

CEROPALIDAE FROM SRI LANKA (HYMENOPTERA)

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(Received: Okt. 9, 1984)

Abstract

Taxonomic notes are presented on four species of Ceylonese *Ceropalidae* belonging to the genera *Ceropales* LATREILLE, *Bifidoceropales* PRIESNER, and *Irenangulus* SCHULZ, partly published by CAMERON (1897, 1900) partly collected by K. V. KROMBEIN as well as by members of the National Museum in Sri Lanka. The female of *Bifidoceropales declivis* (HAUPT) was not known and this species is new to the Oriental fauna.

Key words: Hymenoptera, Ceropalidae, taxonomy, Sri Lanka.

Introduction

All records of *Ceropalidae* species were published from Sri Lanka by CAMERON (1897, 1900) as *Ceropales albovariegata*, *C. albomaculata* and *C. parva*.

During the investigations of K. V. KROMBEIN in Sri Lanka, there were collected 75 specimens (54 ♀ and 21 ♂) which represent 2 further *Ceropalids* species new to Sri Lanka: *C. ligea* BINGHAM and *Bifidoceropales declivis* (HAUPT). It is quite possible that some taxa described from India or from Burma may be collected in Sri Lanka eventually.

I am much obliged to K. V. KROMBEIN for the dispatch of the Ceylonese material as well as to M. C. DAY (British Museum, Natural History, London), to P. I. PERSSON (Swedish Museum of Natural History, Stockholm) and to G. C. VARLEY—M. J. SCOBLE (Hope Department of Oxford) for the loan of some of Bingham's, Haupt's and Cameron's type-material for a revision, and to E. C. DAHMS (Queensland Museum, Brisbane), to L. MASNER (Biosystematics Research Institute, Ottawa), to J. PAPP (Zoological Department of Hungarian Natural History Museum, Budapest) and to R. WAHIS (Chaudfontaine, Belgium) for submitting material.

Results

Irenangulus albovariegatus CAMERON, 1897

Ceropales albovariegata CAMERON 1897 Mem. Proc. Manchr lit. phil. Soc. 41 (4): 84 ♂.

Ceropales albovariegata: 1897, BINGHAM, Fauna Brit. India, Ceylon, Burma I: 176 ♂.

Xanthampulex albovariegata: 1912, TURNER, Ann. Mag. nat. Hist. (Ser. 8) 10: 362.

Hypsiceraeus albovariegatus: 1915, CAMERON, Trans. ent. Soc. London: 405.

Xanthampulex albovariegata: 1917, TURNER, Ann. Mag. nat. Hist. 20: 359.

Specimen examined: "Mussoorie, Rothney", "*Ceropales albomaculatus* CAM. type", "*Irenangulus* ♀ *albovariegatus* CAM. R. WAHIS dt. 77" 1 ♀. Type-specimen, originating from INDIA Uttar Pradesh), deposited in Oxford.

The holotype of the *Ceropales albovariegata* CAMERON was recorded from "Trincomali, CEYLON (Yerbury)", deposited? According to Wahis's synonymy, *C. albovariegata* CAMERON must be transferred to the genus *Irenangulus*.

Ceropales parva CAMERON, 1900

Ceropales parva CAMERON, 1900, Ann. Mag. nat. Hist. 5: 20 ♂.

This species, reported from "CEYLON (Yerbury)", of very small size (only 4 mm), with abdomen and legs rufous, thorax black except the pronotum and propleurae with light spots probably distinguishable from the other *Ceropales* species, but lack of diagnosis on the form of the frons, propodeum and claws the generic relegation among the *Ceropalidae* can not be decided.

Ceropales ligea BINGHAM, 1903

Ceropales ligea BINGHAM, 1903, Fasc. malayenses I: Appendix V ♀

Ceropales ligea: 1906, BINGHAM, Fasc. malayenses III: 41, Plate A figs 4, 4a—4c ♀

Ceropales ligea: 1910, TURNER, Proc. zool. Soc. Lond.: 339 ♀ ♂

Ceropales ligea: 1934, BANKS, Proc. Am. Acad. Arts Sci. 69: 114

Specimens examined: 59 ♀ and 19 ♂: MALAYSIA: "Sungkei 11/2/02", "ANNANDALE & ROBINSON, Siamese Malay States 1903—127", "*Ceropales ligea* BINGH. ♀ Type", "Type" (round label with red margin), "B. M. Type Hym. 19.772" 1 ♀ (London)*. — BURMA: TENASSERIM SHWEGYIN 7.89 Col. BINGHAM 1 ♀ (London). — SRILANKA: 47 ♀, 17 ♂: Northern Province. Mannar District: 4 ♀, 1 ♂, Cashew Corp. Ma Villu, 17—21 Feb, 16—19 Sep (in Malaise trap), K. V. KROMBEIN, T. WIJESINHE, S. SIRIWARDANE, A., T. and V. GUNAWARDANE, P. B. KARUNARATNE, L. JAYAWICKREMA (Washington**, Budapest); 2 ♀ Kokmotte Bungalow 5 mi NE Wilpattu Natl Park, 21—25 May, K. V. KROMBEIN, P. B. KARUNARATNE, S. KARUNA, D. W. BALASOORIYA, G. RATNAVIRA, T. WIJESINHE, M. JAYAWEEERA (Washington); 1 ♀ 2 ♂, Kondachchi, Silavathurai and Ma villu, 23—27 Jan, 11—12 Apr, K. V. KROMBEIN, L. WEERATUNGE, P. LEANAGA (Washington, Budapest). North Central Province. Anuradhapura District: 1 ♀ Wildlife Soc. Bungalow Hunuwilagama, Wilpattu 200 ft, 10—19 Mar. DAVIS & ROWE (Washington); 1 ♀ Padaviya 180 ft 19 Mar (light trap), P. B. and S. KARUNARATNE, D. W. BALASOORIYA (Washington); 1 ♀ the same locality and collector, 12—22 Mar (Washington). North Western Province. Puttalam District: 2 ♀, Wilpattu Natl Park, Kali Villu and Mullikulara Modaragam Aru, 12—14 Jun, D. H. MESSERSMITH, G. L. WILLIAMS, P. B. KARUNARATNE (Washington, Budapest); 1 ♂ Wilpattu Natl Park, Mullikulara Modaragam Aru 13 Jun, collected as before (Washington). Eastern Province. Amparai District: 9 ♀, 3 ♂, Ekgal Aru Reservoir Jungle 100 mts (partly in Malaise trap) and Ekgal Aru Tank, 19—22 Feb, 9—11 Mar, 9—12 Jun, 4—7 Jul, 11—15 Sep, K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, V. KULASEKARE,

* London=British Museum (Natural History, Department of Entomology, England

** Washington=National Museum of Natural History, Smithsonian Institution, Washington, U.S.A.

L. JAYAWICKREMA, M. JAYAWEERA, S. SIRIWARDANE, P. FERNANDO, D. W. BALASOORIYA, S. KARUNA (Washington, Budapest); 1 ♀ Lakugala Sanctuary (in Malaise trap), 13 Jun, K. V. KROMBEIN, P. B. KARUNARATNE, S. KARUNA (Washington). Trincomalee District: 1 ♀ Trincomalee, China Bay Ridge Bungalow 0—100' 13—17 May, K. V. KROMBEIN, P. B. KARUNARATNE, S. KARUNA, D. W. BALASOORIYA (Washington). *Central Province*. Kandy District: 5 ♀, 3 ♂, Udawattakele Sanctuary 2100 ft, 16—31 Aug, S. KARUNA (Washington, Budapest). Matale District: 1 ♀, 1 ♂, Kibissa 0.5 mi West of Sigiriya jungle 28 Jun—4 Jul, K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, V. KULASEKARE (Washington); 3 ♀ Sigiriya jungle, 28 Jun—4 Jul (in Malaise trap), K. V. KROMBEIN, T. WIJESINHE, V. KULASEKARE, D. H. MESSERSMITH, G. L. WILLIAMS, P. B. KARUNARATNE (Washington, Budapest). *Sabaragamuwa Province*. Ratnapura District: 1 ♂ Uggalkaltota, 23—26 Jun (in Malaise trap), K. V. KROMBEIN, P. B. and N. KARUNARATNE, T. WIJESINHE, L. JAYAWICKREMA (Budapest). *Uva Province*. Badulla District: 4 ♀, Ulhitiya Oya, 15 mi NNE of Mahiyangana, 5—6 Sep, K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, L. JAYAWICKREMA, V. GUNAWARDANE (Washington, Budapest). *Southern Province*. Monoragala District: 11 ♀, 4 ♂, Angunakolapelessa 100 mts 21—23 Jan, 27—28 Mar, 17—19 June, 30 Sep—1 Oct, 8—9 Oct (in Malaise trap), K. V. KROMBEIN, T. WIJESINHE, L. WEERATUNGE, S. SIRIWARDANE, T. and V. GUNAWARDANE, P. B. KARUNARATNE (Washington, Budapest); 1 ♂, Mau Ara 100 m 10 mi E of Udawalawa, K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, M. JAYAWEERA (Washington). — INDIA: 1 ♀, Dohnavur, 8 Oct, Tinnevely Dt. (Budapest); 1 ♂, Deesa, Dec, (London); 1 ♀ Walayar Forests, S. Malabar, S. India, Jul, Nathan (Ottawa); 1 ♀, Anamalai Hills, Cinchona, May, Nathan (Ottawa); 1 ♀, Mysore Nandy Hills, 1200 m, 15 Apr, T. S. THOMAS (coll. Wahis). — INDONESIA: *West Java*: 10, Guning Malang 3—4000 ft, Nov, K. M. WALS (Budapest). — THE PHILIPPINES: 1 ♂ Cuernos Mt. Negros, BAKER (Budapest). — AUSTRALIA: 1 ♀, Mackay, Jan (London); 1 ♀, Alexandria, N. Austr. W. STALKER (London); 3 ♀, Brisbane, Indooroopilly, Queensland, I. D. GALLOWAY (London, Budapest) and 1 ♀ Brisbane, 17 Jan, H. HACHER, (Brisbane).

According to Bingham's diagnosis "In a collection of Burmese Hymenoptera there are two females of this species". The locality data of the first specimen correspond to the original diagnosis and it was supplied with the type-inscription and a separate type-label, consequently this specimen can be regarded as the holotype. The second specimen of the original material was published by TURNER (1910) with the locality Burma (♀), together with a specimen from Mackay, Australia. At the same time TURNER shortly described also the male of this species. Bingham's diagnosis and Turner's description can be supplemented as follows:

♀♂. Frons remarkably flat just before antennal sockets and broken in an obtuse angle at its two-thirds length between fore ocellus and antennae. Propodeum conspicuously flat along its whole length viewed from the side, surface finely granulated with a remarkably narrow and rather deep longitudinal furrow basally not reaching the middle of the segment. Both claws of fore and middle tarsi normal, with a short erect and acute subapical tooth, not bifid. Both claws of the hind tarsus rectangularly curved.

♀. — Length 5—7.5 mm. The colouring is variable. Holotype with the spots on front of all coxae becoming gradually smaller backwards; the interrupted white line on abdominal segments 4 developed only on the species from Burma, mandibles

with a very small white spot, first antennal joints brownish red in front. Neither the colouring of tergite 4, nor the same of the fore and the middle tarsi as well as of the inner spur (=carcaria) on the hind legs are uniform. Two specimens from Brisbane with larger black spots on clypeus, but with a smaller and shorter white streak on tergites. Among the 45 females originating mostly from Sri Lanka there are 12 with nearly entirely black tergite 4, while 33 specimens with a narrow curved band on each side of apical margin. Tarsal joints of middle legs dark only on 12 specimens, while 33 specimens are like the fore tarsal joints. Inner spurs of hind legs brownish only on 9 specimens (as in holotype) and white on 36 specimens. Mandibles entirely yellow only on the lighter coloured specimens and only partly on the darker specimens.

♂. — 3.5—5.5 mm. On the basis of 1 male specimen TURNER had published the head being entirely black, the clypeus and labrum fuscous, the scape alone marked with white beneath. Among the 17 males collected in Sri Lanka there are only 2 males with brown labrum and with black clypeus except the two light triangular spots on the lateral corners. 14 male specimens have a narrow longitudinal black spot on the light clypeus and on labrum except of one transitional variation with a broader longitudinal black spot on clypeus. However, the colouring of the head on the 17 males similar to females, namely the subantennal and the supraclipeal area connected with the spot in emargination of eyes; a narrow line behind eyes ivory white except sometimes the black genae below. The spurs of the hind tibiae black only on 4 males and the inner one white on 12 males. The hind femora reddish dark brown on one specimen from India and not red as on specimens from Sri Lanka. The colour variation of this species seems to be rather large.

Distribution. MALAYSIA (BINGHAM, 1903). BURMA, QUEENSLAND, AUSTRALIA (TURNER, 1910) THE PHILIPPINES (BANKS, 1934) and SRI LANKA, INDIA, INDONESIA (West Java).

***Bifidoceropales declivis* (HAUPT, 1934)**

Ceropales declivis HAUPT, 1934, Ark. Zool. 27A: 11 ♂

Ceropales declivis HAUPT, 1938, Ark. Zool. 30A: 10 ♂

Specimens examined: 7 ♀, 7 ♂: CHINA: 1 ♂ holotype, "Kina N. O. Szechuan", "Sven Hedins Exp. Ctr. Asien Dr. HUMMEL", "1/6", "Holotype" red label, "*declivis* HPT. det. HAUPT, 1933" with Haupt's writing (Stockholm). — SRI LANKA: 7 ♀, 4 ♂: Northern Province. Mannar District: 2 ♀, Kondachchi, Ma Villu, 19 Sep (in Malaise trap), T. WIJESINHE, L. JAYAWICKREMA, V. GUNAWARDANE (Washington). North Central Province. Anuradhapura District: 1 ♀ Hunuvilagama, near Wilpatu, 200 feet (in Malaise trap), 28 Oct—3 Nov, G. F. HEVEL, R. E. DIETZ, S. KARUNARATNE, D. W. BALASOORIYA; 1 ♀ Ritigala Nat. Reserve 19. Sept. K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, L. JAYAWICKREMA, V. GUNAWARDANE (Budapest). Eastern Province. Trincomalee District: 3 ♂ China Bay Ridge Bungalow, 0—100', 13—17 May (in Malaise trap), K. V. KROMBEIN, P. B. KARUNARATNE, D. W. BALASOORIYA (Washington, Budapest); 1 ♀ China Bay Ridge Bungalow, 0—50 feet, 24—25 Jul (in Malaise trap), K. V. KROMBEIN, T. WIJESINHE, V. KULASEKANE, L. JAYAWICKREMA (Washington). Central Province. Matale District: 1 ♂ Kibissa, 0.5 mi West to Sigiriya, jungle, 28 Jun—4 Jul (in Malaise trap), K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, V. KULASEKARE. Southern

Province. Monoragala District; 1 ♀ Angunakolapelessa 27—28 Mar (in Malaise trap), K. V. KROMBEIN, T. WIJESINHE, L. WEERATUNGE (Washington); 1 ♀ Mau Ara 100 m. 10 mi E of Udawa lawa, 24—26 Sep (in Malaise trap), K. V. KROMBEIN, P. B. KARUNARATNE, T. WIJESINHE, M. JAYAWEERA (Budapest). — SOUTH INDIA: 1 ♂ Walayar Forests, S. Malabar, Sep, P. S. NATHAN (Ottawa). — TAIWAN: 1 ♂ Takao, May, SAUTER (coll. Wahis).

Haupt's description can be supplemented as follows.

♂. — Length 6.5—7 mm. The green tint given by HAUPT is very faint, the light parts more ivory white or sometimes (Taiwan, S. India) partly very finely yellowish. Tergite 6 not always entirely ivory white, but often with only a small line light apically and broadly interrupted medially, similarly to the previous tergites. Basis of mandible black and with a large white spot only on one male (Sri Lanka). The light inner eye margin usually continuous or interrupted on 3 males from Sri Lanka and on one male from India. The light spots of legs larger on four specimens (Sri Lanka) than on holotype. Trochanter largely black, but with a narrow light streak apically (as also on holotype); middle tarsus red (except holotype), only the hind one blackish. Wing hardly infuscated; upper margin of radial cell 3 shorter than 2 (on holotype, on each male from Sri Lanka and India), but at least as long as the same vein of 2 on the other specimens. Basis of the propodeum more or less finely rugulose on both sides of the triangular incision. Frons, propodeum and claws see later.

♀. — Length 4.7—6 mm. Similar to male, differing as follows: ivory white spots in emargination of eye ending sharply before antennal sockets; lower face above clypeus largely black, ivory white only laterally, sometimes fusing into a continuous streak with the small spot medially (lower face on male ivory white except a very small black spot just between the antennal sockets). Scutellum often black without a light spot. Hind coxa largely black at basis and only moderately ivory white on its apical third. Tergite 6 ivory white. Sculpture of head, thorax as in male, only the acute triangular incision of propodeum basally narrower and deeper. Last sternite triangular and acute.

This species very similar to *Ceropales ligea* BINGHAM, especially in colour. While legs of *declivis* (HAUPT) largely red, those of *ligea* largely black except mainly the hind red femora. These further additions to the known descriptions (♂ ♀) contribute to separate the two species. Frons convex in lateral view and not broken in an obtuse angle on its three-quarters length between fore ocellus and antennae; frons, pronotum, mesonotum with rather dense erect hairs; propodeum moderately convex basally and flattened on its distal two-thirds viewed from the side. Both claws of fore (♀) and middle (♀ ♂) tarsi bifid, with a long appressed, obliquely truncate subapical tooth; inner claw of fore leg (♂) very deeply split owing to the unusually large, not truncate inner tooth basally; both claws of the hind tarsus (♀ ♂) rectangularly curved.

Distribution. N. E. Sichuan, CHINA (HAUPT, 1934). SOUTH INDIA, SRI LANKA, TAIWAN.

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