A new species of *Tongeia Tutt*, [1908] from Northeast Yunnan, China
(Lepidoptera: Lycaenidae)

by
Hao Huang¹ & Zhong Chen²
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Abstract: *Tongeia dongchuanensis* spec. nov. is described from Dongchuan, NE. Yunnan, China. It is closely allied to *Tongeia potanini* (Alpheraky, 1889) in phylogeny and is similar to *Tongeia zuthus* (Leech, [1893]) and *Tongeia hainani* (Bethune-Baker, 1914) in appearance. For comparison, all the known species of *Tongeia Tutt*, [1908] are discussed and a key is given.


Introduction: Recently a strange looking σ specimen of the genus *Tongeia Tutt*, [1908] was collected by the junior author from Dongchuan, NE Yunnan. After a careful study, including dissection of the σ genitalia, the authors have concluded that this unique specimen represents a distinct new species, here described as

*Tongeia dongchuanensis* spec. nov.

Holotype σ (colour plate 4: G), Length of forewing 14,5 mm. Dongchuan, NE Yunnan. China. No detailed collecting data.

Etymology. This new species is named after its type locality, Dongchuan.

Diagnosis
In external features, this new species is very similar to *T. zuthus* (Leech, [1893]) from Sichuan and *T. hainani* (Bethune-Baker, 1914) from Taiwan, but can be easily distinguished from them by the following combination of characters.
1: The ground color on the underside of both wings is uniformly whitish, whereas in *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker) it is more or less brownish.
2: On the underside of the forewing the discal spots are not followed by a dark shade on
their outer side, whereas in *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker) they are followed by such coloration in the postdiscal area.

On the underside of the hindwing, the orange color is fully developed in space 2 in association with the submarginal crescent marking, but absent in space 3, whereas in *T. zuthus* (Leech) the orange color is fully developed in spaces 2 and 3, whereas in *T. hainani* (Bethune-Baker) the color is completely absent.

4. On the underside of the hindwing there is no spot near base of space 1c adjoining the spot mid cell, which is present in both *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker). The genitalia are very much different: the inner harpe of valva is much longer than in *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker), and the posterior angle of the valva is smooth, and without the hook or spine which is present in *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker).

This new species is similar to *Tongeia potanini* (Alpheraky, 1889) in that the genitalia have an elongate and sharply pointed inner harpe to the valva, but can be easily distinguished from the latter by the following combination of characters.

1. On the underside of the forewing, the upper discal spots in spaces 3-6 are well separated, not fused into a single smooth band as in *T. potanini* (Alph.), and the lower discal spots in spaces 1b and 2 are well separated too, not conjoined as in *T. potanini* (Alph.).

2. On the underside of both wings the submarginal crescents are well separated, not conjoined as a band as in *T. potanini* (Alph.), and the marginal spots are well separated too, not conjoined as in *T. potanini* (Alph.).

3. On the underside of the hindwing the discal spot in space 6 is placed inside of that in 7, the two spots are well separated and are not conjoined as in *T. potanini* (Alph.), and are directed towards the discocellular bar, not at the anal angle of hindwing as in *T. potanini* (Alph.).

4. The genitalia are different: valva is rather broad at caudal 1/3, not tapered from the base to the caudal end and phallus not tapered near the tip as in *T. potanini* (Alph.).

**Discussion:** Although the new species is very similar to *T. zuthus* (Leech) and *T. hainani* (Bethune-Baker) in its external features, it is not closely allied because the species does not share any important genital structures. It is very possible that *T. potanini* (Alph.) is the most closely allied species of *T. dongchuanensis* spec. nov in phylogeny, because both share the following distinctive characters which are not found in other species: 1. the underside of the hindwing is without a spot near the base of space 1c adjoining the spot mid cell, 2. the inner harpe is overlapped with the ampulla and fully developed like a rifle bayonet. [In *T. bella* Huang, 2001, the inner harpe is also developed like a bayonet, but is well, but well separated from the ampulla at the base, not overlapped by the ampulla as in *T. potanini* (Alph.) and *T. dongchuanensis* spec. nov].

It is also possible that *T. dongchuanensis* spec. nov is similar to *T. potanini* (Alph.) in nature, as the latter has been found in most areas of N. Yunnan (many specimens have been examined). The very little known *Everes arcana* Leech, 1890 is only based upon a single type specimen from Hubei, Central China and cannot belong to *Tongeia Tutt* because the
butterfly illustrated in the original description has its upperside ground color bluish on the basal half of the forewing.

The recently described *T. shaolinensis* **Wang & Niu**, which is based upon a single ♀ from Henan, Central China is apparently only a **new junior synonym** of *T. fischeri* (Eversmann). According to its original figure and description, *T. shaolinensis* **Wang & Niu** differs from *T. fischeri* (Eversmann) only in that the underside forewing discal spots are in a straighter line and the underside hindwing discal spots are closer to the submarginal spots. However, such variation does not exceed that experienced in *T. fischeri* (Eversmann).

Hitherto 14 valid species have been known within TongeiaTutt including the new species, and a checklist is as follows:

5: *T. dongchuanensis* **Huang & Chen** **spec.nov.**; distribution: NE Yunnan. Specimen and ♀ genitalia here illustrated.
7: *T. fischeri fischeri* **(Eversmann, 1843)**; type locality: Spasskoe, Russia; distribution: Russia, Japan, Korea, China. Specimens illustrated in various journals. ♀ genitalia illustrated in Kawazoe & Wakabayashi (1979: 170) and Wang & Fan (2002: 323).
7 a: *T. fischeri caudalis* **(Bryk, 1946)**; type locality: Korea.
7 c: *T. fischeri sachalinensis* **(Matsumura, 1925)**; type locality: Sachalin Is.
7 d: *T. fischeri thyestes* **(Seitz, [1923])**; type locality: not provided in original description.

Notes: The subspecific division is questionable and not widely accepted. The taxon *T. fischeri thyestes* **(Seitz)** was illustrated and described simply by Seitz under the term of „fischeri“ to have distinct dark dots on underside „joined to strigiform chains“ The name „thyestes“ was attributed to Frühstorfer in Seitz, but according to ICZN it should be attributed to Seitz because he was the author of the description whilst Frühstorfer did not publish any text on this subject. The name „thyestes“ was incorrectly listed under *T. kala* **(De Niceville)** in Bridges' catalogue just because Seitz wrongly treated „kala“ as a geographical variation of *T. fischeri* (Eversm.) and „kala“ was listed
under the term of *T. fischeri* (Eversm.) and followed by „thyestes“ in Seitz.


9a: *T. ion cellarius* (Bollow, 1930); distribution: Gansu and Shaanxi. Specimens illustrated in Chou & al. (1994).


10: *T. kala* (De Niceville, 1890); distribution: Naga Hills and Khasia Hills, NE India; Shan States, Burma. Specimen illustrated in Evans (1932, plate 27). σ genitalia illustrated in Cantile (1964).

Notes: According to Cantile (1962) the two valvae of *T. kala* (De Niceville) were wrongly shown in Cantile (1964) and the valva on the left should be placed on the right of the other, thus the valva should be pointed outwards and bifid at the apex in the ventral view. This bifid apex is unique and not found in other species of Tongeia.


To distinguish the new species from all others, a key is provided as follows. The authors have examined specimens of almost all species, except only *T. kala* (De Niceville) from Burma, which is known to us only from the literature.

Key to species of *Tongeia* Tutt

1. Upperside forewing discocellular bar clearly marked in pale blue; underside hindwing all submarginal spots broadly associated with orange coloring; inner harpe of valva separated from ampulla deeply at base, not overlapped with ampulla—**bella**
Upperside forewing discocellular bar absent, at most bearing some blue scales; underside hindwing without orange coloring in submarginal area or at most only lower submarginal spots broadly associated with orange coloring; inner harpe of valva overlapped with ampulla 2

2. Underside of hindwing without a spot near base of space 1c adjoining the spot mid cell; inner harpe developed like a long and straight sword bayonet pointing posteriorly—3
   Underside of hindwing with a spot near base of space 1c adjoining the spot mid cell; inner harpe not developed like a long and straight rifle bayonet pointing posteriorly—4

3. Underside forewing discal spots in spaces 3-6 fused into a straight and smooth band; underside hindwing discal spots in spaces 6 and 7 conjoined and directed to anal angle of hindwing; valva tapered from base to tip in lateral view, phallus tapered near tip potanini
   Underside forewing discal spots in spaces 3-6 well separated; underside hindwing discal spots in spaces 6 and 7 well separated and directed to the discocellular bar; valva not tapered from base to tip in lateral view, phallus stout and downcurved near tip dongchuanensis

4. Valva bifid at apex kala
   Valva not bifid at apex

5. Discal spots on both wings uniform black; inner harpe obtuse at tip—6
   Discal spots blacker on forewing but more or less paler on hindwing; inner harpe pointed at tip

6. Forewing underside without black spot in cell fischeri
   Forewing underside with black spot in cell

7. On underside of forewing the submarginal markings are comparatively narrower, underside ground color more whitish; distal margin of ampulla serrate clavidi
   On underside of forewing the submarginal markings are comparatively broader, underside ground color more or less brownish; distal margin of ampulla smooth filicaudis

8. Distal margin of ampulla more or less upright to posterior margin of valva
   Distal margin of ampulla considerably oblique to posterior margin of valva

9. Valva gently curved at anterior angle, harpe not needle-like at tip
   Valva strongly produced at anterior angle, harpe needle-like at tip

10. Submarginal spots in spaces 2 and 3 on underside of hindwing broadly associated with orange coloring; harpe shorter and not exceeding the caudal end of ampulla
    Submarginal spots in spaces 2 and 3 on underside of hindwing not associated with orange coloring; harpe longer and exceeding the caudal end of ampulla zutluis

11. Size of male genitalia bigger, valva and inner harpe relatively longer
    Size of male genitalia smaller, valva and inner harpe relatively shorter

12. Discal spot in space 4 of forewing underside nearly horizontal to forewing dorsum; distal margin of ampulla strongly serrate amplifascia
    Discal spot in space 4 of forewing underside only slightly oblique; distal margin of ampulla smooth or minutely serrated

13. Subbasal spots on hindwing underside mostly black; harpe remarkably narrow at middle
    Subbasal spots on hindwing underside brown; harpe remarkably broader at middle, valva shorter
References


Fig. 1: ♂ genitalia of *Tongeia dongchuanensis* spec. nov. consisting of dorsum in dorsal view (D), of uncus and brachium in lateral view (U+B), of phallus in lateral view (P), of right valva in inner lateral view (VL), of juxta in lateral view (J), and of valvae in ventral view (VV).

Colour plate 4/ Farbtafel 4, p. 284
Fig. G: *Tongeia dongchuanensis* spec. nov., Holotype ♂ upperside (left half) and underside (right half).
Colour plate 3/ Farbtafel 3 (p.282)


Fig. 1: *Ahlbergia luoliangi* spec. nov. Holotype ♂ upperside (♂ brand outlined in white on left forewing).

Fig. 2: *Ahlbergia luoliangi* spec. nov. Holotype ♂ underside.

Fig. 3: *Ahlbergia luoliangi* spec. nov. Paratype ♀ upperside (left half) and underside (right half).

Fig. 4: *Ahlbergia leei* JOHNSON, 1992 ♀ (Chang-an, Shaanxi) upperside (left half, with ♀ brand outlined in white) and underside (right half).

Fig. 5: *Ahlbergia leei* JOHNSON, 1992, ♀ (Chang-an, Shaanxi) upperside (left half) and underside (right half).

Fig. 6: *Ahlbergia hsui* JOHNSON, 2000, ♂ (Xing-long-sfan, S. Gansu) upperside (left half) and underside (right half).

Fig. 7: *Ahlbergia hsui* JOHNSON, 2000, Holotype ♂ (Kang-xian, S. Gansu, deposited in IZAS) upperside (left half) and underside (right half).

Fig. 8: *Novosatsuma collosa* JOHNSON, 1992, ♂ (Chang-an, Shaanxi) upperside (left half, with ♂ brand outlined in white) and underside (right half).

Fig. 9: *Novosatsuma collosa* JOHNSON, 1992, ♂ (Chang-an, Shaanxi) upperside (left half) and underside (right half).

Fig. 10: Costal area of forewing showing ♂ brand. C: *A. clarofacia* JOHNSON; Le: *A. leei* JOHNSON, 1992; Lu: *A. luoliangi* spec. nov.; H: *A. hsui* JOHNSON, 2000; A: *Cissatsuma albilinea* (RILEY, 1939); D: *A. dongyui* HUANG & ZHAN, 2006.
Fig. A: *Ahlbergia dongyui* spec. nov. Holotype ♂ upperside (left half, with ♂ brand outlined in white) and underside (right half).

Fig. B: *Ahlbergia dongyui* spec. nov. Paratype ♂ upperside.

Fig. C: *Ahlbergia dongyui* spec. nov. Paratype ♂ underside.

Fig. D: *Ahlbergia leei* Johnson, 1992 ♂ (Chang-an, Shaanxi) upperside (left half, with ♂ brand outlined in white) and underside (right half).

Fig. E: *Ahlbergia confusa* spec. nov. Holotype ♀ upperside (left half) and underside (right half).

Fig. F: *Ahlbergia confusa* spec. nov. Paratype ♂ upperside (left half, with brand outlined in white) and underside (right half).

Fig. G: *Tongeia dongchuanensis* spec. nov., Holotype ♂ upperside (left half) and underside (right half).

Agonopterix ferocella (Chrétien, 1910)
Fig. 1: *Tatargina* (s. str.) picta (Walker, [1865] 1864), China, Yunnan, Haba mts., Hutiao vll., h=2100 m, 21-26.VI.1996, S. Murzin leg.

Fig. 2: *Tatargina (Hindargina) pannosa* (Moore, 1879), Nepal, Mahakali, Banku, 660 m, 20.VI.1995, anonymous leg.

Fig. 3-4: *Tatargina (Hindargina) sipahi* (Moore, 1872), lectotype, India, Bombay, upperside (3) and underside (4).

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**Colour plate 5/ Farbtafel 5 (p. 285)**


**Fig. 1:** *Podomachla antinorii* (Oberthür, 1880), ♀, Tanzania, 5 km S from Bukoba, Forest Kibira, 1.VI.1912, Troitskii leg. (ZIN).

**Fig. 2:** *Podomachla antinorii* (Oberthür, 1880), ♂, Cameroun, Bitye Ja River, 2000 ft, X-XI.1910 (MMUM).

**Fig. 3:** *Podomachla apicalis* (Walker, 1854), ♀, South Africa, Natal, Weenen, coll. by G.H. Burn (MMUM).

**Fig. 4:** *Chiromachla restricta* (Butler, 1894), ♀, Kenya, Kibwezi, 31.VII.1917 (MMUM).

**Fig. 5:** *Chiromachla torbeni* (Wiltshire, 1983), ♂, holotype, Yemen Arab Republic (N Yemen): Wadi Dhabab, 19.X.1981, Torben B. Larsen leg., from: Wiltshire (1983).

**Fig. 6:** *Chiromachla torbeni* (Walker, 1983), ♀, allotype, Yemen Arab Republic (N Yemen): Wadi Annah, 1400 m, 22.V.1980, Torben B. Larsen leg., from: Wiltshire (1983).

**Fig. 7:** *Chiromachla insulare* (Boisduval, 1833), ♀, [Madagascar], without label (MMUM).

**Fig. 8:** *Chiromachla perspicua* (Walker, 1854), ♂, without label, probably from West Africa (MMUM).

**Fig. 9:** *Afronyctemera itokina* (Aurivillius, 1904), ♂, Rwanda, Butare, XII.1976, A. Popoudina leg. (SZMN).

**Fig. 10:** *Xylecaeta hemixantha* (Aurivillius, 1904), ♀, Rwanda, Butare, I.1977, A. Popoudina leg. (SZMN).