

New records of *Elasmus* Westwood, 1833 (Hymenoptera: Eulophidae) species from Southeast Asia

Новые находки видов рода *Elasmus* Westwood, 1833 (Hymenoptera: Eulophidae) из Юго-восточной Азии

I.S. Strakhova¹, Z.A. Yefremova^{1, 2}
И.С. Страхова¹, З.А. Ефремова^{1, 2}

¹ Ulyanovsk State Pedagogical University, 4 pl. 100-letya, Ulyanovsk 432700, Russia. E-mail: eulophids@mail.ru

Ульяновский государственный педагогический университет, пл. 100-летия, 4, Ульяновск 432700, Россия. E-mail: eulophids@mail.ru

² Department of Zoology, George S. Wise Faculty of Life Sciences, Tel Aviv University, Israel.

Кафедра зоологии, факультет наук о жизни имени Жоржа Вайза, Тель-Авивский университет, Израиль.

KEY WORDS: *Elasmus*, Eulophidae, Hymenoptera, Southeast Asia.

КЛЮЧЕВЫЕ СЛОВА: *Elasmus*, Eulophidae, Hymenoptera, Юго-Восточная Азия.

ABSTRACT: Nine species of the genus *Elasmus* are newly recorded from continental Southeast Asia with diagnoses, distributions and remarks. *E. philippinensis* Ashmead, 1904 is re-described. A key to species of the genus *Elasmus* known from Thailand is presented.

РЕЗЮМЕ: Девять видов рода *Elasmus* впервые указываются для континентальной части Юго-Восточной Азии с диагнозом, распространением и комментариями. Дано переписание вида *E. philippinensis* Ashmead, 1904. Предложен ключ для видов рода *Elasmus* фауны Таиланда.

Introduction

The genus *Elasmus* Westwood, 1833 is cosmopolitan. In the Oriental region, it has a wide range and occurs eastwards from Himalayan India and Sri Lanka to Southeast Asia, northern Vietnam, Thailand, Malaysia and the Philippines. A total of 25 species is currently known from Southeast Asia.

Nineteen species are known from Vietnam: *Elasmus anamalaianus* Mani et Saraswat, 1972, *E. belokobilskij* Yefremova et Strakhova, 2009, *E. brevicornis* Gahan, 1922, *E. flavescens* Verma et Hayat, 2002, *E. giraulti* Yefremova et Strakhova, 2009, *E. hanoicus* Yefremova et Strakhova, 2009, *E. indicus* Rohwer, 1921, *E. longicornis* Verma et Hayat, 2002, *E. longifustis* Yefremova et Strakhova, 2009, *E. longiventris* Verma et Hayat, 2002, *E. nephantidis* Rohwer, 1921, *E. nudus* (Nees, 1834), *E. schmitti* Rushka, 1920, *E. singularis* Yefremova et Strakhova, 2009, *E. spodopteri* Yefremova et Strakhova, 2009, *E. subobscurus* Yefremova et Strakhova, 2009, *E. sugonyaevi* Yefremova et Strakhova, 2009, *E. vietnami* Yefremova et Strakhova, 2009, *E. viridifemoralis* Yefremova et Strakhova, 2009 [Yefremova & Strakhova, 2009]. Prior to

the present study, *Elasmus* species were not reported from Thailand. *Elasmus brevicornis* and *E. johnstoni* Ferrière, 1929 are known from Myanmar (Burma) [Herting, 1975, 1977]. *Elasmus* species were not found in Cambodia and Laos. Seven species (*Elasmus anticles* Walker, 1846, *E. brevicornis*, *E. cameroni* Verma et Hayat, 1986, *E. corbetti* Ferrière, 1930, *E. hyblaeae* Ferrière, 1929, *E. nephantidis*, *E. philippinensis* Ashmead, 1904) are known from Malaysia [Ferrière, 1930; Baltazar, 1966; Bhattacherjee, 1976; Verma & Hayat, 1986; Fry, 1989; Verma et al., 2002].

Among the countries neighbouring to Southeast Asia, 62 species were reported from India [Cameron, 1913; Mahdihassan, 1934; Walker, 1846; Parshad & Subba Rao, 1965; Mani & Saraswat, 1972; Husain & Kudeshia, 1984; Verma & Hayat, 1986; Verma et al., 2002; Narendran et al., 2008], three species were found in Indonesia (*Elasmus brevicornis*, *E. cameroni*, *E. zehntneri* Ferrière, 1929), 17 species were reported from Sri Lanka [Thompson, 1954; Mani & Saraswat, 1972; Bhattacherjee, 1976; Verma & Hayat, 1986; Verma et al., 2002; Hedqvist, 2004; Narendran et al., 2008], and three species were found in China (*Elasmus albopictus* Crawford, 1910, *E. cnaphalocrocis* Liao, 1987 and *E. philippinensis*) [Baltazar, 1966; Herting, 1975; Liao et al., 1987].

In this paper, we provide additional descriptions of certain characters of a few *Elasmus* species. Nine species of *Elasmus* were found in Thailand, two species were reported from Malaysia, and one species was found in Indonesia. This paper is dedicated to the famous Russian chalcidologist, Dr. V.A. Trjapitzin, who celebrates his 85th birthday in 2013.

Material and Methods

All specimens used in this study were obtained on loan from the Entomology Research Museum of the

University of California, Riverside, California, USA (UCRC). Specimens were studied using stereomicroscope Leica M20. Morphological terminology follows that used by Graham [1995]. POL — minimum distance between posterior ocelli; OOL — minimum distance between eye margin and adjacent posterior ocellus; OD — longest diameter of ocellus, AOL — minimum distance between posterior ocellus and anterior ocellus; F1 — F4 — length of first, second, third and fourth segments of antennal funicle; SMV — submarginal, MV — marginal, PMV — postmarginal and SV — stigmal vein. Absolute measurements in millimeters (mm) are used for body length and fore wing length of specimens. All other distances are given in μm .

Taxonomy

Genus *Elasmus* Westwood, 1833

DIAGNOSIS. Forewing densely setose and wedge-shaped, with elongate MV, short PMV, and slightly reduced SV; female funicle 3-segmented, male funicle 4-segmented with 3 dorsal branches; mesosoma densely setose, metasoma subsessile; gaster triangular in cross section. Metanotum projecting as flat, triangular, often translucent plate over propodeum. Dorsal metanotal lamella protruding posteriorly over propodeum with partial and complete latero-ventral keels. Metacoxa greatly enlarged and flattened in a plate-like manner. Hind tibia with short bristles forming distinct diamond-shaped or undulating pattern.

BIOLOGY. Polyphagous genus, attacks several lepidopteran genera: *Coleophora* sp., *Tortrix* sp., *Phyllonorycter* sp., as well as members of the order Hymenoptera (e.g. *Apanteles* sp.) [Graham, 1976, 1995].

IDENTIFICATION. Keys to European species were provided by Graham [1976, 1995] and Ferrière [1947], those to Vietnamese species were prepared by Yefremova & Strakhova [2009], and keys to species from Russia and neighboring countries were provided by Yefremova & Strakhova [2010].

Elasmus philippinensis was recorded from peninsular Malaysia [Baltazar, 1966], and we suggest that it could also be found in Thailand. Type material of this species was therefore examined, and the species was re-described and included in the key.

KEY TO THAILAND SPECIES OF *ELASMUS* (FEMALES)

1. Antenna with funicular segments 1.1–1.2 times as long as broad or transverse 2
 - Antenna with funicular segments 2.2–2.8 times as long as broad 3
2. AOL 1.5 OOL, legs dark brown, hind coxae and femora brown. Body dark brown, gaster with reddish band on T1–T2. Antenna as on Fig. 2 *E. brevicornis* Gahan
 - AOL 1.8 OOL, legs yellow, hind coxae and femora partly brown. Body black, gaster with yellow band on T1–T2. Antenna as on Fig. 10 *E. philippinensis* Ashmead
3. Hind tibia with bristles arranged in three wavy parallel lines 4

- Hind tibia with bristles arranged in diamond-shaped lozenges 5
- 4. Posterior pair of scutellar bristles long, reaching up to T2 of gaster. Antennal funicle (Fig. 8) 1.4–1.6 times as long as broad. Body black with bluish metallic tint, gaster reddish, T2–T3 with orange band *E. nigritus* Verma & Hayat
 - Posterior pair of scutellar bristles short, not reaching to past middle of propodeum. Antennal funicle (Fig. 3) 2.0–2.5 times as long as broad. Body black with green metallic tint, gaster reddish with brown band at base of T1 *E. grimmi* Girault
- 5. Body mostly black, mesothorax black with green or bluish metallic tint, mesoscutum sometimes with yellow spot near tegula on both sides 6
 - Body mostly yellow, mesothorax yellow with brown spots on scutellum, gaster with brown spot at base of T1. Antenna as on Fig. 11 *E. queenslandicus* Girault
- 6. Mesoscutum with yellow spot near tegula on both sides 7
 - Mesoscutum completely black with metallic tint 8
- 7. F1–F3 (Fig. 7) almost equal to each other, POL 1.5–1.8 OOL, fore wing hyaline. F1 almost equal to pedicel. Body dark-brown *E. nephantidis* Rohwer
 - F1–F3 (Fig. 1) not equal to each other, POL 2.3–3.5 OOL. F2=F3, distal part of fore wing with brown spot. Body dark brown, gaster with yellow band on T1 *E. alaris* Narendran
- 8. POL 1.3–2.9 OOL 9
 - POL 4.0–5.0 OOL. F1 (Fig. 4) 1.2 times as long as F2, F2=F3. Body black with bluish tint, metanotum yellow, gaster with yellow band on T1 *E. homonae* Ferrière
- 9. F2 (Fig. 6) 1.0–1.2 times as long as F1. Body black with green metallic tint, legs and gaster brown *E. johnstoni* Ferrière
 - F1 (Fig. 5) 1.1–1.5 times as long as F2. Body black with green metallic tint, gaster with yellow band on T1–T2. *E. indicus* Rohwer

Elasmus alaris Narendran, 2008

Fig. 1.

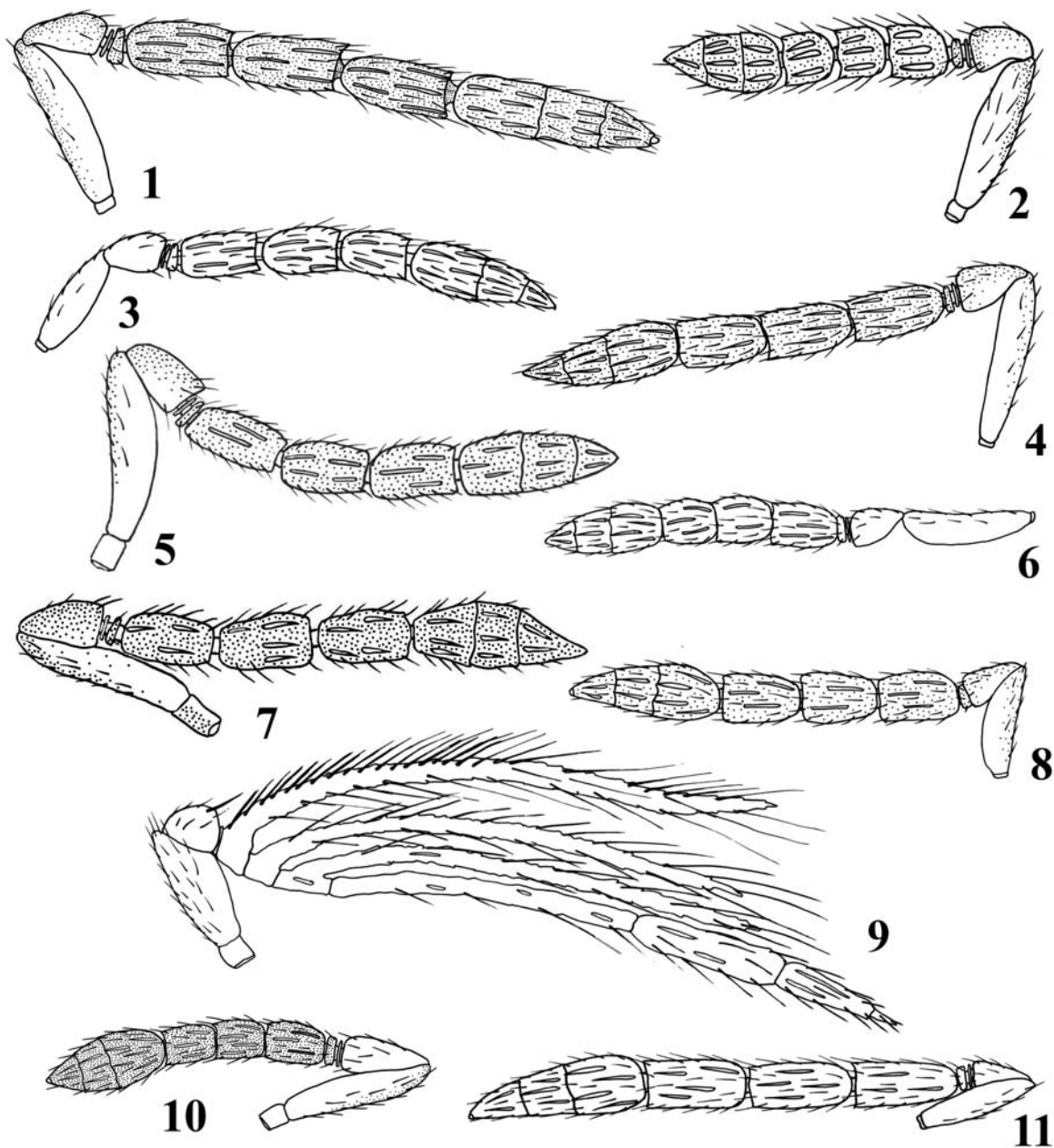
Elasmus alaris Narendran, 2008: 8. Holotype: ♀, India, Kerala, Palghat Dt., Thoonakkadavu, 5.V.1989, T.S. Narendran, Party (DZUC, not examined).

DIAGNOSIS. Body black with blue reflections, mesoscutum with yellow spot near tegula on either side, metanotum and legs mostly yellow, gaster black with reddish band on T1. Fore wing with infumation on distal part. POL 2.3–2.7 times OOL. F1 longer than F2, F2 equal to F3.

HOSTS. Unknown.

DISTRIBUTION. India [Narendran et al., 2008], Japan [Yefremova & Strakhova, 2011]. **New records for Thailand and Indonesia.**

SPECIMENS EXAMINED. **Thailand:** 2 ♀♀, Trang pr., Forest research Station, Khao Chong, MT 75 m, 7°33'N; 99°47'E, 27–28.I, 8–19.II.2005 (D. Lohman); 1 ♀, Trang pr., Nam Tok Ton Yai, Khao Chong, MT 65 m, 7°32'N; 99°47'E, 10.II.2005 (D. Yanega); 1 ♀, Songkhala, Khao, Khaow Hong, 7°2'N; 100°30'E, 18.II.2005 (D. Yanega). **Indonesia:** 3 ♀♀, Bali, Legian, 3.V.1988 (G. Gordh); 4 ♀♀, Bali, Kuta, 4.V.1988 (G. Gordh); 12 ♀♀, Bali, Airport, 5–6.V.1988 (G. Gordh).



Figs 1–11. Female (1–8, 10–11) and male (9) antennae of *Elasmus* spp.: 1 — *E. alaris*, left; 2 — *E. brevicornis*, right; 3 — *E. grimmi*, left; 4 — *E. homonae*, right; 5 — *E. indicus*, left; 6 — *E. johnstoni*, right; 7 — *E. nephantidis*, left; 8 — *E. nigrinus*, right; 9 — *E. nigrinus*, left; 10 — *E. philippinensis* (holotype), right; 11 — *E. queenslandicus*, right.

Рис. 1–11. Антенны самок (1–8, 10–11) и самцов (9) *Elasmus* spp.: 1 — *E. alaris*, левая; 2 — *E. brevicornis*, правая; 3 — *E. grimmi*, левая; 4 — *E. homonae*, правая; 5 — *E. indicus*, левая; 6 — *E. johnstoni*, правая; 7 — *E. nephantidis*, левая; 8 — *E. nigrinus*, правая; 9 — *E. nigrinus*, левая; 10 — голотип *E. philippinensis*, правая; 11 — *E. queenslandicus*, правая.

***Elasmus brevicornis* Gahan, 1922**

Fig. 2.

Elasmus brevicornis Gahan, 1922: 50. Holotype: ♀, Indonesia, Java, Buetenzorv, S. leaf-miners, reared from larva of *Erinota thrax*, det. Gahan 24.XI.1919 (USNM, examined).

DIAGNOSIS. Body black, mesoscutum with yellow spot near each tegula, gaster with T1 and T2 yellow.

low. POL 1.4–1.5 times OOL. OOL 1.2–1.3 times OD. Antenna F1 shorter than pedicel, F2, F3 1.1–1.2 times as long as broad or slightly transverse.

HOSTS. Ectoparasitoid of *Bilobata subsecivella* (Zeller, 1852) (Lepidoptera: Gelechiidae), *Cnaphalocrosis medinalis* (Guenée, 1854), *Diaphania* sp., *Pali-ga machoeralis* (Walker, 1859), *Lygropia* sp., *Maras-mia suspicalis* (Walker, 1859), *Nausinoe geometralis*

(Guenée, 1854) and *Sylepta derogata* (Fabricius, 1775) (Lepidoptera: Pyraloidea), *Erionota thrax* (Linnaeus, 1767) (Lepidoptera: Hesperidae), and a facultative hyperparasitoid of *Apanteles* sp. (Hymenoptera: Braconidae) [Thompson, 1954; Herting, 1975; Verma & Hayat, 1986; Graham, 1995; Narendran et al., 2008].

DISTRIBUTION. Indonesia [Gahan, 1922], Congo, Myanmar (Burma), India, Malaysia [Herting, 1977], Yemen [Yefremova, 2007], Russia [Yefremova & Strakhova, 2010], Vietnam [Yefremova & Strakhova, 2009]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 2 ♀♀, Songkhala, Khao, Khaow Hong, 7°2'N; 100°30'E, 13, 18.II.2005 (D. Yanega). **Malaysia:** 1 ♀, Pahang Kuala Tahan, Taman Negara Nat. park, 200 m, 20–21.VI.1990 (J. Heraty). **Indonesia:** 1 ♀, Bali, Ubud, 3.IV.1988 (G. Gordh).

Elasmus grimmi Girault, 1920

Fig. 3.

Elasmus grimmi Girault, 1920: 186. Lectotype: ♀, Cane, April–September 1915 (A.P. Dodd) (QMB). Designated by Riek, 1967 (not examined).

DIAGNOSIS. Body black with green tint, gaster orange except for a transverse brown stripe on T1 and T5–T7, legs mostly yellow. POL 1.8 times OOL. Setae on hind tibia arranged in 2 wavy lines that do not touch each other, mid tibia with 3 lines of bristles.

HOSTS. Unknown.

DISTRIBUTION. Australia [Girault, 1920]; India [Verma et al., 2002]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 1 ♀, Trang pr. Forest Research Station, Khao Chong, MT 75 m, 7°33'N; 99°47'E, 8–10.II.2005 (D. Lohman).

Elasmus homonae Ferrière 1929

Fig. 4.

Elasmus homonae Ferrière 1929: 415. Lectotype: ♀, Ceylon, Talawakella, ex. larvae of *Homona coffearia*, 1933, C.B.R. King, det. Ferrière, 1933 designated by Verma, Hayat, Kazmi (2002) (BMNH, examined).

DIAGNOSIS. Body black with bluish green reflection, metanotum yellow, gaster brown with transverse reddish band at T1. POL 4.0–5.0 times OOL. F1 1.2 times as long as F2, F2 as long as F3.

HOSTS. *Homona coffearia* (Nietner, 1861), *Cydia leucostoma* (Meyrick, 1912), *Fulcrifera tricentra* (Meyrick, 1907) (Lepidoptera, Tortricidae) [Verma & Hayat, 1986].

DISTRIBUTION. India, Sri Lanka, Taiwan [Ferrière, 1929; Herting, 1975; Narendran et al., 2008]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 2 ♀♀, Suphanburi Khao Yai NP, Nam Tok Haew Suwat, 800 m, 14°25'N; 101°24'E, 1.VII.1990 (J. Heraty); 2 ♀♀, Trang Pr., Nam Tok Ton Yai, Khao Chong, 65 m, 7°32'N; 99°47'E, 10.II.2005 (D. Yanega).

Elasmus indicus Rohwer, 1921

Fig. 5.

Elasmus indicus Rohwer, 1921: 124. Holotype: ♀, Coimbatore, South India, 18.I.1917, Ramarkrishna Coll. No.20979 (USNM) (examined).

DIAGNOSIS. Body black with violet tint, mesoscutum with yellow spots near tegulae, gaster with reddish band on T1–T2. POL 1.5–2.0 OOL. Antenna with F2 as long as F3, F1 1.4–1.5 times as long as F2.

HOSTS. Larval-pupal parasitoid of Noctuidae, Pyralidae (Lepidoptera), Asterolecaniidae (Hemiptera) [Thompson, 1954; Narendran et al., 2008, Yefremova & Strakhova, 2009].

DISTRIBUTION. India [Rohwer, 1921; Narendran et al., 2008], Vietnam [Yefremova & Strakhova, 2009]. **New records for Thailand and Malaysia.**

SPECIMENS EXAMINED. **Thailand:** 1 ♀, Trang pr., Nam Tok Ton Yai, Khao Chong, 65 m, 7°32'N; 99°47'E, 10.II.2005 (D. Yanega). **Malaysia:** 1 ♀, Selangor Kuala Lumpur, University of Malaya, Rimba Ilma, 100 m, 12.VI.1990 (J.M. Heraty); 1 ♀, Pahang, Kuala Tahan Taman, Negara Nat. Park, rainforest, 200 m, 20–21.VI.1990 (J. Heraty).

Elasmus johnstoni Ferrière, 1929

Fig. 6.

Elasmus johnstoni Ferrière, 1929: 258. Holotype: ♀, Sudan, Wad Medani, 15.IV.1927, H.B. Johnston (BMNH, not examined).

DIAGNOSIS. Body black with green reflection. POL 2.5–3.0 times OOL. Malar space 2.0 times as long as eye length. Antenna with F2 as long as F3, F1 1.5 times as long as pedicel.

HOSTS. Species of Gelechiidae, Hyblaeidae, Noctuidae, Pyralidae (Lepidoptera). Hyperparasitoids of *Apanteles* sp. (Hymenoptera, Braconidae) [Thompson, 1954; Herting, 1977; Verma et al., 2002].

DISTRIBUTION. India, Pakistan, Sudan, Myanmar (Burma), Uganda [Thompson, 1954; Herting, 1977; Narendran et al., 2008]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 5 ♀♀, 3 ♂♂, Songkhala, N end Khao, Khaow Hong, 7°2'N; 100°30'E, 13.II.2005 (D. Yanega); 2 ♀♀, 3 ♂♂, Songkhala, S end Khao, Khaow Hong, 7°1'N; 100°31'E, 15.II.2005 (D. Yanega).

Elasmus nephantidis Rohwer, 1921

Fig. 7.

Elasmus nephantidis Rohwer, 1921: 125. Holotype: ♀, South India, Coimbatore, par. on *Nephantidis serinopa* on Palm, 7.IV.1914. Type N 884 (USNH, examined), paratype: ♀, South India, Thivuvallus, 22.V.1924, par. on *Nephantidis* sp., det. A.B. Gahan (BMNH, examined); paratype: ♀, same data and locality, par. on *Nephantidis*, det. A.B. Gahan (USNH, examined).

DIAGNOSIS. Body black with green reflection, mesoscutum with yellow spot near tegulae. POL 1.7–1.8 times OOL. Antenna with F1 almost as long as pedicel, F1–F3 equal to each other and 2.5 times as long as broad.

HOSTS. The coconut caterpillar *Opisina arenosella* Walker, 1864 (= *Nephantidis serinopa* Meyrick, 1905) (Lepidoptera: Cryptophagidae) [Verma et al., 2002].

DISTRIBUTION. Russia, China, Vietnam, Republic of Korea [Yefremova & Strakhova, 2009, 2010], India [Rohwer, 1921; Verma et al., 2002]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 1 ♀, Songkhala, Khao, Khaow Hong, 7°2'N; 100°30'E, 13.II.2005 (D. Yanega).

Elasmus nigrinus Verma, Hayat, 2002
Figs 8–9.

Elasmus nigrinus Verma, Hayat, 2002: 248. Holotype: ♀, India, Kerala, Periyar, A. Saoc, 5–15.X.1979, det. J. Noyes (BMNH, examined).

DIAGNOSIS. Head and mesosoma black with bluish green tint, gaster mostly reddish, legs yellow. Hind tibia setae arranged in 2 wavy lines that do not touch each other, mid tibia with 3 lines of bristles. Scutellum with long and thick second pair of setae. POL 1.7–2.0 times as OOL.

Male. First description. Body length 1.0–1.5 mm.

Body black, mandibles, tegulae, antenna and metanotum yellow, eyes and ocelli grey, gaster dark brown with yellow band on T1–T2, fore leg yellow, mid and hind legs brown with yellowish tibia and tarsi.

Head. POL 2.0 times OOL. OOL 1.3 times OD. Antenna (Fig. 9) with scape 2.0 times as long as pedicel, F1, F2 and F3 equal to each other, F4 1.1 times as long as clava.

Mesosoma. Scutellum with long and thick second pair of setae, setae 1.4–1.6 times as long as scutellum. Fore wing 3.6 times as long as broad. Fore wing hyaline with isolated subcubital line of setae, bare line under MV. Hind tibia setae arranged in 2 wavy lines that do not touch each other. Gaster 2.9 times as long as broad.

HOSTS. Unknown.

DISTRIBUTION. India [Verma, et al., 2002]. **New records for Thailand and Malaysia.**

SPECIMENS EXAMINED. **Thailand:** 1 ♂, Trang Pr. Forest Research Station Khao Chong MT, 75 m, 7°33'N; 99°47'E, 23–25.I.2005 (D. Lohman); 2 ♂♂, Trang Pr. Forest Research Station Khao Chong, trail, 75 m, 7°33'N; 99°47'E, 5, 8.II.2005 (D. Yanega); 1 ♂, Trang Pr., Nam Tok Ton Yai, Khao Chong, 65 m, 7°32'N; 99°47'E, 10.II.2005 (D. Yanega); 1 ♀, Songkhala, Nam Tok Ton Plin, 100 m, 7°00'N; 100°14'E, 17.II.2005 (D. Yanega); 1 ♂, Songkhala Nend Khao Khaw Hong, 7°02'N; 100°30'E, 18.II.2005 (D. Yanega). **Malaysia:** 3 ♂♂, Selangor Kuala Lumpur, University Malaya, Rimba Ilma, 100 m, 12, 14, 23.VI.1990 (J.M. Heraty); 1 ♂, Pahang Kuala Tahan, Taman Negara Nat. park, 200 m, 20–21.VI. 1990 (J.M. Heraty).

Elasmus philippinensis Ashmead, 1904
Fig. 10.

Elasmus philippinensis Ashmead 1904: 138. Holotype, ♀, Manila, Philippines (Father W A Stanton). No. 7915 (USNM, examined).

Type was examined and re-described through 109 years after its description by Ashmead [1904]. Ashmead's description was based only on colour characters. "Female. Length 1 mm. Blue black, abdomen mostly red, with its pointed tip black, the postscutellum waxy-white, the scape pale yellowish, the flagellum brown-black, pubescent, legs yellowish white, the middle and hind femora dark or blue black; the black hairs on hind tibia are arranged to form nine or ten oval areas. Wings hyaline, veins brown". We provide additional morphological characters for this species.

Re-description: Female (holotype): body length 1.1 mm, fore wing length 1.04 mm.

Body black with blue tint. Face black with blue tint, mandibles yellow. Eyes grey, ocelli brown; scape and pedicel of antenna yellow, flagellum and clava brownish. Tegulae yellow. Lamella yellow. Fore and middle legs with brown coxae and yellow femora, hind femora brown, all tibiae and tarsi yellow. Gaster dorsally with T1 black with blue greenish tint, T2 reddish, T3 and other tergites dark brown, ventrally yellow.

Head. Vertex with numerous setae. Eyes without setae. Malar space slightly wider than mouth length. POL about 1.3 times OOL. Toruli situated lower than level of the lower margin of eyes. Antenna short with scape 1.6 times as long as pedicel, with single discoid anellus, funicle and clava 3-segmented. F1 1.7 times shorter than pedicel, pedicel with numerous setae, F1 1.1 times as long as broad and almost equal to F2. F2 almost subquadrate, F2 1.1 times shorter than F3, clava 2.0 times as long as F3.

Mesosoma. Mesoscutum with numerous setae; scutellum smooth with 2 pairs of long setae. Dorsellum finely reticulate. Propodeum finely reticulate medially and smooth laterally, without median carina. Fore wings 3.4 times as long as broad, with isolated subcubital line of setae and with numerous admarginal setae. Gaster 3.3 times as long as broad.

HOSTS. Unknown.

DISTRIBUTION. India [Rawat & Modi, 1970; Verma & Hayat, 1986; Verma et al., 2002], Malaysia, China, Philippines [Baltazar, 1966], Taiwan [Chien et al., 1984; Tsai et al., 1990].

Elasmus queenslandicus Girault, 1913
Fig. 11.

Elasmus queenslandicus Girault, 1913: 82. Holotype: ♀, Australia, Kuranda, Queensland, 18.V.1913, A.P. Dodd (QMB, not examined).

DIAGNOSIS. Body yellow with brown spots on vertex, pronotum, small lateral spots on metanotum, propodeum and gaster yellow with blackish band with green shine on T1, brown spot on T4, legs yellow. POL 1.8–2.2 times OOL. F1 almost equal to F2. F1 1.1 times as long as F3.

HOSTS. Unknown.

DISTRIBUTION. Australia [Girault, 1913], India [Narendran et al., 2008]. **New record for Thailand.**

SPECIMENS EXAMINED. **Thailand:** 1 ♀, Trang Pr. Forest Research Station Khao Chong, MT, 75 m, 7°33'N; 99°47'E, 21–26.I.2005 (D. Lohman); 3 ♀♀, Trang Pr. Forest Research Station Khao Chong, trail, 75 m, 7°33'N; 99°47'E, 5.II.2005 (D. Yanega). **India:** 3 ♀♀, New Delhi, Indian Agricultural Research Institute, 300 m, 7–8.VII.1990 (J.M. Heraty).

ACKNOWLEDGEMENTS. We thank Dr. Serguei Triapitsyn (University of California, Riverside, California, USA [UCRC]) for the loan of material that made this investigation possible; Dr. Michael Gates (Smithsonian Institution, National Museum of Natural History, Washington, USA [USNM]) for the loan of type material in 2013; and Dr. David Furth (USNM) for delivering this material to us.

References

- Ashmead W.H. 1904. Descriptions of new genera and species of Hymenoptera from the Philippine Islands // Proceedings of the United States National Museum. Vol.28. P.127–158.
- Baltazar C.R. 1966. A catalogue of Philippine Hymenoptera (with a bibliography, 1758–1963) // Pacific Insects Monograph. Vol.8. P.1–488.
- Bhattacharjee N.S. 1976. Records of soybean leaf roller parasites // Entomologist's Newsletter. Vol.6. No.3. P.28.
- Ferrière C. 1929. The Asiatic and African species of the genus *Elasmus* Westw. (Hym: Chalcid.) // Bulletin of Entomological Research. Vol.20. P.411–423.
- Ferrière C. 1930. Notes on Asiatic Chalcidoidea // Bulletin of Entomological Research. Vol.21. No.3. P. 353–360.
- Ferrière C. 1947. Les espèces européennes du genre *Elasmus* Westwood (Hymenoptera, Chalcidoidea) // Mitteilungen der Schweizerischen Entomologischen Gesellschaft. Vol.20. P.565–580.
- Fry J.M. 1989. Natural enemy databank, 1987. A catalogue of natural enemies of arthropods derived from records in the CIBC Natural Enemy Databank. UK Oxford: CAB International, Wallingford. viii+185 pp.
- Cameron P. 1913. On some new and other species of Hymenoptera in the collections of the Zoological Branch of the Forest Research Institute, Dehra Dun. Part I. On the Parasitic Hymenoptera reared at Dehra Dun, northern India, from the lac (*Tachardia*) and sal insects // Indian Forest Records. Vol.4. No.2. P. 91–110.
- Chien C.C., Chou L.Y., Chiu S.C. 1984. Biology and natural enemies of *Hedylepta indicata* in Taiwan // Journal of Agricultural Research (China). Vol.33. No.2. P.181–184.
- Gahan A.B. 1922. Report on a small collection of parasitic Hymenoptera from Java and Sumatra // Treubia. Vol.3. P.47–52.
- Girault A.A. 1913. Some chalcidoid Hymenoptera from north Queensland // Archiv für Naturgeschichte (A). Vol.79. No.6. P.70–90.
- Girault A.A. 1920. A new species of *Elasmus* from Australia // Insector Inscitiae Menstruus. Vol.7. P.181–187.
- Graham M.W.R. de V. 1976. Notes on the type-material of some European *Elasmus* (Hymenoptera: Chalcidoidea) and description of a new species from Madeira // Bulletin du Muséum National d'Histoire Naturelle, Paris (Zoologie). Vol.255. P.293–301.
- Graham M.W.R. de V. 1995. European *Elasmus* (Hymenoptera: Chalcidoidea, Elasmidae) with a key and descriptions of five new species // Entomologist's Monthly Magazine. Vol.131. P.1–23.
- Hedqvist K.-J. 2004. New genus and species of Braconidae, Elasmidae and Mymaridae (Ichneumonoidea and Chalcidoidea) from Sri Lanka // Rajmohana K., Sudheer K., Girish Kumar P., Santhosh S. (eds.). Perspectives on biosystematics and biodiversity. Prof. T.C. Narendran commemoration volume. Kerala, India: Systematic Entomology Research Scholars Association (SERSA). P.234–235.
- Herting B. 1975. Lepidoptera, Part 1 (Microlepidoptera). A catalogue of parasites and predators of terrestrial arthropods. Section A. Host or Prey/Enemy. Vol.6. Commonwealth Agricultural Bureaux, Commonwealth Institute of Biological Control. 218 pp.
- Herting B. 1977. Hymenoptera. A catalogue of parasites and predators of terrestrial arthropods. Section A. Host or Prey/Enemy. Vol.4. Commonwealth Agricultural Bureaux, Institute of Biological Control. iii+206 pp.
- Husain T., Kudeshia P.P. 1984. New *Elasmus* (Hymenoptera, Elasmidae) from India // Polskie Pismo Entomologiczne. Vol.54. P.363–365.
- Liao D.X., Li X.L., Pang X.F., Chen T.L. 1987. Hymenoptera: Chalcidoidea (1) // Economic Insect Fauna of China. Vol.34. P.123, 124–125.
- Mani M.S., Saraswat G.G. 1972. On some *Elasmus* (Hymenoptera: Chalcidoidea) from India // Oriental Insects. Vol.6. No.4. P.464–465.
- Mahdihassan H. 1934. *Elasmus claripennis* Can., a hyperparasite of lac insects // Annals of the Entomological Society of America. Vol.27. No.4. P.509–514.
- Narendran T.C., Sheeba M., Kulkarni H. 2008. A review on the taxonomy of the Indian species of *Elasmus* Westwood (Hymenoptera: Chalcidoidea: Eulophidae: Eulophinae: Elasmini) // Biospectra. Vol.3. No.1. P.4, 5–6.
- Parshad B., Subba Rao B.R. 1965. Records of some hymenopterous parasites of *Eucosma critica* Meyrick (Lepidoptera: Eucosmidae) from Uttar Pradesh // Indian Journal of Entomology. Vol.26. No.4. P.462–463.
- Rawat R.R., Modi B.N. 1970. Parasites of *Sylepta derogata* Fabr. with three new records from India // Indian Journal of Entomology. Vol.32. No.1. P.101–102.
- Rohwer S.A. 1921. Description of new chalcidoid flies from Coimbatore, south India // Annals and Magazine of Natural History. Vol.9. No.7. P.123–135.
- Riek E.F. 1967. Australian Hymenoptera Chalcidoidea family Eulophidae, subfamily Elasmidae // Australian Journal of Zoology. Vol.15. P.145–199.
- Thompson W.R. 1954. A catalogue of the parasites and predators of insect pests. Section 2. Host parasite catalogue. Part 3. Hosts of the Hymenoptera (Calliceratid to Evaniid). Ottawa: Commonwealth Agricultural Bureaux, Commonwealth Institute of Biological Control. P.191–332.
- Tsai Y.P., Hwang M.T., Tsai J.M., Chang H.S. 1990. Bionomics and biological control of banana skipper, *Erionota torus* Evans, in Taiwan // Chinese Journal of Entomology Vol.10. No.4. P.419–426.
- Verma M., Hayat M. 1986. Family Elasmidae // Subba Rao B.R., Hayat M. The Chalcidoidea (Insecta: Hymenoptera) of India and the adjacent countries. Part II // Oriental Insects. Vol.20. P.173–178, 310.
- Verma M., Hayat M., Kazmi S.I. 2002. The species of *Elasmus* from India (Hymenoptera: Chalcidoidea: Eulophidae) // Oriental Insects. Vol.36. P.245–306.
- Yefremova Z. 2007. The subfamilies Eulophinae, Euderinae and Entedoninae (Hymenoptera, Eulophidae) in Yemen // F. Krupp (ed.). Fauna of Arabia. Vol.23. P.335–368.
- Yefremova Z., Strakhova I. 2009. A new species of *Elasmus* Westwood (Hymenoptera: Eulophidae) from Vietnam // Oriental Insects. Vol.43. P.275–295.
- Yefremova Z., Strakhova I. 2010. [Review of species of the genus *Elasmus* Westwood, 1833 (Hymenoptera: Eulophidae) of Russia and neighboring countries with description of new species] // Entomologicheskoe Obozrenie. Vol.89. No.3. P.634–661 [in Russian, with English summary].
- Yefremova Z.A., Strakhova I.S. 2011. The Japanese *Elasmus* Westwood (Hymenoptera: Eulophidae), with description of new species // Entomological News. Vol.122. No.5. P.385–406.
- Walker F. 1846. List of the specimens of hymenopterous insects in the collection of the British Museum. Part 1 Chalcidites. London. 181 pp.