



A New Species of Dryinidae (Hymenoptera: Chrysidoidea) from China

Authors: Xu, Zaifu, Olmi, Massimo, Guglielmino, Adalgisa, and Chen, Huayan

Source: Florida Entomologist, 94(4) : 848-852

Published By: Florida Entomological Society

URL: <https://doi.org/10.1653/024.094.0418>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

A NEW SPECIES OF DRYINIDAE (HYMENOPTERA: CHRYSIDOIDEA) FROM CHINA

ZAIFU XU¹, MASSIMO OLMI², ADALGISA GUGLIELMINO² AND HUAYAN CHEN¹

¹College of Nature Resources and Environment, South China Agricultural University, Guangzhou, Guangdong 510642, P.R. China

²Department of Plant Protection, University of Tuscia, I-01100 Viterbo, Italy

Supplementary material online at <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink2>

ABSTRACT

Dryinidae (Hymenoptera: Chrysidoidea) are parasitoids of Hemiptera Auchenorrhyncha. The genus *Dryinus* Latreille, 1804, is present in all zoogeographical regions and about 242 species have been described. *Dryinus anotaulicus* **sp. nov.** is described from Jiujiang, Baisha County (Hainan Province, China). A check-list of Dryinidae from Hainan Province, China, is presented, and is accessible online at Supplementary material <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink2>.

Key Words: Dryinidae, *Dryinus anotaulicus*, new species, Hainan, China

RESUMEN

Los Dryinidae (Hymenoptera: Chrysidoidea) son parasitoides de Hemiptera Auchenorrhyncha. El género *Dryinus* Latreille, 1804, está representado en todas las regiones zoogeográficas y contiene 242 especies descritas. Se describe por primera vez a *Dryinus anotaulicus* **sp. nov.**, colectado en Jiujiang, Condado de Baisha (Hainan Province, China), y se provee una lista de los Dryinidae de la Provincia de Hainan, China. Esta es accesible como material suplementario en la versión en línea de este artículo en <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink1>.

Translation provided by the authors.

Dryinidae (Hymenoptera: Chrysidoidea) are parasitoids of Hemiptera Auchenorrhyncha (Guglielmino & Olmi 1997, 2006, 2007). *Dryinus* Latreille 1804, is found in all zoogeographical regions. About 242 species have been described (Olmi 1999) and the genus was revised by Olmi (1984, 1991, 1993a).

The species of *Dryinus* from China were studied mainly by He & Xu (2002), Xu & He (1994a, 1994b, 1998), Xu et al. (2006, 2007, 2008), Yang (1994) and Yang & Ma (1995).

In 2011 the authors examined additional specimens of *Dryinus* from Hainan Province, China, and have found one new species described herein. The study of the above new material gave the opportunity to present a checklist of Dryinidae from Hainan Province. The checklist is accessible online at Supplementary material <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink2>

MATERIALS AND METHODS

The descriptions follow the terminology used by Olmi (1984, 1994, 1999) and He & Xu (2002). The measurements reported are relative, except for the total length (head to abdominal tip, with-

out the antennae). In the descriptions, POL is the distance between the inner edges of the two lateral ocelli; OL is the distance between the inner edges of a lateral ocellus and the median ocellus; OOL is the distance from the outer edge of a lateral ocellus to the compound eye; OPL is the distance from the posterior edge of a lateral ocellus to the occipital carina; TL is the distance from the posterior edge of an eye to the occipital carina.

The types of all Oriental species of *Dryinus* were examined.

The material studied in this paper and that in the checklist (Supplementary material <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink2>) is deposited in the following collections:

- AEIC American Entomological Institute, Gainesville, Florida, USA.
- AMNH American Museum of Natural History, New York, USA.
- BMNH The Natural History Museum, London, United Kingdom.
- BPBM Bernice P. Bishop Museum, Honolulu, Hawaii, USA.

- CNC Canadian National Collection of Insects, Ottawa, Canada.
- DEI Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.
- ELKU Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, Japan.
- KYC Keizo Yasumatsu's collection, Oonojoshi, Japan.
- MCZ Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA.
- NMNH National Museum of Natural History, Budapest, Hungary.
- OLM Department of Plant Protection, University of Tuscia, Viterbo, Italy (Massimo Olmi's collection).
- PMA Provincial Museum of Alberta, Edmonton, Alberta, Canada.
- RNHL Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands.
- SCAU Hymenopteran Collection of South China Agricultural University, Department of Entomology, Guangzhou, Guangdong Province, P.R. China.
- TARI Taiwan Agricultural Research Institute (TARI), Department of Applied Zoology, Wufeng, Taichung Hsien, Taiwan.
- USNM National Museum of Natural History, Washington, DC, USA.
- ZISP Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.
- ZJUC Department of Plant Protection, Zhejiang University, Hangzhou, Zhejiang Province, P.R. China.
- ZMK Zoologisk Museum, Kobenhavn, Denmark.

SYSTEMATIC ACCOUNTS

Dryinus anotaulicus **sp. nov.** (Fig. 1)

Material examined: Holotype: Female, CHINA, Hainan Province, Baisha County, Jijialing, 17-20.VII.2010, Huayan Chen coll. (SCAU).

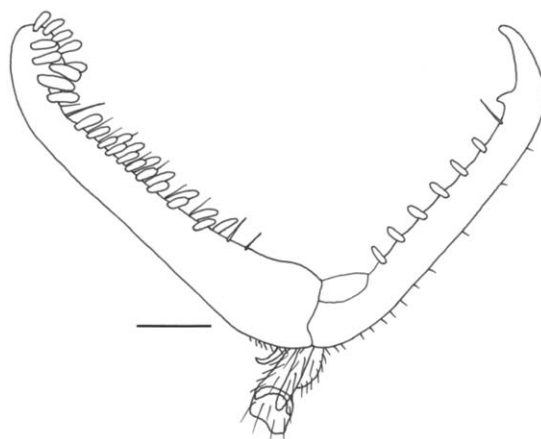


Fig. 1. Chela of holotype of *Dryinus anotaulicus* sp. nov. Scale bar 0.09 mm.

Diagnosis. Female of *Dryinus* without notauli and with enlarged claw not reduced, much longer than arolium, with one only subapical tooth and one row of lamellae, without a broad apical lamella. Because of the above characters, the new species should be included in group 2, according to the systematics of *Dryinus* proposed by Olmi (1993a); see remarks.

Description. Holotype female: Macropterous. Length 3.4 mm. Head black, except mandibles, clypeus and gena testaceous; antenna testaceous; mesosoma black, except lateral margins and posterior collar of pronotum testaceous; metasoma brown; legs testaceous, except hind coxa basally black and club of hind femur partly brown. Antenna clavate; antennal segments in following proportions: 8:6:22:8:7:7:6:6:5:8. Head almost flat, dull, granulated, without longitudinal keels or striae on face, except complete frontal line; occipital carina complete, laterally not reaching eyes; temple distinct; posterior ocelli almost touching occipital carina; POL = 3; OL = 4; OOL = 8; OPL = 0.5; TL = 5; greatest breadth of posterior ocelli shorter than TL (2:5). Pronotum shiny, crossed by one only strong posterior transverse furrow (anterior transverse impression absent); anterior collar and lateral regions unsculptured; disc weakly humped, granulated; posterior collar short, sculptured by longitudinal striae; pronotal tubercle not reaching tegula. Scutum, scutellum and metanotum granulated, not rugose. Notauli absent. Propodeum reticulate-rugose, without longitudinal and transverse keels; dorsal surface longer than posterior surface (22:16). Forewing with three dark transverse bands; distal part of stigmal vein longer than

proximal part (17:7). Hindwing hyaline. Fore tarsal segments in following proportions: 17:3:6:16:25. Enlarged claw not spatulate (Fig. 1), with one large subapical tooth and one row of six lamellae + one bristle. Segment 5 of protarsus (Fig. 1) with two rows of 17 lamellae; distal apex with a group of at least 20 lamellae. Tibial spurs 1/1/1.

Male. Unknown.

Hosts. Unknown.

Etymology. This specific name means that the notauli are absent (*anotaulicus* = without notauli).

Remarks. The world species of *Dryinus* are divided into four groups, according to the following key (Olmi 1993a):

- 1 Enlarged claw very reduced, approximately as long or slightly longer than arolium Group 4
— Enlarged claw not reduced, much longer than arolium 2
2 Enlarged claw without subapical tooth, or with at least 2 subapical teeth; rarely with one only subapical tooth, but then with a very broad apical lamella Group 3
— Enlarged claw with one subapical tooth, never with a broad apical lamella 3
3 Notauli at least partly present Group 1
— Notauli absent Group 2

However, in the Oriental region only groups 1 and 3 have been recorded so far. Group 4 is only present in the Neotropical and Nearctic regions. Group 2 is recorded from all biogeographical regions of the world, except the Oriental region. *Dryinus anotaulicus* is the first Oriental species of *Dryinus* belonging to group 2. This new species is easily recognizable among all Oriental species of *Dryinus* because of the characters presented in the above diagnosis.

ACKNOWLEDGMENTS

We are grateful to Prof. Ducheng Cai, Prof. Xindao Qin, Mr. Zhongrun Zhang, Jingxian Liu, Bin Xiao and Misses Jiemin Yao, Tianfei Chen, Jie Zeng, Jiangli Tan, Manman Wang for their kind help during the survey of Hymenoptera in Hainan. The project was supported by the National Nature Science Foundation of China and the Ministry of Science and Technology of P.R. China (MOST Grant No. 2006FY110500).

REFERENCES CITED

(including references cited in the Supplementary material at <http://www.fcla.edu/FlaEnt/fe944.htm#InfoLink2>)
ASHMEAD, W. H. 1893. Monograph of the North American Proctotrypidae. Bull. United States Nat. Mus. 45: 1-472.
ASHMEAD, W. H. 1904. Descriptions of new genera and species of Hymenoptera from the Philippine Islands. Proc. United States Nat. Mus. 28(1387): 127-158.
ASHMEAD, W. H. 1905. New Hymenoptera from the Philippines. Proc. United States Nat. Mus. 29(1416): 107-119.
BENOIT, P. L. G. 1951. Exploration du Parc National Albert. Mission G. F. de Witte (1933-1935). Fasc. 73. Dryinidae (Hymenoptera Aculeata), Evaniidae (Hymenoptera Terebrantia). Hayez, Bruxelles, pp. 1-26.
BERGMAN, B. H. H. 1957. A new dryinid parasite of leafhoppers in Java. Entomol. Ber. 17: 9-12.
DALMAN, J. W. 1823. Analecta entomologica. Typis Lindhianis, Holmiae, Sweden. 104 pp.

ESAKI, T., AND HASHIMOTO, S. 1931. Report on the leafhoppers injurious to the rice plant and their natural enemies. Publ. No. 2: 1-59, Entomol. Lab., Dept. Agric., Kyushu Imperial Univ.
ESAKI, T., AND HASHIMOTO, S. 1932. Report on the leafhoppers injurious to the rice plant and their natural enemies. Publ. No. 3: 1-42, Entomol. Lab., Dept. Agric., Kyushu Imperial Univ.
FIORI, A. 1984. Ospiti nuovi o poco noti di Imenotteri Driinidi (Hymenoptera, Dryinidae). Frustula entomol., N.S., 6(19): 1-5.
GUGLIELMINO, A., AND OLMI, M. 1997. A host-parasite catalog of world Dryinidae (Hymenoptera: Chrysidoidea). Contrib. Entomol. Int. 2: 165-298.
GUGLIELMINO, A., AND OLMI, M. 2006. A host-parasite catalog of world Dryinidae (Hymenoptera: Chrysidoidea): first supplement. Zootaxa 1139: 35-62.
GUGLIELMINO, A., AND OLMI, M. 2007. A host-parasite catalog of world Dryinidae (Hymenoptera: Chrysidoidea): second supplement. Boll. Zool. Agr. Bachic. (Ser. ii) 39: 121-129.
HE, J., AND XU, Z. 2002. Hymenoptera Dryinidae. Fauna Sinica 29. Science Press, Beijing, P.R. China. 464 pp.
JURINE, L. 1807. Nouvelle méthode de classer les Hyménoptères et les Diptères, 1. Hyménoptères. Paschoud, Genève, Switzerland. 319 pp.
KIEFFER, J. J. 1905. Description de nouveaux Proctotrypides exotiques. Ann. Soc. Sci. Bruxelles 29: 95-142.
KIEFFER, J. J. 1906. Zwei neue Dryinidae aus Ost-Indien (Hym.). Z. Hymenopt. Dipter. 5: 335-336.
KIEFFER, J. J. 1913. Serphides de l'Île de Luçon. Boll. Lab. Zool. gen. agr. R. Sc. sup. Agric. Portici 7: 189-192.
LATREILLE, P. A. 1804. Nouvelle dictionnaire d'Histoire naturelle 24. F. Dufart, Paris, France. 104 pp.
LATREILLE, P. A. 1805. Histoire naturelle generale et particuliere des crustacés et des insectes 13. F. Dufart, Paris. 432 pp.
LATREILLE, P. A. 1809. Genera Crustaceorum et Insectorum secundum ordinem naturalem in familias disposita 4. Amand Koenig, Parisiis et Argentorati. 399 pp.
LJUNGH, S. J. 1810. *Gonatopus*, novum insectorum genus. Beitr. Naturk. 2: 161-163.

- MITA, T. 2009a. First description of the males of *Gonatopus lucens* (Olm) and *G. asiaticus* (Olm), with host records from Japan (Hymenoptera: Dryinidae: Gonatopodinae). *Esakia* 49: 117-120.
- MITA, T. 2009b. A taxonomic study of the Dryininae (Hymenoptera: Dryinidae) of Japan, with description of a new species of *Pseudodryinus*. *Zootaxa* 2168: 45-56.
- MÓCZAR, L. 1965. Remarks on some types of Dryinini and Gonatopodini (Hymenoptera). *Ann. Hist.-Nat. Musei Nation. Hungarici* 57: 375-406.
- MÓCZAR, L. 1979. Some Dryinids from Malaysia (Hymenoptera). *Acta Biol. Szeged* 25: 77-83.
- OLMI, M. 1984. A revision of the Dryinidae (Hymenoptera). *Mem. American Ent. Inst.* 37: xii + 1913 pp.
- OLMI, M. 1986. New species and genera of Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomol.* [1986], N.S., 7-8(20-21): 63-105.
- OLMI, M. 1987a. New species of Dryinidae (Hymenoptera, Chrysidoidea). *Fragmenta Entomol.* 19: 371-456.
- OLMI, M. 1987b. Descrizione di nuove specie di Dryinidae (Hymenoptera Chrysidoidea). *Boll. Zool. Agr. Bachic. (Ser. II)* 19: 31-70.
- OLMI, M. 1991. Supplement to the revision of the world Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomol.* [1989], N.S., 12(25): 109-395.
- OLMI, M. 1992. Contribution to the knowledge of the Gonatopodinae (Hymenoptera Dryinidae). *Boll. Ist. Entomol. Univ. Bologna* 46: 109-122.
- OLMI, M. 1993a. A new generic classification for Thaumatomyridinae, Dryininae and Gonatopodinae, with descriptions of new species (Hymenoptera Dryinidae). *Boll. Zool. Agr. Bachic. (Ser. II)* 25: 57-89.
- OLMI, M. 1993b. Descriptions of new taxa of Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomol.* (1992), N.S., 15(28I): 19-62.
- OLMI, M. 1994. The Dryinidae and Embolemidae (Hymenoptera: Chrysidoidea) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 30. Brill, Leiden, The Netherlands. 100 pp.
- OLMI, M. 1998a. New Embolemidae and Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomol.* (1997), N. S., 20(33): 30-118.
- OLMI, M. 1998b. New oriental and neotropic Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomol.* (1997), N. S., 20 (33): 152-167.
- OLMI, M. 1999. Hymenoptera Dryinidae - Embolemidae. *Fauna d'Italia* 37. Edizioni Calderini, Bologna, Italy. 425 pp.
- OLMI, M. 2005. A contribution to the knowledge of Oriental Dryinidae (Hymenoptera: Chrysidoidea), with descriptions of two new species from India and Thailand. *Oriental Insects* 39: 345-352.
- PERKINS, R. C. L. 1903. The leafhopper of the sugar cane. *Terr. Hawaii, Board Agric. Forest, Div. Entomol. Bull.* 1: 1-38.
- PERKINS, R. C. L. 1905. Leafhoppers and their natural enemies (Pt. I. Dryinidae). *Rep. Work Exper. St. Hawaiian Sugar Planters Assoc., Div. Entomol. Bull.* No. 1(I): 1-69.
- PERKINS, R. C. L. 1907. Parasites of leaf-hoppers. *Rep. Work Exper. St. Hawaiian Sugar Planters Assoc., Div. Entomol. Bull.* No. 4: 5-59.
- PERKINS, R. C. L. 1912. Parasites of the Family Dryinidae. *Rep. Work Exper. St. Hawaiian Sugar Planters Assoc., Div. Entomology Bull.* No. 11: 5-20.
- PONOMARENKO, N. G. 1981. Dryinids (Hymenoptera, Dryinidae) of the fauna of Sri Lanka. *Revue Entomol. URSS (Entomologich. Obozr.)* 60: 879-882.
- PONOMARENKO, N. G. 1988. Dryinids (Hymenoptera, Dryinidae) of Vietnam, pp. 189-192 *In* P. E. Medvedev and J. R. Striganova [eds.], *Fauna and ecology of insects of Vietnam*. Publications House Nauka, Moscow. 200 pp.
- STRAND, E. 1913. H. Sauter's Formosa-Ausbeute. Zwei neue *Gonatopus*-Arten (Hym.). *Entomol. Mitt.* 2: 209-215.
- WESTWOOD, J. O. 1840. *An Introduction to the Modern Classification of Insects* 2. Longman, Orme, Brown, Green and Longmans, London. 587 pp.
- XU, Z., AND HE, J. 1994a. Two new species of Dryinidae from Mt. Gutianshan, Zhejiang (Hymenoptera: Chrysidoidea). *Wuyi Sci. J.* 11: 132-135.
- XU, Z., AND HE, J. 1994b. Hymenoptera: Dryinidae, pp. 266-269 *In* T. Zhu [ed.], *Insects and Macrofungi of Gutianshan, Zhejiang*. Zhejiang Sci. & Tech. Publishing House, Hangzhou, P.R. China. 327 pp.
- XU, Z., AND HE, J. 1998. The Descriptions of two new species of the genus *Dryinus* from China (Hymenoptera: Dryinidae, Dryininae). *Acta Zootax. Sinica* 23(3): 309-312.
- XU, Z., AND HE, J. 1999. Four New Species of the Genus *Anteon* Jurine (Hymenoptera: Dryinidae). *Entomotaxon.* 21(3): 217-222.
- XU, Z., HE, J., AND OLMI, M. 1998. New species of Dryinidae from China (Hymenoptera: Chrysidoidea). *Phytophaga* 8: 21-37.
- XU, Z., HE, J., AND OLMI, M. 1999a. Five new species of *Aphelopus* Dalman from China (Hymenoptera: Dryinidae). *Oriental Insects* 33: 85-94.
- XU, Z., HE, J., AND OLMI, M. 2001. Descriptions of new species of Dryinidae from China (Hymenoptera: Chrysidoidea). *Frustula entomol.* (2000), N.S., 23(36): 1-22.
- XU, Z., HE, J., AND RUI, K. 1996. Two new species of the genus *Anteon* Jurine (Hymenoptera: Dryinidae: Anteoninae). *Entomotaxon.* 18: 213-215.
- XU, Z., HE, J., AND YANG, C. 1997. Two new species of Dryinids (Hymenoptera: Dryinidae: Gonatopodinae) in rice field from South China. *Entomotaxon.* 19: 153-156.
- XU, Z., HE, J., AND YANG, C. 1999b. Three new species of the genus *Gonatopus* from Guangxi (Hymenoptera: Dryinidae). *Acta Entomol. Sinica* 42(1): 86-91.
- XU, Z., OLMI, M., AND HE, J. 2006. A contribution to the knowledge of Dryininae and Gonatopodinae of China (Hymenoptera: Dryinidae). *Oriental Insects* 40: 93-98.
- XU, Z., OLMI, M., AND HE, J. 2007. Two new species of *Dryinus* Latreille (Hymenoptera: Dryinidae) from China. *Florida Entomol.* 90(3): 453-456.
- XU, Z., OLMI, M., AND HE, J. 2008. Descriptions of two new species of *Dryinus* Latreille from China (Dryinidae). *J. Kansas Entomol. Soc.* 81(1): 8-11.
- XU, Z., OLMI, M., AND HE, J. 2009. A taxonomic revision of the Oriental species of *Thaumatomyridinus* Perkins, with descriptions of two new species from P. R. China (Hymenoptera: Dryinidae). *Zootaxa* 2175: 19-28.
- XU, Z., OLMI, M., AND HE, J. 2010. Descriptions of two new species of *Anteon* (Hymenoptera: Dryinidae) from China. *Oriental Insects* 44: 17-22.
- YANG, C. 1994. Descriptions of *Dryinus lycormae* sp. n. and its biological notes (Hymenoptera Dryinidae), pp. 37-42 *In* X. Shen and Z. Shi [eds.], *Fauna and*

- Taxonomy of Insects in Henan vol. I (1994). Chinese Press Agric. Sci. & Tech., Beijing, P R. China. 351 pp.
- YANG, C., AND MA, Z. 1995. Hymenoptera: Dryinidae, pp. 263-265 *In* T. Zhu [ed.], Insects and Macrofungi of Gutianshan, Zhejiang. Zhejiang Sci. & Tech. Publishing House, Hangzhou, P. R. China. 327 pp.
- YANG, C., XU, Z., AND HE, J. 1997. Two new records of Dryinid Wasps from China (Hym.: Dryinidae). *J. Guangxi Agric. Univ.* 16(1): 10-12.