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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 -7

by

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#### INTRODUCTION

In the previous publications of the Land Planarian Indices Series, "Additions and Corrections" are included with the following papers by OGREN & KAWAKATSU (1988a, pp. 3-12; 1989, p. 91; 1991, p. 98) and OGREN, KAWAKATSU & FROEHRICHH (1992, pp. 62-89; 1994, pp. 73-86; 1995, pp. 79-85; 1995, pp. 79-85; 1996, pp. 87-93; 1997, pp. 55-61). This paper is a continuation from the section in the previous papers cited above.

Publications, publishing years and paginations are shown as follows: BFC25 = Bull. Fuji Women's College, No. 25, Ser. II, in 1987 (BIPALIIDAE); BFC26 = *Ibid.*, No. 26, Ser. II, in 1998 (RHYNCHODEMIDAE, Part I: Rhynchodeminae); BFC27 = *Ibid.*, No. 27, Ser. II, in 1989 (RHYNCHODEMIDAE, Part II: Microplaninae); BFC28 = *Ibid.*, No. 28, Ser. II, in 1990 (GEOPLANIDAE, Part I: Geoplaninae); BFC29 = *Ibid.*, No. 29, Ser. II, in 1991 (GEOPLANIDAE, Part II: Caenoplaninae and Pelmatoplaninae); BFC30 = *Ibid.*, No. 30, Ser. II, in 1992 (GEOPLANIDAE, Part II: Caenoplaninae and Pelmatoplaninae - A Continuation); BFC30 = *Ibid.*, No. 30, Ser. II, in 1992 (Additions and Corrections of the Previous Land Planarian Indices of the World); BFC31 = *Ibid.*, No. 31, Ser. II, in 1993 (Additions and Corrections, etc. addendum I); BFC31 = *Ibid.*, No. 31, Ser. II, in 1993 (Additions and Corrections, etc. Addenda II and III); BFC32 = *Ibid.*, No. 32, Ser. II, in 1994 (Additions and Corrections, etc. - 3); BFC33 = *Ibid.*, No. 33, Ser. II, in 1995 (Additions and Corrections, etc. - 4); BFC34 = *Ibid.*, No. 34, Ser. II, in 1996 (Additions and Corrections, etc. - 5); BFC35 = *Ibid.*, No. 35, Ser. II, in 1997 (Additions and Corrections, etc. - 6). OP = Occasional Publications, Biol. Lab., Fuji Women's College, No. 19, in 1988 (Additions and Corrections, BIPALIIDAE). Citations in full of these publications are shown in each subheading in the text of this paper (see also "References").

The following additional publications in this series are also published by OGREN, KAWAKATSU & FROEHЛИCH (1997, 1998).

Additions and Corrections of the Previous Land Planarian Indices of the World (Turbellaria, Seriata, Tricladida, Terricola). Addendum IV. Geographic Locus Index: Bipaliidae; Rhynchomidae (Rhynchodeminae; Microplaninae); Geoplanidae (Geoplaninae; Caenoplaninae; Pelmatoplaninae). Bull. Fuji Women's College, No. 35, Ser. II, in 1997, pp. 63-103 (+ Addenda I-V). Do., Errata. Occ. Publ., Biol. Lab. Fuji Women's College, No. 31, in 1998, pp. 1-4.

The present publication includes the data on land planarians published until the middle of 1998. Additionally, a good number of land planarian papers will be published in the latter half of this year (the VIIth ISBT papers in Hydrobiologia, OECD Workshop papers in Pedobiologia, a taxonomic paper by OGREN, KAWAKATSU & FROEHLICH including descriptions of a new genus of the Bipaliidae and several new species, etc.). These new data will be listed in the next Index.

### ADDITIONS AND CORRECTIONS OF THE PREVIOUS LAND PLANARIAN INDICES OF THE WORLD (TURBELLARIA, SERIATA, TRICLADIDA, TERRICOLA) -7

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; 1997: *Ibid.*, No. 35, Ser. II, p. 56).

- BFC25. Pp. 81–82. *Bipalium adventitium* Hyman, 1943.  
Add the following item.  
*Bipalium adventitium*: Ogren & Kawakatsu, 1998: 4. U. S. A.
- BFC25. P. 85. *Bipalium everetti* Moseley, 1875. Add the following item.  
Four-inch-long specimen from Borneo : Moffett, 1998 : 142. Borneo / Indonesia.
- BFC25. P. 87. *Bipalium fuscatum* Stimpson, 1857. Add the following items.  
*Bipalium fuscatum*?: Koike, 1997: 21, 37 (fig. : DB). Numata, Gunma Pref., Honshū / Japan.  
*Bipalium fuscatum*: Kawakatsu & Ogren, 1998 a : 4, figs. 3–4 (FCA; reproduced from Kaburaki, 1922; Mack-Firā & Kawakatsu, 1972). Japan.  
*Bipalium fuscatum*: Kawakatsu & Ogren, 1998 b : 5. Japan.  
*Bipalium fuscatum*?: Koike, 1997: 21, 37 (fig.). Numata, Gunma Pref., Honshū / Japan.  
*Bipalium fuscatum*?: Koike, 1998: 33–36, photos 1–2 (DB). Numata, Gunma Pref., Honshū / Japan.  
*Bipalium fuscatum*: Shirasawa & Makino, 1998: 47–55, pls. 1–4. Tōkyō / Japan.
- BFC25. Pp. 89–90. *Bipalium hilgendorfi* (von Graff, 1899). Add the following item.  
*Bipalium hilgendorfi*: Organizing Committee of Hilgendorf Exhibition, 1997: 33, fig. 1 (DB, DH, VB; reproduced from Kawakatsu & Kawakatsu, 1991). Sapporo, Hokkaidō / Japan.
- BFC25. Pp. 91–93. *Bipalium kewense* Moseley, 1878. Add the following items.  
*Bipalium Kewense*: Sun, Cheng Chew & White, 1979: 181–189, figs. 1–8 (electron photomicrographs). Arkansas / U. S. A.  
*Bipalium kewense*: Boag, Yeates & Johns, 1998: 11. U. K.  
*Bipalium kewense*: Johns, 1998: 7. New Zealand.  
*Bipalium kewense*: Kawakatsu, Murayama, Yamamoto & Yoneyama, 1998: 25–29, fig. 1B (DB, VB). Tōkyō and the vicinity in Honshū, the Ogasawara Islands, and Okinawa Island in the Southwest Islands / Japan.  
*Bipalium kewense*: Kawakatsu & Ogren, 1998a: 8, fig. 11, top-left (worldwide distribution map reproduced from Ogren, Kawakatsu & Froehlich, 1992, pl. I, top).
- Bipalium kewense*: Ogren & Kawakatsu, 1998: 4. North, Central and South America.  
*Bipalium kewense*: Winsor, 1998: 22. Australia.
- BFC25. Pp. 96–97. *Bipalium multilineatum* Makino et Shirasawa, 1983. Add the following item.  
*Bipalium multilineatum*: Kawakatsu, Murayama, Yamamoto & Yoneyama, 1998: 25–29, fig. 1C (DB, VB). Tōkyō and the vicinity, Honshū / Japan.
- BFC25. P. 97. *Bipalium nobile* Kawakatsu et Makino, 1982. Add the following items.  
*Bipalium nobile*: Kawakatsu, Murayama, Yamamoto & Yoneyama, 1998: 25–29, figs. 1A (DB, VB), 2 (DB) and 3 (distribution map). Japan.  
Ômisuji - kōgaibiru (in Japanese): Nigata Nippō (July 24, 1998). Ojiya, Nigata Pref., Honshū / Japan.  
*Bipalium nobile*: Shirasawa & Makino, 1998: 47–55 (+ pls. 1–4). Tōkyō, Honshū / Japan.
- BFC25. P. 98. *Bipalium pennsylvanicum* Ogren, 1987. Add the following item.  
*Bipalium pennsylvanicum*: Ogren & Kawakatsu, 1998: 4. U. S. A.
- BFC25. P. 98. *Bipalium penrissenense* de Beauchamp, 1925. Add the following items.  
*Bipalium penrissenense*: Kawakatsu & Ogren, 1998 a: 6, fig. 81 (DB; reproduced from de Beauchamp, 1925), 7, fig. 9 (FCA; reproduced from de Beauchamp, 1925). Sarawak, Borneo / East Malaysia.
- B. RHYNCHODEMIDAE INDEX, PART I : RHYNCHODEMINAE (1988 : Bull. Fuji Women's College, No. 26, Ser. II, pp. 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).
- BFC26. Pp. 64–65. *Platydemus manokwari* de Beauchamp, 1962. Add the following items.  
*Platydemus manokwari*: Tomiyama, 1994: 155. Chichijima Island, the Ogasawara Islands / Japan.  
*Platydemus manokwari*: Tomiyama, 1995: 39. Chichijima Island, the Ogasawara Islands / Japan.  
*Platydemus manokwari*: Tomiyama, 1997: 72. Chichijima Island, the Ogasawara Islands / Japan.  
*Platydemus manokwari*: Tomiyama, 1998: 70. Chichijima Island, the Ogasawara islands / Japan.
- BFC26. Pp. 78–81. *Rhynchodemus sylvaticus* (Leidy, 1851). Add the following item.  
*Rhynchodemus sylvaticus*: Johns, 1998: 7. New Zealand and.
- 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)
- BFC27. P. 59. *Incapora weyrauchi* du Bois-Reymond Marcus, 1953. Add the following item.  
*Incapora weyrauchi*: Ogren & Kawakatsu, 1998: 4. Peru.
- BFC30. Pp. 79–80. *Microplana termitophaga* Jones, Darlington et Newson, 1990. Add the following item.

*Microplana termitophaga* : Jones & Cumming, 1998: 53–64, figs. 1–9 (photographs showing the feeding behaviour and ecological graphs). Zimbabwe.

Note. A color copy of an enlarged photograph which was taken a few seconds after fig. 1 b was added to the reprint received from Dr. Jones.

#### 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).

BFC29. P. 36. *Artioposthia alfordensis* (Dendy, 1896). See BFC29, p. 42. *Australopacifica alfordensis* (Dendy, 1896). Add the following item.

*Geoplana alfordensis* : Yeates & Boag, 1995: 40–41, photo (bottom-right, DB). New Zealand.

BFC29. P. 41. *Artioposthia triangulata* (Dendy, 1895). Add the following items.

*Artioposthia triangulata* : Willis & Edwards, 1978: 112–116. U.K.

*Artioposthia* sp.: Rohde & Watson, 1992: 231–235, figs. 1–17 (electron photomicrographs). New South Wales / Australia.

*Artioposthia triangulata*: Blackshaw, 1995: 107–110, figs. 1–2 (ecological graphs). N. Ireland / U.K.

*Artioposthia triangulata* : Boag, Yeates, Johns, Neilson, Palmer & Legg, 1995: 212–214, figs. 1–3 (distribution map and ecological graph). New Zealand ; Scotland / U.K.

*Artioposthia triangulata* : McGee, 1995: 26–27, fig. (DB). N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1995 a. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1995 b. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1995 c : 8. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1995 d : 44.

*Artioposthia triangulata* : Yeates, & Boag, 1995 : 40–41, photo (top : DB). New Zealand.

*Artioposthia triangulata* : Lillico, Cossens & Gibson, 1996; 513–520, figs. 1–3 (ecological graphs). Edinburgh / U.K.

*Artioposthia triangulata* : McGee, 1996: Abstract. U.K.

*Artioposthia triangulata* : McGee, Fairweather &

Blackshaw, 1996 a : 47. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1996 b : 563–571, pls. I - II (electron photomicrograph), fig. 1. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather, Blackshaw, McIlroy, Walker & Wisdom, 1996 a : 8. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather, Blackshaw, McIlroy, Walker & Wisdom, 1996 b: 6. N. Ireland / U.K.

*Artioposthia triangulata* : Terrace & Baker, 1996: 177. S. Australia / Australia.

*Artioposthia triangulata* : Boag, Jones & Neilson, 1997: 53–55, fig. 1 (6 distribution maps in Scotland and England: 1965–1995). U.K.

*Artioposthia triangulata* : Christensen & Mather, 1997: 252–261, figs. 1–6 (physiological and ecological graphs). The Faroe Island / Denmark.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1997 a : 4. N. Ireland / U.K.

*Artioposthia triangulata* : McGee, Fairweather & Blackshaw, 1997 b: 15–23, figs. 1–19 (electron photomicrographs). N. Ireland / U.K.

*Artioposthia triangulata* : Yeates, Boag & Johns, 1997: 351–357, figs. 1–2 (physiological and ecological graphs). Christchurch, S. Island / New Zealand.

*Artioposthia triangulata* : Alford, 1998 : 18. U.K.

*Artioposthia triangulata* : Boag, Jones, Evans, Neilson, Yeates & Johns, 1998 : 10. U.K.

*Artioposthia triangulata* : Boag, Yeates & Johns, 1998 : 11. U.K.

*Artioposthia triangulata* : Christensen & Mather, 1998 : 14. The Faroe Island / Denmark.

*Artioposthia triangulata* : Dynes, Fleming & Moore, 1998: 20. U.K.

*Artioposthia triangulata* : Fraser & Boag, 1998 : 16. New Zealand ; U.K.

*Artioposthia triangulata* : Mather & Christensen, 1998 : 13. Denmark.

*Artioposthia triangulata* : McGee, Wisdom, Fairweather, Blackshaw, McIlroy & Walker, 1998 : 1 –6. Belfast, N. Ireland / U.K.

*Artioposthia triangulata* : Moore, Dynes & Murchie, 1998: 15. N. Ireland / U.K.

*Artioposthia triangulata* : Murchie & Moore, 1998 : 21. N. Ireland / U.K.

*Artioposthia triangulata* : Unger, 1998: 19. Denmark; Sweden.

BFC29. P. 58. *Australopacifica testacea* (Hutton, 1880). Add the following items.

*Artioposthia testacea* : Yeates & Boag, 1995: 40–41, photo (middle : DB). New Zealand.

*Artioposthia testacea* : Yeates & Boag & Johns, 1997: 351–357, figs. 1–2 (physiological and ecological graphs). The Kimbolton Rhododendron

- Garden, near Christchurch, S. Island / New Zealand.
- Artioposthia testacea* : Boag, Yeates & Johns, 1998 : 11.
- BFC31. Pp. 73–74. *Australoplana sanguinea alba* (Dendy, 1891). See BFC29, pp. 54–55. *Australoplacifica sanguinea* (Moseley, 1877); BFC29. Pp. 61–62. *Caenoplana alba* (Dendy, 1891). Add the following items.
- Geoplana sanguinea* var. *alba* : McGee, Fairweather & Blackshaw, 1995 : 44.
- Australoplana sanguinea* var. *alba* : Yeates & Boag, 1995 : 40–41 : photo (bottom-left: DB). New Zealand.
- Australoplana sanguinea* var. *alba* : McGee, 1996 : Abstract.
- Australoplana sanguinea* var. *alba* : Terrace & Baker, 1996 : 177–178. Kingswood Garden, S. Australia / Australia.
- Australoplana sanguinea* var. *alba* : Yeates, Boag & Johns, 1997 : 351–357, figs. 1–2 (physiological and ecological graphs). Christchurch, S. Island / New Zealand.
- Australoplana sanguinea* : Alford, 1998 : 18. U. K.
- Australoplana sanguinea* : Boag, Jones, Evans, Neilson, Yeates & Johns, 1998 : 10. U. K.
- Australoplana sanguinea* var. *alba* : Dynes, Fleming & Moore, 1998 : 20. U. K.
- Australoplana sanguinea* var. *alba* : Jones, Green & Douglas, 1998 : 12. British Isles / U. K.
- Australoplana alba* : Kawakatsu, Ogren, Sluys & Winsor, 1998 : 4.
- Australoplana sanguinea alba* : Kawakatsu, Ogren, Sluys & Winsor, 1998 : 4.
- Australoplana sanguinea* var. *alba* : McGee, Fairweather & Blackshaw, 1998 : 18–19. U. K.
- BFC29. Pp. 62–63. *Caenoplana coerulea coerulea* Moseley, 1877. Add the following items.
- Caenoplana coerulea* : Terrace & Baker, 1994 : 371–372. S. Australia / Australia.
- Caenoplana coerulea* : Terrace & Baker, 1996 : 177. Australia.
- Caenoplana coerulea* : Boag, Yeates & Johns, 1998 : 11.
- BFC29. Pp. 95–96. Undescribed Caenoplaninae and Pelmatoplaninae Species. Add the following items.
- Australoplana* sp. 1 of North Island. Yeates, Boag & Johns, 1997.
- Australoplana* sp. 1. Yeates, Boag & Johns, 1997 : 351–357, figs. 1–2 (physiological and ecological graphs). N. Island / New Zealand.
- Kontikia* spp. of New Zealand. Boag, Yeates & Johns, 1998.
- Kontikia* spp. Boag, Yeates & Johns, 1998 : 11. New Zealand.
- Parakontikia* spp. of New Zealand. Johns, 1998.
- Parakontikia* spp. : Johns, 1998 : 7. New Zealand.

## REFERENCES

*Publications on land planarians without species names are also listed.*

ALFORD, D. V., 1998. Potential problems posed by non-indigenous terrestrial planarians in the UK. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16–20, 1998), p. 18.

BLACKSHAW, R. P., 1995. Changes in populations of the predatory flatworm *Artioposthia triangulata* and its earthworm prey in grassland. Acta Zool. Fennica, 196 : 107–110.

BOAG, B., JOHNS, H. D., EVANS, K. A., NEILSON, R., YEATES, G. W. & JOHNS, P. M., 1998. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16–20, 1998), p. 10.

BOAG, B., JONES, H. D. & NEILSON, R., 1997. The spread of the New Zealand flatworm (*Artioposthia triangulata*) within Great Britain. Eur. Jour. Soil Biol., 33 (1) : 53–56.

BOAG, B., YEATES, G. W. & JOHNS, P. M., 1998. Limitations to the distribution and spread of terrestrial planarians. OECD TFW Programme / Abstracts (Christchurch / New Zealand : Feb. 16–20, 1998), p. 11.

BOAG, B., YEATES, G. W., JOHNS, P. M., NEILSON, R., PALMER, L. F. & LEGG, R. K., 1995. Distribution of the New Zealand flatworm (*Artioposthia triangulata*) in New Zealand and Scotland. Acta Zool. Fennica, 196 : 212–214.

CARRANZA, S., RUIZ, I., LITTLEWOOD, D. T. J., RIUTORT, M. & BAGUÑÀ, J., 1998. A reappraisal of the phylogenetic and taxonomic position of land planarians (Platyhelminthes, Turbellaria, Tricladida) inferred from 18S rDNA sequences. OECD TFW Programme / Abstracts (Christchurch / New Zealand : Feb. 16–20, 1998), p. 3.

CHRISTENSEN, O. M. & MATHER, J. G., 1997. Morphometric study of a field population of the terrestrial planarian *Artioposthia triangulata* (DENDY) in the Faroe Islands. Pedobiologia, 41 : 252–262. 1998. The New Zealand flatworm, *Artioposthia triangulata*, in Europe : the Faroese situation. OECD TFW Programme & Abstracts (Christchurch / New Zealand : 16–20, 1998), p. 14.

DYNES, C. (=MC GEE, C.), FLEMING, C. C. & MOORE, J. P., 1998. Comparisons of populations of *Artioposthia sanguinea* var. *alba*, the Australian flatworm, in the British Isles. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16–20, 1998), p. 20.

FRASER, P. M. & BOAG, B., 1998. The distribution of earthworm communities in relation to flatworms: a comparison between New Zealand and Europe. OECD TFW Programme & Abstracts (Christchurch / New

- Zealand : Feb 16 - 20, 1998), p. 16.
- JOHNS, P. M., 1998 a. Introduction, world perspective and systematics. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 1. 1998 b. The New Zealand fauna. *Ibid.*, p. 7.
- JONES, H. D., 1998. The African and European fauna, with an identification guide for field workers in Europe. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 8.
- JONES, H. D. & CUMMING, M. S., 1998. Feeding behaviour of the termite-eating planarian *Microplana termitophaga* (Platyhelminthes : Thbellaria : Tricladida : Terricola) in Zimbabwe. *Jour. Zool. London*, 245 : 53-64.
- JONES, H. D., GREEN, J. & PALIN, W., 1998. Monthly abundance, size and maturity in a population of the "Australian" flatworm. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 12.
- KAWAKATSU, M., MURAYAMA, H., YAMAMOTO, K. & YONEYAMA, N., 1998. Distribution records of *Bipalium nobile* in Japan (Turbellaria, Tricladida, Seriata, Terricola). *Shibukitsubo*, (19) : 25-32. (In Japanese, with English summary.)
- KAWAKATSU, M. & OGREN, R. E., 1998 a. Preprint of papers given at OECD Workshop on terrestrial planarians, Christchurch, New Zealand, February 16 - 20, 1998. Occ. Publ., Biol. Fuji Women's College Sapporo (Hokkaidō), Japan, (30) : 1-8. 1998 b. The Asian fauna of land planarians, with special reference to the taxonomic revision of several homonyms in the genus *Bipalium*, family Bipaliidae. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 5.
- KAWAKATSU, M., OGREN, R. E., SLUYTS, R. & WINSOR, L., 1998. A proposal to the members of the OECD Workshop from four taxonomists. Concerning the Linnean name of *Australoplana sanguinea* var. *alba* (DENDY, 1891) ... Documents distributed for the participants of OECD Terrestrial Flatworm Workshop (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 4. The conclusion is : "At present we consider that the use of *Australoplana sanguinea alba* (DENDY, 1891) is the best." This "proposal" is not a publication.
- KOIKE, A., 1997. Occurrence of a black-colored land planarian species (*Bipalium fuscum* ?) at Numata, Gunma Prefecture, Honshū, Japan. *Tone-Seibutsudanwakaihō*, (100) : 21, 37 (In Japanese.) 1998. Occurrence of a black-colored land planarian species (*Bipalium fuscum* ?) at Numata, Gunma Prefecture, Honshū, Japan. *Shibukitsubo*, (19) : 33-36. (In Japanese, with English summary.) Mr. KOIKE's 1997 article consists of 3 sections (sample, observation and species consideration). His 1998 article consists of 6 sections (a reduced reproduction of the 1997 article, Dr. KAWAKATSU's note on species consideration, the author's note, acknowledgement, references, and English abstract including "Additional Note by M. KAWAKATSU".
- LILLICO, S., COSENS, D. & GIBSON, P., 1996. Studies of the behaviour of *Artioposthia triangulata* (Platyhelminthes, Tricladida), a predator of earthworms. *Jour. Zool. London*, 238 : 513-520.
- MATHER, J. G. & CHRISTENSEN, O. M., 1998. Behavioural aspects of the New Zealand flatworm, *Artioposthia triangulata*. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 13.
- MC GEE, C., 1995. "Import" causes havoc among the earthworms. *The Advisor*, Spring, 1995, pp. 26-27. 1996. Studies on the biology of the terrestrial flatworms, *Artioposthia triangulata* and *Australoplana sanguinea* var. *alba*. Ph. D. Thesis, Fac. Sci., the Queen's Univ. of Belfast, Northern Ireland. Only an abstract is available in KAWAKATSU's Collection.
- MC GEE, C., FAIRWEATHER, I. & BLACKSHAW, R. P., 1995 a. *Artioposthia triangulata*, the predatory flatworm. Poster presented : The Northern Ireland Biotechnol. Partnership (QUB : Feb. 1995); Irish Zoologists Meet. (Maynooth : Apr. 1995); NI DevR Day (Coleraine : Dec. 1995). 1995 b. Ultrastructural observations on rhabdite formation in the predatory flatworm, *Artioposthia triangulata*. *Proc. of the Royal Microscop. Soc.*, 20 (1) : 8. 1995 c. Ultrastructural observations on rhabdite formation in two triclad species, *Artioposthia triangulata* and *Geoplana sanguinea* var. *alba*. *Proc. of the Irish Zoologists Meet.* (Maynooth : Apr. 1995), p. 44. 1996 a. Ultrastructure of the protonephridial system of the predatory flatworm, *Artioposthia triangulata*. *Proc. of the Irish Zoologists Meet.* (Dublin : Mar. 1996), p. 47. 1996 b. Ultrastructural observations on rhabdite formation in the planarian, *Artioposthia triangulata*. *Jour. Zool. London*, 240 : 563-572 (+ pls. I-II). 1997 a. Feeding behaviour and pharyngeal structure of *Artioposthia triangulata*. *Proc. of the Royal Microscop. Soc.*, 32 (1), p. 4. 1997 b. Ultrastructural features of the epidermis and the planarian *Artioposthia triangulata* (DENDY). *Hydrobiologia*, 347 : 15-24. 1998. Ultrastructural features of the Australian predator flatworm, *Australoplana sanguinea* var. *alba*. *Proc. of the Royal Microscop. Soc.*, 33 (1) : 18-19.
- MC GEE, C., FAIRWEATHER, I., BLACKSHAW, R. P., MC ILROY, J., WALKER, B. & WISDOM, B., 1996 a. Mucoid secretions of *Artioposthia triangulata* and their partial characterisation. VIII ISBT Program / Abstracts (Brisbane / Australia : Aug. 18 - 23, 1996), p. 101. 1996 b. Ultrastructural features of the epidermis and partial characterization of the various proteinases present in the mucus of *Artioposthia triangulata*. *Proc. of the Royal Microscop. Soc.* 30 (4) : 6.
- MC GEE, C., WISDOM, G. B., FAIRWEATHER, I., BLACKSHOW, R. P., MC ILROY, J. & WALKER, B., 1998. Characterization of the proteins present in the mucus of the flatworm *Artioposthia triangulata* (DENDY). *Comp. Biochem. Physiol.*, 119 B : 1-6.
- MOFFET, M. W., 1998. Worm with a warning : "Don't eat me". *Nat. Geogr.*, 193 (6), June 1998 : 142 (Earth

Almanac). This short article contains a color photograph of a land planarian: "four-inch-long specimen from Borneo". OGREN (in litt. for the editor of the Nat. Geogr., dated Nov. 8, 1997) considered the animal is probably *Bipalium everetti* MOSELEY, 1875. This article is not found in the magazine distributed in Asia and South America (KAWAKATSU's and FROEHLICH's note).

MOORE, J. P., DYNES, C. & MURCHIE, A. K., 1998. The status of the New Zealand flatworm, *Artioposthia triangulata*, in Northern Ireland. OECD TFW Programme / Abstracts (Brisbane / Australia : Aug. 16 - 20, 1998), p. 15.

MURCHIE, A. K. & MOORE, J. P., 1998. Hot-water treatment to prevent transference of the New Zealand flatworm, *Artioposthia triangulata*. OECD TFW Programme / Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 21.

THE NIGATA NIPPÔ, 1998. A giant land planarian species was found in Ojiya, Niigata Prefecture, Honshû, Japan. The Niigata Nippô, Evening ed., July 24 (Friday), 1998. (In Japanese.) This species is *Bipalium nobile*.

OGREN, R. E. & KAWAKATSU, M., 1998. The American Nearctic and Neotropical faunas of land planarians. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 4.

THE ORGANIZING COMMITTEE FOR HILGENDORF EXHIBITION, 1997. Animals named in honor of Franz HILGENDORF. Plathelminthes-Turbellaria : *Bipalium hilgendorfi* (VON GRAFF, 1899). In : The Organizing Committee for the HILGENDORF Exhibition (ed. YAJIMA, M.), "Franz HILGENDORF, The Father of Japanese Ichthyology and Fishery Sciences", p. 33. Photographs of animals reproduced from a paper by KAWAKATSU & KAWAKATSU (1991) were used. (In Japanese.)

ROHDE, K. & WATSON, N. A., 1992. Ultrastructure of the flame bulbs and protonephridial capillaries of *Artioposthia* sp. (Platyhelminthes, Tricladida, Geoplanidae). Acta Zool., 73 (4) : 231-236.

SHIRASAWA, Y. & MAKINO, N., 1997. Testes in the different reproduction type of land planarian, *Bipalium nobile* and *Bipalium fuscum*. Zool. Sci., Tôkyô, 14-Suppl. : 35. The title and page are omitted in "References" of OGREN, KAWAKATSU & FROEHLICH (1997, p. 60). 1998. Testes in the land planarians, *Bipalium fuscum* and *B. nobile*. Bull. Tokyo Med. College, (24) : 47 - 55 (pls. 1-4). (In Japanese, with English summary.)

SLUYS, R., 1998. Land planarians in biodiversity and conservation studies. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 9.

SUN, C. N., CHENG CHEW, S. B. & WHITE, H. J., 1979. The fine structure of smooth muscle in *Bipalium kewense* MOSELEY, its possible relation to evolution of skeletal muscle. Cytologia, Tôkyô, 44 (1) : 181-190.

TERRACE, T. E. & BAKER, G. H., 1994. The blue land planarian, *Caenoplana coerula* MOSELEY (Tricladida : Geoplanidae), a predator of *Ommatoiulus moreleti* (LUCAS) (Diplopoda : Julidae) in Southern Australia. Jour. Ent. Aust. Soc., 33 : 371-372. 1996. Predation of earthworms by the land planarian, *Australoplana sanguinea* (MOSELEY) var. *alba* (DENDY) sensu JONES, 1981 (Tricladida : Geoplanidae). Transact. Royal Soc. S. Aust., 120 (4) : 177-178.

TOMIYAMA, K., 1994. Factors affecting the extinction of land snails on the Ogasawara Islands. Venus, 53 (2) : 152-156. (In Japanese.) 1955. A short history of the artificial destruction of nature in Ogasawara Islands and factors of the extinction of endemic species. Kankô to Kôgai (Environmental Pollution & Disruption), Tôkyô, 25 (2) : 36-40. (In Japanese.) 1997. A present condition of the artificial destruction of nature in various areas of Japan and its protection : In the case of the Ogasawara Islands. Seibutsu Kagaku (Biological Science), Tôkyô, 49 (2) : 68-74. (In Japanese.) 1998. Disturbance of island ecosystem by introduced species in Ogasawara Islands. Jap. Jour. Ecol., 48 : 63-72. (In Japanese.)

UNGER, J.-G., 1998. Terrestrial flatworms as a factor in international trade. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 1 - 20, 1998), p. 19.

WILLIS, R. J. & EDWARDS, A. R., 1978. The occurrence of the land planarian, *Artioposthia triangulata* (DENDY) in Northern Ireland. Irish Nat. Jour., 19 (4) : 112-116.

WINSOR, L., 1998 a. Introduction to taxonomy, form and function. OECD TFW programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 2. 1998 b. The Australian fauna. *Ibid.*, p. 6. 1998 c. Flatworm infestation of commercial earthworm farms in Australia. *Ibid.*, p. 22.

YEATES, G. & BOAG, B., 1995. New Zealand Rhododendron Ass. Bull., (83) : 40-41 + inside back cover (color plate).

YEATES, G. W., BOAG, B. & JOHNS, P. M., 1997. Observations on feeding and population structure of five New Zealand terrestrial planarians which prey on lumbricid earthworms. Ann. Appl. Biol., 131 : 351-358. 1998. Field and laboratory observations on terrestrial planarians from modified habitats in New Zealand. OECD TFW Programme & Abstracts (Christchurch / New Zealand : Feb. 16 - 20, 1998), p. 17.

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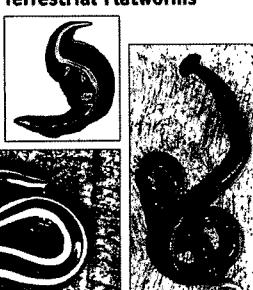
Twenty-five articles given at the OECD Workshop on Terrestrial flatworms (Christchurch, New Zealand: 16-20 February 1998) were published in *Pedobiologia*, vol. 42 (5-6), October 1998.



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