

SHORT COMMUNICATIONS

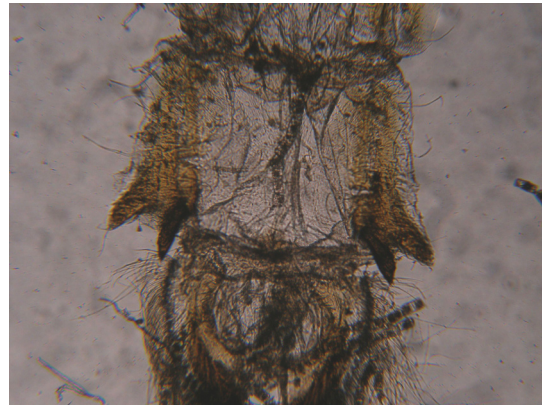
Aberration in *Chironomus* pupa

Peter H. Langton

5 Kylebeg Avenue, Mountsandel, Coleraine, Co. Londonderry, Northern Ireland, BT52 1JN, UK.

E-mail: PHLangton@kylebegave.fsnet.co.uk

I have long been interested in chironomid pupal aberrations (Langton, 1989) as indicators of how new forms can arise in an animal which is unable to compete in Darwinian terms. The photograph shows a *Chironomus nudiventris* pupal exuviae with four spurs on segment VIII; two dorsal, two ventral. The dark spurs are the usual ventral spurs for the genus and the light coloured ones are dorsal, the spurs diverging from each other by about 90° in the unmounted specimen. I have also recently seen a few *Chironomus plumosus* male exuviae from one site without any trace of genital sacs. The adults obviously eclosed successfully, but what had they got (or not got) at the back end?



Reference

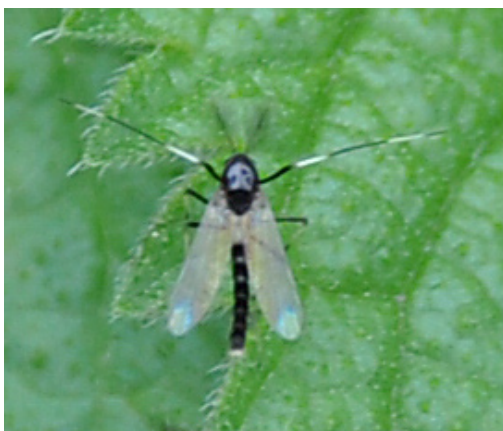
Langton, P.H. 1989. Functional and phylogenetic interpretation of chironomid pupal structure. - *Acta Biol. Debr. Oecol. Hung.* 2:247-252.

Cricotopus annulator with blue wing tips

Peter H. Langton

5 Kylebeg Avenue, Mountsandel, Coleraine, Co. Londonderry, Northern Ireland, BT52 1JN, UK.

E-mail: PHLangton@kylebegave.fsnet.co.uk



Daniel Mengella took a number of photographs of a chironomid in mid-October 2009 by his pond in Yorkshire, England, showing distinct blue tips to the wings. He mailed me for an identification and received the standard reply: please send a specimen. On April 28, 2010 he again noticed chironomids with blue tips to the wings, photographed them, and sent specimens for identification. The species is *Cricotopus (C.) annulator*, despite the strange appearance of the thoracic dorsum in the photograph. In alcohol and when mounted in Euparal, the blue disappears. Presumably it is a diffraction colour. I have never observed this phenomenon and wonder how widespread it is in the Chironomidae. CHIRONOMUS readers are encouraged to look out for it and report their findings to the journal.

(The camera used was a Nikon D90 with a 80-200mm lens, which includes optical stabilisation)

Trends in Chironomid Research

Leena Thorat and Bimalendu Nath

Department of Zoology, University of Pune, Pune-411007, India.

E-mails: leenathorat@gmail.com, bbnath@unipune.ac.in

Each model organism is favoured for its own forte, for instance, the Zebra fish, the Chick, *Xenopus* and *Aplysia*, all have been attracting a larger community of biologists for developmental biology, neurobiology and behavioural studies. Whereas, *Drosophila* could succeed in keeping researchers glued to vast areas of biological research apart from genetics for more than a century. On the other hand, chironomid midges have been witnessing a fluctuating research history. During their early days they were employed as pioneering models in developmental biology and chromosome studies. However, later the attention shifted towards studies on taxonomy and systematics and further the course of flow of chironomid research changed its trend to ecology, palaeolimnology and ecotoxicological research. In taking stock of the literature highlighting the use of *Chironomus* sp. as a model, there seems to be no room for divergent opinions that chironomid midges could never bag a top rank involving research driven by ‘model-oriented’ agenda. As evident from the numerical count of publications on midge-centered research topics, as models, they have always been restricted to only few groups of workers.

In an attempt to look at the trend of research using chironomid midges as model organisms, we have carried out a thorough sampling of literature with the help of the bibliography listed by Hoffrichter (2000-2009) that appeared in the issues of *Chironomus* Newsletters as a standard for the survey. In the interest of brevity, we have considered the past one decade i.e. between 1999 and 2008 as a reference for the evaluation of the number of publications encompassing the diverse areas of chironomid research.

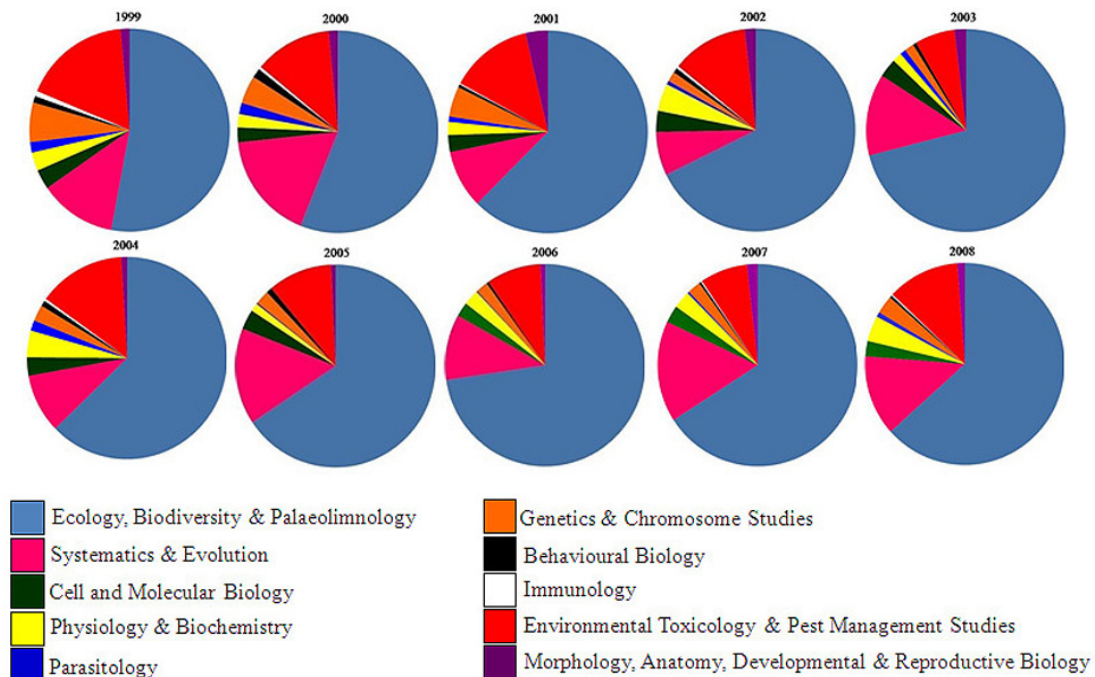


Figure 1. Percentages of covered topics in Chironomidae literature

The present survey reveals the dominance of mainly three distinct, inter-dependent interests in chironomid models which is reflected through their number of publications (Fig. 1). Throughout the decade under the present consideration, unequivocally, studies focusing on the ecological role of chironomid midges in intra-faunal and faunal-floral interactions and palaeolimnology have topped the rank. Being a major group of macro invertebrate fauna, reports addressing their role in different aquatic ecosystems have been evolving even prior to 1999 and have always had a major contribution in the community of Chironomidologists. Concomitantly, investigations concerning climate change and other environmental issues stimulated a large group of palaeolimnologists to adopt midges as test animals for studies predicting the past and future palaeoclimatic changes. The second largest field in the list is environmental toxicology that has grown along with the growing concern for ecological issues. Being one of the potent bioindicators of the aquatic biota,

midges have become one among the few widely studied models for the examination of cause and effect studies in response to different kinds of toxic stressors circulating in the habitat. The third interest of Chironomidologists that has modestly frequented the score is the branch of systematics and taxonomy. With more and more new species of *Chironomus* being explored, chironomid taxonomy too saw its rise. However, it must be emphasized that in the present scenario, the list of chironomid taxonomists is fewer than what may be actually needed by the *Chironomus* research community. In most cases, prior knowledge of taxonomy is a pre-requisite before proceeding with investigations at the molecular level that involve DNA barcoding, molecular phylogeny and the like. This fact rings an alarm that in the near future, a huge number of species of *Chironomus* may become extinct before exploration, thus calling for the need of well trained taxonomists. The other branches like cell and molecular biology, genetics and chromosome studies, morphology and anatomy, developmental and reproductive biology display a uniform trend with a moderate score throughout the past ten years. In contrast, publications on immunology, parasitology and behavioural studies have been extremely scanty.

This article that aims to highlight the quantitative estimation of the progress of chironomid research indicates that although possessing versatile potential, the chironomid midge has failed to embrace all the major areas of biological research. The technique-driven age of the 21st century demands the broadening of research horizons that will in turn popularize the chironomid midge as a model organism. Nevertheless, the interdependent nature of ecology, systematics, paleolimnology and environmental toxicology that causes them to intersect, points out a promising continuum and growth in these studies using midges, which is indeed a boon for the understanding of implications of the changing ecological scenario of the globe as a whole.

Reference

Hoffrichter O. 2000-2009. Current Bibliography. - *CHIRONOMUS Newsletter on Chironomidae Research* 13 -22.

News from chironomid research in India, University of Burdwan

Dr. Abhijit Mazumdar

Department of Zoology, University of Burdwan, Burdwan, 713 104, India

E-mail: abhijitau@rediffmail.com

The research project, TAXONOMY OF DIPTERA under the aegis of the “All India Coordinated project on Insect Taxonomy” funded by the Ministry of Environment & Forests, Govt. of India under Prof. P.K. Chaudhuri & Dr. A. Mazumdar implemented in 2002 is in progress in its second phase. New habitats have been explored and several new species have been identified that will be published in due course. Assistance in the form of material and literature is solicited for its successful execution.

M.Phil. thesis: Effect of temperature and food on the developmental period of *Glyptotendipes barbipes* (Stæger), an abundant pond-dwelling chironomid.

Mrs. Sharamita De (Chakravarti)

Supervisor: Dr. A. Mazumdar,

Summary: The midges were grown under three temperature regimes (22°C, 26°C, 30°C) and food ratios [Ratio (I) 25 mg fish food and 2.5 mg Baker's Yeast in 12 ml (IX) Martin Solution and Ratio, (II) 50 mg fish food and 5 mg Baker's Yeast in 12 ml (IX) Martin Solution]. Photoperiod was maintained as 14:10 (L: D) within the rearing chamber. Correlating with studied parameters indicate that the maximum growth occurred at 30°C and with food regime (i). With food regime (ii) results were not very encouraging.

New Chironomidologist:

Dr. Uttaran Majumdar

Assistant Professor, Department of Zoology

Hooghly Women's College, Hooghly, West Bengal 712103, INDIA

E-mail: uttaran_majumdar@yahoo.com

Area of research: Systematics and phylogeny of high altitude chironomids.

Implementing interactive identification keys is important for accurate and effective chironomid identification

Andreas Plank
Holsteinische Straße 23, 10717 Berlin, Germany
E-mail: andreas.plank@naturwiki.net

Computer based interactive identification programs have been developed recently, for instance the CD-key of Klink and Moller-Pillot (2003) and other identification programs developed using Lucid key software available on <http://www.lucidcentral.com>. They all assist the identification of chironomids in a flexible and interactive manner by means of classical dichotomous or multiple access keys. This helps a lot, but unfortunately those programs don't allow the easy extension of their content. An attempt to do so was made in Plank (2010) with the development of the Chironomidae Identification Program CHIP, whose content pages can be altered in a similar manner to Wikipedia. But CHIP doesn't have the facility to combine work online and, for instance, share photographs with other authors.

An EU-Project "Key to nature" funded three years ago focused on paper-free identification tools for use within schools and universities across Europe, in which a few new alternatives were developed for determinations that can be shared and improved online. Based on contributions having a creative common license on the one hand, and a Wiki-platform with shared image repositories on the other, authors can contribute either keys restricted to editing or with open collaboration. Currently most available keys on that platform are just for plants, but hopefully over time more scientists will consider contributing identification keys for chironomids, making chironomid keys accessible also to expert assessment or monitoring.

References


Klink, A. G. and Moller-Pillot, H. K. M. 2003: *Chironomidae Larvae—Key to the higher taxa and species of the lowlands of Northwestern Europe*. Version: 1.0. CD-Key. ISBN: 90-75000-58-8.

Plank, A. 2010. *Chironomid-based inference models for Tibetan lakes aided by a newly developed chironomid identification key*. Thesis, Freie Universität Berlin. Available from: http://www.diss.fu-berlin.de/diss/receive/FUDISS_thesis_00000017941.

Key to common UK street trees — Bob Press ▶ Execute step-by-step

The key allows quick but reliable identification of common urban street trees in the UK. Please make comments on the discussion page of this key (see tab above page) or send suggestions to [Bob Press](#).
(Geographic scope not specified) — **Collaboration:** open — **Status:** Text completed, illustrations incomplete, Species page incomplete (species links in red are not yet created). — Edited by: Bob Press, G. Hagedorn (formatting and minor adaptations)

- 1 Leaves scale-like and often overlapping ▶ 2
- Leaves broader, not scale-like or overlapping ▶ 3

- 2 Ultimate branchlets with white markings beneath, flattened and all spreading in one plane; fruiting cones 7-9 mm, each cone-scale with a small prickle in the centre (a) (more...)..... **Lawson Cypress**
(*Chamaecyparis lawsoniana*) 
- Ultimate branchlets without white markings beneath, flattened but not all in one plane; fruiting cones 15-20 mm, each cone-scale with a prominent conical spine in the centre (more...)..... **Leyland Cypress**
(*Cupressocyparis x leylandii*) 

- 3 Leaves opposite (more...) ▶ 4
- Leaves alternate (more...) ▶ 13

- 4 Leaves simple, though often deeply lobed (more...) **Maples (Acer species)**
..... ▶ 5
- Leaves compound, divided into completely separate leaflets (more...) ▶ 9

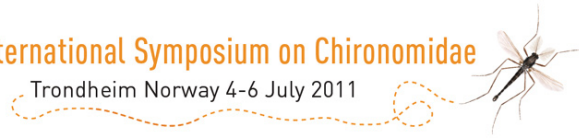
- 5 Leaves green above, silvery white beneath **Silver Maple**
(*Acer saccharinum*) 
- Leaves of similar green on both sides ▶ 6

Screen shot of a classical determination key on www.keytonature.eu with the possibility of step-by-step identification (not shown).

Announcement and Invitation to the

18th International Symposium on Chironomidae

Trondheim Norway 4-6 July 2011



Dear colleagues,

The NTNU Museum of Natural History and Archaeology would like to invite you to the 18th International Symposium on Chironomidae.

The Symposium will take place at the Norwegian University of Science and Technology in Trondheim, July 4-6, 2011, with a post-conference tour on July 7.

We attempt to bring scientists and students from all over the world to Trondheim and hope many of you will consider this a great opportunity to present and discuss recent developments in Chironomidae research.

Read more about the conference and register your interest by using the preregistration form at the symposium website (<http://www.ntnu.no/vitenskapsmuseet/chironomidae-symposium>). Please visit this site for regular updates on the available scientific and social programs. Preregistration will be open until the end of 2010 while formal registration will start in January 2011. As we depend on the preregistration to estimate the approximate number of delegates, we kindly ask you to preregister as soon as possible. This will also give us an opportunity to inform you directly about updates in the symposium program per e-mail.

Looking forward to see you in Trondheim!

For inquiries, please contact the symposium committee: Chiro2011@vm.ntnu.no

The Symposium Committee,
Elisabeth Stur, Torbjørn Ekrem & Kaare Aagaard.

A World Catalogue Of Chironomidae (Diptera). Part 2. Orthocladiinae

Patrick Ashe¹ & James P. O'Connor²

¹33 Shelton Drive, Terenure, Dublin 12, Ireland, patrick.ashe@upcmail.ie

²National Museum of Ireland, Kildare Street, Dublin 2, Ireland

Part 2 of A World Catalogue of Chironomidae (Diptera) is expected to be published in early 2011 (probably April or May). The number of pages will be approximately 1,000 and due to the large size will be printed in two sections (A & B) of about 500 pages each. The two sections will each weigh about 1.3 to 1.4 kg and to save on postage costs each section will be posted separately. A quote from the publisher has not yet been requested but the price for Part 2 copy is likely to be about Euro 84 to which the relevant amount of postage must be added. It is possible therefore to estimate the postage cost (Airmail only) to anywhere in the world. The estimated total cost of a copy of Part 2 plus postage and packing can be determined from the table given below.

	Ireland (incl. Northern Ireland)	Britain	Europe	Rest of the world
Postage	Euro 16.00	Euro 26.00	Euro 26.00	Euro 36.00
Catalogue Part 2	Euro 84.00	Euro 84.00	Euro 84.00	Euro 84.00
TOTAL	Euro 100.00	Euro 110.00	Euro 110.00	Euro 120.00

The Catalogue is being published by The Irish Biogeographical Society in association with The National Museum of Ireland. Once Part 2 of the Catalogue is published and available for sale it will be announced on the website of the Irish Biogeographical Society: <http://www.irishbiogeographicalsociety.com/>

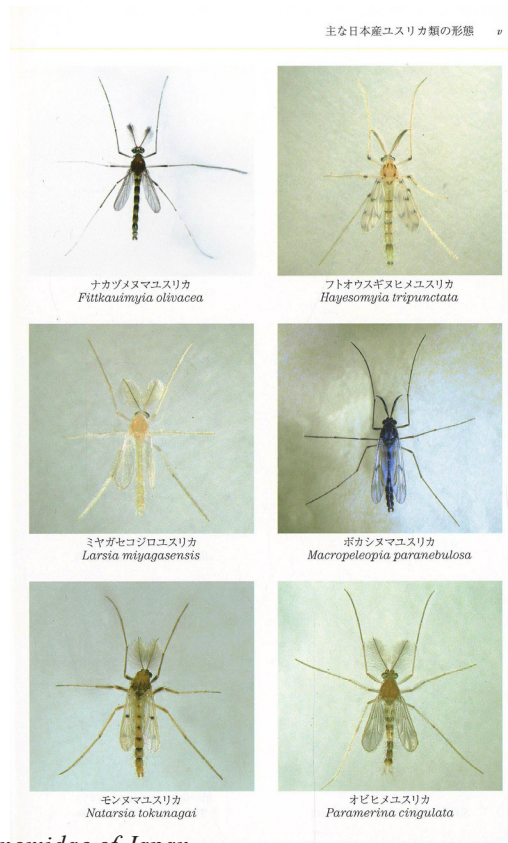
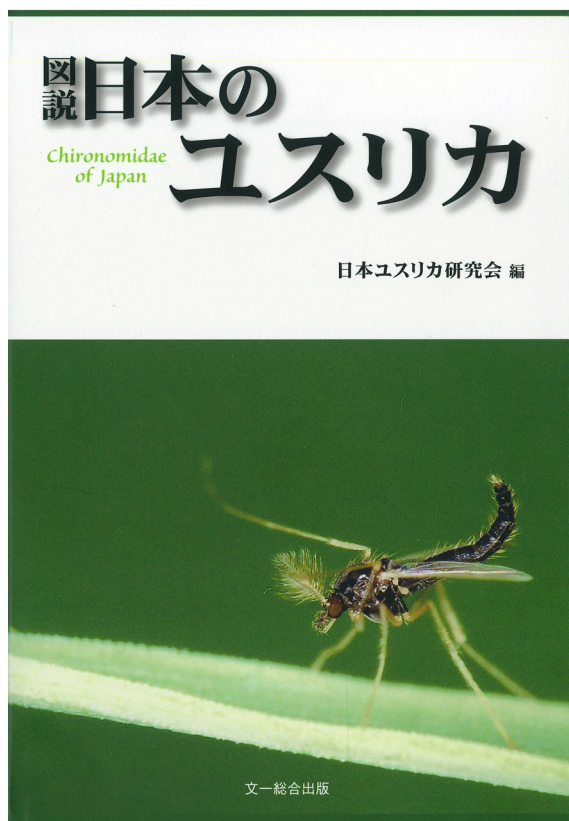
The International Electronic Payment System from your Bank account to our Bank account (The Irish Biogeographical Society account) worked very well for Part 1 and will be used for Part 2. Money received from the sale of Parts 1 and 2 will be used to help pay some of the cost of Parts 3 and 4.

Anyone wishing to order a copy of either Part 1 or Part 2 can contact the senior author, Dr. Patrick Ashe by e-mail: patrick.ashe@upcmail.ie

New book

Illustrated guide to the Chironomidae of Japan

This new comprehensive book on Chironomidae contains detailed descriptions of morphology and methodology (collection, rearing, mounting, SEM, molecular taxonomy) as well as notes on habitats, ecology and the use of chironomids as biological indicators. The book also includes keys to subfamilies, genera and main species, diagnoses and numerous detailed drawings and photographs of adult males, larvae and pupae.



Front and sample page of *Illustrated guide to the Chironomidae of Japan*.

Language: Japanese

Editor: Japanese Association of Chironomidae Studies (JACS)

Editorial board: S. Kondo, M. Yamamoto, T. Kobayashi, K. Hirabayashi, and K. Kawai

Book size: A5 (W 148mm, H 210mm), 356 pp. + color plate 48 pp.

ISBN 978-4-8599-1172-3

Price: ¥ 12,600 (including sales tax 5%)

Publisher: Bun'ichi-sōgō-shuppan Ltd.

2-5 Nishi-gokenmachi, Shinjuku-ku, Tokyo, 162-0812 Japan

Phone: +3-3235-7341

Fax: +3-3269-1402

How to order:

The book can be ordered through the Japanese Amazon web site: <http://www.amazon.co.jp/In-English/>.