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## A new species of the highly modified hypogean genus *Giraffaphaenops* Deuve, 2002 (Coleoptera: Carabidae: Trechinae)

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### Abstract

*Giraffaphaenops yangi* n. sp. is described from a limestone cave named Shizikou Dadong, Tianlin County, northwestern Guangxi, China. It is the second species of this genus, which is the most morphologically modified in the tribe Trechini in terms of troglobiomorphy. So far, *Giraffaphaenops* ranges in a small karstic area in northwestern Guangxi. Of the two known species, *G. clarkei* Deuve, 2002 was recorded from four caves in Leye County, whereas *G. yangi* n. sp. is known from the only type locality cave in Tianlin County. A distributional map of the genus *Giraffaphaenops* is also provided. In addition, two females of *G. clarkei* are recorded from the cave Yanwu Dong, Leye County.

**Key words:** troglobite, ground beetle, Guangxi, China

### Introduction

Hypogean trechine beetles are currently divided into two main morphological types: anophthalmous and aphaenopsian, and the aphaenopsian holds more morphological characteristics adaptative to the subterranean environment than the anophthalmous (Jeannel 1928; Casale *et al.*, 1998; Moldovan, 2012). Among the aphaenopsian genera, *Giraffaphaenops* Deuve, 2002 is the most highly modified representative in the world by having extremely elongate body, in particular, the very long head and prothorax (Deuve, 2002; Uéno, 2003), making head (excluding mandibles) plus prothorax much longer than elytra.

The genus *Giraffaphaenops* was established for the new species *G. clarkei* Deuve, 2002, known by a female only specimen collected by A. Clarke in a limestone cave called Jinyin Dong, Leye County of northwestern Guangxi, South China. The next year, Uéno (2003) re-described both the genus and species based on additional material, including males discovered in other two caves near the type locality, Maping Dong and Ganhan Dong. The species was later found in Yanwu Dong by a team led by L. Deharveng in 2007 (Li *et al.*, 2007). So far, *G. clarkei* has been reported from four caves within a very narrow area of Leye County.

The taxonomic position of *Giraffaphaenops* remains unclear. Contrary to Deuve (2002) who compared the genus with *Dongodytes* Deuve, 1993, Uéno (2003) emphasized that it must be a relative of *Uenotrechus* Deuve & Tian, 1999 (Deuve *et al.*, 1999), and he compared it with *U. hybridiformis* Uéno, 2002, a very peculiar species which was then transferred from *Uenotrechus* to *Pilosaphaenops* Deuve & Tian, 2008 by Tian (2009). Further investigations using molecular tools would be required to elucidate the phylogenetic relationships of above four genera, and also the genus *Sinaphaenops* Uéno & Wang, 1991.

In June, 2014, two blind trechine beetles belonging to *Giraffaphaenops* for their character state were collected in a cave named Shizikou Dadong in northeastern Tianlin County, northwestern Guangxi. Further study confirmed that they belong to a species new to science.

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## References

- Casale, A., Vigna Taglianti, A. & Juberthie, C. (1998) Coleoptera: Carabidae. *In*: Juberthie, C. & Decu, V. (Eds.), *Encyclopedia Biospeologica* II. Société Internationale de Biospéologie, Moulis, Bucarest, pp. 1047–1081.
- Deuve, T. (1993) Description de *Dongodytes fowleri* n. gen., n. sp., Coléoptère troglobie des karsts du Guangxi, Chine (Adephaga: Trechidae). *Bulletin de la Société Entomologique de France*, 98 (3), 291–296.
- Deuve, T. (2002) Deux remarquables Trechinae anophtalmes des cavités souterraines du Guangxi nord-occidental, Chine (Coleoptera, Trechidae). *Bulletin de la Société entomologique de France*, 107 (5), 515–523.
- Deuve, T. & Tian, M.Y. (2008) Deux nouveaux Trechidae cavernicoles de Chine (Coleoptera, Caraboidea). *Revue française d'Entomologie*, (N. S.), 30 (1–2), 55–60.
- Deuve, T. & Tian, M.Y. (2014) Un nouveau Trechini aphénopsien dans l'ouest du Guizhou (Coleoptera, Caraboidea). *Bulletin de la Société entomologique de France*, 119 (3), 319–322.
- Deuve, T., Tian, M.Y. & Ran, J.C. (1999) Trois Caraboidea remarquables de la réserve nationale de Maolan, dans le Guizhou méridional, Chine (Coleoptera, Carabidae et Trechidae). *Revue française d'Entomologie*, (N. S.), 21 (3), 131–138.
- Jeannel, R. (1928) *Monographie des Trechinae. Morphologie comparée et distribution d'un groupe de Coléoptères*. Troisième Livraison: les Trechini cavernicoles. *L'Abeille*, 35, 1–808.
- Li, X.Z., Niu, C.Y., Jiao, Z.J., Lei, C.L. & Tan, X.F. (2008) Cave fauna in Yachang reserve, Guangxi. *Biodiversity*, 16 (2), 185–190. [in Chinese]
- Moldovan, O.T. (2012) Beetles. *In*: White, W.B. & Culver, D.C. (Eds.), *Encyclopedia of caves*, second edition. Elsevier, pp. 54–62.  
<http://dx.doi.org/10.1016/B978-0-12-383832-2.00008-6>
- Tian, M.Y. (2009) New records and new species of cave-dwelling trechine beetles from Mulun Nature Reserve, northern Guangxi, China (Insecta: Coleoptera: Carabidae: Trechinae). *Subterranean Biology*, 7, 69–73.
- Uéno, S.I. (2002) A second species of the trechine genus *Uenotrechus* (Coleoptera, Trechinae). *Elytra*, 30 (2), 399–406.
- Uéno, S.I. (2003) The male of *Giraffaphaenops clarkei* (Coleoptera, Trechinae), with notes on its affinity. *Journal of Speleological Society of Japan*, 28, 1–11.
- Uéno, S.I. & Wang, F.X. (1991) Discovery of a highly specialized cave trechine (Carabidae, Trechinae) in Southeast China. *Elytra*, 19 (1), 127–135.