

Two new species of the genus *Cyanosesia* GORBUNOV & ARITA, 1995 (Lepidoptera, Sesiidae) from the Oriental Region

Oleg G. GORBUNOV and Axel KALLIES

Oleg G. GORBUNOV, Institute for Problems of Ecology and Evolution, Russian Academy of Sciences, Leninsky prospekt 33, RUS-117071 Moscow V-71, Russia; e-mail: sevin@glas.apc.org

Axel KALLIES, Plöner Strasse 13, D-19057 Schwerin, Germany; e-mail: kallies@fmp-berlin.de

Abstract: Two new Sesiinae species, *Cyanosesia philippina* sp. nov. from Mindanao (type locality: "Surigao, Mindanao"), also known from Luzon (Philippines), and *Cyanosesia javana* sp. nov. from W. Java (Gunung Malang; Indonesia), are described and figured. Both holotypes are deposited in BMNH, London.

Zwei neue Arten der Gattung *Cyanosesia* GORBUNOV & ARITA, 1995 (Lepidoptera, Sesiidae) aus der Orientalischen Region

Zusammenfassung: Zwei neue Sesiinae-Arten, *Cyanosesia philippina* sp. nov. von den Philippinen (locus typicus: „Mindanao, Surigao“; auch bekannt von Luzon) und *Cyanosesia javana* sp. nov. von W.-Java (Gunung Malang), Indonesien, werden beschrieben und abgebildet. Beide Holotypen befinden sich im BMNH, London.

Introduction

The genus *Cyanosesia* has been recently described (GORBUNOV & ARITA 1995) from the Oriental Region (Vietnam). The authors originally included two species in this genus: *Cyanosesia tonkinensis* GORBUNOV & ARITA, 1995 (the type species) and *C. vietnamica* GORBUNOV & ARITA, 1995.

In the course of an examination of the clearwing moths of the collections of the Natural History Museum, London, Great Britain (BMNH), and the Bishop Museum, Honolulu, Hawaii, U.S.A. (BMHH), the junior author has found two species belonging to *Cyanosesia*. In the present paper we describe them as new species: *C. philippina* sp. nov. and *C. javana* sp. nov. With these new descriptions the presently known distribution range of the genus *Cyanosesia* is extended from the South East Asian mainland to the Sundanian Island of Java (Indonesia) and to the Philippines.

The types of these new species are deposited in the collection of the Natural History Museum, London, U. K., and in the Bishop Museum, Honolulu, Hawaii, U. S. A.

Cyanosesia philippina sp. nov.

Holotype: 1 ♂, "Surigao, Mindanao" [Philippines, northern Mindanao Island, Province of Surigao] (BMNH) (Figs. 2, 4 a-d).

Paratypes: 1 ♂, "Imugan, Luzon" [Philippines, Luzon Island]; 1 ♂, „Philippines, [South East Luzon] Camarines Sur: Mt. Isarog, 750–900 m, 4.–7. v. 1963/H. M. TORREVILLAS, Collector, Bishop“ (both paratypes in BMHH).

Distribution. This species is known from Mindanao I. and Luzon I. (Philippines).

Description. ♂ (holotype) (Fig. 2). Alar expanse 28.5 mm; body length 16.3 mm; forewing 12.8 mm; antenna 9.0 mm.

Head: antenna black with dark purple sheen, with a large pale yellow spot exterior-posteriorly and with a few yellow scales ventro-basally; frons dark brown with bronze sheen, with a small pale yellow spot dorso-laterally; basal joint of labial palpus yellow to pale yellow, mid joint black with dark purple sheen dorsally and yellow ventrally, apical joint entirely black with dark purple sheen; vertex dark brown to black with bronzy-violet sheen; pericephalic hairs dorsally mixed with brown and yellow scales, laterally yellow.

Thorax: patagia dorsally black with anthracite sheen, laterally yellow; tegula black with anthracite sheen, with a narrow, yellow, inner margin and with a large yellow spot at base of forewing; meso- and metathorax black with anthracite sheen; in addition, tegula, meso- and metathorax covered with thin, hair-like, yellow scales; thorax laterally mixed with black and yellow scales.

Legs: fore coxa black externally and yellow internally; remaining parts of fore legs broken off; mid coxa black externally and yellow internally; mid femur black with purple sheen, anterior margin broadly red-orange, posterior margin with a few yellow hairs basally; mid tibia orange to red-orange with a small black spot dorso-basally; spurs broken off; mid basal tarsomere orange with admixture of dark brown to brown scales; remaining tarsomeres dark brown to brown mixed with orange to yellow-orange scales, especially ventrally; hind coxa black externally and yellow internally; hind femur broken off; hind tibia orange to yellow-orange with a large, longitudinal, black spot with bronzy-green sheen both exterior-basally and interior-distally; spurs orange; hind basal tarsomere orange with admixture of dark brown to brown scales; remaining tarsomeres dark brown to brown mixed with orange to yellow-orange scales, especially ventrally.

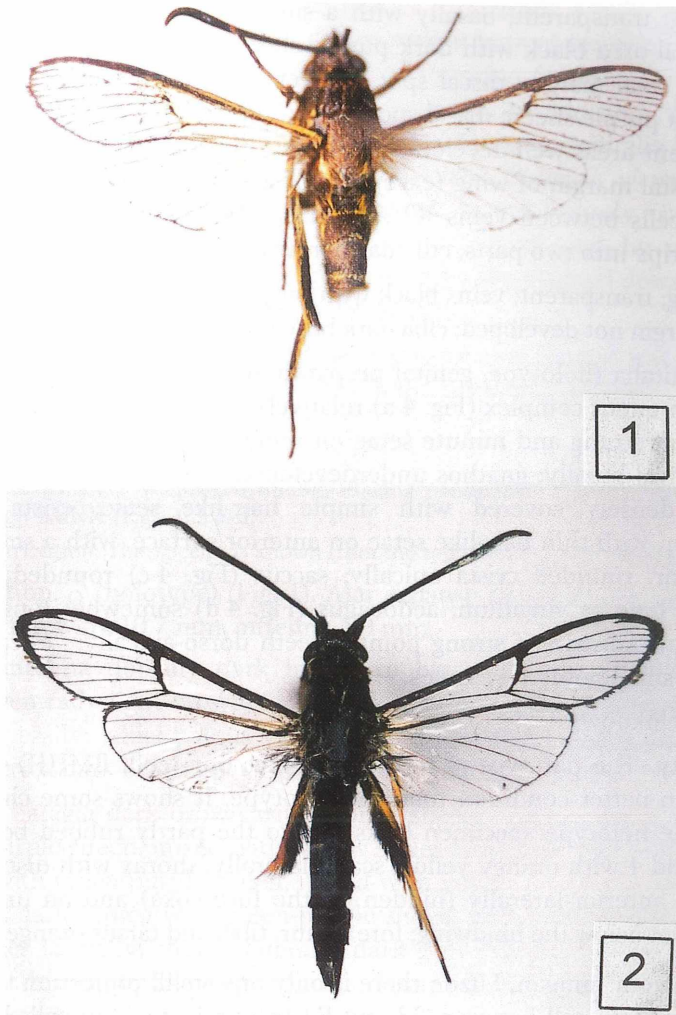


Fig. 1: *Cyanosesia javana* sp. nov., holotype ♂. Alar expanse 24.9 mm (BMNH). Fig. 2: *Cyanosesia philippina* sp. nov., holotype ♂. Alar expanse 28.5 mm (BMNH).

Abdomen: dorsally black with blue-green sheen, with admixture of individual, thin, yellow scales; tergite 4, 5 and 6 each with a narrow yellow stripe anteriorly; ventrally black with purple sheen, densely mixed with yellow scales medially; sternite 1+2 with a large yellow spot anterior-laterally; sternites 3, 4, 5, 6, and 7 each with a narrow yellow stripe proximally; anal tuft dorsally black, mixed with yellow scales.

Forewing: transparent; basally with a small yellow spot; costal; margin and apical area black with dark purple sheen, with a few orange scales; Cu-stem, anal margin, discal spot and veins distally of discal spot black with dark purple sheen; discal spot narrow; apical area extremely narrow; transparent areas well-developed; external transparent area large, reaching to distal margin of wing (except tip of wing), divided into seven cells, distally cells between veins R3 and M3 additionally divided by a thin scaled stripe into two parts; cilia dark brown with a purple-bronze sheen.

Hindwing: transparent; veins black with purple sheen; both discal spot and outer margin not developed; cilia dark brown with purple-bronze sheen.

Male genitalia (holotype, genital preparation No. OG-97-19) (Fig. 4 a-d). Tegumen-uncus complex (Fig. 4 a) relatively large; uncus well-developed, with a few strong and minute setae on inner surface ventrally; tegumen symmetrical basally; gnathos underdeveloped; valva (Fig. 4 b) pentagonal-oval, densely covered with simple hair-like setae; crista sacculi triangular, with thin hair-like setae on anterior surface, with a small, perpendicular, rounded crista apically; saccus (Fig. 4 c) rounded basally, about as long as vinculum; aedoeagus (Fig. 4 d) somewhat longer than valva, with a brush of strong pointed teeth dorso-apically; vesica with a group of small pointed spinules.

Female. Unknown.

Variability. The paratype ♂ from Camarines Sur (coll. BMHH) in some parts is in better condition than the holotype. It shows some characters which the holotype specimen lacks due to the partly rubbed body: tergites 3 and 4 with orange yellow scales laterally; thorax with distinct yellow spot anterior-laterally (hidden by the fore coxa) and an undefined yellow spot below the hindwing; fore femur, tibia and tarsus orange yellow.

In the ♂ from Imugan, Luzon there is only one small projection from the apical area into cell between R3 and R4 (no projections in cells between R4 and M3).

Diagnosis. This species seems to be closest to *C. javana* sp. nov. described below, but it can be distinguished by the coloration of the head, thorax, legs and abdomen (compare with the description of *C. javana* sp. nov. below). Further, these two species are separable in the structure of the male genitalia (compare Figs. 4 and 3). From *C. tonkinensis*, this species differs by the colouration of the antenna (entirely black with purplish sheen in *C. tonkinensis*), frons (dark grey with purple-violet sheen, with a

narrow white stripe laterally in the species compared), tegula (black with violet sheen, with a small lemon-yellow spot at base of forewing in *C. tonkinensis*) and by the entirely transparent forewing (external transparent areas almost not developed in *C. tonkinensis*). In addition, these two species are distinguishable in the structure of the male genitalia (compare Fig. 4 with fig. 13 in GORBUNOV & ARITA 1995). From *C. vietnamica*, *C. philippina* sp. nov. can be easily separated by the entirely transparent forewing (nearly opaque in the species compared) and by numerous details of coloration of the body (compare with the original description of *C. vietnamica* in GORBUNOV & ARITA 1995: 79).

Bionomics and Habitat. The host plant is unknown. One ♂ was collected in an altitude between 750 and 900 m in the beginning of May.

***Cyanosesia javana* sp. nov.**

Holotype: 1 ♂, "W. Java: G[unung] Malang" [Indonesia, western Java, Mt. Malang], BMNH (Figs. 1, 3 a-d).

Distribution. This species is known from the type locality only: Indonesia, Java.

Description. ♂ (holotype) (Fig. 1). Alar expanse 24.9 mm; body length ca. 14 mm; forewing 10.7 mm; antenna 7.0 mm.

Head: antenna dorsally dark brown to black with dark green-purple sheen, ventrally light brown; frons dark grey-brown with a narrow white stripe laterally; labial palpus yellow with a few dark brown scales externally; vertex dark brown; pericephalic hairs yellow.

Thorax: patagia dark brown with bronze sheen; tegula dark brown with green-purple sheen, mixed with yellow scales anteriorly; mesothorax dark brown with green-purple sheen, mixed with yellow scales anteriorly; metathorax dark brown with green-purple sheen, with a tuft of yellow hair-like scales laterally; thorax laterally dark grey-brown with green-purple sheen, with a large yellow spot anteriorly and with a small yellow spot at base of forewing.

Legs: fore coxa dark yellow with admixture of dark brown scales basally; fore femur dark yellow mixed with dark brown scales with bronze sheen internally; fore tibia ventrally dark yellow, dorsally mixed with dark brown and yellow-orange scales; fore tarsus ventrally dark yellow mixed with dark brown scales, dorsally dark brown mixed with orange scales on basal tarsomere; mid coxa dark grey-brown with light green sheen, with a few yellow scales internally; mid femur yellow internally and anteriorly, externally dark grey-brown with bronzy-purple sheen, with admixture

yellow hairs at posterior margin basally; mid tibia internally, dorsally and ventrally yellow, externally dark grey-brown with bronzy-purple sheen; spurs dark grey-brown with bronze sheen, mixed with yellow scales externally; mid tarsus dark grey-brown with bronze sheen mixed with orange-yellow scales on basal tarsomere and a few yellow scales on other tarsomeres; hind coxa dark grey-brown with light green sheen, with a few yellow scales internally; hind femur yellow internally and anteriorly, externally dark grey-brown with bronzy-purple sheen, with admixture yellow hairs at posterior margin basally; hind tibia dark brown with bronze sheen, with a narrow yellow-orange stripe dorso-distally; spurs dark grey-brown with bronze sheen, mixed with yellow scales externally; hind tarsus dorsally dark brown with bronzy-purple sheen, ventrally basal tarsomere yellow-orange, remaining tarsomeres dark brown with a few yellow-orange scales.

Abdomen: dorsally dark brown with bronze sheen; tergites 1 and 2 each with a few yellow scales at posterior margin; tergites 4, 5 and 6 each with a narrow yellow stripe anteriorly; ventrally dark brown with green-violet sheen; sternites 4, 5, 6 and 7 with a narrow yellow stripe anteriorly.

Forewing: transparent; costal and anal margins dark brown with dark purple sheen, with admixture of individual yellow scales; Cu-stem, discal spot and veins distally of discal spot dark brown with dark purple sheen; discal spot narrow; apical area not developed; transparent areas well-developed; external transparent area large, reaching to distal margin of wing, divided into seven cells; distally cells between veins R3 and Cu1 additionally divided by a thin scaled stripe into two parts; cilia dark grey-brown with purple sheen.

Hindwing: transparent; veins covered with dark brown and a few yellow scales; both discal spot and outer margin not developed; cilia dark grey-brown with purple sheen.

Male genitalia (holotype, genital preparation No. OG-97-20) (Fig. 3 a-d). Tegumen-uncus complex (Fig. 3 a) relatively large; uncus well-developed, with a few strong and minute setae on inner surface ventro-apically; tegumen asymmetrical basally; gnathos rather well-developed, slightly asymmetrical distally; valva (Fig. 3 b) pentagonal-oval, densely covered with simple hair-like setae; crista sacculi small, triangular, with thin hair-like setae on inner surface; saccus (Fig. 3 c) rounded basally, about as long as vinculum; aedoeagus (Fig. 3 d) somewhat shorter than valva, with a brush of strong pointed teeth dorso-apically; vesica with a group of small pointed spinules.

Female and Variability. Unknown.

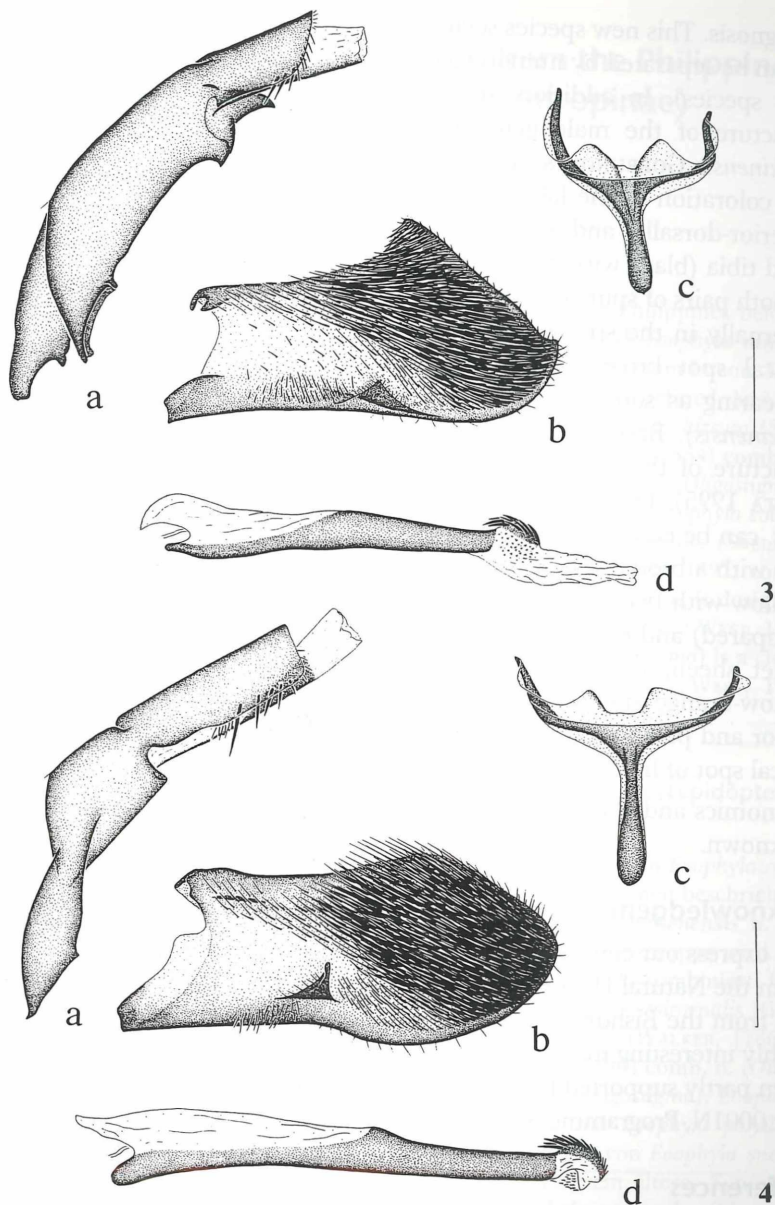


Fig. 3: Male genitalia of *Cyanosesia javana* sp. nov., holotype (genital preparation No. OG-97-20) (BMNH). Fig. 4: Male genitalia of *Cyanosesia philippina* sp. nov., holotype (genital preparation No. OG-97-19) (BMNH). — a: Tegumen-uncus complex. b: Valva. c: Saccus. d: Aedeagus. Scale bar: 0.5 mm.

Diagnosis. This new species seems to be closest to *C. philippina* sp. nov., but it can be separated by numerous details of coloration (see the description of this species). In addition, these two species are distinguishable by the structure of the male genitalia (compare Fig. 3 and Fig. 4). From *C. tonkinensis* GORBUNOV & ARITA, 1995, *C. javana* sp. nov. differs clearly by the coloration of the labial palpus (dark brown to black with violet sheen exterior-dorsally and lemon-yellow interior-ventrally in *C. tonkinensis*), hind tibia (black with bluish sheen, with a small lemon-yellow spot at base of both pairs of spurs externally and a broad, longitudinal pale yellow stripe internally in the species compared) and by the structure of the forewing (discal spot broader, external transparent area almost not developed, appearing as somewhat lighter stripes between veins R3 and Cu1 in *C. tonkinensis*). Besides this, these two species can be distinguished by the structure of the ♂ genitalia (compare Fig. 3 with fig. 13 in GORBUNOV & ARITA 1995). From *C. vietnamica* GORBUNOV & ARITA, 1995, *C. javana* sp. nov. can be easily distinguished by the coloration of the labial palpus (yellow with a broad dark brown stripe externally in *C. vietnamica*), hind tibia (yellow with two dark brown rings both basally and apically in the species compared) and by the structure of the forewing (dark brown to black with violet sheen, with admixture of individual orange scales, with a small yellow-orange spot basally; external transparent area not developed; anterior and posterior transparent areas small, narrow, reaching only level of discal spot of hindwing in *C. vietnamica*).

Bionomics and Habitat. The host plant and flight period of the species are unknown.

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