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The 16th International Chironomid Symposium
25th - 28th July 2006
Funchal
Madeira, Portugal
New updated official website
www.uma.pt/chiro.symposium

Visit the symposium website for information on preregistration, special travel and accommodation packages for delegates, information on symposium proceedings and much more!!

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16th International Chironomid Symposium website: http://www.uma.pt/cem/chirosymp/chiro.htm

THREE QUARTERS OF A CENTURY
(homage to I.I.Kiknadze)

Always on the midges drive
Iya now is seventy five!
No disease could ever stop
Her enormous science job
Papers coming out a lot
From well known Acad-go-dok
Many “ladies” do support
Her chironomid effort.
Chromosomes as can be seen
Are here always polytene
Representing interphases
Show molecules, oxidases,
Jumping genes and Balbi rings
Other fascinating things!
They have pattern, evolution
Justifying some conclusion
They migrate through the continents
With some separation trends
Many Russian sensations!
Some agree with other nations!
We wish life of long duration
Further nice cooperation
Never tired, never slow
Ev’ry midge is ХОРОШО[1]!

Wolfgang Gerhardovich
Freiburg, 9.2.2005

[1]. ХОРОШО = beautiful

SEBASTIÃO JOSÉ DE OLIVEIRA

3.11.1918 – 16.4.2005

Maria Conceição Messias - Ernst Josef Fittkau
(English translation by Martin Spies)

Sebastião de Oliveira was the first Brazilian entomologist to dare and venture into chironomid taxonomy. He began his work on midges as an amateur, on the side of his professional engagement as a young veterinarian. After his academic studies in Rio de Janeiro, in 1939, he was granted workspace as an unpaid assistant in the helminthology section of the Instituto Oswaldo Cruz, the organisation that, except for one intermission, remained his scientific home until his death. At the Instituto Oswaldo Cruz he met other young zoologists, among them Herman Lent and Hugo de Souza Lopes, who were to become highly influential for his scientific career. Souza Lopes, for example, who was working on Brachycera, encouraged Sebastião de Oliveira to acquaint himself with the taxonomy of Diptera. The first work to be published from this was the 1941 title, "Sobre *Ophyra aenescens* (Wiedemann, 1930) (Diptera Anthomyidae)". During these times, Sebastião de Oliveira also remembered the 'little red animals' in his parents' garden water basin, that had fascinated him so much as a child. Investigating the world of these midges became a matter of the heart. Still, Souza Lopes advised him to study the taxonomy and biology of the Culicidae and in 1940 helped him obtain a position as an entomologist with the "Serviço Malária" in Rio de Janeiro. After this, from 1942 until the end of 1943, he was invited to work with the "Serviço de Doenças Parasitárias" in the northeast of Brazil, where the first road for automobiles from Rio to Bahia was being constructed. Subsequently, until 1944, he experimented with DDT in a chemistry laboratory of the Geigy company in Rio de Janeiro. In 1950 Sebastião de Oliveira was finally granted a research position at the Instituto Oswaldo Cruz. With this he became the first scientist of African descent at Brazil's largest research institution.

During his work in northeastern Brazil Sebastião de Oliveira had begun to use "Shannon" light traps to collect insects for the Instituto Oswaldo Cruz. One result was his first publication on Chironomidae, in 1944. In later years he participated in various expeditions to central Brazil that gathered much of the material now constituting the insect collection of the Instituto Oswaldo Cruz.

Sebastião de Oliveira was an excellent field biologist. Frequent excursions enabled him to develop a broad knowledge of his country's fauna and flora. Besides his chironomid studies he worked on Culicidae and Agromyzidae, and became a specialist for Brazilian Ephydridae and Strepsiptera, two families in which he described a total of 25 new species. His professional versatility is reflected in the list of his publications. The latter also shows that studying Chironomidae was possible only on the side of his core duties at the Instituto Oswaldo Cruz, where primarily problems of applied entomology had to be addressed.

In 1966 Sebastião de Oliveira was offered a stipend for several years of research at the Max-Planck-Institut für Limnologie in Plön, Germany. This was intended to enable him to delve deeper into chironomid taxonomy and to prepare a doctoral thesis on the Tanypodinae of Brazil. Regrettably, political circumstances kept him from accepting the stipend. In 1970 he lost his position at the state-controlled Instituto Oswaldo Cruz, as did nine of his fellow scientists, among them his friends and colleagues Herman Lent and Hugo Souza Lopes. In the following 16 years, until his rehabilitation and re-employment with the Instituto Oswaldo Cruz in 1986, Sebastião de Oliveira had no opportunities to continue his beloved chironomid work, as he was deprived of the necessary infrastructure. Thanks to his experience in veterinary medicine and parasitology he kept managing to collaborate on research projects in applied entomology, e.g. in the chemical industry, which enabled him to secure a living for himself, his wife and three children. During all these years he took an active part in the scientific life of Brazil and visited all meetings and congresses in his fields of interest.

Upon re-employment at the Instituto Oswaldo Cruz, Sebastião de Oliveira took over the directorate of the entomological collections. Due to his full rehabilitation, and among other accomplishments, he was able to install a well-equipped research laboratory there, and to lay the foundations for a centre of chironomid science in Brazil. In 1994, after 28 years of separation, he was able to resume his international contacts in person by attending the 12th International Symposium on Chironomidae in Australia. Still in the same year he and the Instituto Oswaldo Cruz hosted the first "Encontro Brasileiro sobre Taxonomia e Ecologia de Chironomidae", opening a new forum continued by so far four further meetings at other institutions. Following Sebastião de Oliveira's invitation at the 13th International Symposium in Freiburg in 1997, the 14th Symposium brought the world's chironomidologists to Rio de Janeiro in 2000. His initiatives and tireless efforts have contributed significantly to adequate establishment of chironomid research in Brazil.

Sebastião de Oliveira was an untiring worker who even at an advanced age took pleasure in passing his knowledge on to others in presentations or as an instructor in various zoological disciplines. He held leading positions in numerous scientific committees, societies and associations. After his re-employment at the Instituto Oswaldo Cruz he received many awards and honors. It was a special satisfaction to him when, having just turned 80 years of age, he was awarded the degree of "Doutor em Ciências" for his work on the marine Chironomidae of Brazil.

Sebastião de Oliveira was an extraordinary person. It was always rewarding to be in his company, whether during a scientific endeavour or just on the streets in Rio. His excellent memory enabled him to tell many interesting, detailed stories about his country's land and people, nature and history. He gladly talked about the Afro-Brazilian traditions in which he had been raised. He was very proud of his grandmother, Bernadina, who had still had to toil in slavery to Barão da Taquara, whose family had been among the earliest Portuguese settlers of Rio de Janeiro. Therefore it is not surprising that Sebastião de Oliveira also was a renowned teacher of the Portela school of samba and a passionate fan of the Flamengo football club.

In Sebastião José de Oliveira chironomid research in Brazil has lost its mentor. His students, Maria Conceição Messias and Arlindo Serpa-Filho, are continuing his courses for newcomers interested in the family of Chironomidae. It remains to be hoped and wished that his idea of expanding his laboratory and a special chironomid collection at the Instituto Oswaldo Cruz, and thus of establishing a centre for Brazilian chironomid research, can be pursued in the future.

Publications by Dr. Sebastião José de Oliveira

Oliveira,S. J., 1941. Sobre Ophyra aenescens (Wiedemann, 1830) (Diptera, Anthomyidae) . Arq. Zool., 2: 342-356.

Oliveira,S. J., 1941. Sobre uma curiosa anomalia em uma larva de Culex (C) nigripalpus, Theobald, 1901 (Diptera, Culicidae) . Rev. Bras. Biol. 1(3): 343-344.

Oliveira,S. J., , 1942. Sobre os mosquitos de Mato Grosso, Brasil, com a descrição do macho de Taeniorhynchus (Rhynchotaenia) shannoni (Lane & Antunes, 1973) (Diptera,Culicidae) Rev. Bras. Biol. 2 (2): 209-212.

Oliveira,S. J. & Verargo, O. T., 1942. Estudo sobre as cerdas clipeais das larvas de Anopheles (Nyssorhynchus) osvaldoi (Peryassú, 1992) e Anopheles Nyssorhynchys)argyritarsis R. Desvoldy, 1827, da Baixada Fluminense (Diptera, Culicidae) . Rev. Brasil Biol., 2 (3): 353-360.

Pinto, C. & Oliveira,S. J., 1942. Contribuição ao estudo da Tunga penetrans (L., 1758). Rev. Bras. Biol. 2 (4): 487.

Oliveira,S. J., 1944. Sobre a presença de Tanypus stellatus Coquillett 1902, no Estado de Minas Gerais, Brasil (Diptera, Chironomidae, Tanypodinae). Rev. Brasil Biol. 4 (1): 91-94.

Lent, H. & Oliveira,S. J., 1944. Nota preliminar sobre a ação do DDT (Dicloro-Difenil- Tricloroetana) em insetos transmissores da Doença de Chagas. Rev. Bras. Biol. 4 (3): 329-331.

Oliveira,S. J., 1944. O Dicloro-Difenil-Tricloroetana (DDT) no combate às Brocas de Livros: Dorcatoma bibliophagum (Coleoptera, Anobiidae) - 1a. Nota. Rev. Ent. 15 (3): 325-328

Oliveira,S. J., 1944. História do DDT. Rev. Med. Brasil.17 (16): 726 -742

Oliveira,S. J., 1945. Luta contra as Brocas de Livros. Lit. Arte 11: 22.

Oliveira,S. J., 1946. Sobre um novo Orthocladiinae neotrópico (Diptera, Chironomidae). Livro de Homenagem à R. F. D'Almeida, 31: 279-282, 2 figs.

Oliveira,S. J.& Moussatché, I., 1947. Ação do DDT (Dicloro- Difenil-Tricloroetana) sobre larvas e pupas de Musca doméstica Linneu. Rev. Bras. Biol. 7 (1): 67-72.

Oliveira,S. J., 1947. Proteção dos grãos contra a reinfestação dos carunchos e outros insetos com Gesarol P. Bol. Campo 3 (4): 21

Oliveira,S. J., 1947. Informação sobre o Berne. Bol. Campo 3 (15): 11-12

Oliveira,S. J., 1948. Os piolhos das aves e seu combate. Bol. Campo 3 (20): 11-12

Oliveira,S. J., 1948. Notas sobre o carrapato dos galinheiros, transmissor de treponemose das aves. Bol. Campo 4 (21): 17-18

Oliveira,S. J., 1948. Paulo Mueller - Descobridor do DDT. Ciênc. Todos, 1 (9): 10, (28/11/1948)

Oliveira,S. J., 1948. Cesar Pinto - de Soldado a Cientista. Ciênc. Todos, 2 (17): 8-9, (31/07/1949)

Oliveira,S. J., 1948. DDT: Eficiência e Segurança. Mundo Agrário 1 (5): 44

Oliveira,S. J., 1949. Sobre uma nova espécie neotrópica do gênero Cardiocladius Kieffer, 1912 (Diptera, Chironomidae). Rev. Brasil Biol. 9 (1): 5-8.

Oliveira,S. J., 1950. Sobre duas novas espécies neotrópicas do gênero Telmatogeton Schiner, 1866 (Diptera, Chironomidae). Mem. Inst. Oswaldo Cruz 48: 470-485.

Oliveira,S. J., 1950. Sobre uma nova espécie neotrópica do gênero Clunio Haliday, 1855 (Diptera, Chironomidae). Rev. Brasil Biol., 10 (4): 493-500.

Oliveira,S. J., 1951. Nova espécie neotrópica do gênero Cardiocladius Kieffer, 1912, (Diptera, Chironomidae). Pap. Avulsos. Zool. X (6): 133-138.

Oliveira,S. J., & Silva, G. A. 1951. Sobre um Agromyzidae (Diptera) cujas larvas minam folhas de trapoeiraba (Commelinaceae). Rev. Brasil Biol., 12 (3): 193-299.

Oliveira,S. J., 1953. Sobre a presença do gênero Clinotanypus Kieffer, 1913, na região neotrópica com a descrição de duas espécies novas (Diptera, Chironomidae).Rev. Brasil Biol., 13 (3): 275-282.

Oliveira,S. J., & Silva, G. A. 1954. Sobre uma nova espécie de Agromyzidae (Diptera) cujas larvas minas folhas de Solanum argenteum. Rev. Ent. 1: 25-30.

Oliveira,S. J., 1954. Sobre o Chironomus brasiliensis Wiedemann, 1828, (Diptera, Chironomidae). Arq. Mus. Nacional 42: 463-458.

Oliveira,S. J., 1954. Contribuição para o conhecimento do gênero Dimecoenia Cresson, 1916. I - Dimecoenia lenti n. sp., encontrada numa fonte terminal do Chile. (Diptera, Ephydridae). Rev. Bras. Biol. 14 (2): 187-194.

Oliveira,S. J., 1954. Contribuição para o conhecimento do gênero Dimecoenia Cresson, 1916. II - Sobre 3 espécies novas no Brasil (Diptera, Ephydridae). Rev. Bras. Biol. 14 (3): 169-278.

Oliveira,S. J., 1954. Sobre a presença do gênero Ephydrella Tonnoir & Malloch, 1926, na região neotrópica, com a descrição de uma espécie nova (Diptera, Ephydridae). Rev. Bras.Biol. 14 (3): 291-292.

Oliveira,S. J., 1954. Sobre Telmatogeton atlanticum Oliveira, 1950, com a descrição do alótipo fêmea (Diptera, Chironomidae). Mem. Inst. Oswaldo Cruz 52: (1) 149-151.

Travassos, L., Travassos, H., Barreto, A. R., Albuquerque, D. O., Oliveira,S. J., Castro, A.L. & Lopes, H. S. 1957. Excursão Científica realizada nas zonas das Estradas de Ferro Noroeste do Brasil e Brasil-Bolívia em janeiro e fevereiro de 1955. Publ. Avulsas do Mus. Nacional 20: 39-41.

Oliveira,S. J., 1957. Contribuição para o conhecimento do gênero Dimecoenia Cresson, 1916. III - Sobre uma espécie nova no Estado de São Paulo, Brasil (Diptera,Ephydridae). Rev. Bras. Biol. 17 (3): 305-308.

Oliveira,S. J., 1958. Contribuição para o conhecimento do gênero Dimecoenia Cresson, 1916. IV - Descrição da larva e do pupário de Dimecoenia grumanni Oliveira, 1954 (Diptera, Ephydridae). Rev. Bras. Biol. 18 (2): 167-169.

Oliveira,S. J. & Kogan, M. 1959. Contribution to the knowledge of the Brazillian Strepsiptera (Insecta). Mem. Inst. Oswaldo Cruz 57 (2): 219-232.

Oliveira,S. J., 1959. Inseticidas e Combate aos Insetos que Atacam os Livros. In Nabuco Mons. Joaquim: A Conservação das nossas Bibliotecas e Arquivos. 2a. Edição, XVI: 97- 131. Antunes & Cia. Ltda., Rio de Janeiro.

Kogan, M & Oliveira,S. J., 1960. New records about Brazillian Strepsiptera Insecta). Mem. Inst. Oswaldo Cruz 59 (2): 183-187.

Lent, H. & Oliveira,S. J., 1961. The tropicopolitan spider Uloborus geniculatus (Oliver), a new predator of the cigarette bettle in warehouses, possibility of its use biological control. Rev. Bras. Biol. 21 (4): 351-358.

Oliveira,S. J., 1961. Contribuição para o conhecimento dos gêneros Clinotanypus e Coelotanypus (Diptera :Chironomidae). 74 pp. Tese para o concurso de Biologista do Ministério da Saúde.

Oliveira,S. J., & Kogan, M., 1962. Brazilian Stepsiptera (Insecta) parasitizing Vespidae, with the description of three new specie of Xenos Rossius, 1973 (Stylopidae). Mem. Inst. Oswaldo Cruz 60 (1): 1-11.

Lent, H. & Oliveira,S. J., 1962. Preliminary notes on Chironomid (Diptera) intersexuality induced by Agamomermis (Nematoda). Rev. Bras. Biol. 22 (4): 357-365.

Oliveira,S. J., & Kogan, M. 1963. A new species of Pseudoxenos Saunders, 1872 and a new record of Myrmecolax incautus (Oliveira & Kogan, 1959, Strepsiptera, Insecta). Mem. Inst. Oswaldo Cruz, 61 (2): 351-356.

Kogan, M & Oliveira,S. J., 1964. New Guinean Mengeidae and Myrmecolacidae (Strepsiptera). Stud. Entomol. 7 (1-4): 459-470.

Lent, H. & Oliveira,S. J., 1964. Uloborus geniculatus (Oliveira), a aranha predadora da broca do fumo armazenado Lasioderma serricorne (F.), e a possibilidade do seu controle biológico. Rev. Bras. Biol. 24 (4): 462-463.

Kogan, M & Oliveira,S. J., 1966. Brazilian Xenidae parasitizing Polybla wasps, with the description of a new genus and six new species (Insecta, Strepsiptera). Rev. Brasil Biol., 26 (4): 345-360.

Oliveira,S. J., 1967. Novo gênero de Chironomidae da Amazônia (Insecta, Diptera) .Atas do Simpósio sobre Biota Amazônia, vol 5. Zoologia: 417-420.

Duarte, J. R., Gilbert, B., Magalhães, G. M., Ricciard, I., Fonseca, J. A. B., Aragão, M. & Oliveira,S. J., 1982 - Praguicidas em Saúde Pública. Centro de Documentação do Ministério da Saúde, Conselho Nacional de Saúde, Brasília, DF, 160 p.

Oliveira,S. J., , Froelich, O. & Harman, N. M. S. 1984. Testes com dispositivos à base de amedino-hidrazona no combate às baratas em dois hospitais da Rede Municipal de São Paulo. Bol. Inform. Depto. Controle de Zoonoses e Vigilância Sanitária, 7 (4): 122-126. São Paulo, SP

Oliveira,S. J., 1989. A Vida Profissional de Hugo de Souza Lopes. Mem. Inst. Oswaldo Cruz 84, supl. IV: III-IV.

Oliveira,S. J., & Messias, M. C. 1989. Sobre uma nova espécie do gênero Aedokritus Roback, 1958 (Diptera, Chironomidae). Mem. Inst. Oswaldo Cruz 84, supl. IV: 405-408

Oliveira,S. J., Labarthe, N., Garcia, E. S. & Rabinovitch, L. 1992 - Ecologia e Controle de Vetores, Relatório Final, Conferência Internacional de Meio Ambiente, Desenvolvimento e Saúde (CIMADES). Carta da Saúde, Agenda Sanitária e Relatórios Finais Fundação Oswaldo Cruz 37 pp.

Oliveira,S. J., Carraro, V. M. & Rêgo, L. E. P. 1992. Sobre uma nova espécie neotrópica do gênero Djalmabatisa Fittkau, 1968 (Diptera, Chironomidae) .Mem. Inst. Oswaldo Cru, 59 (2): 183-187.

Mello, R. P. & Oliveira,S. J., 1992. Contribuição para o conhecimento do gênero Dimecoenia Cresson, 1916. V - Sobre uma espécie nova do Rio de Janeiro - RJ, Brasil (Diptera, Ephydridae). Mem. Inst. Oswaldo Cruz, 87, supl. I: 137-144

Oliveira,S. J., Messias, M. C. & Silva-Vasconcelos, A 1992. Sobre um novo gênero neotrópico da subfamília Tanypodinae (Diptera, Chironomidae). Mem. Inst. Oswaldo Cruz, 87, supl. I: 161-165

Oliveira,S. J., & Serpa-Filho, A. 1992. Sobre uma nova espécie do gênero Tanypus Meigen, 1803 (Diptera, Chironomidae, Tanypodinae). Mem. Inst. Oswaldo Cruz, 87, supl. I: 259-262

Oliveira,S. J., 1992. Hugo de Souza Lopes (1909 - 1991). Rev. Bras. Ent., 36 (4): 895-904)

Oliveira,S. J., , Mello, R. P., Messias, M. C., Santos, A. R. & Serpa-Filho, A. 1993. Quironomídeos parasitados por ácaros. - I Quironomídeos da Ilha de Maracá, Estado de Roraima, Brasil. Rev. Bras. de Parasitol. Veterinária 2 (2) Supl.: 1: 27.

Oliveira,S. J., , Messias, M. C. & Santos, A. R 1995 - A new genus and new species of neotropical Orthocladiinae (Diptera, Chironomidae) pp. 409-412 in: CRANSTON, P. S. (ed.) Chironomids: From genes to ecosystems, CSIRO. – East Melbourne, VI + 482 p.

Oliveira,S. J., 1995. The History of Research on Brasilian Chironomidae Chironomus Newsletter, 7: 9-10

Callisto, M., Serpa-Filho, A., Oliveira,S. J., & Esteves, F. A. 1996. Chironomidae on leaves of Typha domingensis in a lagoon of the Rio de Janeiro State, Brazil .Stud. Neotrop. Fauna Environ. 31: 51-53.

Carraro, V. M. & Oliveira,S. J., 1997. Nova espécie neotrópica do gênero Djalmabatista Fittkau, 1968 (Diptera, Chironomidae). Entomol. y Vect. 4 (1): 3-8.

Serpa-Filho, A. & Oliveira,S. J., 1997. Sobre uma nova espécie neotrópica do gênero Monopelopia Fittkau, 1962 (Diptera, Chironomidae, Tanypodinae). Entomologia y Vectores 4 (2): 47-49.

Labarthe N, Serrão ML, Melo YF, Oliveira,S. J., & Lourenço-de-Oliveira R. 1998. Mosquito frequency and feeding habits in an enzootical canine dirofilariasis area in Niteroi, State of Rio de Janeiro, Brazil. Mem. Inst. Oswaldo Cruz 93 (2): 145-154, Mar./Abr. 1998.

Labarthe, N., Serrão, M. L., Melo, Y. F., Goulart, I., Guerreiro, J., Meneses, S., Alves, L., Oliveira,S. J., & Lourenço-de-Oliveira, R. 1998. Heartworm in dogs in the State of Rio de Janeiro, Brazil. Proceedings of the Heartworm Symposium'98, Tampa, Flórida: 67-73

Labarthe, N., Serrão, M. L., Melo, Y. F., Oliveira,S. J., & Lourenço-de-Oliveira, R. 1998. Potential vectores of Dirofilaria immitis (Leidy, 1856) in Itacoatiara, oceanic region of Niterói Municipality, Rio de Janeiro, Brazil. Mem. Inst. Oswaldo Cruz 93: 425-432.

Messias, M. C. & Oliveira,S. J., 1999. On a new species of the genus Oukuriella Epler (Diptera, Chironomidae, Chironominae). J. Kansas Ent. Soc. 71 (3): 260-262.

Messias, M. C. & Oliveira,S. J., 1998. On a new species of the genus Bryophaenocladius Thienemann, 1934 (Diptera: Chironomidae, Chironominae).

Pp. 189-191. In Late 20th Century Research on Chironomidae: an anthology from the 13th Int. Symp. Chir. (Hoffrichter, O. ed.):.: Shaker Verlag, Aachen.

Oliveira,S. J., 1998. Contribution to the knowledge of the Brazilian marine chironomids. Description of a new species of the genus Telmatogeton Schiner, 1866 (Diptera, Chironomidae, Telmatogetoninae). Pp. 197-200. In Late 20th Century Research on Chironomidae: an anthology from the 13th Int. Symp. Chir. (Hoffrichter, O. ed.):.: Shaker Verlag, Aachen.

Messias, M. C., Oliveira,S. J., & Fittkau, E. J. 1998. Description of a new species of the Neotropical genus Oukuriella (Diptera, Chironomidae, Chironominae). Pp. 183-188. In Late 20th Century Research on Chironomidae: an anthology from the 13th Int. Symp. Chir. (Hoffrichter, O. ed.):.: Shaker Verlag, Aachen.

Oliveira,S. J., de. 2000. A new, no-marine species of the genus Thalassomya Schiner, 1856 (Insecta, Diptera, Chironomidae, Telmatogetoninae).- In: Baehr, M. & M. Spies (eds): Contributions to chironomid research in memory of Dr. Friedrich Reiss. Spixina 23/2: 117-120.

Messias, M. C., Oliveira, S. J. & Fittkau, E. J. 2000. A New Species of the Neotropical Genus Oukuriella Epler (Diptera, Chironomidae, Chironominae). Aquatic Insects 22 (3): 161-164.

Oliveira, S. J. 2000. A new non marine species of the genus Thalassomya Schiner,1856 (Insecta, Diptera, Chironomidae, Telamatogetoninae). 2000. Spixiana, 23(2):117-120.

Souza, A. S.; Oliveira, S. J.;Couri, M. 2001. Mosquitos (Diptera, Culicidae) das regiões de Pendotiba e Oceânica de Niterói (Rio de Janeiro, Brasil). Rev Bras de Zoologia, 18(2): 557-581.

Felippe-Bauer, ML; Oliveira, SJ. 2001. Lista dos exemplares Tipos de ceratopogonidae (Díptera, Nematocera) depositados na Coleção Entomológica do Instituto Oswaldo Cruz, Rio de Janeiro, Brasil. Mem Inst Oswaldo Cruz, 96 (8): 1109-1119.

Soria,S. J; Felippe-Bauer;Oliveira, S. J. 2002.Lista das espécies de Ceratopogonidae(Diptera, Nematocera) do agro-ecossistema cacaueiro depositadas na Coleção Entomológica do Instituto Oswaldo Cruz, Rio de Janeiro, Brasil. Entomol. Vect. 9 (3):317-327.

Hamada N, De Oliveira S. J. 2003. Itens alimentares de larvas de Rimanella arcana (Needham, 1933) (Odonata: Amphipterygidae) na Amazônia Central, Brasil. Entomotropica 18(2):153-155.

De Oliveira S. J. 2005. Contribuition to the knowledge of the brazilian marine Chironomids. IV. On the Clunio brasiliensis Oliveira, 1950 (Diptera,Chironomidae, Orthocladinae). Mem. Inst. Oswaldo Cruz (in press)

De Oliveira S. J. 2005. Contribuition to the knowledge of the brazilian marine Chironomids. III. New species of the genus Thalassomya Schiner, 1856 (Diptera, Chironomidae, Telmatogetoninae) . Mem. Inst. Oswaldo Cruz (in press)

De Oliveira S. J. 2005. Contribuition to the knowledge of the brazilian marine Chironomids. III. New species of the genus Telmatogeton Schiner, 1866 (Diptera, Chironomidae, Telmatogetoninae) . Mem. Inst. Oswaldo Cruz (in press)

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2.4. 1918 – 30.6.2005

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NABS and all benthologists have lost a real pioneer in the field of aquatic ecology and I have lost a teacher, mentor, technical supervisor and most of all a friend. **William (Bill) M. Beck, Jr.** passed away on June 30, 2005 after a short bout with kidney cancer. Bill was 87, a long-time member of NABS, actually starting as a member of the MBS in 1969. Bill was born in Pittsburgh April 2, 1918. He was married to his biologist wife and co-worker, Beth, for 62 years. They had four children: Bill, Page, Noni and Keith, and four grandchildren. Beth worked with mosquitoes and midges in the State Entomology Department and they jointly published many chironomid papers. Bill received his B.S. in Biology from the University of Florida in 1942. During WWII he was in the Army Medical Department using his biology degree in insect control in New Guinea and the Philippines, where he actually did DDT treatment on General Douglas MacArthur's home and office. After WWII he returned to the University of Florida to obtain a M.S. in Herpetology as one of the first graduate students of Dr. Archie Carr.

Bill was the first aquatic biologist that the state of Florida hired in 1948. From 1948 to 1950 he traveled the state collecting water quality data and, very importantly, macroinvertebrates. Those data were used to develop **Beck's Biotic Index.** He consulted with the USPHS, which handled the federal water programs at that time, and determined that macroinvertebrates would be an excellent environmental monitoring tool; therefore, he initiated a program for the state of Florida, which has been used to the present. Over the years he was instrumental in building Florida's program from a one-biologist operation to one with greater than 50 biologists working in biological monitoring (actually many more if agencies and universities other than the state are considered). Bill moved into academia in 1970 when he joined the Entomology Department at Florida Agricultural and Mechanical University , as an Associate Professor from which he retired in 1980.

Bill had a great and maybe somewhat unusual sense of humor. For example he liked conflicting signs such as the one at the back door to the Health Department building in Orlando. A large sign on the door indicated "Positively No Admittance" and a big "Welcome" mat was in front of the door. Bill put it this way in the notes on his life: "I was born with two afflictions. Firstly, I had a sense of humor that has variously been referred to as biting, perverse, and even vicious. Secondly, with a rebellious nature, but never physically as in the 60's with all the marches, demonstrations, burning, bombings, and the holding of hostages in some of our major universities. Actually only part of me was rebel - my tongue." (I can identify with that since I was at the University of Michigan in the 60's). His following views on "professors" also illustrate his perverse humor. "There are, however, three categories of professors: good, bad, and worse… A good professor is one you will never be able to forget. A bad one - mediocre might be fairer - is one you can forget very quickly, thank goodness. The third category is so bad that, unfortunately, you have trouble forgetting, like the taste of quinine." Which reminds me of a situation when Bill's 96% ethyl alcohol was disappearing rapidly from the lab so he put quinine tablets into the alcohol. The level only dropped once after that - never again.

Bill truly loved his work in biology; in fact he actually referred to his career as "My Lives in Biology". He sums up "Employment, especially in the scientific field, is a

two-fold opportunity. To do that for which you are employed and to do that which your training and desire enable you to do in addition, in the latter lies the true satisfaction… it was not just herpetology or invertebrate zoology that was the true interest – it was Biology. The group under study constituted the tools with which I worked. I believe this to be a great truth. I could have worked the rest of my life with reptiles and amphibians and been happy. I ended up studying aquatic invertebrates the rest of my life and being happy. The change of groups was purely economics … it thus appeared that the macroinvertebrates were the best bet. The fact that I knew little about them was immaterial … it simply meant that a fine library of herpetology had to be sold and another library obtained. Much of my meager salary went into this."

Bill's work did so much to help in cleaning up the aquatic natural resources of Florida. For example, the development of his Biotic Index monitoring method as a measurement tool of organic pollution. It has recently been modified somewhat from the original since organic pollution is not a big problem anymore in Florida due in large part to Bill's work.

Likewise, Bill was instrumental in getting President Nixon to shut down the COE's Cross Florida Barge Canal project. In the 60's Secretary of Interior, Walter Hinkel, came out with a press release condemning the canal in Bill's exact words; a few days later President Nixon stopped all work on the canal issuing an order that used Bill's exact wording.

Bill hired me in 1968. As a teacher he instructed with kindness, consideration and much patience, all of which I surely needed. I remember clearly a statement he made to me on my first day on the job, "Just remember, God saw humans becoming so smug with themselves that he invented water, so complex that we'll never know everything about it." I owe much of my career to Bill's patience, attitude and teaching and, along with the many biologists, students, and other associates with whom he crossed paths in his trip through his "Lives in Biology", will sorely miss him!

Some Publications of William M. Beck, Jr.:

1954. "Studies in Stream Pollution Biology". Quarterly Journal of the Fla. Academy of Science 17(4): 211-227.

1955. "Suggested Method for Reporting Biotic Data". Sewage & Industrial Waste 27 (10) 1193-1197.

1957. "The Use and Abuse of Indicator Organisms". Biological Problems in Water Pollution, 1st Seminar. U.S. Public Health Service.

1959. "Sewage Treatment Ponds". The Overflow. 10(5): 12-13.

1962. "The Biological Removal of Nitrogenous Compounds from Sewage Treatment Plant Effluents". Biological Problems in Water Treatment, 3rd Seminar. U.S. Public Health Service.

1964. "New Chironomidae from Florida (Diptera)". Florida Entomologist. 47(3): 201-207.

1967. "Comparative Limnology of the Streams of Florida and the Upper Amazon Basin".Atas do simposio a Biota Amazonia. 3 (Limnologia): 51-62.

1968. "A Study of the Interrelations of Selected Chemical and Physical Factors in the Suwannee River". Quarterly Journal of the Fla. Academy of Science. 21(1): 12-24.

1968. "Keys to Water Quality Indicative Organisms. Chironomidae". Federal Water Pollution Control Administration. Cincinnati, Ohio.

1969. "Stream Monitoring – Biological Parameters". Fla. Engin. & Indust. Experi. Sta. Series. Number 135:60-63.

1973. "Chemical and Physical Aspects of the Blackwater River in Northwestern Florida". Proc. 1st Int. Conf. On Ephemeroptera. Pp. 231-241.

1977. "Environmental Requirements and Pollution Tolerance of Common Freshwater Chironomidae". Environmental Monitoring Series, U.S. EPA.

1979. “Biology of Larval Chironomidae”. Technical Series. Fla. Dept. of Env. Reg.

1980. “Interesting New Larval Chironomid Records for the Southern U.S. (Diptera: Chironomidae)”. Jour. Ga. Entomol. Soc. 15(1): 69-73.

Publications of William M. Beck, Jr. and Elisabeth C. Beck:

1958. “A New Species of Xenochironomus from Florida (Diptera: Chironomidae)”. Florida Entomologist. 41(1): 27-28.

1959. “A Checklist of the Chironomidae (Insecta) of Florida (Diptera: Chironomidae)”. Bull. Fla. State Mus. 4(3): 85-96.

1966. “The Chironomidae of Florida: A Problem in International Taxonomy”. Gewasser und Abwasser, Heft. 41/42, 129-135.

1966. “The Chironomidae of Florida I. Pentaneurini (Tanypodinae)”. Bull. Fla. State. Mus. 10(8): 305-379.

1968. “The Concept of Genus in the Family Chironomidae. Annales Zool. Fennici. 5:14-16.

1969. “The Chironomidae of Florida II. The Nuisance Species. Florida Entomologist. 52(1): 1-11.

1969. “The Chironomidae of Florida III. The Harnischia Complex (Chironomidae)”. Bull. Fla. State Mus. 13 (5): 277-311.

1970. “The Immature Stages of Some Chironomids (Chironomidae”. Quarterly Journal of the Fla. Academy of Science. 33(1): 29-42.

1974. “The Blackwater River Basin and the Chironomidae of Florida”. Ent. Tidskr. 95:18-20.

Significant Contributions of Bill Beck to Benthology:

1. Development of the first biological water quality monitoring program for Florida 1948-1950, which has been continuously in use in Florida since then.
2. Development of “Beck’s Biotic Index” in 1952 for evaluating water quality in Florida streams, with publication in 1954 and 1955.
3. Adaptation of the Shannon Index for use in Florida lakes and streams in 1971 and added to the Florida water quality rules.
4. Classification, ecology, life histories, distribution, descriptions and naming of many species of Chironomidae in Florida and the SE.
5. Work on parasites of and parasitization by the Chironomidae.
6. Work on the Chironomidae of New Caledonia.
7. Study of the distribution of Chironomidae in relation to continental drift for National Geographic.
8. Development of “user friendly” taxonomic keys to the genera of Florida Chironomidae and easily usable keys to the species of Florida Ablabesmyia, Labrundinia, and Harnischia.

AN INDEX TO SELECTED SCIENTIFIC NAMES IN EDWARDS' (1929) MONOGRAPH ON BRITISH CHIRONOMIDAE

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Introduction

Much critical information from historic publications and collections still awaits adequate incorporation into the chironomid system (see, e.g., SPIES 2001, SPIES & SÆTHER 2004). The classic works by EDWARDS (1929) and GOETGHEBUER & LENZ in LINDNER ("Die Fliegen der Palaearktischen Region") have been most influential, both as overviews of the earlier literature and by their original contributions. Unfortunately, access to and evaluation of their individual observations and proposals have been impeded by the index in EDWARDS (1929) being limited to some of the occurrences of genus-group names only, and by the absence of any indexes from the LINDNER volumes on Orthocladiinae (GOETGHEBUER 1940-1950) and Chironominae (GOETGHEBUER & LENZ 1937-1962).

To remove the first of these obstacles, an index to scientific species-group names in Edwards (1929) is presented below. The missing indexes to LINDNER volumes are in preparation; they will be announced and made available upon completion.

Methods

The index entries below are mere references to data in EDWARDS (1929); they must not be used for other purposes without checking them against an appropriate source. Unless specifically stated, no entry implies any opinion of mine on nomenclatural status or taxonomic validity.

Modifications to the indexed data are made for conciseness only. In EDWARDS (1929), many names occur in more than a single respective spelling or genus-species combination. The index reduces such variation where possible without loss of critical information. For example, the entry >*falcigera* / Kieffer / *Pelopia* / ... /< also covers "*P. falciger*" (EDWARDS 1929: 288), whereas the variant original spellings *Chironomus nigronitans* and *C. nigronitens* are indexed separately.

Names EDWARDS (1929) used for 'varieties' are indexed without distinction from species names because under the rules of nomenclature they now apply to subspecies or species.

In the "Authorship" column, the term >[author] misid. [author]< means that EDWARDS deemed the name misapplied by the subsequent author(s); >sensu [author]< denotes a subsequent use not conclusively evaluated against the original one; >nec< signals a junior homonym.

The far right column lists pages in EDWARDS (1929) containing relevant information on the corresponding taxon or name. However, not all occurrences of all names are indexed; e.g. those in comparative descriptions ('wing as in [*species*]') are omitted unless of special significance.

Page numbers in regular type may represent more than one mention of the name. Numbers in boldface refer to taxonomic descriptions. Suffixes >f< and >k< indicate that the name occurs in a figure caption or key, respectively.

Index to species-group names of Chironomidae in Edwards (1929)

Species-group name	Authorship	Genus in original combination	Genus-group name(s) stated or implied by Edwards	Page numbers
abbreviatus	Kieffer	*Tendipes*	*Chironomus (Microtendipes)*	397
abdominalis	Staeger	*Chironomus*	*Pentapedilum (Phaenopsectra)*	375
abstrusus	Kieffer	*Glyptotendipes*	*Chironomus (Glyptotendipes)*	392
acuticornis	Kieffer	*Corynoneura*	*Corynoneura (Corynoneura)*	369
acutus	Kieffer	*Polypedilum*	*Chironomus (Polypedilum)*	398f, 402k, **404**
adjunctus	Walker	*Chironomus*	*Metriocnemus*	311
aestivalis	Goetghebuer	*Metriocnemus*	*Metriocnemus*	313
aestivus	Curtis	*Chironomus*	*Eurycnemus*	309
affinis	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	410
agrayloides	Kieffer	*Tanytarsus*	*Chironomus (Lauterborniella)*	**405**
albicornis	Goetghebuer	*Cricotopus*	*Cricotopus*	351
albicornis	Meigen	*Chironomus*	*Chironomus (Polypedilum)*	402k, **403**
albiforceps	Goetghebuer	*Tanytarsus*	*Pentapedilum (Phaenopsectra)*	375
albiforceps	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	387

albiforceps	Kieffer	*Trichocladius*	*Cricotopus*	320k, **321**
Species-group name	**Authorship**	**Genus in original combination**	**Genus-group name(s) stated or implied by Edwards**	**Page numbers**
albiforceps	Kieffer misid. Goet.	*Trichocladius*	*Cricotopus*	321
albimanus	Meigen	*Chironomus*	*Chironomus (Paratendipes)*	**395**
albinervis	Kieffer	*Procladius*	*Procladius (Psilotanypus)*	302
albinervis	van der Wulp	*Orthocladius*	*Spaniotoma (Psectrocladius)*	334
albipennis	Goetghebuer	*Dactylocladius*	*Spaniotoma (Smittia)*	363k, **365**
albipennis	Goetghebuer	*Dactylocladius*	*Spaniotoma (Smittia)*	363k, **365**
albipennis	Kieffer	*Syndiamesa*	*Syndiamesa*	303
albipennis	Meigen	*Chironomus*	*Chironomus (Endochironomus)*	**394**, 380
albipes	Kieffer	*Iscocladius*	*Isocladius*	318
albipes (incorr. subseqt. spellg. of *altipes*)	Zetterstedt	*Chironomus*	*Pentapedilum (Phaenopsectra)*	375
albipluma	Kieffer	*Cricotopus*	*Cricotopus*	351
albiventris	Kieffer	*Lenzia*	*Pentapedilum (Phaenopsectra)*	375
albofasciatus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	**388**
albolineatus	Meigen	*Chironomus*	*Metriocnemus*	310
alligatus	Walker	*Chironomus*	*Metriocnemus*	311
allolabis	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	387
amasia	Meigen	*Chironomus*	*Cricotopus*	319
ambiguus	Goetghebuer	*Graceus*	*Graceus*	281, 374f, **377**
ambiguus	van der Wulp	*Chironomus*	*Chironomus*	378
ammon	Haliday	*Diamesa*	*Diamesa*	**307**
amoenus	Meigen	*Chironomus*	*Cricotopus*	319
ampullaceus	Kieffer	*Metriocnemus*	*Metriocnemus*	314
angulatus	Goetghebuer	*Metriocnemus*	*Metriocnemus*	314
angusta	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, 363k, **364**, 368f, 428f
angustus	Goetghebuer	*Cricotopus*	*Cricotopus*	322, 323
annularius	De Geer	*Tipula*	*Chironomus (Chironomus)*	384, 392
annularius	De Geer misid. Goet.	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
annularius	De Geer misid. Verr./Coll.	*Chironomus*	*Chironomus (Glyptotendipes)*	392
annulator	Goetghebuer	*Cricotopus*	*Cricotopus*	**323**
annulimanus	Goetghebuer	*Chironomus*	*Chironomus (Glyptotendipes)*	393
annulipes	Meigen	*Chironomus*	*Cricotopus*	323
antennalis	Kieffer	*Corynoneura*	*Bauseia*	367
anthracinus	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	379f, **383**, 383k
apfelbecki	Strobl	*Chironomus*	*Chironomus (Polypedilum)*	398f, 401k, **402**, 429f
apicalis	Kieffer	*Metriocnemus*	*Spaniotoma (Orthocladius)*	308, 339f, **347**, 347k, 428f
appositus	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
aprilinus	Meigen misid. Kieffer	*Chironomus*	*Chironomus (Chironomus)*	382
aprilinus	Meigen sensu Goet.	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
aquaticus	Kieffer sensu Goet.	*Camptocladius*	*Spaniotoma (Smittia)*	360
aquatilis	Goetghebuer	*Camptocladius*	*Spaniotoma (Smittia)*	361
arciger	Kieffer	*Metriocnemus*	*Metriocnemus*	315
arcuatus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	389
arduennensis	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, **414**
argentatus	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	337
armillatus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	388
arundineti	Goetghebuer	*Tendipes*	*Chironomus (Polypedilum)*	379f, 402k, **403**
assimilis	Zetterstedt	*Chironomus*	*Chironomus (Stictochironomus)*	401
aterrima	Meigen	*Chironomus*	*Spaniotoma (Smittia)*	**360**, 360k
aterrimus	Meigen	*Chironomus*	*Camptocladius*	357
atra	Winnertz	*Corynoneura*	*Corynoneura (Corynoneura)*	369
atratulus	Zetterstedt	*Chironomus*	*Metriocnemus*	311k, **312**
atriclavus	Kieffer	*Metriocnemus*	*Metriocnemus*	311k, **311**
atridorsum	Kieffer	*Cladotanytarsus*	*Tanytarsus (Tanytarsus)*	417f, **418**
atriforceps	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**390**
atrimanus	Kieffer	*Trichocladius*	*Cricotopus*	318, 321
atrofasciatus	Kieffer	*Camptochironomus*	*Chironomus (Chironomus)*	382
atrofasciatus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	**408**
atrovittatus	Kieffer	*Limnochironomus*	*Chironomus (Chironomus)*	386
auripilus	Goetghebuer	*Metriocnemus*	*Metriocnemus*	311
bacilliger	Kieffer	*Cryptochironomus*	*Chironomus (Chironomus)*	389
barbatipes	Kieffer	*Pelopia*	*Pentaneura*	291
barbatipes	Kieffer misid. Goet.	*Pelopia*	*Pentaneura*	291

barbimanus	Edwards	*Spaniotoma*	*Spaniotoma (Psectrocladius)*	332k, **333**
barbipes	Staeger	*Chironomus*	*Chironomus (Glyptotendipes)*	391k, **392**
barbitarsis	Zetterstedt	*Tanypus*	*Pentaneura*	292, **293**
bathophilus	Kieffer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	411
bathophilus	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	383
bathyphilus	Kieffer	*Procladius*	*Procladius (Psilotanypus)*	302
bausei	Kieffer	*Tanytarsus*	*Tanytarsus (Stempellina)*	419, **419**
becquaerti	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	385
bellus	Loew	*Tanypus*	*Psilotanypus*	300
biannulatus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	**388**
biannulatus	Staeger misid. Goet.	*Chironomus*	*Chironomus (Chironomus)*	388
bicinctellus	Goetghebuer	*Cricotopus*	*Cricotopus*	321
bicinctus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	415
bicinctus	Meigen	*Chironomus*	*Cricotopus*	318, 320k, **321**, 322f
bicolor	Kieffer	*Clunio*	*Clunio*	371
bicolor	Meigen	*Chironomus*	*Chironomus*	351
bicolor	Zetterstedt	*Chironomus*	*Spaniotoma (Eukiefferiella)*	351, **351**, 351k
bicrenatum	Kieffer	*Polypedilum*	*Polypedilum*	403
bifida	Kieffer	*Metriocnemus*	*Brillia*	310
biformis	Edwards	*Cricotopus*	*Cricotopus*	322f, 324k, **325**
bimaculata	Kieffer	*Isoplastus*	*Anatopynia*	298
binotata	Wiedemann	*Chironomus*	*Pentaneura*	288, 293, **294**
bipunctatus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	390
bipunctatus	Kieffer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	415
bipunctella	Zetterstedt	*Chironomus*	*Spaniotoma (Orthocladius)*	340k, **341**
bituberculatus	Edwards	*Tanytarsus*	*Tanytarsus (Lundstroemia)*	**408**, 412k
bivittata	Philippi	*Spaniotoma*	*Spaniotoma*	327
blandus	van der Wulp	*Chironomus*	*Chironomus (Polypedilum)*	401, 404
brachylabis	Edwards	*Chironomus*	*Chironomus (Lauterborniella)*	398f, **406**
brachysandalum	Kieffer	*Microtendipes*	*Chironomus (Microtendipes)*	397
brayi	Goetghebuer	*Chironomus*	*Chironomus (Kribioxenus)*	**396**
brayi	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	414
brevicalcar	Kieffer	*Dactylocladius*	*Dactylocladius*	350
brevicalcar	Kieffer	*Dactylocladius*	*Spaniotoma (Eukiefferiella)*	351k, 352f, **353**
brevicalcar	Kieffer	*Psectrotanypus*	*Psectrotanypus*	297
brevicalcar	Kieffer	*Psectrotanypus*	*Anatopynia*	298
brevicornis	Kieffer	*Orthocladius*	*Orthocladius*	335, 336
brevifurcata	Edwards	*Orthocladius*	*Spaniotoma (Smittia)*	363k, **365**, 428f
brevinervis	Kieffer	*Corynoneura*	*Corynoneura (Corynoneura)*	368
brevinervis	Malloch	*Dactylocladius*	*Dactylocladius*	351
brevipalpis	Kieffer	*Cricotopus*	*Cricotopus*	318
brevipalpis	Kieffer	*Trissocladius*	*Trissocladius*	309
brevipennis	Holmgren	*Chironomus*	*Camptocladius*	357
brevis	Edwards	*Tanytarsus*	*Tanytarsus (Stempellina)*	417f, **420**, 429f
brevitarsis	Edwards	*Metriocnemus*	*Metriocnemus*	**316**
brevitibialis	Goetghebuer	*Tanypus*	*Pentaneura*	293, **294**
brevitibialis	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	386
brevitibialis	Zetterstedt misid. Goet.	*Chironomus*	*Chironomus (Chironomus)*	386
britteni	Edwards	*Chironomus*	*Chironomus (Microtendipes)*	397k, 398f, **399**
brumalis	Edwards	*Metriocnemus*	*Metriocnemus*	314f, **316**
brunnipes	Goetghebuer	*Trichocladius*	*Trichocladius*	326
brunnipes	Zetterstedt	*Chironomus*	*Tanytarsus (Micropsectra)*	407
brunnipes	Zetterstedt sensu Edw.	*Chironomus*	*Tanytarsus (Micropsectra)*	374f, **407**, 408
byssinus	Schrank	*Tipula*	*Spaniotoma (Smittia)*	335, 362
byssinus	Schrank	*Tipula*	*Camptocladius*	355, 357
calcarata	Edwards	*Spaniotoma*	*Spaniotoma (Psectrocladius)*	332k, **333**
calvescens	Edwards	*Spaniotoma*	*Spaniotoma (Eukiefferiella)*	351k, 352f, **353**, 368f
campestris	Edwards	*Diamesa*	*Diamesa*	306f, **307**
camptolabis	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	381f, **387**
camptophleps	Edwards	*Spaniotoma*	*Spaniotoma (Eukiefferiella)*	351k, 352f, **353**, 368f, 428f
candidus	Kieffer	*Chironomus*	*Chironomus (Glyptotendipes)*	393
capucinus	Zetterstedt	*Chironomus*	*Cardiocladius*	282, **317**, 346, 370f, 428f
carbonarius	Meigen	*Chironomus*	*Chironomus*	332
carbonarius	Meigen misid. Goet.	*Chironomus*	*Spaniotoma (Psectrocladius)*	332
carnea	Fabricius	*Chironomus*	*Pentaneura*	289, **291**
carneus	Fabricius misid. Goet.	*Chironomus*	*Pentaneura*	291
carriana	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	368f, **369**, 429f

Species-group name	Authorship	Genus in original combination	Genus-group name(s) stated or implied by Edwards	Page numbers
cavicola	Kieffer	*Metriocnemus*	*Metriocnemus*	312
celeripes	Winnertz	*Corynoneura*	*Corynoneura (Corynoneura)*	368, **369**
celtica	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	**368**, 368f, 429f
ceylanicus	Kieffer	*Cardiocladius*	*Cardiocladius*	317
ceylonicus (incorr. spellg.)	Kieffer	*Cardiocladius*	*Cardiocladius*	280
chalybeata	Edwards	*Spaniotoma*	*Spaniotoma (Trichocladius)*	329f, 330k, **331**
cheethami	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, **359**, 428f
chiron	Haliday	*Chironomus*	*Syndiamesa*	**304**
chloris	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	**397**, 397k
chlorolobus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	388
choreus	Meigen	*Tanypus*	*Procladius (Procladius)*	**301**
choreus	Meigen misid. Kieffer	*Tanypus*	*Procladius (Procladius)*	301
cincta	Fabricius	*Tipula*	*Tipula*	299
cinctellus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**390**
cinereiventris	Goetghebuer	*Chironomus*	*Chironomus (Microtendipes)*	397
cingulata	Walker	*Chironomus*	*Pentaneura*	293, **294**
cingulatus	Meigen	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
claripennis	Malloch	*Chironomus*	*Chironomus (Chironomus)*	381f, **387**
clavaticornis	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	356
clavaticrus	Kieffer	*Chironomus*	*Chironomus (Lauterborniella)*	405
clavicornis	Kieffer	*Corynoneura*	*Corynoneura (Thienemanniella)*	**366**
claviforceps	Edwards	*Chironomus*	*Chironomus (Chironomus)*	381f, **389**
coaequatus	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	328
coerulescens	Kieffer	*Trichocladius*	*Spaniotoma (Eukiefferiella)*	280, 351k, 352f, **354**
compertus	Walker	*Chironomus*	*Chironomus*	280
confinis	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	397k, 398f, **399**, 429f
conjuncta	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	363k, **365**, 428f
consobrinus	Zetterstedt	*Tanypus*	*Prodiamesa*	307
contingens	Walker	*Chironomus*	*Spaniotoma (Smittia)*	360k, **361**
convectus	Walker	*Chironomus*	*Chironomus (Chironomus)*	385
conversus	Walker	*Chironomus*	*Cricotopus*	326
convestitus	Walker	*Chironomus*	*Prodiamesa*	307
convictus	Walker	*Chironomus*	*Chironomus (Polypedilum)*	398f, 401, 402k, **404**
coracellus	Kieffer	*Trichocladius*	*Chironomus (Endochironomus)*	394
coracinum	Zetterstedt	*Chironomus*	*Pentapedilum (Sergentia)*	**375**, 377, 418
coracinus	Zetterstedt misid. Kieffer	*Chironomus*	*Tanytarsus (Lauterbornia)*	374, 418
cornutus	Goetghebuer	*Tanytarsus*	*Tanytarsus*	414
coronata	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	367, **369**
coronata	Edwards	*Spaniotoma*	*Spaniotoma (Eukiefferiella)*	351k, **354**, 368f
costalis	Kieffer	*Pelopia*	*Pentaneura*	290
crassinervis	Zetterstedt	*Tanypus*	*Procladius (Procladius)*	**301**
crassipes	Kieffer	*Corynoneura*	*Corynoneura (Corynoneura)*	369
crassipes	Panzer	*Chironomus*	*Eurycnemus*	**309**
cubitalis	Kieffer	*Metriocnemus*	*Metriocnemus*	313
culiciformis	Linnaeus	*Tipula*	*Procladius (Procladius)*	299, **301**
culiciformis	Linnaeus	*Tipula*	*Tanypus*	300
culicoides	Heeger	*Diamesa*	*Diamesa*	**304**
cultriger	Kieffer	*Diplocladius*	*Spaniotoma (Diplocladius)*	**331**, 358
cuneatus	Edwards	*Metriocnemus*	*Metriocnemus*	**315**, 428f
cuneipennis	Edwards	*Tanytarsus*	*Tanytarsus (Stempellina)*	**421**, 429f
curticornis	Kieffer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, **415**
curticosta	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, 363k, **364**, 428f
curtistylus	Goetghebuer, 1921	*Psectrocladius*	*Spaniotoma (Orthocladius)*	335, **350**, 359
decipiens	Kieffer	*Trichocladius*	*Trichocladius*	331
defectus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	388
denotatus	Walker	*Chironomus*	*Cricotopus*	326
denticulatus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**389**
dentiforceps	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 345k, **346**
deproperans	Walker	*Chironomus*	*Metriocnemus*	311
devonica	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 347k, **349**
diffinis	Edwards	*Chironomus*	*Chironomus (Microtendipes)*	**397**, 397k, 398f
digitalis	Edwards	*Chironomus*	*Chironomus (Chironomus)*	381f, **389**
dilatatus	van der Wulp	*Chironomus*	*Spaniotoma (Trichocladius)*	328
dilatatus	van der Wulp	*Chironomus*	*Orthocladius*	332

dilatatus	van der Wulp misid. Goet.	*Chironomus*	*Spaniotoma (Psectrocladius)*	332
disclusus	Walker	*Chironomus*	*Chironomus*	280
discrepans	Walker	*Chironomus*	*Chironomus (Microtendipes)*	397
dispar	Goetghebuer	*Cricotopus*	*Spaniotoma (Trichocladius)*	329, 329k, **330**
dispar	Meigen	*Chironomus*	*Chironomus (Endochironomus)*	374f, 379f, **394**
dispessus	Walker	*Chironomus*	*Chironomus (Chironomus)*	386
dissidens	Walker	*Chironomus*	*Chironomus (Chironomus)*	381f, **385**, 396
dissipata	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	337k, **338**, 339f, 428f
distylus	Kieffer	*Dactylocladius*	*Orthocladius*	345
divisa	Walker	*Chironomus*	*Pentaneura*	293, **294**
divisus	Kieffer	*Orthocladius*	*Orthocladius*	340
dizonias	Meigen	*Chironomus*	*Cricotopus*	320k, **321**, 322f
dolens	Walker	*Chironomus*	*Chironomus (Chironomus)*	383
dorsalis	Meigen	*Chironomus*	*Chironomus (Chironomus)*	385
dorsalis	Meigen sensu Edw.	*Chironomus*	*Chironomus*	375, 383k, **384**
dubia	Meigen	*Tanypus*	*Pentaneura*	**295**
dubius	Staeger	*Tanypus*	*Pentaneura*	290, 291
duodenaria	Kieffer	*Tvetenia*	*Tvetenia*	343
effusa	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	329f, **330**, 330k
ejuncidus	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	374f, **414**
elegans	Meigen	*Chironomus*	*Eurycnemus*	309
ellipsoidalis	Kieffer	*Orthocladius*	*Pachycladius*	430
emarginatum	Kieffer	*Polypedilum*	*Polypedilum*	401, 402
eminulus	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	412k, **414**
enotatus	Walker	*Chironomus*	*Chironomus (Polypedilum)*	402
ephemerae	Kieffer	*Camptocladius*	*Spaniotoma (Smittia)*	352f, **358**, 428f, 354
ephippium	Zetterstedt	*Chironomus*	*Cricotopus*	325
ephippium	Zetterstedt misid. Verrall	*Chironomus*	*Cricotopus*	325
excavatus	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**416**, 417f
excerpta	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	337k, **338**, 339f
exiguus	Goetghebuer	*Camptocladius*	*Camptocladius*	280, 354
exiguus	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355
eximia	Edwards	*Pentaneura*	*Pentaneura*	289, **290**, 428f
expalpans	Walker	*Chironomus*	*Pentaneura*	293
exsectus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
exspatians	Walker	*Chironomus*	*Spaniotoma (Psectrocladius)*	334
extensus	Kieffer	*Psectrocladius*	*Spaniotoma (Psectrocladius)*	332
faeroensis	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	387
falcatus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	**389**
falciformis	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	386
falciger	Kieffer	*Tendipes*	*Chironomus (Polypedilum)*	402
falcigera	Kieffer	*Pelopia*	*Pentaneura*	288, 293, **294**
fallax	Kieffer	*Trichocladius*	*Cricotopus*	321
fasciatus	Geoffroy sensu Kieffer	*Tipula*	*Chironomus (Stenochironomus)*	395
fascipennis	Zetterstedt	*Chironomus*	*Chironomus (Stenochironomus)*	**395**
feminea	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 340, 340k, **343**, 368f
femorata	Staeger	*Chironomus*	*Spaniotoma (Eukiefferiella)*	351
ferrugineovittatus	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	384
ferruginicollis	Meigen	*Tanypus*	*Pentaneura*	294
fertus	Walker	*Chironomus*	*Metriocnemus*	311
festiva	Meigen	*Tanypus*	*Pentaneura*	289, 291
festivus	Meigen	*Chironomus*	*Cricotopus*	320k, **322**
filiformis	Kieffer	*Psectrocladius*	*Spaniotoma (Orthocladius)*	**350**
fissicornis	Kieffer	*Orthocladius*	*Trichocladius*	328, 335
flava	Kieffer	*Microlenzia*	*Corynoneura (Microlenzia)*	367
flavescens	Edwards	*Corynoneura*	*Corynoneura (Thienemanniella)*	352f, **367**, 429f
flavidulus	Edwards	*Tanytarsus*	*Tanytarsus (Stempellina)*	**420**
flavifrons	Edwards	*Procladius*	*Procladius (Psilotanypus)*	285f, **302**
flavimanus	Meigen	*Chironomus*	*Chironomus*	392
flavinervis	Kieffer	*Xenochironomus*	*Chironomus (Chironomus)*	385
flavipes	Meigen	*Chironomus*	*Pentapedilum (Phaenopsectra)*	374f, **375**
flavipubens	Goetghebuer	*Tanypus*	*Anatopynia*	298
flavocinctus	Kieffer	*Trichocladius*	*Cricotopus*	320k, 322f, **323**
flavonervosus	Staeger	*Chironomus*	*Chironomus (Polypedilum)*	402k, **403**
flavoscutellatus	Goetghebuer	*Tanypus*	*Pentaneura*	294
flexilis	Linnaeus misid. auct.	*Tipula*	*Chironomus (Stenochironomus)*	395
flexilis	Linnaeus sensu Bause	*Tipula*	*Chironomus (Lauterborniella)*	405

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flexuella	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, **349**, 428f
foenisuga	Kieffer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355
foliacea	Kieffer	*Camptocladius*	*Spaniotoma (Smittia)*	360k, **361**
foliaceus	Kieffer	*Psectrocladius*	*Psectrocladius*	362
foliatus	Kieffer	*Camptocl., Trichocl.*	*Spaniotoma (Smittia)*	360
foliicola	Kieffer	*Glyptotendipes*	*Chironomus (Glyptotendipes)*	391k, **392**, 398f
forcipatus	Goetghebuer	*Camptocladius*	*Camptocladius*	365
formosus	Goetghebuer	*Chironomus*	*Chironomus (Microtendipes)*	397
foveata	Edwards	*Spaniotoma*	*Spaniotoma (Trichocladius)*	329f, **330**, 330k, 428f
frauenfeldi	Schiner	*Thalassomya*	*Thalassomyia*	**371**, 429f
frigida	Zetterstedt	*Chironomus*	*Spaniotoma (Orthocladius)*	339f, 345k, **346**
fucicola	Edwards	*Trichocladius*	*Cricotopus*	324k, **326**
fuliginosus	Goetghebuer	*Tanypus*	*Pentaneura*	293
fulvofasciatus	Kieffer	*Glyptotendipes*	*Chironomus (Glyptotendipes)*	393
fulvofasciatus	Kieffer	*Metriocnemus*	*Metriocnemus*	313
funebris	Goetghebuer	*Trichocladius*	*Spaniotoma (Trichocladius)*	328, 360
furcata	Kieffer	*Psectrocladius*	*Spaniotoma (Orthocladius)*	281, 340k, **341**
fusca	Kieffer	*Microlenzia*	*Corynoneura (Thienemanniella)*	367
fuscicauda	Kieffer	*Calopsectra*	*Phaenopelma*	419
fuscicauda	Kieffer	*Limnochironomus*	*Chironomus (Chironomus)*	386
fusciceps	Edwards	*Pentaneura*	*Pentaneura*	289, **290**, 306f
fusciclava	Kieffer	*Corynoneura*	*Corynoneura*	369
fusciforceps	Kieffer	*Cricotopus*	*Cricotopus*	319
fuscihalter	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	**369**, 429f
fuscimanus	Kieffer	*Harnischia*	*Harnischia*	387
fuscimanus	Kieffer	*Paratendipes*	*Chironomus (Paratendipes)*	396
fuscimanus	Meigen	*Chironomus*	*Cricotopus*	**319**, 319k
fuscipennis	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	396, 397k, **400**
fuscipes	Kieffer	*Cricotopus*	*Spaniotoma (Trichocladius)*	330
fuscipes	Meigen	*Chironomus*	*Metriocnemus*	281, 310, **311**, 311k
fuscipes	Meigen misid. Goet.	*Chironomus*	*Metriocnemus*	311
fuscus	Kieffer	*Cardiocladius*	*Cardiocladius*	280, **317**
fuscus	Meigen	*Chironomus*	*Tanytarsus (Micropsectra)*	**407**
fusiformis	Kieffer	*Tendipes*	*Chironomus*	373
futilis	Walker	*Chironomus*	*Chironomus (Chironomus)*	386
gaedii	Meigen	*Diamesa*	*Diamesa*	307
galactoptera	Nowicki	*Diamesa*	*Diamesa*	307
gibbosus	Meigen	*Chironomus*	*Cricotopus*	321
gibbus	Fabricius	*Tipula*	*Chironomus (Stenochironomus)*	379f, **395**, 399, 405
glabrescens	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**416**, 417f
glabricollis	Meigen	*Chironomus*	*Spaniotoma (Trichocladius)*	329f, **330**, 330k
glabricollis	Meigen misid. Walker	*Chironomus*	*Chironomus (Chironomus)*	390
glabripennis	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	344k, **345**
glauciventris	Kieffer	*Trichocladius*	*Cricotopus*	325
glaucus	Meigen	*Chironomus*	*Chironomus (Glyptotendipes)*	379f, 391k, **392**
globulifer	Goetghebuer	*Tanytarsus*	*Tanytarsus*	407
gmundensis	Egger	*Chironomus*	*Tanytarsus (Micropsectra)*	407
goetghebueri	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	386
goetghebueri	Kieffer	*Tanypus*	*Anatopynia*	**298**
gotchi	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, 414
gracei	Edwards	*Metriocnemus*	*Metriocnemus*	311k, **312**, 314f
gracei	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 345k, **346**, 428f
gracilior	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	389
gracilis	Goetghebuer	*Camptocladius*	*Spaniotoma (Smittia)*	**362**
gracilis	Kieffer	*Syndiamesa*	*Syndiamesa (Lasiodiamesa)*	296
gracilis	Kieffer	*Thienemannia*	*Metriocnemus*	310, **313**
grandis	Kieffer	*Acricotopus*	*Acricotopus*	328
grandis	Kieffer	*Acricotopus*	*Spaniotoma (Trichocladius)*	328
gregarius	Kieffer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**411**, 412k, 414
grimshawi	Edwards	*Metriocnemus*	*Metriocnemus*	**313**, 428f
gripekoveni	Kieffer	*Chironomus*	*Chironomus (Glyptotendipes)*	391k, **392**
grisea	Philippi	*Pentaneura*	*Pentaneura*	288
griseipennis	van der Wulp	*Tanypus*	*Pentaneura*	292, **293**
gurgicola	Edwards	*Spaniotoma*	*Spaniotoma (Limnophyes)*	355k, **357**, 428f

guttipennis	van der Wulp	*Tanypus*	*Pentaneura*	288, **289**
habilis	Walker	*Chironomus*	*Spaniotoma (Limnophyes)*	355k, **356**
halophilus	Kieffer	*Trichocladius*	*Trichocladius*	318, 326
halteralis	Coquillett	*Chironomus*	*Chironomus*	403
hebescens	Walker	*Chironomus*	*Chironomus (Chironomus)*	384
hemipsilus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
heterocerus	Kieffer	*Trissocladius*	*Trissocladius*	309
heterolabis	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	386
heteropus	Kieffer	*Glyptotendipes*	*Chironomus (Glyptotendipes)*	392
heusdensis	Goetghebuer	*Tanytarsus*	*Tanytarsus*	416
hexatomus	Kieffer	*Camptocladius*	*Camptocladius*	354
hexatomus	Kieffer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355
hibernicus	Edwards	*Chironomus*	*Chironomus (Microtendipes)*	396, 397k, 398f, **399**
hirtellus	Goetghebuer	*Metriocnemus*	*Metriocnemus*	312
hirticollis	Staeger	*Chironomus*	*Metriocnemus*	311k, **312**
hirtimanus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	384
hirtimanus	Kieffer	*Tanypus*	*Pentaneura*	290, **291**
hirtipalpis	Kieffer	*Metriocnemus*	*Metriocnemus*	311
hirtipes	Macquart	*Chironomus*	*Eurycnemus*	309
histrio	Fabricius	*Tipula*	*Chironomus (Stictochironomus)*	**401**
holochlorus	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, **414**
hospita	Edwards	*Spaniotoma*	*Spaniotoma (Eukiefferiella)*	**351**, 351k, 352f, 368f, 428f
humeralis	Zetterstedt	*Ceratopogon*	*Cricotopus*	325
hyalinus	Kieffer	*Cricotopus*	*Cricotopus*	319
hydrophila	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	**355**, 355k
hygropetrica	Kieffer	*Diamesa*	*Diamesa*	303
hygropetricus	Kieffer	*Metriocnemus*	*Metriocnemus*	311
ichthyobrota	Kieffer	*Prodiamesa*	*Prodiamesa*	307
icterica	Meigen	*Chironomus*	*Spaniotoma (Orthocladius)*	**340**, 340k
ilkleyensis	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 347k, **349**
illimbata	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 340, 340k, **343**, 428f
imbecillis	Walker	*Chironomus*	*Chironomus (Glyptotendipes)*	391k, **393**
imberbipes	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	388
impar	Walker	*Chironomus*	*Chironomus (Endochironomus)*	**394**, 429f
impensus	Walker	*Chironomus*	*Metriocnemus*	**314**
incallida	Walker	*Chironomus*	*Diamesa*	**305**, 306f
incertus	Walker	*Chironomus*	*Chironomus (Chironomus)*	389
incisuratus	Zetterstedt	*Chironomus*	*Cricotopus*	323
incoactus	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	345
incomptus	Walker	*Chironomus*	*Procladius (Procladius)*	301
incomptus	Zetterstedt	*Chironomus*	*Pentapedilum (Phaenopsectra)*	375
incurvatus	Goetghebuer	*Tanypus*	*Pentaneura*	291
inermifrons	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
inermipes	Kieffer	*Tanytarsus*	*Micropsectra*	407
innupta	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	368f, 369
inopertus	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	**410**, 412k
inscendens	Walker	*Chironomus*	*Diamesa*	**306**, 306f
inserpens	Walker	*Chironomus*	*Cricotopus*	322f, 324k, **326**
insularis	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
intersectus	Staeger	*Chironomus*	*Cricotopus*	**323**, 324k
interseptus	Walker	*Chironomus*	*Pentaneura*	293
intextus	Walker	*Chironomus*	*Chironomus (Endochironomus)*	**394**
intricatus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Phaenopelma)*	**419**
intricatus	Goetghebuer misid. Edw.	*Tanytarsus*	*Tanytarsus*	411
intrudens	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
involitans	Walker	*Chironomus*	*Chironomus (Endochironomus)*	394
irretitus	Walker	*Chironomus*	*Chironomus (Chironomus)*	389
irritus	Walker	*Chironomus*	*Metriocnemus*	314f, **315**
isemerinus	Chevrel	*Scopelodromus*	*Thalassomyia*	371
junci	Meigen	*Chironomus*	*Tanytarsus (Tanytarsus)*	**415**
kervillei	Kieffer	*Orthocladius*	*Cricotopus*	325
kervillei	Kieffer	*Orthocladius*	*Orthocladius*	335
koenigi	Kieffer	*Chironomus*	*Tanytarsus (Lauterbornia)*	374, 377, 418
laccophilus	Edwards	*Tanytarsus*	*Tanytarsus (Lundstroemia)*	**409**, 412k
laccophilus	Kieffer	*Trichocladius*	*Cricotopus*	322
lacteipennis	Zetterstedt	*Tanypus*	*Diamesa*	**307**
lacteolus	Goetghebuer	*Metriocnemus*	*Metriocnemus*	312

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lactescens	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**416**, 417f
lacustris	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	**368**
lacustris	Haliday	*Chironomus*	*Chironomus (Chironomus)*	390, 391
lacustris	Kieffer	*Cricotopus*	*Cricotopus*	323
lacuum	Edwards	*Cricotopus*	*Cricotopus*	322f, **324**, 324k
laetipes	Zetterstedt	*Chironomus*	*Tanytarsus (Tanytarsus)*	407, **410**, 416
laetus	Meigen	*Chironomus*	*Chironomus (Polypedilum)*	401k, **402**
laetus	Meigen sensu Goet.	*Tanypus*	*Pentaneura*	290
laminatus	Kieffer	*Cladopelma*	*Chironomus (Chironomus)*	381f, 387
lanceolatus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
latidens	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	385
latitarsis	Goetghebuer	*Psilodiamesa*	*Diamesa*	**305**, 306f
lativalva	Kieffer	*Chironomus*	*Chironomus*	375
latus	Staeger	*Chironomus*	*Chironomus*	376
lentiginosa	Fries	*Tanypus*	*Pentaneura*	289, **290**
lentiginosus	Fries misid. Zetterstedt	*Tanypus*	*Pentaneura*	290
lentulus	Walker	*Chironomus*	*Chironomus (Microtendipes)*	399
lenzi	Kieffer	*Orthocladius*	*Spaniotoma (Orthocladius)*	345
lepidus	Meigen	*Chironomus*	*Chironomus (Endochironomus)*	**394**
lestagei	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**415**
lestralis	Edwards	*Trichocladius*	*Cricotopus*	325
leucolabis	Kieffer	*Chironomus*	*Pentapedilum (Phaenopsectra)*	375
leucopogon	Meigen	*Chironomus*	*Spaniotoma (Smittia)*	360k, **361**
leucopus	Meigen	*Chironomus*	*Chironomus (Polypedilum)*	401k, **403**
lhoneuxi	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	388
liebeli	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	383
limbatella	Holmgren	*Chironomus*	*Spaniotoma (Psectrocladius)*	332k, **334**
lividus	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	397
lobata	Edwards	*Corynoneura*	*Corynoneura (Corynoneura)*	**368**
lobatifrons	Kieffer sensu Goet.	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	411
lobatus	Kieffer	*Trichocladius*	*Spaniotoma (Trichocladius)*	328
lobiger	Kieffer	*Limnochironomus*	*Chironomus (Chironomus)*	381f, **386**
longicalcar	Kieffer	*Dactylocladius*	*Dactylocladius*	350
longicalcar	Kieffer	*Psectrotanypus*	*Psectrotanypus*	297
longicalcar	Kieffer	*Psectrotanypus*	*Anatopynia*	299
longicauda	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	390
longicollis	Kieffer	*Metriocnemus*	*Metriocnemus*	313
longiforceps	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	**388**
longifurca	Kieffer	*Brillia*	*Brillia*	**310**, 314f, 428f
longimanus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
longimanus	Staeger	*Tanypus*	*Pentaneura*	292, **293**
longipalpis	Goetghebuer	*Tanypus*	*Pentaneura*	**294**
longipalpis	Kieffer	*Cricotopus*	*Cricotopus*	319
longipennis	Goetghebuer	*Psectrotanypus*	*Pentaneura*	293
longipennis	Holmgren	*Smittia*	*Metriocnemus*	357
longipes	Staeger	*Chironomus*	*Chironomus (Chironomus)*	**385**
longiseta	Kieffer	*Calopsectra*	*Pentapedilum (Pentapedilum)*	376
longiseta	Thienemann (& Kieffer)	*Camptocladius*	*Spaniotoma (Limnophyes)*	355
longistylus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
longistylus	Kieffer	*Camptocladius*	*Pachycladius*	430
longitarsus	Goetghebuer	*Metriocnemus*	*Metriocnemus*	**311**, 311k
lucens	Zetterstedt	*Chironomus*	*Spaniotoma (Trichocladius)*	328
lucida	Staeger	*Chironomus*	*Spaniotoma (Trichocladius)*	325, **328**, 332, 360
lugens	Kieffer	*Procladius*	*Procladius (Psilotanypus)*	**302**
lugens	Kieffer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**411**, 414
lugubris	Kieffer	*Microtendipes*	*Chironomus (Microtendipes)*	397
lugubris	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	**383**, 383k
lutea	Edwards	*Corynoneura*	*Corynoneura (Thienemanniella)*	**366**, 429f
luteolus	Goetghebuer	*Psectrocladius*	*Spaniotoma (Psectrocladius)*	334
lygropis	Edwards	*Cricotopus*	*Cricotopus*	324k, **325**
maculata	De Geer	*Tipula*	*Tipula*	299
maculipennis	Meigen	*Chironomus*	*Chironomus (Stictochironomus)*	**400**
maculipennis	Zetterstedt	*Tanypus*	*Pentaneura*	289, **290**
mahensis	Kieffer	*Metriocnemus*	*Metriocnemus*	316

majuscula	Edwards	*Corynoneura*	*Corynoneura (Thienemanniella)*	**366**
malacus	Walker	*Chironomus*	*Chironomus (Chironomus)*	388
mancunianus	Edwards	*Chironomus*	*Chironomus (Glyptotendipes)*	391k, **393**, 398f
mancus	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	**418**
marcidus	Walker	*Chironomus*	*Metriocnemus*	**313**
marginatus	Macquart	*Chironomus*	*Cricotopus*	319
marinus	Haliday	*Clunio*	*Clunio*	**371**, 429f
maritimus	Kieffer	*Endochrionomus*	*Chironomus (Endochironomus)*	394
marmorata	van der Wulp	*Chironomus*	*Chironomus (Lauterborniella)*	380, **405**
martinii	Thienemann	*Metriocnemus*	*Metriocnemus*	281, 311k, **312**
maxi	Goetghebuer	*Tanypus*	*Pentaneura*	293
melaleuca	Meigen	*Chironomus*	*Spaniotoma (Orthocladius)*	**337**, 337k
melanops	Meigen	*Tanypus*	*Pentaneura*	292, **293**, 294
melanurus	Meigen	*Tanypus*	*Pentaneura*	292, **293**
migrator	Kieffer	*Psectrotanypus*	*Psectrotanypus*	293
miki	Kieffer	*Chironomus*	*Chironomus (Endochironomus)*	394
minima	Meigen	*Chironomus*	*Spaniotoma (Limnophyes)*	**355**, 355k, 368f
minimus	Meigen	*Chironomus*	*Camptocladius*	357
minor	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 347k, **348**, 368f, 428f
minor	Edwards	*Tanytarsus*	*Tanytarsus (Stempellina)*	**420**
minusculus	Edwards	*Tanytarsus*	*Tanytarsus (Stempellina)*	417f
minusculus	Walker	*Chironomus*	*Chironomus*	280
minuta	Winnertz	*Corynoneura*	*Corynoneura (Corynoneura)*	367, 368
miriforceps	Kieffer	*Limnochironomus*	*Chironomus (Chironomus)*	386
modesta	Meigen	*Chironomus*	*Brillia*	**310**
modicellus	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	418
moerens	Walker	*Chironomus*	*Chironomus (Chironomus)*	383
monilis	Linnaeus	*Tipula*	*Pentaneura*	**289**, 290
monilis	Linnaeus	*Tipula*	*Tipula*	299, 405
monochromus	van der Wulp	*Chironomus*	*Chironomus (Chironomus)*	**389**
monotomus	Kieffer	*Cryptochironomus*	*Chironomus (Chironomus)*	390
monticola	Edwards	*Tanytarsus*	*Tanytarsus (Micropsectra)*	**408**, 412k
montium	Edwards	*Diamesa*	*Diamesa*	306f, **307**, 428f
montivagus	Goetghebuer	*Trichocladius*	*Cricotopus*	321
morio	Zetterstedt	*Tanypus*	*Protanypus*	**303**
morosa	Edwards	*Corynoneura*	*Corynoneura (Thienemanniella)*	365, **367**
morulus	Walker	*Chironomus*	*Chironomus*	280
motitator	Linnaeus sensu Meigen	*Tipula*	*Cricotopus*	320k, **323**
motitatrix	Linnaeus	*Tipula*	*Tipula*	405
moturus	Walker	*Chironomus*	*Chironomus*	280
mucronatus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	389
murinus	Goetghebuer	*Tanypus*	*Pentaneura*	293
muscicola	Kieffer	*Orthocladius*	*Spaniotoma (Orthocladius)*	340, 342
muscicola	Kieffer	*Pelopia*	*Pentaneura*	292
nactus	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
nanulus	van der Wulp	*Orthocladius*	*Orthocladius*	351
nebulosa	Meigen	*Tanypus*	*Anatopynia*	**298**
nemoralis	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	384
nemorosus	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**416**, 417f
nemorum	Goetghebuer	*Tanypus*	*Pentaneura*	293, **294**
nervosus	Meigen	*Tanypus*	*Clinotanypus*	**302**
nervosus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	381f, **386**
nexilis	Walker	*Chironomus*	*Diamesa*	305
nidorum	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 340k, **342**
niger	Meigen	*Chironomus*	*Chironomus (Chironomus)*	383
nigerrima	Goetghebuer	*Trissocladius*	*Spaniotoma (Trissocladius)*	346
nigratus	Walker	*Chironomus*	*Spaniotoma (Smittia)*	360
nigricans	Goetghebuer	*Tanypus*	*Pentaneura*	293, 294
nigrimanus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	390
nigrimanus	Staeger misid. auct.	*Chironomus*	*Chironomus (Chironomus)*	386
nigritulus	Goetghebuer	*Zavrelia*	*Tanytarsus (Zavrelia)*	**419**
nigriventris	van der Wulp	*Chironomus*	*Cricotopus*	326
nigrofasciatus	Goetghebuer	*Tanytarsus*	*Tanytarsus*	407, 411
nigronitans (var. or. spellg.)	Edwards	*Chironomus*	*Chironomus (Chironomus)*	380
nigronitens	Edwards	*Chironomus*	*Chironomus (Chironomus)*	381f, **390**
nigropunctata	Staeger	*Tanypus*	*Pentaneura*	292, 293, **294**
nigrovittatus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	418

nitidicollis	Goetghebuer	*Camptocladius*	*Spaniotoma (Orthocladius)*	340, 340k, **343**
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nitidicollis	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	328
nitidus	Kieffer	*Cardiocladius*	*Cardiocladius*	317
nitidus	Malloch	*Trichocladius*	*Trichocladius*	331
nitidus	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	396, 397k, **400**
niveipennis	Fabricius	*Chironomus*	*Chironomus (Chironomus)*	383, 393
northumbrica	Edwards	*Pentaneura*	*Pentaneura*	290, **291**, 428f
notabilis	Macquart	*Chironomus*	*Chironomus (Endochironomus)*	394
notabilis	Skuse	*Isoplastus*	*Isoplastus*	299
notata	Meigen	*Tanypus*	*Anatopynia*	**298**
notata	Staeger	*Diamesa*	*Prodiamesa*	307
notatus	Meigen	*Chironomus*	*Chironomus (Chironomus)*	**386**
notescens	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
novatus	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	337
nubeculosus	Meigen	*Chironomus*	*Chironomus (Polypedilum)*	401, 401k, **402**, 402k, 403, 404
nubens	Edwards	*Pentapedilum*	*Pentapedilum (Pentapedilum)*	**376**, 429f
nubila	Meigen	*Tanypus*	*Pentaneura*	290, **291**, 293
nubilipennis	Meigen	*Chironomus*	*Chironomus (Polypedilum)*	402
nubilus	Meigen misid. Verrall	*Chironomus*	*Chironomus (Polypedilum)*	402
nudipennis	Goetghebuer	*Camptocladius*	*Spaniotoma (Smittia)*	360k, **362**
nudipes	Goetghebuer	*Trichocladius*	*Spaniotoma (Trichocladius)*	329
nudipes	Kieffer	*Tanypus*	*Pentaneura*	291
nudipes	Zetterstedt	*Tanypus*	*Prodiamesa*	307
nudisquama	Edwards	*Chironomus*	*Chironomus (Paratendipes)*	**396**, 398f
nugax	Walker	*Chironomus*	*Anatopynia*	**298**
nympha	Kieffer	*Polypedilum*	*Chironomus (Polypedilum)*	404
obditus	Walker	*Chironomus*	*Prodiamesa*	307
objectans	Walker	*Chironomus*	*Chironomus (Chironomus)*	386
oblidens	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	335, 339f, 344k, **345**
obnixus	Walker	*Chironomus*	*Cricotopus*	322f, 324k, **326**
obreptans	Walker	*Chironomus*	*Chironomus (Chironomus)*	**388**
obscurimanus	Zetterstedt	*Chironomus*	*Cricotopus*	319
obscuripes	Meigen	*Chironomus*	*Chironomus (Glyptotendipes)*	392
obsepiens	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	328
obsistens	Walker	*Chironomus*	*Metriocnemus*	311
obtexens	Walker	*Chironomus*	*Cricotopus*	322f, 324k, **326**
obtusidens	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
obvertens	Walker	*Chironomus*	*Chironomus (Microtendipes)*	399
obvia	Walker	*Chironomus*	*Spaniotoma (Psectrocladius)*	**332**, 332k
occipiens	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
occultus	Kieffer	*Stenochironomus*	*Chironomus (Stenochironomus)*	395
ochraceus	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	340
offectus	Walker	*Chironomus*	*Tanytarsus (Micropsectra)*	407
olivacea	Meigen	*Chironomus*	*Prodiamesa*	**307**, 428f
olivaceus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	418
opacus	Meigen	*Chironomus*	*Spaniotoma (Smittia)*	360
oppertus	Walker	*Chironomus*	*Spaniotoma (Psectrocladius)*	332
oppetitus	Walker	*Chironomus*	*Chironomus (Stictochironomus)*	401
opplens	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	329
ornata	Meigen	*Tanypus*	*Pentaneura*	289, **290**
ornaticollis	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, **359**
ornatus	Meigen	*Chironomus*	*Cricotopus*	**319**, 319k
orophilus	Edwards	*Chironomus*	*Chironomus (Lauterborniella)*	398f, **405**, 429f
oscillator	Meigen	*Chironomus*	*Cricotopus*	319
paganicus	Walker	*Chironomus*	*Metriocnemus*	311
paganus	Meigen	*Chironomus*	*Chironomus (Chironomus)*	**385**, 391
pallens	Meigen	*Chironomus*	*Chironomus (Glyptotendipes)*	392
pallens	Meigen misid. Goet.	*Chironomus*	*Chironomus (Glyptotendipes)*	392
pallidicornis	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	**415**
pallidipes	Edwards	*Cricotopus*	*Cricotopus*	322f, **324**, 324k
pallidivittatus	Malloch	*Chironomus*	*Chironomus (Chironomus)*	381f, **382**
pallidula	Meigen	*Tanypus*	*Pentaneura*	290, **292**
paludicola	Skuse	*Procladius*	*Procladius*	300

parilis	Walker	*Chironomus*	*Chironomus (Chironomus)*	**389**
paripes	Edwards	*Chironomus*	*Chironomus (Glyptotendipes)*	391k, **392**, 429f
patens	Walker	*Chironomus*	*Chironomus (Microtendipes)*	400
patibilis	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	328
pectinata	Deby	*Psamathiomya*	*Psammathiomyia*	370f, **371**, 429f
pectoralis	Kieffer	*Einfeldia*	*Einfeldia*	385
pedellus	De Geer	*Tipula*	*Chironomus (Microtendipes)*	281, 374f, 379f, **397**, 397k, 398f
pedestris	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	371, 400, 401
pedestris	Wollaston nec Meigen	*Chironomus*	*Thalassomyia*	371
penerasus	Edwards	*Metriocnemus*	*Metriocnemus*	314f, **315**, 428f
penicillatus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Lundstroemia)*	374f, **409**
pentachaetus	Kieffer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	337
pentaplastus	Kieffer	*Camptocladius*	*Spaniotoma (Limnophyes)*	356
pentastictus	Kieffer	*Procladius*	*Procladius*	300
peregrinus	Edwards	*Podonomus*	*Podonomus*	280, **296**, 306f, 428f
perennis	Meigen	*Chironomus*	*Spaniotoma (Orthocladius)*	331, 336, **337**, 337k, 339f
perexilis	Walker	*Chironomus*	*Spaniotoma (Eukiefferiella)*	351
pergens	Walker	*Chironomus*	*Diamesa*	304
perlevis	Walker	*Chironomus*	*Tanytarsus (Tanytarsus)*	410
permacer	Walker	*Chironomus*	*Diamesa*	**305**, 306f
perniger	Zetterstedt	*Chironomus*	*Spaniotoma (Trichocladius)*	329
perpessus	Walker	*Chironomus*	*Prodiamesa*	307
perpulcher	Mitchell	*Chironomus*	*Chironomus*	405
perreptans	Walker	*Chironomus*	*Chironomus (Microtendipes)*	399
persidens	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	345
pertenuis	Walker	*Chironomus*	*Spaniotoma (Orthocladius)*	340
pertractus	Walker	*Chironomus*	*Diamesa*	304
pervulsus	Walker	*Chironomus*	*Spaniotoma (Trichocladius)*	328
petrensis	Kieffer	*Brillia*	*Brillia*	310
phatta	Egger	*Tanypus*	*Pentaneura*	288, **289**
photophilus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, **413**
picipes	Meigen	*Chironomus*	*Metriocnemus*	**311**, 311k
pictimanus	Kieffer	*Trichocladius*	*Cricotopus*	320
pictipennis	Skuse	*Procladius*	*Procladius*	300
pictipes	Zetterstedt	*Chironomus*	*Chironomus (Microtendipes)*	400
pictulus	Meigen	*Chironomus*	*Chironomus (Stictochironomus)*	379f, **400**
piger	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	338, 339f
pigra	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	**337**, 337k
pilicornis	Fabricius	*Tipula*	*Chironomus (Chironomus)*	298, 377, **383**, 383k, 393
pilitarsis	Zetterstedt	*Chironomus*	*Cricotopus*	**319**, 319k
pilosa	Kieffer	*Syndiamesa*	*Syndiamesa*	**303**, 428f
platypus	Edwards	*Spaniotoma*	*Spaniotoma (Psectrocladius)*	332k, **333**, 428f
plebeius	Meigen	*Chironomus*	*Chironomus (Paratendipes)*	396
ploenensis	Kieffer	*Prorietha*	*Pseudochironomus*	377
plumipes	Fries	*Tanypus*	*Tanypus*	297
plumipes	Fries misid. auct.	*Tanypus*	*Anatopynia*	298
plumosus	Linnaeus	*Tipula*	*Chironomus (Chironomus)*	281, 374f, 382, 383k, **384**, 392
polychaetus	Kieffer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	337
posticalis	Lundbeck	*Tanypus*	*Trichotanypus*	296, 300
praecox	Kieffer	*Diamesa*	*Prodiamesa*	307
praecox	Meigen	*Chironomus*	*Tanytarsus (Lundstroemia)*	374f, **408**
prasinatus	Staeger	*Chironomus*	*Pseudochironomus*	374f, **377**, 429f
prasinus	Meigen	*Chironomus*	*Chironomus (Chironomus)*	384
praticola	Kieffer	*Tanytarsus*	*Tanytarsus*	408
pratorum	Goetghebuer	*Camptocladius*	*Spaniotoma (Smittia)*	360k, **361**
profundorum	Kieffer	*Sergentia*	*Pentapedilum (Sergentia)*	374, 375
prolixitarsis	Lundström	*Chironomus*	*Chironomus (Polypedilum)*	398f, 402k, **403**
prolongata	Kieffer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355k, **356**
prolongata	Kieffer	*Diamesa*	*Diamesa*	**305**, 306f
proximus	Kieffer	*Trichocladius*	*Spaniotoma (Trichocladius)*	329
pseudopedellus	Goetghebuer	*Chironomus*	*Chironomus (Microtendipes)*	399
pseudornatus	Goetghebuer	*Tanypus*	*Pentaneura*	291
pseudosimplex	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**390**
pseudotenellulus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Lundstroemia)*	409
pseudotener	Goetghebuer	*Cryptochironomus*	*Chironomus (Chironomus)*	**389**

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psilopterus	Kieffer	*Orthocladius*	*Spaniotoma (Psectrocladius)*	331, 334
psittacinus	Meigen	*Chironomus*	*Chironomus (Chironomus)*	**388**
pulchellus	Meigen	*Chironomus*	*Cricotopus*	319
pulchripes	Verrall	*Cricotopus*	*Cricotopus*	320k, **321**
pullus	Zetterstedt sensu Goet.	*Chironomus*	*Chironomus (Polypedilum)*	403
pulsus	Walker	*Chironomus*	*Chironomus (Chironomus)*	381f, **386**
pumilio	Holmgren	*Chironomus*	*Spaniotoma (Limnophyes)*	355k, **356**
punctata	Fabricius	*Chironomus*	*Anatopynia*	291, **298**
punctatellus	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	356
punctipennis	Meigen	*Tanypus*	*Tanypus*	284, **299**
punctipes	Wiedemann	*Chironomus*	*Pentapedilum (Phaenopsectra)*	**375**
punctipes	Wiedemann	*Chironomus*	*Chironomus*	406, 411
punctipes	Wiedemann misid. Goet.	*Chironomus*	*Tanytarsus (Tanytarsus)*	410
punctipes	Wiedemann sensu Coqu.	*Chironomus*	*Tanytarsus*	375
punctulatus	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355
pusillus	Eaton	*Limnophyes*	*Spaniotoma (Limnophyes)*	280, **355**, 355k
pusillus	Linnaeus sensu Walker	*Tipula*	*Chironomus*	418
pusillus	Meigen	*Tanypus*	*Pentaneura*	295
pygmaeus	van der Wulp	*Tanypus*	*Pentaneura*	294
quadriguttatus	Kieffer	*Polypedilum*	*Chironomus (Polypedilum)*	401k, 402
quadrimaculatus	Meigen sensu Goet.	*Chironomus*	*Chironomus*	402
quatuorpunctata	Kieffer	*Tanypus*	*Pentaneura*	292
recta	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, **362**, 368f, 428f
rectinervis	Kieffer	*Tanypus*	*Anatopynia*	298
recurvatus	Goetghebuer	*Micropsectra*	*Tanytarsus (Micropsectra)*	**408**
reflexens	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**411**, 412k
remotissimus	Kieffer	*Nilotanypus*	*Nilotanypus*	294
retusus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	**408**
rhithrogenae	Zavrel	*Phaenocladius*	*Symbiocladius*	309
rhyacobia	Kieffer	*Orthocladius*	*Spaniotoma (Orthocladius)*	**345**, 345k
richardsoni	Malloch	*Pseudochironomus*	*Pseudochironomus*	377
richmondensis	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	412k, **413**
riparius	Meigen sensu Goet.	*Chironomus*	*Chironomus (Chironomus)*	383k, **384**
rivinus	Kieffer	*Orthocladius*	*Spaniotoma (Orthocladius)*	345
rosenschoeldi	Zetterstedt	*Chironomus*	*Chironomus (Stictochironomus)*	**401**
rostratus	Kieffer	*Cryptochironomus*	*Chironomus (Chironomus)*	**390**
rousseaui	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	385
rubicunda	Meigen	*Chironomus*	*Spaniotoma (Orthocladius)*	318, 339f, 345k, **345**, 347
rufipes	Linnaeus	*Tipula*	*Chironomus (Endochironomus)*	379, 380, 393, **394**
rufiventris	Meigen	*Chironomus*	*Spaniotoma (Trichocladius)*	**329**
rufovittatus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	418
rufovittatus	Staeger sensu Walker	*Chironomus*	*Chironomus*	418
rufovittatus	van der Wulp	*Tanypus*	*Tanypus*	300
rufovittatus	van der Wulp	*Tanypus*	*Procladius (Psilotanypus)*	**302**
rufus	Meigen	*Tanypus*	*Pentaneura*	292
rydalensis	Edwards	*Chironomus*	*Chironomus (Polypedilum)*	398f, 402k, **404**
sagittalis	Kieffer	*Tanypus*	*Procladius (Procladius)*	**301**
sagittalis	Kieffer	*Trichocladius*	*Spaniotoma (Trichocladius)*	328
salinarius	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	384
saltuum	Goetghebuer	*Tanytarsus*	*Tanytarsus (Stempellina)*	417f, 419, 420, 421
samboni	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**416**, 417f
scalaenus	Schrank	*Tipula*	*Chironomus (Polypedilum)*	401k, **402**
schineri	Strobl	*Tanypus*	*Pentaneura*	293, **294**
scotica	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	**363**
scutellata	Meigen	*Chironomus*	*Prodiamesa*	307
scutellata	Winnertz	*Corynoneura*	*Corynoneura (Corynoneura)*	280, 352f, 368f, **369**
semivillosus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	415
semiviridis	Goetghebuer	*Tanytarsus*	*Pentapedilum (Phaenopsectra)*	375, 411
separatus	Walker	*Chironomus*	*Chironomus (Microtendipes)*	399
setiger	Kieffer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	337
severini	Goetghebuer	*Chironomus*	*Chironomus (Glyptotendipes)*	393
sexannulatus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	408
sibirica	Lundström	*Arctomyia*	*Arctomyia*	357
signatus	van der Wulp	*Chironomus*	*Tanytarsus (Tanytarsus)*	375, 406, **415**

sima	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	340k, **342**
similis	Goetghebuer	*Cricotopus*	*Cricotopus*	320k, **321**, 322
sinuosus	Kieffer	*Trichocladius*	*Spaniotoma (Smittia)*	360
skirwithensis	Edwards	*Spaniotoma*	*Spaniotoma (Trichocladius)*	**329**, 329f
sordens	van der Wulp	*Tanytarsus*	*Pentapedilum (Pentapedilum)*	310, 374f, **376**
sordidella	Zetterstedt	*Chironomus*	*Spaniotoma (Psectrocladius)*	327, 332k, **334**, 335
sordidellus	Zetterstedt misid. Kieffer	*Chironomus*	*Orthocladius*	335
sordidus	Zetterstedt	*Tanypus*	*Pentaneura*	293
speciosus	Goetghebuer	*Cricotopus*	*Cricotopus*	319k, **320**
sphagnicola	Kieffer	*Isoplastus*	*Prosisoplastus*	296
spitzbergensis	Kieffer	*Psilodiamesa*	*Psilodiamesa*	305
stercorarius	De Geer	*Tipula*	*Spaniotoma (Smittia)*	335, 343, **362**
stercorarius	De Geer	*Tipula*	*Camptocladius*	357
stercorarius	De Geer misid. v.d.Wulp	*Tipula*	*Orthocladius*	335
sticticus	Fabricius	*Tipula*	*Chironomus (Stictochironomus)*	401
stigmaticus	Philippi	*Podonomus*	*Podonomus*	295, 297
stratiotale	Kieffer	*Pentapedilum*	*Pentapedilum (Pentapedilum)*	376
stratiotis	Kieffer	*Psectrotanypus*	*Spaniotoma (Psectrocladius)*	332k, **334**
stylatus	Kieffer	*Metriocnemus*	*Metriocnemus*	**315**
subaequalis	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	415
subaprilinus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	382
subcoeruleus	Edwards	*Cricotopus*	*Cricotopus*	**323**
subincurvatus	Goetghebuer	*Tanypus*	*Pentaneura*	290
subnitens	Goetghebuer	*Micropsectra*	*Tanytarsus (Micropsectra)*	408
subnudus	Edwards	*Metriocnemus*	*Metriocnemus*	314f, **316**, 428f
subtenuis	Kieffer	*Tanypus*	*Anatopynia*	298
subvernalis	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 340k, **341**
subviridis	Goetghebuer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	**407**
suecica	Kieffer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	**337**, 337k, 339f
suecicus	Kieffer	*Trichocladius*	*Cricotopus*	323
supplicans	Meigen	*Chironomus*	*Chironomus (Chironomus)*	**388**
sylvaticus	van der Wulp sensu Goet.	*Chironomus*	*Tanytarsus (Tanytarsus)*	**418**
sylvestris	Fabricius	*Tipula*	*Cricotopus*	318, **319**, 319k
sylvestris	Goetghebuer	*Brillia*	*Brillia*	310
tarsalis	Walker	*Chironomus*	*Chironomus (Microtendipes)*	**397**, 397k
tendens	Fabricius	*Tipula*	*Chironomus (Endochironomus)*	374f, **394**
tendipediforme	Goetghebuer	*Tanytarsus*	*Pentapedilum (Kiefferulus)*	**375**
tenellulus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	374f, 407, **411**
tenellus	Zetterstedt	*Chironomus*	*Pentapedilum (Phaenopsectra)*	375
tener	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	**390**
tentans	Fabricius	*Chironomus*	*Chironomus (Chironomus)*	381f, **382**
tenuis	Meigen	*Chironomus*	*Tanytarsus (Tanytarsus)*	409
tenuis	Meigen sensu Goet.	*Chironomus*	*Tanytarsus (Tanytarsus)*	**410**
terminalis	Kieffer	*Syntanytarsus*	*Tanytarsus (Micropsectra)*	407
tetratomus	Kieffer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
thalassophila	Goetghebuer	*Camptocladius*	*Spaniotoma (Smittia)*	360k, **362**, 371
thienemanni	Kieffer	*Orthocladius*	*Spaniotoma (Orthocladius)*	339f, 344k, **345**
thummi	Kieffer	*Tendipes*	*Chironomus (Chironomus)*	384
tibialis	Meigen	*Chironomus*	*Cricotopus*	320k, **323**
tonnoiri	Goetghebuer	*Tanytarsus*	*Tanytarsus (Micropsectra)*	407
tonsa	Haliday	*Diamesa*	*Diamesa*	304
tremulus	Linnaeus	*Tipula*	*Cricotopus*	**320**, 320k
triangulifer	Kieffer	*Metriocnemus*	*Metriocnemus*	313, 313
triannulatus	Goetghebuer	*Tanypus*	*Pentaneura*	292
triannulatus	Macquart	*Chironomus*	*Cricotopus*	320k, **323**
triannulatus	Macquart misid. Goet.	*Chironomus*	*Cricotopus*	321, 323
trichopus	Walker	*Chironomus*	*Chironomus (Endochironomus)*	394
tricinctus	Meigen	*Chironomus*	*Cricotopus*	**319**, 319k
tricolor	Kieffer	*Cryptochironomus*	*Chironomus (Chironomus)*	390
trifascia	Edwards	*Cricotopus*	*Cricotopus*	320k, **322**, 322f
trifasciatus	Panzer	*Chironomus*	*Cricotopus*	**319**, 319k
trifascipennis	Zetterstedt	*Tanypus*	*Psectrotanypus*	297
trifascipennis	Zetterstedt	*Tanypus*	*Anatopynia*	**299**
trifida	Kieffer	*Orthocladius*	*Spaniotoma*	340
trilobata	Edwards	*Spaniotoma*	*Spaniotoma (Smittia)*	352f, 363k, **364**, 368f, 428f
trinotatus	Kieffer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	337
tripilata	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 347k, **348**, 368f, 428f

Species-group name	Authorship	Genus in original combination	Genus-group name(s) stated or implied by Edwards	Page numbers
tristellus	Edwards	*Metriocnemus*	*Metriocnemus*	311k, **312**, 314f, 428f
tristis	Kieffer	*Gripekovenia*	*Gripekovenia*	312
tristis	Wiedemann	*Chironomus*	*Chironomus (Chironomus)*	383
tritomus	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	381f, **386**
tritum	Walker	*Chironomus*	*Pentapedilum (Pentapedilum)*	**376**
truncatus	Kieffer	*Limnochironomus*	*Chironomus (Chironomus)*	386
truncorum	Goetghebuer	*Camptocladius*	*Spaniotoma (Limnophyes)*	355k, **357**
tuberculata	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 340k, **341**
turfacea	Kieffer	*Psectrocladius*	*Spaniotoma (Psectrocladius)*	332k, **334**, 428f
typhon	Haliday	*Diamesa*	*Diamesa*	307
uncinatum	Goetghebuer	*Tanytarsus*	*Pentapedilum (Pentapedilum)*	**376**
unifasciatus	Macquart	*Chironomus*	*Cricotopus*	321
unifascipennis	Zetterstedt	*Tanypus*	*Pentaneura*	291
vagans	Meigen	*Chironomus*	*Chironomus (Microtendipes)*	400
vanderwulpi	Edwards	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	417f, **418**, 429f
variabilis	Staeger	*Chironomus*	*Cricotopus*	325
varians	Staeger	*Chironomus*	*Cricotopus*	326
varius	Fabricius	*Tipula*	*Psectrotanypus*	297
varius	Fabricius	*Tipula*	*Anatopynia*	**298**
varus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**389**
venustus	Staeger	*Chironomus*	*Chironomus (Chironomus)*	384
vernalis	Goetghebuer	*Dactylocladius*	*Spaniotoma (Orthocladius)*	340k, **341**
verralli	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	339f, 347k, **348**
verralli	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**415**, 417f
verruculosus	Goetghebuer	*Tanytarsus*	*Tanytarsus (Tanytarsus)*	**414**
viator	Kieffer	*Psectrotanypus*	*Pentaneura*	292, **293**
vilipennis	Kieffer	*Protenthes*	*Tanypus*	**299**
virescens	Meigen	*Chironomus*	*Chironomus (Chironomus)*	381f
virescens	Meigen sensu Goet.	*Chironomus*	*Chironomus (Chironomus)*	**391**
viridanus	Ruthe sensu Goet.	*Chironomus*	*Chironomus (Chironomus)*	388
viridicollis	van der Wulp	*Chironomus*	*Chironomus (Chironomus)*	384
viridis	Macquart sensu Goet.	*Chironomus*	*Chironomus (Glyptotendipes)*	380, 391k, **393**
viridulus	Linnaeus sensu Goet.	*Tipula*	*Chironomus (Chironomus)*	**390**, 391
virtunensis	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	390
vitellinus	Kieffer	*Camptocladius*	*Camptocladius*	336
vitiosus	Goetghebuer	*Chironomus*	*Chironomus (Chironomus)*	**388**
vitripennis	Meigen	*Chironomus*	*Trichocladius*	318
vitripennis	Meigen	*Chironomus*	*Cricotopus*	324k, **325**, 335
vittata	Edwards	*Corynoneura*	*Corynoneura (Thienemanniella)*	**366**
vulneratus	Zetterstedt	*Chironomus*	*Chironomus (Chironomus)*	**390**
waltli (incorr. subs. spellg.)	Meigen	*Diamesa*	*Diamesa*	**304**, 306f
woodi	Edwards	*Pentaneura*	*Pentaneura*	289, **292**
xanthogyne	Edwards	*Spaniotoma*	*Spaniotoma (Orthocladius)*	340, 340k, **342**, 428f
xenolabis	Kieffer	*Chironomus*	*Chironomus (Chironomus)*	**385**
zavreli	Kieffer	*Peritaphreuusa*	*Pentaneura*	289
zonarius	Walker	*Chironomus*	*Chironomus (Microtendipes)*	399

References

EDWARDS, F. W. (1929): British non-biting midges (Diptera, Chironomidae). – *Trans. Ent. Soc. London* ***77****:* 279-430.

GOETGHEBUER, M. (1940-1950): Tendipedidae (Chironomidae). f) Subfamilie Orthocladiinae. A. Die Imagines. Pp. 1-208, 24 pls. in: LINDNER, E. (ed.), Die Fliegen der palaearktischen Region, vol. 3, part 13g. – *Stuttgart, Schweizerbart*.

GOETGHEBUER, M. & LENZ, F. (1937-1962): Tendipedidae (Chironomidae). b) Subfamilie Tendipedinae (Chironominae). Pp. 1-260, 23 pls. in: LINDNER, E. (ed.), Die Fliegen der palaearktischen Region, vol. 3, part 13c. – *Stuttgart, Schweizerbart*.

SPIES, M. (2001): When is a nomen really dubium? Toward real stability in chironomid taxonomy through better symbiosis with the classic collections. – *Chironomus* ***14***: 7-10.

SPIES, M. & SÆTHER, O. A. (2004): Notes and recommendations on taxonomy and nomenclature of Chironomidae (Diptera). – *Zootaxa* ***752****:* 1-90.

CHIRONOMID FAUNA OF CENTRAL YAKUTIAN LAKES (NORTHERN RUSSIA) IN PALAEOENVIRONMENTAL INVESTIGATION

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Palaeoenvironmental studies, using organisms as proxies for past climate change, can provide valuable insights on past climate variability, climate forcing mechanisms, and are an essential tool for predicting the possible course of future climate change (Alverson & Oldfield, 2000). Chironomid temperature inference models have been developed successfully in Western Europe and North America (Walker et al., 1997; Olander et al., 1999; Larocque et al., 2001; Brooks & Birks, 2001; unpubl.) and produce low error (0.7-1.1°C) temperature estimates (see review in Brooks, 2001, 2003). However, these models have limited application outside the regions in which they have been developed. Models developed in northwestern Europe do not cover a sufficiently long temperature gradient for use in Russia where the continental climate is more extreme and estimates for temperature optima and tolerances of cold and warm stenothermic taxa are not wide enough to reflect the true ecological range of these taxa.

There are very few examples of quantitative palaeoclimate studies in Siberia (e.g. Kumke et al., 2004). To date, quantitative reconstructions based on chironomid remains are made using a calibration data set developed for Sweden (e.g. Andreev et al., 2004, 2005). There is still a lack of calibration datasets for climatologically very sensitive areas such as arctic Russia.

The aim of our investigation is to study and to quantify the relationship between chironomid species assemblages and their environment in order to establish later on a calibration dataset for Northern Russia to provide the basis for quantitative paleoenvironmental reconstruction in this region.

The Republic of Yakutia is located in the north-eastern part of Russia (between appr. 57° and 75°N and between 110° and 160° E). There are ca. 700,000 lakes in Yakutia and 106,000 in the Central Yakutia. Most of the lakes have originated by thermokarst processes, are rather shallow (1-3 m) and characterised by specific thermal and chemical regimes (Ksenofontova et al., 2005). Climate is continental and dry with maximum temperatures in summer + 39 to 40° C and minimum temperatures down to -57° C in winter. The summer period is short, from the middle of June to the beginning of August. Annual precipitation is low at 250 to 300 mm per annum and smaller than the annual evaporation (350 to 400 mm).

At first instance 47 Central Yakutian lakes have been investigated, but only 40 are included in statisical analyses at the moment due to uncompleted chemical analyses for some of the lakes or a lack of chironomid capsules in the sediments. Chemical analyses included ca. 20 parameters and proved that the area of investigation was not affected by any sort of anthropogenic influence. All lakes are slightly alkaline, oxygen rich, have moderate transparency and some have high ionic concentration. As calculated, the lakes are situated within a temperature range of mean July temperature +16.52 to 18.12oC, of mean January To -37.88 to -43.46, and mean annual To -8.27 to -10.23oC. Selected mean temperature ranges, although rather narrow, reflect the real temperature variability in this region.

Chironomid sample preparation and slide mounting followed standard techniques described in Brooks and Birks (2000). Slides were mounted in Euparal. Between 47 and 292 head capsules were counted at 200–400·magnification from each lake. Chironomids were identified with reference to Wiederholm (1983), Oliver and Roussel (1983), Schmid (1993), Makarchenko and Makarchenko (1999), Rieradevall and Brooks (2001) and the national Chironomidae collection at The Natural History Museum, London, UK.

In total, 75 chironomid taxa were identified in the investigated lakes (Fig.1). Most abundant were Chironomus anthracinus-gr. (av.13.8%), Psectrocladius sordidellus (9.04%), Paratanytarsus penicillatus (7.25%), Cricotopus sp. E (6.61%), Dicrotendipes (6.16%), Tanytarsus lugens-gr. (5.46%).

Among the other taxa met in Central Yakutian lakes we would like to mention some, which have been found for the first time for Northern Russia or references for which in Northern Russia have not been found. Nanocladius B has a longer vmp than the taxa included in the Norwegian training set but looks the same as the one that has been previously found in Northern Ural region (Solovieva et al., 2005). Other rare taxa to be mentioned are Glyptotendipes severini, Pogonocladius, Propsilocerus, Psectrocladius barbimanus, Trissocladius. A complete list of Central Yakutian

chironomid taxa will be published soon on the Russian Chironomid homepage.

A comparison of the chironomid fauna identified from 40 Central Yakutian and 24 Northern Ural lakes (mean July ToC range 9.6 – 13.6oC (Nazarova, Brooks, unpubl.) has shown that both datasets have ca. 63 % of species similarity. Statistical tests using a passive canonical correspondence analysis with the Northern Ural lakes as passive samples and TJuly as the only constrained variable indicated that both datasets can be merged. The sample fit to the canonical axis of the Northern Ural lakes is significant and its median is only 5 % smaller than the sample fit of the Yakutian lakes. The squared residual distances of the Northern Ural lake samples are, with some exceptions, reasonably small. We can conclude that the chironomid fauna of the Northern Ural lakes fits well with the chironomid fauna of Yakutian lakes.

The diversity (N2 index) of Central Yakutian chironomid fauna slightly decreases with To rise and varies in different lakes from 8.1 to 20.46 averaging at 15.5.

Canonical correspondence analysis showed that the main environmental variables that drive the chironomid fauna are: water depth (9% explained variance), mean July air temperature (8% e.v.), water transparency (Secchi depth) (6% e.v.), water temperature (5% e.v.).

The investigation is progressing towards more northern and western territories of Yakutia including Verhojansk vicinity, Lena River Delta and some other distant parts of Siberia in order to extend the temperature gradient and by this to complete the chironomid inference temperature model for Northern Russia.

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References

ALVERSON, K., OLDFIELD, F. 2000. PAGES – Past Global Changes and their significance for the future: an introduction. Quaternary Science Reviews 19: 3-7

ANDREEV A., TARASOV P., SCHWAMBORN G., ILJASHUK B., ILJASHUK E., BOBROV A., KLIMANOV V., RACHOLD V., HUBBERTEN H.-W. 2004. Holocene palaeoenvironmental records from Nikolay Lake, Lena River Delta, Arctic Russia. Palaeogeography, Palaeoclimatology, Palaeoecology. 209: 197-217.

ANDREEV A., TARASOV P., SCHWAMBORN G., ILJASHUK B., ILJASHUK E., CREMER H., HERMICHEN W.-D., WISCHER F., HUBBERTEN H.-W. 2005. Holocene environmental history recorded in Lake Lyadhej-To sediments, Polar Ural. Palaeogeography, Palaeoclimatology, Palaeoecology. In press.

BROOKS S.J., BIRKS H.J.B. 2001. Chironomid-inferred air temperature from Lateglacial and Holocene sites in north-western Europe: progress and problems. Quaternary Science Revievs. 20: 1723-1741.

BROOKS S.J. 2003. Chironomids (Insecta: Diptera). Pp.328-341. In: McKay A., Battarbee R.W. & Birks H.J.B. (Eds.). Global change in Holocene. Arnold, London.

KSENOFONTOVA M., KUMKE T., PESTRZAKOVA L., HUBBERTEN H.-W. 2005. Limnological characteristics of lakes in Central Zakutia. Deutsche Geselschaft für Limnologie. Tagungsbericht 2004 (Potsdam). Berlin. 141-145.

KUMKE, T., KIENEL, U., WECKSTRÖM, J., KORHOLA, A., HUBBERTEN, H.-W. 2004. Inferred Palaeotemperatures from diatoms in lake sediments from Lake Lama, Central Siberia. Arctic, Antarctic, and Alpine Research. 36(4): 626-636.

LAROCQUE I., HALL R.I. and GRAHN E. 2001. Chironomids as indicators of climate change: a 100-lake training set from a subarctic region of Northern Sweden Lapland. Journal of Paleolimnology 26: 307-322.

MAKARCHENKO E.A., MAKARCHEKO M.A. 1999. Chironomidae. Non-biting midges. In: Tsalolikhin S.J. (Ed.), Key to freshwater Invertebrates of Russia and Adjacent lands. V.4. Higher Insects.Diptera. Zoologiacal Institute RAS, St.Peterburg. pp. 210-295.

OLANDER H., KORHOLA A., BIRKS H.J.B. and BLOM T. 1999. An expanded calibration model for inferring lake-water temperatures from chironomid assemblages in northern Fennoskandia. The Holocene 9: 279-294.

OLIVER D.R., ROUSSEL M.E. 1983. The genera of larval midges of Canada. Diptera: Chironomidae. Biosystematics Research Institute, Ottawa: Ontario

RIERADEVALL M., BROOKS S.J. 2001. An identification guide to subfossil Tanypodinae larvae (Insecta: Diptera: Chironomidae) based on cephalic setation. Journal of Paleolimnology 25: 81-99.

SOLOVIEVA N., JONES V.J., NAZAROVA L., BROOKS S.J., BIRKS H.J.B., GRYTNES J.-A., APPLEBY P.G., KAUPPILA T., KONDRATENOK B., RENBERG I., PONOMAREV V. 2005. Palaeolimnological evidence for recent climate change in lakes from the Northern Urals, Russia. Journal of Palaeolimnology 33: 463-482.

SCHMID P.E. 1993. A key to the larval Chironomidae and their instars from Austrian Danube region streams and rivers. Part 1.

Diamesinae, Prodiamesinae and Orthocladiinae. Federal Institute for Water Quality, Vienna.

WALKER I.R., LEVESQUE A.J., CWYNAR L.C. and LOTTER A.E. 1997. An expanded surface water paleotemperaure inference model for use with fossil midges from Eastern Canada. Journal of Paleolimnology 18: 165-178.

WIEDERHOLM T. (Ed.) 1983. Chironomidae of the Holarctic region. Keys and diagnoses. Part 1. Larvae. Entomologica Scandinavica Supplement No. 19.

SHORT COMMUNICATIONS

Lateral abdominal spur in *Stempellinella* as a pupal 'can- opener'

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Most chironomid pupae of the subfamily Chironominae have lateral spurs or combs posteriorly on segment eight of the abdomen (Figure 1). Larvae of this subfamily construct tubes or cases in which the pupa also lives, and the function of the postero-lateral spurs or combs has been regarded to be related to pupal movement within the tube (Langton 1995).

For an ongoing world revision of the genera *Stempellinella* Brundin and *Zavrelia* Kieffer, Thienemann & Bause field work was conducted in a calcareous spring in Luxembourg. *Stempellinella* larvae in their portable cases were isolated from the remainder of the benthos samples, and placed in small, clear plastic boxes of one cubic centimetre together with some water, sand and detritus. The larvae of most *Stempellinella* build their tubes of small sand grains and detritus, and although difficult to observe by the naked eye, the 2-3 mm long tubes are easily recognisable under a decent stereo microscope. The rearing boxes were kept at room temperature, and the quite active larvae seemed to live well despite the higher temperature compared to that of their natural habitat. After a few days, swimming pupae of a *Stempellinella* species new to science exited the tubes and continued swimming with quick undulating motions at the water surface. While waiting for the midge to emerge, an interesting observation was made on the pupal swimming pattern: at regular intervals the pupae would bend their abdomen forward and rub the postero-lateral spurs of segment eight against the dorsal part of thorax (Figure 2). This behaviour is interpreted as an attempt to aid or initiate the splitting along the median suture of the pupal thorax. All specimens which were available for observation used their abdominal spurs in a similar way, and all pupae needed several hours of 'swimming' before adult emergence. Although this is the first observation of such behaviour, it is not unlikely that the posterolateral spur of the pupal abdomen is used in a similar way in other species and genera of Chironominae.

The present study and the ongoing revision of *Stempellinella* and *Zavrelia* are supported by a research fellowship from the Alexander von Humboldt foundation. For more information on the project see www.ntnu.no/~torbjoe/Stempellinella&Zavrelia.

References

LANGTON, P. H. 1995. Chapter 8. The pupa and events leading to eclosion. Pp 169-193 in Armitage, P. D., Cranston, P. S. & Pinder, L. C. V. (eds) *The Chironomidae: Biology and ecology of non-biting midges*. Chapman & Hall, London.

Figure captions

Figure 1. Segment eight and nine of pupal abdomen of *Stempellinella* sp.1. Arrow indicates posterolateral spur.
Figure 2. Pupal movement: Posterolateral spur of segment eight is rubbed against dorsal surface of the pupal thorax.

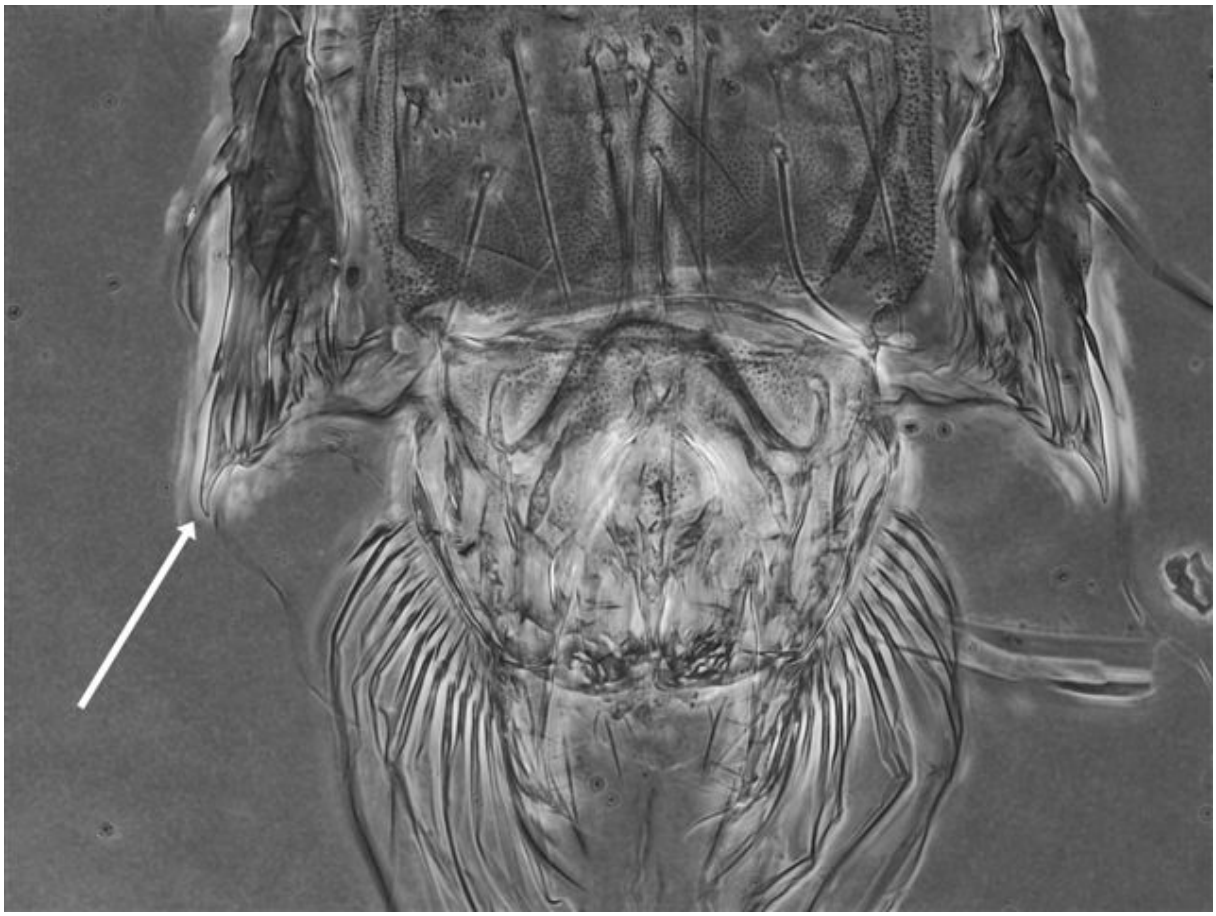


Figure 1. Segment eight and nine of pupal abdomen of *Stempellinella* sp.1. Arrow indicates posterolateral spur.

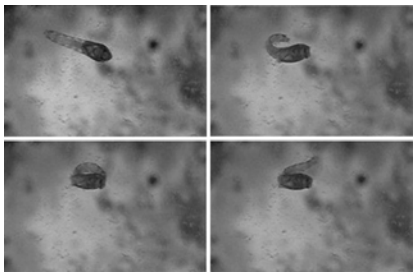
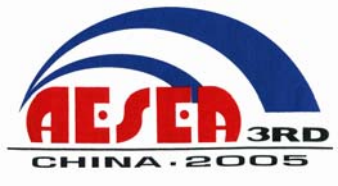


Figure 2. Pupal movement: Posterolateral spur of segment eight is rubbed against dorsal surface of the pupal thorax.



3rd International Symposium on Aquatic Entomology in East Asia (AESEA)

June 17-20, 2005, Nankai University, Tianjin, China

This was the 3rd AESEA symposium; the preceding two were in Korea (2000) and Japan (2002). Nankai University was the host institution and Prof. Dr. Xinhua WANG took charge of the symposium and the organizing committee. The symposium got financial support from the National Natural Science Foundation of China (NSFC), Nankai University and Tianjin association for Science and Technique (TAST).

At this symposium, more than 70 aquatic entomologists from 8 countries (China, Japan, Korea, Vietnam, Mongolia, Thailand, Russia and USA) exchanged their recent researches on Aquatic Entomology in East Asia. 25 oral presentations and 31 poster presentations were delivered. Also 60 paper abstracts were received, which included aquatic morphology, systematics, cytology, behavior, ecology and environmental biology.

During the symposium, the delegates had a field trip in Songshan National Natural conservation near Beijing.

The 4th International Symposium on Aquatic Entomology in East Asia will be held in Thailand in 2008.

13 papers referring to chironomid studies were communicated in this symposium (list in below).

Dr. Albina Istomina and Veronika Golygina from Novosibirsk, Russia; Dr. Tadashi Kobayashi from Japan; Dr. Xinhua Wang and his students attended the Symposium. Prof. Saether from Norway and Dr. Makarchenko from Vladivostok had to cancel their China trip for health reasons.

List of 13 abstracts:

1. Chironomus Sp. N. K – A New Member of Plumosusgroup from Japan By V. V. Golygina
2. Chironomus Suwai, A New Species in the Plumosus Sibling Group From Japan By V.V. Golygina, J. Martin, I.I. Kiknadze
3. Divergence of Centromeric Heterochromatin is an Important Way of Evolution in the Genus Propsilocerus (Diptera, Chironomidae) By V.V. Golygina, N.B. Rubzov, T.V. Karamisheva, I.I. Kiknadze
4. Chironomus yoshimatsui Martin & Sublette (Diptera, Chironomidae) From Russian Far East by I.I. Kiknadze, A.G. Istomina, E.A. Makarchenko & V.V. Golygina
5. Cytotaxonomy Of Sibling Species In Propsilocerus Genus (Diptera, Chironomidae) By I.I. Kiknadze, A.G. Istomina, X. Wang, V.V. Golygina
6. A New Chironomus Species of the Plumosus Sibling-Group (Diptera, Chironomidae) From China By I.I. Kiknadze, X. Wang, A.G. Istomina, L.I. Gunderina
7. The Present Conditions of Sasa Collection (Chironomidae) By T. Kobayashi
8. Preliminary Data on Fauna and Taxonomy of Chironomids (Diptera, Chironomidae) of The Russian Far East By E.A. Makarchenko, M.A. Makarchenko, O.V. Zorina, I.V. Sergeeva
9. Phylogeny of Subgenera and Species of the Genus Orthocladius (Diptera: Chironomidae). By Ole A. Sæther
10. Chironomid Larvae from Tibet Plateau Lakes. By H. Tang, E. Zhang & X. Wang
11. A Discussion on Intraspecific Variation of Microchironomus tener (Kieffer) (Diptera: Chironomidae). By C. Yan & X. Wang
12. Geographic Coevolutionary Study on Polypedilum (Cerobregma) Sæther & Sundal (Diptera: Chironomidae) By R. Zhang and X. Wang
13. Non-Biting Midges of the Genus Paracladopelma Harnisch (Diptera, Chironomidae) From Russian Far East. By O.V. Zorina

Dead Heads 2005 Workshop

Approximately 25 researchers gathered at Okanagan University College in Kelowna, British Columbia, Canada, 15-19 June 2005 for a workshop on chironomid palaeoecology. Following one day of presentations featuring the current research of participants, discussions focused on issues pertaining to the identification, statistical assessment, and interpretation of fossil midge data. A post-conference canoe trip down the Shuswap River offered participants an opportunity to explore "super, natural" British Columbia.

Workshop participants (see attached photo) also searched for evidence of Ogopogo (Okanagan Lake's resident monster). Although Okanagan residents commonly consider the monster to be a reptile, Saether (1970) considered the monster (*Ogopogo ogopogoensis*) to be an oligochaete. Willassen (pers. comm.) speculated that it might be a species of *Castor*, based on a video-recording of the monster in its natural habitat. However, since the species has never been adequately described, and since no type material is available, we speculate that it could instead be a chironomid on steroids.

Workshop participants included Elena Ilyashuk, Boris Ilyashuk, Donna Francis, Josh Kurek, Yarrow Axford, Britta Luder, Pete Langdon, Yiming Wang, Les Cwynar, Robert Quinlan, Oliver Heiri, Jenny Watson, Isabelle Larocque, Steve Brooks, Konrad Gajewski, Claire Serieyssol, Ben Clegg, Ann Dieffenbacher-Krall, Erin Barley, Markus Heinrichs, Christina Bleskie, Marianne Chase, Lydia Stepanovic', and Ian Walker.

The Dead Heads look forward to meeting everyone next year in Madeira!

Reference:

SÆTHER, O.A.1970. A survey of the bottom fauna in lakes of the Okanagan Valley, British Columbia. - T*echnical Report of the Fisheries Research Board of Canada 196*: 1-41.

Availability of Chironomidae Keys:

P.E. Schmid, A key to the larval Chironomidae and their instars from Austrian Danube region streams and rivers, Part 1. Diamesinae, Prodiamesinae and Orthocladiinae, Federal.- Wasser und Abwasser, Suppl 3/93
The contact for ordering is to either email: edv@iwg.bmlf.gv.at
or fax: +431 263 34 74 15

Moller Pillot, H.K.M. - De larven der Nederlandse Chironomidae. Inleiding, Tanypodinae & Chironomini (1984). 277 pp.

Moller Pillot, H.K.M. - De larven der Nederlandse Chironomidae. Orthocladiinae

(1984). 175 pp.
The keys are in Dutch but include a number of useful illustrations of temperate European chironomid species.
The prices of the keys is listed at
http://www.naturalis.nl/asp/page.asp?alias=naturalis.nl&view=naturalis.nl&id=i000256&frameurl=http%3A%2F%2Fwww.naturalis.nl%2Fnaturalis.nl%2Fnaturalis.nl%2Fi000793.html

To order them it might be best to contact the European Invertebrate Survey/Naturalis. postbus 9517, 2300 RA Leiden The Netherlands phone: +31-71-5687670.
e-mail: eis@naturalis.nle

A reprinting of Wiederholm, T. (ed.), 1983, Chironomidae of the Holarctic region. Keys and diagnoses. Part 1. Larvae. Entomol. Scandinavica Suppl., 19: 1-457. is being considered. Persons interested in purchasing the volume should contact Lennart.Cederholm@zool.lu.se

DEADLINE FOR CHIRONOMUS 19

JULY 1, 2006

Current Bibliography: 1 Jan. 2004 - 31 Dec. 2004
by Odwin Hoffrichter

This listing is compiled, as usual, from many sources: databases, tables of contents of journals, references and citations of papers, autopsy of many periodicals, lists provided by authors (thanks to you!). Because titles of a particular year are not fully retrieved the following year, the current titles are preceded by supplements to the two preceding years. Only printed titles are reported here. Online publications should be retrieved elsewhere, in particular, check the chironomid home page for eventual references.

Supplement to 2002 Current Bibliography: additions & corrections

Afonso, A. A. O. 2002a. *Relacões da fauna associada à* Eichhornia azurea *(Swartz) Kunth com as variáveis abióticas em lagoas laterais de diferentes graus de conexão ao Rio Paranapanema (zona de desembocadura na Represa de Jurumirim, SP).* - Tes. Dout., Univ. Estad. Paulista, Botucatu.

Balık, S., Ustaoğlu, M. R., Özbek, M., Taşdemir, A. ve Topkara, E. T. 2002a. Yelkopru Magarası (Dikili, İzmir) ve yakin cevresinin sucul faunası hakkinda bir on araştırma. (A preliminary study on the aquatic fauna of Yelkopru Cave (Dikili, Izmir) and its vicinity. - *Su Ürünleri Derg. 19*: 221-225.

Barros, T. S. 2002a. *Exúvias de pupas de Chironomidae (Diptera) na caracterização de corpos d'água do campus e arredores da Universidade Federal de São Carlos*. - Relatório parc. Inic. cient., Univ. Fed. São Carlos.

Correia, E. S., Pereira, J. A., Apolinário, M. O., Horowitz, A. and Horowitz, S. 2002a. Effect of pond aging on natural availability and growth of the freshwater *Macrobrachium rosenbergii*. - *Aquacult. Engng 26*: 61-69.

Dornfeld, C. B. 2002a. *Utilização de análises limnológicas, bioensaios de toxicidade e macroinvertebrados bentônicos para o diagnóstico ambiental do reservatório de Salto Grande (Americana, SP)*. - Diss. Mestr., Univ. São Paulo, São Carlos.

Ezenwaji, H. M. G. 2002a. The biology of *Clarias ebriensis* Pellegrin, 1920 (Osteichthyes: Clariidae) in an African rainforest river basin. - *Fish. Res. 54*: 235-252.

Gutiérrez, J. D., Riss, W. y Ospina, R. 2002a. Bioindicación de la calidad del agua con lógica difusa Sugeno y macroinvertebrados acuáticos de la Sabana de Bogotá. - *Acta biol. colomb. 7*: 37-51.

Hong, Y. 2002a. *(Amber insects of China.)* - Beijing Sci. Technol. Pr. 653 pp. + 48 pl.

Man'ko, V. i Larina, O. 2002a. (Role of SH-groups in functioning of secretory cell NA^+ -Ca^{2+} exchanger in *Chironomus plumosus* salivary glands.) - *Visn. lviv. Univ., Ser. biol. 31*: 203-211.

Palot, M. J. and Soniya, V. P. 2002a. House crow *Corvus splendens* feeding on midges. - *J. Bombay nat. Hist. Soc. 99*: 533.

Pamplin, P. A. Z. 2002a. *Estudo comparativo da estrutura da comunidade bentônica de duas represas com diferenças no grau de eutrofização*. - Relatorio FAPESP, Univ. Fed. São Carlos.

Santos, C. M. 2002a. *Distribuição de mesoinvertebrados em um lago eutrofizado (Lago de Garças - SP) e excreção de fosfato e amônio por Chironomidae (Diptera)*. - Tese Dout., Univ. Estad. Paulista, Botucatu.

Smiljkov, S. 2002a. Ecology and dynamics of Chironomidae fauna larva (Diptera: Chironomidae) from Ohrid Lake. - *Makedon. Akad. Nauk. Umetn., Odd. biol .med. Nauki Prilozi 22*: 47-56.

Vilella, F. S., Rodrigues, G. G., Barbieri, G. e Hartz, S. M. 2002a. *Forese como estratégia adaptativa da comunidade bentônica ao longo de um riacho de 1ª ordem na Mata Atlântica no sul do Brasil.* - Diss. Mestr., Univ. Fed. São Carlos.

Wright, J. F., Gunn, R. J. M., Winder, J. M., Wiggers, R., Kneebone, N. T. and Clarke, R. T. 2002a. The impact of drought events in 1976 and 1997 on the macroinvertebrate fauna of a chalk stream. - *Verh. int. Verein. Limnol. 28*: 948-952.

Wright, J. F., Gunn, R. J. M., Winder, J. M., Wiggers, R., Vowles, K., Clarke, R. T. and Harris, I. 2002a. A comparison of the macrophyte cover and macroinvertebrate fauna at three sites on the River Kennet in the mid 1970s and late 1990s. - *Sci. tot. Envir. 282-283*: 121-142.

Zorina, O. V. 2002a. *(Fauna, systematics and distribution of non-biting midges of the tribe Chironomini (Diptera, Chironomidae) of the south of the Russian Far East.)* - Avtoref. Diss. Kand. biol. Nauk, Vladivostok. 24 pp.

Zorina, O. V. 2002b. *Fauna i sistematika komarov-zvontsov triby Chironomini (Diptera, Chironomidae, Chironominae) yuga Dal'nego Vostoka Rossii. (Fauna and systematics of non-biting midges of the tribe Chironomini (Diptera, Chironomidae, Chironominae) of the south of the Russian Far East.)* - In: *Chteniya pamyati A. I. Kurentsova 11*: 101-120. Dal'nauka, Vladivostok.

Supplement to 2003 Current Bibliography: additions & corrections

Abdallah, A. M. and Barton, D. R. 2003a. Environmental factors controlling the distributions of benthic invertebrates on rocky shores of Lake Malawi, Africa. - *J. Gt Lakes Res. 29*: 202-215.

Austin, K. R. 2003a. *Assessment of pesticide mixtures from the Sacramento-San Joaquin delta using* Chironomus tentans. - M. Thes., Southern Illinois Univ., Carbondale.

Bakanov, A. I., Skal'skaya, I. A. i Flerov, B. A. 2003a. Osobennosti pervonachal'nogo formirovaniya gruppirovok bentosa i perifitona v vodokhranilishchakh verkhnei Volgi. (Peculiarities of the initial formation of the communities of benthos and periphyton in the reservoirs of the upper Volga River.) - *Gidrobiol. Zh. 39, 6*: 25-33.

Bradt, P. T. 2003a. Stresses on a northeastern Pennsylvania recreational lake: Causes of long-term biological and chemical changes? - *J. Penn. Acad. Sci. 77*: 59-68.

Contreras-Lichtenberg, R. 2003b. Die Geschichte der Dipterologie am Wiener Naturhistorischen Museum. - *Denisia 8*: 47-55.

Costa, A. M., Cristo, M. and La Fonseca, L. C. 2003a. Annual cycle of the benthic community of a coastal lagoon: Lagoa de Melides (Grandola, SW Portugal). - *Revta Biol., Lisboa 21*: 71-89.

Diggins, T. P. and Snyder, R. J. 2003a. Three decades of change in the benthic macroinvertebrate community and water quality in the Buffalo River Area of Concern. - *J. Gt Lakes Res. 29*: 652-663.

Ferriz, R. A. 2003a. Alimentación de *Galaxias platei* (Pisces, Galaxiidae) en siete ambientes lénticos de la provincia de Chubut, Argentina. - *Revta Mus. argent. Cienc. nat. 5*: 79-85.

Fokina, E. S. i Kasumyan, A. O. 2003a. Sravnenie vkusovykh predpochtenii u raznykh pokolenii populyatsii devyatiigloi kolyushki *Pungitius pungitius* (Gasterosteiformes). (The comparison of taste preferences in two different generations of the same population of nine-spined stickleback *Pungitius pungitius* (Gasterosteiformes).) - *Dokl. Akad. Nauk 389*: 570-573.

Fragoso, E. N., Roque, F. O., Souza, J. E., Jancso, M. A., Fenerich-Verani, N. and Trivinho-Strixino, S. 2003a. Relação de forese entre *Icthyocladius* (Diptera, Chironomidae) e cascudos (Pisces, Siluriformes) na microbacia do córrego da Lapa, Ipeúna/Itirapina, Estado de São Paulo. - *XV Encontro Brasileiro de Ictiologia (EBI)*, São Paulo. Resumos em CD-ROM. p.108.

Frouz, J., Matena, J. and Ali, A. 2003a. Survival strategies of chironomids (Diptera: Chironomidae) living in temporary habitats: A review. - *Eur. J. Ent. 100*: 459-465.

Gandouin, E. 2003a. *Enregistrement paléoclimatique interdisciplinaire de la transgression holocène: signature paléoenvironnementale des Chironomidae (Diptères) du Bassin de Saint-Omer (France).* - Thèse, Univ. Lille 1. 246 pp.

Gidó, Zs. és Lakatos, Gy. 2003a. *Paraboreochlus minutissimus*: a Podonominae árvaszúnyog (Diptera) alcsalád első hazai képviselője. (*Paraboreochlus minutissimus*: the first representant of the chironomid subfamily Podonominae (Diptera) from Hungary.) - *Folia ent. hung. 64*: 362-363.

Gjerløv, C., Hildrew, A. G. and Jones, J. I. 2003a. Mobility of stream invertebrates in relation to disturbance and refugia: a test of habitat templet theory. - *J. N. Am. benthol. Soc. 22*: 207-223.

Grandjean, F., Momon, J. et Bramard, M. 2003a. Biological water quality assessment of the white-clawed crayfish habitat based on macroinvertebrate communities: Usefulness for its conservation. - *Bull. Fr. Pêche Piscic. 370-371*: 115-125.

Grzybkowska, M., Dukowska, M., Takeda, A. M., Majecki, J. and Kucharski, L. 2003a. Seasonal dynamics of macroinvertebrates associated with submersed macrophytes in a lowland river downstream of a dam reservoir. - *Ecohydrol. Hydrobiol. 3*: 399-408.

Hossain, M. I. and Chowdhury, M. A. K. 2003a. Susceptibility of *Chironomus* sp. (Diptera: Chironomidae) larvae inhabiting drains of Dhaka City to some synthetic insecticides. - *Bangladesh J. Zool. 31*: 63-68.

Houston, R. D., Boonman, A. M. and Jones, G. 2003a. Do echolocation signal parameters rstrict bats' choice of prey? - In: Thomas, J. A., Moss, C. F. and Vater, M. (eds.): *Echolocation in bats and dolphins*, pp. 339-345. Univ. Chicago Pr. 604 pp.

Hu, Y.-L. and Li, G.-Q. 2003a. (Sequencing and analysis of ITS2 rDNA sequences of the midge (*Culicoides arakawae*).) - *Acta zool. sin. 49*: 277-280.

Jansen, L. 2003a. *Typisierung und Bewertung von Fließgewässern mit Hilfe der Chironomidae (Zuckmücken)-Fauna anhand des Aqem-Datensatzes*. - Dipl.-Arb., Univ. Essen. 119 pp.

Jansen, W., Tham, J. und Koch, M. 2003a. Die aquatische Invertebratenfauna des Moorkomplexes Wurzacher Ried (Landkreis Ravensburg): Biodiversität, habitatspezifische Artengemeinschaften, Rote-Liste-Status und Zielarten-Konzeption. - *Suttg. Beitr. Naturk., Ser. A (Biol.) 655*: 1-19.

Kakareko, T., Żytkowicz, J. and Kowalska, M. 2003a. Wstępne wyniki badań nad relacjami troficznymi pomiędzy inwazyjnymi rybami babkowatymi z rodzaju *Neogobius* a małymi rybami okoniowatymi w przybrzeżnej strefie Zbiornika Włocławskiego. (Trophic relationships between the invasive gobiid genus *Neogobius*, and small percids in the littoral zone of the Włocławek Reservoir.) - *Supplta Acta hydrobiol. 6*: 28-38.

Kharchenko, T. A., Karpezo, Yu. I. i Lyashenko, A. V. 2003a. Gidrobiota r. Tisy i ee izmeneniya v usloviyakh antropogennogo pressa. (Hydrobiota of the Tisa River and its changes under anthropogenic impact.) - *Gidrobiol. Zh. 39, 3*: 11-26.

Kornijów, R. and Moss, B. 2003a. Do night oxygen depletions contribute to the summer decline of zoobenthos in lake littoral? - *Verh. int. Verein. theor. angew. Limnol. 28*: 1899-1901.

Koval'chuk, A. A. 2003a. Rol' prosteishikh i mikrobespozvonochnykh bentosa melkovodii Kremenchugskogo vodokhranilishcha v produktsionno-destruktsinnykh protsessakh. (Role of benthic protozoans and microinvertebrates of shoals of the Kremenchug Reservoir in production and destruction processes.) - *Gidrobiol. Zh. 39, 2*: 28-46.

Kriska, Gy. és Andrikovics, S. 2003a. Az *Electrogena lateralis* Curt. kérészfajon élősködő *Symbiocladius rhithrogenae* Kief. árvaszúnyog életmenetének vizsgálata. (Parasite relationship between the *Symbiocladius rhithrogenae* and *Electrogena lateralis* larvae.) - *Állat. Közl. 88*: 109-116.

Lyashenko, A. V. i Protasov, A. A. 2003a. Primenenie indeksov raznoobraziya makrozoobentosa kak pokazatelya sostoyaniya vodnykh ekosistem. (Application of macrozoobenthos diversity index as an indicator of the state of aquatic ecosystems.) - *Gidrobiol. Zh. 39, 2*: 17-27.

MacKenzie, R. A. 2003a. Northern range extension for *Goeldichironomus devineyae* (Insecta: Diptera). - *NEast. Nat. 10*: 465-467.

Maclean, A., Miles, M. S. and Armstrong, J. D. 2003a. A computer-activated food delivery system for dispensing natural prey items among complex arrays of patches. - *J. Fish Biol. 63*: 1610-1614.

Margaritora, F. G., Bazzanti, M., Ferrara, O., Mastrantuono, L., Seminara, M. and Vagaggini, D. 2003a. Classification of the ecological status of volcanic lakes in Central Italy. - *J. Limnol. 62, Suppl. 1*: 49-59.

Marszał, L., Grzybkowska, M., Przybylski¸ M. and Valladolid¸ M . 2003a. Feeding activity of spined loach *Cobitis* sp. in Lake Lucień, Poland. - *Folia biol., Kraków 51 Suppl.*: 159-165.

Meyerdirks, J., Hemmer, N. und Schirmer, M. 2003a. Die Bodenfauna der Weserwatten zwischen Bremen und Bremerhaven. - *Abh. naturw. Ver. Bremen 45*: 455-464.

Moretto, Y., Higuti, J. and Takeda, A. M. 2003a. Spatial variation of the benthic community in the Corumbá reservoir, Goiás, Brazil. - *Acta Scient. biol. Sci. 25*: 23-30.

Morozova, E. E. 2003a. K voprosu o pitanii lichinok roda *Cryptochironomus* Kieffer (Chironomidae, Diptera). (On the question of feeding of larvae of the genus *Cryptochironomus* Kieffer (Chironomidae, Diptera).) - *Vest. saratov. Gosagrouniv. Im. N. I. Vavilova 2003, 4*: 78-80.

Morozova, E. E. 2003b. Analiz dinamiki chislennosti volzhskikh vidov roda *Cryptochironomus* Kieffer (Diptera, Chironomidae). (Analysis of quantitative dynamics of Volga species of the genus *Cryptochironomus* Kieffer (Diptera, Chironomidae).) - *Vest. orenburg. gos. Univ. 3*: 154-159.

Morozova, E. E. 2003c. Opredelitel' kukolok roda *Cryptochironomus* Kieffer (Diptera, Chironomidae) iz vodoemov Evropy. (Key to the pupae of the genus *Cryptochironomus* Kieffer (Diptera, Chironomidae) from reservoirs in Europe.) - In: *Entomologicheskie i parazitologicheskie issledovaniya v Povolzh'e. Sb. nauch. Trud 2*: 5-15. Izd. Saratov gos. Univ.

Ovcharenko, M. O. and Wita, I. 2003a. Ultrastructural study of *Microsporidium kosewiense* sp. n. (Microspora, Thelohaniidae) - a microsporidian parasite of *Psectrotanipus* [sic!] larvae (Diptera, Chironomidae). - *Vest. Zool. 37*: 39-48.

Ponomarev, S. A., Burkovskii, I. V., Stolyarov, A. P. i Novikov, G. G. 2003a. Osobennosti pitaniya trekh- i devyatiigloi kolyushek s uchetom ikh mikrobiotopicheskogo raspredeleniya v estuarii (Kandalakshskii zaliv, Beloe more). (Specific features of feeding in three- and nine-spined sticklebacks related to their microbiotopic distribution in an estuary (Kandalaksha Bay, the White Sea).) - *Usp. sovr. Biol. 123*: 609-617.

Ree, H.-I. and Kim, J.-Y. 2003a. A new species of *Tanytarsus* and an unrecorded species of *Chironomus* in Korea (Diptera: Chironomidae). - *Kor. J. syst. Zool. 19*: 11-17.

Sandin, L. 2003a. Benthic macroinvertebrates in Swedish streams: community structure, taxon richness, and environmental relations. - *Ecography 26*: 269-282.

Shibatta, O. A. e Bennemann, S. T. 2003a. Plasticidade alimentar em *Rivulus pictus* Costa (Osteichthtyes, Cyprinodontiformes, Rivulidae) de uma pequena lagoa em Brasília, Distrito Federal, Brasil. - *Revta bras. Zool. 20*: 615-618.

Steinman, A. D., Conklin, J., Bohlen, P. J. and Uzarski, D. G. 2003a. Influence of cattle grazing and pasture land use on macroinvertebrate communities in freshwater wetlands. - *Wetlands 23*: 877-889.

Suares, M. C. and Ramadoss, R. 2003a. Predatory strategy of the water bug, *Diplonychus rusticus* Fabr. (Heteroptera: Belostomatidae) through their immature stages and adulthood. - *J. ent. Res. (New Delhi) 27*: 189-195.

Sukumaran, P. K., Das, A. K. and Singh, D. N. 2003a. Status of benthic invertebrate community in river Godavari. - *Proc. natn. Acad. Sci. India, Sect. B (biol. Sci.) 73*: 59-71.

Tatole, V. 2003a. Consideration on aquatic invertebrate fauna from the Piatra Craiului National Park (Romania). - *Trav. Mus. natn. Hist. nat. "Grigore-Antipa" 45*: 479-497.

Velle, G. 2003a. *A palaeolimnological study of chironomids (Insecta: Diptera) with special reference to Holocene climate.* - Doct. Scient. Thes., Univ. Bergen. 26 + 91 pp.

Zavialov, P. O., Kostyanov, A. G., Sapozhnikov, F. V., Sheglov, M. A., Khan, V. M., Ni, A. A., Kudishkin, T. V., Pinkhasov, B. I., Ishniyasov, D., Petrov, M. A., Kurbaniyazov, A. K. i Abdullayev, U. R. 2003a. Sovremennoe gidrofizicheskoe i gidrobiologicheskoe sostoyanie zapadnoi chasti Aralskogo moray. (Current hydrophysical and hydrobiological state of the western part of the Aral Sea.) - *Okeanologiya 43*: 316-319.

Zhantiev, R. D. i Fyodorova, M. V. 2003a. (Effect of air temperature on physiological characteristics of Johnston's organs of midges (Diptera, Chironomidae).) - *Vest. mosk. Univ. Ser. XVI Biol. 2003, 1*: 32-37.

Zorina, O. V. 2003a. Four new species of non-biting midges of the *Harnischia* complex (Diptera, Chironomidae, Chironominae) from Sakhalin Island (Russian Far East). - *Evraziat. ent. Zh. 2*: 221-225.

Current Bibliography 2004

Aagaard, K., Solem, J. O., Bongard, T. and Hanssen, O. 2004a. Studies of aquatic insects in the Atna River 1987-2002. - *Hydrobiologia 521*: 87-105.

Achinelly, M. F., Micieli, M. V., Marti, G. A. and Garcia, J. J. 2004a. Susceptibility of neotropical mosquito larvae (Diptera: Culicidae) and non-target aquatic organisms to the entomoparasitic nematode *Strelkovimermis spiculatus* Poinar & Camino, 1986 (Nematoda: Mermithidae). - *Nematology 6*: 299-302.

Adriaenssens, V., Simons, F., Nguyen, L. T. H., Goddeeris, B., Goethals, P. L. M. and De Pauw, N. 2004a. Potential of bio-indication of chironomid communities for assessment of running water quality in Flanders (Belgium). - *Belg. J. Zool. 134*: 31-40.

Alcorlo, P., Geiger, W. and Otero, M. 2004a. Feeding preferences and food selection of the red swamp crayfish, *Procambarus clarkii*, in habitats differing in food item diversity. - *Crustaceana 77*: 435-453.

Alieva, E. V., Mayorov, V. I., Elisaphenko, E. V., Adkison, L. and Blinov, A. G. 2004a. (The structure and expression of the *F6.2* gene form [sic!] *Chironomus thummi* and other *Chironomus* species.) - *Genetika 40*: 334-342. [also published in: *Russ. J. Genet. 40*: 255-262.]

Altmann, D., Stief, P., Amann, R. and de Beer, D. 2004a. Nitrification in freshwater sediments as influenced by insect larvae: quantification by microsensors and fluorescence *in situ* hybridization. - *Microb. Ecol. 28*: 145-153.

Andersen, T. and Mendes, H. F. 2004a. *Irisobrillia longicosta* Oliver, 1985 (Diptera: Chironomidae: Orthocladiinae) taken in south Brazil. - *Biota neotrop. 4, 2, BN0390402204*: 1-5.

Anderson, J. T. and Smith, L. M. 2004a. Persistence and colonization strategies of playa wetland invertebrates. - *Hydrobiologia 513*: 77-86.

Anderson, T. D. and Zhu, K.-Y. 2004a. Synergistic and antagonistic effects of atrazine on the toxicity of organophosphorodithioate and organophosphorothioate insecticides to *Chironomus tentans* (Diptera:Chironomidae). - *Pesticide Biochem. Physiol. 80*: 54-64.

Andrade-Morraye, M., Eskinazi-Sant'Anna, E. M. and Rocha, O. 2004a. A method for preparing remains of Cladocera (Crustacea) and chironomid (Diptera: Insecta) for scanning electron microscopy. - *Braz. J. Biol. 64*: 911-912.

Andreev, A. A., Grosse, G., Schirrmeister, L., Kuzmina, S. A., Novenko, E. Yu., Bobrov, A. A., Tarasov, P. E., Ilyashuk, B. P., Kuznetsova, T. V., Krbetschek, M., Meyer, H. and Kunitsky, V. V. 2004a. Late Saalian and Eemian palaeoenvironmental history of the Bol'shoy Lyakhovsky Island (Laptev Sea region, Arctic Siberia). - *Boreas 33*: 319-348.

Andreev, A., Tarasov, P., Schwamborn, G., Ilyashuk, B., Ilyashuk, E., Bobrov, A., Klimanov, V., Rachold, V. and Hubberten, H. 2004a. Holocene paleoenvironmental records from Nikolay Lake, Lena River Delta, Arctic Russia. - *Palaeogeogr. Palaeoclim. Palaeoecol. 209*: 197-217.

Anonymus 2004a. More than a smidge about midges. - *Science, Wash. 304*: 1883.

Arab, A., Lek, S., Lounaci, A. and. Park, Y.-S 2004a. Spatial and temporal patterns of benthic invertebrate communities in an intermittent river (North Africa). - *Annls Limnol. 40*: 317-327.

Asari, H., Kasuya.S., Kobayashi, T., Kondo, S., Nagano, I. and Wu, Zh. 2004a. Identification of closely related *Hydrobaenus* species (Diptera: Chironomidae) using the second internal transcribed spacer (ITS2) region of ribosomal DNA. - *Aquat. Insects 26*: 207-213.

Auer, N. A. and Kahn, J. E. 2004a. Abundance and distribution of benthic invertebrates, with emphasis on *Diporeia*, along the Keweenaw Peninsula, Lake Superior. - *J Gt Lakes Res. 30, Suppl. 1*: 340-359.

Babrekar, A. A., Kulkarni, G. R., Nath, B. B. and Vidyasagar, P. B. 2004a. Extracellular electrical activity from the photoreceptors of midge. - *J. Biosci. 29*: 349-353.

Balassa, G. C., Fugi, R., Hahn, N. S. e Galina, A. B. 2004a. Dieta de espécies de Anostomidae (Teleostei, Characiformes) na área de influência do reservatório de Manso, Mato Grosso, Brasil. - *Iheringia, Ser. Zool. 94*: 77-82.

Balushkina, E. V. 2004a. Izmenenie struktury soobshchestv donnykh zhivotnykh pri antropogennom vozdeistvii na vodnye ekosistemy (na primere malykh rek Leningradskoi oblasti). (Changes in structure of communities of benthic

animal under antropogenic influence on aquatic ecosystems (by the example of small rivers of Leningrad Region). - *Evraziat. ent. Zh. 3*: 276-282.

Banchetti, R., Marsili, D. and Galleni, L. 2004a. Ecological modelling: from the biosphere to the everyday data gathering; filling the gap. - *Riv. Biol. 97*: 469-482.

Barquín, J. and Death, R. G. 2004a. Patterns of invertebrate diversity in streams and freshwater springs in Northern Spain. - *Arch. Hydrobiol. 161*: 329-349.

Barton, D. R. 2004a. Differences in wave-zone benthic invertebrate communities in Lake Huron and Georgian Bay, 1974-2003. - *J. Gt Lakes Res. 30*: 508-518.

Batzer, D. P. 2004a. Movements of upland invertebrates into drying seasonal woodland ponds in northern Minnesota, USA. - *Wetlands 24*: 904-907.

Bazzanti, M. and Della Bella, V. 2004a. Functional feeding and habit organization of macroinvertebrate communities in permanent and temporary ponds in central Italy. - *J. Freshwat. Ecol. 19*: 493-497.

Beaty, T. V. Jr. and Hendricks, A. C. 2004a. Effects of culture methods on survival, weight, and development of *Chironomus riparius* Meigen. - *Bull. envir. Contam. Toxic. 73*: 1009-1016.

Becker, C. and Wagner, R. 2004a. Chironomidae (Diptera) emergence from two adjacent stream reaches with contrasting bottom substrata of a brook in Hesse/Germany in 1983. - *Ent. gen. 27*: 105-122.

Bedford, A., Jones, R. T., Lang, B., Brooks, S. and Marshall, J. D. 2004a. A Late-glacial chironomid record from Hawes Water, northwest England. - *J. Quatern. Sci. 19*: 281-290.

Beekey, M. A., McCabe, D. J. and Marsden, J. E. 2004a. Zebra mussel colonisation of soft sediments facilitates invertebrate communities. - *Freshwat. Biol. 49*: 535-545.

Beekey, M. A., McCabe, D. J. and Marsden, J. E. 2004b. Zebra mussels affect benthic predator foraging success and habitat choice on soft sediments. - *Oecologia 141*: 164-170.

Belaidi, N., Taleb, A. and Gagneur, J. 2004a. Composition and dynamics of hyporheic and surface fauna in a semi-arid stream in relation to the management of a polluted reservoir. - *Annls Limnol* 40: 237-248.

Bell, H. E., Liber, K., Call, D.J.and Ankley, G.T. 2004a. Evaluation of bioaccumulation and photo-induced toxicity of fluoranthene in larval and adult life-stages of *Chironomus tentans*. - *Archs envir. Contam. Toxic. 47*: 297-303.

Belyanina, S. I. i Durnova, N. A. 2004°. (Intraspecies differentiation in the chironomid *Glyptotendipes gripekoveni* (Diptera, Chironomidae).) - *Zool. Zh. 83*: 1249-1260.

Berger, W. K. 2004a. Ice can penetrate invertebrate tissues via paracellular pathways. - *CryoLett. 25*: 139-146.

Bergey, E. A. and Weaver, J. E. 2004a. The influence of crevice size on the protection of epilithic algae from grazers. - *Freshwat. Biol. 49*: 1014-1025.

Bergtold, M. and Traunspurger, W. 2004a. The benthic community in the profundal of Lake Brunnsee: seasonal and spatial patterns. - *Arch. Hydrobiol. 160*: 527-554.

Berra, E, Forcella, M., Giacchini, R., Marziali, L., Rossaro, B. and Parenti, P. 2004a. Evaluation of enzyme biomarkers in freshwater invertebrates from Taro and Ticino river, Italy. - *Annls Limnol. 40*: 169-180.

Bervoets, L., Meregalli, G., De Cooman, W., Goddeeris, B. and Blust, R. 2004a. Caged midge larvae (*Chironomus riparius*) for the assessment of metal bioaccumulation from sediments in situ. - *Envir. Toxic. Chem. 23*: 443-454.

Birks, H. J. B., Jones, V. J. and Rose, N. L. 2004a. Recent environmental change and atmospheric contamination on Svalbard as recorded in lake sediments - synthesis and general conclusions. - *J. Paleolimnol. 31*: 531-546.

Bíro, K., Csányi, B., Gulyás, P. és Juhász, P. 2004a. Chironomidae (Diptera) Magyarországról. 1. Lárvák a Duna holtágában. (Chironomidae (Diptera) from Hungary 1. Larvae from back water of Danube.) - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 23-25.

Bitušík, P. 2004a. Faunistic records of chironomids (Diptera, Chironomidae) from Slovakia. - *Biologia, Bratisl. 59*: 545-546.

Blaustein, L., Kiflawi, M., Eitam, M, Mangel, M. and Cohen, J. E. 2004a. Oviposition habitat selection in response to risk of predation in temporary pools: mode of detection and consistency across experimental venue. - *Oecologia 138*: 300-305.

Bond, J. G., Marina, C. F. and Williams, T. 2004a. The naturally derived insecticide spinosad is highly toxic to *Aedes* and *Anopheles* mosquito larvae. - *Med. Vet. Ent. 18*: 50-56.

Borgmann, U., Nowierski, M., Grapentine, L. C. and Dixon, D. G. 2004a. Assessing the cause of impacts on benthic organisms near Rouyn-Noranda, Quebec. - *Envir. Pollut. 129*: 39-48.

Bouldin, J. L., Milam, C. D., Farris, J. L., Moore, M. T., Smith, S. Jr.and Cooper, C. M. 2004a. Evaluating toxicity of Asana XL® (esfenvalerate) amendments in agricultural ditch mesocosms. - *Chemosphere 56*: 677-683.

Boulton, A. J., Dole-Olivier, M.-J. and Marmonier, P. 2004a. Effects of sample volume and taxonomic resolution on assessment of hyporheic assemblage composition sampled using a Bou-Rouch pump. - *Arch. Hydrobiol. 159*: 327-355.

Boyero, L. and Bosch, J. 2004a. The effect of riffle-scale environmental variability on macroinvertebrate assemblages in a tropical stream. - *Hydrobiologia 524*: 125-132.

Boyero, L. and Bosch, J. 2004b. Multiscale spatial variation of stone recolonization by macroinvertebrates in a Costa Rican stream. - *J. trop. Ecol. 20*: 85-95.

Brabec, K., Zahrádková, S., Němejcová, D., Pařil, P., Kokeš, J. and Jarkovský, J. 2004a. Assessment of organic pollution effect considering differences between lotic and lentic stream habitats. - *Hydrobiologia 516*: 331-346.

Braioni, M. G., Dal Cortivo, M. and Salmoiraghi, G. 2004a. Leaf litter breakdown processing in the functional monitoring of a mountain stream. - *Int. Rev. Hydrobiol. 89*: 536-550.

Braukmann, U. and Biss, R. 2004a. Conceptual study - An improved method to assess acidification in German streams by using benthic macroinvertebrates. - *Limnologica 34*: 433-450.

Brodersen, K. P., Pedersen, O., Lindegaard, C. and Hamburger, K. 2004a. Chironomids (Diptera) and oxy-regulatory capacity: An experimental approach to paleolimnological interpretation. - *Limnol. Oceanogr. 49*: 1549-1559.

Brooks, S. J. and Birks, H. J. B. 2004a. The dynamics of Chironomidae (Insecta: Diptera) assemblages in eesponse to environmental change during the past 700 years on Svalbard. - *J. Paleolimnol. 31*: 483-498.

Broumová, H., Simová, I. a Pecharová, M. 2004a. Oziveni vodnich a mokradnich biotopu velke podkrusnohorske vysypky v zavislosti na chemismu vod. (Reviving of aquatic and wetlands biotope on the great podkrusnohorska burden heap depending on water chemistry.) - *Colln scient. Pap. Fac. Agric. České Budějovice, Ser. Crop Sci. 21*: 297-299.

Brown, T. G., Winchell, P. and Postans, N. 2004a. Benthic community of Shuswap Lake's foreshore. - *Can. Manuscr. Rep. Fish. aquat. Sci. 2693*: 1-45.

Buchwalter, D. B., Sandahl, J. F., Jenkins, J. J. and Curtis, L. R. 2004a. Roles of uptake, biotransformation, and target site sensitivity in determining the differential toxicity of chlorpyrifos to second to fourth instar *Chironomous riparius* (Meigen). - *Aquat. Toxic. 66*: 149-157.

Burel, F., Butet, A., Delettre, Y. R. and Millàn de la Peña, N. 2004a. Differential response of selected taxa to landscape context and agricultural intensification - *Landscape Urb. Plann. 67*: 195-204.

Burton, T. M., Uzarski, D. G. and Genet, J. A. 2004a. Invertebrate habitat use in relation to fetch and plant zonation in northern Lake Huron coastal wetlands. - *Aquat. Ecosyst. Hlth Mgmt 7*: 249-267.

Bychkova, S. V., Man'ko, V. V. i Klevets', M. Yu. 2004a. (Cyclic nucleotide regulation of intracellular Ca2+ release in secretory cells of salivary glands of *Chironomus plumosus* larvae.) - *Fiziol Zh. 50*: 16-23.

Byström, P., Andersson, J., Persson, L and De Roos, A. M. 2004a. Size-dependent resource limitation and foraging-predation risk trade-offs: growth and habitat use in young arctic char. - *Oikos 104*: 109-121.

Camargo, J. A., Alonso, A. and De La Puente, M. 2004a. Multimetric assessment of nutrient enrichment in impounded rivers based on benthic macroinvertebrates. - *Envir. Monit. Assess. 96*: 233-249.

Campos, R. E., Fernández, L. A. and Sy, V. E. 2004a. Study of the insects associated with the floodwater mosquito *Ochlerotatus albifasciatus* (Diptera: Culicidae) and their possible predators in Buenos Aires Province, Argentina. - *Hydrobiologia 524*: 91-102.

Capello, S., Marchese, M. y Ezcurra de Drago, I. 2004a. Descomposición y colonización por invertebrados de hojas de *Salix humboldtiana* en la llanura aluvial del río Paraná Medio. - *Amazoniana 18*: 125-143.

Carrillo, M. A., Cannon, C. A. and Ferrington, L. C. 2004a. Effect of sex and age on the supercooling point of the winter-active *Diamesa mendotae* Muttkowski (Diptera: Chironomidae). - *Aquat. Insects 26*: 243-251.

Carvalho, E. M. de e Uieda, V. S. 2004a. Colonização por macroinvertebrados bentônicos em substrato artificial e natural em um riacho da serra de Itatinga, São Paulo, Brasil. - *Revta bras. Zool. 21*: 287-293.

Catalan, J., Ventura, M., Vives, I. and Grimalt, J. O. 2004a. The roles of food and water in the bioaccumulation of organochlorine compounds in high mountain lake fish. - *Envir. Sci. Technol. 38*: 4269-4275.

Cattaneo, A., Cloutier, L. and Méthot, G. 2004a. The response of invertebrates in moss and in gravel to water level fluctuations in a Québec stream. - *Arch. Hydrobiol. 161*: 21-43.

Cattaneo, A., Manca, and Joseph B. Rasmussen, J. B. 2004a. Peculiarities in the stable isotope composition of organisms from an alpine lake. - *Aquat. Sci. 66*: 440-445.

Cerri do Nascimento, D., Messias, M. C. e Rodrigues, J. J. L. 2004a. Sobre a ocorrência de *Lopescladius minutissimus* OLIVEIRA, 1967 (Insecta: Diptera: Chironomidae: Orthocladiinae) no Estado do Rio de Janeiro, Brasil. - *Ent. Vectores 11*: 179-181.

Chaloner, D. T., Lamberti, G. A., Merritt, R. W., Mitchell, N. L., Ostrom, P. H. and Wipfli, M. S. 2004a. Variation in responses to spawning Pacific salmon among three south-eastern Alaska streams. - *Freshwat. Biol. 49*: 587-599.

Charles, S., Ferreol, M., Chaumot, A. and Péry, A. R. R. 2004a. Food availability effect on population dynamics of the midge *Chironomus riparius*: a

Leslie modeling approach. - *Ecol. Modelling 175*: 217-229.

Choi, J. and Roche, H. 2004a. Effect of potassium dichromate and fenitrothion on hemoglobins of *Chironomus riparius* Mg. (Diptera, Chironomidae) larvae: potential biomarker of environmental monitoring. - *Envir. Monit. Assess. 92*: 229-239.

Christen, K. 2004a. Microarrays monitor environmental contaminants. - *Envir. Sci. Technol. 38*: 343A-344A.

Clément, B., Devaux, A., Perrodin, Y., Danjean, M. and Ghidini-Fatus, M. 2004a. Assessment of sediment ecotoxicity and genotoxicity in freshwater laboratory microcosms. - *Ecotoxicology 13*: 323-333.

Clerk, S., Selbie, D. T. and Smol, J. P. 2004a. Cage aquaculture and water-quality changes in the LaCloche Channel, Lake Huron, Canada: a paleolimnological assessment. - *Can. J. Fish. aquat. Sci. 61*: 1691-1701.

Collen, P., Keay, E. J,. andMorrison, B. R. S. 2004a. Processing of pine (*Pinus sylvestris*) and birch (*Betula pubescens*) leaf material in a small river system in the northern Cairngorms, Scotland. - *Hydrol. Earth Syst. Sci. 8*: 567-577.

Collier, K. J. 2004a. Invertebrate community dynamics in soft-bottomed streams of northern New Zealand: a spatio-temporal hierarchy. - *N. Z. Jl mar. Freshwat. Res. 38*: 1-18.

Collier, K. J. 2004b. Perturbation pathways affecting the avian lotic predator, blue duck, following a volcanic eruption. - *Freshwat. Biol. 49*: 818-834.

Collier, K. J., Smith, B. J. and Halliday, N. J. 2004a. Colonization and use of pine wood versus native wood in New Zealand plantation forest streams: implications for riparian management. - *Aquat. Conserv. mar. Freshwat. Ecosyst. 14*: 179-199.

Conder, J., Lotufo, G., Bowen, A., Turner, P., La Point, T. and Steevens, J. 2004a. Solid phase microextraction fibers for estimating the toxicity of nitroaromatic compounds. - *Aquat. Ecosyst. Hlth Mgmt 7*: 387-397.

Connolly, N. M., Crossland, M. R. and Pearson, R. G. 2004a. Effect of low dissolved oxygen on survival, emergence, and drift of tropical stream macroinvertebrates. - *J. N. Am. benthol. Soc. 23*: 251-270.

Cowell, B. C., Remley, A. H. and Lynch, D. M. 2004a. Seasonal changes in the distribution and abundance of benthic invertebrates in six headwater streams in central Florida. - *Hydrobiologia 522*: 99-115.

Cranston, P. S. and Dimitriadis, S. 2004a. The Chironomidae (Diptera) larvae of Atherton Tableland Lakes, north Queensland. - *Mem. Qld Mus.49*: 573-588.

Creed, R. P. and Reed, J. M. 2004a. Ecosystem engineering by crayfish in a headwater stream community. - *J. N. Am. benthol. Soc. 23*: 224-236.

Danger, A. R. and. Robson, B. J. 2004a. The effects of land use on leaf-litter processing by macroinvertebrates in an Australian temperate coastal stream. - *Aquat. Sci. 66*: 296-304.

Dangles, O., Malmqvist, B. and Laudon, H. 2004a. Naturally acid freshwater ecosystems are diverse and functional: evidence from boreal streams. - *Oikos 104*: 149-155.

Danks, H. V. 2004a. Seasonal adaptations in arctic insects. - *Integr. comp. Biol. 44*: 85-94.

Death, R. G. and Joy, M. K. 2004a. Invertebrate community structure in streams of the Manawatu-Wanganui region, New Zealand: the roles of catchment versus reach scale influences. - *Freshwat. Biol. 49*: 982-997.

deBruyn, A. M. H., McCann, K. S. and Rasmussen, J. B. 2004a. Migration supports uneven consumer control in a sewage-enriched river food web. - *J. Anim. Ecol. 73*: 737-746.

De Haas, E. M., Paumen, M. L., Koelmans, A. A. and Kraak, M. H. S. 2004a. Combined effects of copper and food on the midge *Chironomus riparius* in whole-sediment bioassays. - *Envir. Pollut. 127*: 99-107.

De Lange, H. J., De Jonge, J., Den Besten,P. J., Oosterbaan, J. and Peeters, E. T. H. M. 2004a. Sediment pollution and predation affect structure and production of benthic macroinvertebrate communities in the Rhine-Meuse delta, The Netherlands. - *J. N. Am. benthol. Soc. 23*: 557-579.

Denoël, M. 2004a. Feeding performance in heterochronic Alpine newts is consistent with trophic niche and maintenance of polymorphism. - *Ethology 110*: 127-136.

Derka, T., Tierno De Figueroa, J. M. and Krno, I. 2004a. Life cycle, feeding and production of *Isoptena serricornis*(PICTET, 1841) (Plecoptera, Chloroperlidae). - *Int. Rev. Hydrobiol. 89*: 165-174.

Dévai, Gy. 2004a. Előszó. (Preface). - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 7-8.

Di Battista, T. and Gattone, S. A. 2004a. Multivariate bootstrap confidence regions for abundance vector using data depth. - *Envir. Ecol. Statists 11*: 355-365.

Dieterich, A., Baumgärtner, D. and Eckmann, R. 2004a. Competition for food between Eurasian perch (*Perca fluviatilis* L.) and ruffe (*Gymnocephalus cernuus* (L.)) over different substrate types. - *Ecol. Freshwat. Fish 13*: 236-244.

Doi, H., Kikuchi, E., Mizota, C., Satoh, N., Shikano, S., Yurlova, N., Yadrenkina, E. and Zuykova, E. 2004a. Carbon, nitrogen, and sulfur isotope changes and hydro-geological processes in a saline lake chain. - *Hydrobiologia 529*: 227-237.

Dombrovskii, K. O. i Kharchenko, T. A. 2004a. Makrozoobentos verkhov'ya Kakhovskogo

vodokhranilishcha v usloviyakh vozdeistviya krupnogo promyshlennogo tsentra. (Macrozoobenthos of the upper reaches of the Kakhovka Reservoir under influence of a large industrial centre.) - *Gidrobiol. Zh. 40, 4*:54-63.

Dombrovskii, K. O. i Kharchenko, T. A. 2004b. Sanitarno-gidrobiologicheskoe sostoyanie ozera Zakitnya (g. Zaporozh'e). (Sanitary-hydrobiological state of Zakitnia Lake (Zaprozhye). - *Gidrobiol. Zh. 40, 5*: 36-41.

Donohue, I. and Irvine, K. 2004a. Seasonal patterns of sediment loading and benthic invertebrate community dynamics in Lake Tanganyika, Africa. - *Freshwat. Biol. 49*: 320-331.

Ducrot, V., Péry, A. R.R., Mons, R. and Jeanne Garric, J. 2004a. Energy-based modeling as a basis for the analysis of reproductive data with the midge (*Chironomus riparius*). - *Envir. Toxic. Chem. 23*: 225-231.

Dügel, M. and Kazancı, N. 2004a. Assessment of water quality of the Büyük Menderes River (Turkey) by using ordination and classification of macroinvertebrates and environmental variables. - *J. Freshwat. Ecol. 16*: 605-612.

Edokpayi, C. A.; Lawal, M. O.; Okwok, N. A.; and Ogunwenmo, C. A. 2004a. Physico-chemical and macrobenthic faunal characteristics of Kuramo Water, Lagos, southern Nigeria. - *Afr. J. aquat. Sci. 29*: 235-241.

Eggermont, H. 2004a. *Fossil Chironomidae (Insecta, Diptera) as biological indicators for past salinity variation in African lakes*. - Ph. D. Diss., Univ. Ghent. 497 pp.

Eggermont, H. and Verschuren, D. 2004a. Sub-fossil Chironomidae from East Africa. 1. Tanypodinae and Orthocladiinae. - *J. Paleolimnol. 32*: 383-412.

Eggermont, H. and Verschuren, D. 2004b. Sub-fossil Chironomidae from East Africa. 2. Chironominae (Chironomini and Tanytarsini). - *J. Paleolimnol. 32*: 413-455.

Eggleton, M. A. and Schramm, H. L. Jr. 2004a. Feeding ecology and energetic relationships with habitat of blue catfish, *Ictalurus furcatus*, and flathead catfish, *Pylodictis olivaris*, in the lower Mississippi River, USA. - *Envir. Biol. Fishes 70*: 107-121.

Eggleton, M. A., Gido, K. B., Matthews, W. J. and Schnell, G. D. 2004a. Assessment of anthropogenic influences on littoral-zone aquatic communities of Lake Texoma, Oklahoma-Texas, USA. - *Ecohydrol. Hydrobiol. 4*: 103-117.

Einarsson, Á.. and Gardarsson, A. 2004a. Moulting diving ducks and their food supply. - *Aquat. Ecol. 38*: 297-307.

Einarsson, Á.. and Örnólfsdóttir, E. B. 2004a. Long-term changes in benthic Cladocera populations in Lake Myvatn, Iceland. - *Aquat. Ecol. 38*: 253-262.

Einarsson, Á.. Stefánsdóttir, G., Jóhannesson, H., Ólafsson, J. S., Gíslason, G. M., Wakana, I., Gudbergsson, G. and Gardarsson, A. 2004a. The ecology of Lake Myvatn and the River Laxá: Variation in space and time. - *Aquat. Ecol. 38*: 317-348.

Ekrem, T. 2004a. Immature stages of European *Tanytarsus* species I. The *eminulus*-, *gregarius*-, *lugens*- and *mendax* species groups (Diptera, Chironomidae). - *Mitt. Mus. Naturk. Berl., Dt. ent. Z. 51*: 97-146.

Ekrem, T. and Willassen, E. 2004a. Exploring Tanytarsini relationships (Diptera: Chironomidae) using mitochondrial COII gene sequences. - *Insect Syst. Evol. 35*: 263-276.

Elliott, J. M. 2004a. Prey switching in four species of carnivorous stoneflies. - *Freshwat. Biol. 49*: 709-720.

Encina, L., Rodríguez-Ruiz, A. and Granado-Lorencio, C. 2004a. Trophic habits of the fish assemblage in an artificial fresh water ecosystem: the Joaquín Costa reservoir, Spain. - *Folia zool. 53*: 437-449.

Endo, K. 2004a. Genus *Pagastia* Oliver (Diptera: Chironomidae) from Japan, with description of a new species. - *Ent. Sci. 7*: 277-289.

Erbaeva, E. A. i Safronov, G. P. 2004a. Khironomidy (Diptera, Chironomidae) reki Angary i ee vodokhranilishch. (Chironomidae (Diptera) of the Angara River and its reservoirs.) - *Evraziat. ent. Zh. 3*: 325-332.

Ermolaeva, O. V. 2004a. Sravnitel'nyi kariologicheskii analiz khironomid podsemeistv Diamesinae i Prodiamesinae (Diptera, Chironomidae). (Comparative karyological analysis of Diamesinae and Prodiamesinae chironomids (Diptera, Chironomidae).) - *Evraziat. ent. Zh. 3*: 295-299.

Evenset, A., Christensen, G. N., Skotvold, T., Fjeld, E., Schlabach, M., Wartena, E. and Gregor, D. 2004a. A comparison of organic contaminants in two high Arctic lake ecosystems, Bjørnøya (Bear Island), Norway. - *Sci. tot. Envir. 318*: 125-141.

Ezcurra de Drago, I., Marchese, M. and Wantzen, K. M. 2004a. Benthos of a large neotropical river: spatial patterns and species assemblages in the Lower Paraguay and its floodplains. - *Arch. Hydrobiol. 160*: 347-374.

Fallu, M.-A., Pienitz, R., Walker, I. R. and Overpeck, J. 2004a. AMS ^{14}C dating of tundra lake sediments using chironomid head capsules. - *J. Paleolimnol. 31*: 11-22.

Feck, J. and Hall, R. O. 2004a. Response of American dippers (*Cinclus mexicanus*) to variation in stream water quality. - *Freshwat. Biol. 49*: 1123-1137.

Fenoglio, S., Bo, T., Gallina, G. and Cucco, M. 2004a. Vertical distribution in the water column of drifting stream macroinvertebrates. - *J. Freshwat. Ecol. 19*: 485-492.

Fernández-Aláez, M., Fernández-Aláez, C., Bécares, E., Valentín, M., Goma, J. and Castrillo, P. 2004a. A 2-year experimental study on nutrient and

predator influences on food web constituents in a shallow lake of north-west Spain. - *Freshwat. Biol. 49*: 1574-1592.

Fieker, J., Riss, H. W., Nazarova, L. B. und Meyer, E. I. (2003) 2004a. Die Chironomidenfauna des 'Grossen Heiligen Meeres' - Anwendung von Ultraschall auf Sedimentproben. - *Tag.ber. Dt. Ges. Limnol. 2003*: 482-485.

Fonseca Leal, J. J., Esteves, F. A. and Callisto, M. 2004a. Distribution of Chironomidae larvae in an Amazonian flood-plain lake impacted by bauxite tailings (Brazil). - *Amazoniana 18*: 109-123.

Forcella, M., Berra, E., Giacchini, R., Hanozet, G. M. and Parenti, P. 2004a. Changes in leucine transport activity in *Chironomus riparius* larvae after short-term exposure to potassium dichromate and fenitrothion. - *Archs Insect Biochem. Physiol. 55*: 90-101.

Fowler, R. T. 2004a. The recovery of benthic invertebrate communities following dewatering in two braided rivers. - *Hydrobiologia 523*: 17-28.

Francis, D. R. 2004a. Distribution of midge remains (Diptera: Chironomidae) in surficial lake sediments in New England. - *NEast. Nat. 11*: 459-478.

Frank, J. H., Sreenivasan, S., Benshoff, P. J., Deyrup, M., A., Edwards, G. B., Halbert, S. E., Hamon, A. B., Lowman, M. D., Mockford,E. L., Scheffrahn, R. H., Steck, G. J., Thomas, M. C., Walker, T. J. and Welbourn, W. C. 2004a. Invertebrate animals extracted from native *Tillandsia* (Bromeliales: Bromeliaceae) in Sarasota County, Florida. - *Fla Ent. 87*: 176-185.

Frantsevich, L. 2004a. Structure of the coxa and homeosis of legs in Nematocera (Insecta: Diptera). - *Acta zool. 85*: 131-148.

Freitag, H. 2004a. Composition and longitudinal patterns of aquatic insect emergence in small rivers of Palawan Island, the Philippines. - *Int. Rev. Hydrobiol. 89*: 375-391.

Fritz, K. M. and Dodds, W. K. 2004a. Resistance and resilience of macroinvertebrate assemblages to drying and flood in a tallgrass prairie stream system. - *Hydrobiologia 527*: 99-112.

Frouz, J., Ali, A. and Lobinske, R. J. 2004a. Laboratory evaluation of six algal species for larval nutritional suitability of the pestiferous midge *Glyptotendipes paripes* (Diptera: Chironomidae). - *J. econ. Ent. 97*: 1884-1890.

Frouz, J., Ali, A. and Lobinske, R. J. 2004b. Algal food selection and digestion by larvae of the pestiferous chironomid *Chironomus crassicaudatus* under laboratory conditions. - *J. Am. Mosquito Control Ass. 20*: 458-461.

Frouz, J., Ali, A., Frouzova, J. and Lobinske, R. J. 2004a. Horizontal and vertical distribution of soil macroarthropods along a spatio-temporal moisture gradient in subtropical Central Florida. - *Envir. Ent. 33*: 1282-1295.

Frouz, J., Lobinske, R. J. and Ali, A. 2004a. Influence of Chironomidae (Diptera) faecal pellet accumulation on lake sediment quality and larval abundance of pestiferous midge *Glyptotendipes paripes*. - *Hydrobiologia 518*: 169-177.

Fuentes, C., Sanchez, M. I., Selva, N. and Green, A. J. 2004a. The diet of the Marbled Teal *Marmaronetta angustirostris* in southern Alicante, eastern Spain. - *Revue Ecol. Terre Vie 59*: 475-490.

Fuller, R. L., Kennedy, B. P. and Nielsen, C. 2004a. Macroinvertebrate responses to algal and bacterial manipulations in streams. - *Hydrobiologia 523*: 113-126.

Gaino, E., Lancioni, T., La Porta, G. and Todini, B. 2004a. The consortium of the sponge *Ephydatia fluviatilis* (L.) living on the common reed *Phragmites australis* in Lake Piediluco (central Italy). - *Hydrobiologia 520*: 165-178.

Gajdošík, M. and Gaisler, J. 2004a. Diet of two *Eptesicus* bat species in Moravia (Czech Republic). - *Folia zool. 53*: 7-16.

Gardarsson, A. and Einarsson, Á. 2004a. Resource limitation of diving ducks at Myvatn: Food limits production. - *Aquat. Ecol. 38*: 285-295.

Gardarsson, A., Einarsson, Á., Gíslason, G. M., Hrafnsdóttir, Th., Ingvason, H. R., Jónsson, E. and Ólafsson, J. S. 2004a. Population fluctuations of chironomid and simuliid Diptera at Myvatn in 1977-1996. - *Aquat. Ecol. 38*: 209-217.

Gerdeaux, D. et Hamelet, V. 2004a. (Reports on the studies and research in the Geneva basin: whitefish diet in the pelagic zone of lake Geneva.) - In: *Rapp. Comm. Int. Prot. Eaux Leman contre Pollut. (= Rapport de la commission internationale pour la protection des eaux du Leman (CIPEL) contre la pollution. Rapports sur les études et recherches entreprises dans le bassin Lemanique. Programme quinquennal 2001-2005. Campagne 2003. Rapports),* pp. 93-98.

Gerhardt, A., Janssens de Bisthoven, L. and Soares, A. M. V. M. 2004a. Macroinvertebrate response to acid mine drainage: community metrics and on-line behavioural toxicity bioassay. - *Envir. Pollut. 130*: 263-274.

Ghonaim, M., Ali, A. and Salem, M. 2004a. *Tanytarsus* (Diptera: Chironomidae) from Egypt with description of a new species. - *Fla Ent. 87*: 571-575.

Gíslason, G. M. and Steingrímsson, S. Ó. 2004a. Seasonal and spatial variation in the diet of brown trout (*Salmo trutta* L.) in the subarctic River Laxá, north-east Iceland. - *Aquat. Ecol. 38*: 263-270.

Gjerløv, C. and Richardson, J. S. 2004a. Patchy resources in a heterogeneous environment: effects of leaf litter and forest cover on colonisation patterns of invertebrates in a British Columbian stream. - *Arch. Hydrobiol. 161*: 307-327.

Goddeeris, B. 2004a. Diapause and ecological strategies in Chironomidae (Diptera). - *J. Limnol. 63, Suppl. 1*: 94.

Gonçalves, F. B. e Aranha, J. M. R. 2004a. Ocupação espaço-temporal pelos macroinvertebrados bentônicos na bacia do rio Ribeirão, Paranaguá, PR (Brasil). - *Acta biol. paranaense 33*: 181-191.

Gonçalves, J. F. Jr., Santos, A. M. and Esteves, F. A. 2004a. The influence of the chemical composition of *Typha domingensis* and *Nymphaea ampla* detritus on invertebrate colonization during decomposition in a Brazilian coastal lagoon. - *Hydrobiologia 527*: 125-137.

Gray, L. 2004a. Changes in water quality and macroinvertebrate communities resulting from urban stormflows in the Provo River, Utah, U.S.A. - *Hydrobiologia 518*: 33-46.

Grey, J., Kelly, A. and Jones, R. I. 2004a. High intraspecific variability in carbon and nitrogen stable isotope ratios of lake chironomid larvae. - *Limnol. Oceanogr. 49*: 239-244.

Grey, J., Kelly, A., Ward, S., Sommerwerk, N. and Jones, R. I. 2004a. Seasonal changes in the stable isotope values of lake-dwelling chironomid larvae in relation to feeding and life cycle variability. - *Freshwat. Biol. 49*: 681-689.

Grey, J., Waldron, S. and Hutchinson, R. 2004a. The utility of carbon and nitrogen isotope analyses to trace contributions from fish farms to the receiving communities of freshwater lakes: a pilot study in Esthwaite Water, UK. - *Hydrobiologia 524*: 253-262.

Griffith, M. B., Lazorchak, J. M. and Herlihy, A. T. 2004a. Relationships among exceedences of metals criteria, the results of ambient bioassays, and community metrics in mining-impacted streams. - *Envir. Toxic. Chem. 23*: 1786-1795.

Grund, M. 2004a. Chironomidae in Dominikanischem Bernstein. Eine fossile tropische Fauna. - In: Bechly, G. (ed.): *7th GfBS a. Congr. Abstr., Organisms Diversity Evol. 4, electr. Suppl. 6*: 26.

Gudbergsson, G. 2004a. Arctic charr in Lake Myvatn: The centennial catch record in the light of recent stock estimates. - *Aquat. Ecol. 38*: 271-284.

Guo, Y. and Wang, X. 2004a. *Stempellina* and *Zavrelia* from China (Diptera, Chironomidae, Tanytarsini). - *Aquat. Insects 26*: 183-189.

Guo, Y. and Wang, X. 2004b. A new *Neostempellina* Reiss from China (Diptera, Chironomidae, Tanytarsini). - *Acta zootaxon. Sin. 29*: 557-559.

Guo, Y. and Wang, X. 2004c. Description of four new species of *Krenosmittia* Thienemann & Krüger from China (Diptera: Chironomidae: Orthocladiinae). - *Studia dipterol. 11*: 493-499.

Halpern, M., Broza, Y. B., Mittler, S., Arakawa, E. and Broza, M. 2004a. Chironomid egg masses as a natural reservoir of *Vibrio cholerae* non-O1 and non-O139 in freshwater habitats. - *Microb. Ecol. 47*: 341-349. [+ Erratum 2004: *Microb. Ecol. 48*: 285.]

Hammarlund, D., Velle, G., Wolfe, B. B., Edwards, T. W. D., Barnekow, L., Bergman, J., Holmgren, S., Lamme, S., Snowball, I., Wohlfarth, B. and Possnert, G. 2004a. Palaeolimnological and sedimentary responses to Holocene forest retreat in the Scandes Mountains, west-central Sweden. - *Holocene 14*: 862-876.

Hanelt, B. and Janovy, J. Jr. 2004a. Life cycle and paratenesis of American gordiids (Nematomorpha: Gordiida). - *J. Parasit. 90*: 240-244.

Harrison, A. D. (2002) 2004a. A contribution to the taxonomy of Tanytarsini (Diptera: Chironomidae) of sub-Saharan Africa, with a description of a new genus (*Afrozavrelia*) and five new species from other genera. - *Ann. east. Cape Mus. 3*: 1-15.

Harrison, A. D. (2002) 2004b. *Metriconemus capicola*, a replacement name for *Metriocnemus capensis* Harrison 2002. - *Ann. east. Cape Mus. 3*: 15.

Harrison, S. S. C., Pretty, J. L., Shepherd, D., Hildrew, A. G., Smith, C. and Hey, R. D. 2004a. The effect of instream rehabilitation structures on macroinvertebrates in lowland rivers. - *J. appl. Ecol. 41*: 1140-1154.

Heatwole, D. and Simenstad, C. A. 2004a. Quantifying the impacts of tide restrictions in salt marshes of northern Puget Sound. - In: Droscher, T. W. and Fraser, D. A. (eds.): *2003 Georgia Basin/Puget Sound Resarch Conference Proceedings.* (unpag.)

Heinis, L. J., Highland, T. L. and Mount, D. R. 2004a. Method for testing the aquatic toxicity of sediment extracts for use in identifying organic toxicants in sediments. - *Envir. Sci. Technol. 38*: 6256-6262.

Heinrichs, M. L. und Müller, J. 2004a. Biostratigraphie der Zuckmücken (Diptera: Chironomidae) des Ammersees im bayerischen Voralpenland im Späten Pleistozän und im Holozän. - *Lauterbornia 50*: 99-110.

Heiri, O. 2004a. Within-lake variability of subfossil chironomid assemblages in shallow Norwegian lakes. - *J. Paleolimnol. 32*: 67-84.

Heiri, O., Tinner, W. and Lotter, A. F. 2004a. Evidence for cooler European summers during periods of changing meltwater flux to the North Atlantic. - *Proc. natn. Acad. Sci. 101*: 15285-15288.

Herwig, B. R., Soluk, D. A., Dettmers, J. M. and Wahl, D. H. 2004a. Trophic structure and energy flow in backwater lakes of two large floodplain rivers assessed using stable isotopes. - *Can. J. Fish. aquat. Sci. 61*: 12-22.

Hesthagen, T., Saksgård, R., Hegge, O., Dervo, B. K. and Skurdal, J. 2004a. Niche overlap between young brown trout (*Salmo trutta*) and Siberian sculpin (*Cottus poecilopus*) in a subalpine Norwegian river. - *Hydrobiologia 521*: 117-125.

Hildrew, A. G., Woodward, G., Winterbottom, J. H. and Orton, S. 2004a. Strong density dependence in a predatory insect: large-scale experiments in a stream. - *J. Anim. Ecol. 73*: 448-458.

Hirabayashi, K., Matsuzawa, M., Yamamoto, M. and Nakamoto, N. 2004a. Chironomid fauna (Diptera, Chironomidae) in a filtration plant in Japan. - *J. Am. Mosquito Control Ass. 20*: 74-82.

Hirabayashi, K., Yoshizawa, K., Yoshida, N. and Kazama, F. 2004a. Progress of eutrophication and change of chironomid fauna in Lake Yamanakako, Japan. - *Limnology 5*: 47-53.

Hirst, A. J. 2004a. Broad-scale environmental gradients among estuarine benthic macrofaunal assemblages of south-eastern Australia: implications for monitoring estuaries. - *Mar. Freshwat. Res. 55*: 79-92.

Hodkinson, I. D., Coulson, S. J. and Webb, N. R. 2004a. Invertebrate community assembly along proglacial chronosequences in the high Arctic. - *J. Anim. Ecol. 73*: 556-568.

Hoxmeier, R. J. H., Wahl, D. H., Hooe, M. L. and Pierce, C. L. 2004a. Growth and survival of larval walleyes in response to prey availability. - *Trans. Am. Fish. Soc. 133*: 45-54.

Hribar, L. J., Vlach, J. J., Demay, D. J., James, S. S., Fahey, J. S. and Fussell, E. M. 2004a. Mosquito larvae (Culicidae) and other Diptera associated with containers, storm drains, and sewage treatment plants in the Florida Keys, Monroe County, Florida. - *Fla Ent. 87*: 199-203.

Hruska, K. A. and Dube, M. G.. 2004a. Using artificial streams to assess the effects of metal-mining effluent on the life cycle of the freshwater midge (*Chironomus tentans*) in situ. - *Envir. Toxic. Chem. 23*: 2709-2718.

Hwang, H., Fisher, S. W., Kim, K. and Landrum, P. F. 2004a. Comparison of the toxicity using body residues of DDE and select PCB congeners to the midge, *Chironomus riparius*, in partial-life cycle tests. - *Archs envir. Contam. Toxic. 46*: 32-42.

Hyland, J. L., Balthis, W. L., Posey, M., Hackney, C. T. and Alphin, T. 2004a. The soft-bottom macrobenthos of North Carolina estuaries. - *Estuaries 27*: 501-514.

Hynynen, J., Palomäki, A., Meriläinen, J. J., Witick, A. and Mäntykoski, K. 2004a. Pollution history and recovery of a boreal lake exposed to a heavy bleached pulping effluent load. - *J. Paleolimnol. 32*: 351-374.

Ilkova, J. 2004a. Chromosome variability of species of subfamily Chironominae (Diptera, Chironomidae) from polluted regions near Sofia. - *Acta zool. bulg. 56*: 15-30.

Il'yashuk, E. A. and Il'yashuk, B. P. 2004a. Analiz ostatkov khironomid iz donnykh otlozhenii vodoemov pri paleoekologicheskoi rekonstruktsii. - *Vod. Resursy 31*: 223-235. [also published as: Analysis of chironomid remains from lake sediments in paleoecological reconstruction. - *Wat. Resourc. 31*: 203-214.]

Ingvason, H. R., Ólafsson, J. S. and Gardarsson, A. 2004a. Food selection of *Tanytarsus gracilentus* larvae (Diptera: Chironomidae): An analysis of instars and cohorts. - *Aquat. Ecol. 38*: 231-237.

Inoue, E., Kawai, K. and Imabayashi, H. 2004a. A new species of the genus *Stempellinella* (Diptera: Chironomidae) from Hiroshima, Japan. - *Limnology 5*: 141-147.

Inoue, E., Kawai, K. and Imabayashi, H. 2004b. Differences in occurrence among lotic chironomid (Diptera: Chironomidae) species in relation to spatio-temporal factors of mountain streams. - *J. Grad. Sch. Biosphere Sci., Hiroshima Univ. 49*: 25-39.

Irving, E. C., Liber, K. and Culp, J. M. 2004a. Lethal and sublethal effects of low dissolved oxygen condition on two aquatic invertebrates, *Chironomus tentans* and *Hyalella azteca*. - *Envir. Toxic. Chem. 23*: 1561-1566.

Istomina, A. G. i Kiknadze, I. I. 2004a. *Chironomus bernensis* Klotzli [sic!], 1973 (Diptera, Chironomidae) v Zapadnoi Sibiri. Kariotip i khromosomnyi polimorfizm. (*Chironomus bernensis* Klotzli, 1973 (Diptera, Chironomidae) in West Siberia: karyotype and chromosome polymorphism.) - *Evraziat. ent. Zh. 3*: 283-288.

Jacobsen, D. 2004a. Contrasting patterns in local and zonal family richness of stream invertebrates along an Andean altitudinal gradient. - *Freshwat. Biol. 49*: 1293-1305.

Janssens de Bisthoven, L, Gerhardt, A and Soares, A. M. V. M. 2004a. Effects of acid mine drainage on larval *Chironomus* (Diptera, Chironomidae) measured with the Multispecies Freshwater Biomonitor®. - *Envir. Toxic. Chem. 23*: 1123-1128.

Jeong, K. Y., Yum, H.-Y., Lee, I.-Y., Ree, H.-I., Hong, C.-S., Kim, D. S. and Yong, T.-S. 2004a. Molecular cloning and characterization of tropomyosin, a major allergen of *Chironomus kiiensis*, a dominant species of nonbiting midges in Korea. - *Clin. diagn. Lab. Immunol. 11*: 320-324.

Jiang, M. X. and Cheng, J. A. 2004a. Effects of manure use on seasonal patterns of arthropods in rice with special reference to modified biological control of whitebacked planthopper, *Sogatella furcifera* Horvath (Homoptera: Delphacidae). - *J. Pest Sci. 77*: 185-189.

Johnson, A. A. and Kleve, M. G. 2004a. *Lanceimermis palustris* n. sp. and *Telomermis palustris* n. sp. (Nematoda: Mermithidae) parasites of chironomid (Insecta: Diptera) adults from Lake Alice Bog in northern Minnesota. - *J. Parasitol. 90*: 1457-1462.

Jones, R. I. and Grey, J. 2004a. Stable isotope analysis of chironomid larvae from some Finnish forest lakes indicates dietary contribution from biogenic methane. - *Boreal Envir. Res. 9*: 17-23.

Kajak, Z. and Prus, P. 2004a. Influence of the population density and the amount of food on *Chironomus plumosus* (L.) and Tubificidae. Laboratory experiments. - *Pol. J. Ecol. 52*: 47-53.

Kajak, Z. and Prus, P. 2004b. Time of *Chironomus plumosus* (L.) generations in natural conditions of lowland reservoir. - *Pol. J. Ecol. 52*: 211-222.

Kawai, K., Hashimoto, M. and Imabayashi, H. 2004a. Environmental factors affecting the quality and quantity of hemoglobin in *Chironomus* larvae (Diptera: Chironomidae). - *Med. Ent. Zool. 55*: 281-287.

Keats, R. A., Osher, L. J. and Neckles, H. A. 2004a. The effect of nitrogen loading on a brackish estuarine faunal community: a stable isotope approach. - *Estuaries 27*: 460-471.

Kefford, B. J., Dalton, A., Palmer, C. G. and Nugegoda, D. 2004a. The salinity tolerance of eggs and hatchlings of selected aquatic macroinvertebrates in south-east Australia and South Africa. - *Hydrobiologia 517*: 179-192.

Kefford, B. J., Papas, P. J., Metzeling, L. and Nugegoda, D. 2004a. Do laboratory salinity tolerances of freshwater animals correspond with their field salinity? - *Envir. Pollut. 129*: 355-362.

Kelly, A., Jones, R. I. and Grey, J. 2004a. Stable isotope analysis provides fresh insights into dietary separation between *Chironomus anthracinus* and *C. plumosus*. - *J. N. Am. benthol. Soc. 23*: 287-296.

Kevrekidis, T. 2004a. Seasonal variation of the macrozoobenthic community structure at low salinities in a Mediterranean lagoon (Monolimni lagoon, Northern Aegean). - *Int. Rev. Hydrobiol. 89*: 407-425.

Khanna, P., Sharma, O. P. and Tripathi, N. K. 2004a. Karyology of *Chironomus striatipennis* (Diptera: Chironomidae) from Jammu Region, J&K State, India. - *Biol. Mem. 30*: 72-77.

Kharchenko, T. A., Lyashenko, A. V., Volikov, Yu. N. i Etingova, A. A. 2004a. Bioraznoobrazie vodno-bolotnogo kompleksa del'ty Dunaya v predelakh Ukrainy i prognoz ego izmenenii pri realizatsii proekta sudokhodstva po akvatorii biosfernogo zapovednika. (Biodiversity of wetlands complex in the Danube delta within the limits of Ukraine and prognosis of its changes if the navigation project through the biosphere reserve aquatic area will be realized.) - *Gidrobiol. Zh. 40, 2*: 3-22.

Kiesler, E. and Visa, N. 2004a. Intranuclear pre-mRNA trafficking in an insect model system. - *Prog. molec. subcell. Biol. 35*: 99-118.

Kiffney, P. M., Volk, C. J., Beechie, T. J., Murray, G. L., Pess, G. R. and Edmonds, R. L. 2004a. A high-severity disturbance event alter community and ecosystem properties in West Twin Creek, Olympic National Park, Washington, USA. - *Am. Midl. Nat. 152*: 286-303.

Kiknadze, I. I., Golygina, V. V., Istomina, A. G. i Gunderina, L. I. 2004a. Zakonomernosti khromosomnogo polimorfizma pri divergentsii populyatsii i vidov u khironomid (Diptera, Chironomidae). (Pattern of chromosomal polymorphism during population and species divergence in *Chironomus* (Diptera, Chironomidae).) - *Sib. ekol. Zh. 11*: 635-651.

Kiknadze, I. I., Gunderina, L. I., Istomina, A. G., Gusev, V. D. and Nemytikova, L. A. 2004a. Similarity analysis of inversion banding sequences in chromosomes of *Chironomus* species (breakpoint phylogeny). - In: Kolchanov, N. and Hofestaedt, R. (eds.): *Bioinformatics of genome regulation and structure*, pp. 245-253. Kluwer Acad. Publs, Boston, Dordrecht, Lond.

Kiknadze, I. I., Gunderina, L. I., Istomina, A. G., Gusev, V. D. i Miroshnichenko (Nemytikova), L. A. 2004b. Rekonstruktsiya khromosomnoi evolyutsii v rode *Chironomus* Meig. (Diptera, Chironomidae). (Reconstruction of chromosomal evolution in the genus *Chironomus* Meig.(Diptera, Chironomidae).) - *Evraziat. ent. Zh. 3*: 265-275.

Kiknadze, I. I., Wang, X. and Istomina, A. G. 2004a. Karyotype of *Propsilocerus akamusi* (Tokunaga) (Diptera: Chironomidae). - *Zootaxa 765*: 1-8.

Kim, E. J. and Lee, S. K. 2004a. Reduced viability of F_1 egg ropes in *Chironomus riparius* exposed to di-2-ethylhexylphthalate (DEHP). - *J. envir. Biol. 25*: 259-261.

Kirkağaç, M. U., Pulatsue, S. and Koeksal, G. 2004a. Effects of land-based trout farms on the benthic macroinvertebrate community in a Turkish brook. - *Isr. J. Aquacult./Bamidgeh 56*: 59-67.

Kißner, T., Riss, H. W., Stief, P. und Meyer, E. I. (2003) 2004a. Bioturbations- und Bauverhalten von *Chironomus plumosus* (Diptera: Chironomidae) unter verschiedenen Sauerstoffbedingungen. - *Tag.ber. Dt. Ges. Limnol. 2003*: 486-489.

Kitching, R. L., Bickel, D., Creagh, A. C., Hurley, K. and Symonds, C. 2004a. The biodiversity of Diptera in Old World rain forest surveys: a comparative faunistic analysis. - *J. Biogeogr. 31*: 1185-1200.

Kiyashko, S. I., Imbs, A. B., Narita, T., Svetashev, V. I. and Wada, E. 2004a. Fatty acid composition of aquatic insect larvae *Stictochironomus pictulus* (Diptera: Chironomidae): evidence of feeding upon methanotrophic bacteria. - *Comp. Biochem. Physiol. Pt B. Biochem. molec. Biol. 139*: 705-711.

Klerks, P. L., Nyman, J. A. and Bhattacharyya, S. 2004a. Relationship between hydrocarbon measurements and toxicity to a chironomid, fish larva and daphnid for oils and oil spill chemical treatments in laboratory freshwater marsh microcosms. - *Envir. Pollut. 129*: 345-353.

Klishko, O. K. i Nadelyaeva, S. M. 2004a. O novoi nakhodke *Paratanytarsus baicalensis* (Tshern.) (Diptera, Chironomidae) v basseine Verkhnego Amura. (A new record of *Paratanytarsus baicalensis* (Tshern.) (Diptera, Chironomidae) in the Upper Amur basin.) - *Evraziat. ent. Zh. 3*: 333-336.

Kondo, S., Konishi, T. and Murugan, K. 2004a. Larvicidal effects of neem (*Azadirachta indica*) seed kernel extracts against *Paratanytarsus grimmii*

(Diptera: Chironomidae) and *Aedes albopictus* (Diptera: Culicidae). - *Med. Ent. Zool. 55*: 247-250.

Korsu, K. 2004a. Response of benthic invertebrates to disturbance from stream restoration: the importance of bryophytes. - *Hydrobiologia 523*: 37-45.

Kurek, J., Cwynar, L. C. and Spear, R. W. 2004a. The 8200 cal yr BP cooling event in eastern North America and the utility of midge analysis for Holocene temperature reconstructions. - *Quatern. Sci. Rev. 23*: 627-639.

Kwak, I.-S. and Lee, W. 2004a. (Effects of the ecdysteroid agonist tebufenozide on freshwater chironomids.) - *Korean J. Limnol. 37*: 96-101

Langdon, P. G., Barber, K. E. and Lomas-Clarke, S. H. 2004a. Reconstructing climate and environmental change in northern England through chironomid and pollen analyses: evidence from Talkin Tarn, Cumbria. - *J. Paleolimnol. 32*: 197-213.

Langton, P. H. 2004a. Additions to the Irish List of Chironomidae (Diptera), including the first species of the millennium new to the British Isles. - *Dipterists Digest 10*: 131-134.

Langton, P. H. 2004b. *Anatopynia plumipes* (Fries, 1823) and *Chironomus nudiventris* Ryser, Scholl & Wülker, 1983 (Diptera, Chironomidae) new to Britain. - *Dipterists Digest 10*: 134.

Larocque, I. and Bigler, C. 2004a. Similarities and discrepancies between chironomid- and diatom-inferred temperature reconstructions through the Holocene at Lake 850, northern Sweden. - *Quatern. int. 122*: 109-121.

Larocque, I. and Hall, R. I. 2004a. Holocene temperature estimates and chironomid community composition in the Abisko,Valley, northern Sweden. - *Quatern. Sci. Rev. 23*: 2453-2465.

Lawrence, J. M. and Gresens, S. E. 2004a. Foodweb response to nutrient enrichment in rural and urban streams. - *J. Freshwat. Ecol. 19*: 375-385.

Lencioni, V. 2004a. Survival strategies of freshwater insects in cold environments. - *J. Limnol. 63, Suppl. 1*: 45-55.

Leslie, H. A., Hermens, J. L. M. and Kraak,-M. H. S. 2004a. Baseline toxicity of a chlorobenzene mixture and total body residues measured and estimated with solid-phase microextraction. - *Envir. Toxic. Chem. 23*: 2017-2021.

Leslie, H. A., Kraak, M. H. S. and Hermens, J. L. M. 2004a. Chronic toxicity and body residues of the nonpolar narcotic 1,2,3,4-tetrachlorobenzene in *Chironomus riparius*. - *Envir. Toxic. Chem. 23*: 2022-2028.

Lester, G. T., Krestian, B. J. and Epler, J. H. (2003) 2004a. First Nearctic records of *Tempisquitoneura* (Diptera: Chironomidae: Orthocladiinae) from Arizona, USA. - *Ent. News 114*: 117-119.

Leung, Y. K., Wong, K. F., Lee, H.K. and Ho, J. W. 2004a. Cloning and characterization of chironomidae [sic!] ferrochelatase: copper activation of the purified ferrochelatase. - *Molec. cell. Biochem. 262*: 225-231.

Levings, C. D., Barry, K. L., Grout, J. A., Piercey, G. E., Marsden, A. D., Coombs, A. P. and Mossop, B. 2004a. Effects of acid mine drainage on the estuarine food web, Britannia Beach, Howe Sound, British Columbia, Canada. - *Hydrobiologia 525*: 185-202.

Lieverloo, J. H. M. van, Bosboom, D. W., Bakker, G. L., Brouwer, A. K., Voogt, R. and De Roos, J. E. M. 2004a. Sampling and quantifying invertebrates from drinking water distribution mains. - *Wat. Res. 38*: 1101-1112.

Lobinske, R. J., Stimac, J. L. and Ali, A. 2004a. A spatially explicit computer model for immature distributions of *Glyptotendipes paripes* (Diptera: Chironomidae) in central Florida lakes. - *Hydrobiologia 519*: 19-27.

Lods-Crozet, B. et Reymond, O. 2004a. (Reports on the studies and research in the Geneva basin: responses of the benthic communities in lake Geneva to the improved trophic state of the lake between 1983 and 2003.) - In: *Rapp. Comm. Int. Prot. Eaux Leman contre Pollut. (= Rapport de la commission internationale pour la protection des eaux du Leman (CIPEL) contre la pollution. Rapports sur les études et recherches entreprises dans le bassin Lemanique. Programme quinquennal 2001-2005. Campagne 2003. Rapports),* pp. 99-109.

Londono, D. K., Siegfried, B. D. and Lydy, M. J. 2004a. Atrazine induction of a family 4 cytochrome P450 gene in *Chironomus tentans* (Diptera: Chironomidae). - *Chemosphere 56*: 701-706.

Lopez Lastra, C. C., Scorsetti, A. C., Marti, G. A. and Garcia, J. J. 2004a. Host range and specificity of an Argentinean isolate of the aquatic fungus *Leptolegnia chapmanii* (Oomycetes: Saprolegniales), a pathogen of mosquito larvae (Diptera: Culicidae). - *Mycopathologia. 158*: 311-315.

Lorenz, A., Hering, D., Feld, C. K. and Rolauffs, P. 2004a. A new method for assessing the impact of hydromorphological degradation on the macroinvertebrate fauna of five German stream types. - *Hydrobiologia 516*: 107-127.

Lukashev, D. V. i Severenchuk, N. S. 2004a. Izmenenie struktury makrozoobentosa vodoema-okhladitelya Chernobyl'skoi AES v usloviyakh umenysheniya teplovoi nagruzki na ekosistemy. (Change in structure of macrozoobenthos of cooling reservoir of Chernobyl' Power Plant under condition of decreasing of thermal loading on ecosystem.) - *Gidrobiol. Zh. 40, 4*: 64-72.

Lyashenko, A. V., Silaeva, A. A., Etoingova, A. A. i Makovskii, V. V. 2004a. Sravnitel'naya kharakteristika bioraznoobraziya ekologicheskikh gruppirovok makrobespozvonochnykh Kiliiskoi del'ty Dunaya. (Comparative characteristics of biodiversity of ecological assemblages of

macroinvertebrates in the Kilia delta of the Danube.) - *Gidrobiol. Zh. 40, 6*: 18-35.

Lydy, M. J. and Austin, K. R. 2004a. Toxicity assessment of pesticide mixtures typical of the Sacramento–San Joaquin Delta using *Chironomus tentans*. - *Archs envir. Contam. Toxic. 48*: 49-55.

MacDonald, M. M., Warne, A. L., Stock, N. L., Mabury, S. A., Solomon, K. R. and Sibley, P. K. 2004a. Toxicity of perfluorooctane sulfonic acid and perfluorooctanoic acid to *Chironomus tentans*. - *Envir. Toxic. Chem. 23*: 2116-2123.

MacKenzie, R. A. and Kaster, J. L. 2004a. Temporal and spatial patterns of insect emergence from a Lake Michigan coastal wetland. - *Wetlands 24*: 688-700.

Makarchenko, E. A. i Makarchenko, M. A. 2004a. Novye i maloizvestnyi [sic!] vidy komarov-zvontsov podsemeistva Orthocladiinae (Diptera, Chironomidae) s ostrova Sakhalin. (New and little-known chironomids of the subfamily Orthocladiinae (Diptera, Chironomidae) from Sakhalin Island.) - In: Bogatov, V. V., Barkalov, V. Yu., Lelej, A. S., Makarchenko, E. A. and Storozhenko, S. Yu. (eds.): *Flora and fauna of Sakhalin Island (Materials of International Sakhalin Island Project), Pt 1*: 214-223. Dalnauka, Vladivostok.

Makarchenko, E. A. i Makarchenko, M. A. 2004b. *Ninelia* gen. n. - novyi rod Orthocladiinae (Diptera, Chironomidae) iz Yuzhnogo Primor'ya (rossiiskii Dal'nii Vostok). (*Ninelia* gen. n., a new genus of Orthocladiinae (Diptera, Chironomidae) from South Primorye (Russian Far East). - *Evraziat. ent. Zh. 3*: 307-310.

Makarchenko, E. A. i Makarchenko, M. A. 2004c. Khironomidy roda *Chaetocladius* Kieffer (Diptera, Chironomidae, Orthocladiinae) rossiiskogo Dal'nego Vostoka. (Chironomids of the genus *Chaetocladius* Kieffer (Diptera, Chironomidae, Orthocladiinae) of the Russian Far East.) - *Evraziat. ent. Zh. 3*: 311-317.

Man'ko, V. V, Bychkova, S. V. i Klevets', M. Yu. 2004a. (Identification of Ca2+ release channels in salivary glands secretory cells of *Chironomus plumosus* L.) - *Ukr.biokhim. Zh. 76*: 65-71.

Mantel, S. K. and Dudgeon, D. 2004a. Dietary variation in a predatory shrimp *Macrobrachium hainanense* (Palaemonidae) in Hong Kong forest streams. - *Arch. Hydrobiol. 160*: 305-328.

Mantel, S. K. and Dudgeon, D. 2004b. Effects of *Macrobrachium hainanense* predation on benthic community functioning in tropical Asian streams. - *Freshwat. Biol. 49*: 1306-1319.

Marchetto, A., Lami, A., Musazzi, S., Massaferro, J., Langone, L. and Guilizzoni, P. 2004a. Lake Maggiore (N. Italy) trophic history: fossil diatom, plant pigments, and chironomids, and comparison with long-term limnological data. - *Quatern. int. 113*: 97-110.

Marchetto, A., Mosello, R., Rogora, M., Manca, M., Boggero, A., Morabito, G., Musazzi, S., Tartari, G. A., Nocentini, A. M., Pugnetti, A., Bettinetti, R., Panzani, P., Armiraglio, M., Cammarano, P. and Lami, A. 2004. The chemical and biological response of two remote mountain lakes in the Southern Central Alps (Italy) to twenty years of changing physical and chemical climate. - *J. Limnol. 63*: 77-89.

Marshall, N. A. and Bailey, P. C. E. 2004a. Impact of secondary salinisation on freshwater ecosystems: effects of contrasting, experimental, short-term releases of saline wastewater on macroinvertebrates in a lowland stream. - *Mar. Freshwat. Res. 55*: 509-523.

Martin, P. 2004a. Specificity of attachment sites of larval water mites (Hydrachnidia, Acari) on their insect hosts (Chironomidae, Diptera)--evidence from some stream-living species. - *Exp. appl. Acarol. 34*: 95-112.

Martinez, E. A., Moore, B. C., Schaumloffel, J. and Dasgupta, N. 2004a. Effects of exposure to a combination of zinc- and lead-spiked sediments on mouthpart development and growth in *Chironomus tentans*. - *Envir. Toxic. Chem. 23*: 662-667.

Martinez, E. A., Moore, B. C., Schaumloffel, J. and Dasgupta, N. 2004b. Teratogenic versus mutagenic abnormalities in chironomid larvae exposed to zinc and lead. - *Archs envir. Contam. Toxic. 47*: 193-198.

Marziali, L., Casalegno, C. and Rossaro, B. 2004a. The first record of the subfamily Buchonomyiinae (Diptera, Chironomidae) from Italy. - *Ital. J. Zool. 71*: 341-345.

McCormick, P. V. 2004a. Changes in macroinvertebrate community structure and function along a phosphorus gradient in the Florida Everglades. - *Hydrobiologia 529*: 113-132.

McKie, B. G. 2004a. Disturbance and investment: developmental responses of tropical lotic midges to repeated tube destruction in the juvenile stages. - *Ecol. Ent. 29*: 457-466.

McKie, B. G., Cranston, P. S. and Pearson, R. G. 2004a. Gondwanan mesotherms and cosmopolitan eurytherms: effects of temperature on the development and survival of Australian Chironomidae (Diptera) from tropical and temperate populations. - *Mar. Freshwat. Res. 55*: 759-768.

Melody, K. J. and Richardson, J. S. 2004a. Responses of invertebrates and algae of a boreal coniferous forest stream to experimental manipulation of leaf litter inputs and shading. - *Hydrobiologia 519*: 197-206.

Mendes, H. F., Andersen, T. and Sæther, O. A. 2004a. New species of *Ichthyocladius* Fittkau, a member of the *Corynoneura*-group (Diptera: Chironomidae: Orthocladiinae), with a review of the genus. - *Stud. neotrop. Fauna Envir. 39*: 15-35.

Mendes, H. F., Andersen, T. and Sæther, O. A. 2004b. A review of *Antillocladius* Sæther, 1981; *Compterosmittia* Sæther, 1981 and *Litocladius* new genus (Chironomidae, Orthocladiinae). - *Zootaxa 594*: 1-82.

Mérigoux, S. and Dolédec, S. 2004a. Hydraulic requirements of stream communities: a case study on invertebrates. - *Freshwat. Biol. 49*: 600-613.

Mermillod-Blondin, F., Gérino, M., Sauvage, S. and Creuzé des Châtelliers, M. 2004a. Influence of nontrophic interactions between benthic invertebrates on river sediment processes: a microcosm study. - *Can. J. Fish. aquat. Sci. 61*: 1817-1831.

Meyer; E. I. and Poepperl, R. 2004a. Assessing food-web structure, matter fluxes, and system attributes of a Central European mountain stream by performing mass-balanced network analysis. - *Can. J. Fish. aquat. Sci. 61*: 1565-1581.

Michailova, P. 2004a. *Chironomus usenicus* (Diptera: Chironomidae) from Bulgaria - External morphology and karyotype. - *Acta zool. bulg. 56*: 3-14.

Milam, C. D., Bouldin, J. L., Farris, J. L, Schulz, R., Moore, M. T., Bennett, E. R., Cooper, C. M. and Smith, S. Jr. 2004a. Evaluating acute toxicity of methyl parathion application in constructed wetland mesocosms. - *Envir. Toxic. 19*: 471-479.

Millward, R. N., Carman, K. R., Fleeger, J. W., Gambrell, R. P. and Portier, R. 2004a. Mixtures of metals and hydrocarbons elicit complex responses by a benthic invertebrate community. - *J. exp. mar. Biol. Ecol. 310*: 115-130.

Mirabdullayev, I. M., Joldasova, I. M., Mustafaeva, Z. A., Kazakhbaev, S., Lyubimova, S. A. and Tashmukhamedov, B. A. 2004a. Succession of the ecosystems of the Aral Sea during its transition from oligohaline to polyhaline water body. - *J. mar. Sci. 47*: 101-107.

Miserendino, M. L. 2004a. Effects of landscape and desertification on the macroinvertebrate assemblages of rivers in Andean Patagonia. - *Arch. Hydrobiol. 159*: 185-209.

Miserendino, M. L. and Pizzolon, L. A. 2004a. Interactive effects of basin features and land-use change on macroinvertebrate communities of headwater streams in the Patagonian Andes. - *River Res. Applics 20*: 967-983.

Moore, J. W., Schindler, D. E. and Scheuerell, M. D. 2004a. Disturbance of freshwater habitats by anadromous salmon in Alaska. - *Oecologia 139*: 298-308.

Móra, A. 2004a. Thirteen new non-biting midge (Diptera: Chironomidae) species in the Hungarian fauna from the River Tisza. - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 35-38.

Móra, A., Bíró, K. and Csabai, Z. 2004a. Non-biting midges (Diptera: Chironomidae) from oxbows along the Hungarian section of the Upper-Tisza, with two new species to the Hungarian fauna. - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 27-34.

Móra, A. és Dévai, Gy. 2004a. Magyarország árvaszúnyog-faunájának (Diptera: Chironomidae) jegyzéke az előfordulási adatok és sajátosságok feltüntetésével. (Checklist of the non-biting midges (Diptera: Chironomidae) of Hungary with notes on records and peculiarity of the occurrence of the species.) - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 39-207.

Morais, M., Pinto, P., Guilherme, P., Rosado, J. and Antunes, I. 2004a. Assessment of temporary streams: the robustness of metric and multimetric indices under different hydrological conditions. - *Hydrobiologia 516*: 229-249.

Morin, A., Stephenson, J., Strike, J. and Solimini, A. G. 2004a. Sieve retention probabilities of stream benthic invertebrates. - *J. N. Am. benthol. Soc. 23*: 383-391.

Morozova, E. E. 2004a. Obzor lichinok i kukolok roda *Cryptochironomus* Kieffer (Diptera, Chironomidae) iz vodoemov Evropy. (A review of the larvae and pupae of the midge genus *Cryptochironomus* Kieffer (Diptera, Chironomidae) from European water bodies.) - *Ent. Obozr. 83*: 708-718.

Morozova, E. E. 2004b. Izmenchivost' morfologicheskikh priznakov lichinok *C. obreptans* i *C. defectus* (Diptera, Chironomidae) iz volzhskikh vodoemov. (Variability of morphological characters of larvae of *C. obreptans* and *C. defectus* (Diptera, Chironomidae) from Volga reservoirs.) - *Vest. saratov. Gosagrouniv. Im. N. I. Vavilova 2004, 2*: 8-11.

Morozova, E. E. 2004c. K izucheniyu izmenchivosti lichinok roda *Cryptochironomus* Kieffer (Diptera, Chironomidae) iz volzhskikh vodoemov. (On the study of the variation of larvae of the genus *Cryptochironomus* Kieffer (Diptera, Chironomidae) from Volga reservoirs.) - *Vest. samar. gos. Univ., estest.-nauch. Ser. 4*: 171-180.

Morozova, E. E. 2004d. Kariotip i khromosomnyi polimorfizm *Cryptochironomus obreptans* Walk. (Diptera, Chironomidae) iz Volgi. (Karyotype and chromosome polymorphism of *Cryptochironomus obreptans* Walk. (Diptera, Chironomidae) from the Volga.) - *Evraziat. ent. Zh. 3*: 289-294.

Morozova, E. E. 2004e. Osobennosti dinamiki chislennosti populyatsii vidov roda *Cryptochironomus* Kieffer (Diptera, Chironomidae) v volzhskikh vodoemov. (Peculiarities of quantitative population dynamics of species of the genus *Cryptochironomus* Kieffer (Diptera,

Chironomidae) in Volga reservoirs.) - In: *Entomologicheskie i parazitologicheskie issledovaniya v Povolzh'e. Sb. nauch. Trud 3*: 89-96. Izd. Saratov gos. Univ.

Moseman, S. M., Levin, L. A., Currin, C. and Forsder, C. 2004a. Colonization, succession, and nutrition of macrobenthic assemblages in a restored wetland at Tijuana Estuary, California. - *Estuar. coast. Shelf Sci. 60*: 755-770.

Mucha, A. P., Vasconcelos, M. T. S. D. and Bordalo, A. A. 2004a. Vertical distribution of the macrobenthic community and its relationships to trace metals and natural sediment characteristics in the lower Douro estuary, Portugal. - *Estuar. coast. Shelf Sci. 59*: 663-673.

Murata, K. and Tanaka, K. 2004a. Spatial interaction between spiders and prey insects: Horizontal and vertical distribution in a paddy field. - *Acta arachnol. 53*: 75-86.

Murray, D. A., Hughes, S. J., Furse, M. T. and Murray, W. 2004a. New records of Chironomidae (Diptera: Insecta) from the Azores, Macaronesia. - *Annls Limnol. 40*: 33-42.

Nartshuk, E. P. 2004a. Komary semeistva Chironomidae - naibolee adaptirovannye k vodnoi srede dvukrylye nasekomye (Diptera). (Chironomid midges, the most adapted to aquatic environment group of Diptera.) - *Evraziat. ent. Zh. 3*: 259-264.

Nazarova, L. B. i Brooks, S. J. 2004a. Khironomidy (Diptera, Chironomidae) v paleoklimaticheskikh issledovaniyakh. (Chironomids (Diptera, Chironomidae) in paleoclimatic investigations.) - *Evraziat. ent. Zh. 3*: 300-306.

Nazarova, L. B., Semenov, V. F., Sabirov, R. M. i Efimov, I. Yu. 2004a. Sostoyanie bentosnykh soobshhestv i otsenka kachestva vody Cheboksarskogo vodokhranilishcha. - *Vodnye Resursy 31*: 347-353. [also published as: The state of benthic communities and water quality evaluation in the Cheboksary Reservoir. - *Wat. Resourc. 31*: 316-322.]

Nema, P., George, K. V., Karemore, M. G. and Kotangale, J. P. 2004a. Evaluation of water supply system infested with *chironomus* [sic!] larvae. - *J. Wat. Supply Res. Technol. - AQUA 53*: 573-580.

Newman, R. M. 2004a. Biological control of Eurasian watermilfoil by aquatic insects: basic insights from an applied problem. - *Arch. Hydrobiol. 159*: 145-184.

Niitsuma, H. 2004a. Description of *Apsectrotanypus yoshimurai* (Diptera, Chironomidae), with reference to the immature forms. - *Jap. J. syst. Ent. 10*: 215-222.

Niitsuma, H. 2004b. First record of *Fittkauimyia* (Insecta: Diptera: Chironomidae) from the Palaearctic Region, with the description of a new species. - *Species Diversity 9: 367-374.*

Niitsuma, H., Suzuki, M. and Kawabe, K. 2004a. Redescriptions of *Macropelopia kibunensis* and *Macropelopia paranebulosa* (Diptera, Chironomidae), with biological notes. - *Jap. J. syst. Ent. 10*: 43-56.

Nijboer, R. C. and Verdonschot, P. F. M. 2004a. Rare and common macroinvertebrates: definition of distribution classes and their boundaries. - *Arch. Hydrobiol. 161*: 45-64.

Nondula, N., Marshall, D. J., Baxter, R., Sinclair, B. J. and Chown, S. L. 2004a. Life history and osmoregulatory ability of *Telmatogeton amphibius* (Diptera, Chironomidae) at Marion Island. - *Polar Biol. 27*: 629-635.

Ocon, C. S. and Rodrigues Capítulo, A. 2004a. Presence and abundance of Ephemeroptera and other sensitive macroinvertebrates in relation with habitat conditions in pampean streams (Buenos Aires, Argentina). - *Arch. Hydrobiol. 159*: 473-487.

Ólafsson, J. S. and Paterson, D. M. 2004a. Alteration of biogenic structure and physical properties by tube-building chironomid larvae in cohesive sediments. - *Aquat. Ecol. 38*: 219-229.

Olechowicz, E. 2004a. Soil-litter macrofauna in the mixed forest and midfield shelterbelts of different age (Turew area, West Poland). - *Pol. J. Ecol. 52*: 405-419.

Olomukoro, J. O. and Igbinosun, D. 2004a. Acute toxicity of brewery effluent on *Chironomus travalensis* (Dipteran larvae). - *J. aquat. Sci. 19*: 23-26.

Ormerod, S. J., Jones, M. E., Jones, M. C.and Phillips, D. R. 2004a. The effects of riparian forestry on invertebrate drift and brown trout in upland streams of contrasting acidity. - *Hydrol. Earth Syst. Sci. 8*: 578-588.

Panov, A. A. 2004a. (Histological structure of clypeo-cibarial and labral skeleton and musculature in Nematocera (Diptera). 2. Culicomorpha.) - *Zool. Zh. 83*: 425-438.

Papp, L. 2004a. J. J. Kieffer's types still extant in the Hungarian Natural History Museum (Diptera, Chironomidae, Ceratopogonidae). - In: Dévai, Gy. és Móra, A. (eds.): *Tanulmányok árvaszúnyogokról (Diptera. Chironomidae). 1. Rész. (Studies on non-biting midges (Diptera: Chironomidae), Part 1.) Acta biol. debrec. Suppl. oecol. hung. 12*: 9-21.

Papusheva, E., Gruhl, M. C., Berezikov, E., Groudieva, T., Scherbik, S. V., Martin, J., Blinov, A. and Bergtrom, G. 2004a. The evolution of SINEs and LINEs in the genus *Chironomus* (Diptera). - *J. molec. Evol. 58*: 269-279.

Park, Y.-S., Chon, T.-S., Kwak, I.-S. and Lek, S. 2004a. Hierarchical community classification and assessment of aquatic ecosystems using artificial neural networks. - *Sci. tot. Envir. 327*: 105-122.

Passy, S. I., Bode, R. W., Carlson, D. M. and Novak, M. A. 2004a. Comparative environmental assessment in the studies of benthic diatom, macroinvertebrate, and fish communities. - *Int. Rev. Hydrobiol. 89*: 121-138.

Pastor, D., Sanpera, C., González-Solís, J., Ruiz, X. and Albaigés, J. 2004a. Factors affecting the organochlorine pollutant load in biota of a rice field ecosystem (Ebro Delta, NE Spain). - *Chemosphere 55*: 567-576.

Peeters, E. T. H. M., Gylstra, R. and Vos, J. H. 2004a. Benthic macroinvertebrate community structure in relation to food and environmental variables. - *Hydrobiologia 519*: 103-115.

Perkins, E., Furey, J. and Davis, E. 2004a. The potential of screening for agents of toxicity using gene expression fingerprinting in *Chironomus tentans*. - *Aquat. Ecosyst. Hlth Mgmt 7*: 399-405.

Perus, J. and Bonsdorff, E. 2004a. Long-term changes in macrozoobenthos in the Åland archipelago, northern Baltic Sea. - *J. Sea Res. 52*: 45-56.

Péry, A. R. R., Mons, R., Ducrot, V. and Garric, J. 2004a. Effects of methiocarb on *Chironomus riparius* survival and growth with and without tube-building. - *Bull. envir. Contam. Toxic. 72*: 358-364.

Péry, A. R., Mons, R. and Garric, J. 2004a. Energy-based modeling to study population growth rate and production for the midge *Chironomus riparius* in ecotoxicological risk assessment. - *Ecotoxicology 13*: 647-656.

Petrova, N. A., Mikhailova, P. V., Chubareva, L. A., Shobanov, N. A. i Zelentsov, N. I. 2004a. Sistema A. A. Chernovskogo [1949], kak osnova tsitotaksonomii semeistva Chironomidae. (The system of A. A. Chernovskii [1949] as a base of the cytotaxonomy of the family Chironomidae.) - *Evraziat. ent. Zh. 3*: 253-258.

Petrova, N. A., Michailova, P. i Ilkova, Yu. 2004a. Sravnitel'no-tsitogenetocheskaya izmenchivost' politennykh khromoom slyunnykh zhelez *Chironomus riparius* Mg. 1804 (Diptera, Chironomidae) iz dvukh zagryaznennykh biotopov Bolgarii i Rossii. (Comparative cytogenetic variation of the salivary gland polytene chromosomes in *Chironomus riparius* Mg., 1804 (Diptera, Chironomidae) from two polluted biotopes of Bulgaria and Russia. - *Genetika 40*: 49-58. [also published in: *Russ. J. Genet. 40*: 40-48.]

Pinna, M., Fonnesu, A., Sangiorgio, F. and Basset, A. 2004a. Influence of summer drought on spatial patterns of resource availability and detritus processing in Mediterranean stream sub-basins (Sardinia, Italy). - *Int. Rev. Hydrobiol. 89*: 484-499.

Pinto, P., Rosado, J., Morais, M. and Antunes, I. 2004a. Assessment methodology for southern siliceous basins in Portugal. - *Hydrobiologia 516*: 191-214.,

Prat, N., Añón-Suárez, D. and Rieradevall, M. 2004a. First record of Podonominae larvae living phoretically on the shells of the water snail *Chilina dombeyana* (Diptera: Chironomidae / Gastropoda: Lymnaeidae). - *Aquat. Insects 26*: 147-152.

Protasov, A. A., Silaeva, A. A. i Efanova, V. V. 2004a. Otsenka obrastaniya nekotorykh antikorrozionnykh pokrytii v presnoi vode. (Assessment of biofouling of some anticorrosive insulations in fresh water.) - *Gidrobiol. Zh. 40, 3*:53-67.

Rae, J. G. 2004a. The colonization response of lotic chironomid larvae to substrate size and heterogeneity. - *Hydrobiologia 524*: 115-124.

Raju, N. G. and Venkatachalaiah, G. 2004a. Chromosomal characteristics of an Indian tanyponid [sic!] midge, *Anatopynia* spp. (Tanypodinae Chironomidae). - *Cytologia, Tokyo 69*: 35-40.

Ramírez, A. and Pringle, C. M. 2004a. Do macroconsumers affect insect responses to a natural stream phosphorus gradient? - *Hydrobiologia 515*: 235-246.

Rand, G. M., Carriger, J. F., Lee, T. A. and Pfeuffer, R. J. 2004a. Sediment toxicity in the St. Lucie River Watershed and Everglades Agricultural Area. - *Ecotoxicology 13*: 261-274.

Ranvestel, A. W., Lips, K. R., Pringle, C. M., Whiles, M. R. and Bixby, R. J. 2004a. Neotropical tadpoles influence stream benthos: evidence for the ecological consequences of decline in amphibian populations. - *Freshwat. Biol. 49*: 274-285.

Ráudez Reyes, S. M. 2004a. Presencia de la Familia Chironomidae en la entrada del Río San Juan y cuatro de sus tributarios. - *XIII Congr. Cient.*: 6 pp. Univ. Nac. Autón. Nicaragua, Managua.

Reash, R. J. 2004a. Dissolved and total copper in a coal ash effluent and receiving stream: assessment of *in situ* biological effects. - *Envir. Monit. Assess. 96*: 203-220.

Reed, T., Wielgus, S. J., Barnes, A. K., Schiefelbein, J. J. and Fettes, A. L. 2004a. Refugia and local controls: Benthic invertebrate dynamics in Lower Green Bay, Lake Michigan following zebra mussel invasion. - *J. Gt Lakes Res. 30*: 390-396.

Reich, P. 2004a. Patterns of composition and abundance in macroinvertebrate egg masses from temperate Australian streams. - *Mar. Freshwat. Res. 55*: 39-56.

Richardson, J. S., Shaughnessy, C. R. and Harrison, P. G. 2004a. Litter breakdown and invertebrate association with three types of leaves in a temperate rainforest stream. - *Arch. Hydrobiol. 159*: 309-325.

Robinson, C. T., Aebischer, S. and Uehlinger, U. 2004a. Immediate and habitat-specific responses of macroinvertebrates to sequential, experimental floods. - *J. N. Am. benthol. Soc. 23*: 853-867.

Robinson, C. T., Tockner, K. and Burgherr, P. 2004a. Drift benthos relationships in the seasonal colonization dynamics of alpine streams. - *Arch. Hydrobiol. 160*: 447-470.

Robinson, C. T., Uehlinger, U. and Monaghan, M. T. 2004a. Stream ecosystem response to multiple experimental floods from a reservoir. - *River Res. Applics 20*: 359-377.

Rogers, D. C. and Rogers, E. C. L. 2004a. Observations on feeding behavior in western North

American tiger beetles (Coleoptera). - *Cicindela 36*: 17-21.

Roque, F. O. and Trivinho-Strixino, S. 2004a. *Podonomus pepinellii* n. sp., first record of the genus and subfamily from Brazil (Diptera: Chironomidae: Podonominae). - *Zootaxa 689*: 1-7.

Roque, F. O., Correia, L. C. S., Trivinho-Strixino, S. and Strixino, G. 2004a. A review of Chironomidae studies in lentic systems in the State of São Paulo, Brazil. - *Biota neotrop. 4, 2, BN0310402204*: 1-19.

Roque, F. O., Trivinho-Strixino, S., Couceiro, S. R. M., Hamada, N., Volkmer-Ribeiro, C. and Messias, M. C. 2004a. Species of *Oukuriella* Epler (Diptera, Chironomidae) inside freshwater sponges in Brazil. - *Revta bras. Ent. 48*: 291-292.

Roque, F. O., Trivinho-Strixino, S., Jancso, M. and Fragoso, E. N. 2004a. Records of Chironomidae larvae living on other aquatic animals in Brazil. - *Biota neotrop. 4,2, BN030404022004*: 1-9.

Rosenberg, S. M., Walker, I. R., Mathewes, R. W. and Hallett, D. J. 2004a. Midge-inferred Holocene climate history of two subalpine lakes in southern British Columbia, Canada. - *Holocene 14*: 258-271.

Rosi-Marshall, E. J. 2004a. Decline in the quality of suspended fine particulate matter as a food resource for chironomids downstream of an urban area. - *Freshwat. Biol. 49*: 515-525.

Rosi-Marshall, E. and Meyer, J. 2004a. Quality of suspended fine particulate matter in the Little Tennessee River. - *Hydrobiologia 519*: 29-37.

Rüegg, J. and Robinson, C. T. 2004a. Comparison of macroinvertebrate assemblages of permanent and temporary streams in an Alpine flood plain, Switzerland. - *Arch. Hydrobiol. 161*: 489-510.

Sæther, O. A. 2004a. Three new species of *Orthocladius* subgenus *Eudactylocladius* (Diptera: Chironomidae) from Norway. - *Zootaxa 508*: 1-12.

Sæther, O. A. 2004b. The chironomids (Diptera, Chironomidae) described by Lundström (1915) from arctic Siberia, with a redescription of *Derotanypus sibiricus* (Kruglova & Chernovskii). - *Zootaxa 595*: 1-35.

Sæther, O. A. 2004c. The Chironomidae (Diptera) of the Seychelles. - *Annls Limnol. 40*: 285-308.

Sæther, O. A. 2004d. The female of *Lopescladius inermis* SÆTHER, 1983 (Chironomidae, Orthocladiinae). - *Studia dipterol. 11*: 193-197.

Sæther, O. A. and Roque, F. O. 2004a. New Neotropical species of *Nandeva* (Diptera: Chironomidae), with a phylogeny of the Tanytarsini. - *Tijdschr. Ent. 147*: 63-80.

Saksgård. R. and Hesthagen, T. 2004a. A 14-year study of habitat use and diet of brown trout (*Salmo trutta*) and Arctic charr (*Salvelinus alpinus*) in Lake Atnsjøen, a subalpine Norwegian lake. - *Hydrobiologia 521*: 187-199.

Salovius, S. and Kraufvelin, P. 2004a. The filamentous green alga *Cladophora glomerata* as a habitat for littoral macro-fauna in the northern Baltic Sea. - *Ophelia 58*: 65-78.

Sampaio, A., Cortes, R. and Leão, C. 2004a. Yeast and macroinvertebrate communities associated with leaf litter decomposition in a second order stream. - *Int. Rev. Hydrobiol. 89*: 453-466.

Sanmartín, I. and Ronquist, F. 2004a. Southern Hemisphere biogeography inferred by event-based models: plant versus animal patterns. - *Syst. Biol. 53*: 216-243.

Saroff, H. A. 2004a. pH effects on the binding of oxygen to non-vertebrate monomeric hemoglobins. A linked function model. - *J. theor. Biol. 229*: 113-118.

Savoy, T. F. and Benway, J. 2004a. Food habits of shortnose sturgeon collected in the lower Connecticut River from 2000 through 2002. - *Am. Fish. Soc. Monogr. 9*: 353-360.

Schmidt, S. I., Hahn, H. J., Watson, G. D., Woodbury, R. J. and Hatton, T. J. 2004a. Sampling fauna in stream sediments as well as groundwater using one net sampler. - *Acta hydrochim. hydrobiol. 32*: 131-137.

Schöll, F. and A. Haybach, A. 2004a. Typology of large European rivers according to their Chironomidae communities (Insecta : Diptera). - *Annls Limnol. 40*: 309-316.

Schofield, K. A., Pringle, C. M. and Meyer, J. L. 2004a. Effects of increased bedload on algal- and detrital-based stream food webs: Experimental manipulation of sediment and macroconsumers. - *Limnol. Oceanogr. 49*: 900-909.

Schroer, A. F. W., Belgers, J. D. M., Brock, T. C. M., Matser, A. M., Maund, S. J. and Van den Brink, P. J. 2004a. Comparison of laboratory single species and field population-level effects of the pyrethroid insecticide λ-cyhalothrin on freshwater invertebrates. - *Archs envir. Contam. Toxic. 46*: 324-335.

Schuler, L. J., Landrum, P.F. and Lydy, M. J. 2004a. Time-dependent toxicity of fluoranthene to freshwater invertebrates and the role of biotransformation on lethal body residues. - *Envir. Sci. Technol. 38*: 6247-6255.

Sella, G., Bovero, S., Ginepro, M., Michailova, P., Petrova, N., Robotti, C. A. and Zelano, V. 2004a. Inherited and somatic cytogenetic variability in Palearctic populations of *Chironomus riparius* Meigen 1804 (Diptera, Chironomidae). - *Genome 47*: 332-344.

Sergeeva, I. V. 2004a. K revizii vidov khironomid roda *Ablabesmyia* Johannsen, 1905 (Diptera, Chironomidae) fauny Rossii. (A review of the midge genus *Ablabesmyia* Johannsen, 1905 (Diptera, Chironomidae) of the fauna of Russia. - *Ent. Obozr. 83*: 704-707.

Servia, M. J., Cobo, F. and González, M. A. 2004a. Multiple trait analysis of fluctuating asymmetry levels in anthropogenically and naturally stressed sites: a case study using *Chironomus riparius*

Meigen, 1804 larvae. - *Envir. Monit. Assess. 90*: 101-112.

Servia, M. J., Cobo, F. and González, M. A. 2004b. Effects of short-term climatic variations on fluctuating asymmetry levels in *Chironomus riparius* larvae at a polluted site. - *Hydrobiologia 523*: 137-147.

Sharley, D. J., Pettigrove, V. and Parsons, Y. M. 2004a. Molecular identification of *Chironomus* spp. (Diptera) for biomonitoring of aquatic ecosystems. - *Aust. J. Ent. 43*: 359-365.

Shikama, K. and Matsuoka, A. 2004a. Structure-function relationships in unusual nonvertebrate globins. - *Crit. Rev. Biochem. molec. Biol. 39*: 217-259.

Shitikov, V. K., Zinchenko, T. D. i Golovatyuk, L. V. 2004a. Otsenka kachestva poverkhnostnykh vod po indikatornym vidam makrozoobentosa. - *Vodnye Resursy 31*: 354-364. [also published as: Assessing surface water quality based on indicator zoobenthos species.. - *Wat. Resourc. 31*: 323-332.]

Shobanov, N. A. 2004a. (The karyotype of *Omisus caledonicus* (Edwards) (Diptera, Chironomidae).) - *Tsitologiya 46*: 293-300.

Shobanov, N. A. 2004b. (Heterogeneity and functional variation of hemoglobins in Diptera, Chironomidae.) - *Zh. evol. Biokhim. Fiziol. 40*: 311-315. [also published as: Heterogeneity and heterofunctionality of hemoglobins in bloodworms (Diptera, Chironomidae). - *J. evol. Biochem. Physiol. 40*: 392-397.]

Shobanov, A. 2004c. (*Chironomus improvisus* sp n. (Diptera, Chironomidae) from the Ust-Lena Reserve.) - *Zool. Zh. 83*: 1439-1447.

Shtakel'berg, A. A. (1949) 2004a. Aleksei Alekseevich Chernovskii (1904-1942). - *Evraziat. ent. Zh. 3*: 251-252.

Silver, P., McCall, C. B.and Wooster, D. 2004a. Habitat partitioniong by chironomid larvae in arrays of leaf patches in streams. - *J. N. Am. benthol. Soc. 23*: 467-479.

Silver, P., Wooster, D. and Palmer, M. A. 2004a. Chironomid responses to spatially structured, dynamic, streambed landscapes. - *J. N. Am. benthol. Soc. 23*: 69-77.

Simčič, T. 2004a. Respiration rate and respiratory electron transport system (ETS) activity of chironomid larvae from mountain lakes (NW Slovenia). - *Acta biol. sloven. 47*: 83-94.

Smith, B. P .C. and Kokkinn, M. 2004a. The use of emergence as an end-point for sediment toxicity tests using the Australian chironomid *Chironomus maddeni*. - *Trans. R. Soc. S. Aust. 128*: 213-218.

Smith, I. M. and Cook, D. R. 2004a. Description of *Piona lapointei* n. sp. (Acari: Hydrachnida: Pionidae), the first species of water mite reported from the Hawaiian islands. - *Int. J. Acarol. 30*: 33-36.

Smith, R. J., Hamas, M. J., Ewert, D. N. and Dallman, M. E. 2004a. Spatial foraging differences in American redstarts along the shoreline of northern Lake Huron during spring migration. - *Wilson Bull. 116*: 48-55.

Smolders, R., De Coen, W. and Blust, R. 2004a. An ecologically relevant exposure assessment for a polluted river using an integrated multivariate PLS approach. - *Envir. Pollut. 132*: 245-263.

Soininen, J. and Könönen, K. 2004a. Comparative study of monitoring South-Finnish rivers and streams using macroinvertebrate and benthic diatom community structure. - *Aquat. Ecol. 38*: 63-75.

Solà, S., Burgos, M., Plazuelo, Á., Toja, J., Plans, M. and Prat, N. 2004a. Heavy metal bioaccumulation and macroinvertebrate community changes in a Mediterranean stream affected by acid mine drainage and an accidental spill (Guadiamar River, SW Spain). - *Sci. tot. Envir. 333*: 109-126.

Soldner, M., Stephen, I., Ramos, L., Angus, R., Wells, N. C., Grosso, A. and Crane, M. 2004a. Relationship between macroinvertebrate fauna and environmental variables in small streams of the Dominican Republic. - *Wat. Res. 38*: 863-874.

Souter, N. J. 2004a. A comparison among three artificial substrates for aquatic macroinvertebrate sampling. - *Trans. R. Soc. S. Aust. 128*: 259.

Spies, M. and Sæther, O. A. 2004a. Notes and recommendations on taxonomy and nomenclature of Chironomidae (Diptera). - *Zootaxa 752*: 1-90.

Staiber, W. 2004a. Molecular evolution of homologous gene sequences in germline-limited and somatic chromosomes of *Acricotopus*. - *Genome 47*: 732-741.

Stanczak, M. and Keiper, J. B. 2004a. Benthic invertebrates in adjacent created and natural wetlands in northeastern Ohio, USA. - *Wetlands 24*: 212-218.

Stead, T. K., Schmid-Araya, J. M. and Hildrew, A. G. 2004a. The contribution of subsurface invertebrates to benthic density and biomass in a gravel stream. - *Arch. Hydrobiol. 160*: 171-191.

Stevens, M. M., Akhurst, R. J., Clifton, M. A. and Hughes, P. A. 2004a. Factors affecting the toxicity of *Bacillus thuringiensis* var. *israelensis* and *Bacillus sphaericus* to fourth instar larvae of *Chironomus tepperi* (Diptera: Chironomidae). - *J. Invert. Path. 86*: 104-110.

Stoichev, S. 2004a. The benthic invertebrates in the Marichini Ezera glacial lakes, Eastern Rila Mountains, South-West Bulgaria. - *Acta zool. bulg. 56*: 277-282.

Storey, R. G. and Williams, D. D. 2004a. Spatial responses of hyporheic invertebrates to seasonal changes in environmental parameters. - *Freshwat. Biol. 49*: 1468-1486.

Stur, E. and Sæther, O. A. 2004a. A new hairy-winged *Pseudorthocladius* (Diptera: Chironomidae) from Luxemburg. - *Aquat. Insects 26*: 79-83.

Suemoto, T., Kawai, K. and Imabayashi, H. 2004a. A comparison of desiccation tolerance among 12 species of chironomid larvae. - *Hydrobiologia 515*: 107-114.

Sun, X., Zhao, J., Kylberg, K, Soop, T., Palka, K., Sonnhammer, E., Visa, N., Alzhanova-Ericsson, A. T. and Daneholt, B. 2004a. Conspicuous accumulation of transcription elongation repressor hrp130/CA150 on the intron-rich Balbiani ring 3 gene. - *Chromosoma 113*: 244-257.

Sunahara, T. and Mogi, M. 2004a. Searching clusters of community composition along multiple spatial scales: a case study on aquatic invertebrate communities in bamboo stumps in West Timor. - *Popul. Ecol. 46*: 149-158.

Suriano, H. T. and Fonseca-Gessner, A. A. 2004a. Chironomidae (Diptera) larvae in streams of Parque Estadual de Campos do Jordão, São Paulo state, Brazil. - *Acta limnol. bras. 16*: 129-136.

Tang, H., Guo, Y., Wang, X. and Sæther, O. A. 2004a. The pupa and larva of *Propsilocerus taihuensis* (Wen, Zhou & Rong) (Diptera: Chironomidae), with complete keys to all immatures of the genus *Propsilocerus*. - *Aquat. Insects 26*: 265-272.

Taniguchi, H. and Tokeshi, M. 2004a. Effects of habitat complexity on benthic assemblages in a variable environment. - *Freshwat. Biol. 49*: 1164-1178.

Teske, P. R. and Wooldridge, T. H. 2004a. Affinities of some common estuarine macroinvertebrates to salinity and sediment type: empirical data from Eastern Cape estuaries, South Africa. - *Afr. Zool. 39*: 183-192.

Tessier, C., Cattaneo, A., Pinel-Alloul, B., Galanti, G. and Morabito, G. 2004a. Biomass, composition and size structure of invertebrate communities associated to different types of aquatic vegetation during summer in Lago di Candia (Italy). - *J. Limnol. 63*: 190-198.

Thiere, G. and Schulz, R. 2004a. Runoff-related agricultural impact in relation to macroinvertebrate communities of the Lourens River, South Africa. - *Wat. Res. 38*: 3092-3102.

Timmermann, U. und Becker, N. (2003) 2004a. Die Auswirkung der Stechmückenbekämpfung auf die Ernährung auenbewohnender Vogelarten. - *Carolinea 61*: 145-165.

Toetz, D. and Payton, M. E. 2004a. Synergism of nutrients and humic acid in accrual of periphytic biomass in a subalpine stream, Colorado Front Range. - *J. Freshwat. Ecol. 19*: 35-40.

Tonn, W. M., Langlois, P. W., Prepas, E. E., Danylchuk, A. J. and Boss, S. M. 2004a. Winterkill cascade: indirect effects of a natural disturbance on littoral macroinvertebrates in boreal lakes. - *J. N. Am. benthol. Soc. 23*: 237-250.

Tripathi, N. K ., Sharma, O. P. and Khanna, P. 2004a. Studies on the polytene chromosomes of *Chironomus circumdatus* (Diptera: Chironomidae) from Jammu region. - *Proc. natn. Acad. Sci. India, Sect. B, biol. Sci. 74*: 1-6.

Trivinho-Strixino, S. and Strixino, G. 2004a. Two new species of *Tanytarsus* from southeast of Brazil (Insects, Diptera, Chironomidae). - *Spixiana 27*: 155-164.

Trodd, W. R. and Murray, D. A. 2004a. *Cryptotendipes pflugfelderi* Reiss, 1964 (Diptera: Chironomidae) in the Turraun Nature Reserve and the first record from Ireland. - *Entomologist's Gaz. 55*: 171-172.

Urban, M. C. 2004a. Disturbance heterogeneity determines freshwater metacommunity structure. - *Ecology 85*: 2971-2978. [chironomid genera data in: Appendix B: A presence and absence matrix for pond communities. - *Ecological Archives E085-096-A2* = http://www.esapubs.org/archive/ecol/E085/096/appendix-B.htm]

Usio, N. and Townsend, C. R. 2004a. Roles of crayfish: consequences of predation and bioturbation for stream invertebrates. - *Ecology 85*: 807-822.

Valle, L. G. and Santamaria, S. 2004a. The genus *Smittium* (Trichomycetes, Harpellales) in the Iberian Peninsula. - *Mycologia 96*: 682-701.

Vanin, S., Canetti, N. and Turchetto, M. 2004. Osservazioni sulla fauna ditterologica del ghiacciaio della Marmolada (Italia, Dolomiti). - *Soc: venez. Sci. Nat. Lav. 29*: 9-15.

Vassilev, Y. and Uzunov, Y. 2004a. Comparative density and biomass of the bottom invertebrate communities in consequent running and stagnant aquatic microhabitats along the Iskar River in South-West Bulgaria. - *Acta zool. bulg. 56*: 93-103.

Venkatesan, P. 2004a. Studies on feeding efficiency of the water bug, *Diplonychus rusticus* (Fabr.) on different preys. - *J. ent. Res. (New Delhi) 28*: 23-31.

Verneaux, V**.,** Verneaux, J**.,** Schmitt, A. and Lambert, J**.**-C. 2004a. Relationships of macrobenthos with dissolved oxygen and organic matter at the sediment-water interface in ten French lakes**.** - *Arch. Hydrobiol. 160*: 247-259.

Verneaux, V., Verneaux, J., Schmitt, A., Lovy, C. and Lambert, J. C. 2004a. The Lake Biotic Index (LBI): an applied method for assessing the biological quality of lakes using macrobenthos; the Lake Châlin (French Jura) as an example. - *Annls Limnol. 40*: 1-9.

Verschuren, D., Cumming, B. F. and Laird, K. R. 2004a. Quantitative reconstruction of past salinity variations in African lakes: assessment of chironomid-based inference models (Insecta: Diptera) in space and time. - *Can. J. Fish. aquat. Sci. 61*: 986-998.

Vieira, N. K. M., Clements, W. H., Guevara, L. S. and Jacobs, B. F. 2004a. Resistance and resilience of stream insect communities to repeated hydrologic

disturbances after a wildfire. - *Freshwat. Biol. 49*: 1243-1259.

Vinogradova, E. B. i Petrova, N. A. 2004a. (The first record of the synanthropic *Chironomus riparius* Meigen, 1804 (Diptera, Chironomidae) population in the dwelling house basements in St. Petersburg and some of its biological and karyological characteristics.) - *Ent. Obozr. 83*: 334-348.

Volkman, E. T., Pangle, K. L., Rajchel, D. A. and Sutton, T. M. 2004a. Hatchery performance attributes of juvenile lake sturgeon fed two natural food types. - *N. Am. J. Aquacult. 66*: 105-112.

Vos, J. H., Peeters, E. T. H. M., Gylstra, R., Kraak, M. H. S. and Admiraal, W. 2004a. Nutritional value of sediments for macroinvertebrate communities in shallow eutrophic waters. - *Arch. Hydrobiol. 161*: 469-487.

Waite, I. R., Herlihy, A. T., Larsen, D. P., Urquhart, N. S. and Klemm, D. J. 2004a. The effects of macroinvertebrate taxonomic resolution in large landscape bioassessments: an example from the Mid-Atlantic Highlands, U.S.A. - *Freshwat. Biol. 49*: 474-489.

Walker, I. 2004a. The food spectrum of the cardinal - tetra (*Paracheirodon axelrodi*, Characidae) in its natural habitat. - *Acta amazon. 34*: 69-73.

Walsh, C. J. 2004a. Protection of in-stream biota from urban impacts: minimise catchment imperviousness or improve drainage design? - *Mar. Freshwat. Res. 55*: 317-326.

Wang, X. and Guo, Y. 2004a A review of the genus *Rheotanytarsus* Thienemann & Bause from China (Diptera: Chironomidae: Tanytarsini) - *Zootaxa 650*: 1-19.

Wang, X. and Guo, Y. 2004b A review of the genus *Cladotanytarsus* Kieffer from China (Diptera: Chironomidae: Tanytarsini). - *Zootaxa* 750: 1-19.

Wang, X., Liu, Zh. and Epler, J. H. 2004a. New species of *Bryophaenocladius* Thienemann from the Nearctic Region (Diptera: Chironomidae: Orthocladiinae). - *Zootaxa* 581: 1-10.

Wang, X.-h., Yan, C.-c. and Maa, C.-j. 2004a. A new *Rheocricotopus* Thienemann & Harnischia from Taiwan Province (Diptera, Chironomidae) - *Ent. sin. 11*: 239-242.

Watanabe, M., Kikawada, T., Fujita, A., Forczek, E., Adati, T. and Okuda, T. 2004a. Physiological traits of invertebrates entering cryptobiosis in a post-embryonic stage. - *Eur. J. Ent. 101*: 439-444.

Werle, S. F., Klekowski, E. and Smith, D. G. 2004a. Inversion polymorphism in a Connecticut River *Axarus* species (Diptera: Chironomidae): biometric effects of a triple inversion heterozygote. - *Can. J. Zool. 82*: 118-129.

Werle, S. F., Smith, D. G. and Klekowski, E. 2004a. Life in crumbling clay: the biology of *Axarus* species (Diptera: Chironomidae) in the Connecticut River. - *NEast. Nat. 11*: 443-458.

Werner, D. 2004a. New records of Diptera predators of blackflies (Diptera, Simuliidae). - *Entomologist's mon. Mag. 139*: 1-25.

Werner, D., Adler, P. H. and Sinclair, B. J. 2004a. Notes on predation by Empididae and Hybotidae on Chironomidae and Simuliidae (Diptera). - *Studia dipterol. 11*: 323-325.

Werner, I., Zalom, F. G., Oliver, M. N., Deanovic, L. A., Kimball, T. S., Henderson, J. D., Wilson, B. W., Krueger, W. and Wallender, W. W. 2004a. Toxicity of storm-water runoff after dormant spray application in a french prune orchard, Glenn County, California, USA: temporal patterns and the effect of ground covers. - *Envir. Toxic. Chem. 23*: 2719-2726.

Weston, D. P., You, J. and Lydy, M. J. 2004a. Distribution and toxicity of sediment-associated pesticides in agriculture-dominated water bodies of California's Central Valley. - *Envir. Sci. Technol.. 38*: 2752-2759.

Whisson, C. S., Wells, F. E. and Rose, T. 2004a. The benthic invertebrate fauna of the Peel-Harvey Estuary of southwestern Australia after completion of the Dawesville Channel. - *Rec. West. Aust. Mus. 22*: 81-90.

White, M. M. and Lichtwardt, R. W. 2004a. Fungal symbionts (Harpellales) in Norwegian aquatic insect larvae. - *Mycologia 96*: 891-910.

Wickham, S. A., Nagel, S. and Hillebrand, H. 2004a. Control of epibenthic ciliate communities by grazers and nutrients. - *Aquat. microb. Ecol. 35*: 153-162.

Wickramasinghe, L. P., Harris, S., Jones, G. and Jennings, N. V. 2004a. Abundance and species richness of nocturnal insects on organic and conventional farms: Effects of agricultural intensification on bat foraging. - *Conserv. Biol. 18*: 1283-1292.

Wilson, S. E. and Gajewski, K. 2004a. Modern chironomid assemblages and their relationship to physical and chemical variables in southwest Yukon and northern British Columbia lakes. - *Arct. antarct. alp. Res. 36*: 446-455.

Wong, K. F. and Ho, J. W. 2004a. Kinetic and mutagenesis study of ferrochelatase from Chironomidae larvae. - *FASEB J. 18, Suppl. S*: C142.

Woodcock, T. S. and Huryn, A. D. 2004a. Effects of roadway crossings on leaf litter processing and invertebrate assemblages in small streams. - *Envir. Monit. Assess. 93*: 229-250.

Wooller, M. J., Francis, D., Fogel, M. L., Miller, G. H., Walker, I. R. and Wolfe, A. P. 2004a. Quantitative paleotemperature estimates from $\delta^{18}O$ of chironomid head capsules preserved in arctic lake sediments. - *J. Paleolimnol. 31*: 267-274.

Wooten, D. E. and Werner, S. J. 2004a. Food habits of lesser scaup *Aythya affinis* occupying baitfish aquaculture facilities in Arkansas. - *J. Wld Aquacult. Soc. 35*: 70-77.

Wu, J., Fu, C., Liang, Y. and Chen, J. 2004a. Distribution of the meiofaunal community in a eutrophic shallow lake of China. - *Arch. Hydrobiol. 159*: 555-575.

Yamamoto, M. 2004a. A catalog of Japanese Orthocladiinae (Diptera: Chironomidae). - *Makunagi 21*: 1-121.

Yan, C.-C. and Wang, X.-H. 2004a. A new species of the *orientalis* group of *Rheocricotopus* from China (Diptera: Chironomidae). - *Acta zootaxon. sin. 29*: 560-562.

Yan, Y. and Liang, Y. 2004a. (The comparison of secondary production of macrozoobenthos between a typical algal lake and a typical macrophytic lake.) - *J. Lake Sci. 16*: 81-84.

You, J., Schuler, L. J. and Lydy, M. J. 2004a. Acute toxicity of sediment-sorbed endrin, methoxychlor, and endosulfan to *Hyalella azteca* and *Chironomus tentans*. - *Bull. envir. Contam. Toxic. 73*: 457-464.

Yuan, L. L. 2004a. Assigning macroinvertebrate tolerance classifications using generalised additive models. - *Freshwat. Biol. 49*: 662-677.

Zagal, C. J. 2004a. Diet of the stauromedusa *Haliclystus auricula* from southern Chile. - *J. mar. biol. Ass. UK 84*: 337-340.

Zampicinini, G., Blinov, A., Cervella, P., Guryev, V. and Sella, G. 2004a. Insertional polymorphism of a non-LTR mobile element (NLRCth1) in European populations of *Chironomus riparius* (Diptera, Chironomidae) as detected by transposon insertion display. - *Genome 47*: 1154-1163.

Zhang, J. S, Pan, J., Zhao, Q. L. and Zhou, L. 2004a. (Control of chironomids in water by immobilized *Bacillus thuringiensis* var. *israelensis* de Barjac.) - *Huan Jing Ke Xue 25*: 109-111.

Zhang, R. L. and Wang, X. H. 2004a. *Polypedilum* (*Uresipedilum*) Oyewo and Sæther from China (Diptera: Chironomidae) - *Zootaxa 565*: 1-38.

Zhang, R. L and Wang, X. H. 2004b. *Acricotopus* Kieffer from China (Diptera: Chironomidae) - *Ent. sin.* 11: 285-291.

Zhang, R. L and Wang, X. H. 2004c. (Advances in the studies on infesting and controlling chironomid in municipal water system.) - *Ent. Knowledge (3)*: 223-226.

Zhang, Y., Richardson, J. S. and Negishi, J. N. 2004a. Detritus processing, ecosystem engineering and benthic diversity: a test of predator-omnivore interference. - *J. Anim. Ecol. 73*: 756-766.

Zhao, J., Jin, S.-B. and Wieslander, L. 2004a. CRM1 and Ran are present but a NES-CRM1-RanGTP complex is not required in Balbiani ring mRNP particles from the gene to the cytoplasm. - *J. Cell Sci.* 117: 1553-1566.

Zhou, H. and Morton, B. 2004a. The diets of juvenile horseshoe crabs, *Tachypleus tridentatus* and *Carcinoscorpius rotundicauda* (Xiphosura), from nursery beaches proposed for conservation in Hong Kong. - *J. nat. Hist. 38*: 1915-1925.

Zorina, O. V. 2004a. Novye i maloizvestnye vidy komarov-zvontsov roda *Demicryptochironomus* Lenz (Diptera, Chironomidae) s ostrova Sakhalin. (New and little known species of the genus *Demicryptochironomus* Lenz (Diptera, Chironomidae) from Sakhalin Island. - In: Bogatov, V. V., Barkalov, V. Yu., Lelej, A. S., Makarchenko, E. A. and Storozhenko, S. Yu. (eds.): *Flora and fauna of Sakhalin Island (Materials of International Sakhalin Island Project), Pt 1*: 224-237. Dalnauka, Vladivostok.

Zorina, O. V. 2004b. Khironomidy roda *Paratendipes* Kieffer (Diptera, Chironomidae, Chironominae) rossiiskogo Dal'nego Vostoka. (Chironomids of the genus *Paratendipes* Kieffer (Diptera, Chironomidae, Chironominae) of the Russian Far East. - *Evraziat. ent. Zh. 3*: 318-324.