

## A new species of *Cyrtophora* (Araneae: Araneidae) from Thailand

Akio Tanikawa<sup>1</sup> & Booppa Petcharad<sup>2</sup>

<sup>1</sup> Laboratory of Biodiversity Science, School of Agriculture and Life Sciences, The University of Tokyo,  
1-1-1, Yayoi, Bunkyo-ku, Tokyo, 113-8657 Japan

E-mail: dp7a-tknw@j.asahi-net.or.jp

<sup>2</sup> Department of Biology, Faculty of Science, Prince of Songkla University, Kor Hong, Hat Yai, Songkhla, Thailand 90112  
E-mail: zigzagargiope@yahoo.com

---

**Abstract** — A new species of *Cyrtophora* is described on the basis of specimens collected from Trang Province, Thailand, under the name of *Cyrtophora sextuberculata* n. sp. This species can be distinguished from other congeners by the elongated abdomen having three pairs of tubercles. The shape of epigyne of this species resembles that of *C. crassipes* (Rainbow 1897), but the abdomen of the latter has only a pair of dorsal tubercles and bifurcated posterior end. The male of the latter species is still unknown.

**Key words** — Araneae, Araneidae, *Cyrtophora*, taxonomy, new species, Thailand

---

### Introduction

The genus *Cyrtophora* Simon 1864 comprises 43 species described mainly from Old World (Platnick 2014). Recently, several interesting specimens of the genus have been found during a survey of spider fauna in southern part of Thailand. They were found in their webs built at low position in swampy lowland forest. This species is described as a new species in this paper.

### Materials and methods

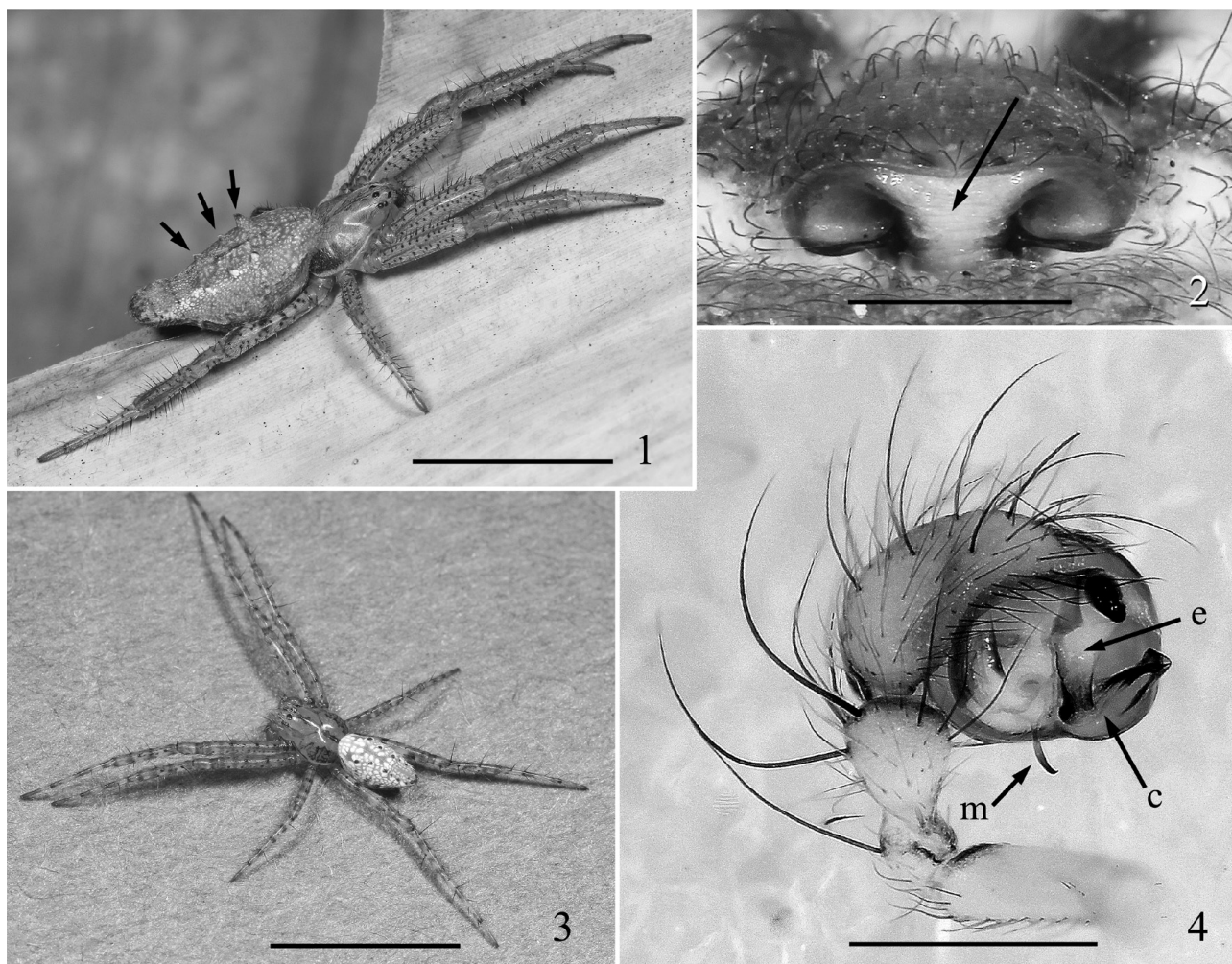
The specimens were preserved in 75% ethanol at room temperature. The morphological characters were examined under stereoscopic microscope M3Z (Wild Heerbrugg AG, Heerbrugg, Switzerland), photographs were taken by EOS Kiss X7 with EF100 mm or MP-E macro lens and MT-24EX macro twin flash (Canon Inc., Tokyo, Japan) or attached to stereoscopic microscope. All measurements are given in mm. The type specimens designated in this paper are deposited in the collections of the Princess Maha Chakri Sirindhorn Natural History Museum, Prince of Songkla University, Hat Yai, Thailand (PSUZYC).

The spider in question has characteristic shape of abdomen, that is, having three pairs of dorsal tubercles, elongated, not bifurcated at the posterior end. We compared it with the all of known species of the genus mainly by the shape of the abdomen. In the course of morphological study, we examined the type specimens of *Cyrtophora eczematica* (Thorell 1892) and *C. limbata* (Thorell 1898) to confirm the feature.

### Results

The following 11 species of the genus *Cyrtophora* have

only 1 pair of dorsal tubercles: *bidentata* Tikader 1970, *bimaculata* Han, Zhang & Zhu 2010, *cylindroides* (Walckenaer 1841), *feai* (Thorell 1887), *guangxiensis* Yin et al. 1990, *ikomosanensis* (Böenberg & Strand 1906), *koronadalensis* Barrion & Litsinger 1995, *lacunaris* Yin et al. 1990, *limbata* (Thorell 1898), *lineata* Kulczyński 1910, *moluccensis* (Doleschall 1857); the following 3 species have 2 pairs of dorsal tubercles: *cicatrosa* (Stoliczka 1869), *forbesi* (Thorell 1890), *rainbowi* (Roewer 1955); the following 8 species don't have any tubercle: *admiralia* Strand 1913, *beccarii* (Thorell 1878), *cordiformis* (L. Koch 1871), *doriae* (Thorell 1881), *lahirii* Biswas & Raychaudhuri 2004, *larinioides* Simon 1895, *nareshi* Biswas & Raychaudhuri 2004; the following 7 species have bifurcated caudal end: *bicauda* (Saito 1933), *cephalotes* Simon 1877, *crassipes* (Rainbow 1897), *jabalpurensis* Gajbe & Gajbe 1999, *petersi* Karsch 1878, *parnasia* L. Koch 1872, *citricola* (Forsskal 1775), *subacalypha* (Simon 1882); the following 7 species have inverted triangular shaped abdomen with shoulder hump: *diazoma* (Thorell 1890), *eczematica* (Thorell 1892), *exanthematica* (Doleschall 1859), *gazellae* (Karsch 1878), *leucopicta* (Urquhart 1890), *parangexanthematica* Barrion & Litsinger 1995, *trigona* (L. Koch 1871); the following 3 species have lumpy surface: *gemmosa* Thorell 1899, *monulfi* Chrysanthus 1960, *unicolor* (Doleschall 1857); the abdomen of *hirta* L. Koch 1872 has waving lateral outline. Thus, the spider in question can be separated from the above species by the shape of abdomen; and it can be separated from *ksudra* Sherriffs 1928, though its shape of abdomen is uncertain, by much larger size (14 mm vs 4 mm in total length of adult female). The original illustration of *caudata* Böenberg & Lenz 1895 shows that it should be a member of the genus *Cyclosa*. Remaining one species, *hainanensis*



**Figs. 1–4.** *Cyrtophora sextuberculata* n. sp. 1, female (holotype), arrows show dorsal tubercles; 2, epigyne (holotype), arrow shows median septum; 3, male (paratype); 4, male left palp, prolateral view (paratype), m: median apophysis, e: embulus, c: conductor. Scales = 10 mm (1); 0.5 mm (2, 4); 5 mm (3).

Yin et al. 1990 also has three pairs of tubercles on dorsum of abdomen, but its general appearance is much more similar to *cicatrosa* (Stoliczka 1869) than the spider in question, and its median septum of epigyne is much narrower than that of the spider in question.

Accordingly, we came to the conclusion that the spider in question is new to science.

#### Description of new species

##### *Cyrtophora sextuberculata* n. sp.

[Thai name: Mangmoum-Yai-Tent-Trang]

(Figs. 1–4)

**Type series.** Holotype: ♀, Peninsular Botanical Garden (Thung Khai), Tambon Thung Khai, Yan Ta Khaow District, Trang Province, Thailand (7.46291N, 99.63811E), 11-X-2013 (PSUZYC\_AR 001 2481). Paratypes: 1♀1♂, same data as the holotype (PSUZYC\_AR 001 2482–2483). All the specimens were collected by A. Tanikawa & B. Petcharad.

**Etymology.** The specific name is derived from its

characteristic shape of abdomen.

**Diagnosis.** The present new species can be distinguished from other congeners by the elongated abdomen having three pairs of tubercles; it can be separated from *C. hainanensis* Yin et al. 1990, also has three pairs of tubercles, by general appearance and wide median septum of epigyne; the shape of epigyne of this species resembles that of *C. crassipes* (Rainbow 1897), but the abdomen of the latter species has only a pair of dorsal tubercles and has bifurcated posterior end.

**Description.** Coloration and markings. Female (holotype, Fig. 1): carapace pale brown, laterally darker, with dark color midline. Dorsum of abdomen pale brown. Male (paratype, Fig. 3): carapace pale brown, laterally darker, with dark color midline. Dorsum of abdomen whitish pale brown, laterally yellowish, with several pairs of small black spots.

**Measurements.** Female holotype (female paratype in parentheses)/male paratype. Body 13.69 (15.38) / 4.19 long. Carapace 5.06 (5.69) / 1.85 long; 3.63 (4.25) / 1.38



wide. Length of legs [tarsus + metatarsus + tibia + patella + femur = total]: I,  $1.44 + 3.69 + 3.59 + 2.13 + 4.94 = 15.79 / 0.85 + 1.71 + 1.55 + 0.74 + 2.00 = 6.85$ ; II,  $1.38 + 3.38 + 3.19 + 2.06 + 4.63 = 14.64 / 0.79 + 1.50 + 1.35 + 0.68 + 1.85 = 6.17$ ; III,  $1.13 + 2.19 + 1.69 + 1.38 + 3.00 = 9.39 / 0.55 + 0.83 + 0.68 + 0.48 + 1.14 = 3.68$ ; IV,  $1.31 + 3.94 + 3.03 + 1.91 + 4.75 = 14.94 / 0.73 + 1.60 + 1.23 + 0.63 + 1.81 = 6.00$ . Abdomen  $8.50 (10.6) / 2.13$  long;  $4.10 (4.92) / 1.23$  wide.

Female (Fig. 1). Carapace longer than wide [length divided by width 1.40 (1.34)]. Median ocular area longer than wide [length divided by width 1.17 (1.20)]; almost as wide in front as behind [anterior width divided by posterior width 1.07 (0.97)]. Labium wider than long [length divided by width 0.61 (0.63)]. Sternum longer than wide [length divided by width 1.14 (1.09)]. Length of leg I divided by length of carapace 3.12 (2.99). Abdomen longer than wide [length divided by width 3.12 (2.99)], with three pairs of tubercles. Epigyne as in fig. 3, with wide median septum.

Male (Fig. 3). Carapace longer than wide (length divided by width 1.35). Median ocular area slightly longer than wide (length divided by width 1.09); wider in front than behind (anterior width divided by posterior width 1.10). Labium wider than long (length divided by width 0.65). Sternum longer than wide (length divided by width 1.15). Length of leg I divided by length of carapace 3.70. Palp as in Fig. 4, median apophysis thin, combination of embolus and conductor forms L-shape. Abdomen longer than wide (length divided by width 1.73), with three pairs of small tubercles.

**Distribution.** Thailand (known only from the type locality).

#### Acknowledgments

We wish to express our heartfelt thanks to Tadashi Miyashita for constant guidance on scientific study. Our sincere thanks are also due to Jakkrapat Dulyapat for kind help for our field work. We thank Maria Tavano, Museo di Storia Naturale Giacomo Doria, Nigel T. Monaghan and Myles Nolan, National Museum of Ireland, for loaning invaluable specimens.

#### References

- Barrión, A. T. & Litsinger, J. A. 1995. *Riceland Spiders of South and Southeast Asia*. CAB International, Wallingford, UK, xix + 700 pp.
- Biswas, V. & Raychaudhuri, D. 2004. New orb-weaving spiders of the genus *Cyrtophora* Simon (Araneae: Araneidae) from Bangladesh. *J. Bombay Nat. Hist. Soc.*, 101: 124–129.
- Bösenberg, W. & Lenz, H. 1895. Ostafrikanische Spinnen gesammelt von Herrn Dr. F. Stuhlmann in den Jahren 1888 und 1889. *Jahrb. hamb. wiss. Anst.*, 12: 27–51.
- Bösenberg, W. & Strand, E. 1906. Japanische Spinnen. *Abh. Senck. Naturf. Ges.*, 30: 93–422.
- Chrysanthus, P. 1960. Spiders from south New Guinea III. *Nova Guinea*, 10: 23–42.
- Doleschall, L. 1857. Bijdrage tot de Kennis der Arachniden van den Indischen Archipel. *Nat. Tijdschr. Neder.-Ind.*, 13: 339–434.
- Doleschall, L. 1859. Tweede Bijdrage tot de Kennis der Arachniden van den Indischen Archipel. *Acta Soc. Sci. Ind.-Neerl.*, 5: 1–60.
- Feng, Z. Q. 1990. *Spiders of China in colour*. Hunan Sci. Technol. Publ. House, 256 pp.
- Forsskal, P. 1775. *Descriptiones animalium avium, amphibiorum, piscium, insectorum, vermium; quae in itinere orientali observavit Petrus Forsskal[sic]*. Hauniae, pp. 85–86.
- Gajbe, U. A. & Gajbe, P. 1999. A new *Cyrtophora* spider (Araneae: Araneidae) from Jabalpur, Madhya Pradesh, India. *Rec. Zool. Surv. India*, 97: 29–31.
- Han, G. X., Zhang, F. & Zhu, M. S. 2010. A new species of the genus *Cyrtophora* (Araneae: Araneidae) from Hainan Island, China. *J. Hebei Univ., Nat. Sci. Ed.*, 30: 692–695.
- Karsch, F. 1878a. Übersicht der von Peters in Mossambique gesammelten Arachniden. *Monats.-ber. Akad. Wiss. Wiss. Berlin*, 1878: 314–338.
- Karsch, F. 1878b. Exotisch-araneologisches. *Zeitschr. Ges. Naturw.*, 51: 332–333, 771–826.
- Koch, L. 1871. Die Arachniden Australiens, nach der Natur beschrieben und abgebildet. Nürnberg 1, 1–104.
- Koch, L. 1872. Die Arachniden Australiens. Nürnberg 1, 105–368.
- Kulczyński, W. 1910. Araneae et Arachnoidea Arthrogastra. In: *Botanische und zoologische Ergebnisse einer wissenschaftlichen Forschungsreise nach den Samoainseln, dem Neuguinea-Archipel und den Solomon inseln von März bis Dezember 1905 von Dr Karl Rechinger*. III Teil. *Denkschr. Akad. Wiss. Wien*, 85, 389–411.
- Platnick, N. I. 2014. The world spider catalog, version 14.5. American Museum of Natural History, online at <http://research.amnh.org/entomology/spiders/catalog/index.html>
- Rainbow, W. J. 1897. Descriptions of some new Araneidae of New South Wales. No. 8. *Proc. Linn. Soc. New S. Wales*, 22: 514–553.
- Saito, S. 1933. Notes on the spiders from Formosa. *Trans. Sapporo Nat. Hist. Soc.*, 13: 32–61.
- Sherriiffs, W. R. 1928. South Indian Arachnology. Part III. *Ann. Mag. Nat. Hist.*, 10: 177–192.
- Simon, E. 1864. *Histoire naturelle des araignées (aranéides)*. Paris, 540 pp.
- Simon, E. 1877. *Etudes arachnologiques*. 5e Mémoire. IX. Arachnides recueillis aux îles Philippines par MM. G. A. Baer et Laglaise. *Ann. Soc. Ent. France*, 5: 53–96.
- Simon, E. 1882. II. Étude sur les arachnides de l'Yemen méridional. In: *Viaggio ad Assab nel Mar Rosso, dei signori G. Doria ed O. Beccari con il R. Aviso "Esploratore" dal 16 Novembre 1879 al 26 Febbraio 1880*. *Ann. Mus. Civ. Stor. Nat. Genova*, 18: 207–260.
- Simon, E. 1895. *Etudes arachnologiques*. 26e. XLI. Descriptions d'espèces et de genres nouveaux de l'ordre des Araneae. *Ann. Soc. Ent. France*, 64: 131–160.
- Stoliczka, F. 1869. Contribution towards the knowledge of Indian Arachnoidea. *J. Asia. Soc. Bengal*, 38: 201–251.
- Strand, E. 1913. Neue indoaustralische und polynesische Spinnen des Senckenbergischen Museums. *Arch. Naturg.*, 79: 113–123.
- Thorell, T. 1878. Studi sui ragni Malesi e Papuani. II. Ragni di Amboina raccolti Prof. O. Beccari. *Ann. Mus. Civ. Stor. Nat. Genova*, 13: 1–317.
- Thorell, T. 1881. Studi sui Ragni Malesi e Papuani. III. Ragni dell'Austro Malesia e del Capo York, conservati nel Museo civico di storia naturale di Genova. *Ann. Mus. Civ. Stor. Nat. Genova*, 17: 1–727.
- Thorell, T. 1887. Viaggio di L. Fea in Birmania e regioni vicine. II. Primo saggio sui ragni birmani. *Ann. Mus. Civ. Stor. Nat. Genova*, 25: 5–417.
- Thorell, T. 1890. Studi sui ragni Malesi e Papuani. IV, 1. *Ann. Mus. Civ. Stor. Nat. Genova*, 28: 1–419.
- Thorell, T. 1892. Novae species araneorum a Cel. Th. Workman in ins. Singapore collectae. *Boll. Soc. Ent. Italiana*, 24: 209–252.
- Thorell, T. 1898. Viaggio di Leonardo Fea in Birmania e regioni vicine. LXXX. Secondo saggio sui Ragni birmani. II. Retilariar et Orbitelariar. *Ann. Mus. Civ. Stor. Nat. Genova*, 39: 271–378.

- Thorell, T. 1899. Araneae Camerunenses (Africae occidentalis) quas anno 1891 collegerunt Cel. Dr Y. Sjöstedt aliiq. Bih. Svenska Vet.-Akad. Handl., 25: 1–105.
- Tikader, B. K. 1970. Spider fauna of Sikkim. Rec. Zool. Surv. India, 64: 1–83.
- Urquhart, A. T. 1890. Description of a new species of Argiope from Fiji. Trans. New Zealand Inst., 22: 234–236.
- Walckenaer, C. A. 1841. Histoire naturelle des Insects. Aptères. Paris 2, 1–549.
- Yin, C. M., Wang, J. F., Xie, L. P. & Peng, X. J. 1990. New and newly recorded species of the spiders of family Araneidae from China (Arachnida, Araneae). In: Spiders in China: One Hundred New and Newly Recorded Species of the Families Araneidae and Agelenidae. Hunan Normal Univ. Press, pp. 1–171.

*Received July 31, 2014 / Accepted February 13, 2015*