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Coeliccia poungyi dasha subsp. nov. (Odonata, Platycnemididae, Calicnemiinae) from eastern Cambodia

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Abstract

Coeliccia poungyi dasha is described from the Annamense Mts. in the eastern Cambodia (holotype: Cambodia, Mondulkiri Province, a brook, a left tributary of the main river downstream Buu Sraa Waterfall, 12°34'01-19'' N 107°24'50''-25'03'' E, 416-490 m a.s., 15.06. 2014, RMNH). The new subspecies differs from the nominotypical one in coloration of the mesepisternum in males and end of the abdomen in both sexes, as well as in the length of the terminal lobe of the genital ligula.

Key words: Odonata, Zygoptera, *Coeliccia, poungyi, dasha*, new subspecies, Cambodia

Introduction

The genus *Coeliccia* Kirby, 1890 ranges from South China and Japan to India, Sundaland and the Philippines and is remarkably speciose. According to the regularly updated list of world Odonata species by M. Schorr and D. Paulson (2016), 62 valid species are currently accepted in this genus. This species richness is likely to be due to the restricted habitats of representatives of the genus at shady forest brooks which favour divergence, speciation and small geographical ranges. According to my count, 40 species of *Coeliccia* occur in continental Asia (Tsuda 2000; Wilson & Reels 2003; Xu 2006; Do 2007, 2011; Zhang & Huo 2011; Steinhoff & Uhl 2015; Dow 2016; Schorr & Paulson 2016), of which 11 are known from Vietnam (Tsuda 2000, Do 2011; Steinhoff & Do 2013; Steinhoff & Uhl 2015; Dow 2016), 13 from Laos (Yokoi & Souphanthong 2014) and 11 from Thailand (Hämäläinen & Pinratana 1999; Kosterin 2011). However, in the current sense the genus is paraphyletic in molecularly reconstructed phylogenetic trees (Dijkstra et al. 2014) and most probably will be soon split into smaller genera, or absorb the genus *Indocnemis* Laidlaw, 1917 (with two species, one of which occurring in all the three above mentioned countries and the other in Vietnam). The Odonata fauna of Cambodia, which is bordered by Vietnam, Laos and Thailand, is still insufficiently studied, so only two *Coeliccia* species have so far

been identified from this country, *Coeliccia kazukoae* Asahina, 1984 (Kosterin 2010, 2011) and *C. yamasakii* Asahina, 1984 (Kosterin & Holden 2011). A possibly undescribed species related to *C. kazukoae* has also been reported (Roland et al. 2011).

There are two continental species of *Coeliccia* in which most of the mesepisternum of the males is occupied by one large spot, chrome yellow in *Coeliccia chromothorax* (Selys, 1891) and *sky blue in C. poungyi* Fraser, 1924, both broadly ranging over Myanmar, Thailand, Laos and Vietnam. (The same condition is found in *Indocnemis orang* (Förster in Laidlaw, 1907)). Laidlaw (1932: 25) noted on *C. poungyi* the following: "The male of this species resembles in colour-pattern though of course not in colour the species chromothorax". Although Laidlaw (1923) classified both species with respect to venational characters, which in fact are not so reliable (Dow 2010), to the same *didyma* group, they are not obviously closely related since they have a profound difference in the structure of the genital ligula (Laidlaw 1923; Fraser 1933; Asahina 1984).

In June 2014 I encountered two *Coeliccia* males in eastern Cambodia, which, at first glance, looked like *C. ponugyi*, with most of the mesepisternum sky blue and the end of the abdomen yellowish (Fig. 1, 3). However, the colour pattern of the end of abdomen differs from the typical *C. poungyi* in having significantly reduced pale coloration, resembling that in *C. chromothorax*; the pale coloration is also reduced on the mesepisternum (Fig. 1, 3). The anal appendages are similar to typical *C. poungyi*, while the ligula, although also similar in its principal structure, shows a considerable difference. In August 2016 I revisited that locality and collected ten more males and three females. These specimens are described below as a new subspecies of *C. poungyi*.

Figure 1. A male of *Coeliccia poungyi dasha* subsp. nov. in nature in its type locality: Cambodia, Mondulkiri Province, 'Loringae brook' [a working nickname], the left tributary of the main river downstream Buu Sraa Waterfall, 15.06.2014.

Figure 2. A tandem of *Coeliccia poungyi dasha* subsp. nov. in nature in its type locality, 03.08.2016.

Material and methods

Specimens were collected with a net and photographed alive and free in the field using Olympus Camedia C8080 and Canon EOS 350D cameras. The specimens collected in 2014 (the holotype and a paratype) were preserved dry; of the specimens collected in 2016, 2 ♂, 1 ♀ were preserved in alcohol, others dry after overnight treatment with acetone. The genital ligula was cut out of the 2014 paratype (as well as from a specimen of *C. poungyi poungyi*) and everted in the two male paratypes of 2016 preserved in alcohol. Morphological details were photographed with a lens Zeiss Stemi 2000-C equipped with a digital camera Canon PowerShot A640 at the Institute of Cytology and Genetics of the Siberian Branch of the Russian

Academy of Sciences, Novosibirsk. Images with broad focus zones were obtained from serial photos with shifted focus using the program Helicon Focus 5.3.

The males of the new subspecies were compared to a specimen of *C. poungyi poungyi* at my disposal from Thailand, Mae Hong Son Province, the environs of Pai, November 7, 2009, N. Vikhrev leg. (Fig. 3d, 4e-h), a location at the border with Myanmar, just 360 km south-east of the type locality of *C. poungyi* (the new subspecies was collected 1,670 km south-east of this). Its characters fit all descriptions in literature, including the ligula structure as illustrated by Laidlaw (1932) and Asahina (1984).

***Coeliccia poungyi dasha* subsp. nov.**

(Figs. 1, 2, 3a-c,e-h, 4a-d,i-m, 5a-e, 6a-c, 7, 8a-e)

Type material

Holotype: ♂ (Fig. 3a-b,e-g, 4b-d,i-m, 5a-e), Cambodia, Mondulkiri Province, 'Loringae brook' [a working nickname], the left tributary of the main river downstream Buu Sraa Waterfall, 12°34'01-19" N 107°24'50"-25'03" E, 416-490 m a.s.l., Jun-15-2014, O. Kosterin leg.; deposited in Naturalis Biodiversity Centre, Leiden, the Netherlands (RMNH). Paratypes: ♂ (Fig. 3c,h, 4a, 6a-c, 7, 8a-e), the same data; 10 ♂, 3 ♀ (collected in tandems with males), the same locality, Aug-03-2016, O. Kosterin leg. (in RMNH, in the Natural History Museum, London (BMNH) and the author's collection).

Etymology

Dasha is the hypocorism of the Russian feminine name Darya (Daria); a noun in apposition.

Diagnosis

Holotype male. - Head (Fig. 3f-g) black with some contrasting bluish markings: a stripe from eye to eye at level of clypeus, broken into four pieces, a pair of short strokes laterad of the lateral ocelli, a pair of narrow, isolated postocular marks. Apex of 1st antennal segment yellowish, that of 2nd brown. Labium black with postmentum and bases of labial palpi yellowish. Eyes in life bicoloured, black above, azure blue below (Fig. 1,2), brown in dry specimen.

Thorax: - Prothorax (Fig. 3e) black with bluish sides, black colour extending someway along rear of propleuron. Synthorax (Fig. 3a-b) bicoloured light azure blue and black. Most area of mesepisternum occupied by a large blue oval spot with a rounded anterior side and a bluntly laterally pointed posterior side; its black margins broad, posterior side of mesepisternum black for ca 15% of its length (Fig. 3b). Synthorax blue with a black humeral stripe with a small ventral spur at ca 2/3 of its length and a black stripe along metapleural suture, broadening towards legs (Fig 3a). Sclerites of ventral sides blue but with indistinctly brownish anterior margins. Coxae bicoloured, black with broad posterior blue spots. Legs brownish-black.

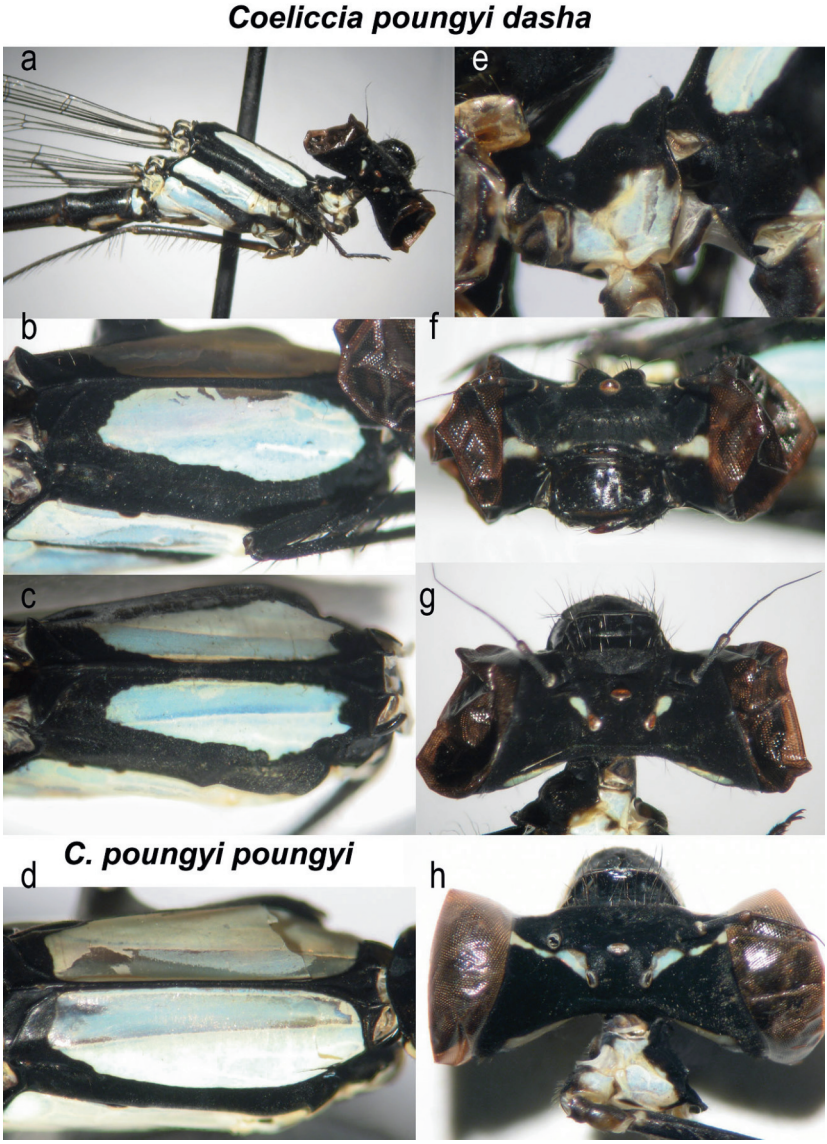

Figure 3. Details of the head and thorax of the holotype (a-b,e-g) and paratype (c,h) of *Coeliccia poungyi dasha* subsp. nov. in comparison with a male of *Coeliccia poungyi poungyi* from Thailand, Mae Hong Son Province, Pai env. (7.11.2009, N. Vikhrev leg) (d): a – head and thorax, lateral view; b-d – mesepisternum, subdorsal view; e – prothorax, lateral view; f – head, frontal view; g-h, head, dorsal view. Not to scale.

Wings. - hyaline; venation black. 19 postnodal crossveins in left fore wing, 20 in right fore wings, 17 (left) – 18 (right) in hindwings. Pterostigmata blackish brown, with a slightly lighter rim. IR3 arises distal to subnodus, R4 proximal to it.

Abdomen. - mostly black. S1 with a blue posterior ring broading at sides. S2 with a fine blue dorsal streak and whitish lateral areas above secondary genitalia (Fig. 3a). S3 tergite margins dull yellowish at anterioventral corners; S3-S4 with traces of finest yellowish dorsal streak. S9 tergite dorsally with a pair of brownish spots at posterior margin (Fig. 4b); S10 yellowish-white with lateral brown spots with diffuse margins (Fig. 4b-c, 5a-c), sternites of S9-10 and apex of S8 sternite also whitish (Fig. 4d).

Appendages (Fig. 4b-d, 5a-e). - yellowish-white, only margin of ventral projection of cercus and terminal tooth of paraproct black. Cerci in dorsal view (Fig. 4b, 5a)

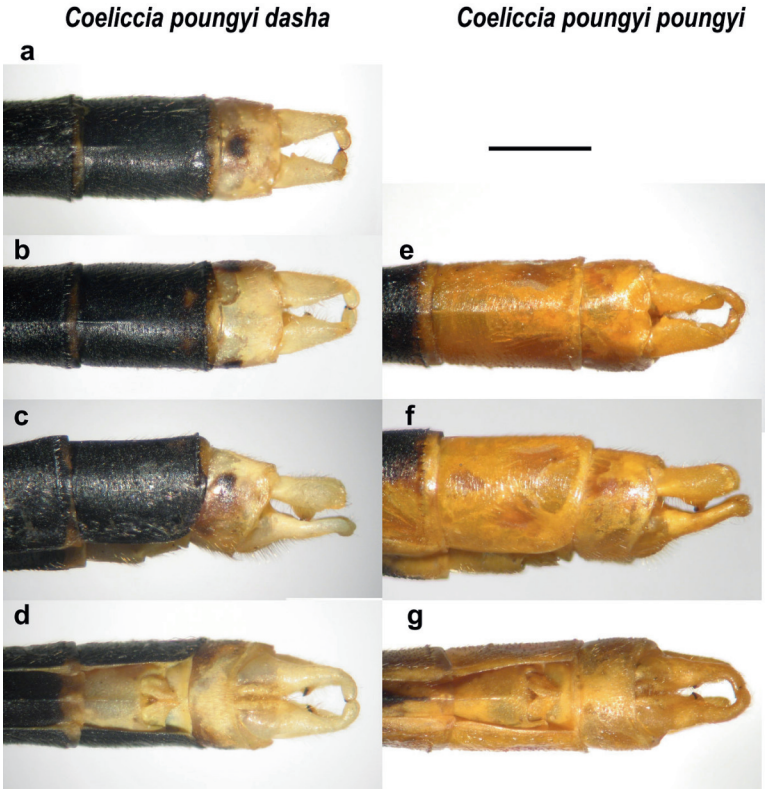

Figure 4. Details of the end of abdomen of the holotype (b-d,i-m) and paratype (a) of *Coeliccia poungyi dasha* subsp. nov. in comparison with a male of *Coeliccia poungyi poungyi* from Thailand, Mae Hong Son Province, Pai env. (e-g): a-b,e – dorsal view; c,f – lateral view; d,g – ventral view. Scale bar 1 mm.

elongate triangular with rounded apices, in lateral view cercus club-shaped with a subtruncated but rounded apex and a large, roughly semicircular ventral projection at about middle of cercus length (designated as 'vp' in Fig. 5). Ventral view (Fig. 4d, 5d) shows that this projection terminates with a straight, ax-like black subtransversal blade. As seen in an oblique dorsal view (Fig. 5b), inner surface of cercus extends as a lengthwise rib above ventral projection, this rib ends proximally with a large, blunt subbasal tooth (designated as 'st' in Fig. 5). Paraprocts slightly longer than cerci, with broad bases, tapering and curving towards each other terminally, with thick rounded apices furnished with a small black tooth (Fig. 4a-d, 5a-e).

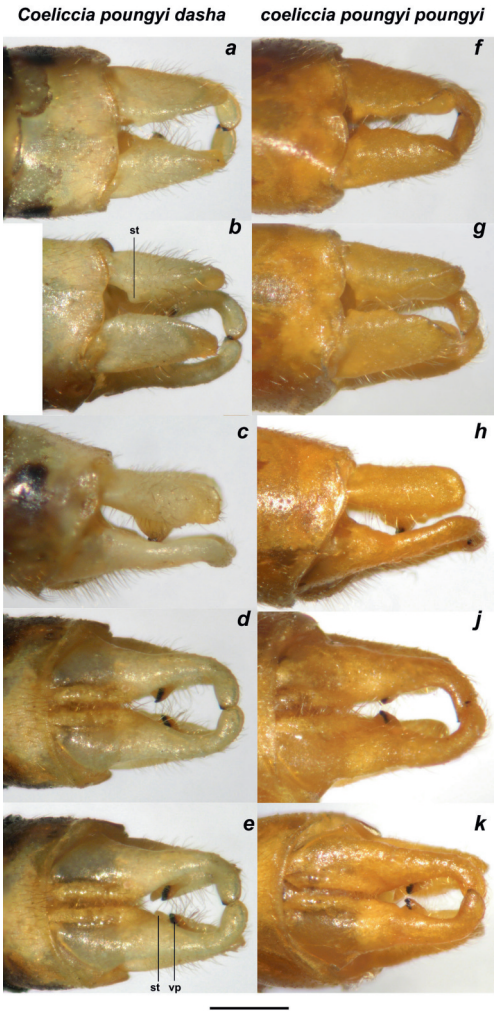

Figure 5. Details of the anal appendages of the holotype of *Coeliccia poungyi dasha* subsp. nov. (a-e) in comparison with a male of *Coeliccia poungyi poungyi* from Thailand, Mae Hong Son Province, Pai env. (f-k): a,f – dorsal view; b,g – subdorsal view; c,h – lateral view; d,j – ventral view; e,k – posterioventral view; st – subbasal tooth; vp – ventral projection. Scale bar 0.5 mm.

Genital ligula (examined in three paratypes) (Fig. 6a-d). - with a bluntly rounded terminal lobe between flagellae, approximately 1/3 shorter than in the nominotypical subspecies (Fig. 6e).

Measurements (mm). - Abdomen with appendages 38; hindwing 25; total length 45.

Variation in male paratypes. - All but one males have a pair of short blue streaks laterad of the lateral ocelli (Fig. 3g), while in the 2014 paratype they are prolonged as streaks reaching the eyes (Fig. 3h), while the blue stripe at the level of the clypeus is interrupted only centrally. Note that this extension of the pale marking is opposite to its maximum reduction on the mesepisternum in this specimen.

In some 2016 paratypes, the azure blue colour gradually changes to yellowish at the ventral side and ventral parts of sides of the thorax and on the coxae; the ventral side of trochanters and proximal parts of the femora are yellowish; perhaps these specimens are not fully mature. The anterior end of the blue mesepisternal spot is deeply notched in the 2014 paratype (Fig. 3c), not so in other males (Fig. 1, 2, 3b).

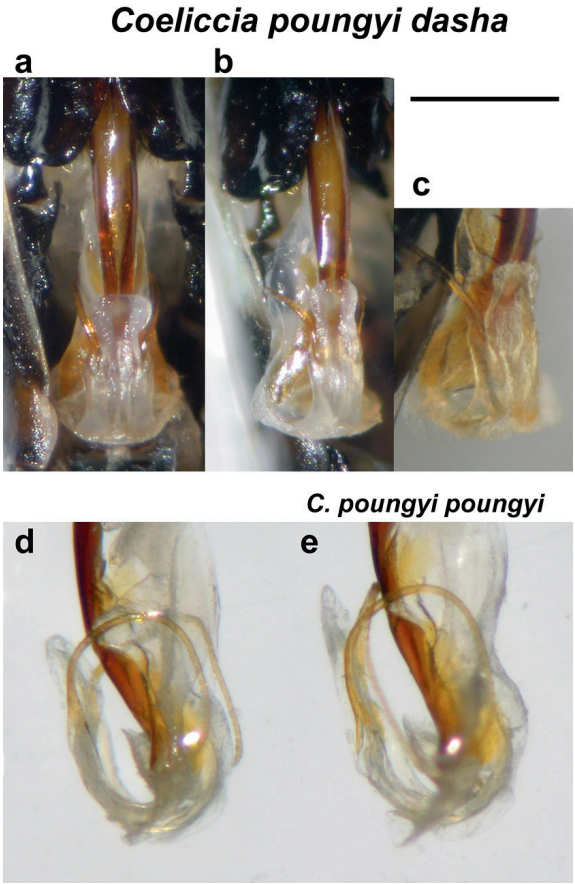

Figure 6. Distal part of ligula of the paratypes (a-d) of *Coeliccia poungyi dasha* subsp. nov. in comparison with a male of *Coeliccia poungyi poungyi* from Thailand, Mae Hong Son Province, Pai env. (e): a,b – two different 2016 paratypes preserved in alcohol; c,d – the 2014 paratype preserved dry; a – ventral view; b,c – lateroventral view; d,e – lateral view. Scale bar 0.5 mm.

Among the 2016 paratypes, there are 4 cases (in 3 individuals) when IR3 arises exactly from below subnodus in fore wings. In the 2014 paratype, IR3 arises exactly from below the subnodus in all wings while R4 arises proximal to it in hindwings but from the same point below the subnodus in fore wings; in the left fore wing IR3 and R4 are free at origin while in the right forewing they share a common stalk before the transversal vein.

Postnodal crossveins: 17–21 in forewing, 16–19 in hindwings.

In 13 males in total (the holotype, 11 paratypes and a photographed male), S10 has brownish areas on its sides (as in the holotype, see Fig. 4b-c, 5a) in four males, on its dorsum (Fig. 4a, 7) in three males, both on dorsum and sides in four males, and none in one male (Fig. 7). The degree of this melanisation on S10 is variable; in one specimen the S10 tergite is almost entirely blackish.

Measurements (mm): abdomen with appendages 36–41; hindwing 22–25; total 44–48.

Female. - (Fig. 2, 8). Bicolorous, bright yellow and black.

Head. - (Fig. 8c,d) black with yellow marking. Mandibles and genae entirely yellow, labrum yellow with a black upper border; two lateral spots on anteclypeus; postclypeus yellow below, with uneven margins of black, but this yellow stripe is discontinuous at anteclypeus base; an uneven yellow transverse stripe behind antennal bases and in front of ocelli (here it narrows considerably); narrow postocular yellow stripes. Rear part of head with broad yellow stripes along eyes, deeply incised at their ventral corners. Apex of 1st antennal segment yellow. Labium entirely yellow. Eyes in life bicoloured, black above, greenish-blue below (Fig. 2).

Thorax: - Prothorax (Fig. 8b) black on dorsum and yellow at sides; the border of colours has two small narrow protuberances at anterior

Figure 7. Variable coloration of S10 in male paratypes of *Coeliccia poungyi dasha* subsp. nov. collected in 2016. Scale bar 0.5 mm.

Coeliccia poungyi dasha

Coeliccia poungyi poungyi

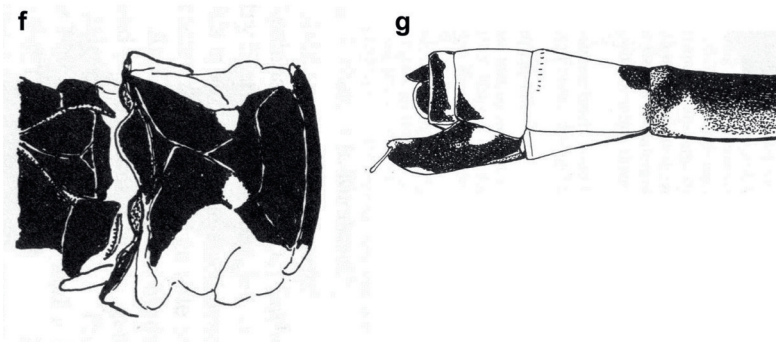

Figure 8. Details of a female paratype of *Coeliccia poungyi dasha* subsp. nov. (a-e) and drawings of a female of *Coeliccia poungyi poungyi* from Thailand, Doi Suthep, after Asahina (1989: fig. 23-24): a – head and thorax, lateral view; b – prothorax, lateral view; c – head, dorsofrontal view; d – ditto, frontal view; e,g – end of abdomen, lateral view; f – prothorax, dorsolateral view; f – from Asahina (1989: fig. 23), mirrored; g – from Asahina (1989: fig. 24), mirrored. Not to scale.

lobe and one at posterior lobe but its general outline is rather smooth, with black dorsal colour only slightly constricted at middle. Posterior margin with central lobe smoothly triangular and lateral lobes (lappels according to Laidlaw 1932) triangularly projecting in upper part, as in *C. p. poungyi*; all these lobes black. Mesepisternum (Fig. 8a) with an even yellow antehumeral stripe almost throughout its length but not reaching posterior margin. Black stripe along 2nd thoracic suture (Fig. 8a) narrow and ends at inframetepisternum; in one specimen borders of the latter with blackish shades. Coxae and protrochanters entirely yellow, trochanters with black shades at distal margin, femora yellow with a black stripe on dorsal side; tibiae dull brownish-yellow, tarsi blackish-brown, all spines and claws black (Fig. 8a).

Wings. - hyaline; venation brownish black. 18–20 postnodal crossveins in fore wings, 17–19 in hindwings. Pterostigmata brown with lighter rim. IR3 arises distal to subnodus, R4 proximal to it.

Abdomen. - mostly black. S2-S5 and a proximal part of S6 with a fine yellow middorsal streak interrupted at segment joints; sides of S1 entirely yellow; sides of S2-S8 with broad ventral yellow stripes interrupted with diffuse brownish darkening at segment ends; at S3 anetrior border there is a dorsally interrupted yellow ring. S8 with a pair of diffuse but well expressed, round dorsolateral yellow spots in one specimen (Fig. 8e), obscure lightening at their place in another specimen and no trace of lightening in the third specimen. Black on S9 dorsum narrows distally in a triangular manner but in two specimens inside it there is a small yellow spot at proximal margin; sides of S9 with brownish proximal darkening (Fig. 8e), almost black in the most melanised specimen. S10 entirely yellow in one specimen, with some dorsal blackening in the two others; cerci yellow. Sternites S7-S8 yellow with a black midventral stripe; ovipositor brownish-yellow, with a brownish margin (Fig. 8e).

Measurements (mm). - Abdomen with appendages 41; hindwing 28–29; total length 49–51.

Differential diagnosis. - The males of the new subspecies differ from the nominotypical one structurally by a 1/3 shorter and blunter terminal tongue-like lobe of the male ligula (Fig. 6a-d, compare Fig. 6 eand Asahina 1989: fig. 21), and by the colour of the last abdominal segments being whitish-yellow (Fig. 4a-d) rather than chrome yellow (Fig. 4e-g) and occupying, as far as the tergites are concerned, only S10 (Fig. 1, 4a-d), whereas the apex of tergite S8 and tergites S9-10 entirely in *C. poungyi poungyi* (Fig. 4e-g). The same diagnostic character is found in females, which have dorsum of S8 completely, of S9 largely and of S10 variably black (Fig. 8d), while in *C. poungyi poungyi* dorsum of S8 is largely and of S9 completely yellow (Fig. 8g; Asahina 1984: fig. 24). As a difference from female of *C. poungyi poungyi* (Fig. 8g), there is no blackening of S10 sides, appendages and ovipositor. In males, the blue spot on mesepisternum occupies a more limited area: the mesepisternum is black posteriorly for 15-20% of its length (Fig. 3a-c), versus 10% in *C. p. poungyi* (Fig. 2d), while the posterior end of this area has a strongly skewed outer margin (forming a more acute angle to the mesepisternum margins) in the new subspecies (Fig. 3a-c) than in *C. p. poungyi* (Fig. 3d). The female prothorax (Fig. 8b) misses a pair of yellow spots on black dorsum, found in *C. poungyi poungyi* (Fig. 8f; Asahina 1984: fig. 23).

Figure 9. Habitat of *Coeliccia poungyi dasha* subsp. nov., the 'Loringae brook' downstream of the Buu Sraa Waterfall. 03.08.2016.

Habitat

These damselflies were found near a brook (Fig. 9) situated downstream of the popular Buu Sraa Waterfalls, at an elevation of 420-460 m a.s.l. This brook has a partly silty and partly stony bed, with rapid sections and pools and a waterfall, shaded by tall evergreen forest and bamboo understorey. The brook descends from the left slope of the forested main river gorge through a hilly terrain originally clad with deciduous dipterocarp forest, now mostly replaced by plantation. More individuals of *C. poungyi dasha* subsp. nov. were found closely downstream of the waterfall, none at the mouth. They preferred half open, less shaded places, perching mostly on tips of large leaves, mostly of gingers (*Curcuma stenochila* and *C. petiolata*) predominating in the habitat, less frequently on small palm fronds and or plants. Males were quite active and often changed a perch, even in overcast weather after a strong rain on 03.08.2016. I observed a tandem sitting on mossy wet ground but not ovipositing. The type location of *C. p. dasha* is also the type locality of *Asiagomphus reinhardti* Kosterin et Yokoi, 2016 (Kosterin & Yokoi 2016).

Distribution

So far the new subspecies is known only from its type locality in East Cambodia but it can be expected to occur elsewhere in similar habitats on the Central Plateau of the Annamense Mountains which extend into Vietnam, the border of which is 17 km to the east of the type locality.

Discussion

C. poungyi is a distinctive species (especially in the genital ligula bearing a terminal lobe, see Fig. 5), with no obvious close relatives. It was described from Maymyo (presently Pyin Oo Lwin) in upper Myanmar (Fraser 1926, 1933) and ranges broadly also in Thailand (Asahina 1984; Hämäläinen & Pinratana, 1999), Laos (Yokoi &

Figure 10. The presumed range and the type locality (black triangle) of *Coeliccia poungyi poungyi* and the type locality (black square) of *C. p. dasha* sp. nov. (based on Fraser 1933; Hämäläinen & Pinratana 1999; Yokoi & Souphanthong 2014; http://odonatavietnam.blogspot.ru/search/label/*Coeliccia*).

Souphanthong 2014) and Vietnam (Do 2011) (Fig. 10). Its characters are described in detail and the appendages are illustrated by Laidlaw (1932), Fraser (1933) and Asahina (1984), and the genital ligula structure and coloration pattern illustrated by Laidlaw (1932) and Asahina (1984). According to these literature sources, and also 19 photos uploaded up to date to www.allodonata.com, the colour patter in the

male of this species is fairly stable, and the photos by Tom Kompier show the same for specimens from Xuan Son, a national park ca 100 km west of Hanoi, North Vietnam (http://odonatavietnam.blogspot.ru/search/label/Coeliccia). In particular, the blue spot occupies almost the entire mesepisternum and the chrome yellow colour occupies entirely S9-10 and the anal appendages and the apical part of S8, where it is always present on the sides and usually also on the dorsum. These characters, however, show diagnostic differences in the new subspecies.

The appendage structure of the new subspecies (Fig. 5a-e) resembles that in *C. p. poungyi* (Fig. 5f-k). The subbasal tooth of the cercus appears to be situated slightly more proximally (Fig. 5b, compare Fig. 5g) but without data on variation of its position in *C. p. poungyi* this slight difference cannot be claimed diagnostic. It is noteworthy that all earlier authors (Laidlaw 1923; Fraser 1933; Asahina 1984) did not show the subbasal tooth of the cerci, which is best seen in ventroposterior view (Fig. 5e,k, see 'st') and hardly visible at oblique dorsal view (Fig 5b,g).

Although the difference from *C. p. poungyi* in the coloration of the terminal abdominal segments is striking (Fig. 4a-d vs Fig. 4e-g), extent of melanisation is considered a not so reliable character in Odonata in general (Dijkstra 2003), and it is known to change with age in *Coeliccia* (Laidlaw 1932; Kosterin & Vikhrev 2009; Kosterin 2010, 2011; Steinhoff & Do 2013; Steinhoff & Uhl 2015). Nevertheless, the new subspecies shows a sound difference from the nominotypical one in the genital ligula which has a shorter, bluntly rounded terminal projection, identical in the three studied paratypes (Fig. 6a-d, compare Fig. 6e). Maybe further studies will provide evidence that the taxon *dasha* is a full species, sister to *C. poungyi*. The fact that the colour pattern of *C. p. poungyi* appears to be stable over its range is an argument in favour of a specific status of the new taxon. The new taxon seems to be isolated in the Annamense Mts. while *C. p. poungyi* ranges from Upper Myanmar to North Vietnam and most probably South China (Fig. 10); so in the situation of possible allopatry I abstain from claiming it is a species. The key area to clarify the relationship and taxonomic status of *C. p. poungyi* and *C. p. dasha* is Laos where a zone of either transition or co-occurrence, or possibly a gap between the distributions of the two taxa is expected to occur. Yokoi & Souphanthong (2015) summarised current knowledge of the distribution of Odonata in Laos; their map (Yokoi & Souphanthong 2015: 79) shows eight records of *C. poungy*i in northern and central Laos but none in southern Laos. In order to clarify the status of the new subspecies in relation to *C. p. poungyi*, it seems especially worthwhile to search suitable habitats in southern Laos.

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References

Asahina, S. 1984. A list of the Odonata from Thailand. Part VI. Platycnemididae – genus Coeliccia. Tombo 27: 2-20.

Dijkstra, K.-D. 2003. Problems of Chlorocypha classification: four cases from West Africa and a discussion of the taxonomic pitfalls (Odonata: Chlorocyphidae). International Journal of Odonatology 6 (2): 109-126.

Dijkstra, K.-D. B., Kalkman, V. J, Dow, R. A., Stokvis, F. R. & van Tol, J. 2014. Redefining the damselfly families: a comprehensive molecular phylogeny of Zygoptera (Odonata). Systematic Entomology 39: 68-96.

Do, M.C. 2007. *Coeliccia hoanglienensis* spec. nov., a new platycnemidid damselfly from Hoang Lien Mountains in the south of Vietman (Zygoptera, Platycnemididae). In B.K. Tyagi (Ed.) Odonata: Biology of Dragonflies. Scientific Publishers, Jodhpur, pp. 343-348.

Do, M.C. 2011. *Coeliccia sasamotoi* sp. nov. from Vietman and Laos (Odonata, Platycnemididae). International Journal of Odonatology 14 (3): 193-197.

Dow, R.A. 2010. Revision of the genus *Coeliccia* (Zygoptera: Platycnemididae) in Borneo. Part 1: the borneensis-group of species. Zoologische Mededelingen 84: 117-157.

Dow, R.A. 2016. A remarkable new species of *Coeliccia* from the Tuyen Lam Lake area, Lam Dong, southern Vietnam (Odonata: Zygoptera: Platycnemididae). Zootaxa 4103 (5): 481-486.

Fraser, F. C. 1933. The Fauna of British India, including Ceylon and Burma. Odonata. Vol. I. Taylor and Francis, London.

Hämäläinen, M. & Pinratana, A. 1999. Atlas of the Dragonflies of Thailand. Distribution maps by provinces. Brothers of St. Gabriel in Thailand, Bangkok.

Kosterin, O.E. 2010. A glance at the Odonata of the Cambodian coastal regions: end of dry season in 2010. International Dragonfly Fund Report 29: 1-75.

Kosterin, O.E. 2011. Odonata of the Cambodian coastal regions revisited: beginning of dry season 2010. International Dragonfly Fund Report 40: 1-108.

Kosterin, O.E. & Holden, J. 2011. Some photographic records of Odonata in Cambodia. International Dragonfly Fund Report 42: 1-6.

Kosterin O.E. & Vikhrev N. 2009. Some new provincial records of Odonata made in Thailand in 2007-2009 and a new record for Vietnam. Agrion 13 (2): 75-79.

Kosterin O.E. & Yokoi N. 2016. *Asiagomphus reinhardti* sp. nov. (Odonata, Gomphidae) from eastern Cambodia and southern Laos. Zootaxa 4103(1): 35-42.

Laidlaw, F.F. 1932. A revision of the genus *Coeliccia* (Order Odonata). Records of Indian Museum 34: 7-42.

Roland, H.-J., Sacher, T. & Roland, U. 2011. New records of Odonata for Cambodia –results from a trip to various places of the country November 14th –December 1st 2010. International Dragonfly Fund Report 35: 1-22.

Schorr, M., & Paulson, D. 2015. World Odonata List. Online resource, http://www.pugetsound.edu/academics/academic-resources/slater-museum/biodiversity-resources/dragonflies/world-odonata-list2/; accessed on 16.08.2016.

Steinhoff, P.O.M. & Do M.C. 2013. Notes on some *Coeliccia* species from Vietnam (Zygoptera, Platycnemididae). Odonatologica 42 (4): 347-357.

Steinhoff, P.O.M. & Uhl, M.C. 2015. Taxonomy and nomenclature of some mainland SE-Asian *Coeliccia* species (Odonata, Platycnemididae) using micro-CT analysis. Zootaxa 4059 (2): 257-276.

Tsuda S. 2000. A Distributional List of World Odonata. Published privately, Osaka.

Wilson, K.D.P. & Reels, G.T. 2003. Odonata of Guangxi Zhuang autonomous region, China, part 1: Zygoptera. Odonatologica 32 (3): 237-279.

Xu, Q.-h. (2006). *Coeliccia mingxiensis* sp. nov. from Fujian, China (Odonata: Platycnemididae). International Journal of Odonatology 9 (2): 250-254.

Yokoi N. & Souphanthong V. 2014. A List of Lao Dragonfliles. Kyoei Printing Co Ltd., Koriyama.

Zhang, H.-j. & Huo K.K. 2011. A study of the genus *Coeliccia* Kirby, 1890 from Shaanxi (China), with the description of *C. wilsoni* Zhang & Yang spec. nov. (Zygoptera: Platycnemididae). Odonatologica: 40 (1): 51-56.

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