

## MISCELLANEOUS PAPERS ON TURBELLARIANS

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ADDITIONS AND CORRECTIONS OF THE PREVIOUS LAND PLANARIAN INDICES OF THE WORLD (TURBELLARIA, SERIATA, TRICLADIDA, TERRICOLA)

ADDITIONS AND CORRECTIONS OF THE PREVIOUS LAND PLANARIAN INDICES OF THE WORLD – 11

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### INTRODUCTION

The present publication is a continuation of our Land Planarian Indices Series. In the Part I, we give a taxonomic revision of the family Rhynchodemidae von Graff, 1896, and its two subfamilies, based upon the establishment of two new collective groups. Part II is an 'Additions and Corrections of the Previous Land Planarian Indices of the World –11'.

Abbreviations: BFC = Bulletin of Fuji Women's College, (Ser. II); BFU = Bulletin of Fuji Women's University, (Ser. II)(after 2002); OC = Occasional Publications, Biological Laboratory of Fuji Women's College, Sapporo (Hokkaidô), Japan; pdf = web article (pdf) is also available.

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### PART I

#### REVISION OF THE LIST OF SPECIES IN THE FAMILY RHYNCHODEMIDAE PUBLISHED IN THE PREVIOUS GEOGRAPHIC LOCUS INDEX

##### Revision of the Family Rhynchodemidae

The taxonomic history of the family Rhynchodemidae von Graff, 1896, is described in a paper by Ogren & Kawakatsu (1988: 39-49). The family is classified into 2 subfamilies: Rhynchodeminae Corrêa, 1947 (5 genera) and Microplaninae Pantin, 1953 (7 genera). The definitions of the family, subfamilies and genera are given by Ogren & Kawakatsu (1988, 1989), who also list all species in each subfamily (1988: Rhynchodeminae; 1989: Microplaninae).

The geographic locus index of the Rhynchodemidae and its itemized list were published in a later article of the Land Planarian Indices Series (Ogren, Kawakatsu & Froehlich, 1997, p. 68, Table 2, p. 70, Table 4, pp. 73-75; see also pp. 83-96 and Appendix I on pp. 97-98; Errata, see Ogren, Kawakatsu & Froehlich, 1998; for taxonomic list of rhynchodemid taxa, see Ogren, Kawakatsu & Froehlich, 1993).

According to Ogren, Kawakatsu & Froehlich (1997: 68, Table 2) the Rhynchodemidae consists of 2 subfamilies, 12 genera, 206 species and 5 subspecies. Full anatomical and histological descriptions of the copulatory apparatus are available for 59% of the species (well-described species), (approximately 37% in the Rhynchodeminae and 83% in the Microplaninae). Thus 41% of the Rhynchodemidae species are known only by their external morphological characters.

This prevents appropriate progress in the taxonomic revision of the Rhynchodemidae. We propose the establishment of a collective group in both subfamilies Rhynchodeminae and Microplaninae. Uncertain species will be tentatively classified under each of these groups. Although being of no value for improving rhynchodemid taxonomy itself, in practice this procedure can be of help in immediately indicating species with unknown genital anatomy.

Implementation of this proposal requires the following taxonomic treatment.

1). Abolishment of the Subspecies Classification System.

In our previous classification system (Ogren & Kawakatsu, 1988; Ogren, Kawakatsu & Froehlich, 1997), the following subspecies classification system was employed.

*Rhynchodemus hectori* von Graff, 1897

*R. h. hectori* von Graff, 1897, from Argentina and Brazil. Copulatory apparatus is known.

*R. h. marfa* Marcus, 1953, from Zaire. Copulatory apparatus is known.

*Rhynchodemus ochroleucus* von Graff, 1899

*R. o. ochroleucus* von Graff, 1899, from Indonesia (Natuna Is.) and the Philippines. Copulatory apparatus is known.

*R. o. belli* von Graff, 1899, from Indonesia (Moluccas Is.). Genital anatomy is not known.

*R. o. varians* von Graff, 1899, from Indonesia (Java and Sumatra). Genital anatomy is not known.

The 5 subspecies mentioned above (including 2 nominotypical subspecies) should be elevated to the rank of species.

2). Proposal of 2 *nomina nova*

There are two groups of rhynchodemid species having the same specific names (Ogren & Kawakatsu, 1988; Ogren, Kawakatsu & Froehlich, 1997). They are as follows:

*Rhynchodemus assimilis* Geba, 1909, from Comoro Island.

*Platydemus assimilis* Wood, 1926, from Australia (NSW).

*Rhynchodemus boehmigi* von Graff, 1899, from Indonesia (Mollucas Is.).

*Platydemus boehmigi* Geba, 1909, from Comoro Island.

All of these 4 species were described based upon non-sexual specimens (i.e., their genital anatomy is not known). Thus, they should be classified into the same collective group proposed in the present paper (see the foregoing section). New names will be given for *Platydemus assimilis* and *Platydemus boehmigi* in Table I.

3). Synonymised species

We employed the following synonymic treatment in the present publication. See also Table I.

*Dolichoplana feildeni* von Graff, 1899, is synonymised with *Dolichoplana striata* Moseley, 1877. Cf. Ogren, Kawakatsu & Froehlich

(1997: 81, \*8 in Notes). See also Jones (1998).

*Microplana britannica* (Percival, 1925) [*olim Rhynchodemus*], *Microplana decennii* (Battalgazi, 1945) [*olim Rhynchodemus*], *Microplana hovassei* (de Beauchamp, 1934) [*olim Rhynchodemus*], and *Microplana monacensis* (Heinzel, 1929) [*olim Rhynchodemus*] have all been synonymised with *Microplana scharffi* (von Graff, 1896). Cf. Ogren, Kawakatsu & Froehlich (1997: 81, \*16–\*21 in Notes). See also Jones (1998).

*Microplana albicollis* (von Graff, 1899) [*olim Rhynchodemus*], *Microplana atrocyanea* (Walton, 1912) [*olim Rhynchodemus*], *Microplana carli* (Fuhrmann, 1914) [*olim Rhynchodemus*], and *Microplana mahnerti* Minelli, 1977, *Microplana richardi* (Bendl, 1909) [*olim Rhynchodemus*], *Microplana styriaca* (Freisling, 1935) [*olim Rhynchodemus*] have all been synonymised with *Microplana terrestris* (Müller, 1774). Cf. Ogren, Kawakatsu & Froehlich (1997: 81, \*15, \*22— the second \*21 is a *lapsus calami*). See also Ogren (1988), Ogren & Kawakatsu (1998) and Jones (1998).

4). Additional species

*Microplana nana* Mateos, Giribet & Carranza, 1998, from Spain is the only rhynchodemid species (Microplaninae) described after the publication of our Locus Index (Ogren, Kawakatsu & Froehlich, 1997; cf. Kawakatsu, Ogren, Froehlich & Sasaki, 2001: 114). It is added in Table I of the present paper.

Note by HDJ. A paper describing a new species of *Othelosoma* from South Africa is “in press” (Jones, 2004). See Table I and References for Part I.

**Definitions of the Family Rhynchodemidae, 2 Subfamilies and 14 Genera**

The following definitions of the family, subfamilies and genera are reproduced from Ogren & Kawakatsu (1988, 1989) except for the two collective groups. We do not propose a comprehensive taxonomic revision of the Rhynchodemidae in the present paper.

**Family Rhynchodemidae von Graff, 1896**

Definition: Body elongate and cylindroid with 2 eyes near the simple, tapered anterior end; without tentacles or head plate; with well-developed creeping

sole occupying part of the ventral surface. A sucker organ present at the anterior ventral surface (*Cotyloplana*).

Type genus: *Rhynchodemus* Leidy, 1851  
Cf. Ogren & Kawakatsu (1988: 44, 50).

#### Subfamily **Rhynchodeminae** Corrêa, 1947

Definition: Rhynchodemidae with strong cortical musculature in which the subepithelial longitudinal muscle fibers are grouped into large, definite bundles; penis papilla absent or greatly reduced (*Platydemus* in part); female copulatory apparatus simple, consisting of antrum and genital duct without bursa or genito-intestinal connection.

Type genus: *Rhynchodemus* Leidy, 1851  
Cf. Ogren & Kawakatsu (1988: 44, 50). See also  
Ogren Kawakatsu & Froehlich (1992: 99, pl. I, bottom-fig., 102-103, pl. IV (1-2), fig.).

#### Genus ***Cotyloplana*** Spencer, 1892

Definition: Rhynchodeminae, flattened body, with wide creeping sole; with a single sucker at the antero-ventral side in front of the creeping sole; copulatory organs similar to *Platydemus* with large, spacious male genital antrum having a small, obtuse, penis papilla at its base through which the ejaculatory duct empties; female organ simple, with narrow and curved glandular duct, dorsally situated and opening by way of a reduced vagina into the dorsal part of the common genital antrum; posterior diverticulum (or glandular sac) present.

Type species: *Cotyloplana whiteleggei* Spencer, 1892  
Cf. Ogren & Kawakatsu (1988: 44, 51).

#### Genus ***Digonopyla*** Fischer, 1926

Definition: Rhynchodeminae with numerous pharynges and mouths; copulatory apparatus has a wall of tissue separating the gonopores, resulting in independent male and female openings; copulatory organs as in *Platydemus* with minute penis papilla and dorsal entrance of vagina.

Type species: *Dolichoplana harmeri* von Graff, 1899  
Cf. Ogren & Kawakatsu (1988: 44, 53 54).

#### Genus ***Dolichoplana*** Moseley, 1877

Definition: Rhynchodeminae of very elongate flattened form; creeping sole of moderate width; the rounded, slightly concave anterior end is bordered by glandular and sensory tracts; with two large retinal eyes behind the anterior tip; parenchymal longitudinal muscle fibers occur only ventral to the intestine; male

copulatory organ without penis papilla, genital antrum very large, elongate with many folds, opens into large elongated common antrum; the short female genital duct and vagina open dorsally into the common antrum; a prominent diverticulum (or glandular sac) opens from the posterior wall of common antrum near the gonopore.

Type species: *Dolichoplana striata* Moseley, 1877  
Cf. Ogren & Kawakatsu (1988: 44, 54).

#### Genus ***Platydemus*** von Graff, 1896

Definition: Rhynchodeminae of massive, plano-convex body, both ends tapered, with broad creeping sole; with very large eyes; anterior secretory and sensory tracts; male copulatory organ consists of a large chamber with folded epithelium and in most cases a short penis papilla; vagina opens from the dorsal aspect into the large common genital antrum; ventrally, a diverticulum (or glandular sac) opens from the posterior wall of the common antrum.

Type species: *Rhynchodemus grandis* Spencer, 1892  
Cf. Ogren & Kawakatsu (1988: 44-45, 61).

#### Genus ***Rhynchodemus*** Leidy, 1851

Definition: Rhynchodeminae with elongate body attenuated at both ends, with oval to round cross section; creeping sole occupying most of the ventral surface; anterior end has sensory tracts and a pair of medium to large eyes situated close to anterior tip; male copulatory apparatus lacks a penis papilla, but develops large folds in the genital antrum.

Type species: *Planaria sylvatica* Leidy, 1851  
Cf. Ogren & Kawakatsu (1988: 45-46, 67).

#### ***Anisorhynchodemus*** Kawakatsu, Froehlich, Jones, Ogren & Sasaki, gen. nov. (collective group)

Definition: Rhynchodeminae, but not classifiable into present taxonomic genera because of insufficient morphological information; geographical distribution is worldwide. A collective group to temporarily assign *species inquirendae* and *nomina dubia*.

No type species. Cf. ICZN, 4th Ed., 1999, Art. 42.3.1.

Etymology: The new generic name of *Anisorhynchodemus* is from Greek. Aniso (unequal, different, irregular, dissimilar) + *rhynchodemus*. Gender is the same as *Rhynchodemus* (masculine).

#### Subfamily **Microplaninae** Pantin, 1953

Definition: Rhynchodemidae of generally short, plump, cylindrical form, anterior end often blunt; eyes often small or may be retrogressed; body wall with weak subepithelial musculature consisting of thin outer circular layer and single layer of longitudinal

fibers inconspicuously developed and not aggregated into large bundles; male copulatory organ often complicated with well developed penis papilla; female copulatory organ simple or complex, may have genito-intestinal connection, with or without seminal bursa with one or more exits.

Type genus: *Microplana* Vejdovský, 1890

Cf. Ogren & Kawakatsu (1988: 46); Ogren & Kawakatsu (1989: 53). See also Ogren, Kawakatsu & Froehlich (1992: 100, pl. II, top fig., 102 103, pl. IV (1 2), fig.).

#### Genus *Amblyplana* von Graff, 1896

Definition: Microplaninae with plump, rounded body, two well-developed retinal eyes on the subcylindrical head; with narrow creeping sole; with well developed bundle of parenchymal musculature and retractor muscle at anterior end of the body which pulls the front inwards.

Type species: *Rhynchodemus fuscus* Moseley, 1877

Cf. Ogren & Kawakatsu (1988: 46); Ogren & Kawakatsu (1989: 53).

#### Genus *Diporodemus* Hyman, 1938

Definition: Microplaninae with large seminal bursa connected to the vagina by a canal (Beauchamp's canal) and also opening asymmetrically to the exterior by a bursal canal and pore situated behind the common gonopore; with or without a genito-intestinal connection.

Type species: *Diporodemus yucatani* Hyman, 1938

Cf. Ogren & Kawakatsu (1988: 47); Ogren & Kawakatsu (1989: 56-57).

#### Genus *Geobenazzia* Minelli, 1974

Definition: Microplaninae with a conspicuous adenodactyl in the common genital antrum; male copulatory organ well developed, with large seminal vesicle and penis papilla; female organ has a copulatory bursa (or seminal receptacle) connected by one duct, the vagina, which opens into the genital antrum; also opening into the genital antrum near the vagina is a genito-intestinal duct which apparently does not communicate with the copulatory bursa.

Type species: *Geobenazzia tyrrhenica* Minelli, 1974

Cf. Ogren & Kawakatsu (1988: 47); Ogren & Kawakatsu (1989: 58).

#### Genus *Incapora* du Bois-Reymond Marcus, 1953

Definition: Microplaninae with two ventral orifices in the skin, from which tubes lead to the posterior

limbs of the gut; these limbs form a transanastomosis connected to the common ovovitelline duct by the bursal canal.

Type species: *Incapora weyrauchi* du Bois-Reymond Marcus, 1953

Cf. Ogren & Kawakatsu (1988: 47); Ogren & Kawakatsu (1989: 59).

#### Genus *Microplana* Vejdovský, 1890

Definition: Microplaninae with an elongate, rounded body (preserved worms may have rounded anterior with greatest diameter anterior to mouth); with two small eyes; male copulatory organ consists of well-developed penis with muscular bulbus, bulbar cavity and elongate penis papilla projecting into short antrum; female organ has one simple canal (vagina) entering common genital antrum; typically a genito-intestinal canal is present arising from vagina or behind the common ovovitelline duct; seminal bursa can be present with a short connection (bursasteles, bursal canal, or proximal duct) to female tract, with or without connections to intestine, or bursa is blind lacking connections to intestine; when bursa is absent a genito-intestinal connection is often present; without adenodactyls, tentacles or suckers.

Type species: *Microplana humicola* Vejdovský, 1890

Cf. Ogren & Kawakatsu (1988: 47); Ogren & Kawakatsu (1989: 60).

#### Genus *Othelosoma* Gray, 1869

Definition: Microplaninae with rounded, elongated body, anterior may be blunt or inrolled; narrow creeping sole reaches nearly to anterior tip; seminal bursa very large and communicates by two openings or by a common opening with two canals, a ductus vaginalis and a Beauchamp's canal, leading into the genital antrum; dorso-anterior parenchymal musculature is very highly developed and may be differentiated as a discrete retractor muscle.

Type species: *Othelosoma symondsii* Gray, 1869

Cf. Ogren & Kawakatsu (1988: 47); Ogren & Kawakatsu (1989: 79).

#### Genus *Pseudartiocotylus* Ikeda, 1911

Definition (in von Graff, 1916: 3230): "Der riemenförmige Körper ist relativ kurz, besitzt ein zwischen den kleinen Augen liegendes uhrglasförmiges apikales Sinnesorgan und zwei neben dem Vorderende der schmalen Kriechleiste angebrachte längsovale Ambulakralgrübchen." Insufficient information in the original description does not allow for a suitable definition.

Type species: *Pseudartiocotylus ceylonicus* Ikeda,

1911

Cf. Ogren & Kawakatsu (1988: 48); Ogren & Kawakatsu (1989: 87).

***Statomicroplana* Kawakatsu, Froehlich, Jones, Ogren & Sasaki, gen. nov.** (collective group)

Definition: Microplaninae, but not classifiable into present taxonomic genera because of insufficient morphological information; geographic distribution is

worldwide. A collective group to temporarily assign *species inquirendae* and *nomina dubia*.

No type species. Cf. ICZN, 4th Ed., 1999, Art. 42.3.1.

Etymology: The new generic name of *Statomicroplana* is from Greek. Stato (stillness, rest, standstill, suspend) + microplana. Gender is the same as *Microplana* (feminine).

Table 1. A list of rhynchodemid species with information on copulatory organs and geographical location. (+ indicates adequate information is available on the copulatory organs; – indicates no such information.)

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Family RHYNCHODEMIDAE von Graff, 1896

Subfamily RHYNCHODEMINAE Corrêa, 1947

Genus ***COTYLOPLANA* Spencer, 1892**

*Cotyloplana borneensis* de Beauchamp, 1933

+ E. Malaysia

*Cotyloplana punctata* Spencer, 1892

+ Australia - Lord Howe Is.

Genus ***DIGONOPYLA* Fischer, 1926**

*Digonopyla harmeri* (von Graff, 1899)

+ Indonesia - Sulawesi

Genus ***DOLICHOPLANA* Moseley, 1877**

*Dolichoplana carvalhoi* Corrêa, 1947

+ Brazil

*Dolichoplana striata* Moseley, 1877\*1

Sri Lanka; Philippines; Palau Is, U.S.A. (GA, FL, MO; greenhouses); Barbados; Bermuda; Guiana; Europe: Ireland; U.K.

\*1 *Dolichoplana feildeni* is synonymised with *D. striata*.

*Dolichoplana vircata* du Bois-Reymond Marcus, 1957

+ Peru

Genus ***PLATYDEMUS* von Graff, 1896**

*Platydemus bivittatus* (von Graff, 1899)

+ Papua New Guinea

*Platydemus fasciatus* (Spencer, 1892)

+ Australia - Lord Howe Is.

*Platydemus grandis* (Spencer, 1892)

+ Australia - Lord Howe Is.

*Platydemus joliveti* de Beauchamp, 1972

+ Papua New Guinea

*Platydemus lividus* (von Graff, 1899)

+ Caroline Is.; Palau Is.

*Platydemus longibulbus* de Beauchamp, 1972

+ Papua New Guinea

*Platydemus macrophthalmus* (von Graff, 1899)

+ Papua New Guinea

*Platydemus manokwari* de Beauchamp, 1962

+ Indonesia, Irian Jaya; Maldives; Philippines; Japan (SWI and Ogasawara Is.); Australia (QLD)

*Platydemus pindaudei* de Beauchamp, 1972

+ Papua New Guinea

*Platydemus vanheurni* de Beauchamp, 1929

+ Indonesia - Irian Jaya

*Platydemus victoriae* (Dendy, 1890)

+ Australia (VIC)

*Platydemus zimmermanni* de Beauchamp, 1952

+ Fiji

Genus ***RHYNCHODEMUS* Leidy, 1851**

*Rhynchodemus americanus* Hyman, 1943

+ U.S.A. (green houses)

<i>Rhynchodemus angustus</i> (Hyman, 1941)	+ Panama
<i>Rhynchodemus aripensis</i> Prudhoe, 1949	+ Trinidad & Tobago
<i>Rhynchodemus blainvillei</i> von Graff, 1899	+ Brazil
<i>Rhynchodemus bromelicola</i> de Beauchamp, 1912	+ Costa Rica
<i>Rhynchodemus graetzi</i> du Bois-Reymond Marcus, 1953	+ Panama
<i>Rhynchodemus hectori</i> von Graff, 1897	+ Argentina ; Brazil
<i>Rhynchodemus ijimai</i> Kaburaki, 1922	+ Japan (CJ)
<i>Rhynchodemus inopinatus</i> (de Beauchamp, 1930)	+ Indonesia - Sumatra
<i>Rhynchodemus marfa</i> Marcus, 1953	+ Zaire
<i>Rhynchodemus misus</i> du Bois Reymond Marcus, 1965	+ Ecuador
<i>Rhynchodemus nematopsis</i> (de Beauchamp, 1930)	+ Indonesia - Java
<i>Rhynchodemus oahuensis</i> Hyman, 1939	+ Hawaii, U.S.A.
<i>Rhynchodemus ochroleucus</i> von Graff, 1899	+ Indonesia - Natuna Is.; Philippines
<i>Rhynchodemus piptus</i> Marcus, 1952	+ Brazil
<i>Rhynchodemus samperi</i> Fuhrmann, 1814	+ Colombia
<i>Rhynchodemus schmardai</i> von Graff, 1899	+ Indonesia - Java
<i>Rhynchodemus schubarti</i> du Bois-Raymond Marcus, 1955	+ Brazil
<i>Rhynchodemus sciurus</i> du Bois-Reymond Marcus, 1955	+ Brazil
<i>Rhynchodemus sumbawaeiensis</i> (Haslauer-Gamisch, 1982)	+ Indonesia - Flores
<i>Rhynchodemus sylvaticus</i> (Leidy, 1851)	+ Europe: Austria; Belgium; Czechoslovakia;
	Germany; Ireland; Netherlands; Poland; U.K.; Canada (Ontario); U.S.A. (IL, LA, MD,
	MO, NC, NY, OH, PA, RI, TX, WI); Bermuda
<i>Rhynchodemus vej dovskiyi</i> von Graff, 1899	+ Indonesia - Java; Singapore

Genus **ANISORHYNCHODEMUS** Kawakatsu, Froehlich, Jones, Ogren & Sasaki, gen. nov.  
(collective group)

<i>Anisorhynchodemus albicinctus</i> (von Graff, 1899) comb. nov.	– Palau Is.
<i>Anisorhynchodemus amboinensis</i> (von Graff, 1899) comb. nov.	– Indonesia - Moluccas Is.
<i>Anisorhynchodemus assimilis</i> (Geba, 1909) comb. nov.	– Comoro Is.
<i>Anisorhynchodemus belli</i> (von Graff, 1899) comb. nov.	– Indonesia - Moluccas Is.
<i>Anisorhynchodemus bistratus</i> (Grube, 1868) comb. nov.	– Fiji; Samoa Is.
<i>Anisorhynchodemus boehmigi</i> (von Graff, 1899) comb. nov.	– Indonesia - Moluccas Is.
<i>Anisorhynchodemus boholicus</i> (von Graff, 1899) comb. nov.	– Philippines
<i>Anisorhynchodemus borellii</i> (von Graff, 1894) comb. nov.	– Paraguay
<i>Anisorhynchodemus bosci</i> (von Graff, 1899) comb. nov.	– Madagascar
<i>Anisorhynchodemus cameliae</i> (Fuhrmann, 1914) comb. nov.	– Colombia
<i>Anisorhynchodemus chuni</i> (von Graff, 1899) comb. nov.	– Indonesia - Java
<i>Anisorhynchodemus conradti</i> (von Graff, 1899) comb. nov.	– Togo
<i>Anisorhynchodemus conspersus</i> (von Graff, 1899) comb. nov.	– Philippines
<i>Anisorhynchodemus cultratus</i> (von Graff, 1899) comb. nov.	– Philippines
<i>Anisorhynchodemus demani</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus diesingi</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus diorchis</i> (Fuhrmann, 1914) comb. nov.	– Switzerland
<i>Anisorhynchodemus dubius</i> (Spencer, 1892) comb. nov.	– Australia - Lord Howe Is.
<i>Anisorhynchodemus dugesi</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus excavatus</i> (von Graff, 1899) comb. nov.	– Indonesia - Banda Is.
<i>Anisorhynchodemus figdori</i> (von Graff, 1899) comb. nov.	– Indonesia - Java
<i>Anisorhynchodemus fletcheri</i> (Spencer, 1892) comb. nov.	– Australia - Lord Howe Is.
<i>Anisorhynchodemus forrestianus</i> (Schröder, 1924) comb. nov.	– New Caledonia
<i>Anisorhynchodemus gebaboehmigi</i> Kawakatsu, Froehlich, Jones, Ogren & Sasaki, nom. nov.	– Comoro Is.
<i>Anisorhynchodemus guttatus</i> (Fletcher & Hamilton, 1888)	– Australia (NSW, VIC)
	comb. nov.

<i>Anisorhynchodemus hallezi</i> (von Graff, 1899) comb. nov.	– Philippines; U.K. (hothouses)
<i>Anisorhynchodemus insularis</i> (von Graff, 1899) comb. nov.	– Palau Is.
<i>Anisorhynchodemus joubini</i> (Hallez, 1894) comb. nov.	– Guiana
<i>Anisorhynchodemus kraepelini</i> (von Graff, 1899) comb. nov.	– Fiji
<i>Anisorhynchodemus laterolineatus</i> (Spencer, 1892) comb. nov.	– Australia - Lord Howe Is.
<i>Anisorhynchodemus leidyi</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus lindsaysianus</i> (Schröder, 1924) comb. nov.	– New Caledonia
<i>Anisorhynchodemus lineolatus</i> (von Graff, 1899) comb. nov.	– Fiji
<i>Anisorhynchodemus lubbocki</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus luteicollis</i> (von Graff, 1899) comb. nov.	– Papua New Guinea
<i>Anisorhynchodemus maculatus</i> (Fuhrmann, 1914) comb. nov.	– Colombia
<i>Anisorhynchodemus mediolineatus</i> (Spencer, 1892) comb. nov.	– Australia - Lord Howe Is.
<i>Anisorhynchodemus megalophthalma</i> (Loman, 1890) comb. nov.	– Indonesia - Java
<i>Anisorhynchodemus mertoni</i> (Schröder, 1916) comb. nov.	– Indonesia - Aru Is.
<i>Anisorhynchodemus michaelsoni</i> (von Graff, 1899) comb. nov.	– Madagascar
<i>Anisorhynchodemus miniatus</i> (von Graff, 1899) comb. nov.	– Palau Is.
<i>Anisorhynchodemus mitchellianus</i> (Schröder, 1924) comb. nov.	– New Caledonia
<i>Anisorhynchodemus montanus</i> (Mell, 1904) comb. nov.	– Ethiopia
<i>Anisorhynchodemus moseleyi</i> (Fletcher & Hamilton, 1888)	– Australia (NSW)
comb. nov.	
<i>Anisorhynchodemus nematooides</i> (Loman, 1890) comb. nov.	– Indonesia - Kai Is., - Java; W. Malaysia; Maldive ; Sri Lanka
<i>Anisorhynchodemus nietneri</i> (Humbert, 1862) comb. nov.	– Sri Lanka
<i>Anisorhynchodemus niger</i> (Fletcher & Hamilton, 1888) comb. nov.	– Australia (NSW)
<i>Anisorhynchodemus nollii</i> (von Graff, 1899) comb. nov.	– Philippines
<i>Anisorhynchodemus obscurus</i> (Fletcher & Hamilton, 1888)	– Australia (NSW, QLD)
comb. nov.	
<i>Anisorhynchodemus pellucidus</i> (von Graff, 1899) comb. nov.	– Brazil
<i>Anisorhynchodemus picta</i> (von Graff, 1899) comb. nov.	– Madagascar
<i>Anisorhynchodemus pilleata</i> (Whitehouse, 1915) comb. nov.	– India
<i>Anisorhynchodemus procera</i> (von Graff, 1899) comb. nov.	– Indonesia - Kai Is. & Moluccas Is.; Palau Is.
<i>Anisorhynchodemus putzei</i> (von Graff, 1899) comb. nov.	– Maldive ; Australia (QLD)
<i>Anisorhynchodemus quadristriatus</i> (Grube, 1868) comb. nov.	– Samoa Is.; Tonga
<i>Anisorhynchodemus rubrocinctus</i> (von Graff, 1899) comb. nov.	– Indonesia - Sulawesi
<i>Anisorhynchodemus scriptus</i> (Steel, 1897) comb. nov.	– Fiji
<i>Anisorhynchodemus septemstriatus</i> (von Graff, 1899) comb. nov.	– Palau Is.
<i>Anisorhynchodemus sharpi</i> (von Graff, 1899) comb. nov.	– Indonesia Sulawesi
<i>Anisorhynchodemus signata</i> (von Graff, 1899) comb. nov.	– Indonesia - Moluccas Is.
<i>Anisorhynchodemus simulans</i> (Dendy, 1891) comb. nov.	– Australia (VIC)
<i>Anisorhynchodemus stenopus</i> (von Graff, 1894) comb. nov.	– Argentina; Venezuela
<i>Anisorhynchodemus tabatteldili</i> (von Graff, 1899) comb. nov.	– Palau Is.
<i>Anisorhynchodemus tetracelis</i> (Haslauer-Gamisch, 1981)	– Indonesia - Flores Is.
comb. nov.	
<i>Anisorhynchodemus trilineatus</i> (Fletcher & Hamilton, 1888)	– Australia (NSW)
comb. nov.	
<i>Anisorhynchodemus tristis</i> (von Graff, 1899) comb. nov.	– Indonesia - Moluccas Is.
<i>Anisorhynchodemus varians</i> (von Graff, 1899) comb. nov.	– Indonesia - Java & Sumatra
<i>Anisorhynchodemus waburtonianus</i> (Schröder, 1924) comb. nov.	– Loyalty Is.
<i>Anisorhynchodemus whiteleggei</i> (Spencer, 1892) comb. nov.	– Australia - Lord Howe Is.
<i>Anisorhynchodemus woodassimilis</i> Kawakatsu, Froehlich, Jones, Ogren & Sasaki, nom. nov.	– Australia (NSW)

Subfamily MICROPLANINAE Pantin, 1953

Genus **AMBLYPPLANA** von Graff, 1896

*Amblyplana braueri* (von Graff, 1899) + Seychelle

Genus **DIPORODEMUS** Hyman, 1938

*Diporodemus hymanae* E. M. Froehlich & Froehlich, 1972 + Brazil  
*Diporodemus indigenus* Hyman, 1943 + U.S.A. (DC, IL?, IN?, KY, LA, MD, MI,  
 NC, NY, TN, VA, WV)  
*Diporodemus plenus* Hyman, 1941 + Panama  
*Diporodemus yucatanii* Hyman, 1938 + Mexico

Genus **GEOBENAZZIA** Minelli, 1974

*Geobenazzia tyrrhenica* Minelli, 1974 + Italy

Genus **INCAPORA** du Bois-Reymond Marcus, 1953

*Incapora anamallensis* (de Beauchamp, 1930) + India  
*Incapora weyrauchi* du Bois-Reymond Marcus, 1953 + Peru

Genus **MICROPLANA** Vejdovský, 1890

*Microplana aberana* (Mell, 1904) + Ethiopia  
*Microplana atropurpurea* (von Graff, 1899) + Palau Is.  
*Microplana attemsi* (Bendl, 1909) + Yugoslavia  
*Microplana ceylonica* (von Graff, 1899) + India; Sri Lanka; Rodrigues Is., Mauritius  
*Microplana cherangani* (de Beauchamp, 1936) + Ethiopia  
*Microplana costaricensis* (de Beauchamp, 1913) + Costa Rica  
*Microplana giustii* Minelli, 1976 + Italy  
*Microplana graffi* (Geba, 1909) + Comores  
*Microplana haitiensis* (Prudhoe, 1949) + Haiti, W. Indies  
*Microplana harea* Marcus, 1953 + Congo; Zaire  
*Microplana henrici* (Bendl, 1908) + France  
*Microplana howesi* (Scharff, 1900) + France  
*Microplana humicola* Vejdovský, 1890 + Czechoslovakia; U.K.  
*Microplana indica* (Chaurasia, 1985) + India  
*Microplana mediotriata* (Geba, 1909) + Comoro Is.  
*Microplana montoyai* (Fuhrmann, 1914) + Colombia  
*Microplana nana* Mateos, Giribet & Carranza, 1998 + Spain  
*Microplana natalensis* (Jameson, 1907) + S. Africa  
*Microplana neumanni* (Mell, 1904) + Ethiopia  
*Microplana peneckeii* (Meixner, 1921) + Austria  
*Microplana perereca* Marcus & du Bois-Reymond Marcus, 1959 + Azores Is.  
*Microplana purpurea* (Bendl, 1908) + Ethiopia  
*Microplana rufocephalata* Hyman, 1954 + U.S.A. (KY)  
*Microplana scharffi* (von Graff, 1896) \*2 + Europe: Belgium; Bulgaria; Ireland; U.K.;  
 Monaco; Turkey; Madeira Is.; U.S.A. (WA)

\*2 *Microplana britannica*, *Microplana decennii*, *Microplana hovassei*, and *Microplana monacensis* have all been synonymised with *M. scharffi*.

*Microplana termitophaga* Jones, Darlington & Newson, 1990 + Kenya; Zambia; Zimbabwe  
*Microplana terrestris* (Müller, 1774) \*3 + Europe: Austria; Belgium; Bulgaria; Czechoslovakia; Denmark; France; Germany; Ireland; Monaco; Netherlands; Norway; Po-



land; Spain; Sweden; Switzerland; Yugoslavia; U.K.; Madeira; U.S.A. (AR, IL, KY, MD  
MD, MO, NY, OH, PA, C, TN, VA, WA, WI)

\*3 *Microplana albicollis*, *M. atrocyanea*, *M. carli*, *M. mahnerti*, *M. richardi* and *M. styriaca* have all been synonymised with *M. terrestris*.

<i>Microplana thwaitesii</i> (Moseley, 1875)	+ Sri Lanka
<i>Microplana trifuscolineata</i> (Kaburaki, 1920)	+ Mauritius
<i>Microplana tristriata</i> (Geba, 1909)	+ Comoro Is.
<i>Microplana uniductus</i> (de Beauchamp, 1930)	+ India
<i>Microplana unilineata</i> (Frieb, 1923)	+ Korea
<i>Microplana viridis</i> (Jameson, 1907)	+ S. Africa
<i>Microplana voeltzkowi</i> (von Graff, 1899)	+ Madagascar
<i>Microplana yaravi</i> du Bois-Reymond Marcus, 1957	+ Peru

Genus **OTHELOSOMA** Gray, 1869

<i>Othelosoma africanum</i> (von Graff, 1899)	+ S. Africa
<i>Othelosoma angolense</i> (de Beauchamp, 1951)	+ Angola
<i>Othelosoma caffrum</i> (Jameson, 1907)	+ S. Africa
<i>Othelosoma chinum</i> Marcus, 1955	+ S. Africa
<i>Othelosoma conyum</i> Marcus, 1953	+ Congo
<i>Othelosoma cylindricum</i> (de Beauchamp, 1913)	+ Kenya
<i>Othelosoma evelinae</i> Marcus, 1970	+ S. Africa
<i>Othelosoma flavescens</i> (Jameson, 1907)	+ S. Africa
<i>Othelosoma gnaum</i> Marcus, 1955	+ S. Africa
<i>Othelosoma gravelyi</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma hepaticarum</i> (Jameson, 1907)	+ S. Africa
<i>Othelosoma hirudineum</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma huntum</i> Marcus, 1955	+ S. Africa
<i>Othelosoma joburgi</i> Jones, in press *4	+ S. Africa

\*4 This new species name may be disclaimed. Cf. ICZN, 4th Ed., 1999, Art. 8.3.

<i>Othelosoma kukkal</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma macrothylax</i> (de Beauchamp, 1936)	+ Ethiopia
<i>Othelosoma marcusii</i> de Beauchamp, 1956	+ Angola
<i>Othelosoma marlieri</i> de Beauchamp, 1956	+ Zaire
<i>Othelosoma musculosum</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma nigrescens</i> (Mell, 1904)	+ Ethiopia
<i>Othelosoma notabile</i> (von Graff, 1899)	+ Cameroon
<i>Othelosoma polecatum</i> Marcus, 1953	+ Congo
<i>Othelosoma pugum</i> Marcus, 1953	+ Zaire
<i>Othelosoma retractile</i> (de Beauchamp, 1930)	+ S. India
<i>Othelosoma rudebecki</i> Marcus, 1955	+ S. Africa
<i>Othelosoma saegeri</i> Marcus, 1955	+ Zaire
<i>Othelosoma sholanum</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma speciosum</i> (von Graff, 1896)	+ S. Africa
<i>Othelosoma symondsii</i> Gray, 1869	+ Gabon
<i>Othelosoma torquatum</i> (de Beauchamp, 1930)	+ India
<i>Othelosoma voleum</i> Marcus, 1953	+ Tanzania
<i>Othelosoma wauzen</i> Marcus, 1955	+ S. Africa

Genus **PSEUDARTIOCOTYLUS** Ikeda, 1911

<i>Pseudartiocotylus ceylonicus</i> Ikeda, 1911	+ Sri Lanka
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Genus **STATOMICROPLANA** Kawakatsu, Froehlich, Jones, Ogren & Sasaki, gen. nov. (collective group)

<i>Statomicroplana capensis</i> (von Graff, 1899) comb. nov.	– S. Africa
<i>Statomicroplana cockerelli</i> (von Graff, 1899) comb. nov.	– Jamaica, W. Indies
<i>Statomicroplana ehrenbergi</i> (von Graff, 1899) comb. nov.	– Cameroon
<i>Statomicroplana flavum</i> (Moseley, 1877) comb. nov.	– S. Africa
<i>Statomicroplana fuliginea</i> (von Graff, 1899) comb. nov.	– Madagascar
<i>Statomicroplana fuscum</i> (Moseley, 1877) comb. nov.	– S. Africa
<i>Statomicroplana gebavoeltzkowi</i> (Ogren & Kawakatsu, 1988) comb. nov.	– Comoros
<i>Statomicroplana haeckeli</i> (von Graff, 1899) comb. nov.	– Sri Lanka
<i>Statomicroplana knysnensis</i> (von Graff, 1899) comb. nov.	– S. Africa
<i>Statomicroplana kuekenthali</i> (Mell, 1903) comb. nov.	– Madagascar
<i>Statomicroplana pyrenaica</i> (von Graff, 1893) comb. nov.	– France
<i>Statomicroplana ruteocephala</i> (Kaburaki, 1922) comb. nov.	– Japan (CJ)
<i>Statomicroplana teres</i> (von Graff, 1899) comb. nov.	– Sri Lanka
<i>Statomicroplana tetracladea</i> (Wilczyński, 1923) comb. nov.	– Tanzania
<i>Statomicroplana zenkeri</i> (von Graff, 1899) comb. nov.	– Cameroon

The summarized data on the Rhynchodemidae (Rhynchodeminae and Microplaninae) proposed in the present article are shown in Table 2.

Table 2. A summary list of the family Rhynchodemidae. (Figures in parentheses are percentages of the relevant total.)

Family, subfamilies & genera	No. of species described	Sexual specimens (FCA reported)	Asexual specimens (FCA unknown)
<b>RHYNCHODEMIDAE</b>			
Rhynchodeminae			
<i>Cotyloplana</i>	2	2	0
<i>Dygonopyla</i>	1	1	0
<i>Dolichoplana</i>	3	3	0
<i>Platydemus</i>	12	12	0
<i>Rhynchodemus</i>	22	22	0
<i>Anisorhynchodemus</i>	70	0	70
Total	110	40 (36.4%)	70 (63.6%)
Microplaninae			
<i>Amblyplana</i>	1	1	0
<i>Diporodemus</i>	4	4	0
<i>Geobenazzia</i>	1	1	0
<i>Incapora</i>	2	2	0
<i>Microplana</i>	34	34	0

<i>Othelosoma</i>	32	32	0
<i>Pseudartiocotylus</i>	1	1	0
<i>Statomicoplana</i>	15	0	15
Total	90	75 (83.3%)	15 (17.6%)
Sum total	200	115 (57.5%)	85 (42.5%)

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References for Table 1 are not listed here.

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## PART II

### ADDITIONS AND CORRECTIONS OF THE PREVIOUS LAND PLANARIAN INDICES OF THE WORLD – 11

A. BIPALIIDAE INDEX (1987: Bull. Fuji Women's College, No. 25, Ser. II, pp. 79-119; 1988: Occ. Publ., Biol. Lab. Fuji Women's College, No. 19, pp. 1-16; 1992: Bull. Fuji Women's College, No. 30, Ser. II, pp. 62-75; 1993: *Ibid.*, No. 31, Ser. II, pp. 80-81; 1994: *Ibid.*, No. 32, Ser. II, pp. 73-76; 1995: *Ibid.*, No. 33, Ser. II, pp. 78-81; 1996: *Ibid.*, No. 34, Ser. II, pp. 87-93; 1991: *Ibid.*, No. 35, Ser. II, p. 56; 1998: *Ibid.*, No. 36, Ser. II, pp. 75-76; 1999: *Ibid.*, No. 37, Ser. II, 94, 97, 99-101; 2000: *Ibid.*, No. 38, Ser. II, 83-85; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, pp. 165-166).

BFC25. pp. 91-93. *Bipalium kewense* Moseley, 1878.

Add the following items.

*Bipalium kewense*: Bandier, 1936: 316, 322.

*Bipalium kewense*: Silveira, 1998: 191, 194-195, fig. 10 (electrophotomicrograph). Brazil.

*Bipalium kewense*: Košel, 2001: 79. Czech and Slovakia.

*Bipalium kewense*: Košel, 2002: 38. Slovakia.

*Kewense Moseley* [watari-kôgai-biru]: Asato, Taira, Kudaka, Nakamura & Itokazu, 2003: 10-14. Okinawa / Japan.

*Bipalium kewense*: Tanaka, 2003: 138. Okinawa / Japan.

*Bipalium kewense*: Yamamoto. 2003a: 63-64, 67, figs. 1-2 (DB, VB), 69, figs. 1-2 (chromosomes), 70 (idiograms). Nagasaki Pref., Kyûshû / Japan.

*Bipalium kewense*: Yamamoto, 2003b: 63, fig. 4 (DB, VB). Nagayo-chô, Nagasaki Pref., Kyûshû / Japan.

BFC25. P. 97. *Bipalium nobile* Kawakatsu & Makino,

1982. Add the following items.

*Bipalium nobile*: Shirasawa, Yoshihama, Seo & Furuta, 2002: 1437. Tôkyô / Japan.

[Kogai-biru]: Poster of Otaru Museum for the 55th Special Exhibition and Otaru City Home-page, 2003: Backside of the Poster and p. 2 in the Home-page (with a photograph of a living specimen of *Bipalium nobile*). Otaru, Hokkaidô / Japan.

*Bipalium nobile*: Yamamoto, 2003a: 64, 67, figs. 4-5 (DB, VB), 69, fig. 3 (chromosomes), 70 (idiogram). Nagasaki Pref., Kyûshû / Japan.

BFC25. Pp. 96-97. (Under *Bipalium*). *Diversibipalium multilineatum* (Makino & Shirasawa, 1983). Add the following items.

*Diversibipalium multilineatum*: Yamamoto, 2003a: 64, 67, figs. 6-8 (DB, VB), 69, fig. 4 (chromosomes), 70 (idiograms). Nagasaki Pref., Kyûshû / Japan.

*Diversibipalium multilineatum*: Yamamoto, 2003b: 63, fig. 5 (DB, VB). Nagayo-chô, Nagasaki Pref., Kyûshû / Japan.

UNDESCRIBED BIPALIID SPECIES (1987: BFC25, pp. 107-109; 1992: BFC30, pp. 73-75; 1993: BFC31, p. 81; 1994: BFC32, pp. 75-76; 1995: BFC33, pp. 80-81; 1996: BFC34, pp. 88-89; 1997: BFC35, p. 56; BFC37, p. 97; 2000: BFC38, pp. 84-85; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, p. 166).

BFC39. P. 113. (Under *Bipalium*). *Diversibipalium* sp. Nagasaki-1. Kawakatsu & al., 2000. Add the following item.

*Diversibipalium* sp. Nagasaki-1: Yamamoto, 2003a: 64, 68, figs. 9-10 (DB, VB), 69, fig. 5 (chromosomes), 70 (idiogram). Nagasaki Pref., Kyûshû / Japan.

BFC39. P. 113. (Under *Bipalium*). *Diversibipalium* sp. Nagasaki-2. Kawakatsu & al., 2000. Add the following item.

*Diversibipalium* sp. Nagasaki-2: Yamamoto, 2003a: 64, 68, figs. 11-12 (DB, VB), 69, fig. 6 (chromosomes), 70 (idiogram). Nagasaki Pref., Kyûshû / Japan.

BFC39. P. 113. (Under *Bipalium*). *Diversibipalium* sp. Nagasaki-3. Kawakatsu & al., 2000. Add the following item.

*Diversibipalium* sp. Nagasaki-3: Yamamoto, 2003a: 64-65, 68, figs. 13-14 (DB, VB), 69, fig. 7 (chromosomes), 70 (idiogram). Nagasaki Pref., Kyûshû / Japan.

BFC39. P. 113. (Under *Bipalium*). *Diversibipalium* sp.

Nagasaki-4. Kawakatsu & al., 2000. Add the following item.

*Diversibipalium* sp. Nagasaki-4: Yamamoto 2003a: 65, 68, figs. 15-16 (DB, VB), 69, fig. 8 (chromosomes), 70 (idiograms). Nagasaki Pref., Kyûshû / Japan.

BFC39. P. 113. (Under *Bipalium*). *Diversibipalium* sp. Nagasaki-5. Kawakatsu & al., 2000. Add the following items.

*Bipalium* sp. Nagasaki-5: Yamamoto, 2002: 37-43, figs. A-P (DB, VB, chromosomes), Idiograms. Nagasaki Pref., Kyûshû / Japan.

*Diversibipalium* sp. Nagasaki-5: Yamamoto, 2003a: 65, 68, figs. 17-18 (DB, VB), 69, figs. 9-10 (chromosomes), 70 (idiogram).

**Note.** For 5 undescribed *Diversibipalium* spp. from Nagasaki, color photographs of live specimens and their idiograms can be seen in the following web article:

<http://planarian.net/kswp/40/Nagasaki.pdf>

B. RHYNCHODEMIDAE INDEX, PART I: RHYNCHODEMINAE (1988: Bull. Fuji Women's College, No. 26, Ser. II 39-91; 1992: *Ibid.*, No. 30, Ser. II, pp. 75-78; 1993: *Ibid.*, No. 31, Ser. II, p. 81; 1994: *Ibid.*, No. 32, Ser. II, p. 76; 1995: *Ibid.*, No. 33, Ser. II, p. 81; 1996: *Ibid.*, No. 34, Ser. II, p. 89; 1997: *Ibid.*, No. 35, Ser. II, pp. 56-57; 1998: *Ibid.*, No. 36, Ser. II, 76; 1999: *Ibid.*, No. 37, Ser. II, 101-103; 2000: *Ibid.*, No. 38, Ser. II, 85-86; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, p. 166).

BFC26. Pp. 64-65. *Platydemus manokwari* de Beauchamp, 1962. Add the following items.

*Platydemus manokwari* Itô, 1992: 434. Ryûkyû Islands, Okinawa Pref. / Japan.

*Platydemus manokwari*: Kaneda, Kitagawa, Nagai & Ichinohe, 1992: 7-11, figs. 1-3 (physiological graphs). Culture stock of animals from the Philippines at Yokohama Plant Protection Station. Cf. Kaneda, Kitagawa & Ichinohe (1990); Kawakatsu, Ogren & Muniappan (1992).

*Platydemus manokwari*: Nishikawa, 1992: 431. Ryûkyû Islands, Okinawa Pref. / Japan.

A land planarian (= *Platydemus manokwari*): Asato, Taira, Kudaka, Itokazu & Nakamura. 2002: 20-21. Ryûkyû Islands, Okinawa Pref. / Japan.

**Note.** *Angiostrongylus cantonensis* has been found in Okinawa Prefecture (the Ryûkyû Islands, etc.) in Southern Japan. A giant African snail, *Achatina fulica*, is one of hosts of *A. cantonensis* in Okinawa. *Platydemus*

*manokwari*, a land planarian species recently invaded into Okinawa, seems to be one of intermediate hosts.

*Platydemus manokwari*: Ohkochi, 2002: 167. Ogasawara Islands / Japan.

[Planaria, kôgai-biru]: Asato, Taira, Kudaka, Itokazu & Nakamura, 2002: 20-21. Okinawa / Japan.

*Platydemus manokwari*: Asato, Taira, Kudaka, Nakamura & Itokazu, 2003: 10-14, 24 (photographs 6-7). Okinawa / Japan.

*Platydemus manokwari*: Tanaka, 2003: 138. Okinawa Pref. / Japan.

BFC26. Pp. 78-81. *Rhynchodemus sylvaticus* (Leidy, 1851). Add the following items.

*Rhynchodemus bilineatus*: Bandier, 1936: 317-345, figs. 4, 6-8, 10-15 (HF).

*Rhynchodemus sylvaticus*: Košel, 2001: 80. Czech Republic

UNDESCRIBED RHYNCHODEMIDAE (Rhynchodeminae) SPECIES (1998: BFC26, pp. 82-84; 1992: BFC30, p. 78; 1994: BFC32, p. 76; 1997: BFC35, p. 57; 2000: BFC38, p. 86).

None reported during the past year.

C. RHYNCHODEMIDAE INDEX, PART II : MICROPLANINAE (1989: Bull. Fuji Women's College, No. 27, Ser. II, pp. 53-111; 1992: *Ibid.*, No. 30, Ser. II, 78-80; 1993: *Ibid.*, No. 31, Ser. II, pp. 81-82; 1994: *Ibid.*, No. 32, Ser. II, 76-77; 1995: *Ibid.*, No. 33, Ser. II, p. 81; 1996: *Ibid.*, No. 34, Ser. II, p. 89; 1997: *Ibid.*, No. 35, Ser. II, p. 57; 1998: *Ibid.*, No. 36, Ser. II, pp. 76-77; 2000: *Ibid.*, No. 38, Ser. II, 86-89; 2002: Bull. Fuji Women's Univ., No. 40. Ser. II, p. 167).

BFC27. P. 66. *Microplana humicola* Vejdovský, 1890. Add the following items.

*Microplana humicola*: Košel, 2001: 80. Czech and Slovakia.

*Rhynchodemus* cf. *humicola*: Košel, 2002: 38. Slovakia.

BFC27. Pp. 70-71. *Microplana scharffi* (von Graff, 1896). Add the following item.

*Microplana scharffi*: Košel, 2001: 79-80. Czech Republic.

BFC27. Pp. 72-77. *Microplana terrestris* (Müller, 1774). Add the following items.

*Rhynchodemus terrestris*: Bandier, 1936: 317-345, figs. 1, 5, 9 (HF).

*Microplana terrestris*: Košel, 2001: 80. Czech and Slovakia.

*Microplana terrestris*: Alvarez & Almeida, 2002: 235.

*Rhynchodemus terrestris*: Košel, 2002: 38. Slovakia.

UNDESCRIBED RHYNCHODEMIDAE (Microplaninae) SPECIES (1988: BFC26, pp. 82-84; 1997: BFC35, p. 57; 2000: BFC38, p. 89).

None reported during the past year.

D. GEOPLANIDAE INDEX, PART I: GEOPLANINAE (1990: Bull. Fuji Women's College, No. 28, Ser. II, pp. 79-166; 1992: *Ibid.*, No. 30, Ser. II, pp. 80-89; 1993: *Ibid.*, No. 31, Ser. II, p. 82; 1994: *Ibid.*, No. 32, Ser. II, p. 77; 1995: *Ibid.*, No. 33, Ser. II, pp. 81-82; 1998: *Ibid.*, No. 36, Ser. II, 77-78; 2000: *Ibid.*, No. 38, Ser. II, 89-91; 2002: Bull. Fuji Women's Univ., No. 40., Ser. II, pp. 167-168).

**Note.** A taxonomic confusion is found in "several species of *Notogynaphallia marginata* complex" reported in the previous papers. Cf. BFC30: 85-86. *Notogynaphallia caissara* (E. M. Froehlich, 1955). See also BFC30: 86-87. *Notogynaphallia marginata* (von Graff, 1899) and BFC30: 84. '*Pseudogeoplana marginata* (Schultze et Müller, 1857) comb. nov.'

Revisional study on this problem including new species descriptions is now in progress by Dr. Leal-Zanchet and Froehlich. See '*Geoplana marginata* sensu von Graff, 1899' and '*Geoplana marginata* sensu Marcus, 1951' listed at the end of the succeeding section in the present paper: UNDESCRIBED GEOPLANIDAE (Geoplaninae) SPECIES.

BFC28. Pp. 95-96. BFC30. P. 81. *Choeradoplana iheringi* von Graff, 1899. Add the following item.

*Choeradoplana iheringi*: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

BFC28. Pp. 97-98. *Geobia subterranea* (Schultze & Müller, 1857). Add the following item.

*Geobia subterranea*: Silveira, 1998: 191, 194. Brazil.

BFC28. P. 116. BFC30. P. 83. *Geoplana (Geoplana) burmeisteri* Schultze & Müller, 1857. Add the following item.

*Geoplana burmeisteri*: Alvarez & Almeida, 2002: 235-238, figs. 1-4 (karyograms: 2x=14, 4x=28, 8x=56). São Paulo and the vicinity.

BFC28. P. 117. *Geoplana (Geoplana) carinata* Rieger, 1938. Add the following item.

*Geoplana carinata*: Alvarez & Almeida, 2002: 238.

BFC39. P. 115. *Geoplana (Geoplana) franciscana*

Leal-Zanchet & Carbayo, 2001. Add the following item.

*Geoplana franciscana*: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

BFC40. Pp. 167-168. *Geoplana (Geoplana) josefi* Carbayo & Leal-Zanchet, 2001. Add the following item.

*Geoplana josefi*: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

BFC28. P. 123. BFC30. P. 84. *Geoplana (Geoplana) ladislavii* von Graff. 1899. Add the following item.

*Geoplana ladislavii*: Carbayo, Leal-Zanchet & Vieira, 2002. 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

BFC28. P. 128. *Geoplana (Geoplana) notocelis* Bresslau, 1930. Add the following item.

*Geoplana notocelis*: Bandier, 1936: 320.

BFC28. P. 129. *Geoplana (Geoplana) pavani* Marcus, 1951. Add the following item.

*Geoplana pavani*?: Carbayo, Leal Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

BFC39. P. 116. *Notogynaphallia guaiana* Leal-Zanchet & Carbayo, 2001. Add the following item.

*Notogynaphallia guaiana*: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

BFC28. P. 147. *Pasipha pasipha* (Marcus, 1951). Add the following item.

*Geoplana pasipha*: Silveira, 1998: 191, 194-195, fig. 9 (electrophotomicrograph). Brazil.

*Geoplana pasipha*: Fernandes, Alvarez, Gama & Silveira, 2001: 177. Brazil.

BFC28. P. 159. *Pseudogeoplana pallida* (Darwin, 1844). Add the following item.

*Geoplana pallida*: Bandier, 1936: 317-326, figs. 2-3 (HF).

BFC28. P. 159. *Pseudogeoplana pulla* (Darwin, 1844). Add the following item.

*Geoplana pulla*: Bandier, 1936: 317, 319, 331, 340.

UNDESCRIBED GEOPLANIDAE (Geoplaninae) SPECIES (1990: BFC28, pp. 162-165; 1994: BFC32, p. 77; 2000: BFC38, p.91; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, p. 168).

**Note.** Twenty undescribed geoplanid species (2 spp. in *Choeradoplana*, 6 spp. in *Geoplana*, 3 spp. in *Notogynaphallia*, 2 spp. in *Pasipha*, 1 sp. in *Xerapoa* and 6 spp. of Geoplanidae) are listed by Carbayo, Leal-Zanchet & Vieira (2002, tables 1 and 4). It is a reasonable taxonomic treatment that these undescribed spe-

cies are placed in the collective group *Pseudogeoplana* (cf. Ogren & Kawakatsu, 1990: 90, 152). In the present Index, however, they are tentatively listed according to the names used by the original authors.

*Choeradoplana* sp. 1 in Carbayo & al., 2002.

*Choeradoplana* sp. 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Choeradoplana* sp. 2 in Carbayo & al., 2002.

*Choeradoplana* sp. 2: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana* sp. 1 in Carbayo & al., 2002.

*Geoplana* sp. 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana* sp. 2 in Carbayo & al., 2002.

*Geoplana* sp. 2: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

*Geoplana* sp. 3 in Carbayo & al., 2002.

*Geoplana* sp. 3: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana* sp. 4 in Carbayo & al., 2002.

*Geoplana* sp. 4: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana* sp. 5 in Carbayo & al., 2002.

*Geoplana* sp. 5: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana* sp. 6 in Carbayo & al., 2002.

*Geoplana* sp. 6: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

*Notogynaphallia* sp. 1 in Carbayo & al., 2002.

*Notogynaphallia* sp. 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Notogynaphallia* sp. 2 in Carbayo & al., 2002.

*Notogynaphallia* sp. 2: Carbayo. Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

*Notogynaphallia* sp. 3 in Carbayo & al., 2002.

*Notogynaphallia* sp. 3: Carbayo. Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Pasipha* sp. 1 in Carbayo & al., 2002.

*Pasipha* sp. 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Pasipha* sp. 2 in Carbayo & al., 2002.

*Pasipha* sp. 2: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102., National Forest of São Francisco de Paula, RS / Brazil.

*Xerapoa* sp. 1 in Carbayo & al., 2002.

*Xerapoa* sp. 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

Geoplanidae sp. 1 in Carbayo & al., 2002.

Geoplanidae 1: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

Geoplanidae sp. 2 in Carbayo & al., 2002.

Geoplanidae 2: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

Geoplanidae sp. 3 in Carbayo & al., 2002.

Geoplanidae 3: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

Geoplanidae sp. 4 in Carbayo & al., 2002.

Geoplanidae 4: Carbayo, Leal-Zanchet & Vieira., 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

Geoplanidae sp. 5 in Carbayo & al., 2002.

Geoplanidae 5: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula. RS / Brazil.

Geoplanidae sp. 6 in Carbayo & al., 2002.

Geoplanidae 6: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

*Geoplana marginata* sensu von Graff, 1899, in Carbayo, Leal-Zanchet & Vieira, 2002.

*Geoplana marginata* sensu von Graff, 1899: Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Francisco de Paula, RS / Brazil.

**Froehlich's Note.** At present *Geoplana marginata* sensu von Graff, 1899, is the correct denomination of the species *Geoplana marginata* (in part): von Graff (1894, 1896, 1899, 1912-1917) in the list of synonyms of '*Notogynaphallia marginata* (von Graff, 1899) comb. nov.' in BFC30 (pp. 86-87). It has been erroneously quoted as '*Notogynaphallia marginata* sensu Graff, 1899' in Leal-Zanchet & Froehlich (2001: 225) and Carbayo, Leal-Zanchet & Vieira (2001: 223-224). Cf. BFC39 (pp. 116-117).

*Geoplana marginata* sensu Marcus, 1951: Carbayo, Leal-Zanchet & Vieira, 2002.

*Geoplana marginata* sensu Marcus, 1951, in Carbayo, Leal-Zanchet & Vieira, 2002: 1091-1102. National Forest of São Fran-

cisco de Paula, RS / Brazil.

**Froehlich's Note.** At present *Geoplana marginata* sensu Marcus, 1951, in Carbayo, Leal-Zanchet & Vieira (2002: 1091-1102) is the correct denomination of *Geoplana marginata* (in part): Marcus (1951). It appears in the list of synonyms of '*Notogynaphallia marginata* (von Graff, 1899) comb. nov.' in BFC30 (pp. 86-87), in BFC28 (pp. 124-125), and under UNDESCRIBED GEOPLANIDAE (Geoplaninae) SPECIES in BFC39 (p. 117).

It has been erroneously quoted as *Notogynaphallia marginata* sensu Marcus, 1951, in Leal-Zanchet & Froehlich (2001: 225) and in Carbayo, Leal-Zanchet & Vieira (2001: 223-224). Cf. BFC39 (pp. 116-117). It is the same as *Geoplana marginata auctorum*: Almeida, Yamada & Froehlich, 1990 (p. 48) and 1991 (pp. 169-173). It is also the same as *Notogynaphallia marginata* in Rocini, Alvarez & Almeida (2000).

E. GEOPLANIDAE INDEX, PART II: CAENOPLANINAE AND PELMATOPLANINAE (1991: Bull. Fuji Women's College, No. 29, Ser. II, pp. 25-102; 1992: *Ibid.*, No. 30, Ser. II, p. 89; 1993: *Ibid.*, No. 31, Ser. II, pp. 82-83; 1994: *Ibid.*, No. 32, Ser. II, pp. 77-82; 1995: *Ibid.*, No. 33, Ser. II, pp. 81-82; 1996: *Ibid.*, No. 34, Ser. II, p. 90; 1997: *Ibid.*, No. 35, Ser. II, pp. 58-59; 1999: *Ibid.*, No. 37, Ser. II, pp. 94-97; 2000: *Ibid.*, No. 38, Ser. II, pp. 91-94; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, pp. 168-170).

None reported during the past year.

UNDESCRIBED GEOPLANIDAE (Caenoplaninae) SPECIES (1991: BFC29, pp. 95-96; 1994: BFC32, p. 82; 1997: BFC35, p. 59; 1998: BFC36, p. 78; 2000: BFC38, pp. 94-95; 2002: Bull. Fuji Women's Univ., No. 40, Ser. II, p. 170.)

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**Note.** The distribution data of land planarians in Slovakia listed in Košel (2002) have been cited from Babor (1940, 1943) and Krumpál, Krumpálova & Cyprič (1997). These papers are listed here.

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