical Moist Forest, 50 m a.s.l., under *Heliconia* and *Ochroma pyramidale*–Balsa, well-decayed leaf litter and decayed wood, thin litter layer on surface, dry to moist, 18 I 1997, leg. H. Schatz – (3 sp.); Isla Taboga, Sendero Las Tres Cruces, dry deciduous forest, near small bridge over rivulet, 90 m a.s.l., decayed leaf litter and roots between rocks along rivulet, dry to moist, 24 I 1996, leg. H. Schatz – (2 sp.); Costa Arriba, Caribbean Coast, near Nombre de Diós, south of road to Palenque – Prov. Colón, Premontane Wet Forest, 20 m a.s.l., Coastal Rain Forest with secondary growth, well-decayed leaf litter, dry to moist, 12 II 1997, leg. H. Schatz – (3 sp.).

Distribution. Pantropical. The first time found in Belize.

***Atropacarus (Hoplophorella) tuberosus* NIEDBALA et SCHATZ, 1966**

Atropacarus (Hoplophorella) praeocupata SUBIAS, 2004 **syn. nov.**

Cuba, Matanzas, Cienaga de Zapata, sea grape forest (*Coccoloba unifera*), litter, 28 X 2001, leg. D. Prieto – (1 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Cuba.

***Atropacarus (Hoplophorella) vitrinus* (BERLESE, 1913)**

Cocos Island, Costa Rica, near Rio Genio (Bahía Wafer), 40 m a.s.l., tropical humid forest with ferns and Melastomataceae as undergrowth, deep litter layer, partially decayed leaf litter with humus under uppermost layer, moist, 09 III 1996, leg. H. Schatz – (2 sp.);

Galapagos Islands, Ecuador, Gardner island near Española, near “summit”, Arid zone, 40 m a.s.l., under *Opuntia megasperma* var. *orientalis*, sample: cactus litter, dry to moist, 14 III 1987, leg. H. Schatz – (1 sp.); Isla Fernandina, moist highland – *Psychotria* zone, 450 m a.s.l., forest, 09 V 1991, leg. S. Abedrabbo – (2 sp.); Isla Floreana, highland near caves under Cerro Asilo de la Paz, Agricultural area, 340 m a.s.l., under *Furcraea cubensis*, *Lantana camara*, sample: leaf litter and pieces of wood, dry to moist, 17 I 1987, leg.

H. Schatz – (1 sp.); Isla Santa Cruz, north of Los Gemelos, at crater rim, *Scalesia* zone, 590 m a.s.l., grass and herbs, sample: litter with roots and soil, moist to wet, 08 III 1987, leg. H. Schatz – (1 sp.); Isla Santiago, western side, Los Aguacates: moist highland, 550 m a.s.l., forest of *Croton scouleri* and *Tournefortia rufo-sericea*, under *Croton*, 09 VI 1991, leg. S. Abedrabbo – (2 sp.);

Mexico, Yucatán Peninsula, Calakmul, Campeche, beside trail to ruins, 200 m a.s.l., dense lower Tropical Moist Forest, partially-decayed leaf litter with pieces of wood, moist, 07 II 2001, leg. H. Schatz – (8 sp.); Yucatán Peninsula, Calakmul, Campeche, 200 m a.s.l. dense lower tropical forest around Maya ruins, near Structure I, well-decayed leaf litter, moist, 21 IX 2002, leg. H. Schatz – (1 sp.);

Belize, Maya Mountains, Cockscomb Basin near Guam Bank, beside South Stann Creek, Tropical Moist Forest, 30 m a.s.l., well-decayed leaf litter with roots and humus, wet, 24 II 1997, leg. H. Schatz – (1 sp.); Maya Mountains, Cockscomb Basin near Guam Bank, under *Schizolobium parahyllum*, Tropical Moist Forest, 35 m a.s.l., leaf litter between buttressed roots, moist to wet, 24 II 1997, leg. H. Schatz – (5 sp.);

Costa Rica, near Cahuita south of Puerto Limón, 1 m a.s.l., Tropical Moist Forest, partially decayed leaf litter and roots and *Piper*, moist, 09 III 2004, leg. H. Schatz – (2 sp.); near Cahuita south of Puerto Limón, 2 m a.s.l., Tropical Moist Forest with *Terminalia catappa*, partially decayed leaf litter and sand under *Terminalia*, moist, 09 III 2004, leg. H. Schatz – (21 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 14 IV–17 IV 2004, 03/B/BF – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 18 II 2004, 03/WF/01 – (1 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–24 IV 2004, 03/B/BH – (7 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–24 IV 2004, 03/B/BV – (4 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect, 15 II–23 IV 2004, 03/B/BM – (5 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 10 II–23 IV 2004, 03/B/AH – (3 sp.); Prov. Heredia, 11 km ESE La Virgen, 250–350 m, 10°21'N 84°03'W, INBio-OET-ALAS transect 15 II–23 IV 2004, 03/B/AS – (1 sp.);

Panama, El Copé, Premontane Rain Forest, cloud forest, Sendero "Los Helechos", near entrance, 730 m a.s.l., dense well-decayed leaf litter under *Symphonia globulifera*, moist to wet, depth 10 cm, 04 III 2004, leg. H. Schatz – (1 sp.); El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, along river, dense undergrowth with many young trees, 780 m a.s.l., between buttressed roots, well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz – (1 sp.); Darién, Golfo de San Miguel – Punta Patiño, south of Punta Alegre, Premontane Moist Forest, 5 m a.s.l., dry forest with *Hibiscus* and *Hippomane manzinella* with thin litter layer above sand, well-decayed leaf litter with pieces of wood and sand below uppermost layer, dry to moist, 14 II 1997, leg. H. Schatz – (1 sp.); Panama Canal, Semaphore Hill, Tropical Moist Forest, secondary growth with many palms, 220 m a.s.l., thin leaf litter layer at surface with roots and humus, seeds, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, under *Heliconia* and big trees, 50 m a.s.l., very well-decayed leaf litter and humus, moist, 04 II 1996, leg. H. Schatz – (1 sp.); Gamboa, Pipeline Road, Soberania National Park, south of Rio Frijolito, Tropical Moist Forest, 50 m a.s.l., between buttressed roots, well-decayed leaf and needle litter and humus, moist to wet, 18 I 1996, leg. H. Schatz – (5 sp.); El Gaital near El Valle Antón, crevice between mountain, Tropical Wet Forest, along river, dense undergrowth with many young trees, 780 m a.s.l., between buttressed roots, very well-decayed leaf litter and humus, moist to wet, 09 II 1996, leg. H. Schatz – (1 sp.); Bocas del Toro, Isla Bastimentos, Tropical Moist Forest, secondary growth on small hill, 20 m a.s.l., well-decayed leaf litter under big tree, thin litter layer, dry to moist, 01 II 1996, leg. H. Schatz – (1 sp.); Soberania National Park, Camino de Cruces Tropical Moist Forest, 50 m a.s.l., dense litter layer, well-decayed leaf litter with pieces of wood, dry to moist, 20 I 1996, leg. H. Schatz – (1 sp.); Panama Canal, Sendero La Plantación at Rio Chico Masambi, Tropical Moist Forest with secondary growth, 50 m a.s.l., under big tree between buttressed roots, well-decayed leaf litter and much humus, dry to moist, 24 I 1997, leg. H. Schatz – (1 sp.); Darién, Cana, Tropical Wet Forest, trail to Bocas del Cupe, in secondary growth with palms, 550 m a.s.l., very well-decayed leaf litter, moist to wet, 17 II 1996, leg. H. Schatz – (1 sp.); Parque Natural Metropolitana, Tropical Moist Forest, under *Anacardium excelsum*, 85 m a.s.l., well-decayed leaf litter with humus, moist, 07 II 1996, leg. H. Schatz – (2 sp.); Madden Dam, Deciduous Dry Forest, 40 m a.s.l., well-decayed leaf litter and humus, below uppermost level, dry to slightly moist, 08 II 1996, leg. H. Schatz – (1 sp.);

Cuba, Matanzas, Bacunayagua, Habana slope, litter of semideciduous forest, 21 VI 2002, leg. D. Prieto – (2 sp.); La Habana, Santa Cruz del Norte, Boca de Canasi, evergreen microphyllous forest, litter, 27 XI

1999, leg. A. Barro – (2 sp.); Sancti Spiritus, Topes de Collantes, litter of pines (*Pinus caribaea*) and ferns, 29 X 2002, leg. D. Prieto – (1 sp.);

Virgin Island, N 18°21.822' W 064° 43.861' Waterleman Bay, 5 km from beach, moist litter under scrubs, 28 V 2006 leg. M. Liana – (20 sp.);

Brazil, São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of litter and rhizosphera, 04 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest interior, sample of leaf litter, 04 XI 2002, leg. J. Stary – (20 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of leaf litter, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, secondary atlantic forest, sample of brown decaying wood from lying trunk, 04 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Instituto Butantan, 100 m from Museum of Microbiology, coconut palm forest, sample of palm leaf litter, 07 XI 2002, leg. J. Stary – (6 sp.); São Paulo State, São Paulo, Instituto Butantan, artificial green near building of Entomologia and Parasitologia, sample of grass rhizosphere, 07 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of bush leaf litter growing on the rock wall, 09 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, rock wall 20 m above beach, sample of bush leaf litter growing on the rock wall, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between boulders, 09 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Atlantic ocean coast near Ubatuba, rock above beach Praia dos Pedras, 1 km south San Lorenzo, boulders on the sea level, sample of litter between stones, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, rock above beach Praia dos Pedras, 1 km south San Lorenzo, dense forest on the rock wall foot with dense bush and herb floor, sample of litter, 09 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (3 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of leaf litter, 15 XI 2002, leg. J. Stary – (2 sp.); São Paulo State, Instituto Butantan, dense atlantic forest near Museum of Microbiology, sample of brown decaying wood from lying trunk, 15 XI 2002, leg. J. Stary – (1 sp.); São Paulo State, São Paulo, Butantan, near Laboratory of Parasitology and Entomology, sample of leaf litter from the fruit tree, 24 XI 2002, leg. J. Stary – (5 sp.); São Paulo State, São Paulo, Butantan, near Hospital, group of leaf trees, sample of leaf litter 27 XI 2002, leg. J. Stary – (1 sp.);

Argentina, waterfalls of Iguazu, litter and mosses in forest, 12 VII 2004, leg. A. Kaźmierski – (3 sp.).

Distribution. Semicosmopolitan.

Atropacarus (Atropacarus) antrosus NIEDEBALA, 2003

Costa Rica, Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/AS – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BE – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/B/BV – (28 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2 000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 09 II–21 IV 2002, 20/WF/05 – (2 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/WF/04/43 – (14 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 II 2002, 20/B/BH/015 – (8 sp.); Prov. Heredia,

6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/AS/063 – (4 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 10 III 2002, 20/B/BH/047 – (20 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 23 III 2002, 20/B/BV/072 – (3 sp.); Prov. Heredia, 6 km ENE Vara Blanca, 2000 m, 10°11'N 84°07'W, INBio–OET–ALAS transect, 15 IV 2002, 20/B/BV/095 – (21 sp.)†

Panama, Cordillera Talamanca near Volcán Barú, Montane Rain Forest, 2250 m a.s.l., dense well decayed leaf litter, moist, 21 II 2004, leg. H. Schatz – (24 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

***Atropacarus (Atropacarus) foliosus* NIEDBAŁA, 2003**

Panama, Prov. Chiriquí, Jaramillo northwest of Boquete, Lower Montane Wet Forest, Quebrada el Velo, under *Ficus*, 1750 m a.s.l., partially-decayed leaf litter with humus below uppermost layer, moist, 05 II 1997, leg. H. Schatz – (5 sp.); Prov. Chiriquí, surrounding of Boquete, Lower Montane Wet Forest, Sendero Los Quetzales, small patch of forest, 1750 m a.s.l., fern litter, moist, 05 II 1997, leg. H. Schatz – (3 sp.); Prov. Chiriquí, Bajo Monos northwest of Boquete, Lower Montane Wet Forest, at cascada beside Rio Caldera, 1470 m a.s.l., deep well-decayed leaf litter in crevice below uppermost layer, moist to wet, 05 II 1997, leg. H. Schatz – (2 sp.).

Distribution. Neotropical, Mesoamerica only. The first time found in Panama.

***Atropacarus (Atropacarus) striculus* (C.L. KOCH, 1836)**

Guatemala, Pochuta, slope of coffee culture, 1500 m, 04 II 2001, leg. E. Palik – (1 sp.).

Distribution. Semicosmopolitan. The first time found in Guatemala.

REMARKS

SUBÍAS (2004) having proposed the new combination of the genus *Hoplophorella* (*Hoplophorella*) with no appropriate justification has introduced nominae novae for the species: *Atropacarus (Hoplophorella) tuberosus* NIEDBAŁA et SCHATZ, 1996 as *Hoplophorella (H.) praeocupata* nom. nov. and for *Protophthiracarus reductus* NIEDBAŁA, 1991 as *Hoplophorella (H.) repetita* nom. nov. All the two nominae novae have been rejected.

SUBÍAS (2004) has changed the name *Microtrititia glabrata* STARÝ, 1993 into *Microtrititia neonominata* nom. nov., on no justified base. However, *Microtrititia glabrata* STARÝ, 1993 is an older homonym of *Microtrititia glabrata* NIEDBAŁA, 1993, so the name *Microtrititia neonominata* SUBÍAS, 2004, should be rejected.

VITZTHUM (1925) reported *Phthiracarus brasiliensis* n. sp., from Brazil. It is a nymph of *Mesoplophora*, as indicated by Prof. R. NORTON (personal information).

The catalogue of ptyctimous mites occurring in Mexico (VÁZQUEZ 1999) comprises 10 species. The presence of three of them - *Cryptoplophora abscondita* (GRANDJEAN, 1932), *Hoplophorella fonseciai* (PEREZ-ÍÑIGO and BAGGIO, 1980), *Hoplophorella lanceosetoides* (MAHUNKA, 1985) in Mexico has not been proved.

RESULTS

At 588 new localities, the representatives of 102 different species of ptyctimous mite have been found one species of Protoplophoridae, seven of Mesoplophoridae, 34 species of Euphthiracaroidae, and 63 species in Phthiracaroidae. One species *Austrophthiracarus valdiviaensis* **sp. nov.**, is new for science. The information on three species has been supplemented with additional taxonomical notes and figures.

The most interesting facts are that *Phthiracarus brevisetae*, the species hitherto known in Nearctic, has been found in Costa Rica, the species *Phthiracarus bryobius* and *Phthiracarus longulus*, hitherto classified as Holarctic, have been found in Costa Rica and Uruguay, respectively, and *Austrophthiracarus latior* has been found in Brazil and hence it should be reclassified as cosmopolitan.

The seventeen species listed below have been known only from the original descriptions and classified as endemites, thus their finding at new localities has changed their status into the Antilles or Mesoamerica: *Prototritia palaciosi*, *Mesoplophora* (*M.*) *cubana*, *Euphthiracarus* (*E.*) *nasalis*, *E.* (*E.*) *tumidus*, *Acrotritria parallelus*, *Austrophthiracarus admirabilis*, *Arphthicararus phaleratus*, *A. mirandus*, *A. pervicax*, *Protophthiracarus clandestinus*, *P. kyphos*, *P. oidematos*, *Notophthiracarus pedanos*, *Atropacarus* (*Hoplophorella*) *frondeus*, *A.(H.) tuberosus*, *Atropacarus* (*Atropacarus*) *foliosus*, *A. (A.) antrosus*.

The three species: *Mesoplophora* (*M.*) *permodica*, *P. brevisetae* and *P. setanus* have been hitherto assumed as introduced do Neotropical, and thanks to the finding at new localities should be reclassified to Nearctic and Neotropical.

The geographical ranges of nine species have been extended by the new localities: *Mesotritia curviseta*, *Euphthiracarus* (*Euphthiracarus*) *dlohyorus*, *Acrotritria dikra*, *A. meristos*, *A. monodactyla*, *Phthiracarus phoxos*, *Hoplophthiracarus illinoisensis*, *Austrophthiracarus diazae*, *Protophthiracarus bernini*.

In total the geographical ranges of 33 species have been extended. The following twenty two species have been found in the area of new country or countries, but these findings have not extended the ranges of their occurrence: *Mesoplophora* (*Mesoplophora*) *hauseri* in Ecuador, *Mesotritia brevisetae* in Cuba, *Indotritia krakatauensis* in Panama, *Acrotritria ardua* in Uruguay and Cocos Island, *A. clavata* in Ecuador, *A. comteae* in Belize and Argentina, *A. curticephala* in Cuba, *A. diapohoros* in Uruguay, *A. dikra* in Cuba, Panama and Ecuador, *A. dinota* in Panama and Cocos Island, *A. peruensis* in Ecuador, *Mesoplophora simplex* in Costa Rica, *M. tropica* in Belize, Chile and Galapagos Islands, *P. anonymus* in Ecuador, *P. pygmaeus* in Guatemala, *Hoplophthiracarus illinoisensis* in Costa Rica and Diminicana, *Austrophthiracarus dilucidus* in Argentina, *Arphthicararus pararidiculus* in Panama, *Protophthiracarus varius* in Panama, Ecuador and Galapagos Islands, *A.(H.) cucullatus* in Cuba and Ecuador, *A.(H.) hamatus* in Dominicana, *A. (H.) singularis* in Belize, *A.(H.) stilifer* in Belize, *A. (A.) striculus* in Guatemala. For 19 species their findings at new localities have not resulted in extension of their ranges.

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