

often clinal and occasionally extreme in extent. The nature of this variation is thought to be a combination of environmental factors, such as weather conditions during larval development and metamorphosis, and various degrees of genetic heterogeneity in the population.

Systematic part

Primary key to the four keys to *Embates* species

- 1 Species occurring in northern Middle America: Mexico, Guatemala, Belize and in cloud forest habitats of Honduras, Nicaragua and possibly El Salvador (**Fig. 234**) Key I
- Species occurring in southern Middle America and Mosquito coast: Panama, Costa Rica and lowlands of Honduras and Nicaragua (**Fig. 235**)..... 2
- 2 Dark subspherical to rhomboid elytral macula more or less distinct, ante-macular and post-macular fasciae of light-colored scales present or not (Fig. 13–Fig. 15) Key II
- Dark elytral macula greatly reduced or modified, elytral color-pattern dominated by light-colored scales derived from modified circumferential line of former elytral macula, or vestiture diffuse (Fig. 16–Fig. 20) 3
- 3 Elytral color-pattern with dorsolateral markings (so-called vittae) of light-colored scalesKey III
- Elytral color-pattern with transverse (so-called fasciae) or round markings of light-colored scales, or markings confined to elytral declivity, or vestiture diffuse Key IV

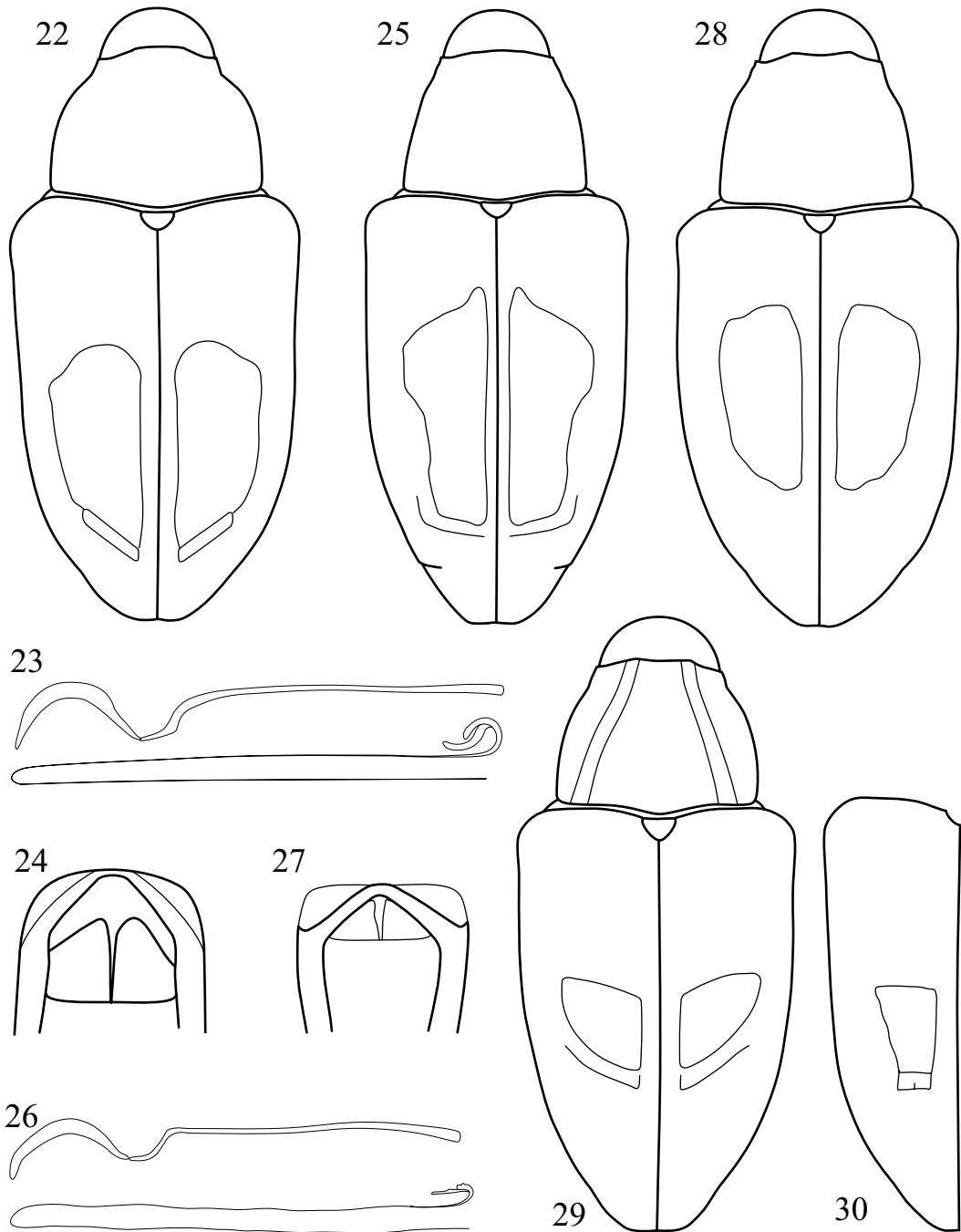
Key I. Species with northern distribution

- 1 Elytron with ornaments formed by yellow scales (occasionally reduced in *fasciolatus*), dark elytral macula absent, basic vestiture of microscopic, inconspicuous scales 2
- Elytron with dark macula that may be lined by light-colored scales, basic vestiture of larger scales 5
- 2 Tarsal claws straight in profile and subconnate at base 3
- Tarsal claws arcuate in profile and separate at base 4
- 3 Elytron with compound dorso-lateral vitta between base and preapical callus (Fig. 148)*heilipoides*
- Elytron with isolated fascia near preapical callus, in basal half with or without additional marking (Fig. 153)*obliquus*
- 4 Elytron with oblique, narrow fascia near middle (may be fragmented or reduced entirely, Fig. 154).....*fasciolatus*
- Elytron with subapical oval macula of light-colored scales (Fig. 155) *flavoplagiatus*
- 5 Tarsal claws straight in profile and subconnate at base 6
- Tarsal claws arcuate in profile and separate at base 7
- 6 Pronotum with greatest width near base; pronotal vitta obsolete, elytral macula pointed distally (Fig. 54); Mexico, Atlantic side *caecus*
- Pronotum with greatest width near middle; dorsolateral and lateral pronotal vittae distinct, extended along dorsal margins of mesepimeron and mesepisternum, elytral macula notched basally (Fig. 66); Mexico, Pacific side *bicoctura*
- 7 Elytron with preapical callus produced and costate; elytral macula oblique, of variable size, lined with light-colored scales (Fig. 69)*ocellatus*
- Elytron with preapical callus moderate, not costate; when elytral macula oblique then with post-macular fascia of light-colored scales wide and ill-defined 8
- 8 Venter with light-colored scales; color-pattern as Fig. 22*ornativentris*
- At most prosternum with light-colored scales 9

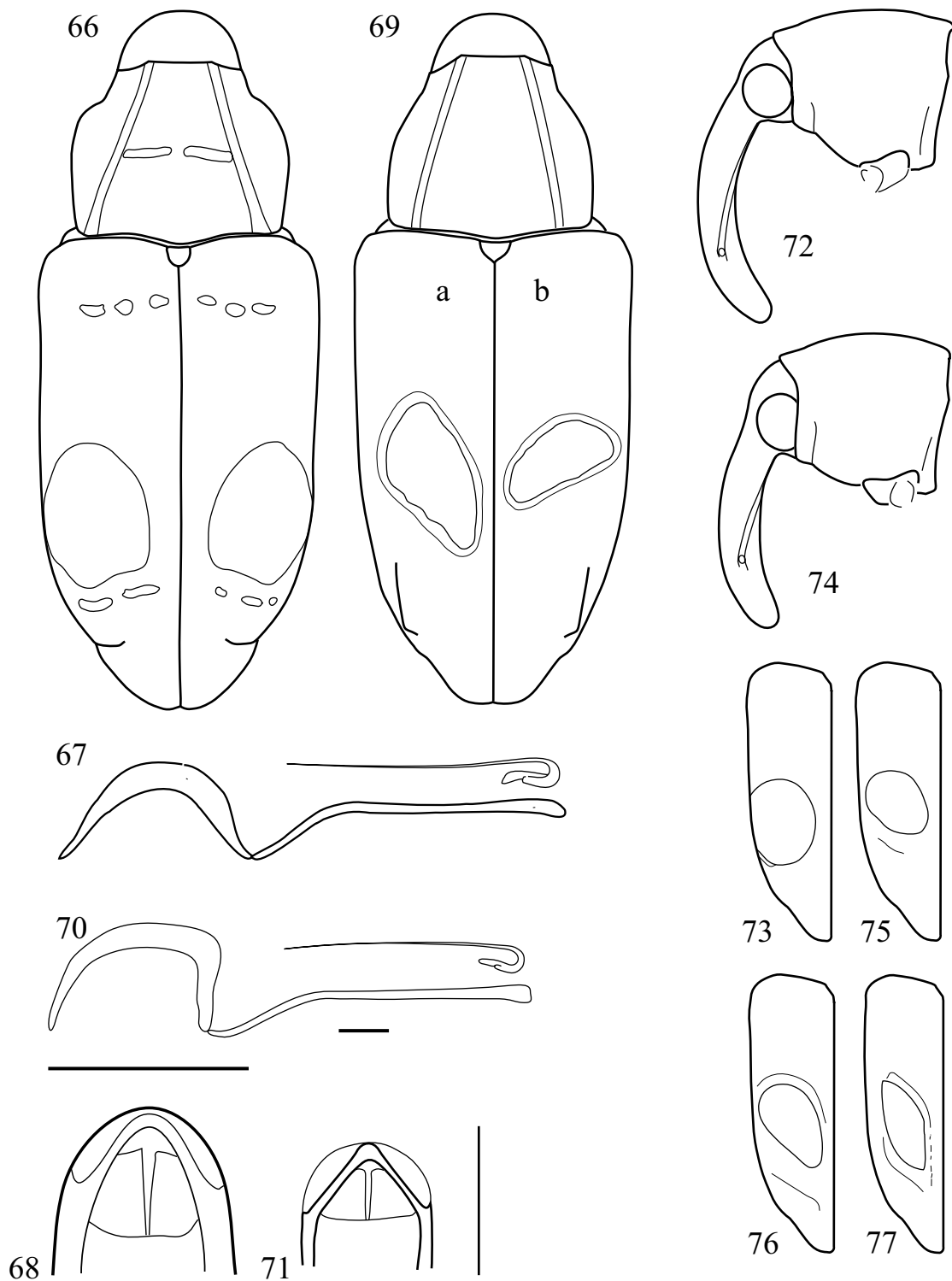
- 9 Rostrum moderately thick, subcylindrical; prosternum without light-colored vestiture before coxae; elytral macula round to pyriform, usually lined with light-colored scales; flagellum shorter than aedeagus including apodemes 10
- Rostrum thick, falciform, basolateral margin notably produced (Fig. 33); prosternum with spot of yellow or whitish scales before coxae; base of elytral macula lined with light colored scales or not; flagellum distinctly longer than aedeagus 13
- 10 Elytral macula of round shape, post-macular fascia narrow if present 11
- Elytral macula elongate-pyriform, post-macular fascia ill-defined 12
- 11 Basal third of aedeagus angular in lateral view, apex sclerotized medially (Table 1); rostrum long and slender (Fig. 72); widely dispersed from southern Mexico to Nicaragua *biguttatus* complex I
- Aedeagus curved in lateral view, apex membranous medially (Table 1); rostrum shorter and less slender (Fig. 74); Chiapas and adjacent Tabasco in Mexico *biguttatus* complex II
- 12 Pacific side of Guatemala, body size ca. 5.5 mm, post-macular fascia narrow (Fig. 77) .
..... *nigronotatus*
- Atlantic side of Mexico and Guatemala, body size 6.6–7.5 mm, post-macular fascia wide (Fig. 76) *sublibratus*
- 13 Integument piceous, post-macular elytral fascia absent (Fig. 28); widely dispersed in open habitats *solani*
- Integument brown, post-macular elytral fascia of light-colored scales generally developed 14
- 14 Size ca. 4.0 mm; sides of pronotum subparallel, abruptly constricted in front; elytral macula narrow (Fig. 31); known only from vicinity of Guatemala-City *exclamationis*
- Size 4.5–6 mm; pronotum widest near base; elytral macula broad (Fig. 29) 15
- 15 Elytral macula and post-macular fascia broader, dorso-lateral pronotal vitta usually distinct (Fig. 29); size 4.5–5.1 mm *bisignatus*
- Elytral macula and post-macular fascia narrower, dorso-lateral pronotal vitta reduced basally (Fig. 30); size 6.0 mm *duplicatus*

Key II. Southern species with dark elytral macula

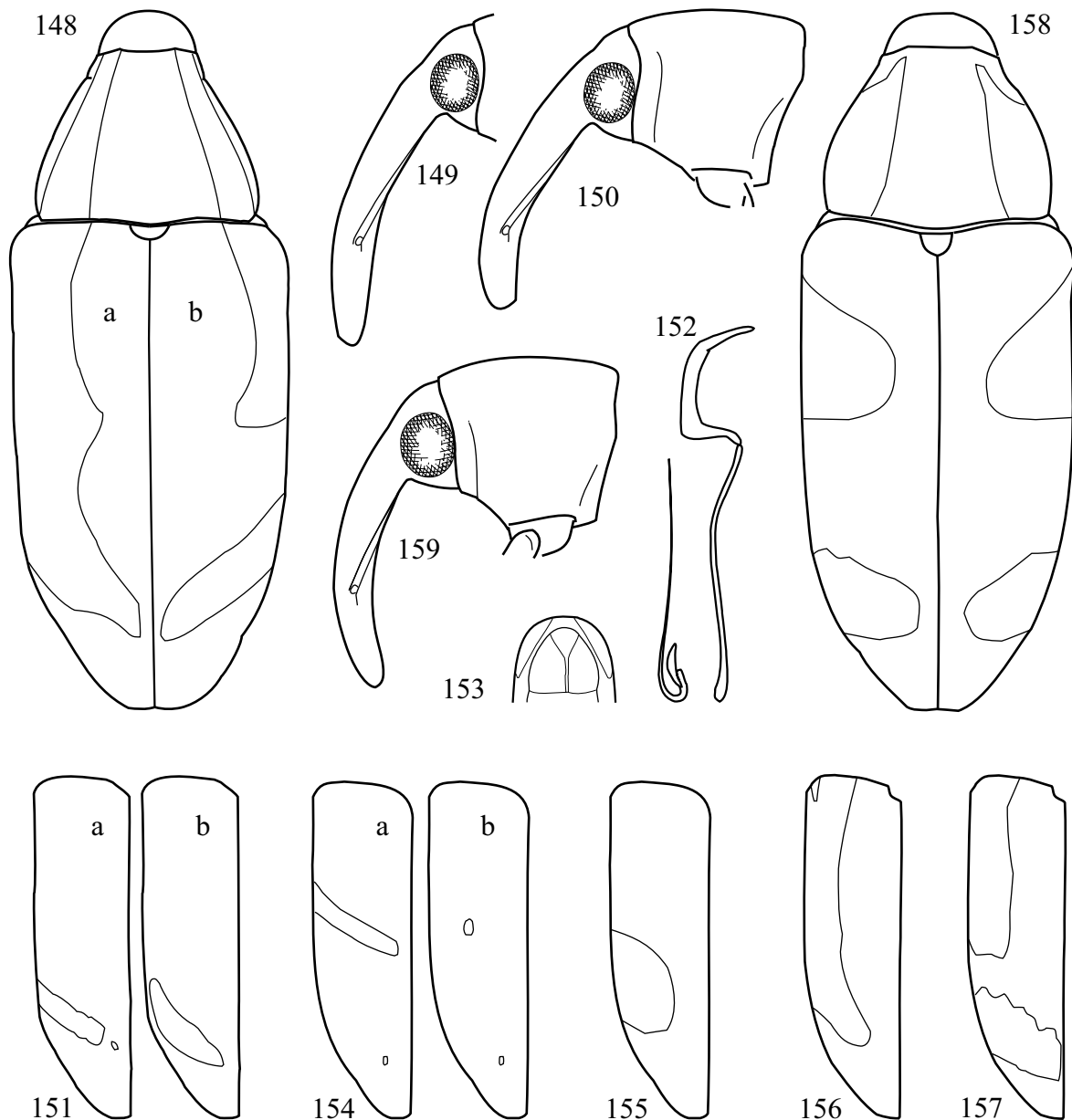
- 16 Metatibia with ventral margin with dense fringe of long, waved yellow hairs in male (Fig. 176); tarsal claws flat, approximate at base; elytral macula ovate (Fig. 171); total length 6.7–8.8 mm; Pacific side of Cordillera de Talamanca in Costa Rica and Panama
..... *melanops*
- Metatibia with ventral margin with fringe indistinct or absent, color-pattern different 17
- 17 Elytral interstria 3 with elongate callosities near base, middle and preapical callus, preapical callus prominent (Fig. 126); dark elytral macula indistinct, restricted to median callosity; size 6.6–7.4 mm; Costa Rica *callifer*
- Elytral interstria 3 without elongate callosities, at most tumid near base 18
- 18 Venter with white scales; elytral vestiture brownish, disk with black, variously modified macula (Fig. 132, Fig. 135, Fig. 139 etc.); associated with species of *Piper* with shoot-apex emerging from within leaf-base at flowering nodes; Costa Rica and western Panama 19
- Ventral vestiture of different color, or elytral vestiture different 25
- 19 Elytral interstria 3 tumid near base; tarsal claws flat, approximate at base 20
- Elytral interstria 3 not tumid near base; tarsal claws curved, separate at base 22
- 20 Black elytral macula raised, at least post-macular region depressed; preapical callus finely costate 21



Figures 22-30. *Embates ornativentris*: **22**, habitus, dorsal view; **23**, aedeagus and ejaculatory duct, lateral view; **24**, apex of aedeagus, dorsal view. *Embates rugosus* (Costa Rica, Cerro Chucuyo): **25**, habitus, dorsal view; **26**, aedeagus and ejaculatory duct, lateral view; **27**, apex of aedeagus, dorsal view. *Embates solani* (Mexico, Teapa): **28**, habitus, dorsal view; *Embates bisignatus*: **29**, habitus, dorsal view. *Embates duplicatus*: **30**, left elytron with color pattern.



Figures 66-77. *Embates bicoctura*: **66**, habitus, dorsal view; **67**, aedeagus and ejaculatory duct, lateral view; **68**, apex of aedeagus, dorsal view. *Embates ocellatus*: **69**, habitus, dorsal view (**a**, Mexico, Chiapas; **b**, Mexico, Oaxaca); **70**, aedeagus and ejaculatory duct, lateral view; **71**, apex of aedeagus, dorsal view. *Embates biguttatus*: **72**, head and prothorax, lateral view; **73**, left elytron with color pattern. *Embates paucilimbatus*: **74**, head and prothorax, lateral view; **75**, left elytron with color pattern. *Embates sublibratus*: **76**, left elytron with color pattern. *Embates nigronotatus*: **77**, left elytron with color pattern.



Figures 148-159. *E. heilipoides*: **148**, habitus and two color patterns (**a**, Tabasco Distr., Teapa; **b**, Chiapas Distr., Tuxtla Gutierrez), dorsal view; **149**, head, female, lateral view; **150**, head and prothorax, male, lateral view. *E. obliquus*: **151**, elytron with color pattern; **152**, aedeagus and ejaculatory duct, lateral view; **153**, apex of aedeagus, dorsal view. Elytron with color pattern; **154**, *E. fasciolatus* (**a**, nominal form; **b**, sexpunctatus); **155**, *E. flavoplagiatus*; **156**, *E. albovittatus*; **157**, *E. discessus*. *E. championi*: **158**, habitus and color pattern, dorsal view; **159**, head and prothorax, male, lateral view.