



First records of the druid fly genus *Clusia* Haliday, 1838 (Diptera, Clusiidae), with two new species from China

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Abstract

The druid fly genus *Clusia* was firstly recorded from China, including two new species: *C. luteimacula* **sp. nov.** from Yintiaoling Nature Reserve of Chongqing and *C. sinensis* **sp. nov.** from Wanglang of Sichuan and Mt. Taibai of Shaanxi. A key to all species of *Clusia* globally is presented.

Key words: new species, new records, taxonomy, key

Introduction

Clusiidae (Diptera, Acalyptrate) is a small family with 14 genera and over 640 species. While in China, the family has little attention, and only 13 species are known (Lonsdale 2017; Galinskaya 2018; Yang et al. 2021). Clusiids, otherwise known as “druid flies”, are also often encountered as adults on dead wood, such as stumps, fallen logs or branches, frequently in association with mammal or bird dung, and have often been observed feeding on sap, dung, or decomposing vegetation (Lonsdale & Marshall 2010). Although most members of the family are described from tropical biomes, many Old-World species remain undocumented, and more species are expected to be discovered from temperate regions as well (Lonsdale 2017).

The type genus *Clusia* Haliday, 1838 includes 13 species worldwide, but never found from Chinese fauna. Nine of them distribute in the Palearctic Region (*C. ciliata* (Sasakawa), *C. flava* (Meigen), *C. intermedialis* (Mamaev), *C. japonica* (Sasakawa), *C. nigromaculata* (Mamaev), *C. okadomei* Sasakawa, *C. omogensis* (Sasakawa), *C. tigrina* (Fallén) and *C. unita* Mamaev). Three of them were found from the Nearctic Region (*C. czernyi* Johnson and *C. lateralis* (Walker) and *C. occidentalis* Malloch). And the last one is distributed in the Oriental Region (*C. sexlineata* Frey) (Lonsdale 2017).

The genus *Clusia* is characterized by the following characteristics: triangular extension on outer margin of pedicel long and sharply-pointed; one inter-frontal seta; two stout lateral scutellar setae greatly exceeding the apex of the scutellum; a pubescent to short-plumose (not long-plumose) arista; postocellar seta absent; postvertical setae sometimes small or absent; mesonotum with two dorsocentral setae; prescutellar acrostichal seta reduced; proepisternal seta long; a cloud usually present around crossvein dm-m; scutellum with a central yellow stripe (sometimes expanded to include entire scutellum); ejaculatory apodeme small with ends tapered; male cerci separated; surstylus smooth with setae sparse or absent on outer surface anteriorly; phallus as long as phallapodeme; distiphallus long and slender sclerites on lateral sides; hypophallus and paraphallus absent; hypandrial arm extending past basiphallus. Head of phallapodeme not much wider than shaft and only gradually widened distally; postgonite small,

elongate and often confluent with pregonite; a heavily-sclerotized and anteriorly-produced epiphallus (Lonsdale & Marshall 2008, 2010; Lonsdale et al. 2011; Sasakawa 2011).

The exploration to Yintiaoling National Nature Reserve this year and other areas on the South slope of Qinling Mountains several years ago yields some specimens of *Clusia*. The further identification confirmed two new *Clusia* species. This is the first record of *Clusia* from China.

Materials and methods

Methods of dissection and preservation of male genitalia: By removing and soften the apical portion of the abdomen with a dissecting needle. The dissected parts were transferred to a glass tube containing lactic acid. The tube was heated in a water bath for 5-10 minutes, removed after most soft tissue had dissolved, and rinsed with distilled water. The genitalia were then moved to glycerol drops in culture dishes for microscopic observation and dissection. After observing the structure of genitalia under a microscope, they were moved to a small centrifuge tube containing glycerol and stored with the wet specimen in a glass tube containing absolute ethanol (Yang et al. 2021).

Specimens examined were deposited in the Entomological Museum of Henan Agricultural University (HAU) and the Entomological Museum of China Agricultural University (CAU). The general terminology follows Lonsdale & Marshall (2006, 2008). The M_1 ratio is defined as the length of the ultimate section of vein M_1 divided by the length of the penultimate section (Lonsdale & Marshall 2006).

Taxonomy

Key to the species of *Clusia*

1. Abdomen mostly black or brown, sometimes with yellow spot2
- Abdomen mostly yellow, sometimes with blackish spot 11
2. Wing with one brown band at the apical 3
- Wing with two brown or blackish bands, one slightly beyond middle and the other at apex, connected along costa. 10
3. Mesonotum and scutellum entirely testaceous, but humeri and ventral margins of notopleura brown. . . . *C. ciliata* (Sasakawa)
- Mesonotum with brown or dark transverse markings, pleurae usually with dark transverse markings4
4. Mesonotum black and with a pair of brown longitudinal stripes between the dorsocentral and intra-alar seta, interrupted at the transverse suture; fore tibia and tarsus dark brown *C. nigromaculata* (Mamaev)
- Mesonotum light yellow or yellowish, and with one or more stripes; fore tibia and tarsus darkish 5
5. Wing in overall forming a “C” shape; mesonotum with a pair of lateral stripes between the dorsocentral and intra-alar seta, not connected to other markings at the anterior end; wide dark stripe extending from propleuron to mediotergite and subscutellum *C. intermedialis* (Mamaev)
- Wing without “C” shape spot; mesonotum with tiny dark stripe or without 6
6. Thorax with six brown stripes7
- Thorax less than six brown stripes 9
7. Postocellar setae absent *C. sinensis* **sp. nov.**
- Postocellar with one seta 8
8. Surstylus conical, bearing 12-18 spine-like setae and some setulae on inner apical part; pregonite membranous, with two setae *C. sexlineata* Frey
- Surstylus without setae on inner and outer face, without spines; pregonite three setae and four setae at the root *C. luteimacula* **sp. nov.**
9. Abdomen shiny, dark brown except tergite 1, and anterior half and median longitudinal line of tergite 2 brownish yellow, anteromedian line on tergites 3-5 obscure, tergite 7 blackish *C. okadomei* Sasakawa
- Abdomen, tergite 1 with inverted T-shaped testaceous patch, tergites 2-3 with testaceous median longitudinal stripes, tergite 4 with median stripe on anterior half and posterior margin broadest, tergite 5 with broadly yellowish anterior and posterior margins and the former slightly projected posteriorly at middle *C. omogensis* (Sasakawa)
10. Thorax shiny, testaceous, with five blackish stripes; leg yellow, ventral sides of femur somewhat darker, fore femur and mid femur, with three rows of setae, of which posterovental series much stronger than those of antero-ventral. *C. japonica* (Sasakawa)
- Thorax strong, black; leg with setae of anterior and posterior flexor surfaces of front femora subequal. . . . *C. czernyi* Johnson
11. Wing with three brown or blackish bands *C. tigrina* Fallén
- Wing with one or two brown or blackish bands. 12
12. Wing with two blackish bands, basal half of costal margin yellow, apical half blackish, connecting with the blackish tip of the wing, posterior crossvein surrounded by a blackish cloud. *C. occidentalis* Malloch

- Wing with one brown band at the apical. 13
- 13. Antenna reddish yellow; arista with sparse pubescence. *C. lateralis* (Walker)
- Antenna yellow, upper edge of postpedicel blackish; arista with obvious pubescence 14
- 14. Palpus yellow; thorax dark brown, crescent-shaped stripes on the mesoscutum, from the transverse suture to the scutellum. *C. unita* Mamaev
- Palpus dark; thorax testaceous, sometimes with brownish dorsocentral stripes. *C. flava* (Meigen)

***Clusia luteimacula* sp. nov.**

(Figs 1, 3, 5–10)

Diagnosis. Head (Figs 1, 5) mostly yellowish, with one pair of dark brown dorsal stripes; antenna yellowish (dorsal 1/3 of postpedicel and arista except base of verticals); front with two brown subtriangular markings and connected. Thorax yellow with six black-brown stripes, median stripe along dorsocentral seta, sublateral ones just inside of supra-alar lines and with median stripe connected, lateral ones from postpronotal lobes to notopleura. Scutellum black-brown with a wide central yellow stripe. Legs yellow, mid tibia without preapical dorsal setae. Wing with fuscous anterodistal spot, covering distal 1/4 of R_{2+3} . Abdomen brown; surstylus longer and without setae on inner and outer face; hypandrium with a row of setulae and four pores under the setulae, pregonite with three longer setae and four shorter setae at the root.

Description. Male. Body length 6.1–6.2 mm, wing length 5.8–6.0 mm.



FIGURES 1–4. Dorsal view of head and thorax (male). 1, head of *C. luteimacula* sp. nov.); 2, head of *C. sinensis* sp. nov.; 3, thorax of *C. luteimacula* sp. nov.; 4, thorax of *C. sinensis* sp. nov.. Scale bars: 0.5mm.

Head (Figs 1, 5) yellowish; palpus, face and frons yellow, three fronto-orbitals, the first fronto-orbital seta from inclines inward; one inter-frontal seta; occiput yellow in the middle and brown subtriangular markings on both sides; gena mostly yellow and almost without seta, a row of setae on the lower edge of the eye; gena more than 1/3 as

high as eye; antenna yellowish, antenna dorsal 1/3 of postpedicel and arista except base of vertical spale brown spot surrounding base of arista, arista brown, sparsely short plumose; one postocellar seta and one ocellar seta; frons with two brown subtriangular markings and connected, a brown subtriangular markings on the front of the postocellar seta; a brown subtriangular markings on the inter-frontal and some setae around the inter-frontal.

Thorax (Fig. 3) yellow with six brown stripes, the middle two stripes are longer, extending from the pronotum plate to the scutellum anterior, the stripes along dorsocentral seta; sublateral ones shorter, just inside of supra-alar lines, extending from the seam of the scutal to the scutellum until fused with the middle, lateral ones from postpronotal lobes to notopleura; scutellum yellow in the middle and black-brown markings on both sides; anepisternum and katepisternum yellow. Prescutellar acrostichal seta absent; one postpronotal seta, two notopleural setae, one posutural supra-alar seta, two dorsocentral setae, dark brown; one intra-alar seta, two postalar setae, the posterior seta is 1/3 of the anterior setae, dark brown; two lateral scutellar setae, one apical scutellar seta, dark brown; one anepisternal seta, one katepisternal seta. Legs yellow, tibiae and tarsi very slightly brownish; mid femur with one posterior rows of ventral setae and preapical dorsal seta absent. Wing (Fig. 6) with complete subcosta and with large dark brown spots along veins R_{2+3} , R_{4+5} and M_1 , covering distal 1/4 of R_{2+3} , the M_1 ratio: distal portion of M_1 1.7 times as long as dm-m. Halter white.

Abdomen brown; setae and setulae on abdomen dark brown; tergites 1–3 dark yellow, with inverted T-shaped patch, tergite 3 with yellow spots in the middle, which are as 1/3 area as tergite 3, approximately subtriangular markings, tergite 4 with dark yellow spots in the middle, approximately subtriangular markings, tergite 5 with brown lower margin; sternites yellow. Male genitalia (Figs 7–10): 2/3 of the epandrium brown, the rest is yellow, epandrium high and wide almost the same length. Cerci approximately 1/4 of surstylus length, W-shaped, 0.7 times longer than wide, with many setae and three long setae. Surstylus about 1/3 of epandrium length; surstylus without setae on inner and outer face, having no spines. Hypandrium with a row of setulae and four pores under the setulae, pregonite with three setae and four setae at the root, phallapodeme well developed, the apex is large and protruding; distipallus relatively long, narrower at the distal end.

Female. Unknown.

Type material. HOLOTYPE male, CHINA, Chongqing, Yintiaoling Nature Reserve, Mt. Guanshan, Maizitang 2168m, 31°28'N 109°47'E, 2022.VIII.17. Xulong Chen. PARATYPE: 1 male, same data as holotype.

Distribution. China (Chongqing).

Etymology. The specific name is a combination of “*lute-*” (yellow) and “*maculus*” (spotted), referring to the yellow spotted abdomen, feminine.

Remarks. The new species is similar to *C. sinensis* sp. nov. (Figs 2, 4, 11–16), but it can be separated from the latter by the frons with two brown subtriangular markings and connected; the wing with large dark brown spots along the R_{2+3} , R_{4+5} and M_1 , covering distal 1/4 of R_{2+3} ; one postocellar seta; hypandrium with a row of setulae and four pores under the setulae; pregonite with three setae and four setae at the root. In *C. sinensis* sp. nov., the frons with stripe extending from ocellar tubercle; the wing with brown spots along the R_{2+3} and R_{4+5} , and with a small fainter spot subapically on M_1 , covering distal 1/5 of R_{2+3} ; postocellar seta absent; abdomen with light yellow markings; hypandrium with one shorter seta; pregonite with three longer setae and three shorter setae. The new species also is similar to *C. sexlineata*, in which surstylus conical with 12–18 spine-like setae and some setulae on inner apical part; pregonite membranous, with two setae (Sasakawa 2011; Frey 1960).

Clusia sinensis sp. nov.

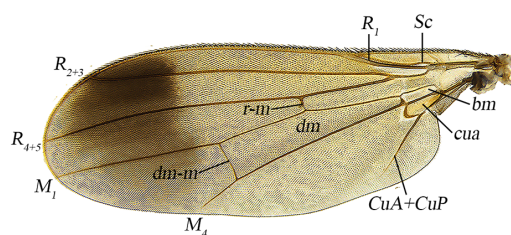
(Figs 2, 4, 11–16)

Diagnosis. Head (Figs 2, 11) mostly yellowish, with one pair of dark brown dorsal stripes; antenna yellowish (dorsal 1/2 of postpedicel and arista except base of verticals). Thorax (Fig. 4) yellow with six brown stripes, median stripe along dorsocentral seta, sublateral ones just inside of supra-alar lines, lateral ones from postpronotal lobes to notopleura. Scutellum with a wide central yellow stripe and brown on both sides. Legs yellow; mid tibia without preapical dorsal seta. Wing (Fig. 12) with fuscous anterodistal spot, covering distal 1/4 of R_{2+3} . Abdomen brown; surstylus (Figs 13, 14) long and without setae on inner and outer face, without spines; hypandrium (Figs 15, 16) with one short seta; pregonite (Figs 15, 16) with three longer setae and three shorter setae.

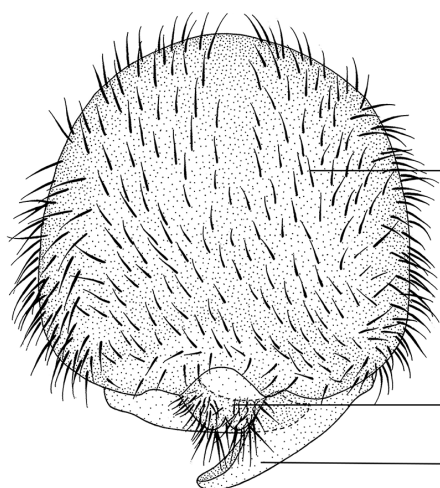
Description. Male. Body length 5.3–5.5 mm, wing length 5.5–5.7 mm.



5



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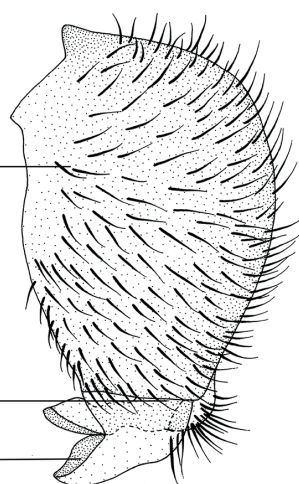


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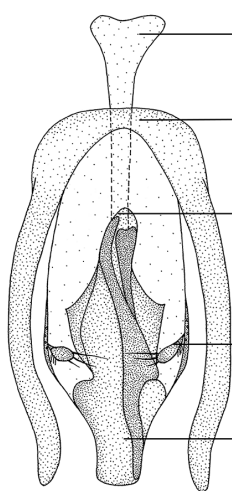
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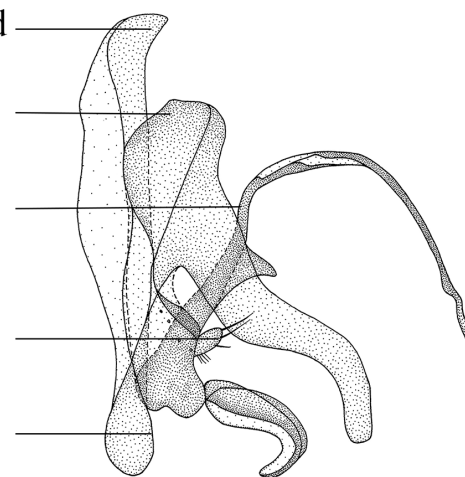
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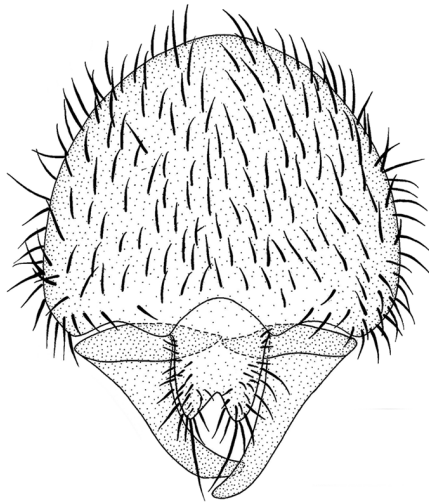
FIGURES 5–10. *Clusia luteimacula* sp. nov. (male). 5, head, lateral view; 6, wing; 7, epandrium, cerci, and surstylus, posterior view; 8, epandrium, cerci, and surstylus, lateral view; 9, hypandrial complex, posterior view; 10, hypandrial complex, lateral view. Scale bars: 0.5mm. Abbreviations: Sc = subcostal vein; R_1 = anterior branch of radius; R_{2+3} = second branch of radius; R_{4+5} = third branch of radius; M_1 = first branch of media; M_4 = fourth branch of cubital vein; CuA + CuP = anterior branch of cubital vein + posterior branch of cubital vein; bm = basal medial cell; cua = anterior cubital cell; dm = discal medial crossvein; r - m = radial - medial crossvein; dm - m = discal medial cubital crossvein; epand = epandrium; cerc = cerci; sur = surstylus; phapod = phallapodeme; hypd = hypandrium; distph = distiphallus; pregt = pregonite; epiph = epiphallus.



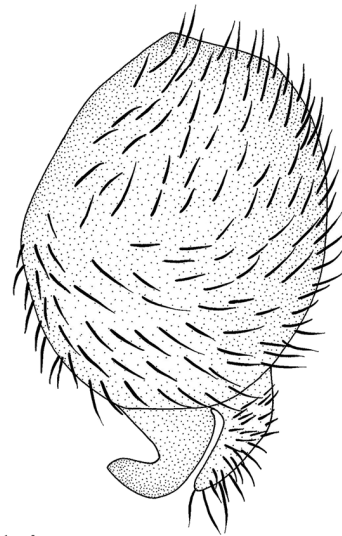
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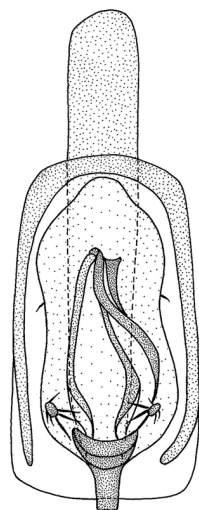
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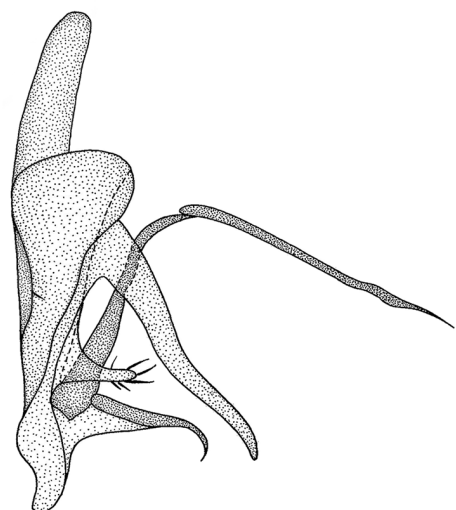
13 _____



14 _____



15 _____



16 _____

FIGURES 11–16. *Clusia sinensis* sp. nov. (male); 11, head, lateral view; 12, wing; 13, epandrium, cerci, and surstylus, posterior view; 14, epandrium, cerci, and surstylus, lateral view; 15, hypandrial complex, posterior view; 16, hypandrial complex, lateral view. Scale bars: 0.5mm.

Head (Figs 2, 11) yellowish; palpus, face and frons light yellow; three fronto-orbital setae, the first fronto-orbital seta from inclines inward; one inter-frontal seta; head with one pair of dark brown dorsal stripes; gena and postgena mostly yellow and almost without setulae; gena more than 1/5 as high as eye; antenna yellowish (dorsal 1/2 of postpedicel and arista except base pale brown), arista dark brown, sparsely short plumose; one ocellar seta and postocellar seta absent.

Thorax (Fig. 4) yellow with six brown stripes, the mid two stripes extending from the pronotum to the scutellum, the stripe along dorsocentral seta; sublateral ones shorter, just inside of supra-alar lines, lateral ones from postpronotal labes to notopleura; scutellum yellow in the middle and brown markings on both sides; anepisternum and katepisternum yellow. Prescutellar acrostichal seta absent; one postpronotal seta, two notopleural setae, one posutural supra-alar seta, two dorsocentral setae; one intra-alar seta, two postalar setae, the anterior setae 3 times longer than posterior setae; two lateral scutellar setae, one apical scutellar seta; one anepisternal seta, one katepisternal seta. Legs yellow, tibiae and tarsi very slightly brownish; mid femur with one posterior rows of ventral seta and preapical dorsal seta absent. Wing (Fig. 12) with complete subcosta; wing with brown spots along the R_{2+3} and R_{4+5} , and with a small fainter spot subapically on M_1 , covering distal 1/5 of R_{2+3} , the M_1 ratio: distal portion of M_1 is 1.7 times longer than dm-m. Halter white.

Abdomen dark brown; setae and setulae on abdomen dark brown; tergites 1–3 with median spots on anterior; sternites yellow. Male genitalia (Figs 13–16): The upper part of the epandrium brown, the lower part yellow, epandrium 1.3 times as high as wide. Cerci approximately 2/3 of surstylus length, W-shaped, 1.4 times as high as wide, with many setae and two long setae. Surstylus long and 1/3 length of epandrium; surstylus without setae on inner and outer face, having no spines. Hypandrium with one shorter seta, pregonite with three longer setae and three shorter setae, phallapodeme well developed, the top is large and protruding; distipallus is longer and narrower at the top.

Female. Unknown.

Type material. HOLOTYPE male, CHINA, Sichuan, Pingwu, Wanglang, 2909 m, 32°51'N 103°58'E, 2016.VII.29, Yuqiang Xi. PARATYPES: 1 male, CHINA, Shaanxi, Zhouzhi, Dudumen, 1740m, 2015.VIII.1. Xuankun Li; 2 males, CHINA, Shaanxi, Zhouzhi, Mt. Taibai, 1648m, 33°53'N 107°46'E, 2014.VIII.17–18. Xuankun Li.

Distribution. China (Sichuan, Shaanxi).

Etymology. The specific name refers to China, referring to the firstly discovered species of *Clusia* in China.

Remarks. The new species is similar to *C. omogensis* (Sasakawa), but it can be separated from the latter by the frons with stripe extending from ocellar tubercle; the gena is about 1/5 height of eye; the abdomen brown, with light yellow markings; the surstylus without setae on inner and outer face, spines absent; the pregonite with three longer setae and three shorter setae. In *C. omogensis* the frons very slightly brownish; the gena about 1/7 height of eye; the abdomen black, with distinctly testaceous markings; the surstylus is strongly incurved, with two processes; the pregonite with three long setae (Sueyoshi 2006; Sasakawa 1965).

Acknowledgements

Many thanks to the anonymous reviewers and the subject editor for their valuable comments. We are grateful to Dr. Xuankun Li (Beijing) and Mr. Xulong Chen (Chongqing) for their kind help and collecting the specimens. This research was funded by the Key R&D and promotion projects of Henan Province (212102110471), Central Plains Science and Technology Innovation Talent (224200510018), Entrepreneurship Training Program for College Students of Henan Agricultural University in 2022 (2022CYXL090, 2022CYXL095, 2022CYXL096), China Agriculture Research System of MOF and MARA (CARS-27), the Special Foundation for National Science and Technology Basic Research Program of China (2018FY100400), the National Natural Science Foundation of China (31672333).

References

- Czerny, P.L. (1928) Clusiidae. In: Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region*. Vol. 5. E. Schweizerbart, Stuttgart, 12 pp.
- Frey, R. (1960) Studien über indoaustralische Clusiiden (Dipt.) nebst Katalog der Clusiiden. *Commentationes Biologicae*, 22 (2), 1–31.

<https://doi.org/10.5479/si.00963801.64-2501.1>

- Galinskaya, T.V. (2018) A new species of *Sobarocephala* Czerny, 1903 (Diptera: Clusiidae) from Vietnam. *Oriental Insects* 52 (3), 259–263.
<https://doi.org/10.1080/00305316.2017.1405850>.
- Lonsdale, O. & Marshall, S.A. (2006) Redefinition of the Clusiinae and Clusiodinae, description of the new subfamily Sobarocephalinae, revision of the genus *Chaetoclusia* and a description of *Procerosoma* gen. n. (Diptera: Clusiidae). *European Journal of Entomology*, 103, 163–182.
<https://doi.org/10.14411/eje.2006.020>
- Lonsdale, O. & Marshall, S.A. (2008) Synonymy within *Clusia* and description of the new genus *Melanoclusia*. *Annals of the Entomological Society of America*, 101 (2), 327–330.
[https://doi.org/10.1603/0013-8746\(2008\)101\[327:SWCADO\]2.0.CO;2](https://doi.org/10.1603/0013-8746(2008)101[327:SWCADO]2.0.CO;2)
- Lonsdale, O. & Marshall, S.A. (2010) Clusiidae (clusiid flies). In: Brown, B.V., Borkent, A., Cumming, J.M., Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera. Vol. 2*. NRC Research Press, Ottawa, pp. 1041–1048.
- Lonsdale, O., Marshall, S.A., Fu, J. & Wiegmann, B. (2010) Phylogenetic analysis of the druid flies (Diptera: Schizophora: Clusiidae) based on morphological and molecular data. *Insect Systematics & Evolution*, 41, 231–274.
<https://doi.org/10.1163/187631210X500628>.
- Lonsdale, O., Cheung, D.K.B. & Marshall, S.A. (2011) Key to the world genera and North American species of Clusiidae (Diptera: Schizophora). Canadian Journal of Arthropod Identification. No. 14. Available from: http://www.biology.ualberta.ca/bsc/ejournal/lcm_14/lcm_14.html (accessed 26 June 2017)
<https://doi.org/10.3752/cjai.2011.14>
- Lonsdale, O. (2017) World Catalogue of the Druid Flies (Diptera: Schizophora: Clusiidae). *Zootaxa*, 4333 (1), 1–85.
<https://doi.org/10.11646/zootaxa.4333.1.1>
- Lonsdale, O. (2018) Clusiidae (Druid flies). In: Kirk–Spriggs, A.H. & Sinclair, B.J. (Eds), *Manual of Afrotropical Diptera, Vol. 2*. SANBI Publishing, Pretoria, pp. 10–23.
- Mamaev, B.M. (1987) Novye i maloizvestnye vidy mukh-piatnokrylok Dal'nevo Vostoka (Diptera, Clusiidae) [New and little-known Clusiidae species from the Far East]. In: Kapustina, O.G. (Ed.), [Taxonomy of the insects of Siberia and Soviet Far East]. Akademiia Nauk, SSSR., Vladivostok, pp. 112–115. [in Russian, 1987]
- Sasakawa, M. (1957) A new species of Clusiidae from Japan (Diptera). *Akitu*, 6, 63–64.
- Sasakawa, M. (1959) A new species allied to *Paraclusia japonica* Sasakawa (Diptera: Clusiidae). *Akitu*, 8, 30.
- Sasakawa, M. (1965) A new species of the genus *Paraclusia* from Shikoku, Japan (Diptera: Clusiidae). *Transactions of the Shikoku Entomological Society*, 8 (3), 91–92.
- Sasakawa, M. (1986) Descriptions of two new species of Clusiidae (Diptera). *Akitu*, 82, 1–4.
- Sasakawa, M. (2011) Oriental species of clusiid flies (Diptera: Clusiidae: Clusiinae). *Zootaxa*, 3038, 1–28.
<https://doi.org/10.11646/zootaxa.3038.1.1>
- Sueyoshi, M. (2006) Species diversity of Japanese Clusiidae (Diptera: Acalyptrata) with description of 12 new species. *Annales de la Société Entomologique de France*, 42 (1), 1–26.
<https://doi.org/10.1080/00379271.2006.10697445>
- Yang, S.L., Yin, X.M. & Xi, Y.Q. (2021) Three new species of the genus *Czernyola* Bezzi, 1907 (Diptera, Clusiidae) from China. *ZooKeys*, 1029, 175–183.
<https://doi.org/10.3897/zookeys.1029.63696>