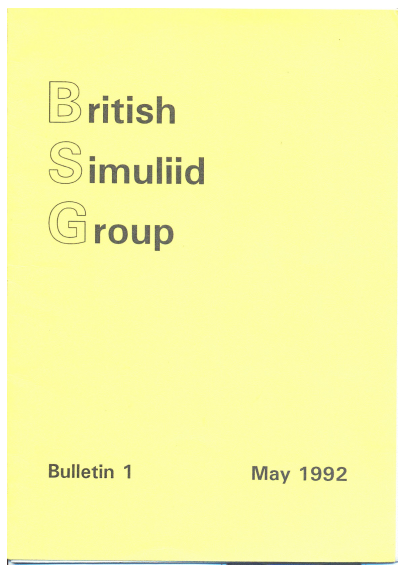


The British Simuliid Group Bulletin

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Cover Image:

Cover of the first British Simuliid Group Bulletin, of May 1992. Edited by Trefor Williams and published by Liverpool University.

From the Editor

"*The Times they are a changin'* " sang Bob Dylan in 1963, and times are changing for the British Simuliid Group and its *Bulletin*. At the meeting held in Birmingham last June (page 4) the future of the Group was discussed. The main point being that the number of active British simuliidologists has now dwindled to about 5 and the original objective of the group - *to coordinate research between the several groups of researchers in Britain which in the 1970s numbered over 30 individuals* - was no longer relevant.

The discussion concluded that there was little point in continuing the Group as a formal entity with annual meetings, but this would not prevent anyone organizing an *ad hoc* meeting at any time. With regard to the *Bulletin*, everyone agreed that they would like to see it continue. There were mixed feelings over the name, but finally it was decided that the international aspect of its content should be expanded and the name changed to "*The Simuliid Bulletin*" to reflect this. It was also agreed that a number of assistant editors from different geographical areas should be co-opted in order to widen its coverage.

So this will be the last issue of the *British Simuliid Group Bulletin*, which I commemorate by reproducing a copy of the first issue on the cover. Next year will see the phoenix-like emergence of *The Simuliid Bulletin*. To help with the production of the new *Bulletin* I invite readers to submit ideas or designs for the new cover to me at jaybeedee@gmail.com.

This number contains a report on the 33rd (2015) meeting of the British Simuliid Group hosted by Charles Brockhouse and John Colbourne at Birmingham University, an update on the Simulium Genome Project, notice of the next International Symposium of 2016 to be held in Zaragoza, (mark your diary now!) and a notice about another important publication by the Adler and Crosskey team.

John Davies

FORTHCOMING MEETINGS

VII International Simuliidae Symposium 2016

Provisional dates: 5 to 10 September 2016

Dear colleagues,

I am very glad to organize the 7th International Simuliidae Symposium in Zaragoza (Spain) in 2016 presented by the University of Zaragoza.

Zaragoza is a large Spanish city, capital of the province and Aragon. It is the fifth most populated Spanish city with 666,058 inhabitants. It is located on the banks of the Ebro, Huerva and Gallego rivers in the center of a wide valley. Its privileged geographical location makes it an important logistical hub and communications; It is located about 300 km from Madrid, Barcelona, Valencia, Bilbao and Toulouse. The city is famous for its folklore, local gastronomy, and landmarks such as the Basilica del Pilar, La Seo Cathedral and the Aljaferia Palace. Together with La Seo and the Aljaferia, several other buildings form part of the Mudéjar Architecture of Aragon which is a UNESCO World Heritage Site.

For more information go to:

<http://www.zaragoza.es/ciudad/turismo?idioma=en&seleccionar=OK>

Best regards and I hope to see all of you in Zaragoza.

Ignacio Ruiz

Notification of details will be made through the
SIMULIIDAE@JISMAIL.AC.UK forum, the *blackfly.org.uk* website and
future *Bulletins*

MEETING REPORT

The BSG 2015 Meeting, Birmingham University June 9-10, 2015.

by Charles Brockhouse , Creighton University, Omaha, USA
CharlesBrockhouse@creighton.edu.or

The 2015 joint meeting of the British Simulium Group and the Simulium Genome Project took place at the University of Birmingham, with the sponsorship of a NERC training grant to our co-host, Professor John Colbourne.

The meeting was hosted by the new Environmental Genomics unit of the School of Biosciences. Prof. Colbourne's group is applying the new tools of "omics" to advance the understanding of environmental health, and to increase environmental safety, by using a wide spectrum of organisms in high-throughput gene expression, metabolomic, and epigenetic experiments. Blackflies are to play an important role in this, due to their key role in lotic habitats, and the strength of the background work in population structure and ecology.

The evening before, the pre-conference dinner took place alongside the Birmingham canals, at the "Tap and Spile" pub. The conference venue itself was the University's "Horton Grange" Conference Park.

Co-chairs Charles Brockhouse (Creighton University/EnGen Birmingham) and John Davies welcomed the group of simudologists supplemented by attending students, postdocs and faculty of the EnGen group. The international component was represented by Alexie Papanicolaou (Hawkesbury Institute, University of Western Sydney) and John McCreadie (University of South Alabama), who both gave keynote lectures. Daniel Lawson represented VectorBase, our partner in the Simulium Genome Project.

Other attendees included John Raybould, Frank and Brenda Walsh, Rory Post, Craig Wilding, Zoe Adams, Poppy Lamberton, and Leda Mirbahai. The talks covered both ongoing and newly initiated projects, including recent work in Africa (Post and Lamberton), an update on the Simulium Genome Project (Brockhouse), and an introduction to epigenetics and the methylome (Mirbahai). John McCreadie delivered a keynote address on "Recent Advances in Blackfly Ecology". After lunch, we all went over to the Biosciences Building where Alexie Papanicolaou gave a joint keynote/Biosciences seminar entitled "Making a genome sequence work: best-practices reveals a novel gene and putative neofunctionalisation in the insect SNMP chemosensory family."



Rory Post in full flow (Photo J.B.D.)

A tour of John Colbourne's Environmental Genomics unit ("EnGen") followed the keynote address. EnGen is engaged in a wide variety of research projects involving the genomic and gene-expression responses of a variety of aquatic organisms (most prominently *Daphnia* spp., but now featuring *Simulium*!) to environmental stresses. The unit boasts a Illumina HiSeq 2500 sequencing, and a wide variety of supporting genomic infrastructure.

The end of the first day featured an extensive discussion on the future of the BSG and the Bulletin. A consensus emerged to rename the Bulletin to "The Simulium Bulletin" in recognition of the international character of its authorship and readership. John McCreadie and Charles Brockhouse offered to jointly act as North American sub-editors, and will gather abstracts from the North American Black Fly Association (NABFA) annual meetings for publication in the Bulletin. The BSG will carry on as an informal organization, meeting biannually with our European colleagues at the International Symposiums, and at other times as organization and volunteers permit.

On the second day a second major discussion took place on the direction of the Genome Project. Complications in the sequencing and bioinformatics have slowed production of genome assemblies. We have useful genome data in the form of large sequence collections of several species, and several transcriptomes of the "model species", *Simulium vittatum*



Charles Brockhouse setting up the MinION experimental multi-genome sequencer (the box on the desk to the left of the laptop a little smaller than a mobile phone) to sequence microbes in the gut of a Birmingham blackfly. Photo. *RJPost*

(UGA colony). *S. vittatum* was chosen for pragmatic reasons (easy availability of material with known development stages) but its genome structure has posed difficulties, mostly likely because of the large number of inversion polymorphisms.

Several chromosomally monomorphic species/populations were discussed with result that *Simulium yahense* and *S. ochraceum* (Galapagos) are now in queue at Birmingham for deep sequencing. Difficulties in obtaining adequate samples to fulfill the population sampling called for in the NIH White Paper have now been solved by the donation of *S. damnosum* complex samples, by the collaborative project of Maria-Gloria Basanez, Daniel Boakye and Rory Post. Poppy Lamberton supplied the DNA now stored at EnGen.

The conference concluded with a demonstration/training session of the new DNA single-molecule nanopore sequencing technology, the Oxford Nanopore "MinION". The sequencer was set up and run in the conference room. We watched as sequences from the local population of *S. ornatum* were read and called in real time. Both Charles Brockhouse's and John Colbourne's lab are included in the MinION early access program.

We are all grateful to C.B and John Colbourne for organising the meeting so well and look forward to the next International Symposium to be held in Zaragoza, Spain, 2016.

Meeting Agenda

Monday June 8th: Arrival Day.

Dinner: 7:30 pm "Tap and Spile" restaurant. Birmingham.

Tuesday June 9th:

9:00 a.m. Registration and coffee.

Morning Session

Welcome. **John Colbourn and John Davies:**

Introduction to the Simulium Genome. **Charles Brockhouse**

Onchocerciasis transmission in Ghana: effect of vector species on biting rates, transmission potentials and the human blood index. **Poppy Lambert**

Recent Advancements in Blackfly Ecology. **John McCreadie**

Coffee break

Blackflies and onchocerciasis in northern Uganda. **Rory Post.**

12:00: Lunch break. In Horton Grange.

1.00 pm Keynote Talk and Biosciences seminar in the Biosciences Building

Making a genome sequence work: best-practices reveals a novel gene and putative neofunctionalisation in the insect SNMP chemosensory family

Alexie Papanicolaou.

2.00 pm Tour of Environmental Genomics Department.

Afternoon Session

Vectobase **.Daniel Lawson.**

The blackfly reproductive methylome. **Leda Mirbahai.**

A discussion on the future of the British Simuliid Group and its Bulletin. **John B. Davies**

Wednesday June 10th

Discussion Session

Demonstration of new equipment.

An Update on the Simulium Genome Project.

Charles Brockhouse for the Simulium Genome Consortium
Creighton University, Omaha, USA
CharlesBrockhouse@creighton.edu.or

It has been several years since the last update to the Simulium Genome Project was presented to the BSG, and significant new genomic resources are now available to simudologists interested in using genomic data, or who are in need of DNA sequences for their research. While we continue to analyse the data prior to publication, we want to make both genomes and transcriptomes available to the community for immediate use.

Most of the data is derived from the *Simulium vittatum* complex. Two genomic DNA contig assemblies derived from the colony maintained by the Entomology Department of University of Georgia (Athens) are available. One is assembled from Illumina 100 bp reads, and the other from Illumina synthetic long-reads.

Two further low coverage genomes are available for *Simulium squamosum* and *S. thylense*, both members of the *S. damnosum* complex. In the near future, we will have *S. ornatum* (Bourn Brook, Birmingham), and *S. yahense* (Ghana) sequences. Assembly of these two species will take some time, but we hope availability in spring 2016.

We also have multiple transcriptomes (cDNA sequence assemblies) from both *Simulium vittatum* colony, and its sibling species *Simulium tribulatum*. The transcriptomes include whole-body, all life-stage assembly from the UGA colony, single-sex, and developmental staged assemblies of both colony and "wild" *S. tribulatum* samples.

We encourage anyone wishing to participate in the genome project and to use the available data to join the Consortium by contacting Charles Brockhouse at the Biology Department, Creighton University (charles-brockhouse@creighton.edu).

BOOK NOTICE

A MAJOR PUBLICATION IN BLACKFLY CYTOTAXONOMY

Cytotaxonomy of the Simuliidae (Diptera): a systematic and bibliographic conspectus

By Peter H Adler and Roger W Crosskey
Zootaxa 3975 (2015)

The publication of Adler and Crosskey's monumental work is a milestone in blackfly cytotaxonomy. Entitled *Cytotaxonomy of the Simuliidae (Diptera): a systematic and bibliographic conspectus* it aims to list every 'work' on blackfly cytotaxonomy that has ever been 'produced', and I am pretty confident that it has achieved that objective – certainly I have been unable to find anything which is not included. It takes a broad view of what constitutes cytotaxonomy and hence deals with just about anything on blackfly chromosomes, and it also takes a broad view on what constitutes a 'work', containing much grey literature, such as PhD and MSc theses, proceedings of conferences, WHO mimeographs, etc. I was surprised to learn that almost a quarter of the World's blackflies have had some cytotaxonomic study. The 'conspectus' is published as a Monograph in the on-line journal *Zootaxa*. It is 139 pages long and the first sections list works under a number of headings:

- General chromosomal works on the Simuliidae
- Works containing standard chromosomal reference maps
- Techniques and terminology
- Obituaries of simuliid cytogeneticists
- Cytotaxonomic inventory

It is the cytotaxonomic inventory which is the heart of the monograph listing references to cytotaxonomic works species by species,

extending to 100 pages. It is followed by the alphabetic listing of the various works cited under these various headings and species.

This monograph is not a review, it is a bibliography which will enable other scientists to access the necessary cytotaxonomic literature with ease and be confident that they are not missing anything. For me, at least, the practical value of this publication is enormous. Get it.

Rory Post

THE BRITISH SIMULIID GROUP

The British Simuliid Group (BSG) is an informal assemblage of scientists of any discipline, from many countries, who have an interest in the Simuliidae. The group's members include entomologists, parasitologists, environmentalists, ecologists and medics, with interests in ecology, bionomics, taxonomy, cytotaxonomy, disease transmission, freshwater biology etc. Our aim is to assemble as diverse a group as possible in order to encourage a wide interchange of ideas and information.

At present the BSG has about 130 recorded members in the UK, Europe, Africa, Australia, New Zealand and the Americas. Membership is FREE - there are no restrictions. If you are not already a member of the BSG and you wish your interest to be known, all you have to do is send your name and postal and e-mail addresses to the editor at jaybeedee@gmail.com. Annual meetings have been held at different locations in the UK since 1978. Abstracts of papers presented are published in our *Bulletin* which is now available for downloading from the internet.

The Group also runs an electronic news list with the name "Simuliidae" which is now on JISCmail. To join "Simuliidae" send the following command as one line of text in an e-mail message without subject heading- join Simuliidae your-firstname lastname to: jiscmail@jiscmail.ac.uk. The Simuliidae list owner is the Editor of the Bulletin. Current and back numbers of the *Bulletin* can be viewed on the World Wide Web at URL:

<http://www.blackfly.org.uk>.

Inquiries about the Group and its activities should be made to John Davies: address on the back cover and e-mail: jaybeedee@gmail.com

Notes for Contributors

To avoid copy-typing, the editor (address above) would prefer to receive contributions on disc or by e-mail, or typewritten. Details as follows:-

1. Via conventional mail on CDROM or IBM PC formatted 720Kb or 1.4Mb 3.5 inch diskettes, as unmodified word processor files (most common DOS or Windows word processor formats are acceptable) or as RTF, PDF, ASCII or DOS text files (We usually have to change pagination and heading format, anyway). Mark the disc with the format, word processor name and file name(s). Complicated tables and figures can be accepted as separate graphics files (not OLE embedded, please!) but we may ask for a hard copy as a check that all detail has been retained. Remember that figures should have legends and small detail drawn large enough to be visible when reduced to 100mm by 70mm. Diskettes will be returned on request.
2. By electronic mail via the Internet. Send your file in MSWord .DOC or .DOCX or in .RTF or .PDF format or as an ASCII file (also known as DOS or txt File), and e-mail it either as part of the message or preferably as an attachment to: jaybeedee@gmail.com

If neither of the above methods are available, then post to me printed copy on A4 paper (210x297 mm), single spaced, ready for scanning. Heading styles as in the Bulletin. Format for References is flexible. Please refer to the Bulletin for the form appropriate to your article. Scientific Communications should quote the full title and journal name, but Notes and Abstracts may optionally omit titles and show only the abbreviated journal name.

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The British Simuliid Group Bulletin is an informal publication intended to disseminate information about the Simuliidae. It is published twice each year and is available free of charge. From July 2011 the Bulletin will be published as a downloadable file on the internet at <http://www.blackfly.org.uk>. Printed paper copies will be sent to members on request.

Content covers papers presented at the Group's Annual Meeting, which is usually held in September, short research notes, notices and accounts of meetings, and articles of anecdotal or general interest that would not normally be found in international journals. Geographical cover is world-wide, and is not restricted to the British Isles. Reports of research carried out by graduates, young scientists and newcomers to the subject are particularly encouraged. It is an ideal medium for offering new ideas and stimulating discussion because of the very short interval between acceptance and publication.

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