

## THE CERATOPOGONIDAE INFORMATION EXCHANGE

The CIE, issued twice a year (no subscription fee), was begun in 1967-68 as a newsletter to facilitate communication among workers interested in the Ceratopogonidae. The format is extremely flexible. Contributions may be of any length and deal with any subject having some bearing on the study of ceratopogonids. For example, contributors may report their current interests or plans, observations or techniques of probable value to the readership, requests for addresses, study material or reprints, or any other matter of concern. The newsletter serves also as a bulletin for planning and communicating information on meetings, symposia, workshops and so forth. Finally, there is in every issue a compilation of recent literature in the field. Any person(s) wishing to contribute to the newsletter or to receive future issues by email should contact:

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### CIE No. 104 –December 2019 -The Ceratopogonidae Information Exchange Newsletter

Colleagues,

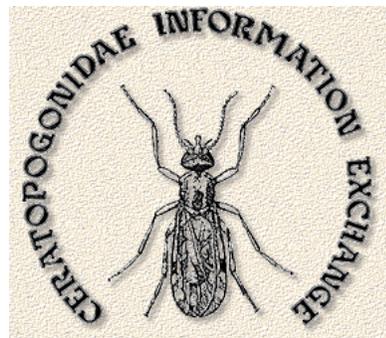
I hope that you will find something useful and interesting in this December, 2019 issue of the CIE Newsletter. The Recent Literature section contains 208 original research papers, reviews, reports and abstracts representing diverse research areas. Studies also were conducted from the high altitudes of the fabled Shangri-La to the tropical islands of Reunion and Curacao. I have included [Click here](#) to view figures or images from three of these papers on the last pages of this issue.

If anyone is not listed in the [Directory of Workers](#), please send your contact information (or an update) to me. Please also send copies of your published papers, research summaries, requests for information, etc. for the May, 2020 issue by Friday, May 8<sup>th</sup>.

Finally, I send best wishes for a complete recovery to our research colleague, [Gustavo Spinelli](#), who was injured in a traffic accident in October. Thanks to his wife, Monica, for providing information about Gustavo's condition.

With Best Wishes for a Merry Christmas and a Happy New Year,  
Steve Murphree, Nashville, Tennessee, U.S.A.

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## **New CIE Subscribers, Address Updates**

### **New Subscribers:**

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### **Address Update:**

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## **Announcement**

**The 64th Annual Livestock Insect Workers Conference will be held June 14-17, 2020 in Dallas Texas. For updates [Click Here](#).**

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## **Contributions/Requests from Scientists:**

**From: William L. Grogan, Jr., Florida State Collection of Arthropods, Gainesville, Florida, U.S.A.**

Colleagues,

Recently, I learned about the John Malloch Society: (<http://www.mallochsociety.org.uk/>) from a young British worker here (Sam Bolton, who worked on chironomids and has a Ph.D. on mites - his specialty now) John Russell Malloch (1875-1963) apparently immigrated to the USA sometime during the early 20<sup>th</sup> century [See page 8 of [John Russell Malloch \(1875-1963\) his early life and contribution to entomology in Scotland](#) – Ed]. He worked at the Illinois Natural History Survey early on and published several important monographs 1914-1917 on flies, the largest in 1915 in the Bulletin of the Illinois State Laboratory of Natural History –

[The Chironomidae, or midges, of Illinois, with particular reference to the species occurring in the Illinois River. Vol. X, Article VI, pp. 217-543, Plates XVII-XL.](#) [Below are two plates from Malloch's 1915 publication – Ed]

Since I had never heard about this Society, I thought it would be of interest to our readers. It is likely that John Boorman knows about it and may have included a note in an early issue of the CIE Newsletter.

Cheers, Bill

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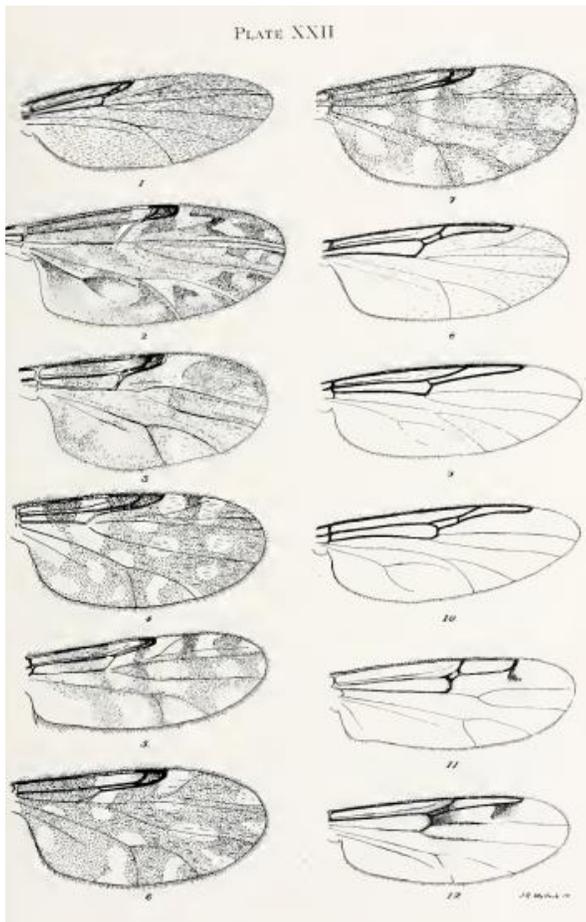


PLATE XXII  
Wings of *Ceratopogonina*

- Fig. 1. *Forcipomyia specularis*, male.
- Fig. 2. *Culicoides varipennis*, female.
- Fig. 3. *Culicoides sanguisugus*, female.
- Fig. 4. *Culicoides guttipennis*, female.
- Fig. 5. *Culicoides stellifer*, male.
- Fig. 6. *Culicoides hematopotus*, female.
- Fig. 7. *Culicoides crepuscularis*, female.
- Fig. 8. *Ceratopogon fuscus*, female.
- Fig. 9. *Probezzia glaber*, female.
- Fig. 10. *Palpomyia schwarzi*, female.
- Fig. 11. *Hartomyia picta*, male.
- Fig. 12. *Johannsenomyia bimaculata*, female.

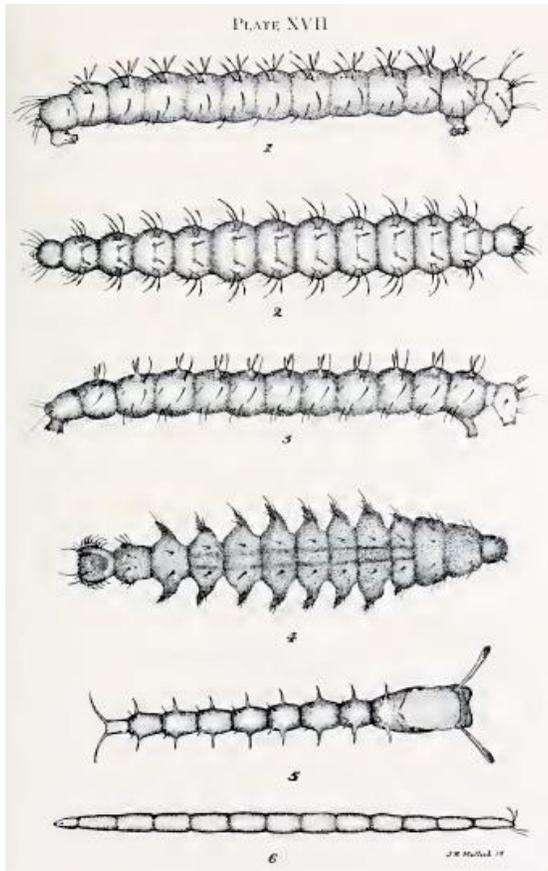
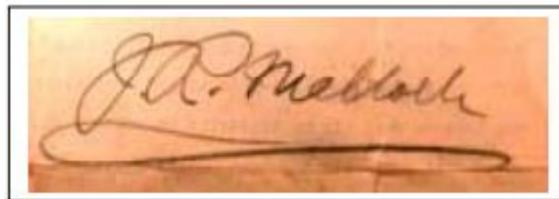


PLATE XVII  
*Larva and Pupa of Ceratopogoninae*  
 Fig. 1. *Forcipomyia specularis*, larva, lateral view.  
 Fig. 2. The same, dorsal view.  
 Fig. 3. *Forcipomyia cilipes*, larva, lateral view.  
 Fig. 4. *Ceratopogon fuscus*, larva, dorsal view.  
 Fig. 5. *Palpomyia?* sp.?, pupa, dorsal view.  
 Fig. 6. *Palpomyia longipennis*, larva, lateral view.



**From: Walter Knausenberger, Bowie, Maryland, U.S.A.; Art Borkent, Salmon Arm, British Columbia, CANADA; Alison Blackwell, APS Biocontrol, Ltd., Dundee, UNITED KINGDOM; Simon Carpenter, Pirbright Laboratory, UNITED KINGDOM**

An interesting correspondence took place which began with a July 5<sup>th</sup> email from Walter Knausenberger, who read an article on BBC News entitled, "[Buzz off! Midge song heralds start of Icelandic summer](#)". The author states that midges have historically been in only one region of the country, the north where a lake is named after them - Lake Mývatn, or Midge Lake. In fact, he indicates that they are "as Icelandic as the puffins". However, if you [follow this link](#), though an image of a *Culicoides* species is prominent, it is clear that the midges, though quite numerous, are chironomids. Subsequently I found [a July, 2015 report](#) of biting midges in Kjós on both sides of Hvalfjörður fjord in West Iceland (north of Reykjavik) that heralded them as a new species introduction.

Art Borkent located a tweet in the BBC article that included the photograph below, determined that it was a species of *Culicoides* rather than a black fly, and remarked, "What an interesting world we live in, with still so much we don't know - even a pest in Iceland which remains unnamed. Someone needs to get a few females into a vial and get an identification on these. Does anyone know someone in Iceland who can capture some specimens?" Alison Blackwell replied that she would try to get samples and recently replied to my follow-up that samples had not been acquired but that Simon Carpenter might know the species. After my question to Simon, he replied that "Thomas Balenghien recorded *Culicoides riouxi* as part of the Vectornet work there that he led" and [provided this link](#). However, after a look at the [Fauna of the](#)

[European Union website for \*C. riouxi\*](#), it would appear that *C. riouxi* has become the junior synonym of *Culicoides reconditus*, yet this is not reflected in the latest (2016) version of the World Catalog of Ceratopogonidae (see snapshot below). So, some questions remain on at least a couple of levels. Does anyone want to look into the synonymy or perhaps visit Iceland next early July? - Ed.



- reconditus** Campbell and Pelham-Clinton, 1960: 227. Great Britain.
- rectilis** Nandi and Mazumdar, 2014c: 62. India.
- recurvus** Delfinado, 1961: 663. Philippines.
- reduncutheca** Yu, Wang and Tan, *in* Wang, et al., 2012: 284. China.
- reevesi** Wirth, 1952a: 193. USA (California).
- regalis** Majumdar and Das Gupta, *in* Majumdar et al., 1997: 31. India.
- remerki** Boorman and Dipeolu, 1979: 51. Nigeria.
- remotus** Kieffer, 1918a: 54. Guinea.
- reticulatus** Lutz, 1913: 49. Brazil.
- rhizophorensis** Khamala and Kettle, 1971: 77. Kenya.
- rhombus** Santarém, Felipe-Bauer and Castellón, *in* Santarém, et al., 2014: 270. Brazil.
- ribeiroi** Lemblé, Messaddeq, Capela and Kremer, 1990: 267. Portugal.
- riebi** Delécolle, Mathieu, and Baldet, 2005: 70. France.
- riethi** Kieffer, 1914a: 237. Germany.
  - cordatus* Kieffer, 1921h: 114 (1921d: 275). Latvia.
  - crassiforceps* Kieffer, 1924a: 15. Germany.
  - gigas* Root and Hoffman, 1937: 172. Canada (Saskatchewan).
- riggsi** Khalaf, 1957a: 198 (as subspecies of *piliferus*). USA (Oklahoma).
- riouxi** Callot and Kremer, 1961a: 679. France.

**From: Richard Lane, Kilmington, Devon, UNITED KINGDOM**

Colleagues,

Below are some pictures from early ceratopogonid meetings. I have included a listing of who is in them as far as I can remember. I wonder if anyone else can identify the few people I can't? If you have any queries, then please do not hesitate to contact me; if I don't know them perhaps John Boorman will!

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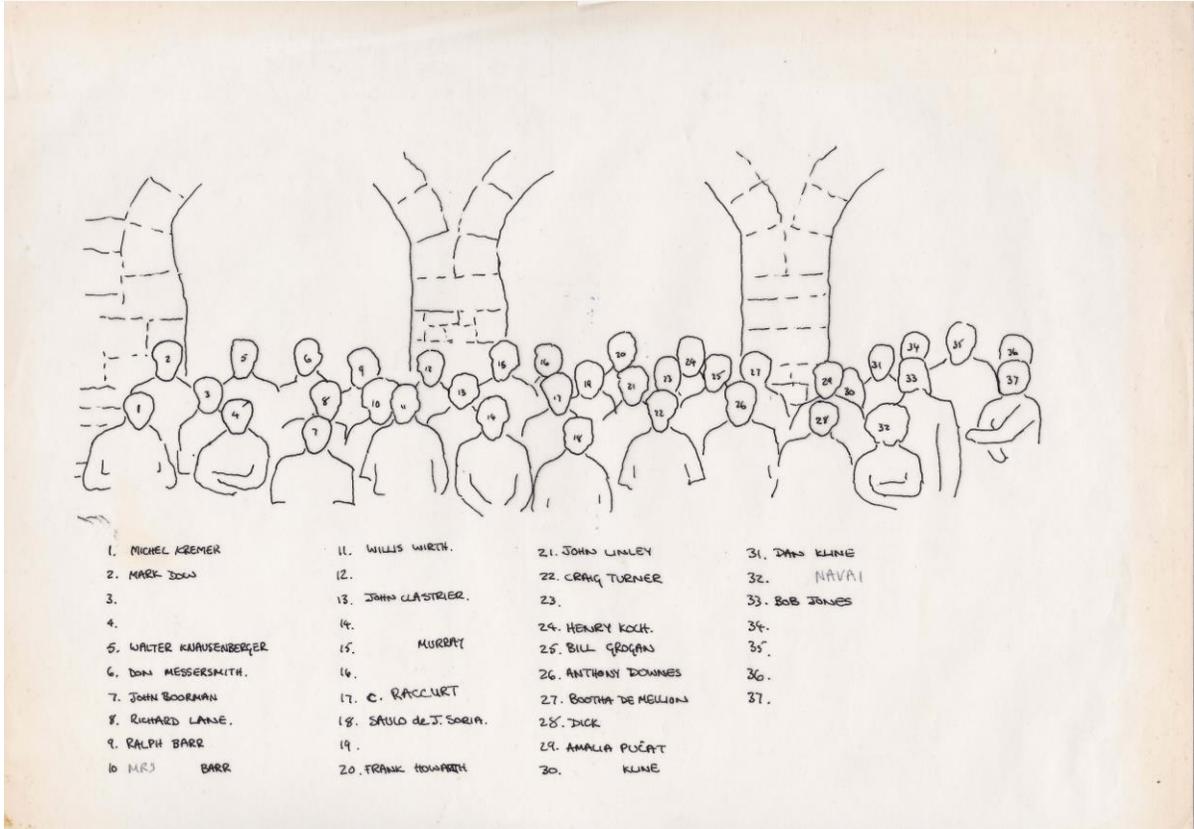
**1<sup>st</sup> International Ceratopogonid meeting, Strasbourg, France. 1974** - 1 Amelia Pucat (Canada); 2 Jason Glick (US/Kenya); 3 ?; 4 John Boorman; 5 Michel Cornet; 6 Jean-Pierre Rieb; 7 Bill Grogan; 8 Ryzard Szadziewski; 9 ?; Jean Clastrier; 11 ?; 12 Peter Havelka; 13 E Chaker; 14 ?; 15 ?; 16 Claudine Rebholtz; 17 ?; 18 ?; 19 Jean Callot.



**1<sup>st</sup> International Ceratopogonid meeting, Strasbourg, France. 1974** - Collecting larvae in a churchyard! Circling Left to right: on wall ?; Peter Havelka, Bill Grogan (striped shirt), Ryszard Szadziwski (kneeling), Amelia Pucac.



**1<sup>st</sup> International Ceratopogonid meeting, Strasbourg, France. 1974** - American ceratopogonid worker with his wife and Michel Kremer (right).



**Ceratopogonid meeting Blacksburg, Virginia 1976** Photos by John Boorman?

**Ceratopogonid meeting Blacksburg, Virginia 1976 -**

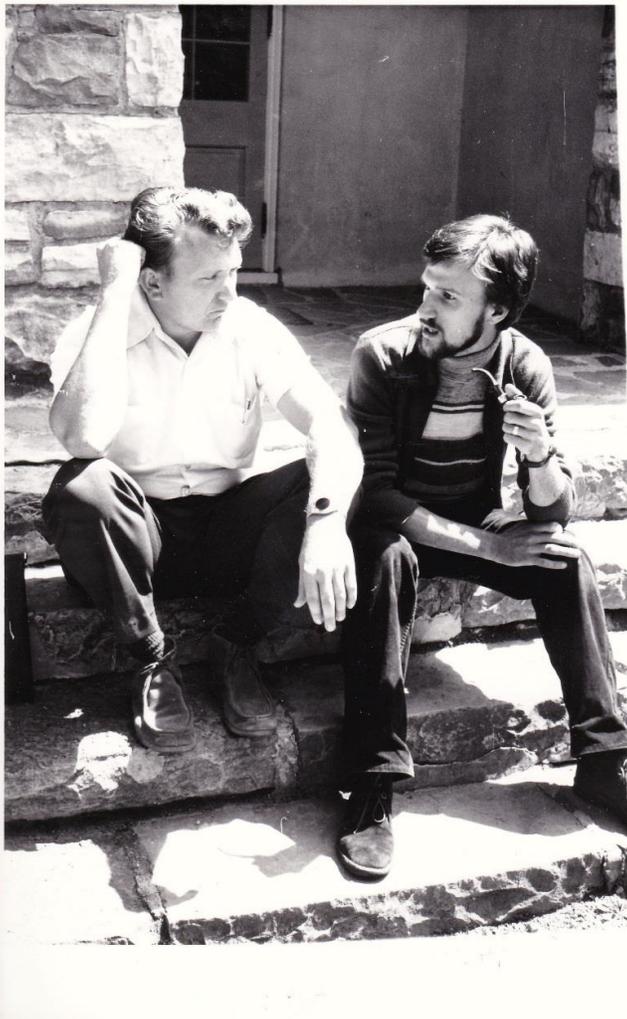
From left to right: Michel Kremer, Walter Knausenburger, Jean Clastrier, Craig Turner.



**Ceratopogonid meeting Blacksburg, Virginia 1976 -**

From left to right:  
Frank Howarth, back  
?, Anthony Downes,  
female ?, Ralph  
Barr, Bob Jones  
(centre), Christian  
Racourt, Jean  
Clastrier (side)  
Michel Kremer,  
Murray, John  
Boorman, ? far  
right.





**Ceratopogonid meeting Blacksburg, Virginia 1976** - Henry Koch (left) and Richard Lane [Left]; Botha de Mellion (left) and Walter Knausenberger [Right].



**Ceratopogonid meeting Blacksburg, Virginia 1976** - Willis Wirth (left), John Linley and Craig Turner.



**Ceratopogonid meeting Blacksburg, Virginia 1976** - Willis Wirth (left) and Anthony Downes.



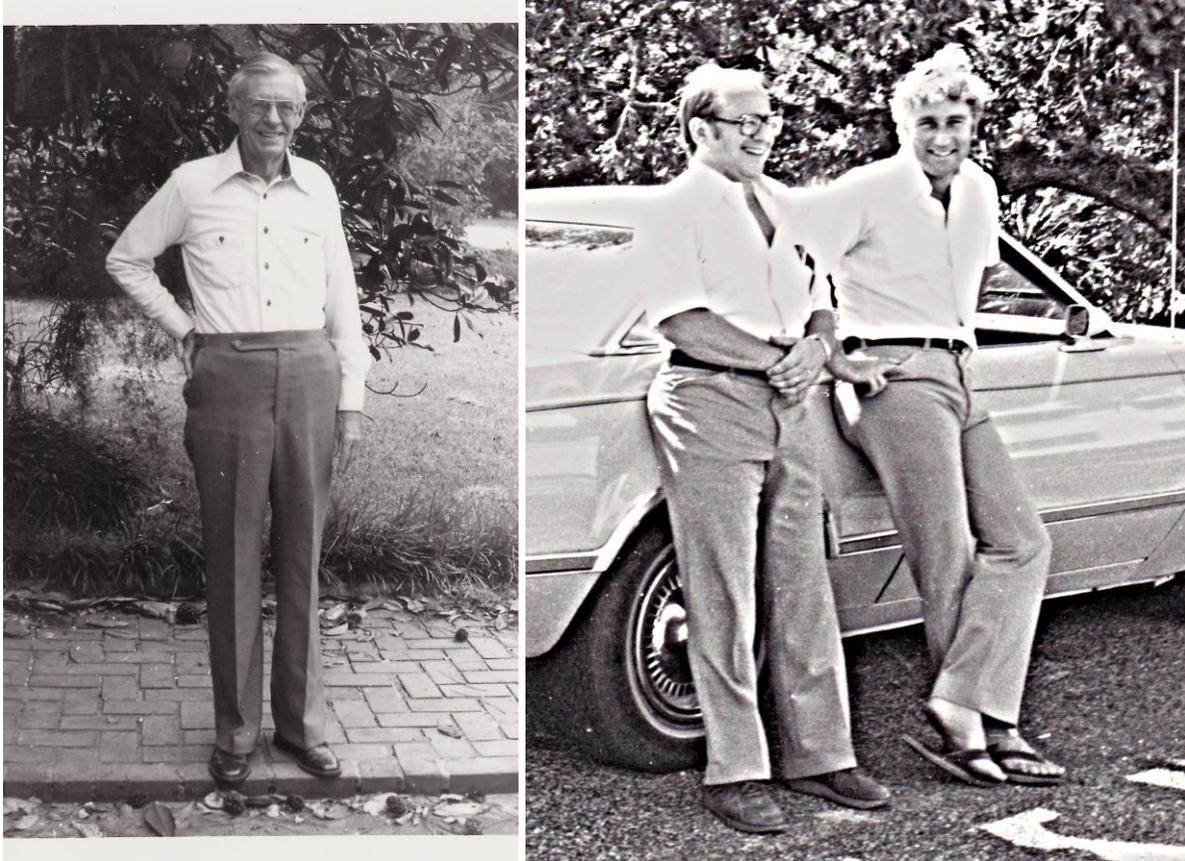
**Ceratopogonid Study Group. August 1978. Meeting at the IV International Congress of Parasitology, Warsaw** – right to left - John Boorman, John Linley, Peter Havelka, Yoshito Wada (Japan).



**Ceratopogonid Study Group. August 1978. Meeting at the IV International Congress of Parasitology, Warsaw** - Warsaw street scene. From left to right: Bob Jones, John Linley, Michel Kremer, Christian Raccurt, Yoshida Wada, Peter Havelka, Jean-Claude Delecolle, Claudine Rebholtz, Richard Lane, Jean-Pierre Rieb, H Bessemer. Photo by John Boorman.



**Ceratopogonid Study Group, August 1978, Meeting at the IV International Congress of Parasitology, Warsaw** - Outside Polish Academy of Sciences. From left to right: John Boorman, Yoshito Wada, Peter Havelka, John Linley, Richard Lane, Claudine Rebholtz, Jean-Claude Delecolle, Jean-Pierre Rieb, Michel Kremer.



**Florida October 1979** - Photos by John Boorman; Franklin S. Blanton, Gainesville Florida, a October 1979 [Left]; Ellis Greiner (left) and John Linley (right) [Right].

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## **Recent Literature:**

### **Taxonomy and Morphology**

- Bourquia, M., C. Garros, I. Rakotoarivony, L. Gardes, K. Huber, I. Boukhari, J.-C. Delecolle, T. Baldet, A. Mignotte, Y. Lhor, K. Khallaayoune, and T. Balenghien. 2019.** Update of the species checklist of *Culicoides* Latreille, 1809 biting midges (Diptera: Ceratopogonidae) of Morocco. [Parasites & Vectors 12: 459: 1-13.](#)
- Chang, Q.-q., Duan, C., Han, X.-j., Xu, Z.-y., and X.-h. Hou. 2017.** Survey of blood sucking midges from Suiyang County, Guizhou Province, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 28\(2\): 138-140](#) [In Chinese with English Abstract].
- Chen, L.-h., Ayiken, and Y.-x. Yu. 2016.** Description of two new species of the genus *Culicoides* (Diptera: Ceratopogonidae) from Tianshan of Xinjiang, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 27\(6\): 582-584](#) [In Chinese with English Abstract].

- Ciliberti, P. 2019.** *Stilobezzia lutacea*, a new predaceous midge for the Netherlands (Diptera: Ceratopogonidae). *Entomologische Berichten* (Amsterdam) 79: 143-146.
- Dominiak, P., and R. Szadziewski. 2018.** The taxonomic status of two species of predaceous midges in the genera *Bezzia* and *Palpomyia* described by STAEGER (1839) in the genus *Ceratopogon* (Diptera: Ceratopogonidae: Palpomyiini). [Dipteron - Wroclaw 34: 94-108](#).
- Duan, C., X. H. Jiang, X. J. Han, and X. H. Hou. 2019.** Description of a New Species of *Forcipomyia* (*Forcipomyia*) (Diptera: Ceratopogonidae) and a Key to Species of the Subgenus from the Chinese Mainland. [Journal of Medical Entomology 56\(6\): 1614-1622](#).
- Duan, C., Han, X.-j., Chang, Q.-q., and X.-h. Hou. 2018.** Survey of Ceratopogonidae from Dayaoshan National Nature Reserve of Guangxi Zhuang Autonomous Region. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 29\(1\): 73-75](#) [In Chinese with English Abstract].
- Feng, Y., G.-p. Liu, W.-h. Yang, J. Zhang, and G.-d. Liang. 2018.** Fauna and a new species of hematophagous midges (Diptera Ceratopogonidae) at the China-Burma border. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 29\(6\): 628-630](#) [In Chinese with English Abstract].
- Grogan, W. L., Jr., F. Diaz, G. Spinelli, and M.M. Ronderos. 2019.** The Biting Midges of the Caribbean island Curacao (Diptera: Ceratopogonidae). I: Species of the genus *Dasyhelea* Kieffer. *Zootaxa* 4700 (3):301-325. [[Read Abstract](#); Six new species - Ed]
- Hakima, B., H.-S. Hwang, and K.-Y. Lee. 2019.** Molecular identification of *Culicoides* (Diptera: Ceratopogonidae) species in Algeria. *Acta Tropica* 202: 105261 [[Read Abstract](#)].
- Kanasugi, T. 2019.** Discovery of Predaceous Midge of the Genus *Monohelea* Kieffer, 1917 (Diptera: Ceratopogonidae) from Japan, with Descriptions of Two New Species. *Japanese Journal of Systematic Entomology* 25: 75-79.
- Laneti, Gustavo José Perruolo. 2016.** *Los Culicoides* (Diptera: Ceratopogonidae) de Venezuela. Fondo Editorial UNET.120 pp [in Spanish].
- Li, M., Zhang, B. and G.-p. Liu. 2011.** A new species of the genus *Culicoides* (Diptera: Ceratopogonidae) from Heilongjiang Province, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 22\(4\): 363, 367](#) [In Chinese with English Abstract].
- Li, Y.-j., Yu, W., Zhang, Y., and G.-p. Liu. 2011.** Baseline investigation on bloodsucking mosquitoes and midges at Raohe port in China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 22\(6\): 587-589](#) [In Chinese with English Abstract].
- Liang, H.-j., G.-p. Liu, and Y.-q. Zhang. 2019.** A new species of *Culicoides* (*Oeacta*) (Diptera: Ceratopogonidae) in Luobei, Heilongjiang, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 30\(3\): 314-316](#) [In Chinese with English Abstract].

- Liang, H.-j., Ma, H.-x., Fu, Y.-q., and G.-p. Liu. 2014. Catalogue of hematophagous midges in Luobei County, China: a new species and a new record of the genus *Culicoides* (Diptera: Ceratopogonidae). [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 25\(6\): 552-554](#) [In Chinese with English Abstract].
- Liang, H.-j., Fu, Y.-q., and G.-p. Liu. 2012. Genus *Culicoides* (Diptera: Ceratopogonidae) from Luobei port of Heilongjiang Province in China: a new species and a new record in China. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 23\(3\): 234-236](#) [In Chinese with English Abstract].
- Liu, G.-p., N. Fan, D.-w. Sun, Q. Wu, L.-h. Zeng, S.-g. Li, Q.-r. Yang, Y.-l. Chen, A.-j. Shi, and G.-d. Liang. 2019. Species distribution and new species of hematophagous midges in three cities and counties in Hainan and a new record in China (Diptera: Ceratopogonidae). [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 30\(4\): 438-441](#) [In Chinese with English Abstract].
- Liu, G.-p., Tian, Z.-z., Fu, S.-h., Zhou, J.-z., Li, Y.-y., Wang, D.-m., and G.-d. Liang. 2017. Fauna and a new species of hematophagous midges (Diptera: Ceratopogonidae) in Dejiang County, Guizhou Province, China. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 28\(4\): 376-378](#) [In Chinese with English Abstract].
- Liu, G.-p. and A.-m. Dong. 2016. Description of two new species of *Culicoides* (*Oecacta*) (Diptera: Ceratopogonidae) in China. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 27\(6\): 580-581](#) [In Chinese with English Abstract].
- Liu, G.-p., Guo, X.-f., Li, Y.-y., Zhang, J., Wang, J., Li, C.-m. Yang, Z.-m., Chen, H.-y., Zhou, H.-n., and G.-d. Liang. 2016. Survey of hematophagous midges at the China-Laos border. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 27\(5\): 463-466](#) [In Chinese with English Abstract].
- Liu, G.-p., Xing, A.-h., Ren, Q.-m., Wang, X., and F. Wang. 2011. Catalogue and a new species of the family Ceratopogonidae from Heilongjiang Province in China. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 22\(6\): 570-575, 578](#) [In Chinese with English Abstract].
- Liu, G.-p., Ren, Q.-m., and X. Wang. 2011. *Culicoides* (*Sinocoides*) and two new species from China (Diptera: Ceratopogonidae). [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 22\(3\): 257-259](#) [In Chinese with English Abstract].
- Liu, G.-p. and C.-g. Wu. 2010. Classification of blood-sucking midges from Jilin Province (Diptera: Ceratopogonidae). [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 21\(3\): 263-267](#) [In Chinese with English Abstract].
- Liu, G.-p., Ren, Q.-m., and F. Wang. 2010. Two new species of *Culicoides* (*Fastus*) from Jilin Province of China (Diptera: Ceratopogonidae). [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 21\(1\): 63-64](#) [In Chinese with English Abstract].
- Liu, J.-h., Hoa, L., Liu, J.-h., Liu, S.-z., and J.-r. Gao. 2014. Study on classification and geographic distribution of Ceratopogonidae in Guangxi Zhuang Autonomous Region, China. [\*Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\)\* 25\(3\): 259-262](#) [In Chinese with English Abstract].

- Liu, Y.-q., Chen, H.-y., and Y.-x. Yu. 2016. Genus *Dasyhelea* Kieffer and two new species (Diptera: Ceratopogonidae) in Jiangxi Province, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 27\(5\): 498-500](#) [In Chinese with English Abstract].
- Liu, Y.-q., Chen, H.-y., and Y.-x. Yu. 2013. A new species of the subgenus *Forcipomyia* (Diptera: Ceratopogonidae) from Nanchang City, Jiangxi Province, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 24\(1\): 60-61](#) [In Chinese with English Abstract].
- Liu, Y.-q., Liu, X.-q., and Y.-x. Yu. 2011. A new species of *Alluaudomyia* (Diptera: Ceratopogonidae) from Jiangxi province, China. [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 22\(4\): 364-365](#) [In Chinese with English Abstract].
- Liu, Y.-q., Chen, H.-y., Liu, X.-q., Ma, H.-m., and Y.-x. Yu. 2009. Studies on the species and diurnal cycles of *Dasyhelea fasciigera* in Beijing (Diptera: Ceratopogonidae). [Chinese Journal of Vector Biology and Control \(Zhongguo Meijieshengwuxue Ji Kongzhi Zazhi\) 20\(5\): 481-482](#) [In Chinese with English Abstract].
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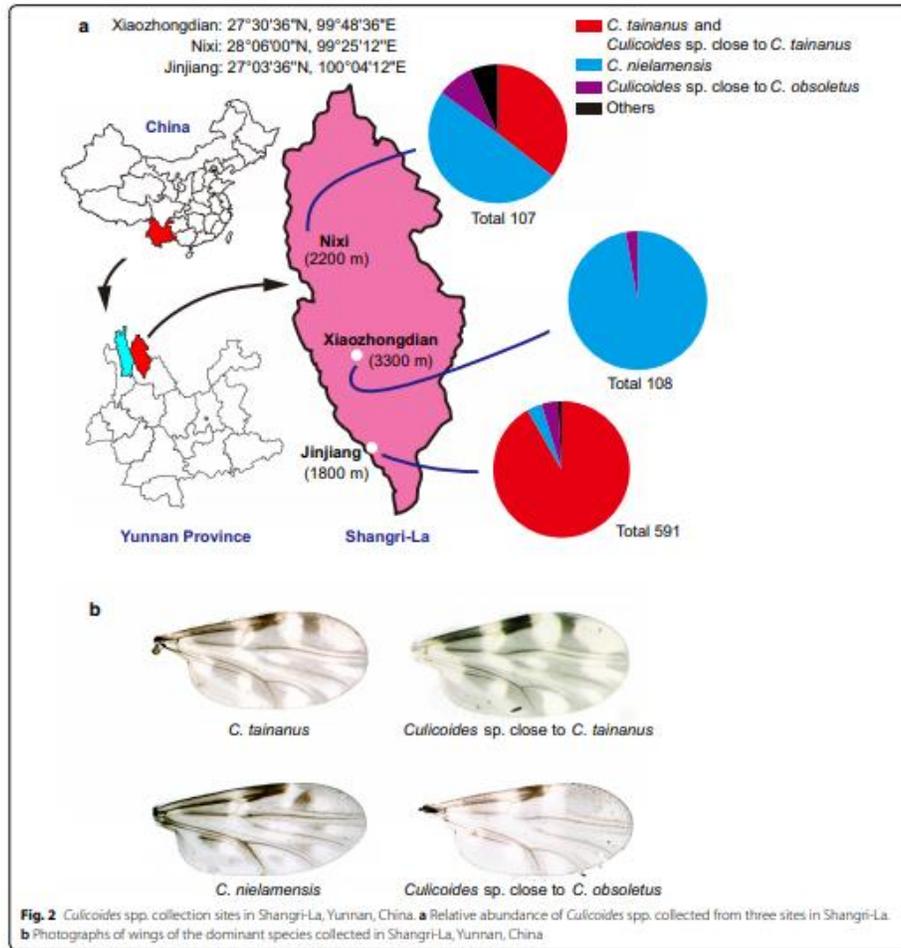
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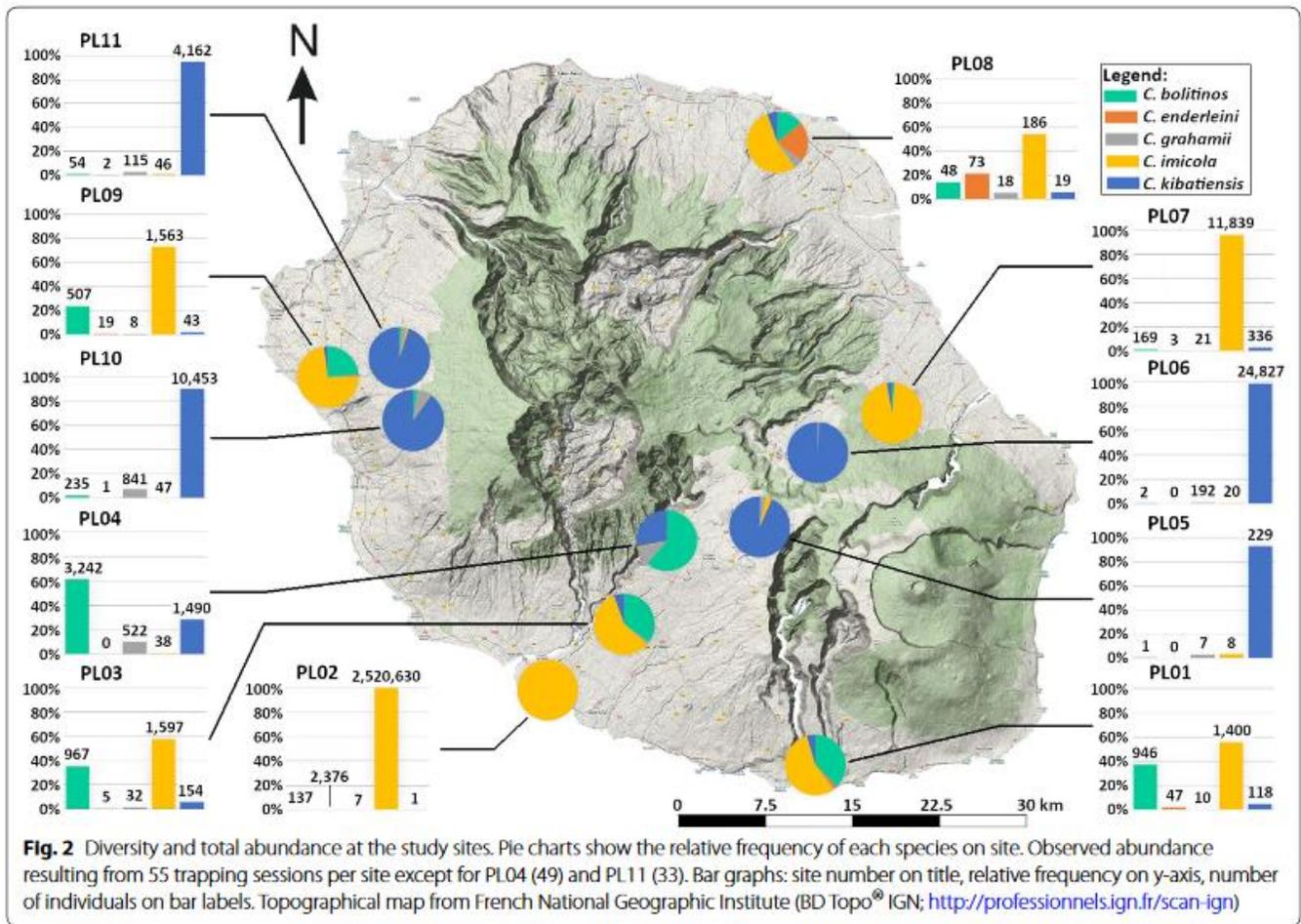


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**FIG. 5.** *Palpomyia binotata* (STEGER, 1839), female: habitus, lateral view.

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**Fig. 2** Diversity and total abundance at the study sites. Pie charts show the relative frequency of each species on site. Observed abundance resulting from 55 trapping sessions per site except for PL04 (49) and PL11 (33). Bar graphs: site number on title, relative frequency on y-axis, number of individuals on bar labels. Topographical map from French National Geographic Institute (BD Topo® IGN; <http://professionnels.ign.fr/scan-ign>)

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