

**Review of Oriental and some Palaearctic species of the genus *Endomia*  
(Coleoptera: Anthicidae)**

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**Taxonomy, Coleoptera, Anthicidae, *Endomia*, synonymy, lectotype designations, Oriental region, Palaearctic region**

**Abstract.** A total of 18 Palaearctic and Oriental species of *Endomia* are treated. Two of them are described as new: *Endomia rameshi* sp. n. (South India) and *Endomia gracilis* sp. n. (South Vietnam). A new synonymy *Endomia arabica* Pic, 1913 (= *Endomia longicornis* Pic & Hawkins, 1955, syn. n.) is proposed. Lectotypes are designated for the following seven species: *E. indica* (Laferté, 1848); *E. euphratica* Krekich-Strassoldo, 1926; *E. nana* Krekich-Strassoldo, 1926; *E. gratiosa* Krekich-Strassoldo, 1926; *E. lunulata* Krekich-Strassoldo, 1926; *E. baeri* (Pic, 1902); *E. malayana* (Pic, 1895).

INTRODUCTION

*Endomia* are small, ground-dwelling anthicids, inhabiting arid or at least temporarily dried sandy habitats. The genus was established by Laporte de Castelnau (1840), but its representatives have long been known under the junior synonym *Ochthenomus*, proposed two years later by Schmidt (1842). Schmidt recognized only two European species, but described their morphology in detail and gave nearly all generic features discussed below. His generic definition was interpreted in an augmented, but substantially unchanged, form more than hundred years later by Bonadona (1960) for *Endomia*.

*Endomia* contains at present 50 species occurring in Palaearctic (9), Afrotropical (26) and Oriental (15) regions. Except *E. picina* Hawkins, 1957 from Ethiopia and *E. mirei* Bonadona, 1984 from Cameroon, all Afrotropical and five West-Palaearctic (Mediterranean) species are included in the revision by Bonadona (1960). The present study is an attempt to complete our knowledge of remaining Palaearctic and mainly Oriental species. No serious attention has been paid to possible phylogenetic classification of the genus within Anthicinae, since a number of rather doubtful genera included in this subfamily are in the need of complete revision. Consequently, it is not possible to comment on Bucciarelli's (1980) erection of the tribe Endomiini.

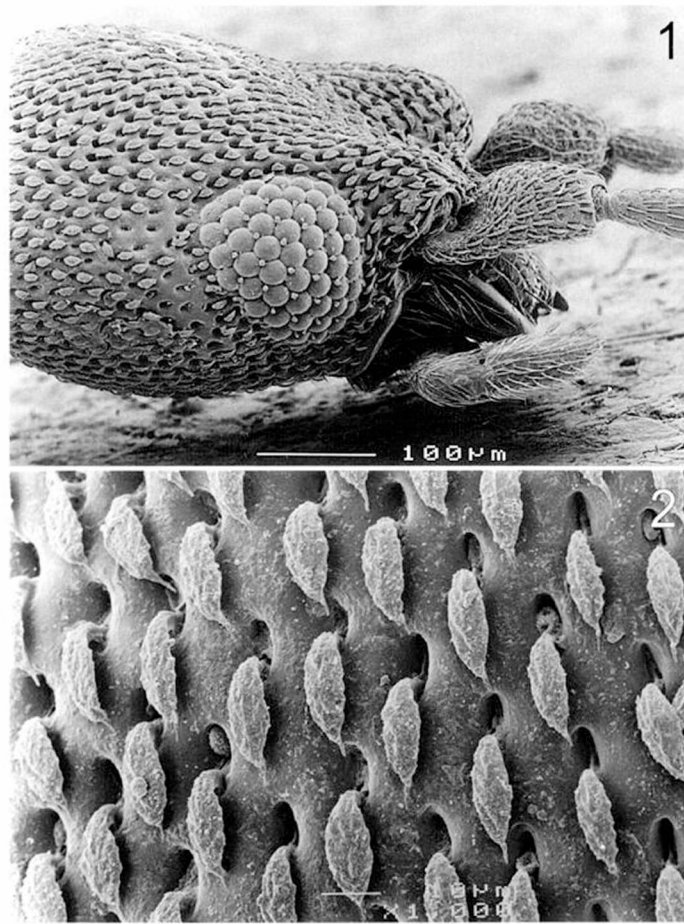
MATERIAL AND METHODS

Specimens were examined with stereoscopic microscope with diffused lighting and illustrated with the aid of drawing graticule. After dissection, male genitalia were placed in concentrated lactic acid for at least several days before they were examined and illustrated.

Material on which this study is based is deposited in the following institutions and collections: BMNH – Natural History Museum, London; MNHM – Hungarian Natural History Museum, Budapest; MHNG – Muséum d'Histoire Naturelle, Genève; MNHN – Muséum National d'Histoire Naturelle, Paris; NMPC – National Museum, Praha; NHMW – Naturhistorisches Museum, Wien; USNM – National Museum of Natural History, Washington, D. C. (Smithsonian Institution); ZKPC – Z. Kejval, private collection; GUPC – G. Uhmman, private collection.

#### TAXONOMY

Generic definition. The following combination of characters may serve for distinguishing *Endomia* from all other members of the large and rather uniform subfamily Anthicinae: size ranging from 1.75 to 3.4 mm; elongate, rather slim appearance; the body surface rather dull or at most feebly shining owing to distinct, conspicuously dense, punctation (punctures of head and prothorax finer, separated by less than one diameter or nearly contiguous; punctures on elytra markedly coarser in basal third and becoming shallower and more widely spaced posteriorly); pubescence very short, quite recumbent; hairs as a rule rather thickened (scale-like, as in Fig. 2); basal margin of prothorax not appreciably bordered; legs comparatively short; tibiae with almost entirely reduced terminal setae; the first antennal segment usually elongate, somewhat asymmetrical, inserted under more or less protruding antero-lateral margin of frons (Fig. 1) and therefore often not clearly visible in dorsal view.



Figs 1-2: *Endomia tenuicollis* (Rossi), SEM photographs. 1 – head laterally; 2 – head, detail of scale-like pubescence.

### Key to Oriental and Palaearctic *Endomia*

- 1 Head conspicuously elongated, 1.9 times longer than wide . . . *E. lefebvrei* Laferté, *E. senilis* Wollaston
- Head less elongated, at most 1.4 times longer than wide . . . . . 2
- 2 Elytra unicolored . . . . . 3
- Elytra with more or less extensive dark marking or with lighter, transverse band at posterior third . . . 5
- 3 Larger species (2.9 mm); eyes rather flat; frons moderately impressed; tegmen of aedeagus as in Fig. 5, flattened, truncate apically, with apical margin shallowly emarginate; median lobe of aedeagus trilobed apically (Fig. 7) . . . . . *E. arabica* Pic
- Smaller species (2.2–2.5 mm); eyes somewhat convex; frons deeply impressed; apical margin of tegmen of aedeagus with small, median process or protuberance; median lobe of aedeagus never trilobed . . . . . 4
- 4 Head rather vaulted posteriorly; first antennal segment slender, cylindrical; last abdominal sternum in male not impressed subapically; distal part of tegmen of aedeagus as in Fig. 41, with small, fine, membranous lobes laterally . . . . . *E. nana* Krekich-Strassoldo
- Head less vaulted posteriorly; first antennal segment stouter distally; last abdominal sternum in male distinctly impressed subapically; tegmen of aedeagus conspicuously widened and flattened apically; lateral lobe-like protrusions massive, well sclerotized, pointed . . . . . *E. tenuicollis* Rossi, *E. concolor* Desbrochers
- 5 Fourth antennal segment at most 2.6 times longer than wide . . . . . 6
- Fourth antennal segment at least 3.2 times longer than wide . . . . . 8
- 6 Antennal segments 8–10 transverse; width : length ratio in tenth segment 1.3; elytra light brown, with vague, lighter transverse band at posterior third; median lobe of aedeagus trilobed apically (Fig. 48) . . . . . *E. tonkinae* Pic
- At most tenth antennal segment moderately transverse, 1.19 times wider than long; elytra largely light, with dark marking; median lobe of aedeagus never trilobed apically . . . . . 7
- 7 Rather slim; head roughly of the same color as prothorax; punctures of head and prothorax contiguous; eyes very small, flat (Fig. 83) . . . . . *E. gracilis* sp. n.
- Slightly more robust; head distinctly darker colored than prothorax; punctures of head and prothorax more widely spaced, not contiguous, eyes slightly more prominent (Fig. 85) . . . . . *E. rameshi* sp. n.
- 8 Head roughly of the same color as prothorax; elytra with vague V or W-shaped marking at posterior half (Figs 19, 24, 29, 34), which may be reduced to small triangular spot at suture; frontal protrusions minute; frons feebly impressed . . . . . 9
- Head darker than prothorax; dark marking of elytra consists of five spots or a transverse band at posterior half; frontal protrusions prominent; frons distinctly impressed . . . . . 14
- 9 Antennae conspicuously long and slender, tenth segment markedly, 1.80 times longer than wide, apex of tegmen of aedeagus (Fig. 36) abruptly shortened, with small, blunt median projection . . . . . *E. lunulata* Krekich-Strassoldo
- Antennae less elongated, tenth antennal segment at most 1.18 times longer than wide; tegmen of aedeagus tapering apically . . . . . 10
- 10 Eyes conspicuously large; fourth antennal segment slightly shorter than third; median lobe of aedeagus trilobed apically (Fig. 54) . . . . . *E. castelsi* Pic
- Eyes medium; fourth antennal segment distinctly longer than third; median lobe of aedeagus simple . . . . . 11
- 11 Tempora distinctly narrowed toward base of head; pubescence rather distinct; hairs whitish, scale like, similar to those in Fig. 2, but somewhat longer; western Palaearctic region . . . . . *E. occipitalis* Dufour
- Tempora subparallel or at most slightly narrowed toward base of head; pubescence inconspicuous; hairs translucent, much finer, rather thin; Oriental region . . . . . 12
- 12 Head regularly arcuately rounded posteriorly; hind angles indistinct; tegmen of aedeagus (Figs 26, 27) continuously narrowed toward apex in both ventral and lateral view . . . . . *E. malayana* (Pic)
- Head somewhat angulate posteriorly; tegmen of aedeagus discontinuously narrowed toward apex . . . . . 13
- 13 Body light, yellow-brown, more subtle, less vaulted, prothorax narrower than head; tegmen of aedeagus (Figs 21, 22) somewhat discontinuously narrowed toward apex . . . . . *E. indica* (Laferté)

- Body brown to dark brown, robust, rather vaulted; prothorax massive, as wide as head; tegmen of aedeagus (Figs 31, 32) abruptly narrowed apically ..... *E. baeri* (Pic)
- 14 Elytra with five relatively sharply limited dark spots; four anterior spots paired, situated on humeri and at middle, laterally, fifth spot triangular, situated at suture, posteriorly; aedeagus as in Figs 80, 81 ..... *E. quinquemaculata* Uhmann
- Elytra with dark, transverse band in posterior half, which may extend along lateral margins and suture in both directions ..... 15
- 15 Antennal segments 8–10 rounded distally; lateral outlines of elytra moderately angulate behind humeral swellings in dorsal view (Fig. 9); tegmen of aedeagus as in Fig. 11, median lobe cylindrical, simple ..... *E. coniceps* Reitter
- Antennal segments more or less sharply angulate distally; lateral outlines of elytra without another pair of angles behind humeral swellings; tegmen of aedeagus flattened apically; median lobe strengthened by longitudinal fork-like sclerite posteriorly ..... 16
- 16 Eyes rather small; first antennal segment short, massive distally; distal part of tegmen of aedeagus as in Fig. 16, lateral sides of apex somewhat sloping, spines on ventral side form a pair of distinct accumulations laterally ..... *E. euphratica* Krekich-Strassoldo
- Eyes medium; first antennal segment longer, cylindrical, less enlarged distally; apex of tegmen of aedeagus broadly rounded, somewhat angulate, not sloping laterally; spines sparsely scattered on ventral side, subapically ..... 17
- 17 Last abdominal sternum in male with short subapical groove (Figs 60, 67, 72); distal part of tegmen of aedeagus wide, flattened, with distinct membranous lobes laterally ..... 18
- Last abdominal sternum in male simple; distal part of tegmen of aedeagus narrower, distinctly dorso-laterally impressed subapically, rounded apically, without distinct membranous lobes ..... *E. unifasciata* Bonelli
- 18 Tenth antennal segment transverse, 1.19 times wider than long; basal median carina of head distinctly impressed; dark marking of elytra (Fig. 68) restricted to sharply outlined, transverse spot in posterior third, not extending to lateral margins ..... *E. gratiosa* Krekich-Strassoldo
- Tenth antennal segment at most as long as wide; basal median carina slightly or not impressed; the dark posterior band of elytra rather vaguely outlined, usually conspicuously extended along lateral margins and suture (Fig. 56) or at least extending to lateral margins (Fig. 64) ..... 19
- 19 Tenth antennal segment as long as wide; tegmen of aedeagus (Fig. 58) with small protuberance in the middle of apical margin ..... *E. decorata* Krekich-Strassoldo
- Tenth antennal segment slightly, 1.13 times longer than wide; tegmen of aedeagus (Fig. 65) with conspicuous, pointed projection in the middle of apical margin ..... *E. besucheti* Bonadonna

*Endomia arabica* Pic, 1913

*Endomia arabicus* Pic, 1913: 162.

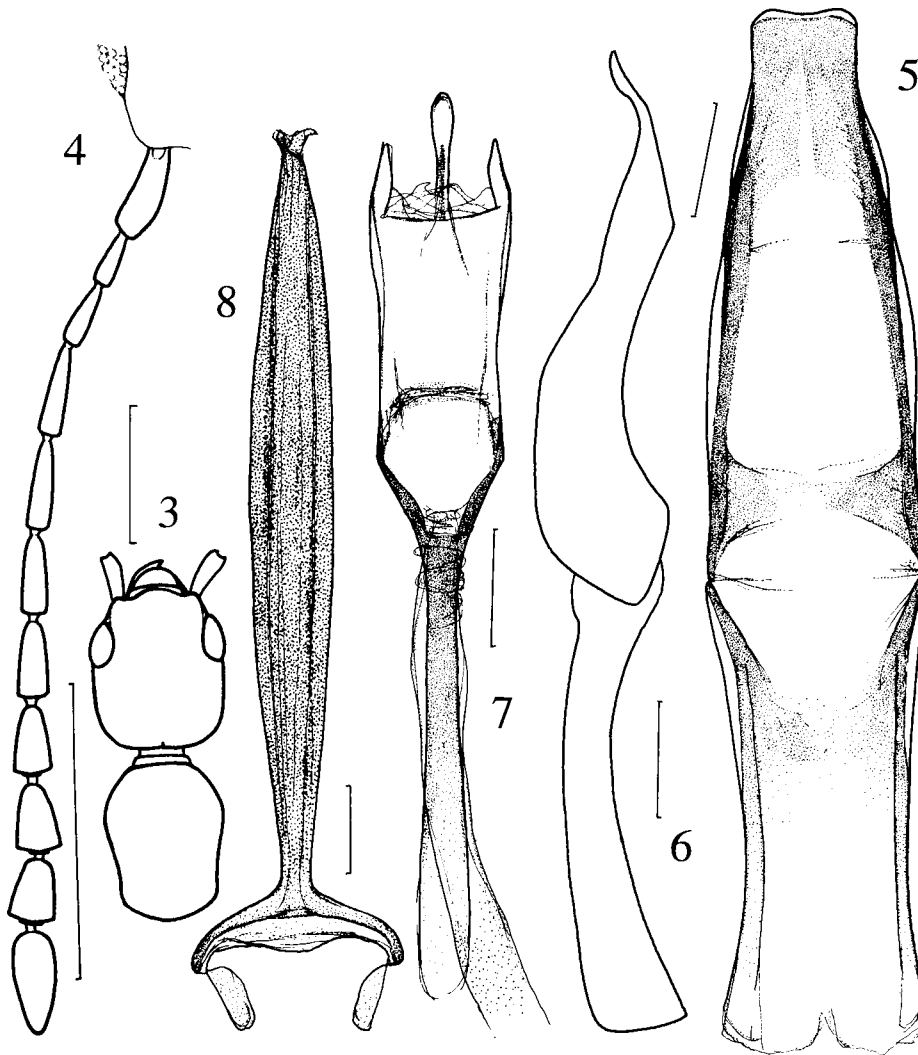
*Endomia longicornis* Pic & Hawkins, 1955: 448, syn. n.

Length 2.9 mm.

MALE. Fore-part of the body (Fig. 3). Fuscous; head darker; antennae and legs with rufous tinge.

Head 1.4 times longer than wide, broadly rounded, somewhat angulate posteriorly; tempora subparallel; posterior angles rounded, widely obtuse; basal median carina fine, moderately impressed; frontal protrusions minute, moderately elevated; frons flat. Eyes medium, rather flat, not protruding from lateral outline of head. Prothorax somewhat smaller than head, regularly rounded in front, shallowly impressed postero-laterally. Elytra nearly twice as long as wide.

Antennae (Fig. 4) long, moderately stout, from the seventh segment increasingly enlarged; the tenth segment 1.29 times longer than wide; terminal segment 1.44 times longer than penultimate.



Figs 3–8: *Endomia arabica* Pic. 3 – fore-part of the body; 4 – antenna; 5 – tegmen of aedeagus ventrally; 6 – same laterally; 7 – median lobe of aedeagus; 8 – spiculum gastrale. Scales: 3, 4 – 0.5 mm; 5–8 – 0.1 mm.

Aedeagus (Figs 5–7). Tegmen moderately narrowed distally in ventral view, with apical portion truncate, angulate, dorso-ventrally flattened, with anterior margin shallowly emarginate medially. Median lobe trilobed apically; middle lobe longer, club-like, rounded apically; lateral lobes shorter, pointed apically. Spiculum gastrale (Fig. 8).

FEMALE. Unknown.

TYPE MATERIAL EXAMINED: 1 ♂, "Arabia Hel Hadjaz", "Endomia arabica", "type" (handwritten), "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN); 1 ♂, "Yemen, El Errein, nr. Haz, about 16 miles V. W. of San'a, ca. 9,000 ft., 3, 4.ii.1938", "B. M. Exp. to S. W. Arabia, H. Scott & E.B. Britton., B. M. 1936-246., under stones in short turf near water-hole, Birkat-El-Bu'r.", "E. longicornis n. sp.", "syntype", "Muséum Paris Coll. M. Pic" (MNHN).

DISTRIBUTION. Saudi Arabia, Yemen.

DIFFERENTIAL DIAGNOSIS. *E. arabica* Pic is easily distinguishable from all known Palearctic species by the following combination of characters: unicolored; eyes rather flat; all antennal segments distinctly longer than wide, angulate distally; tegmen of aedeagus dorso-ventrally flattened, truncate apically; median lobe trilobed.

### *Endomia coniceps* (Reitter, 1901)

*Ochthenomus coniceps* Reitter, 1901: 79–80.

*Endomia coniceps*; Pic, 1911: 82.

Length 2.6–3.4 mm.

MALE. Habitus (Fig. 9). Head, prothorax and antennae rufous-brown; elytra lighter, yellow-brown with distinct, dark transverse band beyond the middle, not extending to lateral margins; legs and palpi yellow-brown. Head 1.3 times longer than wide, rounded posteriorly, distinctly narrowed behind eyes; posterior angles obsolete, entirely rounded; basal median carina distinctly impressed; frontal protrusions prominent, elevated; frons flat. Eyes medium, slightly convex, not protruding from lateral outline of head. Prothorax smaller than head, rounded in front, distinctly impressed postero-laterally. Elytra twice as long as wide; lateral outlines moderately angulate behind humeral swellings in dorsal view.

Antennae (Fig. 10) conspicuously long, extending markedly beyond elytral humeri, slender; the tenth segment 1.54 times longer than wide; terminal segment 1.36 times longer than penultimate.

Aedeagus (Figs 11–12). Distal part of tegmen markedly dorso-laterally vaulted, nearly subparallel posteriorly in ventral view and arcuately narrowed in anterior fourth toward pointed, slightly protruding apex. Median lobe cylindrical, simple. Spiculum gastrale (Fig. 13).

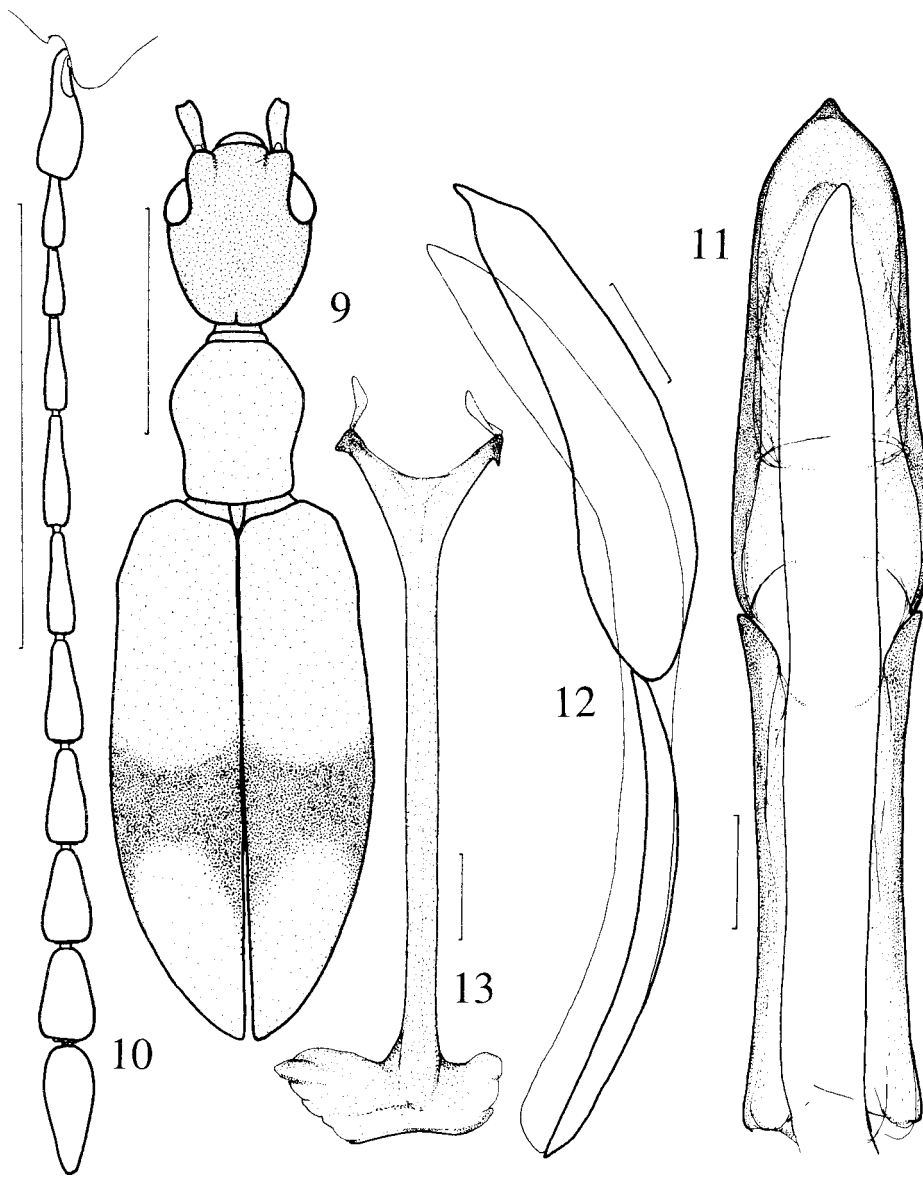
FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: 1 ♀, "Turkestan, Buchara, Karatagh", "Coll. Reitter", "O. coniceps m. 1900., Buchara", "Holotypus (red printed) 1901, Ochthenomus coniceps" (light label with red margin) (HNHM); 1 ♀, same data, "Paratypus (red printed) 1901, Ochthenomus coniceps" (light label with red margin) (HNHM); 1 ♀, "Buchara" (date not stated), "type" (handwritten), "Ochthenomus coniceps Rtt.", "Ochthenomus coniceps n. sp.", "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN).

OTHER SPECIMENS EXAMINED: 1 ♂, 5 ♀, USSR, Uzbekistan, Zeravshan Mts, 1,300 m, Agalyk river valley, 40 km SW of Samarkand, 26.v.1990, Z. Jindra lgt.; 2 ♂, same data, 16.v.1990; 1 ♂, same data, 20.v.1990 (ZKPC); 1 ♀, Hissar, date not stated, Hauser lgt. (NHMW); 1 ♀, Mts Karateghin, Baldschuan, 924 m, 1898, F. Hauser lgt. (NHMW).

DISTRIBUTION. Central Asia (Uzbekistan).

DIFFERENTIAL DIAGNOSIS. This species shares similar color pattern with *E. unifasciata* and *E. euphratica*, but differs essentially in many features, e.g., by the form of the antennal segments, prothorax and male genitalia.



Figs 9–13: *Endomia coniceps* (Reitter). 9 – habitus; 10 – antenna; 11 – aedeagus ventrally; 12 – same laterally; 13 – spiculum gastrale. Scales: 9, 10 – 0.5 mm; 11–13 – 0.1 mm.

REMARKS. The dark transverse band on elytra may be narrow, straight or considerably wide, extending along lateral margins and suture posteriorly. The male genitalia of *E. coniceps* are described from a non-type male specimen (lgt. Z. Jindra). Those non-type specimens are on the average slightly smaller (2.6–2.9 mm), but otherwise correspond in all details with both examined types.

*Endomia euphratica* Krekich-Strassoldo, 1926

*Endomia euphratica* Krekich-Strassoldo, 1926: 103–104, Fig. 33 I.

Length 2.7–2.8 mm.

MALE. Habitus (Fig. 14). Light brown with rufous tinge, head somewhat darker; elytra with brown-black, vaguely outlined, transverse band beyond the middle, not extending to lateral margins.

Head 1.3 times longer than wide, regularly rounded posteriorly; tempora relatively long, nearly subparallel; posterior angles obsolete, entirely rounded; basal median carina fine, moderately impressed; frontal protrusions prominent, distinctly elevated; frons moderately impressed. Eyes small, convex, slightly protruding from lateral outline of head. Prothorax smaller than head, regularly rounded in front, shallowly impressed postero-laterally. Elytra 2.1 times longer than wide.

Antennae (Fig. 15) long, from the sixth segment on increasingly enlarged; the tenth segment 1.20 times longer than wide; terminal segment 1.55 times longer than penultimate.

Aedeagus (Figs 16–17). Distal part of tegmen nearly parallel-sided in ventral view, its apical portion flattened, with small, pointed projection in the middle of apical, arcuately rounded margin, with very fine, lobe-like, membranous lateral margins and a number of small spines on its ventral surface, forming distinct accumulations antero-laterally. Distal portion of median lobe (Fig. 79) membranous, of unclear structure, terminating in a long, slender projection, which fits into the shallow, longitudinal, rearward-widened groove in the median row of the apical portion of tegmen; the membranous part of median lobe strengthened by longitudinal, fork-like sclerite posteriorly. Spiculum gastrale (Fig. 18).

FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated; genitalia dissected, mounted on slide), "Persia, Kerim, IX.75", "45B" (number of slide), "euphratica det. v. Krekich", "TYPE" (red, printed) (NHMW). Paralectotype ♂ (genitalia dissected, mounted on slide), "Mesopot., Wadi Seiduk", "495A" (number of slide), "TYPE" (red, printed) (NHMW).

OTHER SPECIMENS EXAMINED: 1 ♂, 1 ♀, SE Turkey, Uludere Pass, 31.v.1987, M. Jäch lgt. (NHMW); 1 ♂, Turkey, 5 km from Halfeti, 27.v.1987, M. Jäch lgt. (NHMW); 1 ♀, Turkey, Prov. Hakkari, Beytüşsebab, 2.vi.1987, Schönmann and Schillhammer lgt. (NHMW); 2 ♀, Iran, Komehr, 2,000 m, 17.vi.1973 (NMPC).

DISTRIBUTION. Iran, SE Turkey.

DIFFERENTIAL DIAGNOSIS. This species shares very similar color pattern and general form of male aedeagus with *E. unifasciata*, but differs mainly by somewhat smaller eyes; the tenth antennal segment 1.20 times longer than wide (at most as long as wide in *E. unifasciata*); distal part of tegmen of aedeagus (Fig. 16) wide, flattened apically; apex of tegmen pointed, sloping laterally.

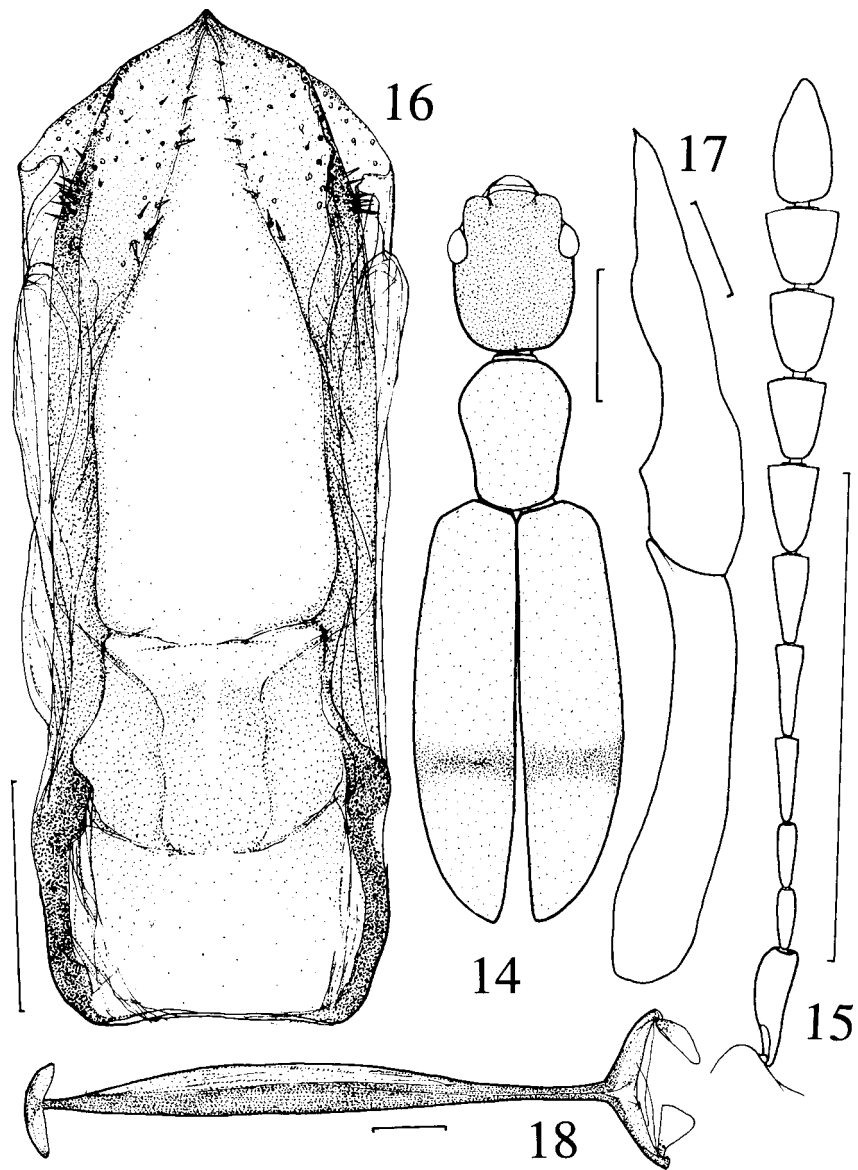
VARIABILITY. The dark transverse band on elytra may be narrow, straight, or somewhat wider, extending along median suture posteriorly.

*Endomia concolor* (Desbrochers, 1875)

*Ochthenomus concolor* Desbrochers, 1875: 176.

*Endomia concolor*; Pic, 1911: 82.

This species is known only from original description; the type material was not found in MNHN. Described from Asia Minor. Length 2.5 mm.



Figs 14–18: *Endomia euphratica* Krekich-Strassoldo: 14 – habitus; 15 – antenna; 16 – distal part of tegmen of aedeagus ventrally; 17 – tegmen laterally; 18 – spiculum gastrale. Scales: 14, 15 – 0.5; 16–18 – 0.1.

Desbrochers (1875) mentioned the similarity of *E. concolor* and *E. tenuicollis* Rossi, 1790, but he found the former essentially different in the following points: entirely light yellow-rufous; head much larger than prothorax; prothorax convex, slim, rounded in front and laterally, not angular; elytra less longitudinal and somewhat less depressed.

Having examined rather extensive material of *E. tenuicollis* from Middle East (Turkey, Iran, central Asia) including three specimens labelled: "Persia septent, 1862–63, Coll. S. Doria; concolor Pic det.", the above-mentioned differences are not significant and both species are probably conspecific.

*Endomia indica* (La Ferté-Sénéctère, 1848)

*Ochthenomus indicus* La Ferté-Sénéctère, 1848: 288.

*Endomia indicus*: Pic, 1911: 82.

Length 2.6–2.7 mm.

MALE. Habitus (Fig. 19). Light brown, with dark, vaguely outlined, W-shaped marking in the middle of elytra.

Head 1.2 times longer than wide, somewhat angulate posteriorly, moderately narrowed behind eyes; posterior angles widely rounded, obtuse; basal median carina fine, not impressed; frontal protrusions minute, moderately elevated; frons flat. Eyes relatively large, slightly convex, not protruding from lateral outline of head. Prothorax somewhat smaller than head, regularly rounded in front, feebly impressed postero-laterally. Elytra 1.8 times longer than wide, moderately vaulted posteriorly.

Antennae (Fig. 20) relatively long, from the eighth segment increasingly enlarged; the tenth segment 1.18 times longer than wide; terminal segment 1.61 times longer than penultimate.

Aedeagus (Figs 21–22). Distal part of tegmen somewhat discontinuously narrowed (ventral view) toward apex; apical portion tapering, distinctly curved (lateral view). Median lobe simply shaped, strongly narrowed, pointed apically. Spiculum gastrale (Fig. 23).

FEMALE. Generally corresponding to male.

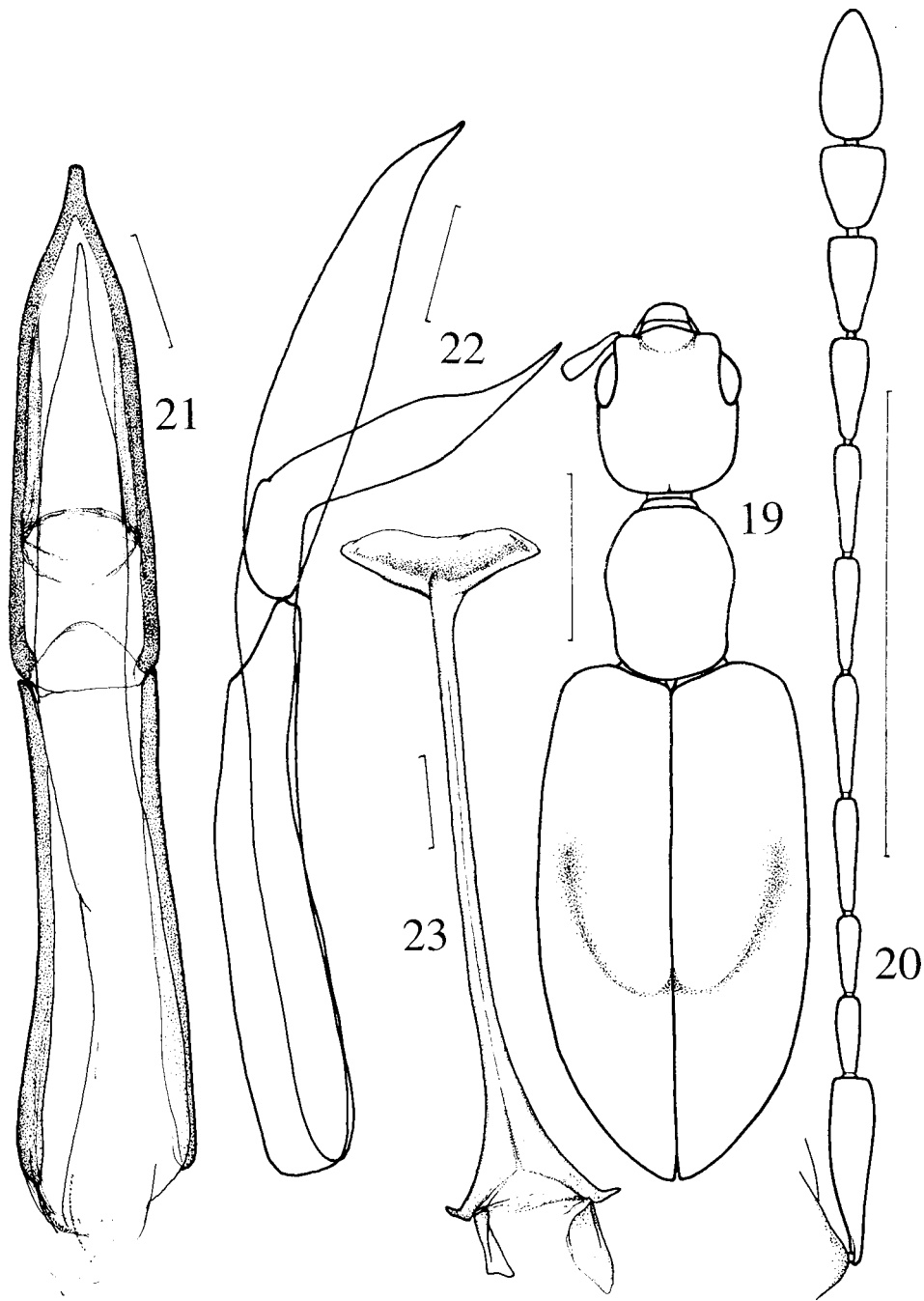
TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated), "indicus mihi Ind. or. Schm." (yellow written label, pinned separately and common for all type specimens), "TYPE" (red, printed), "Museum Paris, ex. Coll. R. Oberthür, Laferté" (MNHN). Paralectotypes 3 ♂, 2 ♀, same data as lectotype (MNHN).

OTHER SPECIMENS EXAMINED: 2 ♂, 6 ♀, "Museum Prag Hinter-Indien (sic!) Tenasserim?" (S Burma), date not stated, "Coll. Helfer.", bearing an identification label ("indicus") by Krekich (NMPC); 1 ♂, same data (HNHM); 1 ♀, same data; 1 ♂, 1 ♀, same data, "TYPE" (red, printed) (NHMW).

DISTRIBUTION. Known only from the type locality in South Burma, probably Tenasserim.

DIFFERENTIAL DIAGNOSIS. *E. indica* is no doubt closely related to *E. malayana* and *E. baeri*, as suggested by the similar form of male genitalia. It can be distinguished from both latter species by the following combination of characters: head somewhat angulate posteriorly (regularly rounded in *E. malayana*); prothorax smaller, narrower (as wide as head in *E. baeri*); distal part of tegmen of aedeagus in ventral view somewhat discontinuously narrowed toward apex, distinctly curved in lateral view (continuously narrowed in both dorsal and lateral view in *E. malayana*; abruptly narrowed in the apical third in *E. baeri*).

It resembles *E. lunulata* by general appearance, but the latter species differs essentially by the proportions of antennal segments and male genitalia.



Figs 19–23: *Endomia indica* (La Ferté). 19 – habitus; 20 – antenna; 21 – aedeagus ventrally; 22 – same laterally; 23 – spiculum gastrale. Scales: 3, 4 – 0.5 mm; 5–7 – 0.1 mm.

Additionally, *E. indica* has been previously, due to its somewhat misleading specific name, often confused with *E. castelsi* Pic, 1929. This species is distributed on the territory of Indian subcontinent, but morphologically it has little in common with the former species.

REMARKS. La Ferté (1848) mentioned the following in the original description of *E. indica*: "Cette espèce, recueillie dans l'Inde par Helfer ... M. Schmidt-Goebel m'en a communiqué plusieurs individus appartenant au musée de Prague." From this statement it is obvious that all examined specimens originate most probably from Helfer's collection, however, the quite different way of preparation and design of labels suggest that just those specimens herein designated, deposited in La Ferté's collection (MNHN), constitute the true type series. Consequently, two other specimens labeled as types (NHMW) must be set apart, since they were selected much later from the rest of Helfer's collection and incorrectly designated by Krekich-Strassoldo.

VARIABILITY. The dark marking of elytra may be reduced to small, triangular spot at suture.

#### *Endomia malayana* (Pic, 1895)

*Ochthenomus malayanus* Pic, 1895: 36–37.

*Endomia malayanus*; Pic, 1911: 82.

Length 2.5–2.8 mm.

MALE. Habitus (Fig. 24). In most morphological characters and color pattern identical with preceding *E. indica*, but different as follows: head regularly arcuately rounded behind eyes, with entirely rounded, obsolete posterior angles; prothorax massive, somewhat smaller than head, broadly rounded in front; distal part of tegmen of aedeagus continuously narrowed toward apex in both dorsal and lateral view (Figs 26–27), with apical portion slender, conspicuously elongated; spiculum gastrale (Fig. 28).

FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated), "Sumbawa", "type" (handwritten), "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN); Paralectotypes, 4 ♀, same data as lectotype (MNHN).

OTHER SPECIMENS EXAMINED: 1 ♂, Sumbawa, date not stated, collector unknown (MNHN); 1 ♀, same data, bearing an identification label "E. malayana" by Pic (NHMW); 1 ♂, Java, date not stated, Royer lgt. (MNHN); 1 ♂, Java, 1904, Royer lgt. (MNHN); 1 ♀, Java, date not stated, collector unknown (MNHN); 1 ♂, Bali, Legian, xi.1978, J.T. Huber lgt. (MHNG); 2 ♀, "Batavia" (now Java), ix.1947, C.V. Nidek lgt.; 2 ♂, same data, but viii.1947 (GUPC, ZKPC).

DISTRIBUTION. Obviously restricted only to western Sunda islands, known so far from Sumbawa, Java and Bali.

#### *Endomia baeri* (Pic, 1902)

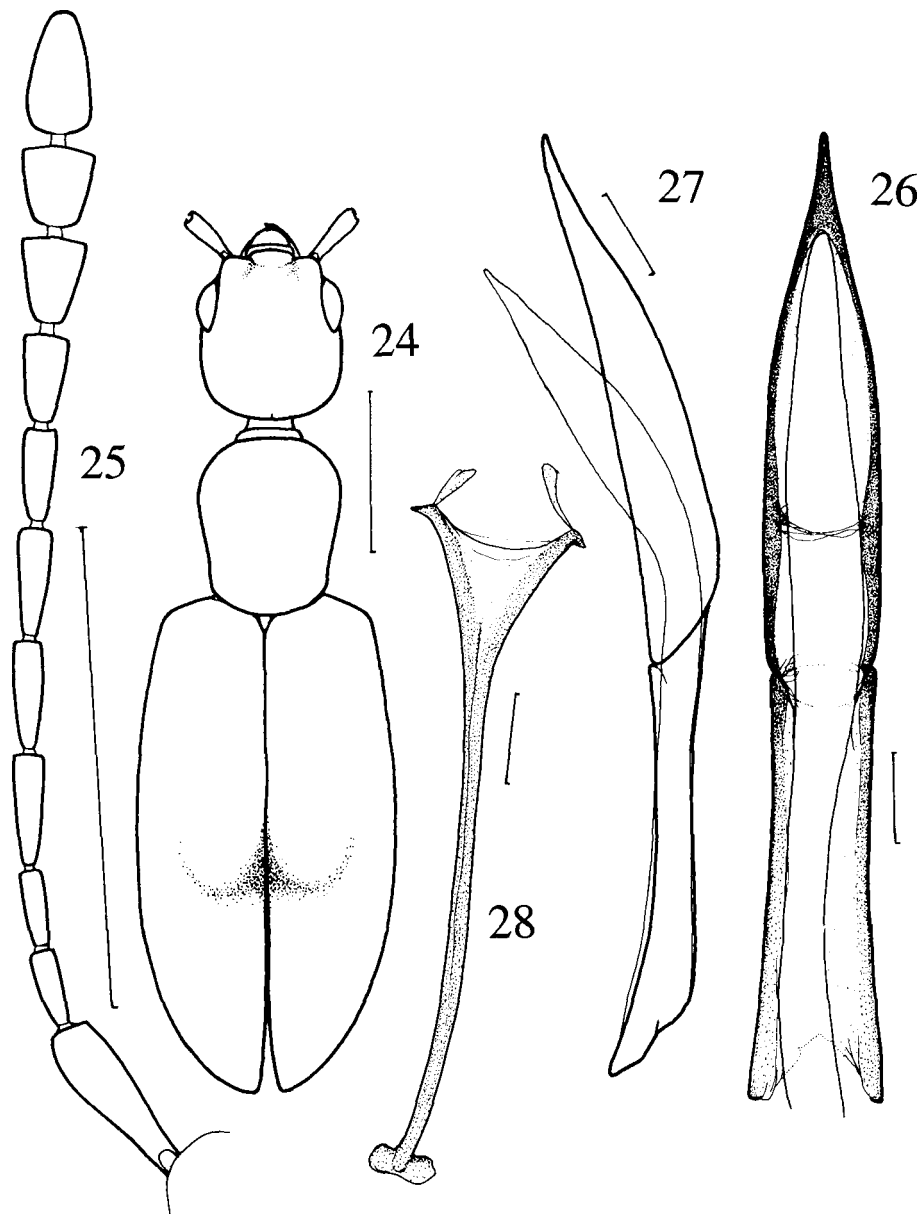
*Ochthenomus baeri* Pic, 1902: 647–648.

*Endomia baeri*; Pic, 1911: 82.

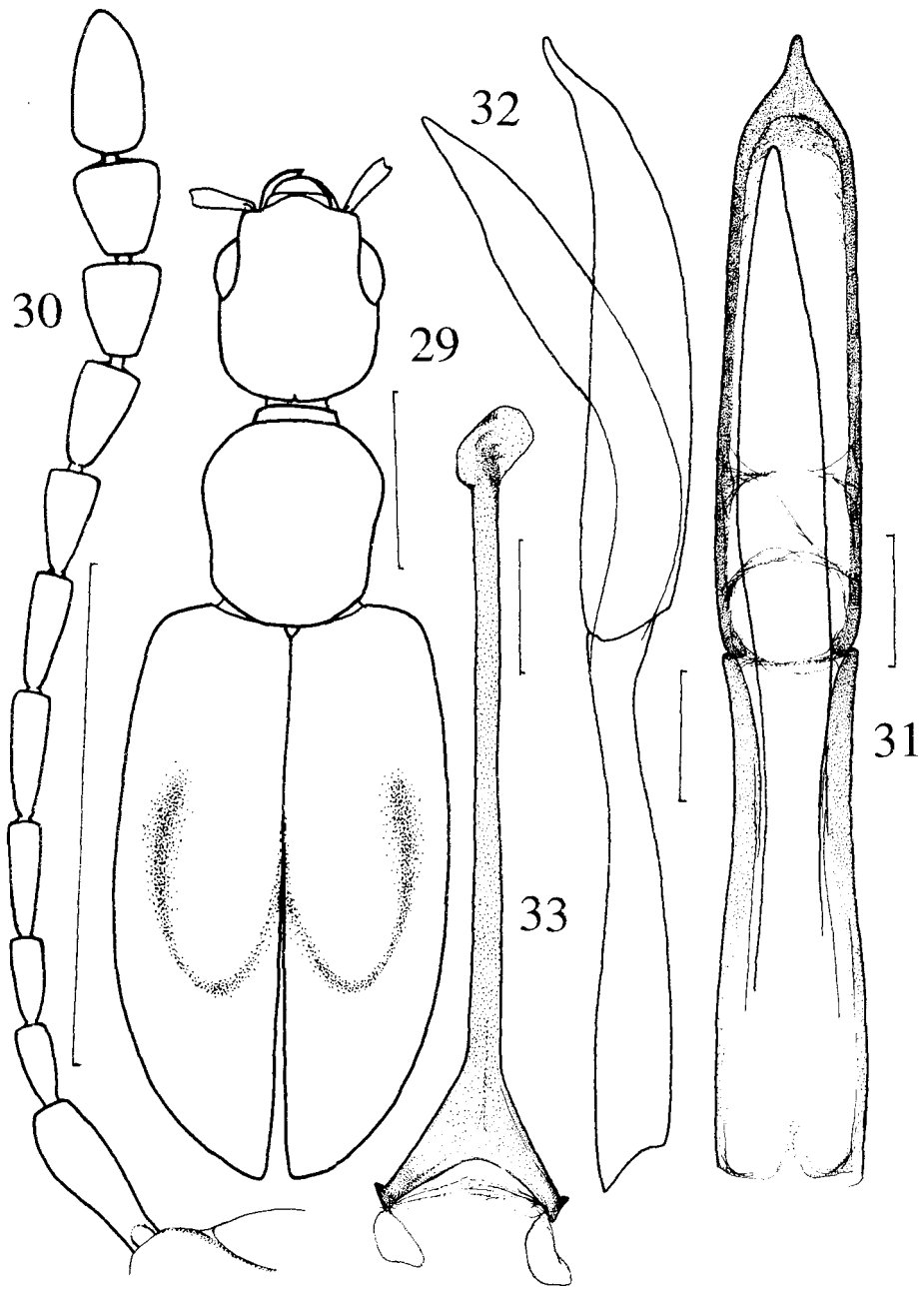
Length 2.7–2.8 mm.

MALE. Habitus (Fig. 29). Brown to dark brown; antennae, legs and palpi somewhat lighter, rufous-brown; elytra in the middle with indistinct, brown-black marking.

Head 1.3 times longer than wide, somewhat angulate posteriorly, moderately narrowed behind eyes; posterior angles widely obtuse, rounded; basal median carina fine, not



Figs 24–28: *Endomia malayana* (Pic). 24 – habitus; 25 – antenna; 26 – aedeagus ventrally; 27 – same laterally; 28 – spiculum gastrale. Scales: 24, 25 – 0.5 mm; 26–28 – 0.1 mm.



Figs 29–33: *Endomia baeri* (Pic). 29 – habitus; 30 – antenna; 31 – aedeagus ventrally; 32 – same laterally; 33 – spiculum gastrale. Scales: 29, 30 – 0.5 mm; 31–33 – 0.1 mm.

impressed; frontal protrusions minute, moderately elevated; frons flat. Eyes relatively large, slightly convex, not protruding from lateral outline of head. Prothorax massive, as wide as head, rather vaulted, broadly rounded in front, shallowly impressed posterolaterally. Elytra 1.8 times longer than wide, rather vaulted.

Antennae (Fig. 30) moderately stout, from the seventh segment increasingly enlarged; the tenth segment 1.16 times longer than wide; terminal segment 1.42 times longer than penultimate.

Aedeagus (Figs 31–32). Distal part of tegmen almost parallel-sided in ventral view, with apical portion abruptly narrowed, tapering and distinctly curved in lateral view. Median lobe simple, narrowing toward apex. Spiculum gastrale (Fig. 33).

FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated) "Manille, Baer (legit)", "type" (handwritten), "baeri Pic", "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN). Paralectotypes, 1 ♂, 5 ♀, same data as lectotype (MNHN).

OTHER SPECIMENS EXAMINED: 2 ♀, Luzon, Los Banos, date not stated, P.I. Baker lgt. (coll. M. Pic, MNHN); 1 ♀, same locality, 12.xi.1992, lgt. Schillhammer (NHMW); 4 ex., Luzon, Manila, 14.iii.1914, Böttcher lgt.; 1 ex., same data, 10.v.1914; 3 ex., same data, 21.iii.1914; 2 ex., same data, 8.vii.1914 (NHMW); 1 ♀, same data, 21.iii.1914; 1 ♀, same data, 14.iii.1914 (BMNH); 1 ex., same locality, date not stated, Boettcher lgt. (GUPC).

DISTRIBUTION. Known only from the island of Luzon (Philippines).

DIFFERENTIAL DIAGNOSIS. This species is closely related to *E. indica* and *E. malayana*. It differs from both by the following combination of characters: dark brown coloration; more robust and rather vaulted appearance; distal part of tegmen of aedeagus abruptly narrowed apically, distinctly curved in lateral view.

VARIABILITY. Pic (1902) described var. *nigrobrunneus*, different from the typical form by the particularly dark brown coloration of the body. In this specimen is the dark marking of elytra barely discernible.

#### *Endomia lunulata* Krekich-Strassoldo, 1926

*Endomia lunulata* Krekich-Strassoldo, 1926: 104, Fig. 34.

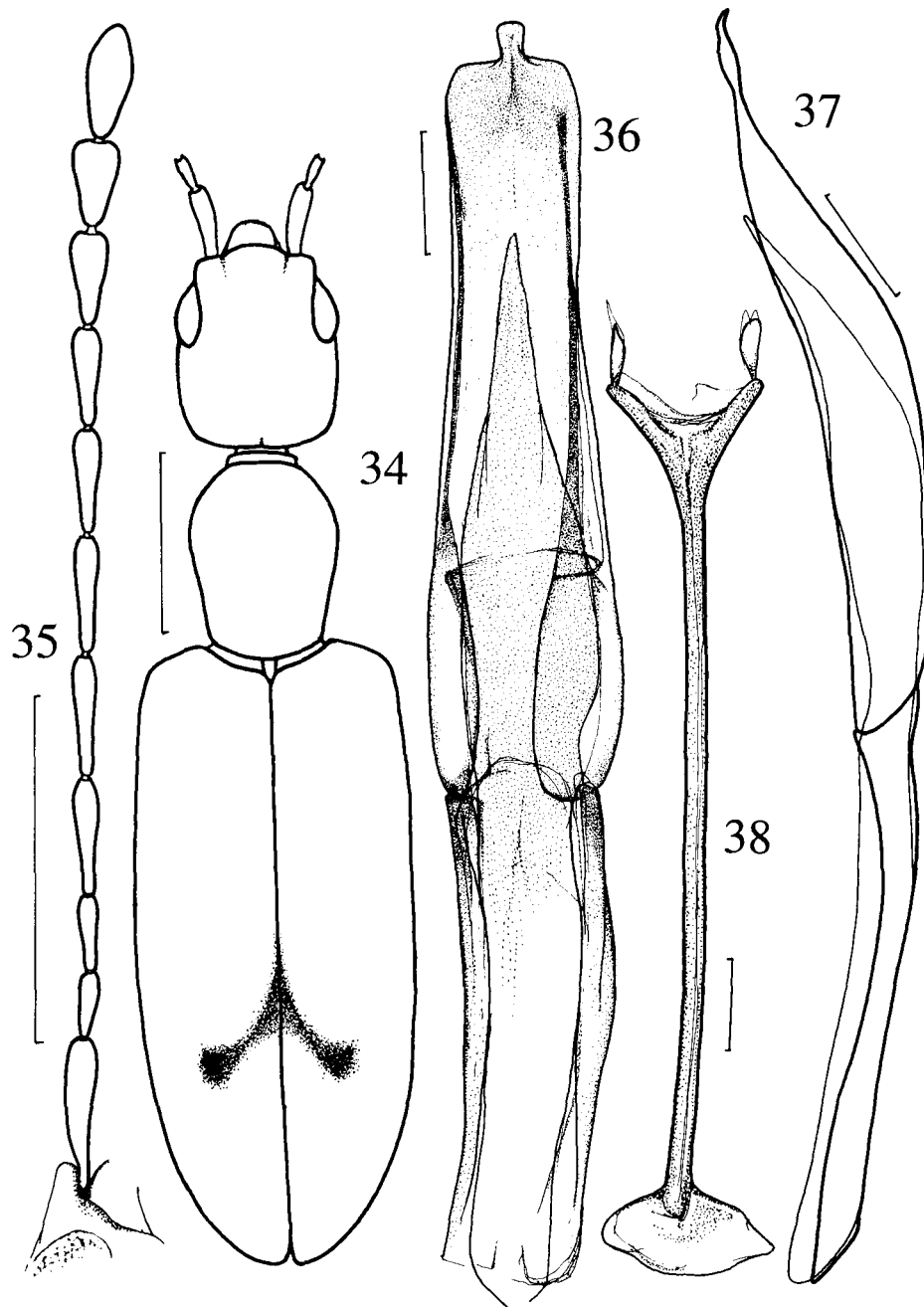
Length 2.7–3.1 mm.

MALE. Habitus (Fig. 34). Light yellow-brown to rufous or dark brown, with darker, roughly triangular, vaguely outlined spot beyond the middle of elytra.

Head 1.3 times longer than wide, somewhat angulate posteriorly, moderately narrowed behind eyes; tempora long, slightly convex; posterior angles well developed, obtuse; basal median carina fine, somewhat impressed; frontal protrusions minute, moderately elevated; frons flat. Eyes relatively large, not protruding from lateral outline of head. Prothorax somewhat smaller than head, regularly rounded in front, shallowly impressed posterolaterally. Elytra nearly 2.2 times longer than wide.

Antennae (Fig. 35) conspicuously long, slender, from the eighth segment increasingly enlarged; the tenth segment 1.80 times longer than wide; terminal segment 1.33 times longer than penultimate.

Aedeagus (Figs 36–37). Tegmen moderately narrowed, almost parallel-sided in ventral view in anterior third; apical portion broadly rounded, angulate, dorso-ventrally flattened, with short, blunt projection in the middle of anterior margin. Median lobe cylindrical, tapering toward apex, simple. Spiculum gastrale (Fig. 38).



Figs 34–38: *Endomia lunulata* Krekich-Strassoldo. 34 – habitus; 35 – antenna; 36 – aedeagus ventrally; 37 – same laterally; 38 – spiculum gastrale. Scales: 34, 35 – 0.5 mm; 36–38 – 0.1 mm.

FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated), "Sarda, Bengal, F. W. C.", "TYPE" (red, printed), "Type" (round label with red margin), "Syntype" (round label with blue margin), "H.G. Champion Coll., B. M. 1953-156", "Endomia lunulata det. v. Krekich" (BMNH). Paralectotypes, 1 ♀ (originally pinned together with the lectotype), "Sarda, Bengal, F. W. C" (BMNH); 1 ♂ (in rather poor condition, genitalia dissected, mounted on slide), same data, "70A" (number of slide), "TYPE" (red, printed), "Endomia lunulata det. v. Krekich" (NHMW).

OTHER SPECIMENS EXAMINED: 1 ♀, India, W Bengal, Calcutta, at light, 25.-28.x.1967, G. Topál lgt. (HNHM); 1 ♀, same data, 9.-12.vi.1980 (HNHM); 1 ♂, Thailand, Erawan N. P., Erawan Waterfall, at light, 14.ii.1994, S. & L. Mahunka lgt. (HNHM); 1 ♂, Vietnam, Saigon, 16.ix.1950, J. Barbier lgt.; 1 ♀, same data, 12.v.1950; 1 ♀, same data, 27.xii.1949, "Endomia saigonensis n. sp.", "TYPE" (red) (coll. M. Pic, MNHN); 1 ♀, Vietnam, Saigon, vii.1903, Fouquet lgt., (coll. M. Pic, MNHN); 1 ♂, Vietnam, Saigon, ix.1903, collector unknown, (coll. M. Pic, MNHN). Furthermore, 3 ♂, 11 ♀ from NE Thailand, Khon Kaen (GUPC) and 6 ♂, 6 ♀ from Vietnam, near Quang Tri (17°N, 107°E) (GUPC).

DIFFERENTIAL DIAGNOSIS. This species resembles *E. indica* and *E. malayana* by its general appearance, but differs from them in having distinctly longer, slim antennae, posterior margin of head angulate and tegmen of aedeagus dorso-laterally flattened, truncate apically, with blunt median projection.

REMARKS. Somewhat variable in distinctness of the dark marking of elytra.

DISTRIBUTION. India, Nepal, Thailand, Vietnam.

Searching the Pic's collection, a specimen from Vietnam (Saigon) was discovered, labelled: "Endomia saigonensis n. sp.", "TYPE" (red, printed). The description of *E. saigonensis*, has never been published the specimen agrees in all characters with *E. lunulata* and is therefore listed under that species (see above).

#### *Endomia nana* Krekich-Strassoldo, 1926

*Endomia nana* Krekich-Strassoldo, 1926: 104-105.

Length 2.2-2.3 mm.

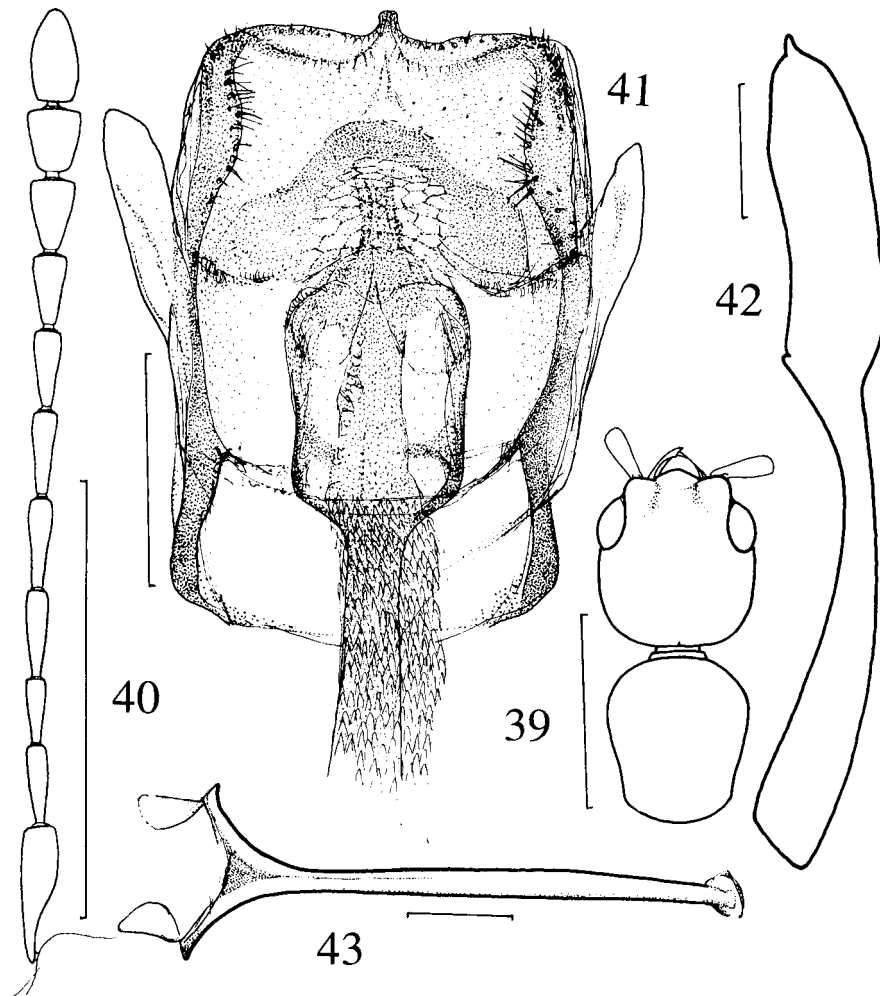
MALE. Fore-part of the body (Fig. 39). Yellow-brown to light brown, unicolorous.

Head relatively large, 1.2 times longer than wide, broadly rounded, angulate posteriorly; tempora subparallel; basal median carina fine, barely discernible, not impressed; frontal protrusions prominent, distinctly elevated; frons deeply impressed. Eyes small, rather convex, protruding from lateral outline of head. Prothorax distinctly smaller than head, rounded in front; latero-basal impressions barely discernible in dorsal view. Elytra nearly twice as long as wide.

Antennae (Fig. 40) relatively long, extending markedly beyond elytral humeri, slender; the second segment 1.40 times longer than the third; segments 8-10 increasingly enlarged; the tenth segment 1.22 times longer than wide; terminal segment 1.45 times longer than penultimate.

Distal part of tegmen of aedeagus (Fig. 41) nearly parallel-sided in ventral view, abruptly shortened apically, with minute protuberance in the middle of anterior margin, with fine, laterally situated, membranous lobes. Its anterior portion with lateral sides somewhat turned ventrally and armed with a number of small spines along inner margins, on ventral side and anteriorly. Median lobe with apical portion membranous, of unclear structure, strengthened by fine, fork-like sclerite posteriorly. Spiculum gastrale (Fig. 43).

FEMALE. Generally corresponding to male.



Figs 39–43: *Endomia nana* Krekich-Strassoldo. 39 – fore-part of the body; 40 – antenna; 41 – distal part of aedeagus ventrally; 42 – tegmen laterally; 43 – spiculum gastrale. Scales: 39, 40 – 0.5 mm; 41–42 – 0.1 mm.

TYPE MATERIAL EXAMINED: Lectotype ♂ (herewith designated; genitalia dissected, mounted on slide) “India, Chipurupalli, Vizagapatam Dist., R.S. Patuck., B. M. 1924–7.”, “69B” (number of slide), “COTYPE” (red, printed), “*Endomia nana* det v. Krekich” (NHMW); paralectotypes, 1 ♀ (in poor condition), same data as lectotype (NHMW); 1 ♂, same data as lectotype, in addition: “TYPE” (red, printed), “Type” (round label with red margin), “Syntype” (round label with blue margin) (BMNH).

OTHER SPECIMENS EXAMINED: 1 ♂, 1 ♀, India, Orissa State, Ganjam distr., Chilka lake, at light, 18.ix.23, collector unknown (NHMW); 4 ♂, 4 ♀, S India, Tamil Nadu, Tiruchendur – sea shore, 8°30'N, 78°07'E, 23.–24.i.1994, Z. Kejval lgt. (ZKPC); 1 ♀, India, Orissa, Kalasandrapur, distr. Ganjam, N of Berhampur (= Brahmapur), sandy bank of river, 20.–21.ii.1994, Z. Kejval lgt. (ZKPC); 1 ♀, India, Goa, Benaulin Beach, 5 km W Margao, 21.–24.ix.1991, R. Schuh lgt. (ZKPC); 2 ♀, Ceylon, Kurunegala Dist., Kurunegala, 7.x.1996, J.F.G. Clarke and Thelma M. Clarke lgt.; 1 ♂, 3 ♀, 1.xi.1966 (USNM); 1 ♀, Ceylon Badula

Dist., 5 mi E Mahiyangana, Hasalaka, 200 ft, 16.xi.1974, C. Gans, P. Fernando and S. Farook lgt. (USNM); 1♀, Ceylon, Pottuvil, 1.–6.vii.1983, Ole Mehl lgt. (ZKPC); 1♀, Ceylon, Negombo, 17.–20.vi.1985, Ole Mehl lgt. (ZKPC); 2♂, 2♀, "Indes mer", P.S. Nathan lgt., date not stated (coll. M. Pic, MNHN); 4 ex., India, Orissa State, Konarak, at shore, 25.xii.1966, G. Topál lgt. (HNHM); 1♀, India, Karnataka State, Ablathi, 800 m, 12°17'N 76°06'E, x.1984, W. Lorenz lgt. (GUPC).

DISTRIBUTION. India, Sri Lanka.

DIFFERENTIAL DIAGNOSIS. This species appears to be identical with *E. ceylonica* (Motschulsky, 1863), which is known only from the original description (see below). Otherwise, it is unique among all known Oriental species, with respect to its small size, absence of dark pattern and peculiar morphology of tegmen of aedeagus (Fig. 41). The most closely related species is *E. impressiceps* (Pic, 1902) from Madagascar. They are very similar each other and hardly distinguishable by external characters, but the form of male aedeagus is clearly different (compare Figs 41, 74).

#### *Endomia ceylonica* (Motschulsky, 1863)

*Ochthenomus ceylonicus* Motschulsky, 1863: 494.

*Endomia ceylonicus*; Pic, 1911: 82; Bonadona, 1986: 63.

Original description (translated from Latin): Elongated, slim, feebly convex, punctured, covered with whitish scale-like hairs, rufous to brown, eyes black; head quadrate, clypeus truncate, in front between antennae concave, antennal segments subelongated, three penultimate segments stouter, triangular, last segment oval, pointed; prothorax distinctly narrower, moderately shorter than head, subconvex, feebly narrowed posteriorly, anterior angles rounded, posterior angles rectangular; elytra twice as long and wide as prothorax, elongate oval, humeri less prominent.

Long. 3/4 l. – lat. 1/4 l. Des environs de Colombo. Très voisin de notre *Och. angustatus*, mais le double plus petit, plus testacé, recouvert d'écaillés plus blanchâtres.

This species, as originally defined, seems to be most probably conspecific with *E. nana*, which is known from India and Sri Lanka. However, this cannot be confirmed, since the type material, which should be deposited in Motschulsky's collection of the Zoological Museum of the Moscow State University, Russia, was not made available for study.

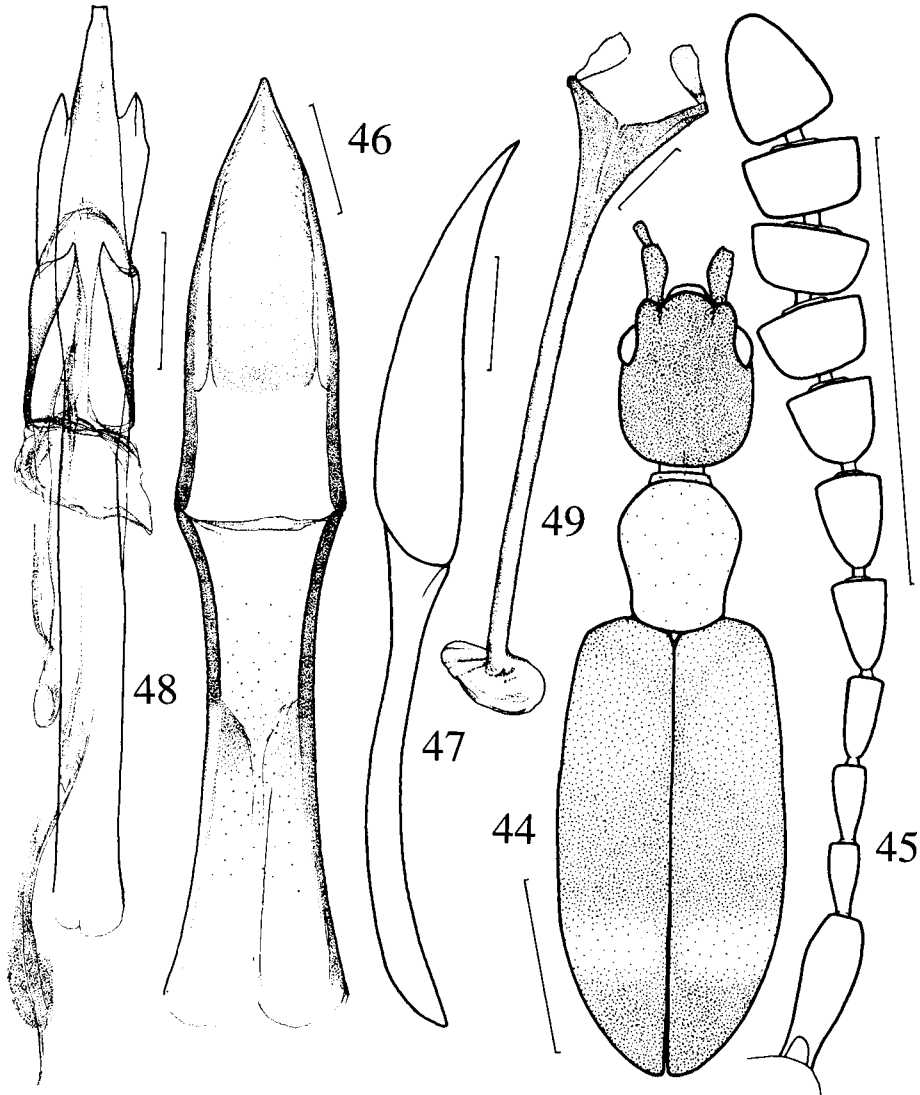
#### *Endomia tonkinea* Pic, 1922

*Endomia tonkinea* Pic, 1922: 21.

Length 2.1–2.4 mm.

MALE. Habitus (Fig. 44). Head brown to black; prothorax light brown with rufous tinge; elytra light brown with very vague, pale yellow, transverse band in posterior third, not extending to median suture and somewhat extending along lateral margin in both directions; antennae red-brown, segments 6–10 and base of 11 darkened; legs and palpi light yellow.

Head 1.3 times longer than wide, regularly rounded posteriorly, tempora relatively long, moderately convex; posterior angles obsolete, entirely rounded; basal median carina hardly discernible, not impressed; frontal protrusions well developed, distinctly elevated; frons shallowly impressed. Eyes small, convex, somewhat protruding from lateral outline of head. Prothorax smaller than head, rounded in front, shallowly impressed posterolaterally. Elytra nearly twice as long as wide.



Figs 44–49: *Endomia tonkinea* Pic. 44 – habitus; 45 – antenna; 46 – tegmen of aedeagus ventrally; 47 – same laterally; 48 – median lobe of aedeagus; 49 – spiculum gastrale. Scales: 44, 45 – 0.5 mm; 46–49 – 0.1 mm.

Antennae (Fig. 45) rather short, from the fifth segment increasingly enlarged; segments 8–10 transverse; the tenth segment 1.31 times wider than long, markedly flattened, angulate; terminal segment 1.66 times longer than penultimate.

Aedeagus (Figs 46–48). Distal part of tegmen tapering apically in ventral view. Median lobe trilobed; middle lobe conspicuously projecting, abruptly shortened apically; lateral lobes much shorter, pointed, situated subapically. Spiculum gastrale (Fig. 49).

Female. Generally corresponding to male.

TYPE MATERIAL EXAMINED: 1 ♂, "Hoo Binh (sic!, Hoa Binh in N Vietnam) Tonkin", "type" (handwritten), "Endomia tonkinea n. sp.", "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN).

OTHER SPECIMENS EXAMINED: 26 ♂ ♀, Vietnam, Hoa Binh, date not stated, collector unknown (coll. M. Pic, MNHN); 1 ♀, "Tonkin" (N Vietnam), Lactho, 73, de Cooman lgt. (coll. M. Pic, MNHN); 1 ♂, "Tonkin" (N Vietnam), Mt. Bavi, 800–1,000 m, vii.1941, A. de Cooman lgt. (coll. M. Pic, MNHN); 1 ♂, Vietnam, Lao-cai, 300 m, secondary forest, at light, 21.ix.1963, T. Pócs lgt. (HNHM); 1 ex., Laos, Annam (NHMW); 1 ex., same data (GUPC); 1 ♂, "Indochina" (now Vietnam), 17°N, 107°E, CamLo, 7 mi W Dong Ha, Quang Tri Pr RVN, at light, 17.vi.1970, A.R. Gillogly lgt. (GUPC); 1 ♂, Vietnam, Hoa Binh, Ha son binh prov., 4.–7.vi.1986, Jan Horák lgt. (ZKPC).

DISTRIBUTION. NE Vietnam.

DIFFERENTIAL DIAGNOSIS. Very distinctive species, easily distinguishable by its small size, color pattern, the form of antennal segments and male genitalia.

Variability. In some (possibly immature) individuals is the head lighter, rufous posteriorly; elytra appear largely light, with basal third yellowish, interconnected along lateral margin with posterior, transverse band, which may extend to suture.

#### *Endomia castelsi* Pic, 1929

*Endomia castelsi* Pic, 1929: 14.

*Endomia indica* sensu Pic, 1894: 183–184 (non La Ferté, 1848).

Length 2.4–2.9 mm.

MALE. Habitus (Fig. 50). Red-brown; antennae and palpi somewhat lighter; legs yellow-brown, with rufous tinge; elytra with three vaguely outlined spots (two anterior larger, situated laterally at elytral midlength and narrowly connected with third smaller, subapical spot at suture), forming V-shaped marking.

Head 1.2 times longer than wide, rounded posteriorly, distinctly narrowed behind eyes; posterior angles obsolete, entirely rounded; median basal carina barely discernible, not impressed; frontal protrusions minute, not elevated; frons flat. Eyes conspicuously large, moderately convex, somewhat protruding from lateral outline of head. Prothorax smaller than head, rounded in front, shallowly impressed postero-laterally. Elytra nearly 1.7 times longer than wide.

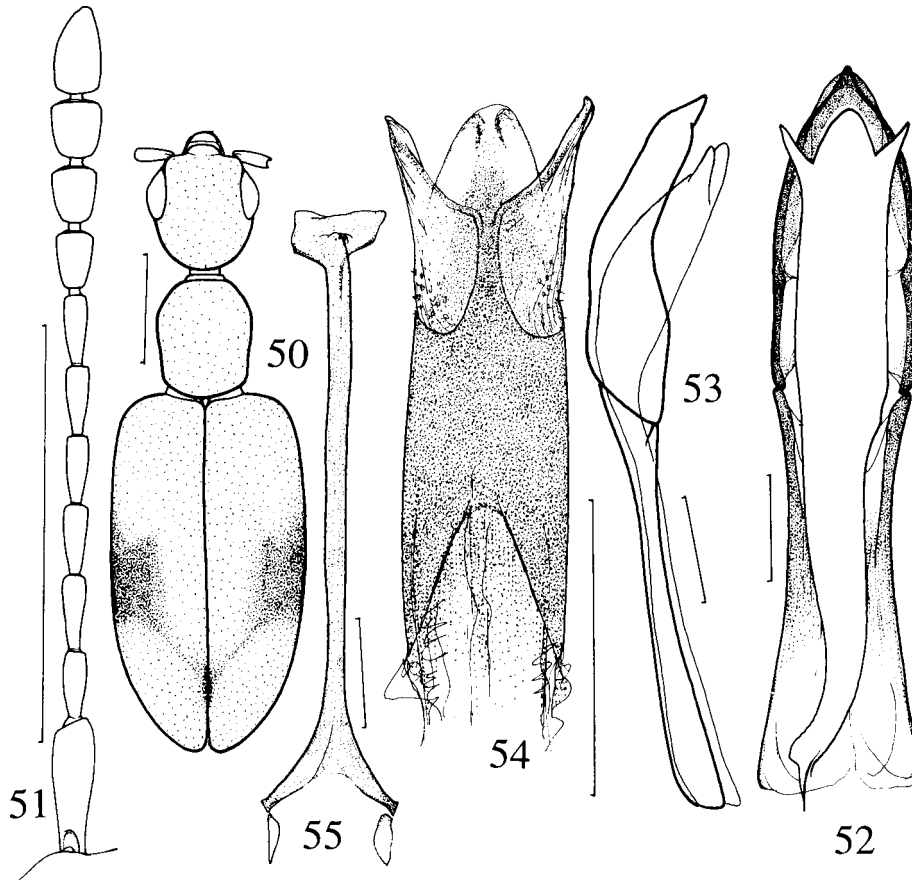
Antennae (Fig. 51) rather short, slender, from the seventh segment increasingly enlarged; the tenth segment 1.10 times longer than wide; terminal segment 1.60 times longer than penultimate.

Aedeagus (Figs 52–54). Distal part of tegmen markedly dorso-laterally vaulted, with lateral outline arcuately narrowing toward apex in ventral view. Median lobe with rounded apex, with two slender, pointed, subapically situated and somewhat divergent projections, extending well over the lateral sides of tegmen. Spiculum gastrale (Fig. 55).

FEMALE. Generally corresponding to male.

TYPE MATERIAL EXAMINED: 1 ♂, "Trichonopoly (probably Tiruchirapalli in Tamil Nadu state), R.P. Castels (lgt.), 1904", "Castelsi n. sp.", "TYPE" (red, printed), "Muséum Paris Coll. M. Pic" (MNHN).

OTHER SPECIMENS EXAMINED: 1 ♀, Ceylon, Mankulam Prov., W Medavachiya, 28.vi.1968; I. Loksa lgt. (HNHM); 3 ♂, 2 ♀, India, Madhya Pradesh State, Sahrpura, near river Narmada, trodden from mud,



Figs 50–55: *Endomia castelsi* Pic. 50 – habitus; 51 – antenna; 52 – aedeagus ventrally; 53 – same laterally; 54 – median lobe of aedeagus; 55 – spiculum gastrale. Scales: 50, 51 – 0.5 mm; 52–55 – 0.1 mm.

18.iii.1967, G. Topál lgt. (HNHM); 1♂, 2♀, same data (GUPC); 3♂, India, Tamil Nadu State, Nilgiri hills, Ootacamund, Doddabetta hill, 2,600 m, netted, 13.iii.1980, lgt. G. Topál (HNHM); 1♂, S India, Tamil Nadu State, Nilgiri hills, Kotagiri env., Elk falls, 11°23'N, 76°52'E, 2.ii.1994, Z. Kejval lgt. (ZKPC); 3♂, "Bengale", date not stated, collector unknown (coll. M. Pic, MNHN); 1♀, India, "Poonah" (now Pune, Maharashtra State), G.E. Bryant lgt., v.1908 (coll. M. Pic, MNHN); 1♀, Ceylon, Anu. Dist., Wilpattu Natl. Park, Panikka Wila Bungalow, UV light, 1.xi.1977, K.V. Krombein, P.B. Karunaratne, T. Wijesinhe and M. Jayaweera lgt. (USNM); 1♂, India, New Delhi, at light, 8.vii.1967, K.E. Gibson lgt. (USNM); 1♀, Ceylon, Anuradhapura, 22.–26.vi.1985, Ole Mehl lgt. (ZKPC).

DISTRIBUTION. India, Sri Lanka.

DIFFERENTIAL DIAGNOSIS. *E. castelsi* is easily distinguishable from all known Oriental species by the following combination of major characters: elytra with conspicuous dark marking; head distinctly narrowed behind eyes, with entirely rounded, obsolete hind

angles; eyes conspicuously large; antennae rather short, slender, at most slightly enlarged toward apex; median lobe of aedeagus trilobed apically.

This species appears to be very closely related to *E. trinotata* Pic, 1952 from Mauritania, from which a male specimen, labelled: "Mauritania, Fogh Tagant, 9.3.1958, J. Mateu; Muséum Paris, coll. Bonadona; *E. trinotata* Pic P. Bonadona dét.", was briefly examined and found to agree in all the above features; the status of *E. trinotata* is therefore uncertain.

#### *Endomia decorata* Krekich-Strassoldo, 1914

*Endomia decorata* Krekich-Strassoldo, 1914: 113–114.

Length 2.7 mm.

FEMALE. Habitus (Fig. 56). Head dark brown with rufous tinge; prothorax lighter, red-brown; elytra light brown with extensive, indistinctly outlined dark marking, comprising a dark base, lateral margins, suture and transverse band behind the middle, somewhat widened laterally and at median suture.

Head conspicuously large, 1.4 times longer than wide, regularly rounded posteriorly; tempora slowly narrowing behind eyes; posterior angles obsolete, entirely rounded; basal median carina barely discernible, not impressed; frontal protrusions prominent, elevated; frons deeply impressed. Eyes small, rather flat, not protruding from lateral outline of head. Prothorax slim, distinctly smaller than head, rounded in front, shallowly impressed postero-laterally. Elytra 1.9 times longer than wide, moderately vaulted, shallowly dorsally impressed in anterior third.

Antennae (Fig. 57) conspicuously long, extending markedly beyond elytral humeri, from the seventh segment increasingly enlarged; the ninth segment somewhat longer than wide; the tenth as long as wide; terminal segment 1.63 times longer than penultimate.

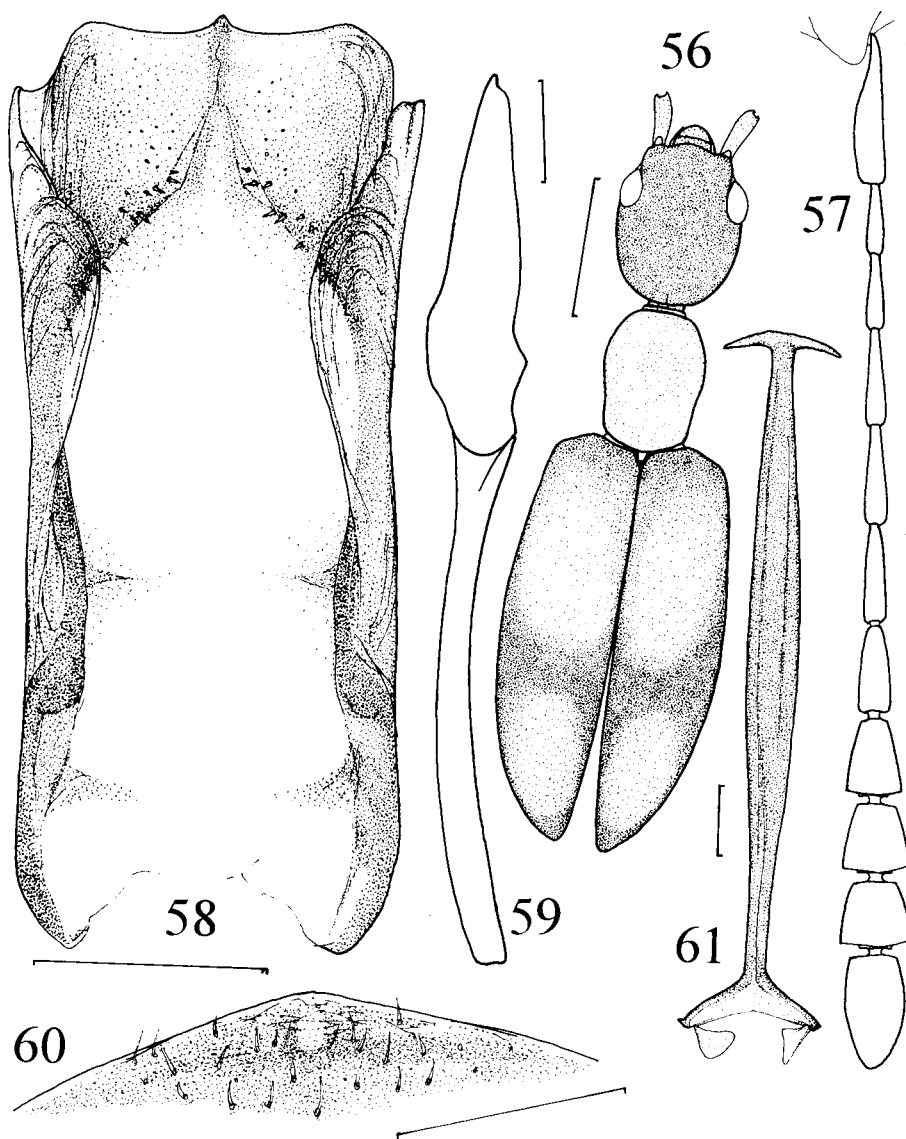
MALE. Generally corresponding to female. Last abdominal sternum subapically with a short, longitudinal groove (Fig. 60). Aedeagus (Figs 58–59). Distal part of tegmen widely angulate, flattened apically, with slight, pointed protuberance in the middle of anterior margin, with longitudinal membranous lobes situated subapically, behind anterior angles; these lobes are turned somewhat ventrally and, thus, not clearly visible in dorsal view. Median lobe (Fig. 76) apically with a long, pointed projection, which fits into the longitudinal groove in the middle of anterior, flattened portion of tegmen. Spiculum gastrale (Fig. 61).

TYPE MATERIAL EXAMINED: ♀, "Ost-Indien", "TYPE" (red, printed), "*decorata* det. v. Krekich" (NHMW).

OTHER SPECIMENS EXAMINED: 1 ♂, "Ind. or." (probably Burma), Helfer (NMPC); 1 ♂, India, Karnataka State, Shimoga Distr., Jog Falls, 500 m, at light, 2.–8.iii.1980, lgt. G. Topál (GUPC).

DISTRIBUTION. "India orientalis" (probably Burma, with respect to origin of Helfer's collection), India (Karnataka State).

DIFFERENTIAL DIAGNOSIS. *E. decorata* is no doubt closely related to *E. besucheti* and *E. gratiosa*, as evidenced by the similar structure of male aedeagus, the form of spiculum gastrale and notched last abdominal sternum of male. Based on rather limited material, *E. decorata* differs in the following: elytra with extended dark marking (largely light, with conspicuously limited dark spot in *E. gratiosa*); tenth antennal segment roughly as long as wide (slightly longer than wide in *E. besucheti*; distinctly transverse in *E. gratiosa*);



Figs 56–61: *Endomia decorata* Krekich-Strassoldo. 56 – habitus; 57 – antenna; 58 – distal part of tegmen of aedeagus ventrally; 59 – tegmen laterally; 60 – apex of the last exposed sternum in male; 61 – spiculum gastrale. Scales: 56, 57 – 0.5 mm; 58–61 – 0.1 mm.

median, basal carina of head slight, barely discernible (conspicuous, deeply impressed in *E. gratiosa*); anterior margin of tegmen of aedeagus with small protuberance (longer, pointed projection in *E. besucheti*).

REMARKS. The original description of *E. decorata* is based on female type. The structure of male genitalia, as first described and illustrated herein, originate from an additional male specimen labelled: "Ind. or.; Helfer". The other, from Karnataka (Fig. 75), shows only slight differences from the former, which may be caused by different position of antero-lateral, membranous lobes. Both those specimens correspond in all features, including the proportions of antennal segments, with the examined type.

#### *Endomia besucheti* Bonadona, 1989

*Endomia besucheti* Bonadona, 1989: 257–259, Figs 4, 8.

Length 2.4–2.9 mm.

According to the original description, *E. besucheti* was described after three specimens from Sri Lanka. Only the female holotype was available for the present study, since two males (allotype, paratype), both labelled: "Sri Lanka: Pimburettava, 1850', 9.XI.1970 (O.S. Flint leg.)", are probably lost (G.N. House, in litt.).

TYPE MATERIAL EXAMINED: 1 ♀, "Ceylan central, S/Mululla, 750 m, 4.II.70, Mussard, Besuchet, Löbl", "HOLOTYPE" (red, printed), "*Endomia besucheti* n. sp., P. Bonadona dét." (MHNG).

OTHER SPECIMENS EXAMINED: 1 ♀, Ceylon: Kurunegala Dist., Kurunegala, 7.x.1966, J.F.G. Clarke and Thelma M. Clarke lgt. (USNM); 7 ♂, 4 ♀, S India, Kerala State, Shoranur, 10°46'N, 76°16'E, bank of Ponnáni river, 31.i.1994, Z. Kejval lgt. (ZKPC).

DISTRIBUTION. Sri Lanka, S. India (Kerala State).

DIFFERENTIAL DIAGNOSIS. This species is in most external morphological characters identical with preceding *E. decorata*, but differs in the following two points: antennae slightly more slender (Fig. 62), with the tenth segment 1.13 times longer than wide (as long as wide in *E. decorata*); tegmen of aedeagus, as evident from the sketch given by Bonadona (1989, Fig. 63), with conspicuous, pointed projection in the middle of anterior margin (only small protuberance in *E. decorata*).

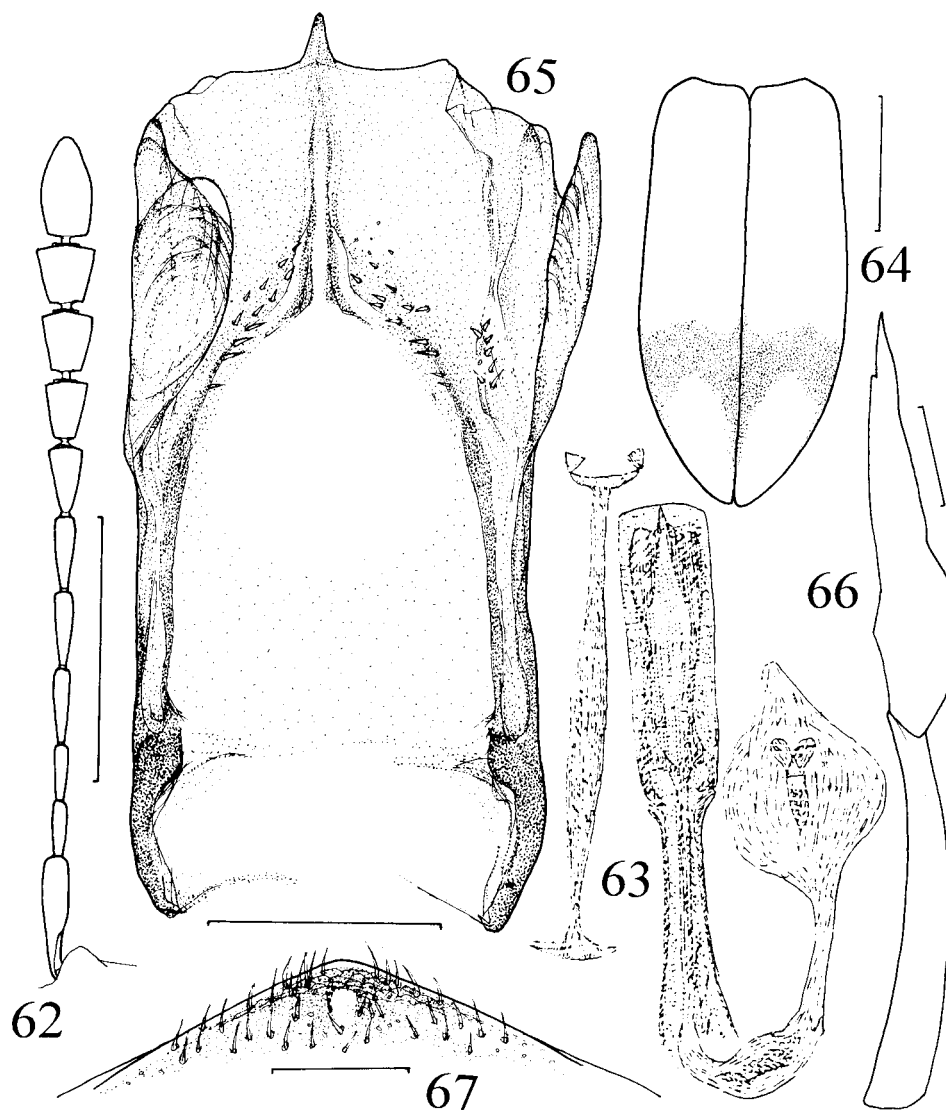
REMARKS. Apart from another female from Sri Lanka, the additionally examined specimens have been collected in south India (Kerala state). They agree well with the distinguishing characters of *E. besucheti* (see Fig. 65 for the form of tegmen of male aedeagus), but differ in having an impressed median basal carina of the head and somewhat restricted dark markings on the elytra (Fig. 64). Whilst there is much color variation within species of *Endomia*, the prominence of the former feature appears to be relatively constant. Considering this fact, identification of the specimens illustrated in Figs 64–67 and 78 should be regarded as provisional, until a male specimen from Sri Lanka is properly examined.

#### *Endomia gratiosa* Krekich-Strassoldo, 1926

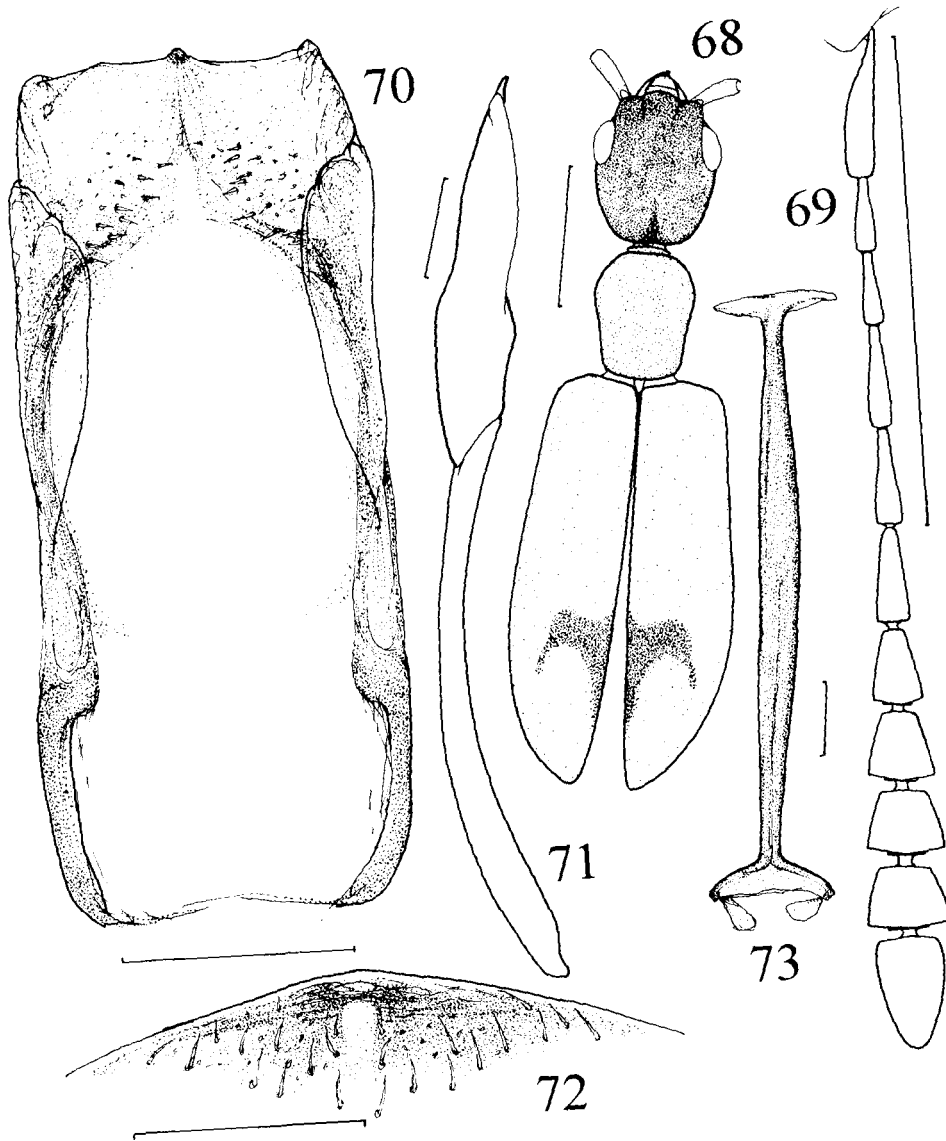
*Endomia gratiosa* Krekich-Strassoldo, 1926: 103, Fig. 33 III.

Length 2.6–2.7 mm.

MALE. Habitus (Fig. 68). This species shares most external features with *E. decorata* and *E. besucheti*, but differs as follows: Head slightly more narrowed behind eyes, with conspicuous, deeply impressed median basal carina; eyes medium-sized, more prominent and somewhat convex; elytra largely pale yellow, with relatively sharply limited, sinuous,



Figs 62–67. 62–63: *Endomia besucheti* Bonadona, Sri Lanka. 62 – antenna; 63 – male aedeagus with spermatheca and spiculum gastrale (after a sketch by P. Bonadona). 64–67: Specimen from S India. 64 – scheme of coloration of elytra; 65 – distal part of tegmen of aedeagus ventrally; 66 – tegmen laterally; 67 – apex of the last exposed sternum in male. Scales: 62, 64 – 0.5 mm; 63, 65–67 – 0.1 mm.



Figs 68–73: *Endomia gratiosa* Krekich-Strassoldo. 68 – habitus; 69 – antenna; 70 – distal part of tegmen of aedeagus ventrally; 71 – tegmen laterally; 72 – apex of the last exposed sternum in male; 73 – spiculum gastrale. Scales: 68, 69 – 0.5 mm; 70–73 – 0.1 mm.

transverse spot in the posterior third, not extending to lateral margins, markedly extending along suture posteriorly; antennae (Fig. 69) from the sixth segment increasingly enlarged, with the tenth segment distinctly transverse, 1.19 times wider than long.

Male characters as figured (Figs 70–73, 77). Surprisingly, tegmen of aedeagus does not show substantial differences in the form of membranous lobes, location of ventral spines or prominence of median protuberance from that in *F. decorata*.

MATERIAL EXAMINED: Lectotype ♂ (herewith designated; genitalia dissected, mounted on slide), "Siwaliks, Dehra Dun, U. P.; S. N. Chatterjee, 30.X.1921", "44B" (number of slide), "TYPE" (red, printed), "Endomia gratiosa det. v. Krekich" (NHMW). Paralectotype ♂, "India. B. M. 1927–38", "Dehra Dun., Dr. M. Cameron, 26.II.1921", "20", "L", "TYPE" (red, printed), "♂", "Type" (round label with red margin), "Syntype" (round label with blue margin), "Endomia gratiosa det. v. Krekich" (BMNH).

OTHER SPECIMENS EXAMINED: 1 ♀, Haldwani Div., Kumaon (N Uttar Pradesh), India. H. G. C., date not stated, collector unknown, bearing an identification label ("E. gratiosa") by Krekich (NHMW); 1 ♂, West Pakistan, Rawalpindi Umg., 20 km O., 600–700 m, 18.xii.1955, Chr. Lindemann lgt. (GUPC).

DISTRIBUTION. North Pakistan: India: Uttar Pradesh.

#### *Endomia quinquemaculata* Uhmann, 1995

*Endomia quinquemaculata* Uhmann, 1995: 495–496.

Length: 2.5–2.7 mm.

*E. quinquemaculata* was described after several female specimens only (Uhmann, 1995) and description of this very distinct species is hereby augmented by the discovery of males.

MALE. Generally corresponding to female. Aedeagus (Figs 80, 81). Distal part of tegmen narrowed in ventral view toward apex, with apical portion slender, stem-like, slightly curved dorsally in lateral view. Median lobe cylindrical, pointed apically, simple. Spiculum gastrale (Fig. 82).

TYPE MATERIAL EXAMINED: 1 ♀, "Thailand, 13.5.1993, 19°29'N–98°18'E, Soppong, 750 m, leg. Bocák", "PARATYPE" (red, printed), "Endomia quinquemaculata det. G. Uhmann 1995" (GUPC).

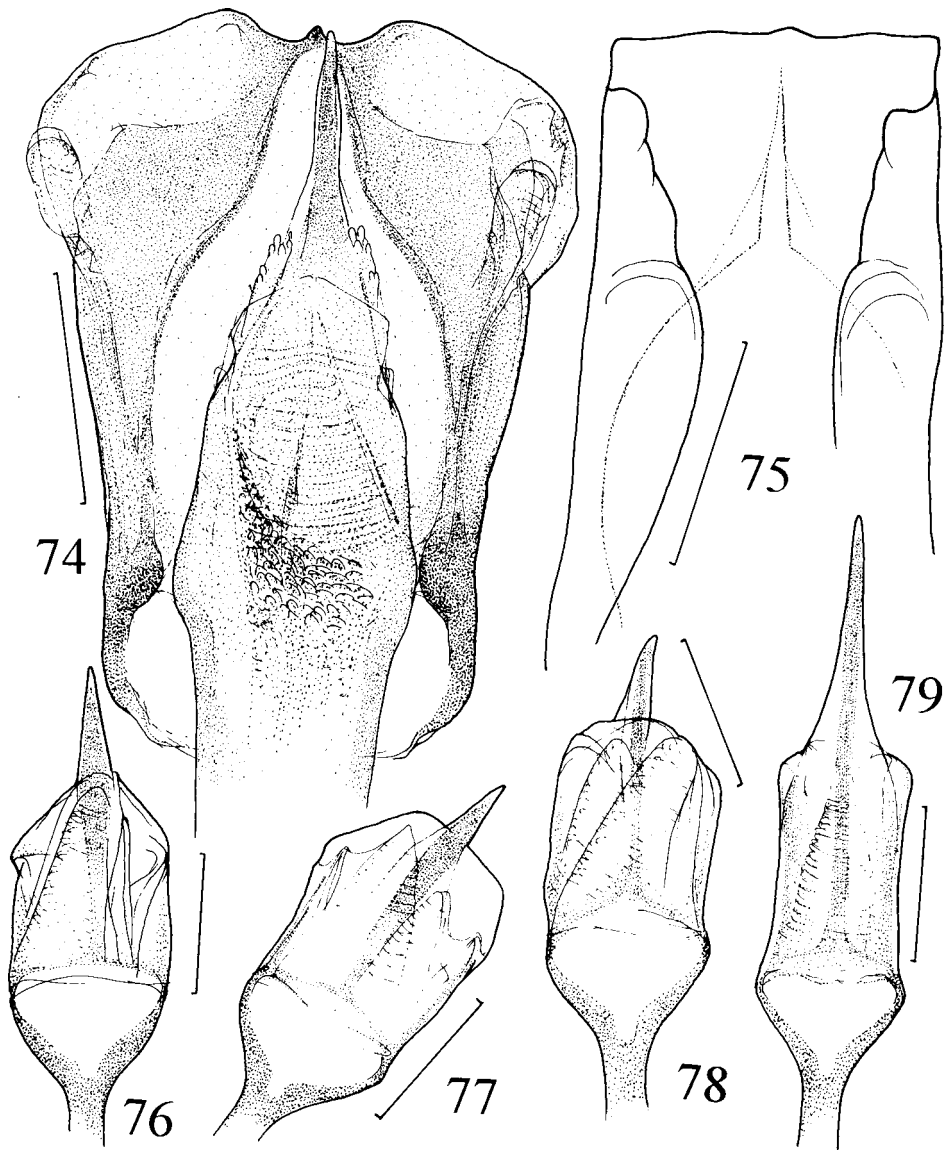
OTHER SPECIMENS EXAMINED: 4 ♂, 7 ♀, Thailand, Umphang, 16°04'N, 98°53'E, 500 m, V. Kubán lgt. (ZKPC); 1 ♂, Thailand, Fang, 19°55'N, 99°12'E, 300 m, 25.v.1991, D. Král lgt. (ZKPC); 1 ♀, Thailand, Chiang Dao, 19°22'N, 98°57'E, 350 m, iv.1991, D. Král lgt. (ZKPC).

DISTRIBUTION. Thailand.

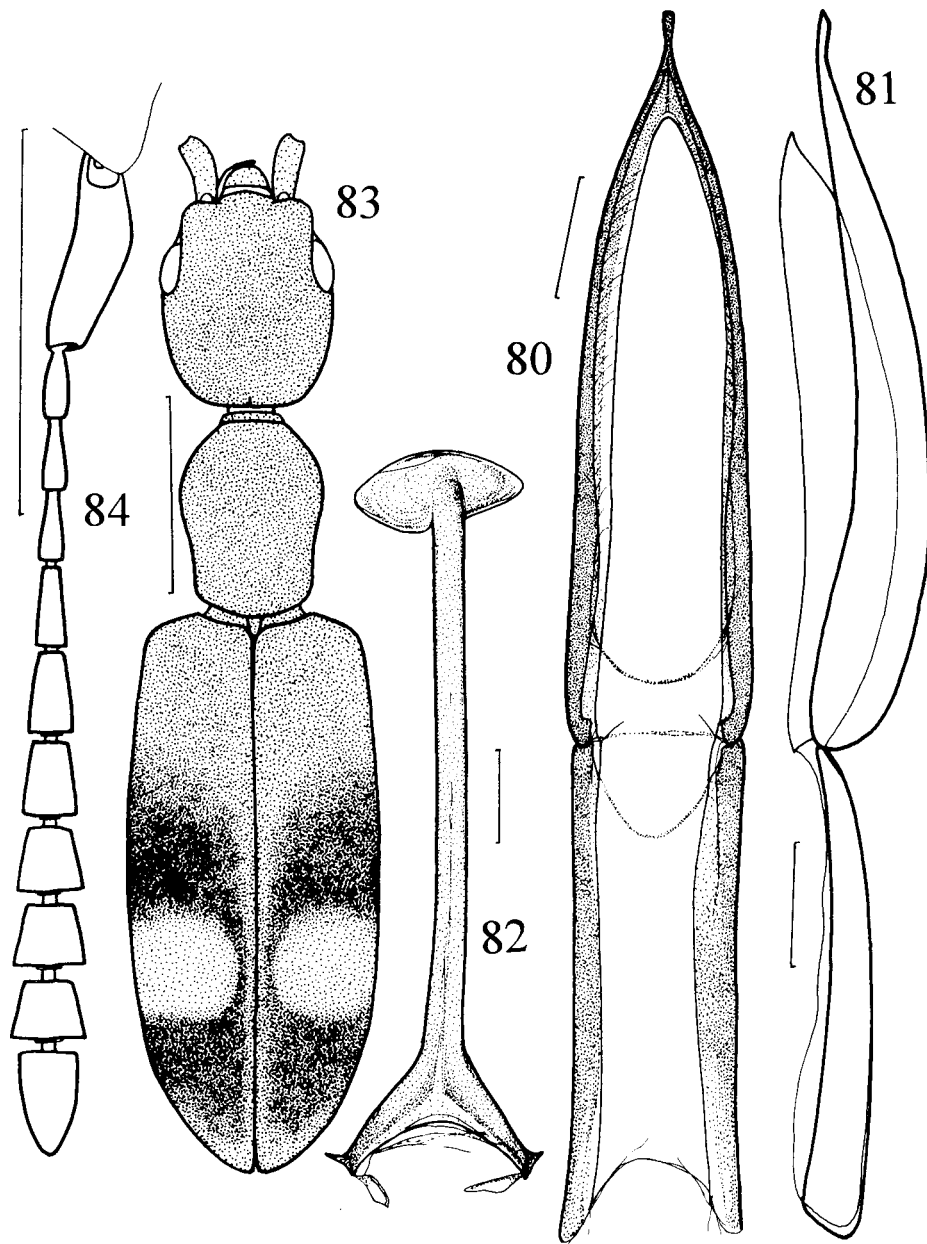
#### *Endomia rameshi* sp. n.

Length 2.5–2.7 mm.

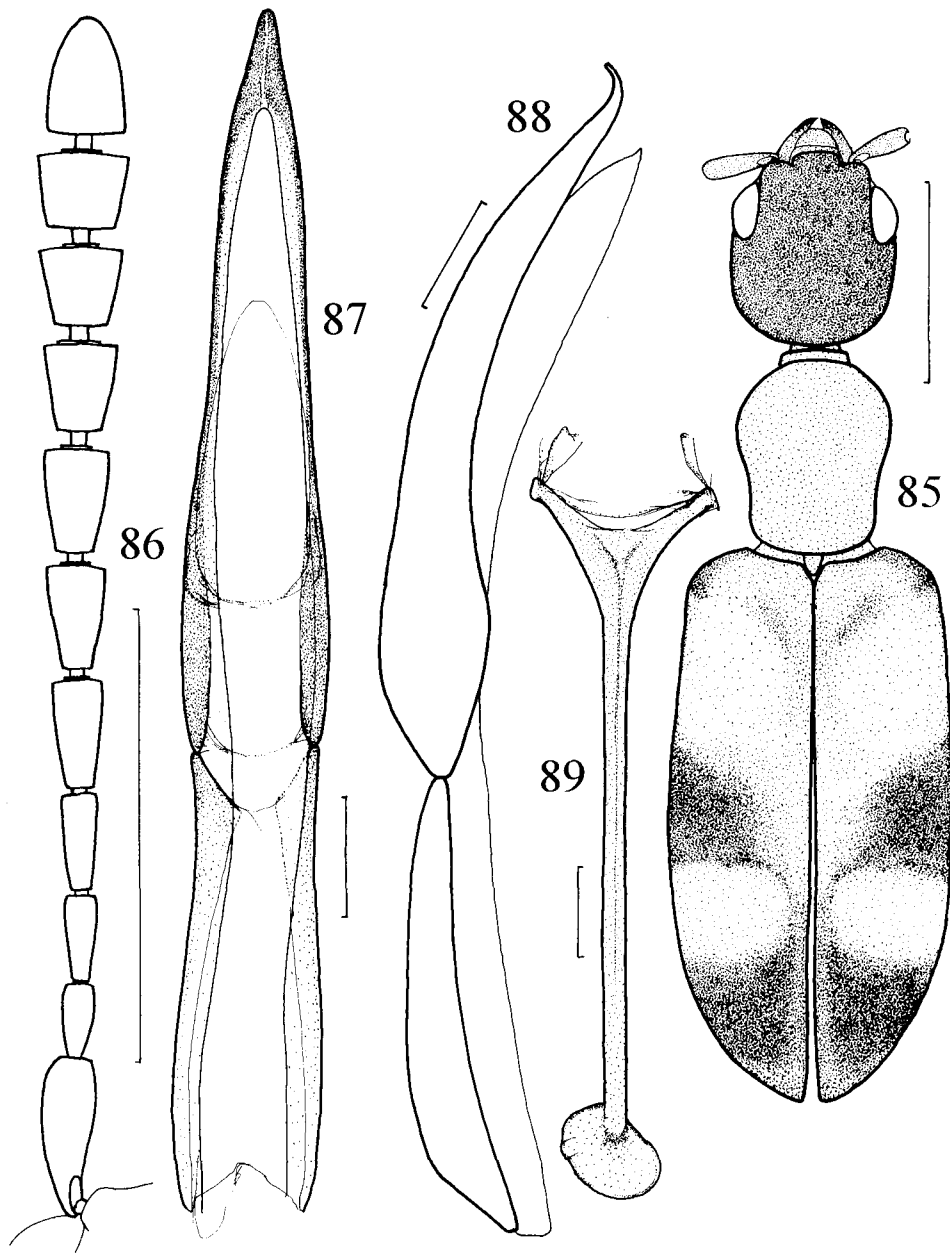
MALE. Habitus (Fig. 85). Head dark brown to black, prothorax red-brown, elytra pale yellow-brown with dark brown to black, vaguely outlined markings consisting of paired median and subapical spots, which may be connected along suture and lateral margins, antennae red-brown, legs and palpi yellow-brown. Head 1.3 times longer than wide, regularly rounded posteriorly; tempora slightly convex, subparallel, with posterior angles entirely rounded, obsolete; basal median carina barely discernible, not impressed; frontal protrusions minute, feebly elevated; frons somewhat impressed; eyes medium, moderately convex, not protruding from lateral outline of head. Prothorax somewhat smaller than head, rounded in front, weakly impressed postero-laterally. Elytra nearly twice as long as wide.



Figs 74–79. 74 – *Endomia impressiceps* (Pic), Madagascar, distal part of aedeagus ventrally; 75 – *E. decorata* Krekich-Strassoldo, apical part of aedeagus ventrally. 76–79: Median lobe of aedeagus. 76 – *E. decorata* Krekich-Strassoldo; 77 – *E. gratiosa* Krekich-Strassoldo; 78 – *E. besucheti* Bonadona, S. India; 79 – *E. euphratica* Krekich-Strassoldo. Scale – 0.1 mm.



Figs 80–84. 80–82: *Endomia quinquemaculata* Uhmann. 80 – aedeagus ventrally; 81 – same laterally; 82 – spiculum gastrale. 83–84: *E. gracilis* sp. n. 83 – habitus; 84 – antenna. Scales: 80–82 – 0.1 mm; 83, 84 – 0.5 mm.



Figs 85–89: *Endomia rameshi* sp. n. 85 – habitus; 86 – antenna; 87 – aedeagus ventrally; 88 – same laterally; 89 – spiculum gastrale. Scales: 85, 86 – 0.5 mm; 87–89 – 0.1 mm.

Antennae (Fig. 86) moderately stout, from the fifth segment slowly, increasingly enlarged; segments 9–10 nearly as long as wide; the tenth segment only 1.08 times longer than wide; terminal segment 1.36 times longer than penultimate.

Inner side of hind tibia with inconspicuous, somewhat sinuous longitudinal edge.

Male aedeagus (Figs 87, 88). Distal part of tegmen slim, elongated, tapering in ventral view, its apical portion distinctly curved upwards in lateral view; penis cylindrical, pointed apically, simple. Spiculum gastrale (Fig. 89).

FEMALE. Generally corresponding to male; hind tibia simple.

TYPE MATERIAL: Holotype ♂, "S India, Tamil Nadu, Nilgiri hills, Kotagiri env., Elk falls, 11°23'N 76°52'E, 2.ii.1994, Z. Kejval lgt." (NMPC). Paratypes, 1♀, same data as holotype; 1♀, same data, 16.xi.1993; 1♀, "S India, Tamil Nadu, Nilgiri hills, 15 km SE of Kotagiri, near Kunjappanai, alt. 900 m; 11°22'N 76°56'E, 1.ii.1994, Z. Kejval lgt." (ZKPC).

DISTRIBUTION. Known only from the type locality in South India.

DIFFERENTIAL DIAGNOSIS. *E. rameshi* resembles *E. gracilis* sp. n. by similar color pattern and the form of antennal segments. It differs from the latter in having a somewhat stouter body-form, sparser punctation of head and prothorax, more prominent eyes and minute frontal protrusions.

NAME DERIVATION. Named after Ramesh Yesuthasen from Kunjappanai, in appreciation of his kindness during the author's stay in Nilgiri hills.

*Endomia gracilis* sp. n.

Length 2.5 mm.

FEMALE. Habitus (Fig. 83). Head red-brown, prothorax somewhat lighter, elytra yellow-brown with dark brown, vaguely outlined marking, consisting of paired subapical and median spots, interconnected along suture, legs and palpi light yellow-brown, antennae red-brown. The punctures of the head and prothorax distinctly contiguous.

Head 1.4 times longer than wide, somewhat angulate posteriorly; tempora moderately narrowed rearwards, with posterior angles rounded, nearly obsolete; basal median carina short, fine, moderately impressed; frontal protrusions prominent, distinctly elevated; frons impressed. Eyes very small, flattened, not protruding from lateral outline of head. Prothorax slim, distinctly smaller than head, rounded in front, barely impressed postero-laterally. Elytra 2.1 times longer than wide.

Antennae (Fig. 84) moderately stout, from the sixth segment increasingly enlarged; the ninth segment roughly as long as wide; the tenth 1.14 times wider than long; terminal segment 1.5 times longer than penultimate.

MALE. Unknown.

TYPE MATERIAL: Holotype ♀, "S Vietnam, Nam Cat Tien - Nat. park., 1.–15.V.1994, P. Pacholátko & L. Dembický lgt." (NMPC); paratype ♀, same data as holotype (NHMW).

NAME DERIVATION. From the Latin, *gracilis* (= slim), referring to slim appearance of the body.

DISTRIBUTION. Known only from the type locality in South Vietnam.

DIFFERENTIAL DIAGNOSIS. Small species, easily distinguishable from similarly colored *E. tonkina* and *E. rameshi* by its longitudinal, slim appearance, rather flat eyes and conspicuously dense punctation of head and prothorax.

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