

A REVISION OF THE FORMOSAN SPECIES OF
THE GENUS *TIMELAEA* LUCAS
(LEPIDOPTERA: NYMPHALIDAE)

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One species of the genus *Timelaea* LUCAS occurs in Formosa. From this island, the species was first recorded by MIYAKE (1906) as *T. albescens* (OBERTHÜR), but it was described by FRUHSTORFER (1908) as *T. maculata formosana*. Up to the present, *formosana* has been regarded as a subspecies, a variety or a form of *T. maculata* (BREMER & GREY) by most previous authors. In this small paper, however, the systematic station of *formosana* is revised.

Before going further we wish to express our cordial thanks to Dr. TAKASHI SHIRÔZU, Mr. KIKUMARO OKANO, Mr. JOZABURO OHKURA, Mr. SHUNZO KAMMURI and Mr. TOSHIO SUZUKI for their kindness rendered in various ways.

***Timelaea albescens formosana* FRUHSTORFER stat. rev.**

(Pl. 1, figs. 1, 2, 5, 6, ♂; Text-fig. 1, ♂ genitalia)

- Timelaea albescens*: MIYAKE, Zool. Mag., Tokyo, 18: 116, pl. 4, fig. 9, ♀, 1906.
Timelaea albescens: MIYAKE, Zool. Mag., Tokyo, 18: 4 (Catal. Butt. Formosa), 1906.
Timelaea maculata formosana FRUHSTORFER, Ent. Zeit. Stutt., 22: 48, 1908.
Timelaea maculata formosana FRUHSTORFER, in SEITZ, Grosssch. Erde, 9: 511, 1912.
Timelaea maculata formosana f. *muliebris* FRUHSTORFER, in SEITZ, Grosssch. Erde, 9: 511, 1912.
Timelaea formosana var. *confluana* NIEPELT, in STRAND, Iep. Niepelt., 2: 8, 1916.
Timelaea maculata formosana ab. *confluens* NIRE, Zool. Mag., Tokyo, 29: 144, 147, pl. 3, fig. 6, 1917.
Timelaea maculata var. *formosana*: MATSUMURA, Thousand Ins. Japan, Addit. 3: 741, 15 (distribution table), pl. 41, fig. 7, ♂, 1919.
Timelaea maculata var. *muliebris*: MATSUMURA, Thousand Ins. Japan, Addit. 3: 742, 15 (distribution table), 1919.
Timelaea maculata f. *formosana*: MATSUMURA, 6000 Illus. Ins.: 541, fig. ♂, 1931.
Timelaea maculata formosana: ESAKI, in Icon. Ins. Jap.: 910, fig. 1792, ♂, 1932.
Timelaea maculata formosana: HIRAYAMA, Genshoku Chorui Zufu: 18, pl. 47, fig. 5, ♂, 1939.

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Timelaea maculata formosana ab. *confluens* : HIRAYAMA, Genshoku Chôruï Zufu : 18, 1939.

Timelaea maculata muliebris : HIRAYAMA, Genshoku Chôruï Zufu : 18, 1939.

Timelaea albescens f. *reticulata* MATSUMURA, Ins. Mats., 13 : 113, fig. 1c, ♂, 1939.

Timelaea albescens f. *formosana* : MATSUMURA, Ins. Mats., 13 : 113, fig. 1d, ♂, 1939.

Timelaea maculata formosana f. aest. *formosana* : OKANO & OHKURA, Butt. Formosa : 40, pl. 39, fig. 115, ♂, 1959.

Timelaea maculata formosana f. hiem. *muliebris* : OKANO & OHKURA, Butt. Formosa : 40, 1959.

Timelaea maculata formosana : SHIRÔZU, Butt. Formosa Colour : 186, 449, pl. 41, figs. 347, 348, ♂, text-figs. 208, ♂ genitalia, 209, distribution map, 1960.

Timelaea maculata formosana f. *muliebris* : SHIRÔZU, Butt. Formosa Colour : 186, 449, 1960.

Timelaea maculata formosana : CHEN, Butt. Taiwan Colour : 193, pl. 31, fig. 5-65, ♂, 1974,

We examined 12 ♂ 5 ♀ of subsp. *formosana* FRUHSTORFER from Formosa (Puli and Wushe), 3 ♂ of *T. albescens albescens* (OBERTHÜR) from China (Zhejiang), and 5 ♂ of *T. maculata maculata* (BREMER & GREY) from China (Anhui). A closer examination revealed that *formosana* is not a subspecies, a variety or a form of *T. maculata*, but apparently representing the Formosan subspecies of *T. albescens*.

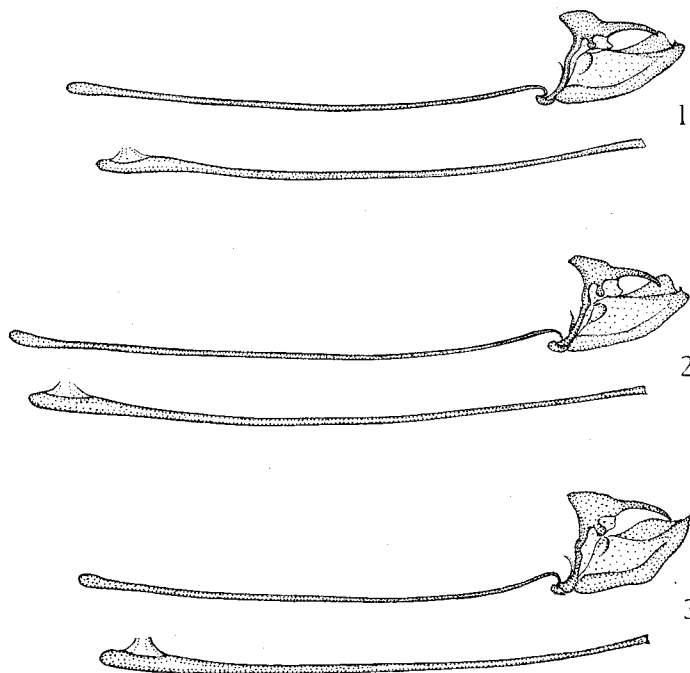


Fig. 1. Male genitalia of *Timelaea albescens formosana* FRUHSTORFER.

Fig. 2. Male genitalia of *Timelaea albescens albescens* (OBERTHÜR).

Fig. 3. Male genitalia of *Timelaea maculata maculata* (BREMER & GREY).

Both the species are clearly distinguished by the following key.

- 1 (2) Forewing underside in both sexes with four black spots in cell; forewing termen in male not angulated at vein 6. Male valva with ventral margin not angulated in the middle; ampulla projected before the end; harpe with a minute process before the end..... *T. albescens* (OBERTHÜR).
- 2 (1) Forewing underside in both sexes with six black spots in cell; forewing termen in male angulated at vein 6. Male valva with ventral margin angulated in the middle; ampulla projected in the middle; harpe with a minute process at the end..... *T. maculata* (BREMER & GREY).

The Formosan subspecies is similar to the nominate subspecies, but the post-discal black spots of the hindwing are smaller, consequently the discal area is much wider. The summer form *formosana* FRUHSTORFER is similar to *T. maculata* in the wing ground colour, while in the spring form* *muliebris* FRUHSTORFER is characterized by the white discal area of the hindwing above and below. The black markings of the wings of subsp. *formosana* are generally constant, but they vary in some individuals, and three aberrant forms, *confluana* NIEPELT, *confluens* NIRE and *reticulata* MATSUMURA, have hitherto been known from Formosa.

* This form was regarded as winter form by OKANO and OHKUAR (1959) and CHNN (1974), but it appears from Apil in North and Central Formosa.

Explanation of Plate 1

- Fig. 1. *Timelaea albescens formosana* f. aest. *formosana* FRUHSTORFER, ♂. Puli, Formosa, July, 1967.
- Fig. 2. *Timelaea albescens formosana* f. vern. *multebris* FRUHSTORFER, ♂. Wushe, Formosa, April, 1957.
- Fig. 3. *Timelaea albescens albescens* (OBERTHÜR), ♂. Tianmushan, Zhejiang, China, June, 1980.
- Fig. 4. *Timelaea maculata maculata* (BREMER & GREY), ♂. Dabieshan, Anhui, China June, 1982.
- Fig. 5. Underside of fig. 1.
- Fig. 6. Underside of fig. 2.
- Fig. 7. Underside of fig. 3.
- Fig. 8. Underside of fig. 4.

