

Catalogue of type specimens of the Collection of Invertebrates of Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil. III. Hexapoda: Isoptera, Mantodea, Mecoptera, Orthoptera, Plecoptera, Trichoptera and Zoraptera

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ABSTRACT. Catalogue of type specimens of the Collection of Invertebrates of Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil. III. Hexapoda: Isoptera, Mantodea, Mecoptera, Orthoptera, Plecoptera, Trichoptera and Zoraptera. A catalogue of the type specimens of Isoptera, Mantodea, Mecoptera, Orthoptera, Plecoptera, Trichoptera, and Zoraptera deposited in the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil, is presented and updated to December, 2007. A total of eight holotypes and seven lots of paratypes of nine species of Isoptera; three holotypes and one paratype of three species of Mantodea; five holotypes and five lots of paratypes of five species of Mecoptera; eight holotypes and five lots of paratypes of eleven species of Orthoptera; three holotypes, three neotypes and two lots of paratypes of seven species of Plecoptera; six holotypes and seven lots of paratypes of ten species of Trichoptera; and two holotypes and three lots of paratypes of three species of Zoraptera, are listed. Specific names are listed alphabetically within the family, followed by bibliographic citation, original genus name, status of type, collection number, locality data and remarks when appropriate.

KEYWORDS. Amazon Region; Arthropoda; INPA; taxonomy; type collection.

RESUMO. Catálogo dos espécimes-tipo de invertebrados da coleção do Instituto Nacional de Pesquisas da Amazônia, Manaus, Brasil. III. Hexapoda: Isoptera, Mantodea, Mecoptera, Orthoptera, Plecoptera, Trichoptera e Zoraptera. É apresentado o catálogo dos espécimes-tipo de Isoptera, Mantodea, Orthoptera, Plecoptera, Trichoptera e Zoraptera depositados na Coleção de Invertebrados do Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brasil, atualizado até dezembro de 2007. É relacionado um total de sete holótipos e sete lotes de parátipos de nove espécies de Isoptera; três holótipos e um parátipo de três espécies de Mantodea; cinco holótipos e cinco lotes de parátipos de cinco espécies de Mecoptera; oito holótipos e cinco lotes de parátipos de 11 espécies de Orthoptera; três holótipos, três neótipos e dois lotes de parátipos de sete espécies de Plecoptera; seis holótipos e sete lotes de parátipos de dez espécies de Trichoptera; e dois holótipos e três lotes de parátipos de três espécies de Zoraptera. São listados alfabeticamente em cada família os nomes das espécies, seguidos da citação bibliográfica, nome original do gênero, categoria do tipo, número de registro na coleção, dados de localidade e comentários quando pertinentes.

PALAVRAS-CHAVE. Arthropoda; Região Amazônica; INPA; taxonomia; coleção de tipos.

The Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia (INPA) was initiated in 1954 and, by the end of 2007, housed type material of more than 900 species. Almost 80% of this amount belong to various Hexapoda groups. A numbered series of catalogues of its type material was planned to cover different taxa, given that the preparation of a single, complete volume is not feasible within a short period of time. The first part I, (Magalhães & Pimpão 2006) comprises Acanthocephala, Nematoda, and Rotifera; The second part II list the types of Collembola, Diplura, Archaeognatha, Ephemeroptera and Blattaria (Ribeiro *et al.* 2008). This paper continues, as part III, listing type material of Isoptera, Mantodea, Mecoptera, Orthoptera, Plecoptera, Trichoptera, and Zoraptera.

MATERIAL AND METHODS

The present catalogue follows the same format and procedures established by Magalhães & Pimpão (2006) and Ribeiro *et al.* (2008).

RESULTS

A total of eight holotypes and seven lots of paratypes of nine species of Isoptera; three holotypes and one paratype of three species of Mantodea; five holotypes and five lots of paratypes of five species of Mecoptera; eight holotypes and five lots of paratypes of 12 species of Orthoptera; three holotypes, three neotypes and two lots of paratypes of seven species of Plecoptera; six holotypes and seven lots of

paratypes of ten species of Trichoptera and two holotypes and three lots of paratypes of three species of Zoraptera were found to be currently deposited at the INPA's entomological collection.

LIST OF TYPE SPECIMENS

Order ISOPTERA
KALOTERMITIDAE

breviceps Constantino, 1997: 126, figs 1-8. *Eucryptotermes*
Holotype: male, ISOPT 001, alcohol. [Brazil, Amazonas, Balbina, 16.iv.1984, Leg. F. Campos]. Paratypes: 7 spec., ISOPT 001, one vial with alcohol, three soldiers and four nymphs; data as holotype.

TERMITIDAE

ayri Bandeira & Canello, 1992: 432, figs 14-16. *Termis*
Holotype: ISOPT 003, alcohol. [Brazil], Roraima, ilha de Maracá, 26.x.1987, Leg. S.P. Staide. Paratypes: 15 spec., ISOPT 003, two vials with alcohol, one with nine specimens and one with six specimens; locality data as holotype.

caapora Bandeira & Canello, 1992: 424, figs 1-6.
Paracornitermis

Holotype: male, ISOPT 007, alcohol. [Brazil], Roraima, ilha de Maracá, 22.x.1987, Leg. L. Antony and A.G. Bandeira.

crassilabrum Constantino, 1995: 478, figs 113-120.
Syntermes

Holotype: male, ISOPT 004, alcohol. Brazil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, 23.i.1991, Leg. F.B. Apolinário. Paratypes: 2 spec., ISOPT 004, one vial with alcohol; data as holotype.

cupiporanga Bandeira & Canello, 1992: 430, figs 11-13.
Dentispicotermes

Holotype: male, ISOPT 005, alcohol. [Brazil], Roraima, ilha de Maracá, 04.ii.1988, Leg. L. Antony and A.G. Bandeira. Paratypes: 65 spec., ISOPT 005, one vial with alcohol; data as holotype.

longilabrum Constantino, 1998: 111, figs 1-7.
Planicapritermes

Holotype: ISOPT 002, alcohol. [Brazil, Amazonas], Balbina, 16.iv.1996, Leg. F. Campos. Paratypes: 4 spec., ISOPT 002, one vial with alcohol; data as holotype.

triceratops Canello & Bandeira, 1992: 3, figs 1-8.
Macuxitermes

Holotype: male, ISOPT 008, alcohol. [Brazil], Roraima, ilha de Maracá, 11.ii.1988, Leg. A.G. Bandeira.

mirim Bandeira & Canello, 1992: 428, figs 7-10.
Neocapritermes

Holotype: male, ISOPT 006, alcohol. [Brasil], Roraima, ilha de Maracá, 16.ii.1988, Leg. L. Antony and A.G. Bandeira. Paratypes: 38 spec., ISOPT 006, three vials with alcohol; one with 23 specimens, one with seven specimens and one with eight specimens.

SERRITERMITIDAE

sulcatus Canello & DeSouza, 2004: 5, figs 1-12.
Glossotermes

Paratypes: 35 spec., ISOPT 009, one vial with alcohol. [Brazil], Amazonas, Manaus, Estação Experimental de Silvicultura Tropical, Manaus-Boa Vista (BR-174) road, Km 44, 05.iv.1992, Leg. A.G. Bandeira.

Order MANTODEA
MANTIDAE

amazonica Jantsh, 1985: 1. *Urumantis*

Holotype: male, MANTI 001. Brazil, Amazonas, Itacoatiara, estrada AM 010, Km 232, 17.xii.1977, Leg W.E. Kerr. Paratype: male, MANTI 001. Brasil, Amazonas, Itacoatiara, 02.ix.1977, Leg. Rufino.

paraensis Jantsh, 1985: 1. *Urumantis*

Holotype: male, MANTI 002. Brazil, Pará, Uruará, 65 Km SW Itaituba on BR 230 road, 12-15.x.1977, Leg. B.C. Ratcliffe.

HYMENOPODIDAE

corseuili Jantsh, 1986: 1. *Tithrone*

Holotype: male, MANTI 003. United States of America, California, 07.vii.1972, unknown collector.

Order ORTHOPTERA
ACRIDIDAE

manausana Decamps, 1981: 320, figs 24-30. *Anabylis*

Holotype: male ORTHO 018. [Brasil], Amazonas, Reserva Biológica do Cuieiras, 50 Km N, 1979, unknown collector. Paratype: female ORTHO 019 (Alotype); data as holotype.

punctipes Decamps, 1981: 323, figs 40, 48, 56, 61, 62.
Aploceras

Holotype: male ORTHO 016. [Brasil], Amazonas, Reserva Biológica do Cuieiras, 50 Km N, 1979, unknown collector.

rubriventris Decamps, 1981: 327, figs 65-x71. *Miacris*
Holotype: male, ORTHO 017. [Brasil], Amazonas, Reserva Biológica do Cuieiras, 50 Km N, 1979, unknown collector.

EUMASTACIDAE

dukeana Decamps, 1982: 169, figs 111-114. *Eumastacops*

Holotype: male, ORTHO 003. [Brasil, Amazonas] Reserva [Florestal Adolpho] Ducke, v.1963, Leg. Faustino. Paratype: male, ORTHO 004; data as in holotype.

sinopensis Decamps, 1982: 177, figs 88, 131.
Pseudomastacops

Paratypes: 2 males, ORTHO 005 and 006. Brasil, Mato Grosso, Aripuanã, Reserva Humboldt (10° 11'S/59° 48'W), 23.i.1976 and 16-22.iii.1977, Legs. A.P.A. Luna Dias and B.C. Ratcliffe.

uruana Decamps, 1982: 177, figs 88, 131. *Pseudomastacops*
Holotype: male, ORTHO 007. Brasil, Pará, Uruá, 65 km SW Itaituba, on BR- 230, 12-15.x.1977, Leg B.C. Ratcliffe.

ROMALEIDAE

cantans Decamps, 1981: 316, figs 9-11. *Prionacris*

Holotype: male, ORTHO 015. [Brasil], Amazonas Reserva Biológica do Cuieiras, 1979, unknown collector.

corticolor Decamps, 1978: 321, figs 62-63. *Hylephilacris*
Holotype: male, ORTHO 001. [Brasil, Amazonas], Manaus, [campus] INPA-sede, 15.iv.1976, Leg. A.P.A. Luna Dias.

gloriosa Decamps, 1981: 312. *Ophthalmolampis*
Holotype: male, ORTHO 008. [Brasil], Amazonas, Reserva Biológica do Cuieiras, 50 Km N, [15.ix and 30.x.]. 1979, unknown collector. Paratypes: 2 spec., ORTHO 009 (allotype) and 010.

magnicornis Decamps, 1978: 320, figs 52-61. *Hylephilacris*
Paratype: 1 spec., male, ORTHO 002. [Guyana, Sinnamary], Km 20-25, vii.1977, Leg. M. Decamps.

nigricans Decamps, 1981: 311. *Pseudonautia*

Holotype: male, ORTHO 011. [Brasil], Amazonas, Reserva Biológica do Cuieiras, 1979, unknown collector. Paratypes: 3 spec., ORTHO 012, (allotype) ORTHO 013 and ORTHO 014, data as in holotype.

Order MECOPTERA
BITTACIDAE

araguaiensis Penny & Arias, 1983: 701, figs 1-3. *Issikiella*

Holotype: male, MECOP 017. Brasil, Pará, Conceição do Araguaia, 19-24.i.1983, Leg. N.D. Penny. Paratypes: 18 spec., nine male and nine female MECOP 018-035, one specimen being designated as allotype (018) locality data as holotype.

aripuaensis Penny, 1977: 423, figs 1-4. *Neobittacus*

Holotype: male, MECOP 001. [Brasil]. Mato Grosso, Aripuaná, Reserva Humboldt, estrada da Colônia, 02.x.1975, Leg. L. P. Albuquerque *et al.* Paratypes: 2 spec., MECOP 002 (allotype) and MECOP 003, locality data as holotype.

byersi Penny & Arias, 1982: 263, figs 1-4. *Issikiella*

Holotype: male, MECOP 007. Brasil, Amazonas, [Manaus], Reserva [Florestal Adolpho] Ducke, 26.xii.1979, Leg. M. Mendonça. Paratypes: 4 spec., females, MECOP 008 (allotype), 009 and 010, locality data as holotype.

ornaticaudus Penny, 1983: 424, figs 5-9. *Pazius*

Holotype: male, MECOP 004. Brasil, Mato Grosso, Reserva Humboldt, 21.ii.1978, Leg. N.D. Penny. Paratypes: 2 spec., females, MECOP 005 (allotype) and MECOP 006, locality data as holotype.

souzalopezi Penny & Arias, 1983: 266, figs 5-7. *Nannobittacus*

Holotype: male, MECOP 011. Brasil, Amazonas, [Manaus], Reserva [Florestal Adolpho] Ducke, 21.iii.1977, Leg. J. Arias. Paratypes: 5 spec., females, MECOP 012 (allotype), MECOP 016-MECO 018, locality data as holotype.

Order TRICHOPTERA
HYDROPSYCHIDAE

amazonense Flint, 1978: 399, figs 130-134,145. *Leptonema*

Holotype: male, TRICH 001. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, 24.xi.1976, Leg. N.D. Penny.

amazonense Flint, 1978: 403, figs 142-144. *Macronema*

Holotype: male, TRICH 002. Brasil, Amazonas, Manaus, [Reserva Egler], Estrada AM 010, Km 64, 24.viii.1970, [Leg. A. Faustino].

exophthalmum Flint, 1978: 401, fig. 148. *Macronema*

Paratype: female, TRICH 003. Brasil, Amazonas, Manaus, Reserva da Campina, 60 Km, N of Manaus, 14.i.1977, Leg. N.D. Penny.

gladiator Flint, 1978: 379, figs 33-35. *Smicridea*

Paratype: male, TRICH 005. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, 14.iii.1977, Leg. N.D. Penny.

hamadae Holzenthal & Paes, 2004: 8, figs 1-9. *Amazonatolica*

Holotype: male, TRICH 011; Brazil, Amazonas, Manaus, Reserva Florestal Adolpho Ducke, 02°57'S 59°57'W, Igarapé Barro Branco (sede), vi.2001, Leg. J. Vidal. Paratypes: 92 spec., TRICH 011 (1-92), 12 vials with alcohol, one vial with 20 specimens, one vial with nine specimens, one vial with two specimens, two vials with two specimens, one vial with five specimens, one vial with 25 specimens, one vial with two specimens, two vial with eight specimens, one vial with five specimens and one vial with 13 specimens; different locality of holotype.

neotropicalis Flint, 1978: 70, figs 8-12. *Tricholeiochiton*

Holotype: male, TRICH 009. Brasil, Roraima, Maracá, Rio Uraricoera, 02-13.v.1987, Leg. J.A. Rafael *et al.* Paratypes: 21 spec., TRICH INPA 009 (1-21); data as holotype.

pennyi Flint, 1978: 401, figs 139-141, 149. *Macronema*

Holotype: male, TRICH 004. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, 24.xi.1976, Leg. N.D. Penny.

rafaeli Flint, 1991: 74, figs 13-15. *Oecetis*

Holotype: male, TRICH 010. Brasil, Roraima, Ilha de Maracá, Rio Uraricoera, 18-28.viii.1987, Leg. J.A. Rafael *et al.* Paratypes: 4 spec., TRICH 010 (1-4); locality data as holotype.

rostratum Flint, McAlpine & Ross 1987: 30, figs 195-202. *Leptonema*

Paratypes: 1 spec., female, TRICH 008. Brasil, Roraima, Rio Mucajaí, 14.v.1977, Leg. N.D. Penny. 1 spec., female, TRICH 008; Mato Grosso, Reserva Humboldt, 12.iv.1979, Leg. N.D. Penny.

voluta Flint, 1978: 378, figs 27-29. *Smicridea*

Paratypes: 1 spec., males, TRICH 006 and TRICH 007 1 spec., female. Brasil, Amazonas, Manaus, 08.iii.1977, Leg. N.D. Penny.

Order ZORAPTERA
ZOROTYPIDAE

amazonensis Rafael & Engel, 2006: 3, figs 1-14. *Zorotypus*

Holotype: male, ZORAP 003a, slide. Brasil, Amazonas, Itacoatiara, Madeireira Mil, 17.iii.2002, Leg. J.A. Rafael and João Vidal. Paratypes: 5 spec., ZORAP 003b-f, slide, and 1 spec., alcohol; locality data as holotype.

weidneri New, 1978: 365, figs 7-15. *Zorotypus*

Holotype: male, ZORAP 001, slide. Brasil, Manaus, Reserva [Florestal Adolpho] Ducke, INPA, 12.xii.1975, Leg. H.D. Hamilton. Paratypes: 2 spec., ZORAP 001, slides; data as in holotype.

hamiltoni New, 1978: 365, figs 16-123. *Zorotypus*

Paratypes: 2 spec., 1 male and 1 female, ZORAP 002a-b, slides. Colombia, Purace, Maremberg, Huila, 30.ii.1973, Leg. H.D. Hamilton.

Order PLECOPTERA
PERLIDAE

anae Ribeiro & Rafael, 2007: 26, figs.35-43. *Macrogynoplax*

Holotype: male, PLECO 003, alcohol (dissected abdomen in an Eppendorf vial). Brasil, Amazonas, Manaus, Reserva Florestal Adolpho Ducke, Igarapé Ipiranga, Malaise, 13-20.v.2003, leg. J.M.F.Ribeiro & João Vidal. Paratypes: 2 spec., PLECO 003, two Eppendorf vials with alcohol, locality data as holotype.

delicata Ribeiro-Ferreira & Froehlich, 1999: 134, figs. 1-5. *Macrogynoplax*

Neotype: (designation by Ribeiro & Rafael, 2007), male, PLECO 005, Eppendorf vial with alcohol. Brasil, Amazonas, Manaus, Reserva Florestal Adolpho Ducke, Igarapé Bolívia, Malaise, 24-28.ii.2003., Leg. J.M.F. Ribeiro.

froehlichii Ribeiro-Ferreira, 1996: 145, figs. 1-6. *Enderleina*

Holotype: male, PLECO 007, Eppendorf vial with alcohol. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, AM 010 Km 26, Igarapé Anta, 13.xi.1987, Leg. A.C. Ferreira.

manauensis Ribeiro-Ferreira *in* Ribeiro-Ferreira & Froehlich, 2001: 189, figs 5-10. *Anacroneuria*

Holotype: male, PLECO 001, vial with alcohol and aedeagus in a micro vial with glycerin. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, Malaise, 01.i.1989, Leg. U.C. Barbosa. Paratypes: 3 females, PLECO 001 in two vials with alcohol, one with three specimens, one with legs and one aedeagus in micro vial with glycerin; locality data as holotype.

marlieri Froehlich *in* Ribeiro-Ferreira & Froehlich, 2001: 189, figs 11-16. *Anacroneuria*

Neotype: (designation by Ribeiro & Rafael, 2007, male, PLECO 002, Eppendorf vial with alcohol and aedeagus in a micro vial with

glycerin. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, Igarapé Ipiranga, Malaise, 31.xi.2003, Leg. J.M.F. Ribeiro & J. Vidal.

poranga Ribeiro-Ferreira & Froehlich, 1999: 136, figs. 14-18. *Macrogynoplax*

Neotype: (designation by Ribeiro & Rafael, 2007), male, PLECO 006, Eppendorf vial with alcohol. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, Igarapé Tinga, Malaise trap, 24-31.iii.2003, Leg. J.M.F. Ribeiro.

pulchra Ribeiro-Ferreira & Froehlich, 1999: 134, figs. 7-13.

Macrogynoplax

Holotype: male, PLECO 004, specimen in a vial with alcohol, an Eppendorf vial with exuvia nymphal and a micro vial with glycerin with the aedeagus. Brasil, Amazonas, Manaus, Reserva [Florestal Adolpho] Ducke, Igarapé Barro Branco, 05.iii.1988, Leg. A.C. Ferreira.

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