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Notes on the genus *Stichophthalma* C. & R. Felder, 1862 from Hainan Island, China

(Lepidoptera, Nymphalidae)

by

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Abstract: In this paper, all taxa of the genus *Stichophthalma* C. & R. Felder, 1862 from Hainan Island in S. China are mentioned. *Stichophthalma le* Joicey & Talbot, 1921 **stat. nov.** from Hainan is a distinct species, and not an insular subspecies of *S. neumogeni* Leech, 1892.

The genus *Stichophthalma* C. & R. Felder, 1862 (Morphinae: Amathusiini) inhabits the tropical and subtropical rainforests of the Oriental Region, but it is absent from the Malay Archipelago, Philippines, S. India and Sri Lanka. Until now, thirteen species have been recognised from this genus, they are: *S. nourmahal* (Westwood, 1851), *S. neumogeni* Leech, 1892, *S. cambodia* (Hewitson, 1862), *S. godfreyi* Rothschild, 1916, *S. fruhstorferi* Röber, 1903, *S. uemurai* Nishimura, 1998, *S. camadeva* (Westwood, 1848), *S. louisa* (Wood-Mason, 1877), *S. mathilda* Janet, 1905, *S. eamesi* Monastyrskii, Devyatkin & Uémura, 2000, *S. sparta* de Nicéville, 1894, *S. howqua* (Westwood, 1851), and *S. suffusa* Leech 1892 (d'Abrera, 1985; Nishimura, 1998; Monastyrskii & Devyatkin, 2008; etc.).

Joicey & Talbot (1921) first recorded the genus *Stichophthalma* from Hainan Island with descriptions and illustrations of three insular subspecies, they are *S. howqua bowringi* Joicey & Talbot, 1921, *S. neumogeni le* Joicey & Talbot, 1921 and *S. nourmahal chuni* Joicey & Talbot, 1921. Hitherto, no additional taxon of this genus has been added to the butterfly fauna of Hainan. After a study on materials of this genus collected from Hainan, the author's opinion is, that the insular *Stichophthalma le* Joicey & Talbot, 1921 **stat. nov.** is a quite distinct species against continental *S. neumogeni* Leech and its most close relative is *S. fruhstorferi* Röber from N. Vietnam and S. Guangxi Province.

The material in this study is deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS).

Abbreviations: FW - forewing; HW - hindwing.

Stichophthalma le Joicey & Talbot, 1921 **stat. nov.** (colour plate 7: 3, 4)

Stichophthalma neumogeni le Joicey & Talbot, 1921, Bull. Hill. Mus. **1**: 173, pl. 28: 20. TL: Hainan.

Material: 1 ♀, Hainan: Lingshui County, Shipin, 28.V.1934; 1 ♂, Hainan: Mt. Jianfengling, 1.V.2007, coll. Chen Fuqiang; 1 ♂, 1 ♀, Hainan: Mt. Wuzhishan, Shuiman Village, 730-900 m, 8-11.V.2007, colls. Lang Songyun et al. (all IZCAS).

Diagnosis: *S. le* Joicey & Talbot, 1921 **stat. nov.** can be easily distinguished from the continental *S. n. neumogeni* Leech (colour plate 7: 5) and other sympatric taxa in the genus *Stichophthalma* from Hainan by the following combination of characters:

1. It is large in size, as in *S. howqua bowringi* Joicey & Talbot, whereas *S. n. neumogeni* Leech and *S. nourmahal chuni* Joicey & Talbot are smaller.
2. The subapical spot in space 6 is absent from dorsal FW, whereas in *S. n. neumogeni* Leech and *S. nourmahal chuni* Joicey & Talbot it is present.
3. The ground colour of the dorsal surface is yellowish, whereas in *S. nourmahal chuni* Joicey & Talbot it is ochreous red with the FW distal half orange.
4. On the dorsal surface, marginal crescent mark and submarginal diamond-like mark in each space of both wings are separated from each other, whereas in *S. howqua bowringi* Joicey & Talbot they are connected with each other in each space as an arrow mark.
5. Ventral submarginal ocelli are present only in FW spaces 2 and 5 and HW spaces 2, 4 and 6, whereas in *S. n. neumogeni* Leech and *S. nourmahal chuni* Joicey & Talbot, they are present in the above-mentioned spaces in the same way, but are degraded and present only as small dots in other spaces on both wings, and in *S. howqua bowringi* Joicey & Talbot they are prominent and complete on both wings.
6. A small dark mark inside discal cell of ventral HW is present, as in *S. n. neumogeni* Leech and *S. nourmahal chuni* Joicey & Talbot, whereas in *S. howqua bowringi* Joicey & Talbot it is absent.

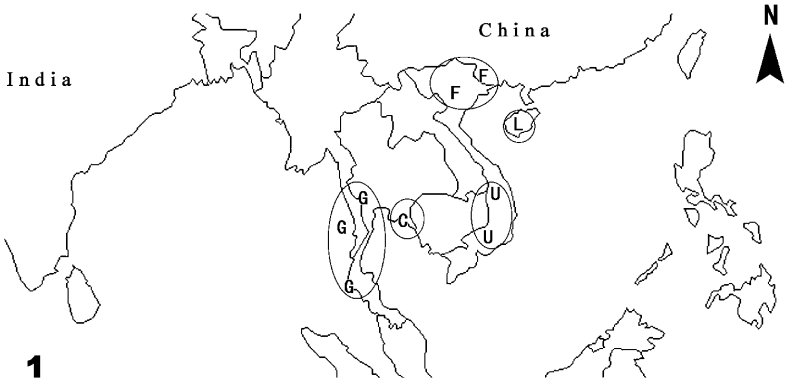

Fig. 1: Distribution map of the *cambodia*-group: G = *Stichophthalma godfreyi* Rothschild, 1916; C = *S. cambodia* (Hewitson, 1862); F = *S. fruhstorferi* Röber, 1903; U = *S. uemurai* Nishimura, 1998; L = *S. le* Joicey & Talbot, 1921 **stat. nov.**

Stichophthalma le Joicey & Talbot **stat. nov.** is most closely related to *S. fruhstorferi* Röber (colour plate 7: 2) from N. Vietnam and S. Guangxi. In fact, the following species of this genus, including *S. cambodia* (Hewitson), *S. godfreyi* Rothschild, *S. fruhstorferi* Röber, *S. uemurai* Nishimura and *S. le* Joicey & Talbot **stat. nov.**, can compose a species group called the *cambodia*-group. This species group can be very easily recognised from other species in this genus by the following combination of characters: 1. It is large in size; 2. a small dark mark inside the discal cell of the ventral HW is present, whereas in other species, except *S. neumogeni* Leech and *S. nourmahal* (Westw.), it is absent; 3. the ventral submarginal ocelli are present only in FW spaces 2 and 5 and HW spaces 2, 4 and 6, whereas in *S. neumogeni* Leech and *S. nourmahal* (Westw.) they are present in the above-mentioned spaces in the same way and present only as small degraded dots in

other spaces on both wings, and in other species in this genus they are almost always prominent and complete on both wings. According to the distribution map of the *cambodia*-group (fig. 1), each species of this group is restricted to a separate small area.

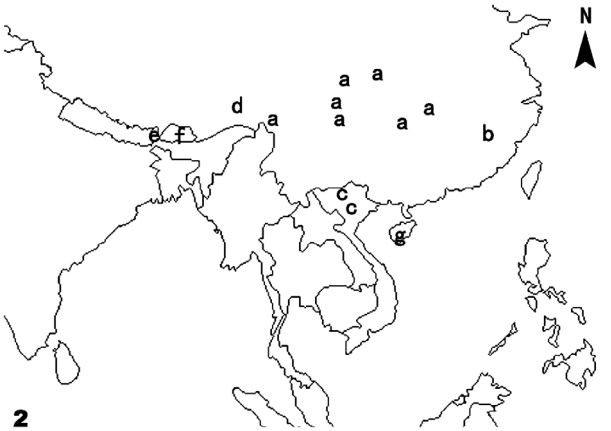

Fig. 2: Distribution map of the *nourmahal*-group: a = *Stichophthalma neumogeni neumogeni* Leech, 1892; b = *S. neumogeni pacifica* Mell, 1942; c = *S. neumogeni regulus* Brooks, 1949; d = *S. neumogeni renqingduojiei* Huang, 1998; e = *S. nourmahal nourmahal* (Westwood, 1851); f = *S. nourmahal nurinissa* de Nicéville, 1890; g = *S. nourmahal chuni* Joicey & Talbot, 1921.

Stichophthalma nourmahal chuni Joicey & Talbot, 1921 (colour plate 7: 6)

Bull. Hill Mus. **1**: 172, pl. 23: 18. TL: Five Finger Mts [Mt. Wuzhishan], Hainan.

Stichophthalma neumogeni le, Gu & Chen, 1997, Butt. Hainan Is.: 136, fig. 109. (nec Joicey & Talbot, 1921)

Material: 1 ♂, Hainan, 19.III.1922 (IZCAS).

Stichophthalma neumogeni Leech (with the following subspecies: *S. n. neumogeni* Leech from SW. and C. China, *S. n. pacifica* Mell, 1942 from SE. China, *S. n. renqingduojiei* Huang, 1998 from SE. Tibet and *S. n. regulus* Brooks, 1949 from N. Vietnam) and *S. nourmahal* (Westw.) [with the following subspecies: *S. n. nourmahal* (Westw.) from Sikkim, *S. n. nurinissa* de Nicéville, 1890 from Bhutan and *S. n. chuni* Joicey & Talbot from Hainan] can compose a species group called the *nourmahal*-group. This species group can be easily recognised from other species in this genus by the following combination of characters: 1. It is small in size; 2. a small dark mark inside the discal cell of the ventral HW is present, as in the *cambodia*-group species, whereas in other species it is absent; 3. the FW subapical spot is present as a white or ground coloured dot, especially in the ♀, whereas in other species it is absent; 4. the ventral submarginal ocelli are prominent in FW spaces 2 and 5 and HW spaces 2, 4 and 6, and present only as small degraded dots in other spaces on both wings, whereas in the *cambodia*-group they are absolutely absent from those above-mentioned other spaces, and in other species in this genus they are almost always prominent and complete on both wings.

The *nourmahal*-group is distributed from Sikkim eastwards to SE. China (fig. 2). Until now, no sympatric record of the two species has been reported. Generally, *S. neumogeni* Leech and *S.*

nourmahal (Westw.) can be separated from each other by the following characters: The dorsal surface ground colour is light and yellowish in *S. neumogeni* Leech, whereas in *S. nourmahal* (Westw.) it is dark and mainly brownish; arrow marks are developed in *S. neumogeni* Leech, whereas in *S. nourmahal* (Westw.) they are very small. However, the differences between the two are indistinct and mixed in *S. n. renqingduojiei* Huang. The dorsal surface ground colour of *S. n. renqingduojiei* Huang is intervenient between typical *S. neumogeni* Leech and *S. nourmahal* (Westw.). One form of *S. n. renqingduojiei* Huang (colour plate 7: 7) has developed arrow marks as in typical *S. neumogeni* Leech, but another form (colour plate 7: 8) has degraded small arrow marks as in typical *S. nourmahal* (Westw.). Therefore, despite the changeful ground colours from light to very dark in different subspecies of *S. neumogeni* Leech and *S. nourmahal* (Westw.), it is possible that the two species are conspecific.

Stichophthalma howqua bowringi Joicey & Talbot, 1921 (colour plate 7: 1)

Bull. Hill Mus. **1**: 172, pl. 23: 19. TL: Five Finger Mts, Hainan.

Material: 1 ♂, Hainan: Mt. Bawangling, Dong-er Forest farm, 9.V.2007, coll. Chen Fuqiang; 13 ♂♂, 1 ♀, Hainan: Mt. Wuzhishan, Shuiman Village, 730-900 m, 9.-11.V.2007, colls. Lang Songyun et al.; 1 ♂, Hainan: Mt. Jianfengling, 18.VII.1983; 2 ♀♀, Lai-mo-ling [Mt. Limuling], 13-16. VI.1935, coll. F. K. TO (all in IZCAS).

Until now, four subspecies of *S. howqua* (Westw.) have been known. They are *S. h. howqua* (Westwood, 1851) from E.China (Shanghai, Jiangsu, Zhejiang, N. Jiangxi and N. Hunan), *S. h. bowringi* Joicey & Talbot, 1921 from Hainan Island, *S. h. formosana* Fruhstorfer, 1908 from Taiwan Island and *S. h. iapetus* Brooks, 1949 from N. Vietnam. According to Monastyrskii & Devyatkin (2008), *S. suffusa* Leech, 1892 is a bona species which is separated from *S. howqua* (Westw.) - my study also supports their viewpoint. The speciation between *S. howqua* (Westw.) and *S. suffusa* Leech basing upon biogeographic evidence is a very interesting topic and worth a discussion in another separate paper.

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