

## Review of Mexican species of the genus *Cryptanura* Brullé with a key to species from North America (Hymenoptera: Ichneumonidae: Cryptini)

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A key to 38 North American species of *Cryptanura* is given. 30 species are recorded for Mexico; new data on their distribution are given. 10 new species from Mexico are described; the following new synonymy is established: *Cryptanura ectypa* (Cresson, 1873) = *C. vallis* Porter, 1977, syn. n.; *C. nitidiuscula* Cameron, 1886 = *C. bicarinata* Cushman, 1945, syn. n.

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### Genus *Cryptanura* Brullé, 1846 (Figs 1-72)

*Cryptanura* Brullé, 1846: 242 (type species: *Cryptanura nigripes* Brullé, 1846, designated by Viereck, 1914); Cushman, 1945: 139-176 (= *Polyaenus*, *Polyaenidea*; descr., key to species); Townes & Townes, 1962: 426 (descr., 3 species from USA.); 1966: 100 (catalogue, synonymy, bibl. to 67 Neotropic species); Townes, 1970: 217, 219, 452 (key, descr., fig. 190); Yu & Horstmann, 1997: 274 (bibl. to species of the world fauna); Ruíz et al., 2002: 640 (list of 14 species from Mexico). *Polyaenus* Cresson, 1873: 149 (type species: *Polyaenus ectypus* Cresson, designated by Viereck, 1914); Cameron, 1886: 244. *Polyaenidea* Viereck, 1913: 381 (type species *Polyaenidea pretiosa* Viereck, original designation).

*Cryptanura* is a large, predominantly Neotropic genus. It includes rather large and robust species that may easily be separated from other mesostenines by the presence of a pair of horns (usually arising from a common base) on frons. "Adults occur in woods and shrubby places. Males have a dancing flight around bushes. Females explore along the trunks and branches of trees, shrubs and vines" (Townes, 1970). Hosts unknown.

About 70 species were known in the genus (Townes & Townes, 1962, 1966; Yu & Horstmann, 1997); 10 new species from Mexico are described below. Most abundant and diverse is

the fauna of South America; in Mexico, 30 species are known, three of them are also recorded from the United States (*C. spinaria* Brullé, *C. compacta* Cresson, *C. ectypa* Cresson) and only one (*C. septentrionalis* Cushman) is possibly endemic to eastern part of USA, this one is closely related to the Mexican species *C. punctator* sp. n. Only species recorded from Mexico are numbered in the key and considered in the annotated list of species. Synonymy is given in detail only for species described from Mexico.

The types of North American species have been examined by the senior author. The types of new species and all materials (with especially noted exceptions) are deposited at the Insect Museum, UAT, in Cd. Victoria, Tamaulipas, Mexico.

The following abbreviations are used for collections containing types and examined materials of Mexican and Neotropical species: AEI – American Entomological Institute, Gainesville, Florida, USA; ANSP – Philadelphia Academy of Natural Sciences, Philadelphia, USA; BMNH – Natural History Museum, London, U.K.; TAMU – Texas A & M University, Department of Entomology, College Station, USA; UAT – Insect Museum of "Universidad Autónoma de Tamaulipas", Cd. Victoria, Mexico; USNM – U.S. National Museum of Natural History, Washington D.C.; ZIN – Zoological Institute, St.Petersburg, Russia. Other abbreviations: SMSC – "selva

mediana subcaducifolia”; SMSP – “selva mediana subperennifolia”.

In the “Material”, Spanish words are cited according to labels.

#### Key to North American species of *Cryptanura*

1. Mesoscutum black (or sometimes with yellow stripes on anterolateral margins). – Tergites 2 and 3 shiny, polished . . . . . 2
- Mesoscutum with a median yellow spot or with two median yellow stripes (Figs 15, 17). – Tergites 2 and 3 usually with distinct microsculpture (polished in a few species) . . . . . 6
2. Propodeum yellowish with median longitudinal black band (Fig. 2). Apical transverse carina of propodeum complete between apophyses (Fig. 2). – Mesopleurum (except for prepectus and black band under subtegular ridge), mesosternum and metapleurum entirely yellowish. Hind coxa pale, sometimes with light brown dorsal mark (Fig. 1). Ovipositor sheath about 0.7–0.8 times as long as hind tibia; upper valve beyond the nodus about 0.8–0.9 times as long as 2nd segment of hind tarsus . . . . . 3
- Propodeum entirely black before basal transverse carina; its two yellow spots beyond this carina bordered with black laterally (Fig. 8) . . . . . 4
3. Tegulae yellow. Temple white, orbits usually not interrupted, or narrowly interrupted behind dorsal 0.3 of eye . . . . . 9. *C. ectypa* (Cresson)
- Tegulae entirely black. Temple black with cheek white. – Mesoscutum anterolaterally with yellow hooked marking extending backward from base of notaulus. – Panama . . . *C. mediostrigosa* Cushman
- 4(2). Abdominal tergites 2–7 black basally, with broad yellowish white apical band. Temple entirely black at least on upper 0.3 . . . . . 5
- Abdominal tergites 4–7 entirely light orange, tergites 2 and 3 brownish basally. Hind coxa light reddish with dorsal yellow spot. – [Type, female. Front wing 11.5 mm; flagellum 30-segmented, segments (5)6–10 white; mandible entirely yellow; scape black; orbits entirely white, on dorsal 0.3 of temple very narrow (Fig. 62); occipital carina at lower end as a lobe, which partly covers a deep pit between occipital and hypostomal carinae (Fig. 62); propleurum black with white lateral sides; collar black; mesopleurum coarsely punctate in anterior half, with parallel straight rugae under subtegular ridge; mesosternum black with yellow hooked spot under sternaulus; scutellum yellow except laterally; metapleurum with coarse reticulation and with long erected hairs, yellow in 70% (front and lower margins black); propodeum before basal transverse carina polished; apophyses long; two yellow spots behind basal transverse carina obliquely truncate anteriorly just above apophyses; front and middle femora black posteriorly and ventrally; hind trochanter I brownish, yellow dorsally; trochanter II blackish brown, brown ventrally; hind femur black ventrally and posteriorly on lower 0.6; first tergite yellow with dorsal blackish band about between spiracles; ovipositor 0.6 times as long as hind tibia]. – Guatemala . . . . . *C. vivida* (Cameron)
5. Mesosternum black. Petiole yellow, black ventrally. All coxae yellow, broadly black ventrally from base to apex; hind trochanter I yellow, trochanter II black. Hind femur yellow, black ventrally, on apical 0.15, and with anterior subdorsal black line. Mesopleurum smooth, with scarce irregular coarse punctures; metapleurum yellow with black wedge-shaped spot anteriorly. Temple rather narrow, black about on dorsal 0.6. Cheeks between lower end of occipital carina and mandible concave. Clypeus as in *Rhinium*. Malar space black. Ovipositor sheath 0.55 times as long as hind tibia; upper valve beyond the nodus as long as 2nd segment of hind tarsus . . . . . 1. *C. ablata* (Cresson)
- Mesosternum yellow. Petiole black, at apex and laterally yellow (Fig. 8). Hind coxa yellow with black band dorsally on anterior margin; its posterior dorsal black band present only at base (Fig. 7); hind trochanters yellow with black and brown marks on dorsal side. Hind femur yellow, blackish brown dorsally, with longitudinal yellow line on dorsum. Mesopleurum on fore half longitudinally rugose with distinct punctures above sternaulus. Temples black about on dorsal 0.3 (orbits interrupted). Cheeks between mandible and lower end of occipital carina not impressed. Malar space yellow (black spot close to clypeal fovea). Ovipositor sheath 0.75 times as long as hind tibia; upper valve beyond the nodus 1.5 times as long as 2nd segment of hind tarsus (Fig. 39) . . . . . 18. *C. illera* sp. n.
- 6(1). Abdominal tergites predominantly black and white (or light yellow) . . . . . 7
- Abdominal tergites predominantly reddish (sometimes one or two tergites with blackish spots) . . . . . 34
7. Mesoscutum with two yellow median stripes (Fig. 15) . . . . . 8
- Mesoscutum with a median whitish yellow spot (Fig. 17) . . . . . 12
8. Hind coxa, trochanters and femur reddish (coxa sometimes blackish at extreme base). [Type, male. Mesosternum yellow; sternaulus entirely black. Metapleurum coarsely punctato-rugose, rugae sinuate. Apical transverse carina of propodeum present between apophyses (Fig. 9). Scape black; mandibles black with yellow spot on basal third. Orbits not interrupted. Hypostomal carina rather high and black. Nervellus intercepted on lower 0.15]. – Guatemala, Mexico . . . . . 12. *C. fulvipes* (Cameron)
- Hind coxa, trochanters and femur usually yellowish with black pattern . . . . . 9
9. Second tergite polished, without microsculpture, its hind margin black (Fig. 16). Pronotum black laterally on anterior margin (Fig. 15). Propodeum with two basal large yellow spots (Fig. 16), polished; apical transverse carina present between apophyses. – Mesopleurum and metapleurum polished and predominantly yellow; mesosternum yellow. – Mexico, Guatemala, Panama . . . . . 2. *C. nitidiuscula* (Cameron)
- Second tergite with distinct microsculpture; its hind margin white. Pronotum yellow laterally on anterior margin. Propodeum entirely black before basal transverse carina . . . . . 10
10. Yellow spots of propodeum before apophyse sharply narrowed as tongue-shaped band, which extends to basal transverse carina (as in Fig. 12). [Type, female. Orbits widely interrupted. Scape black with very small ventral yellow spot. Mandible black with small yellowish spot at lower basal corner. Mesoscutum entirely punctured. Mesopleurum black behind oblique impression; mesosternum black; metapleurum yellow with front margin entirely black. Propodeum with transverse rugae on apical third. Hind coxa yellowish, dorsally completely bordered with black. Hind femur yellowish, black dorsally. Hind tibia yellow, rufous on apical 0.25 (in male, black on apical 0.33) and blackish on basal 0.1. Petiole yellow, black ventrally] . . . . . 6. *C. bilineata* Cushman

- Yellow spots of propodeum not as above ..... 11
- 11. Mesosternum black with yellow hooked spot under sternaulus (as in Fig. 12). Propodeal yellow spots truncate just above apophyses. [Type, female. Scape black. Mandible yellow with dark lower margin. Mesopleurum on lower half smooth with rather thin punctures; metapleurum coarsely striate to apophyses. Hind coxa dorsally entirely bordered with black (Fig. 21). Hind femur black on dorsal half, with longitudinal yellow line on dorsum. First segment yellow, black dorsally (Fig. 18), except for apex (sometimes brownish ventrally). Ovipositor sheath 0.86 times as long as hind tibia; ovipositor tip as in Fig. 38 ..... 22. *C. orizabensis* (Cameron)
- Mesosternum yellow. Propodeal yellow spots extend anteriorly almost to basal transverse carina. [Type, female. Scape black with yellow ventral spot. Mandible white. Mesopleurum striate with coarse punctures above sternaulus; metapleurum with very dense oblique striae. Dorsal black band on hind coxa widely interrupted posteriorly on apical half (Fig. 19). Hind femur black dorsally and posteriorly on dorsal half. Petiole yellow, black ventrally. Ovipositor sheath about 0.95 times as long as hind tibia. Ovipositor rather thin, with distinct nodus; upper valve beyond the nodus about 1.5 times as long as 2nd segment of hind tarsus] ..... 20. *C. mexicana* (Cresson)
- 12(7). Hind coxa pale rufous or reddish, sometimes with weak dark and white marks (Figs 5, 10, 11); hind femur predominantly red (in *C. azteca* and *C. sostenesi*, blackish posteriorly, and in *C. xilitla*, blackish in apical half). – Mesoscutum with a central spot (if with two median stripes, see couplet 8, *C. fulvipes*) ..... 13
- Hind coxa dorsally yellow (or whitish) with black band on anterior and usually also on posterior margin (Figs 22, 27–30); hind femur yellow and black or entirely black (except for *C. septentrionalis*, USA) ..... 18
- 13. Propodeal yellow spots sharply truncate just above apophyses (Fig. 24). – Scape black; mandible white on basal 0.66; all femora blackish posteriorly; petiole entirely yellow ..... 14
- Propodeal yellow spot before apophyses covers at least half way between apophyses to basal transverse carina. Mesosternum black ..... 15
- 14. Mesosternum yellow with black band on mesosternal suture. – In type, fore wing 13.3 mm long; antenna with 36 flagellar segments; malar space 0.8 times as long as basal width of mandible; ovipositor sheath 1.15 times as long as hind tibia; ovipositor rather thin (Fig. 35); upper valve beyond the nodus 1.4 times as long as 2nd segment of hind tarsus ..... 3. *C. azteca* (Cresson)
- Mesosternum black. – In type, front wing 11.5 mm long; antenna with 33 flagellar segments; ovipositor sheath 0.78 times as long as hind tibia; upper valve beyond the nodus equal in length to 2nd segment of hind tarsus ..... 30. *C. xilitla* sp. n.
- 15. Propodeal yellow spots before apophyses as broad as just behind apophyses, extend anteriorly about half way between apophyses to basal transverse carina (Fig. 6). Ovipositor sheath about 1.4–1.5 times as long as hind tibia. – Horn reduced. Mandibles black. Orbits usually not interrupted beyond the eye ..... 16
- Propodeal yellow spots before apophyses sharply narrowed (Figs 4, 12). Ovipositor sheath shorter than hind tibia or twice as long as hind tibia ..... 17
- 16. Petiole black. Ovipositor very stout (Fig. 42). Hind coxa tricoloured dorsally: with apical brownish spot and large white spot (Fig. 10, 11) ..... 11. *C. fraternans* (Cameron)
- Petiole light yellow (Fig. 6). Ovipositor much slenderer (Fig. 37). Hind coxa not so distinctly tricoloured (Fig. 5) ..... 10. *C. femorator* sp. n.
- 17. Mesopleurum on yellow spot with distinct dense punctures. All femora entirely light reddish. Third tergite densely and moderately finely punctate. Ovipositor sheath about 0.85 times as long as hind tibia. Horn distinct. – Metapleurum with dense and moderately coarse punctures, partly rugose, usually more than 50% black. Mesepimeron with fine, but distinct and dense punctures (usually absent in most other species). – Fig. 12. – USA, Mexico ..... 27. *C. spinaria* (Brullé), female
- Mesopleurum on yellow spot with very fine and scarce punctures. All femora fuscous posteriorly. Third tergite polished, without hairs and punctures. Ovipositor sheath about 2.2 times as long as hind tibia. Horn reduced. – Figs 3, 4, 41 ..... 26. *C. sostenesi* sp. n.
- 18(12). Propodeal yellow spots abruptly narrowed before apophyses (“tongue-like spots”) (Figs 23, 25, 12, 14). [Hind coxa black and yellow dorsally; if coxa and femur predominantly reddish, see couplet 17] ... 19
- Propodeal yellow spots before apophyses as wide as just behind apophyses, or sometimes spots obliquely truncate anteriorly (Figs 45, 51) ..... 25
- 19. Second tergite rather evenly, distinctly (moderately coarsely) and densely punctate, distances between punctures on dorsum medially not more than diameter of punctures (Fig. 23). Base of second tergite with yellow quadrangular spot medially (Fig. 23). – Scape widely whitish ventrally. Mesosternum whitish yellow. Front ends of propodeal yellow spots curved proximad and sometimes confluent. Petiole yellow dorsally and laterally. Hind coxa whitish, black basally and on dorsoanterior margin (Fig. 22, 14). Occipital carina sinuate before lower ends ..... 20
- Second tergite with very fine and sparse punctures on dorsum, without large basal quadrangular spot medially. Other characters not entirely as above ... 21
- 20. Hind femur yellow, black dorsally. Petiole black ventrally ..... 24. *C. punctator* sp. n.
- Hind femur reddish. Petiole yellow ventrally (sometimes black at base). – Fig. 14 – USA ..... 27. *C. septentrionalis* Cushman
- 21. Hind coxa entirely black ventrally and laterally, with whitish dorsal spot. Hind femur black, reddish at extreme base. – Hind tibia yellow, blackish on apical 0.25. Mesopleurum and metapleurum as in Fig. 12 ..... 27. *C. spinaria* (Brullé), male
- Hind coxa predominantly yellow ventrally and laterally. Hind femur mostly or partly yellow ventrally ..... 22
- 22. Mesosternum yellow. Petiole black, yellow dorsally in female (in male, black only ventrally). Hind femur yellow, black dorsally. – Scape with white mark ventrally. Hind coxa with posterior black dorsal band widely interrupted before base or medially (Fig. 30). Hind trochanters I blackish; hind trochanters II black laterally. Front and middle femora black posteriorly. Ovipositor sheath about 0.8 times as long as hind tibia. In male, hind tibia entirely yellow; hind coxa usually with thin blackish ventral line medially, hind trochanter II black dorsolaterally, hind femur sometimes on apical 0.3 entirely black. Propodeal yellow spots confluent anteriorly ..... 7. *C. brachygaster* (Cameron)
- Mesosternum black. Petiole yellow, sometimes black ventrally. Hind femur black on dorsal half with yellow

- low longitudinal line on dorsum (in males of *C. hamulator*, hind femur without yellow dorsal line). – Other characters not entirely as above . . . . . 23
23. Two hamuli on costella. Petiole of female black dorsally (sometimes only on dorsolateral carinae). Propodeal yellow spots before apophyses projecting on proximal side towards each other (Fig. 25) and in males usually fused. Ovipositor sheath about 1.1 times as long as hind tibia. Upper valve beyond the nodus about 1.25 times as long as 2nd segment of hind tarsus (Fig. 34). In male, antenna with 40 flagellar segments, flagellomeres 17 and 18 with a strong tyloid (Fig. 50); metapleurum 50-60% yellow (widely black on front and lower margins); 2-3 hamuli on costella; hind femur usually black dorsally, without yellow line; hind trochanter II entirely yellow; hind tibia blackish about on apical 0.35; petiole entirely yellow or sometimes black on dorsum or only on lateral margins . . . . . 14. **C. hamulator** sp. n.
- One hamulus on costella. Petiole of female yellow dorsally. Propodeal yellow spots before apophyses proximally subparallel (Fig. 26). Ovipositor sheath about 0.85 times as long as hind tibia . . . . . 24
24. Whitish yellow dorsal spot on hind coxa entirely bordered with black laterally (Fig. 29). Upper valve of ovipositor about 1.3 times as long as 2nd segment of hind tarsus (Fig. 44). Flagellum with 28-30 segments (in type, with 30 segments, fore wing 12.3 mm long). Metapleurum yellow about on 85% . . . . . 17. **C. lineatifemur** Cushman
- Whitish yellow dorsal spot on hind coxa apico-posteriorly not bordered with black (Fig. 27). Upper valve of ovipositor 1.4-1.5 times as long as 2nd segment of hind tarsus (Fig. 32, 33). Flagellum with about 33 flagellar segments. Metapleurum yellow on 60%. In male, 1 hamulus on costella; hind femur with longitudinal yellow line on dorsum; hind trochanter II usually darkened (sometimes on 80% black); petiole black ventrally; yellow propodeal spots usually not fused before apophyses . . . . . 29. **C. veraepacis** (Cameron)
- 25(18). Upper margin of pronotum strongly prominent anterolaterally (Fig. 17). Propodeal yellow spots long, extend anteriorly to basal transverse carina and slightly widened close to carina (Fig. 13). Abdomen polished, without microsculpture. Hind femur black dorsally and ventrally. Mesosternum yellow. Tergite 2 of female with subbasal yellow median spot or band (Fig. 13) . . . . . 8. **C. compacta** (Cresson)
- Upper margin of pronotum not so strongly projecting anterolaterally. Propodeal yellow spots shorter, usually not extend to basal transverse carina and not widened anteriorly. Abdominal tergites dull (except for tergite 1), with distinct microsculpture. Hind femur yellow ventrally. Other characters not entirely as above . . . . . 26
26. Mesosternum yellow. – Hind coxa on dorsum entirely bordered with black (Fig. 55), laterally without large basal black spot . . . . . 27
- Mesosternum black . . . . . 28
27. Petiole black dorsally (and ventrally). Propodeal yellow spots transversely truncate before apophyses. Ovipositor sheath about 0.7 times as long as hind tibia. – In type, female, flagellum with 34 segments; front wing 11.5 mm; mandible yellow on basal 0.6; mesoscutum with sparse punctures and close to tegula impunctate; mesepimeron on upper 0.3 yellow; metapleurum yellow about on 75% (black anteriorly, Fig. 56). – Nicaragua, Mexico . . . . . 4. **C. bakeriana** (Cameron)
- Petiole yellow dorsally (ventrally black). Propodeal yellow spots obliquely truncate before apophyses (as in Fig. 51). Ovipositor sheath about as long as hind tibia. – In type, female, flagellum with 30 segments, front wing 12 mm; mandible black with small subbasal yellow spot; mesoscutum more or less evenly and rather coarsely punctured; mesepimeron yellow on upper 0.6; metapleurum on 95% yellow (only front suture black); hind trochanters black dorsally and ventrally. – Panama, ?Mexico . . . . . 16. **C. lamentaria** (Cameron)
28. Females . . . . . 29
- Males (mesosternum black) . . . . . 32
29. Ovipositor very thick and without distinct nodus (Fig. 43), subapically about 1.5 times as high as subbasally; ovipositor sheath 1.35 times as long as hind tibia. Orbits not interrupted, yellow on upper part of temple. Hind coxa with black posterior dorsal band interrupted subbasally or medially (Fig. 54) and with large posterior dark spot (on inner side). Petiole black . . . . . 23. **C. propinqua** (Cresson)
- Ovipositor not so thick, with distinct nodus (Figs 57-59); ovipositor sheath 0.7-1.1 times as long as hind tibia. Orbits on upper part of temple widely interrupted with black. Hind coxa with black dorsoposterior band not interrupted or interrupted apically (Figs 47, 52) . . . . . 30
30. Petiole black (Fig. 46). Propodeal yellow spots almost transversely truncate before apophyses (Fig. 45). Mesoscutum rather sparsely punctured. Metapleurum about on 60% yellow (with wide black band on front and lower margins). Apophyses short and obtuse. Hind coxa with large black basolateral spots merging ventrally; dorsum of coxa not darkened apico-posteriorly (Fig. 47). Hind trochanter II yellow, reddish brown at extreme apex; hind trochanter I brownish with yellow ventral spot (Fig. 48). In type, flagellum 35-segmented, front wing 13 mm . . . . . 2. **C. armandoi** sp. n.
- Petiole yellow. Propodeal yellow spots obliquely truncate before apophyses (Fig. 51). Mesoscutum more or less evenly punctured. Metapleurum about on 90% yellow (black only on front suture and sometimes slightly darkened on lower margin). Apophyses rather long (Fig. 51). Hind coxa black only on dorsolateral margins, this black coloration not interrupted (Fig. 52). Hind trochanter II usually marked with black; trochanter I not as above. Flagellum with 30-34 segments, fore wing 7.5-12.5 mm . . . . . 31
31. Ovipositor sheath 0.95-1.1 times as long as hind tibia; ovipositor stout (Fig. 58), a little thicker than hind basitarsus; upper valve beyond the nodus about 8 times as long as height of ovipositor on nodus. Mandible usually black or with small yellow spot on basal 0.2-0.3. Mesoscutum on anterolateral margin between tegula and base of notaulus with thin yellow stripe . . . . . 19. **C. lunai** sp. n.
- Ovipositor sheath 0.65-0.85 times as long as hind tibia; ovipositor slender (Fig. 59), at the middle 0.65-0.8 times as thick as hind basitarsus; upper valve beyond the nodus about 10 times as long as height of ovipositor on nodus. Mandible usually yellow on basal 0.4-0.6. Mesoscutum with anterolateral margins entirely black . . . . . 25. **C. silvae** sp. n.
- 32(28). Hind tibia entirely yellow, not blackish apically. First tergite on petiole entirely yellow dorsally and laterally. Hind coxa posteriorly (on inner side) yellow, without large blackish basal spot . . . . . males of **C. lunai** sp. n. and **C. silvae** sp. n.



- Hind tibia blackish on apical 0.35. First tergite on petiole black (at least on basal half). Hind coxa posteriorly with large basal blackish spot . . . . . 33
- 33. Petiole entirely black (at least on basal half). Mandible yellow on basal half. Hind trochanter II predominantly blackish. Black posterior spot of hind coxa with yellow mark subbasally, which usually connects with dorsal yellow spot (Fig. 54) . . . . . 23. **C. propinqua** (Cresson)
- Petiole black dorsally, yellow laterally and ventrally. Mandible black. Hind trochanter II yellowish. Black posterior spot of hind coxa not interrupted subbasally with yellow mark . . . . . 2. **C. ?armandoi** sp. n.
- 34(6). Mesoscutum entirely black (see also couplet 5) . . . . . **C. ablata** (Cresson) and **C. vivida** (Cameron)
- Mesoscutum with central pale spot. – Abdominal tergites 2-7 entirely red . . . . . 35
- 35. Ovipositor very strong apically (as in *C. propinqua* and *C. fraternans* – Figs 42, 43); ovipositor sheath 1.5 times as long as hind tibia. – Hind legs reddish (tibiae and tarsi yellow). – Panama . . . . . **C. exalibur** Cushman
- Ovipositor thinner and shorter . . . . . 36
- 36. Hind coxa yellow dorsally, with black marginal ring interrupted on posterior side subbasally (more or less as in *C. propinqua* – Fig. 54). – Mesosternum yellow. Propodeal spots abruptly narrowed before apophyses and curving toward each other just before basal transverse carina. Petiole of first abdominal segment short and wide, dorsally white, black ventrally; postpetiole with a pair of dorsal tubercles between spiracles. Ovipositor sheath 0.85 times as long as hind tibia. – Panama, Bolivia . . . . . **C. coxata** Cushman
- Hind coxa reddish, sometimes with whitish basal spot dorsally . . . . . 37
- 37. Ovipositor 1.1 times as long as hind tibia; nodus on upper valve as a thin low ridge (Fig. 72). – Orbits on temple not interrupted with black in female. Propleurum black. Mesepimeron entirely black. Tergite 2 of female almost polished. Propodeal yellow spots obliquely truncate before apophyses. – Figs 63, 64, 68, 72 . . . . . 13. **C. genalis** Cushman
- Ovipositor shorter, 0.65-1.0 times (or, in type of *C. volcanica*, 1.05) as long as hind tibia, *or/and* nodus not in form of compressed carina. Other characters not entirely as above . . . . . 38
- 38. Propodeal spots tongue-shaped before apophyses (as in Fig. 12). – Mesopleurum (and metapleurum) coarsely longitudinally rugose. Postpetiole with black dorsal spot. Ovipositor sheath 0.95 times as long as hind tibia. – Panama . . . . . **C. isthmus** Cushman
- Propodeal spots abruptly truncate before apophyses . . . . . 39
- 39. Hind femur 7.6 times (in type) as long as high. – Type (female): scape black; mandible yellow; mesopleurum on lower half polished, with rather fine punctures; mesepimeron white at apex; mesoscutum on lateral lobes along notaulus almost impunctate; hind femur darkened apically; postpetiole with black dorsal spot; ovipositor sheath 0.82 times as long as hind tibia. – Panama . . . . . **C. gracilipes** Cushman
- Hind femur shorter (Figs 67, 69) . . . . . 40
- 40. Mesosternum yellow. Hind femur not darkened (Fig. 67). Ovipositor sheath 0.65 times as long as hind tibia. – Figs 65-67, 70 . . . . . 28. **C. sternoleuca** sp. n.
- Mesosternum black. Hind femur fuscous at apex (Fig. 69) and sometimes posteriorly. Ovipositor sheath usually longer . . . . . 41
- 41. Horns almost absent. Basal area of propodeum large, broad and transverse (1.5 times as wide as long); propodeum laterad of basal area punctured and partly rugose, not polished. – Scutellum black dorsally with yellow lateral carina and apex. Propodeal yellow spots truncate just above apophyses. Hind coxa reddish with small white basal spot dorsally. Hind femur blackish on apical 0.12; front and middle femora black posteriorly, middle femur yellow ventrally. Abdomen entirely reddish with petiole reddish yellow. Ovipositor sheath 1.05 times as long as hind tibia; upper valve beyond the nodus 1.27 times as long as segment 2 of hind tarsus. – Panama . . . . . **C. volcanica** (Cameron)
- Horns distinct, on common low base. Basal area of propodeum not broad and not transverse, and basal part of propodeum usually partly polished . . . . . 42
- 42. First abdominal segment (in type) entirely reddish with very unclear apicolateral whitish spots. Ovipositor sheath as long as hind tibia. – Type (female): hind femur 0.66 times as long as hind tibia and slightly darkened posteriorly (stronger so to apex); front and middle femora brownish posteriorly; nervellus intercepted at lower 0.1; mesepimeron whitish on upper half . . . . . 15. **C. incerta** (Cresson)
- First abdominal segment (in type) yellow, reddish brown dorsally behind middle of petiole. Type (female): front wing 11 mm, flagellum 32-segmented; scape black; mandible yellow with black margins; hypostomal carina low, yellow-whitish; hind femur reddish on basal 0.4, becomes brown on apical half; nervellus interstitial; metapleurum yellow about on 80% (black on front and lower margins); propodeal spots sharply truncate on half way between apophyses and basal transverse carina (Fig. 61); propodeum polished before basal carina on anterior half; distances between short hairs on dorsum of tergite 2 about 1-2 times the length of hairs (denser than in *C. volcanica*). – Figs 60, 61, 69, 71 . . . . . 5. **C. basimacula** (Cameron)

## 1. *Cryptanura ablata* (Cresson, 1873)

Cresson, 1873: 149, ♀ [*Mesostenus (Polyaenus)*]; type: ♀, Mexico, Orizaba; Cushman, 1945: 175 (*Cryptanura*; key); Townes & Townes, 1966: 100 (bibl.).

*Material.* Type (ANSP).

*Distribution.* Mexico (Veracruz).

## 2. *Cryptanura armandoi* sp. n. (Figs 45-49, 57)

*Holotype:* ♀, **Mexico**, *Tamaulipas*, Cd. Victoria, Canyon Novillo, 8.VI.1985 (A. del Valle).

*Additional material.* **Mexico**, *Tamaulipas*: 1 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 12-19.VI.1999 (S. Hernández) (this male maybe does not belong to this species).

*Description. Female* (holotype). Fore wing 13 mm long. Antenna with 35 flagellar segments; segment 20 about 0.66 times as long as wide. Horns rather short, have common base, about 0.8 times as high as maximum diameter of ocellus. Frons with strong rugosity between horn and ocellus. Malar space about 0.8 times as long as basal width of mandible. Temple directly narrowed to occipital carina, almost straight, rather broad, at

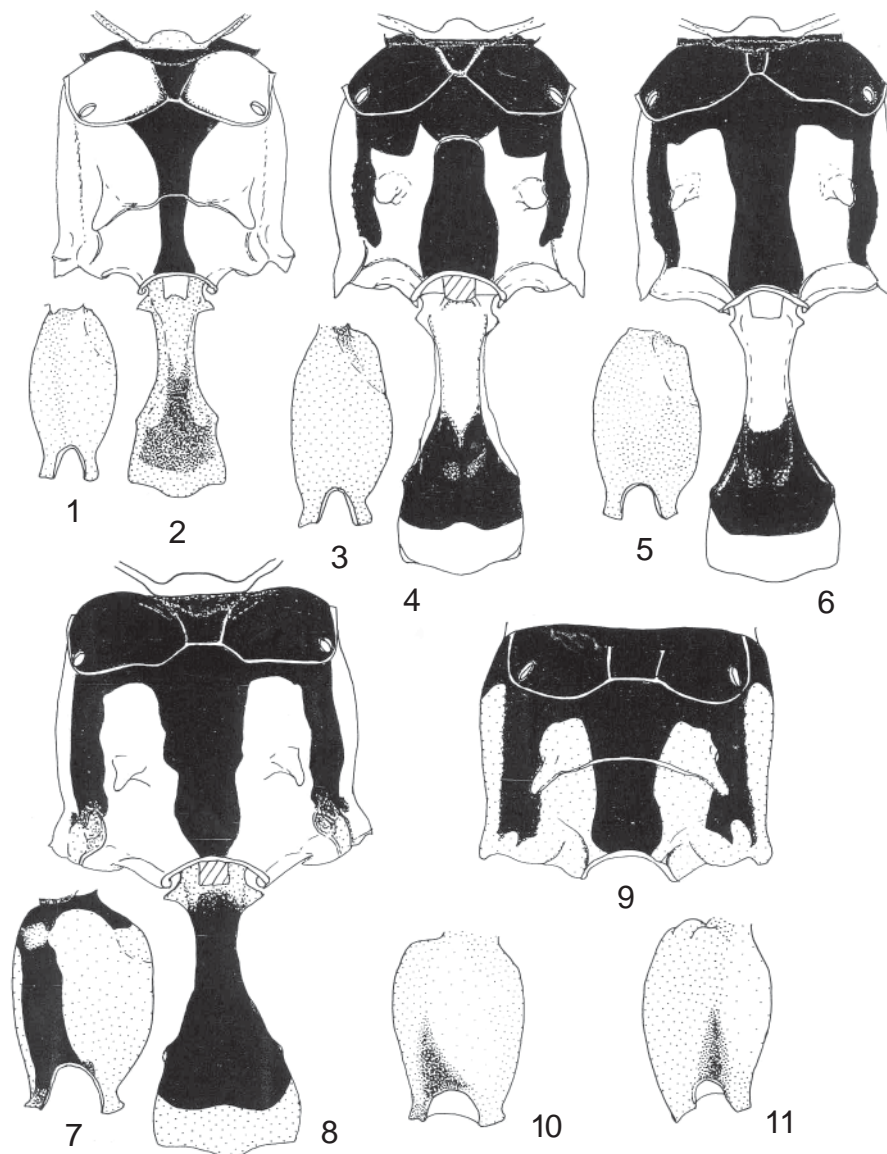
the middle about 0.6 times as long as eye in profile. Occipital carina on cheeks distinctly divergent from hind margin of eye; cheeks swollen, impressed in point of connection of hypostomal and occipital carinae; both carinae moderately high. Distance between eye and hind ocellus 2.0 times as long as maximum diameter of ocellus (in related species, usually about 1.2-1.5). Dorsolateral margin of pronotum anteriorly bordered with distinct carina (horizontal part of epomia), not strongly projecting laterad. Epomia strong. Lateral lobes of pronotum on median 0.3-0.6 with strong longitudinal rugae, on upper part smooth with rather coarse punctures on upper margin. Mesoscutum with coarse but rather sparse punctures, which are very sparse close to tegulae and anteriorly on median lobe. Mesopleurum on upper half with strong horizontal rugae, on lower half with distinct but not coarse, moderately dense punctures, and with rather thin rugae; speculum and oblique impression before speculum polished, impunctate. Metapleurum with coarse subhorizontal rugae, which expand on pleural part of propodeum. Propodeum basad of basal transverse carina on median 0.6 smooth, with sparse coarse punctures and with superficial rugosity; laterally rugose-punctate (very densely before spiracles); rugae just behind basal transverse carinae medially irregular and superficial, laterally stronger, with tendency to be radiate. Behind apophyses, propodeum with strong transverse rugae, which become obsolete on midline. Apophyses short, conical (Fig. 45). Areolet about half as long as abscissa of 2nd recurrent vein above the bulla; nervulus antefurcal (almost interstitial); nervellus intercepted about at lower 0.17; hind wing with 1 hamulus on costella. Hind femur stout, 6.7 times as long as high. Proportion of hind tarsal segments 6.2 : 2 : 1.2 : 0.35 : 1.8. First tergite polished, between spiracles rather strongly convex, but without distinct traces of dorsal and dorsolateral carinae. Other tergites dull; tergites 2 and 3 distinctly granulate; tergite 2 with separate, moderately fine shallow punctures on dorsum, and with scarce very short hairs; tergite 3 with punctures and hairs denser, distances between hairs on central part of tergite equal in length to hairs. Ovipositor sheath 0.85 times as long as hind tibia; ovipositor with distinct nodus (Fig. 57); upper valve beyond the nodus 1.1 times as long as 2nd segment of hind tarsus.

A black and yellow species. Antennae black; scape with very small yellow ventral mark; flagellar segments (5)6-12(13) white. Head yellow anteriorly; clypeal suture (except dorsally), lower margins of clypeus, mandible (except for small yellowish spot before base, and reddish brown preapical 0.2), lateral margins of oral hollow, margins of antennal sockets, frons (except on

orbits) black; at apex of head yellow coloration of orbits wider but does not reach lateral ocellus. Temple on upper 0.3 entirely black with black stripe to the middle on hind margin, on lower 0.6 entirely yellow including cheeks. Vertex, occiput, occipital and hypostomal carina entirely black. Propleurum yellow, blackish basally and on lateral margins. Pronotum black; its front and dorsolateral margins widely yellow with lower and hind corners black; collar yellow with small black median spot. Mesoscutum black with central spot and lateral prescutellar carinae yellow. Scutellum dorsally yellow to apex (except for short blackish basal spot). Tegulae yellow with translucent brownish distal margin. Mesopleurum as in *C. spinaria* (Fig. 12); mesepimeron entirely black. Metapleurum, propodeum and first tergite as in Figs 45, 46, 49. Petiole entirely blackish, except for narrow yellow stripes before spiracles. Tergite 2 black, yellow on apical 0.3 and laterally distad of spiracles. Tergite 3 black, yellow on apical 0.45 and laterally. Other tergites yellow, blackish at base dorsally; tergite 8 on dorsum black with yellow hind margin. Front and middle coxae whitish, blackish posteriorly on basal 0.6; front coxa with a dorsal blackish median stripe from base to apex, middle coxa with small dorsoapical brown spot. Front and middle legs beyond the coxae yellow, except that trochanters II with basal brownish spot posteriorly, femora brown posteriorly, and apical segment of tarsi brownish. Hind coxa and trochanters as in Figs 47, 48; posterior (inner) black basal spot of coxa similar to anterior basolateral spot (Fig. 48) but has no prolongation to apex. Hind femur yellowish on ventral 0.6, brownish on dorsal 0.4, with wide brownish yellow longitudinal band on dorsum. Hind tibia and tarsus yellow; tibia black laterally at extreme base, and on apical 0.25 with ventrolateral brownish yellow stripes; apical half of hind tarsal segment 5 brownish. Pterostigma blackish brown.

[*Male*. Front wing 13.2 mm long; flagellum 38-segmented, segments 10-17 white, segments 16-23 with a tyloid. In coloration, it differs from female (besides of flagellum) in having scape and mandible entirely black, scutellum black with yellow basolateral carinae and apex; metapleurum only on 40% yellow and with yellow hind corner; hind coxa with posterior black dorsolateral band not interrupted subapically and hind tibia black on apical 0.25-0.3; first segment black dorsally (except for apical yellow band), but entirely yellow laterally and ventrally; tergites 2 and 3 entirely black laterally basad of spiracles.]

*Diagnosis*. Structurally and chromatically, *C. armandoi* resembles *C. propinqua*, from which it differs principally in the structure of ovipositor (compare Figs 57 and 43), short apophyses,



**Figs 1-11.** *Cryptanura*, female (except for 9), colour pattern of hind coxa (1, 3, 5, 7, 10, 11), propodeum with tergite 1 (2, 4, 6, 8), and propodeum (9), dorsal view. **1, 2.** *C. ectypa* Cresson; **3, 4.** *C. sostenesi* sp. n.; **5, 6.** *C. femorator* sp. n.; **7, 8.** *C. llera* sp. n.; **9.** *C. fulvipes* Cameron (type, male); **10, 11.** *C. fraternans* Cameron (10, type of *fraternans*; 11, type of *C. acinacis* Cushman).

hind trochanters II yellow and orbits of female widely interrupted with black on upper 0.3 of temple.

**Etymology.** The species is named in honour of Armando del Valle, who has collected the holotype and many other interesting ichneumonids in Canyon Novillo.

**Distribution.** Mexico (Tamaulipas).

### 3. *Cryptanura azteca* (Cresson, 1873) (Figs 24, 35)

Cresson, 1873: 152, ♀ [*Mesostenus* (*Mesostenus*); type: ♀, Mexico, Cordoba]; Townes, 1946: 33 (*Cryptanura*).

**Material.** Type (ANSP).

**Distribution.** Mexico (Veracruz).

#### 4. *Cryptanura bakeriana* (Cameron, 1905) (Fig. 56)

Cameron, 1905: 102, ♀ (*Mesostenoides*; type: ♀, Nicaragua, Chinandega); Townes & Townes, 1966: 100 (*Cryptanura*); Kasparyan & Ruíz, 2004: 722 (Mexico: Tamaulipas, Veracruz).

**Material.** **Nicaragua:** type (BMNH). **Mexico, Tamaulipas:** 1 ♀, El Encino, 80 km S Cd. Victoria, Rio Sabinos, 27.III.2001 (Kasparyan); **Veracruz:** 1 ♂, Tuxpan, Tihuatlan, citricos, 27.X.1995 (R.C. Azuara).

**Distribution.** Nicaragua, Mexico (Tamaulipas, Veracruz).

#### 5. *Cryptanura basimacula* (Cameron, 1886) (Figs 60, 61, 69, 71)

Cameron, 1886: 246, ♀, ♂ (*Polyaenus*; type: ♀, Guatemala, San Jeronimo); Cushman, 1945: 173 (*Cryptanura*; key); Kasparyan & Ruíz, 2004: 722 (Mexico: Veracruz).

**Material.** **Guatemala:** type (BMNH). **Mexico, Tamaulipas:** 1 ♀, Cd. Victoria, Canyon Novillo, 840-900 m, bosque de pino y encino, 6.III.1988 (R. Neza V.); Gomez Farias, Canindo, 1400 m, tr. Malaise 94067, 21-22.VII.1994 (J.B. Woolley), 1 ♂; **Veracruz:** 1 ♀, Jalapa, bosque, 26.X.1995 (R. Herrera).

**Distribution.** Guatemala, Mexico (Veracruz, Tamaulipas).

#### 6. *Cryptanura bilineata* Cushman, 1945

Cushman, 1945: 143, 160, 176, ♀ (keys, descr.; type: ♀, Mexico, Cuernavaca in Morelos, "4/23" [=IV.1923]).

**Material.** **Mexico, Morelos:** type (USNM); **Nuevo León:** 1 ♂, Canyon Caballo (S Monterrey), 19.IV.1984 (E. Ruíz C.); **Tamaulipas:** 1 ♂, Cd. Victoria, Canyon Novillo, 19.III.1985 (A. del Valle).

**Distribution.** Mexico (Nuevo León, Tamaulipas, Morelos).

#### 7. *Cryptanura brachygaster* (Cameron, 1885) (Fig. 30)

Cameron, 1885: 219 (*Mesostenus*; type: ♀, Mexico, Orizaba); Townes & Townes, 1966: 101 (*Cryptanura*; = *striatifrons*, *corpulentus*); Kasparyan & Ruíz, 2004: 722 (Mexico: Oaxaca). – *striatifrons* Cameron, 1885: 222, ♀ (*Mesostenus*; type: ♀, "British Honduras"). – *corpulentus* Cameron, 1885: 223, ♀ [*Mesostenus*; type: ♀, Mexico, Orizaba (same specimen as the type of *brachygaster*)]. – ?*lamentaria* sensu Porter, 1977: 37, 40, 43-46 (key, descr., USA).

**Material.** **Mexico, Veracruz:** type (BMNH); 1 ♂, Tuxpan, Juana Moza, 1.IX.1995 (M. Molina); 2 ♀, Tuxpan, Coloman y Boca del Monte, citricos, 5 and 11.III.1996 (R. Herrera & M. Molina); **Tamaulipas:** 1 ♀, Cd. Victoria, Canyon Novillo, 7.X.1985 (Serna); 1 ♂, Cd. Victoria, La Libertad, 1.XII.1985 (J. Hernández R.); 1 ♀, same locality, 29.VII.1988; 1 ♂, Km 68 E Cd. Victoria, Villa Casas, 14.IV.1987 (E. Ruíz C.); 1 ♀, same locality,

14.V.1995 (C. Covarrubias); 1 ♀, 1 ♂, Llera, rio Guayalejo, 11.VIII.2000 and 27.III.2001 (Kasparyan); 4 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 23.I-6.III.1999 (S. Hernández); **Oaxaca:** 1 ♀ (Crawford) (USNM); **Yucatán:** 1 ♂, 9 km N Teya Pueblo, selva baja caducifolia, 3.IX.1999 (D. Burgos); 1 ♀, Sudzal Chico, II.1999 (Hugo Delfin); 1 ♀, 4 ♂, Corral, II and VII.1999 (Hugo Delfin).

**Remarks.** From the description of specimens of "*C. lamentaria*" from USA (Porter, 1977) it is understandable that Porter had another species. This species differs from *C. lamentaria* in the presence of white spots on scapus, petiole darkened laterally, metapleurum more blackish, yellow spots of propodeum narrowed to apophyses; all these characters and also yellow mesosternum are typical of *C. brachygaster* Cameron.

**Distribution.** Honduras, Mexico (Tamaulipas, Veracruz, Yucatán, Oaxaca), ?USA (Texas: Rio Grande) – see "Remarks".

#### 8. *Cryptanura compacta* (Cresson, 1873) (Figs 13, 17)

Cresson, 1873: 153, ♀ [*Mesostenus* (*Mesostenus*); type: ♀, Mexico, Orizaba]; Townes, 1946: 35 (*Cryptanura*); Townes & Townes, 1962: 427, 429, 560 (key, descr., distr. in USA, fig.; = *planiscutellata*); 1966: 101 (bibl.). – *planiscutellata* Cushman, 1945: 152, ♀ (type: ♀, Honduras, Puerto Castilla).

**Material.** **Honduras:** type of *C. planiscutellata* (USNM). **Mexico, Veracruz:** type (ANSP); **Tamaulipas:** 2 ♀, 2 ♂, Cd. Victoria, Canyon Novillo, 5.V-19.VII.1985 (A. del Valle); 1 ♂, Cd. Victoria, 19.IX.1986 (A. del Valle); 1 ♂, Cd. Victoria, Canyon Libertad, 9.IX.1988 (N. Reyes); 1 ♂, Gomez Farias, Alta Cima, 900 m, tr. Malaise, 22-29.V.1999 (S. Hernández); 3 ♀, 2 ♂, same locality, 4.VIII-23.IX.2000 (Kasparyan).

**Distribution.** USA, Mexico (Veracruz, Tamaulipas), Honduras.

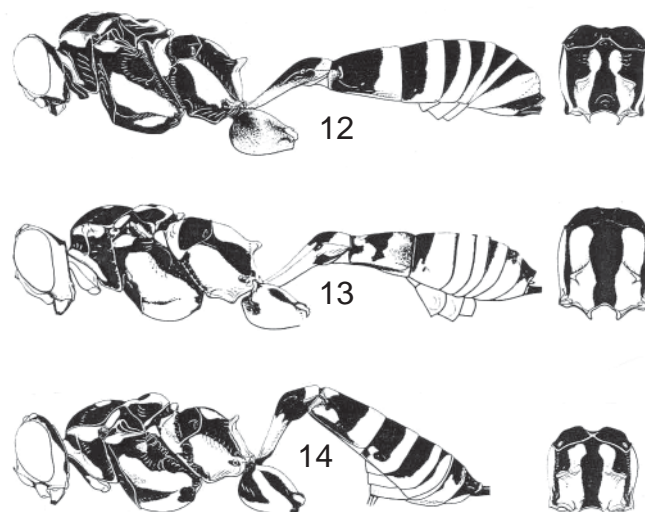
#### 9. *Cryptanura ectypa* (Cresson, 1873) (Figs 1, 2)

Cresson, 1873: 153, ♀ [*Mesostenus* (*Mesostenus*); type: ♀, Mexico]; Cushman, 1945: 175 (*Cryptanura*; key); Townes & Townes, 1966: 101 (bibl.). – *vallis* Porter, 1977: 38, ♀ (type: ♀, USA, Texas), **syn. n.**

**Material.** **Mexico:** type (ANSP); **Tamaulipas:** 5 ♀, 2 ♂, Cd. Victoria, Canyon Novillo, 5.V-13.VII.1985 (A. del Valle); 2 ♀, 1 ♂, same locality, 29.VII-9.IX.1985 (Serna); 1 ♀, 3 ♂, km 68 E of Cd. Victoria, 13-14.III.1985 (E. and J. Ruíz C., S. Arrambide); 1 ♀, El Encino, 20 km S Llera, Rio Sabinas, 21.V.1992 (Lara); 1 ♀, Gomez Farias, Ej. Rio Frio, selva mediana, tr. agua, 18.II.1995 (Hernández A.); 3 ♀, 4 ♂, 44 km S Cd. Victoria, Llera, matorral, tr. Malaise, 19.VIII-4.XI.2000 (Kasparyan); **Yucatán:** 1 ♀, Xcoblacal (SMSC), XII.1998 (Hugo Delfin); 11 ♀, 1 ♂, Corral (SMSC), XII.1998-III.1999 (Hugo Delfin); 23 ♀, Sudzal Chico (SMSP), XII.1998-III.1999 (Hugo Delfin); 3 ♀, same locality, VII and XI.1999 (Hugo Delfin); 1 ♀, 9 km N Teya Pueblo, selva baja caducifolia, 3.VIII.1999 (D. Burgos).



**Figs 12-14.** *Cryptanura*, female, colour pattern of body (lateral view) and propodeum (dorsal view) (after Townes & Townes, 1962). **12.** *C. spinaria* Brullé; **13.** *C. compacta* Cresson; **14.** *C. septentrionalis* Cushman.



*Distribution.* Mexico (Tamaulipas, Yucatán), USA (Texas).

**10. *Cryptanura femorator* sp. n.**  
(Figs 5, 6, 37)

*Holotype:* ♀, **Mexico**, ?Morelos, "I. Bastida, Mol.", 10.III.1988 (S. Ramírez A.).

*Description. Female* (holotype). Front wing 11 mm long. Antenna with 33 flagellar segments; segment 20 about 0.7 times as long as wide. Horn entirely reduced; frons with strong rugosity before front ocellus. Temple rather narrow but distinctly convex on anterior 0.66 beyond the eye; at the middle, about half as long as eye in profile. Occipital carina weakly divergent downward from hind margin of eye; profile of temple in lower part about 1.2 times as long as in upper part. Cheeks moderately swollen, beyond mandible slightly impressed along hypostomal carina. Hypostomal carina beyond the mandible as moderately high lobe. Malar space 0.6 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly very weakly tuberculate; epomia weak, obscured by strong vertical rugosity; lateral lobes of pronotum beyond oblique depression with longitudinal rugae, on upper margin coarsely and densely punctate. Mesoscutum more or less evenly, rather densely and moderately coarsely punctate. Mesopleurum under subtegular ridge and on front margin just behind prepectal carina with longitudinal rugae; speculum and oblique impression before speculum polished; lower 0.4 of mesopleurum (mainly on yellow spot) covered with distinct and dense punctures. Metapleurum just beyond anterior suture almost smooth, on posterior 0.8 with

coarse subhorizontal rugae, which expand on pleural part of propodeum. Propodeum basad of basal transverse carina on median 0.6 smooth and impunctate; around spiracles distinctly punctured, punctures very dense before spiracles (on anterior corners); behind apophyses, propodeum with strong transverse rugae, before apophyses rugae radiate to basal carina. Apophyses rather short (Fig. 6). Hind femur stout, 4.5 times as long as high. Proportion of hind tarsal segments 4.3 : 1.7 : 0.95 : 0.3 : 1.5. Areolet about half as long as abscissa of 2nd recurrent vein above the bulla; nervulus very weakly antefurcal (almost interstitial); nervellus intercepted about at lower 0.15; hind wing with 2 hamuli on costella. First tergite polished, with very weak traces of dorsal and dorsolateral carinae. Other tergites dull, with microsculpture and very fine punctures; 2nd tergite with very scarce punctures on dorsum and almost hairless; tergite 3 with punctures denser (especially laterally), but hairs very short; on following tergites hairs become longer. Ovipositor sheath 1.5 times as long as hind tibia; ovipositor with distinguishable nodus; upper valve beyond the nodus 1.75 times as long as 2nd segment of hind tarsus (Fig. 37).

A predominantly black and yellow species. Antennae black; flagellar segments 6-12(13) white. Head yellow anteriorly, with black clypeal foveae, lower and lateral margins of clypeus, mandible (except for small yellowish spot before base), lateral margins of oral hollow, frons and vertex except on orbits (orbits entirely yellow, on top of head expanded to hind margin of lateral ocellus); temples posteriorly black on dorsal half; occiput entirely black; hypostomal carina just behind mandible yellowish. Palpi yellow,

slightly fuscous on apical segments. Propleurum yellow, blackish basally. Pronotum black; its front and dorsolateral margins entirely yellow; collar yellow, slightly darkened on front margin and with median black spot, entirely black beyond transverse groove. Mesoscutum black with whitish central spot and yellow prescutellar lateral carinae; scutellum yellow dorsally to apex (with black spot at base), and on hind margin. Tegulae yellow. Mesopleurum, mesosternum and metapleurum with yellow pattern as in *C. spinaria* (Fig. 12). Metanotum black with hind margin and postscutellum yellow. Coloration of propodeum as figured (Fig. 6). First segment whitish yellow with a large black spot on dorsum between spiracles (Fig. 6). Tergite 2 black on basal 0.75, yellow apically and laterally; its basolateral corners yellowish to thyridia. Tergites 3-5 black on basal 0.5-0.6, yellow apically and laterally; anterior corners of tergites 4-5 reddish brown. Tergite 6 black dorsally to hind margin, widely yellow laterally. Tergite 7 reddish brown dorsally, with blackish basolateral spots, yellow laterally. Tergite 8 reddish brown, widely black on hind margin. Sternites dirty yellowish with a reddish brown basolateral spot. Front coxa light yellow, black posteriorly on basal half; middle coxa light yellow, rufous posteriorly. Front and middle femora and trochanters entirely rufous. All tibiae and tarsi yellowish; front and middle tarsi with two or three apical segments brown; hind tarsus only on apical 0.6 of segment 5 brownish. Hind coxa, trochanters and femur reddish; coxa with white and fuscous spots dorsally (Fig. 5), extreme base and apex of femur slightly darkened. Pterostigma blackish brown.

**Diagnosis.** Structurally and chromatically, *C. femorator* closely resembles *C. fraternans*, from which it differs in having ovipositor not so robust (Fig. 277) and petiole yellow (Fig. 249).

**Distribution.** Mexico (?Morelos).

#### 11. *Cryptanura fraternans* (Cameron, 1885) (Figs 10, 11, 42)

Cameron, 1885: 220, ♀ (*Mesostenus*; type: ♀, Mexico, Presidio); Townes & Townes, 1966: 102 (*Cryptanura*; = *fulvipes*, *acinaces*). – *fulvipes* Cameron, 1904: 253, ♀ (*Mesostenoides*; type: ♀, Mexico), nom. praecox., non *Polycyrtus fulvipes* Cameron, 1885 (= *Cryptanura*). – *acinaces* Cushman, 1945: 165, 175, ♀ (type: ♀, Mexico, Volcan de Colima).

**Material.** **Mexico:** type of *Mesostenoides fulvipes* and "Presidio" – type of *Mesostenus fraternans* (BMNH); **Colima:** type of *M. acinaces* (USNM); **Nayarit:** 1 ♀, Vic. Compostella, 29.VI.1933 (AEI); **Morelos:** 1 ♀, Tlaltizapan, 18.II.1988.

**Distribution.** Mexico (?Veracruz (Presidio), Morelos, Nayarit, Colima).

#### 12. *Cryptanura fulvipes* (Cameron, 1885) (Fig. 9)

Cameron, 1885: 238, ♂ (*Polycyrtus*; type: ♂, Guatemala, El Tumbador at 2.500 ft.).

**Material.** **Guatemala:** type (BMNH). **Mexico, Colima:** 1 ♀, 9 mi N Comala, 12.VII.1984 (Carroll, Schaffner, Friedlander) (TAMU).

**Distribution.** Guatemala, Mexico (Colima).

#### 13. *Cryptanura genalis* Cushman, 1945 (Figs 63, 64, 68, 72)

Cushman, 1945: 144, 169, 174, ♀ (keys, descr.; type: ♀, Mexico, "Venodio" in Sinaloa).

**Material.** **Mexico:** *Sinaloa*, type (USNM); *Yucatán:* 2 ♂, Sudzal Chico, VII.1999 (Hugo Delfin).

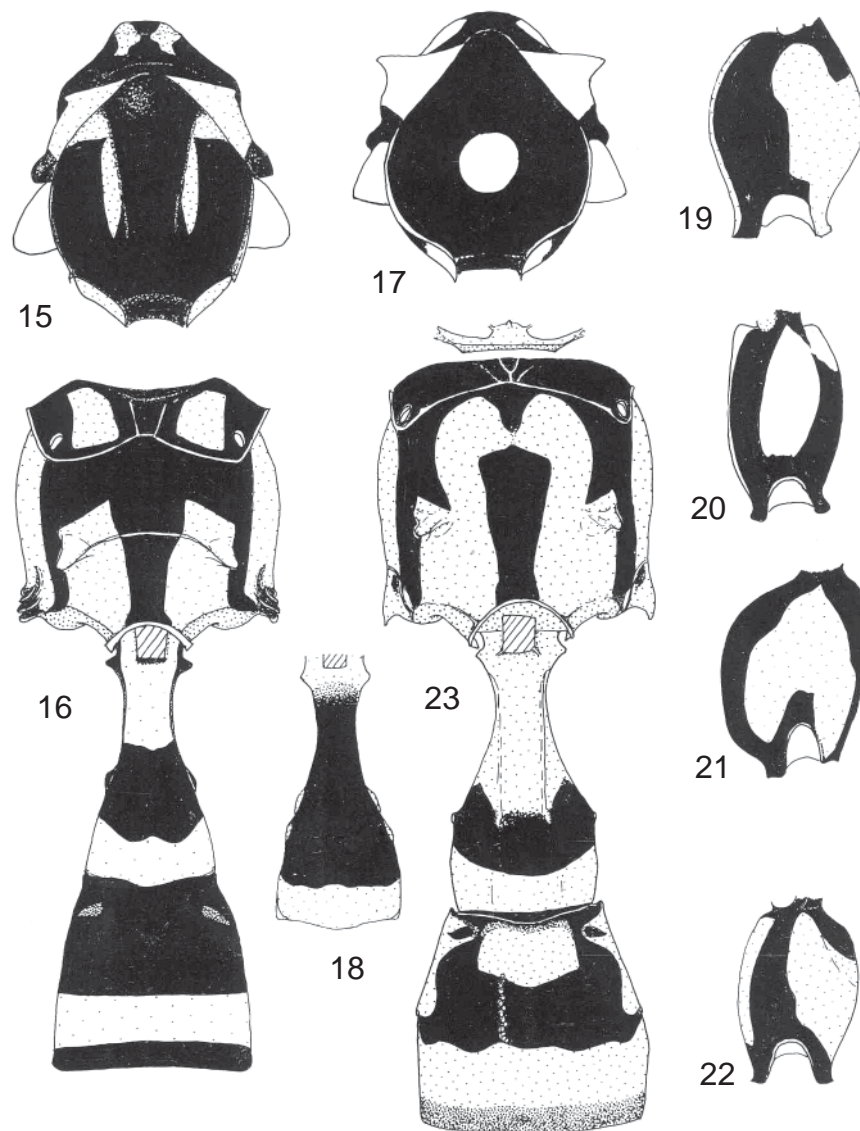
**Male (nov.).** Two males from Yucatán are considered by us (with some doubt) as belonging to this species. These specimens correspond to the type (female) in having entirely black scapus and mesepimeron, black propleurum and mesosternum, metapleurum widely black on front and lower margins, tergites 2-8 and hind legs (except for tibiae and tarsi) reddish. Front wing about 9 mm long. Male differs from female in following characters. Flagellum 37-segmented, segments (9)10-16 (partly 17-18) white, segments 16-20 with a tyloid. Orbits yellow but narrowly interrupted with black at upper part of temple. Mesopleurum polished, with distinct, moderately fine and moderately dense punctures on lower half; metapleurum with punctures a little coarser and denser, more or less evenly distributed. Propodeum with apical transverse carina complete, arched anteriorly between apophyses; apophyses short and slightly compressed; propodeal yellow spots almost confluent on midline and obliquely truncate just before apophyses. Petiole whitish yellow; postpetiole entirely dark brown with a pair of small yellowish spots apicolaterally. Front and middle legs white, their femora pale rufous, blackish brown posteriorly; coxae darkened posteriorly on basal 0.5-0.7 (stronger on front coxa), and with small black dorsoapical stripe; last tarsal segment blackish. Hind trochanter I and hind femur distinctly darkened dorsally; hind tibia yellow, blackish at extreme base and with brownish lateral marks on apical 0.2.

**Distribution.** Mexico (Sinaloa, Yucatán).

#### 14. *Cryptanura hamulator* sp. n. (Figs 25, 28, 34, 50)

**Holotype:** ♀, **Mexico, Tamaulipas**, El Madrono, 28 km SSW of Cd. Victoria, 1200 m, oak forest with palms, 8.VII.1984 (H. Ruíz C.).

**Paratypes.** **Mexico, Tamaulipas:** 2 ♀, 13 ♂, same locality as holotype: 20.V-8.VII.1984 (E. Ruíz J., J. Ruíz Z.).



**Figs 15-23.** *Cryptanura*, female: colour pattern of pronotum and mesoscutum (15, 17), propodeum and two first segments of metasoma (16, 23), tergite 1 (18), hind coxa (19-22), dorsal view. **15, 16, 20,** *C. nitidiuscula* Cameron; **17,** *C. compacta* Cresson; **18, 21,** *C. orizabensis* Cameron; **19,** *C. mexicana* Cresson; **22, 23,** *C. punctator* sp. n.

S. Arrambide); 1 ♀, 1 ♂, same locality, 26.VIII.1984 and 10.VII.1985 (J. Ruíz C.); 1 ♂, Cd. Victoria, San Carlos, Rincon Murillo, 21.X.1995 (S. Hernández, C. Covarrubias); 1 ♀, Gomes Farias, Ej. La Libertad, 24.III.1990 (E. Ruíz C.); 1 ♂, Gomez Farias, Los Cedros, 300 m, tr. Malaise, 17-24.IV.1999 (S. Hernández); *San Luis Potosí*: 1 ♀, El Naranjo, 24 km NW Morelos, 9.X.1962 (H. & M. Townes), (AEI); *Veracruz*: 1 ♂, Apazapan, 347 m, 19.V.1991 (L. Quiroz).

**Description.** *Female* (holotype). Front wing 11-13.5 mm long. Antenna with 30-32 flagellar seg-

ments; segment 20 about 0.7-0.8 times as long as wide. Horns rather strong, fused at base; frons with strong rugosity before front ocellus. Temple moderately wide, at the middle about 0.45 times as long as eye in profile, very weakly convex (almost flat). Occipital carina distinctly divergent downward from hind margin of eye; profile of temple on lower part about 1.5 times as long as on upper part. Cheeks buccate, not impressed along hypostomal carina. Hypostomal

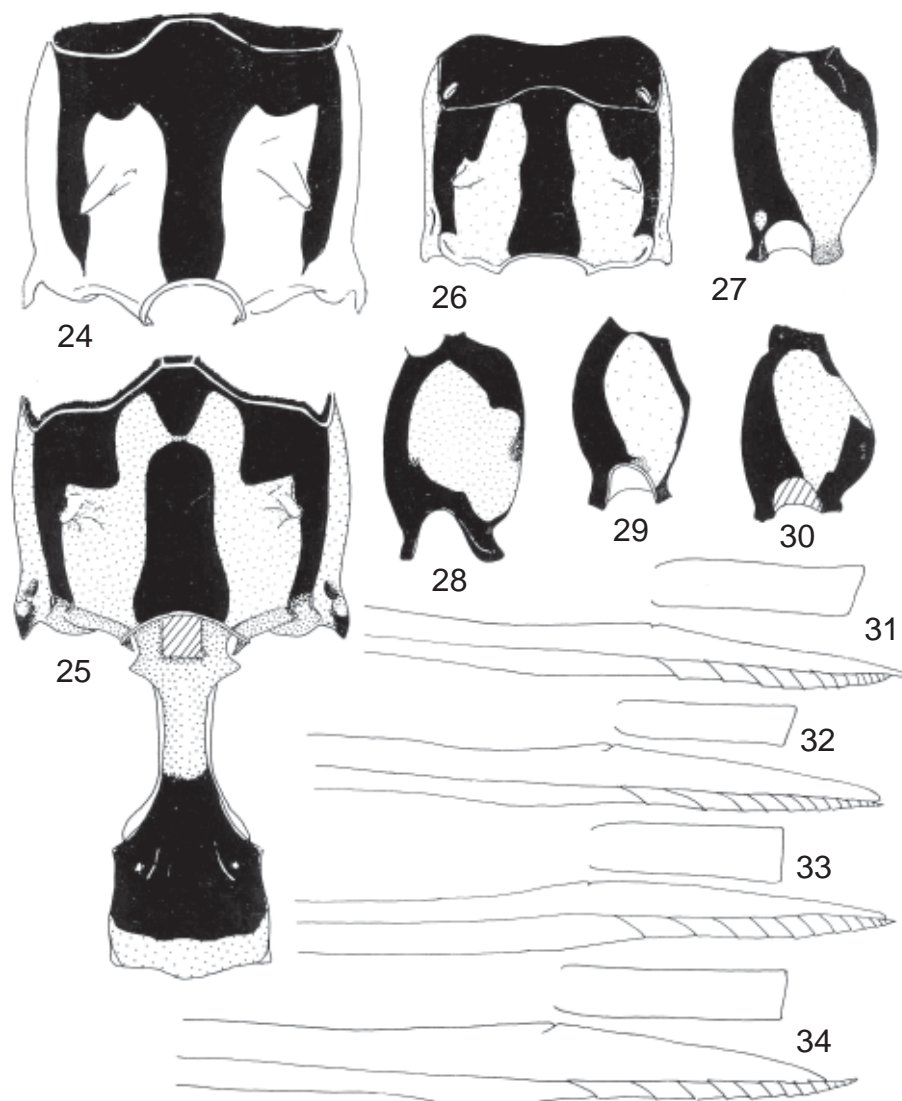
carina rather high; occipital carina not sinuate before the connection with hypostomal carina. Malar space 0.7-0.8 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly bordered by lamina (upper horizontal part of epomia), but not distinctly projecting laterally. Epomia strong. Lateral lobes of pronotum with coarse longitudinal rugae, on upper 0.2 smooth with rather coarse punctures. Mesoscutum more or less evenly, rather densely and moderately coarsely punctate. Mesopleurum under subtegular ridge and on front margin just behind prepectal carina with longitudinal rugae; speculum and oblique impression before speculum polished; lower 0.4 of mesopleurum (mainly on yellow spot) covered with distinct and dense punctures; hind corner polished, with sparse moderately fine punctures. Metapleurum with coarse subhorizontal rugae, which expand on pleural part of propodeum. Propodeum basad of basal transverse carina on median 0.6 smooth and sparsely punctate along carina, around spiracles coarsely punctured, punctures very dense before spiracles (on anterior corners); behind basal transverse carina, propodeum with strong transverse rugae, except that rather large median area just beyond basal carina coarsely punctured and almost without rugae. Apophyses moderate (Fig. 25), about 1.2 times as long as wide. Areolet about half as long as abscissa of 2nd recurrent vein above the bulla; nervulus strongly antefurcal; nervellus intercepted at lower 0.17; hind wing with 2 hamuli on costella. In holotype, hind femur 7.2 times as long as high; proportion of hind tarsal segments 6.5 : 2.2 : 1.2 : 0.4 : 1.9. First tergite polished, with very weak traces of dorsal and dorsolateral carinae. Other tergites dull with microsculpture and superficial punctures; punctures on basal part of tergites 2 and 3 scarce but rather large; on middle third punctures smaller and often very dense; hairs on dorsum of tergite 2 very short and sparse; on following tergites hairs become longer and dense; punctures on tergites 4-7 very fine, inconspicuous. Ovipositor sheath 1.07-1.15 times as long as hind tibia; upper valve beyond the nodus about 1.25 times as long as 2nd segment of hind tarsus (Fig. 34).

A predominantly black and yellow species. Antennae black; scape usually with small yellow ventral mark; flagellar segments 6-11, apex of segment 5 and dorsum of segment 12 and sometimes 13 white. Head yellow anteriorly with black clypeal foveae, lower and lateral margins of clypeus, apical half of mandible, lateral margins of oral hollow, and frons (except on orbits). Orbits yellow, on top of head expanded to hind ocellus, on upper 0.25 of temple interrupted with black; temple on lower half yellow. Vertex, most part of temple on upper half, occiput, hypostom-

al and occipital carinae entirely black. Palpi whitish; apical segments sometimes pale rufous. Propleurum black basally and laterally, yellow on apical 0.4. Pronotum black, its front and dorsolateral margins widely yellow, except that lower corner and large median spot on collar black. Mesoscutum black with whitish central spot and yellow prescutellar lateral carinae; scutellum yellow dorsally to apex (with black spot at base), and on hind margin; sometimes basal spot at apex expanded and fused with black coloration on lateral sides of scutellum. Tegulae yellow, with dark brown spot on hind distal corner. Mesopleurum, mesosternum, metanotum, and metapleurum with yellow pattern as in *C. spinaria* (Fig. 12), except for entirely yellow apex of epimeron. Coloration of propodeum as figured (Fig. 25). First segment yellow laterally and apically; petiole dorsally black; sometimes only dorsolateral margins of petiole black. Tergite 2 black on basal 0.75, yellow apically and laterally; tergites 3-6 black on basal 0.5-0.65, yellow apically and laterally, apical yellow band on tergite 7 narrow but distinct; tergite 8 black dorsally. Front and middle legs with coxae light yellow, black posteriorly about on basal half, and with small brown dorsoapical spot; trochanters entirely yellow or sometimes with small pale brownish spot posteriorly (usually at base of trochanter II); femora rufous, brownish posteriorly (not darkened at extreme base and apex); tibiae and tarsi yellowish, tarsal segments 3-5 brownish. Hind coxa yellow, black laterally on basal half and partly dorsally (Fig. 28); dorsal black marks confluent with lateral black spots; hind trochanter I yellow, on dorsum black with yellow median spot widened to apex; trochanters II entirely yellow except that reddish brown on apical margin. Hind femur yellow on lower half, subbasally, and on dorsum; at extreme base reddish brown, at extreme apex with dorsal brown transverse band, and brownish black on anterodorsal 0.4-0.5 and on posterodorsal 0.55-0.7. Hind tibia yellow, blackish at extreme base laterally, and with brownish spot on subapical 0.2 anteriorly (sometimes this spot expands on lower and posterior side of tibia). Hind tarsus yellow with segment 5 brown. Pterostigma blackish brown.

*Male.* Front wing 11-12 mm long. Antenna with 40 flagellar segments; flagellomeres about 16-21 with a tyloid (Fig. 50), (10)11-16(17) white (usually segments 11-13 and 16-17 blackish ventrally). Pronotum on lateral lobes in upper half without rugae except for hind margin, polished. Propodeum with distinguishable apical transverse carina. Differs from female in coloration as follows: scutellum black, yellow on basolateral carinae and at apex; propodeal yellow spots fused anteriorly (Fig. 25); coloration of petiole very





**Figs 24-34.** *Cryptanura*, female: colour pattern of different body parts, dorsal view (24-30) and ovipositor with segment 2 of hind tarsus (31-34). 24, *C. azteca* Cresson, propodeum; 25, *C. hamulator* sp. n., propodeum with tergite 1; 26, *C. veraepacis* Cameron, propodeum; 27, *C. veraepacis*, hind coxa; 28, *C. hamulator*, hind coxa; 29, *C. lineatifemur* Cushman, hind coxa, type; 30, *C. brachygaster* Cameron, hind coxa, type; 31, *C. punctator* sp. n.; 32, *C. veraepacis* (Cañon Novillo); 33, *C. veraepacis* (type); 34, *C. hamulator*.

variable (entirely yellow, or black ventrally, or sometimes partly or completely black dorsally); hind femur black, but sometimes (in one male examined) brownish yellow line present on dorsum; hind tibia about on apical 0.35 black.

**Diagnosis.** *C. hamulator* closely resembles *C. lineatifemur* and *C. veraepacis* in the presence of a median spot on mesoscutum, tongue-shaped

propodeal spots (Fig. 25), hind coxa dorsally black and yellow, and hind femur of female dorsally black with yellow longitudinal line (in male of *C. hamulator*, femur entirely black dorsally). *C. hamulator* differs from both these species in having 2 hamuli on costella, petiole of female black dorsally (sometimes only partly), ovipositor longer, and propodeal spots before apophys-

es projecting proximally to midline (Fig. 25) and confluent in male.

**Distribution.** Mexico (Tamaulipas, San Luis Potosí, Veracruz).

### 15. *Cryptanura incerta* (Cresson, 1873)

Cresson, 1873: 161, ♀, ♂ [*Mesostenus* (*Mesostenus*); lectotype: ♀, Mexico, Orizaba]; Cresson, 1916: 36 (*Mesostenus*; lectotype design.); Cushman, 1945: 145, 171, 174 (*Cryptanura*; keys, descr.; distr.: Panama, Peru); Townes & Townes, 1966: 102 (bibl.).

**Material.** Type (ANSP).

**Distribution.** Mexico (Veracruz), Panama?, Peru?

### 16. *Cryptanura lamentaria* (Cameron, 1885) (Figs 40, 55)

Cameron, 1885: 219, ♀ (*Mesostenus*; type: ♀, Panama, Volcan de Chiriquí at 4,000-6,000 ft); Cushman, 1945: 175 (*Cryptanura*; key).

**Material.** **Panama:** type (BMNH). **?Mexico, Yucatán:** 1 ♂, 1 ♀, Sudzal Chico (SMSP), VI and XI.1999 (Hugo Delfin); **Tamaulipas:** 1 ♂, Cd. Victoria, Canyon Novillo, 3.IX.1986 (A. del Valle).

**Remarks.** Data on distribution of this species in Costa Rica, Guatemala (Townes & Townes, 1966) and USA (Porter, 1977) are referring to other species (*C. lineatifemur* and *C. brachygaster*). Specimens from Mexico in our material also differ from the type (in having one hamulus on costella and smaller size) and maybe represent merely a variation of the Mexican *C. silvae* with yellow mesosternum.

**Distribution.** Panama; ?Mexico (Tamaulipas, Yucatán) – see “Remarks”.

### 17. *Cryptanura lineatifemur* Cushman, 1945, **sp. dist.** (Figs 29, 44)

Cushman, 1945: 144, 162, 175, ♀ (type: ♀, Costa Rica, “La Caja, near San José”; keys, distr.: Costa Rica, Guatemala); Kasparyan & Ruíz, 2004: 722 (Mexico: Morelos).

**Material.** **Costa Rica:** type (USNM). **Mexico, Morelos:** 1 ♀ (compared with the type), Tlaltizapan, Ticuman, 15.III.1995 (J. Flores).

**Remarks.** This species was considered (Townes & Townes, 1966) a junior synonym of *C. lamentaria* Cameron, 1885. Types of both species were examined. *C. lineatifemur* certainly is a separate species, closely related to *C. veraepacis* Cameron (see couplet 24). Differences between *C. lineatifemur* and *C. lamentaria* are given in the key:

1. Mandible yellowish. Orbits very weakly interrupted on temple. Mesosternum black with yellow elongate

spot just beneath sternaulus and (in type) with two small posterior spots before postpectus. Metapleurum yellow with anterior suture and submetapleural carina black. Propodeum with “tongue-shaped” yellow spot before apophyse (more or less as in *C. veraepacis*, Fig. 26). One hamulus on costella. Hind coxa dorsally yellow, entirely bordered with black; posterior black line weaker subapically (Fig. 29). Hind femur yellow with two subdorsal blackish lines. Ovipositor sheath 0.87 times as long as hind tibia; ovipositor tip moderately strong (Fig. 44). [Type: fore wing 12.3 mm long, flagellum 30-segmented with segments 6-12(13) white, segment 20 0.6 times as long as wide (median flagellomeres very strongly flattened below)] . . . . . **C. lineatifemur** Cushman

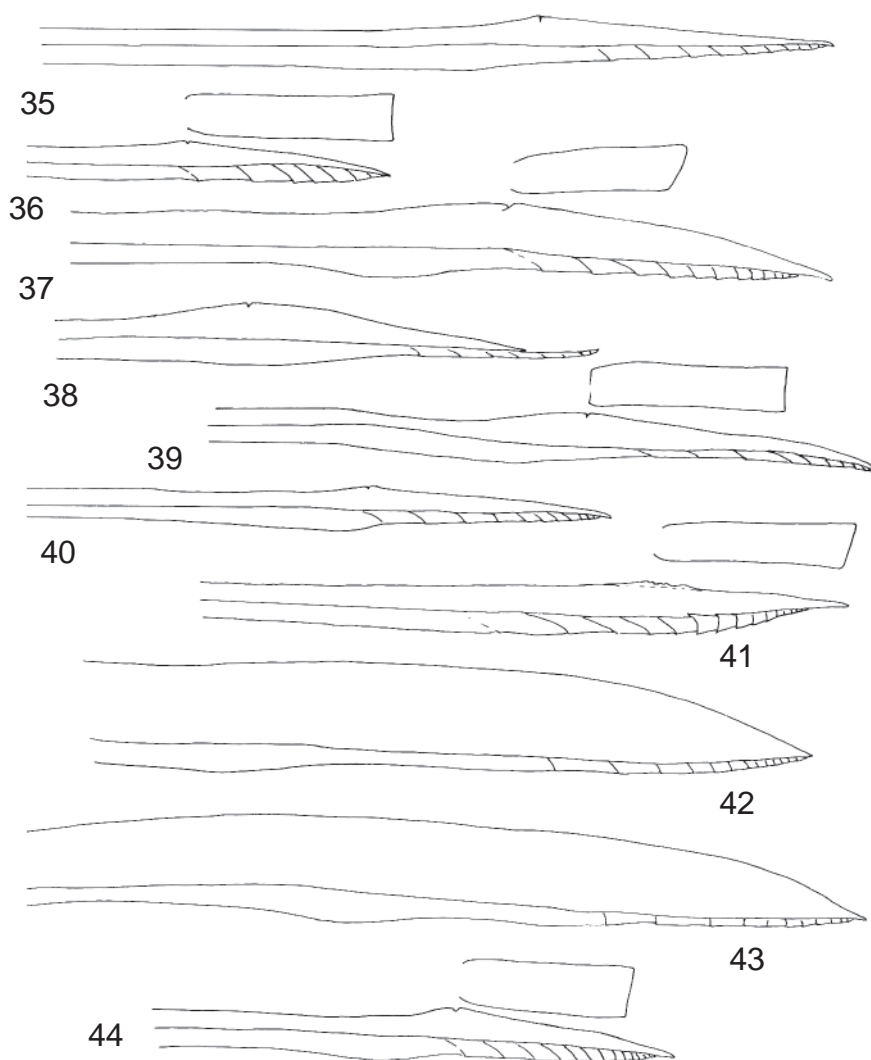
– Mandible black with small subbasal yellowish spot. Orbits widely interrupted on temple. Mesosternum entirely yellow. Metapleurum yellow with anterior suture and small spot in hind corner black. Two hamuli on costella. Hind coxa dorsally yellow, entirely bordered with black; posterior black line weaker subbasally (Fig. 55). Hind femur entirely black dorsally and 70% dorsoposteriorly. Ovipositor sheath 1.1 times as long as hind tibia; ovipositor tip slender (Fig. 40). [Type: fore wing 12.0 mm long, flagellum 30-segmented with segments 6-11 white; nervellus in hind wing intercepted about at lower 0.1] . . . . . **C. lamentaria** Cameron

**Distribution.** Costa Rica, Guatemala, Mexico (Morelos).

### 18. *Cryptanura llera* sp. n. (Figs 7, 8, 39)

**Holotype:** ♀, **Mexico, Tamaulipas**, Llera, Rio Guayalejo, matorral, 1.IX.2000 (Kasparyan).

**Description. Female** (holotype). Front wing 12 mm long. Antenna with 33 flagellar segments; segment 20 about 0.65 times as long as wide. Horn long, subdivided to the midlength. Occipital carina flange-like, sinuate on lower 0.2 of temple, parallel to hind margin of eye. Temple half as long as eye in profile. Hypostomal carina beyond the mandible as moderately high lobe; cheek along this lobe not impressed at all. Malar space 0.77 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly rather strongly tuberculate; lateral lobes of pronotum striato-rugose, on dorsal 0.2 rather sparsely and coarsely punctate. Mesoscutum with moderately coarse punctures on median lobe and on front part of lateral lobes; other parts of lateral lobes smooth, almost without punctures (except along notaulus). Mesopleurum longitudinally striate except for large polished speculum; its lower part predominantly punctate, punctures rather coarse and moderately dense. Metapleurum with coarse punctures and on posterior 0.6 with subvertical rugae; hairs rather evenly distributed, adjacent, moderately long. Propodeum before basal transverse carina on median 0.6 smooth and without punctures; on lateral 0.2 coarsely rugose; behind



**Figs 35-44.** *Cryptanura*, ovipositor with segment 2 of hind tarsus. **35**, *C. azteca* Cresson, type; **36**, *C. nitidiuscula* Cameron, type of *bicarinatus* Cushman; **37**, *C. femorator* sp. n.; **38**, *C. orizabensis* Cameron; **39**, *C. llera* sp. n.; **40**, *C. lamentaria* Cameron; **41**, *C. sostenesi* sp. n.; **42**, *C. fraternans* Cameron; **43**, *C. propinqua* Cresson; **44**, *C. lineatifemur* Cushman, type.

basal carina, propodeum rugose-reticulate with more regular transverse rugae beyond apophyses. Apophyses as long as basal width (Fig. 8). Areolet about 0.47 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus weakly antefurcal; nervellus intercepted about at lower 0.25; hind wing with 2 hamuli on costella. Hind femur about 8 times as long as high. Proportion of hind tarsal segments 6.2 : 2 : 1.1 : 0.5 : 1.5. First tergite without dorsal carina; postpetiole rather flat. Tergites polished; tergites 2 and 3

on median 0.6 with distinct, moderately sparse setiferous punctures; these punctures coarser and denser than in other species with polished tergites; in central part of tergite, punctures are separated by 1.5-3 their diameters; hairs on second tergite rather long, on average 1.5 times as long as distance between hairs. Tergite 4 slightly dull, with very fine microsculpture; setiferous punctures very fine; tergites 3-7 rather densely pubescent except basally. Ovipositor sheath 0.7 times as long as hind tibia; ovipositor without

sharp nodus; upper valve beyond the nodus 1.45 times as long as 2nd segment of hind tarsus (Fig. 39).

A predominantly black and yellow species. Antennae black; scape with yellow ventral mark; flagellar segments 6-11 entirely, segments 12-13(14) dorsally white. Head yellow with black clypeal suture except medially, lower margin of clypeus at median 0.6, apical half of mandibles, frons (except for yellow orbits that broaden on top of head to hind margin of lateral ocellus), vertex, temples on dorsal 0.3 entirely, occiput except on postgenae; palpi light yellow with last segment brownish. Propleurum yellow on apical 0.6, black on basal 0.4. Pronotum black, its front and dorsolateral margins yellow (except for black lower and hind corners); collar black on front margin and medially to hind margin. Mesoscutum entirely black except for yellow prescutellar lateral carinae; scutellum completely yellow dorsally to apex and on hind margin. Tegulae yellow. Mesopleurum and metapleurum with yellow pattern as in *C. spinaria* (Fig. 12), but mesosternum entirely yellow, and black band on front margin of metapleurum narrower. Metanotum black with hind margin and postscutellum yellow. Propodeum black; yellow spots parallel-sided before apophyses, extending anteriorly almost to basal transverse carina and rounded on front margin (Fig. 8). First segment black dorsally, with yellow apical band (Fig. 8); its lateral sides yellowish; sternite black, on apical 0.4 yellowish laterally. Second tergite black about on basal 0.7, light orange on apical 0.3 and laterally; tergites 3-6 black about on basal half, light orange on apical half and widely laterally; tergites 7-8 black dorsally. Front and middle legs light orange to light yellow on tarsi; coxae posteriorly on basal half black, femora and middle trochanter II brownish posteriorly, tarsal segments 4 and 5 brown. Hind coxa yellow with broad anterodorsal and narrow basal black band (Fig. 7), narrow basal black mark and with black posterior (inner) spot on basal 0.4. Hind trochanter I yellow with black basal spot on dorsum; hind trochanter II yellow, blackish brown dorsally and posteriorly. Hind femur yellow, dorsally with two parallel (anterior and posterior) brown lines, which are interrupted before base and apex of femur. Hind tibia yellow, blackish at extreme base laterally and with light brown lateral spots on apical 0.15. Hind tarsus light yellow with segment 5 brown. Pterostigma blackish brown.

**Diagnosis.** *C. llera* differs from most other Mexican species in the coloration: mesoscutum entirely black and hind coxa with the only black dorsolateral band (Fig. 7).

**Distribution.** Mexico (Tamaulipas).

### 19. *Cryptanura lunai* sp. n. (Figs 51-53, 58)

**Holotype:** ♀, Mexico, Tamaulipas, El Madrono, 25 km SSW Cd. Victoria, 1200 m, 20.VIII.1988 (E. Ruíz C.).

**Paratypes.** Mexico, Nuevo León: 4 ♀, Presa La Boca, Santiago, tr. McPhail, 14-28.III.1987 (H. Sosa); 3 ♀, 4 ♂, Allende, citricos, tr. McPhail, 27.I, 26.II and 11.XII.1986, 28.I and 24.III.1987 (M.R. Cantú); 1 ♀, La Capilla, Allende, tr. McPhail, 6.I.1987 (D. Enkerlin S.); 1 ♀, Chipinque, 8.IX.1981 (E. Ruíz C.); 1 ♂, La Estanzuela, S of Monterrey, 22.VIII.1986 (E. Ruíz C.); Tamaulipas: 8 ♀, 8 ♂, Cd. Victoria, Canyon Novillo, 13.X.1984-28.X.1985, 7.IV.1988 and 4.IV.1999 (Serna, A. del Valle, Lopez Velez, R. Meza and G. Gaona); 1 ♀, Cd. Victoria, La Libertad, 23.III.1999 (H. Olazaran A.); 1 ♀, El Madrono, 25 km SSW Cd. Victoria, 26.VIII.1984 (E. Ruíz C.); 1 ♀, 6 ♂, km 68-69 E of Cd. Victoria, 13 and 31.III.1985, 3.I-14.IV.1987 (E. & H. Ruíz C.); 1 ♀, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 23-30.I.1999 (C. Covarrubias, S. Hernández). In AEL, *Cryptanura* sp. 51 (*San Luis Potosí*: 1 ♀, 7 ♂, El Naranjo, leg. H. & M. Townes) maybe is this species.

**Description. Female.** Front wing 11-13 mm long; antenna with about 30 flagellar segments. Mandible black or with small basal yellow spot on lower corner, rarely the spot covers basal third of mandible. Mesoscutum on anterolateral margin (between tegula and base of notaulus) usually with yellow stripe, but sometimes stripe absent. Dorsal longitudinal carinae of tergite 1 distinctly tuberculate between spiracles. Ovipositor sheath 0.95-1.1 times as long as hind tibia; ovipositor rather stout (Fig. 58), in median part laterally about as wide as hind basitarsus; upper valve beyond the nodus 7-8 times as long as its height on nodus, and 1.35 times as long as 2nd segment of hind tarsus. Other characters as in Figs 51, 52 and as in description of *C. silvae*.

**Males** of this species not distinctly separated from males of *C. silvae*. Hind coxa of male as in Fig. 53.

**Diagnosis.** Structurally *C. lunai* closely resembles *C. lamentaria*, but differs in having mesosternum black, mesoscutum usually with yellow anterolateral line (between tegula and base of notaulus), and costella with one hamulus. *C. lunai* is also very similar to *C. silvae*, from which it differs by characters given in the key.

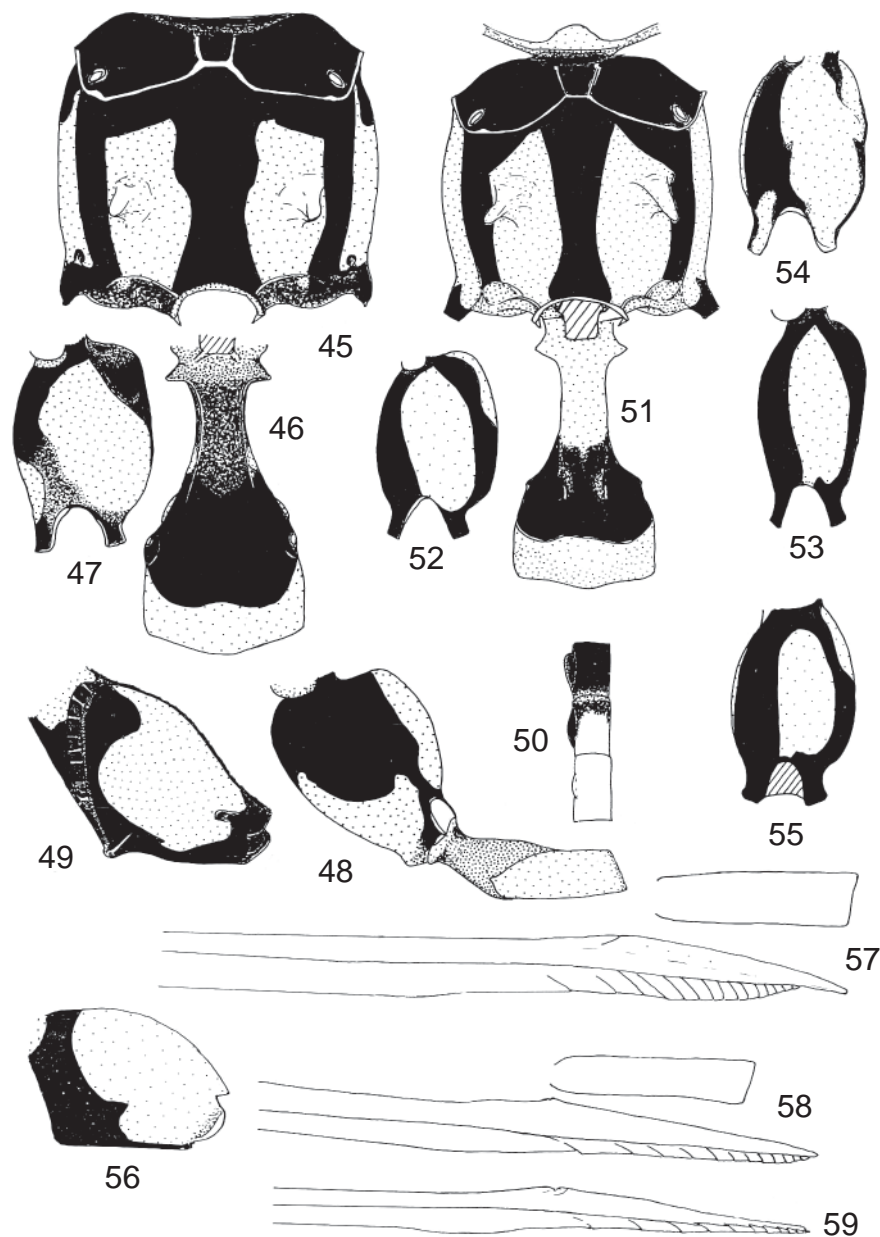
**Distribution.** Mexico (Nuevo León, Tamaulipas, ?San Luis Potosí).

**Etymology.** The species is named in honour of Juan F. Luna Salas, entomologist of UAT.

### 20. *Cryptanura mexicana* (Cresson, 1873) (Fig. 19)

Cresson, 1873: 157, ♀, ♂ [*Mesostenus* (*Mesostenus*); lectotype: ♀, Mexico]; Cresson, 1916: 42 (*Mesostenus*; designation of lectotype); Cushman, 1945: 143, 158, 176 (*Cryptanura*; keys, descr.; distr.: Costa Rica, Panama – "Argas", Colombia – Santa Marta); Townes & Townes, 1966: 103 (bibl.; = *intrudens*; = *nicaraguae*).





**Figs 45-59.** *Cryptanura*, female (except for 50, 53). **45-49, 57.** *C. armandoi* sp. n. (45, propodeum; 46, tergite 1; 47, hind coxa, dorsal view; 48, hind coxa and trochanters, lateral view; 49, metapleurum; 57, ovipositor with segment 2 of hind tarsus); **50.** *C. hamulator* sp. n., flagellomeres 16-18 of male; **51-53, 58.** *C. lunai* sp. n. (51, propodeum with tergite 1; 52, hind coxa of female; 53, hind coxa of male; 58, ovipositor with segment 2 of hind tarsus); **54.** *C. propinqua* Cresson, hind coxa; **55.** *C. lamentaria* Cameron, hind coxa, type; **56.** *C. bakeriana* Cameron, sketch of metapleurum from type; **59.** *C. silvae* sp. n., ovipositor.

*sis*; = *costaricensis*; = *Polyaenus championi* sensu Cameron, 1886: 245, Panama). – *intrudens* Smith, 1879: 232, ♀ (*Mesostenus*; lectotype: ♀, Costa Rica). – *nicaraguensis* Cameron, 1885 (August): plate 10, Fig.

13, ♀ (*Mesostenus*; type: ♀, Costa Rica – same specimen as lectotype of *M. intrudens* Smith). – *costaricensis* Cameron, 1885: 225, ♀ (nom. nov. for *M. nicaraguensis*).

**Material.** **Panama:** ♀, "type 3b 495", *Polyaenus championi* Cameron det. (BMNH). **Costa Rica:** ♀, type of *C. costaricensis* (BMNH). **Mexico:** type (ANSP); Oaxaca, 4 ♀, 4 ♂, Metate, 85.5 km SW of Tuxtepec, 900 m, 17-21.X.1962 (H. and M. Townes), (AEI).

**Distribution.** Panama, Costa Rica, Mexico (Oaxaca).

## 21. *Cryptanura nitidiuscula* (Cameron, 1886) (Figs 15, 16, 20, 36)

Cameron, 1886: 245, ♀ (*Polyaenus*; type: ♀, Guatemala, Las Mercedes, at 3,000 ft); Cushman, 1945: 175 (*Cryptanura*; key); Kasparyan & Ruíz, 2004: 722 (Mexico: Oaxaca). – *bicarinata* Cushman, 1945: 144, 149, 175, ♀ (type: ♀, Panama, Rio Trinidad), **syn. n.**

**Material.** **Guatemala:** type (BMNH). **Panama:** type of *C. bicarinata* (USNM). **Mexico, Tamaulipas:** 1 ♂, Cd. Victoria, Canyon Novillo, 30.IX.1985 (Serna); 1 ♂, El Madrono, 25 km SSW Cd. Victoria, 1200 m, 23.VIII.1885 (S. Arrambide); 1 ♀, 44 km S Cd. Victoria, matorral, Llera, 2-9.IX.2000 (Kasparyan); 1 ♀, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 13-20.II.1999 (S. Hernández); 1 ♂, Gomez Farias, Alta Cimas, 940 m, 2.XI.1990 (E. Ruíz C.); 1 ♂, same locality, tr. Malaise, 3-10.VII.1999 (S. Hernández). **Yucatán:** 8 ♀, Corral (SMSC), XII.1998–III.1999 (Hugo Delfin); 4 ♀, Sudzal Chico, (SMSP), XII.1998–VI.1999 (Hugo Delfin); **Oaxaca:** 1 ♂, Metate, 85.5 km SW of Tuxtepec, 900 m, 21.X.1962 (H. & M. Townes) (AEI).

**Remarks.** This is a very distinct species (see key for details). The type of *C. bicarinata* from Panama differs from the type of *C. nitidiuscula* and from our materials from Mexico in having hind tibia blackish with dull yellowish longitudinal stripes on ventral side, and scutellum yellow dorsally with central black spot. The type of *C. bicarinata* differs from our material in having hind femur black posteriorly. We consider all these differences to be colour variations of one species.

**Distribution.** Panama, Guatemala, Mexico (Tamaulipas, Yucatán, Oaxaca).

## 22. *Cryptanura orizabensis* (Cameron, 1886) (Figs 18, 21, 38)

Cameron, 1886: 246, ♀ (*Polyaenus*; type: ♀, Mexico, Orizaba); Cushman, 1945: 143, 159, 176 (*Cryptanura*; keys, descr. ♀, ♂); Townes & Townes, 1966: 104 (bibl.).

**Material.** **Mexico, Veracruz:** type (BMNH); **Nuevo León:** 1 ♀, Allende, 31.III.1986 (M.R. Cartú); **Tamaulipas:** 1 ♀, Cd. Victoria, Canyon Novillo, bosque de pino y encino, 850 m, 6.III.1988 (R. Meza V.); 1 ♀, Cd. Victoria, Canyon Libertad, bosque de pino y encino, 950 m, 12.III.1988 (R. Meza V.); 2 ♀, San Carlos, Rincon Murillo, bosque encino, 21.X.1995 (S. Hernández, C. Covarrubias); 2 ♀, 1 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 26.II-8.V.1999 (S. Hernández); **San Luis Potosí:** 1 ♂, El Naranjo, 24 km NW Morelos, 9.X.1962 (H. & M. Townes) (AEI). **Costa Rica:** 1 ♀, Monteverde, 11-12.II.1962 (Ch. Palmer) (AEI).

**Distribution.** Costa Rica, Mexico (Nuevo León, Tamaulipas, San Luis Potosí, Veracruz).

## 23. *Cryptanura propinqua* (Cresson, 1873) (Figs 43, 54)

Cresson, 1873: 152, ♀, ♂ [*Mesostenus* (*Mesostenus*); lectotype: ♀, Mexico, Cordoba]; Cresson, 1916: 50 (*Mesostenus*; lectotype descr.); Cushman, 1945: 144, 166, 175, ♂ [*Cryptanura*; keys, descr.; distr.: Mexico (Tabasco: Frontera), Costa Rica, Nicaragua].

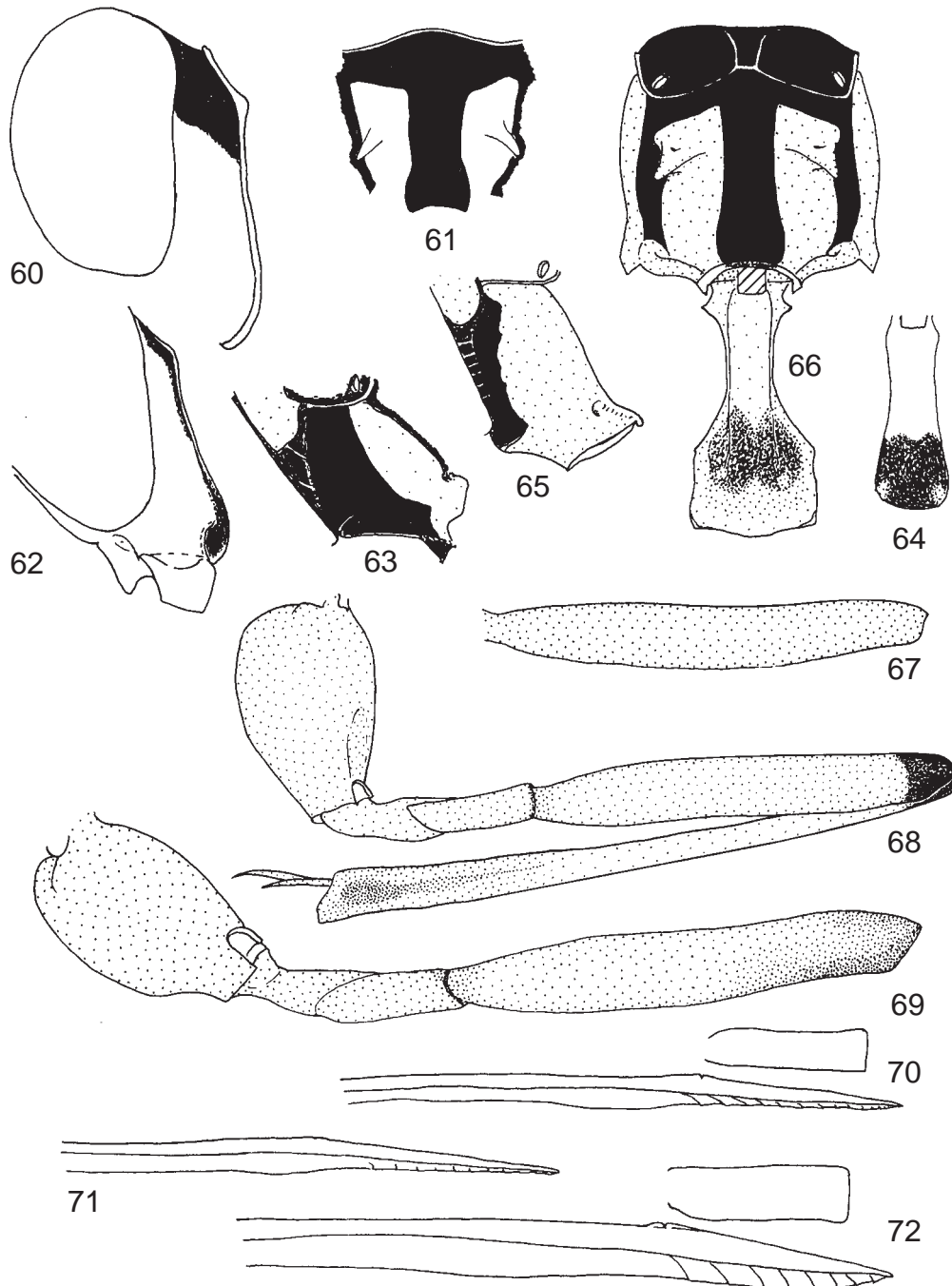
**Material.** **Mexico, Veracruz:** lectotype (ANSP); **Tamaulipas:** 1 ♂, Llera, El Roble, tr. McPhail, 22.XII.1988 (N. Reyes M.); 1 ♀, Llera, Ej. La Libertad, 24.III.1990 (E. Ruíz C.); 4 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 13.III-26.VI.1999 (S. Hernández); 1 ♂, Gomez Farias, Alta Cima, 940 m, tr. Malaise, 19-26.VIII.2000 (Kasparyan); 2 ♀, Occampo, Sta. Maria de Gpe., 27.IV.1989 (E. Ruíz C. and L. Martinez); **San Luis Potosí:** 2 ♀, El Naranjo, 24 km NW Morelos, 9.X.1962 (H. & M. Townes) (AEI); 2 ♀, Tamasopo, XII.1984 and 30.V.1987 (Lupe Mares L.).

**Distribution.** Costa Rica, Nicaragua, Mexico (Tamaulipas, San Luis Potosí, Veracruz, Tabasco). All specimens from Mexico are collected south of tropic of Cancer.

## 24. *Cryptanura punctator* sp. n. (Figs 22, 23, 31)

**Holotype:** ♀, **Mexico, Tamaulipas,** Llera, matorral, 44 km S of Cd. Victoria, tr. Malaise, 4-11.XI.2000 (Kasparyan).

**Description.** **Female** (holotype). Front wing 11.7 mm long. Antenna with 30 flagellar segments; flagellum rather weakly widened on apical 0.3, segment 20 about 0.8 times as long as wide. Frons with a median carina, which extends from anterior ocellus to base of two small separate acute horns. Temple rather narrow, almost straight; its length at the middle about 0.4 times the length of eye in profile. Occipital carina almost parallel to hind margin of eye, but on lower 0.2 strongly sinuate backward and then turned forward as distinct lamella to hypostomal carina. Cheeks moderately buccate, beyond mandible slightly impressed along hypostomal carina. Hypostomal carina beyond the mandible as moderately high lobe. Malar space 0.63 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly not tuberculate; epomia extends upward only to level of yellow coloration; lateral lobes of pronotum coarsely rugose, on upper 0.25 more or less smooth, moderately coarsely and densely punctate. Mesoscutum more or less evenly, rather densely and moderately coarsely punctate. Mesopleurum punctato-rugose, rugae more or less horizontal under subtegular ridge, becoming irregular in central part of mesopleurum, and almost absent on lower 0.3 (punctures here dense and moderately coarse).



**Figs 60-72.** *Cryptanura*, female (except for 63, 64 and 68). **60, 61**, *C. basimacula* Cameron (type) (60, part of head, lateral view; 61, apical spots of propodeum); **62**, *C. vivida* Cameron (type), part of head, lateral view; **63, 64, 68**, *C. genalis* Cushman, male (63, metapleurum; 64, tergite 1; 68, part of hind leg); **65-67**, *C. sternoleuca* sp. n. (65, metapleurum; 66, propodeum with tergite 1; 67, hind femur); **69**, *C. basimacula* (Cañon Novillo), part of hind leg; **70**, *C. sternoleuca*, ovipositor with segment 2 of hind tarsus; **71**, *C. basimacula* (type), ovipositor; **72**, *C. genalis* (type), ovipositor with segment 2 of hind tarsus.

Speculum and oblique impression before speculum polished. Metapleurum with coarse, more or less horizontal rugae, partly reticulate; this sculpture expands on pleural part of propodeum. Propodeum basad of basal transverse carina smooth, rather evenly covered with moderately large distinct punctures; basal transverse carina evenly arched, medially very weakly produced anteriorly (Fig. 23); behind apophyses, propodeum with strong transverse rugae, before apophyses rugae radiate to basal carina, irregular at centre (on widened part of black median longitudinal band). Apophyses rather short (Fig. 23). Areolet about 0.35 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus distinctly antefurcal; nervellus intercepted about at lower 0.2; hind wing with 1 hamulus on costella. Hind femur 6.4 times as long as high. Proportion of hind tarsal segments 5.5 : 2.1 : 1.1 : 0.4 : 1.5. First tergite polished, with a pair of distinct tubercles of dorsal carinae between spiracles (Fig. 23); dorsolateral carinae present. Second tergite dull (except basally), on median 0.4 (on transverse black band) with numerous punctures, which are rather deep, with sharp margins, moderately small and dense (on black band beyond yellow subbasal spot, a line of ocular scale crosses about 10-15 punctures). 3rd tergite dull, distinctly and densely punctured on basal 0.6, punctures become smaller and sparse to hind margin; other tergites with very fine indistinct punctures, polished basally. Ovipositor sheath 1.35 times as long as hind tibia; upper valve beyond the nodus 1.25 times as long as 2nd segment of hind tarsus (Fig. 31).

A predominantly black and yellow species. Antennae black with ventral yellow spot on the scapus; flagellar segments 5-10 entirely and 11-13 dorsally white. Head yellow anteriorly; lower and upper margin of mandible, short marks on clypeal suture, frons and vertex except on orbits black; orbits entirely yellow, on top of head expand to lateral ocellus, rather narrow on upper 0.25 of temple; lower half of temple, cheeks, hypostomal carina to occipital foramen yellow. Hind part of temple on upper half and occiput (except for postgenae) black. Palpi whitish with last segments pale rufous.

Propleurum yellow, black on basal half. Pronotum black with front and dorsolateral margins entirely yellow, its lower corner black; collar completely yellow. Mesoscutum black with whitish central spot and yellow prescutellar lateral carinae; scutellum yellow dorsally to apex (with black spot at base), and on hind margin. Tegulae yellow. Mesopleurum, mesosternum, metanotum, metapleurum and propodeum laterally with yellow pattern as in *C. septentrionalis* (Fig. 14), except that yellow spot on mesopleurum above speculum absent. Coloration of propodeum and

tergites 1 and 2 dorsally as figured (Fig. 23). First segment whitish yellow laterally to apex, black ventrally. Tergite 2 with black lateral margins (except posterior 0.2 and on epipleurum, between lateral margin and spiracles entirely yellow from base to apex; on tergite 3 yellow coloration laterally expands above spiracles; hind margin of tergites 2-3 pale brownish (Fig. 23); tergites 7-8 reddish brown dorsally, 8th tergite with black hind margin. Other characters of coloration of abdomen as in *C. septentrionalis* (Fig. 14). Front and middle legs with white coxae; each coxa with small dorsoapical brownish spot; trochanters I yellow with brownish dorsal mark on middle trochanter; beyond trochanters I, legs rufous, tinged with light brownish stronger on posterior side of femora and on tarsal segments 3-5 dorsally. Hind coxa yellow, with dorsal band (Fig. 22), base, and posterior (inner) basal spot black; hind trochanters yellow with trochanter I black dorsally; femur yellow with black dorsum; hind tibia and tarsus yellow, tibia slightly blackish at extreme base. Front wing hyaline, slightly smoked on distal margin. Pterostigma blackish brown.

**Diagnosis.** Structurally and chromatically *C. punctator* closely resembles *C. septentrionalis*, from which it differs in having hind coxa yellow with black dorsal marks (Fig. 22) and petiole black ventrally. Both species differ from all other North American *Cryptanura* in having 2nd tergite with very distinct and dense punctures and with large subbasal pale spot medially (Fig. 23).

**Distribution.** Mexico (Tamaulipas).

## 25. *Cryptanura silvae* sp. n. (Fig. 59)

**Holotype:** ♀, **Mexico**, Tamaulipas, Cd. Victoria, 31.V.1981 (E. Ruíz C.).

**Paratypes.** **Mexico**, Tamaulipas: 1 ♂, Cd. Victoria, 2.VI.1981 (H. Ruíz C.); 3 ♀, Cd. Victoria, Canyon Novillo, 1.VII, 17.IX and 7.X.1985 (Serna); 1 ♀, 1 ♂, Cd. Victoria, Canyon Libertad (Troncones), 25.IX and 10.XI.1988 (R. Thompson F., N. Reyes M.); 1 ♀, Cd. Victoria?, El Barretal, 22.V.1981; 1 ♀, 44 km S Cd. Victoria, matorral, tr. Malaise, 23-30.IX.2000 (Kasparyan); 5 ♀, 1 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 16.XII.1998-29.V.1999 (S. Hernández, C. Covarrubias); 2 ♀, Gomez Farias, Alta Cima, 940 m, tr. Malaise, 1.V-3.VII.1999 (S. Hernández); 1 ♀, same locality, 7-14.X.2000 (Kasparyan).

**Description.** **Female** (holotype). Front wing 12 mm long. Antenna with 33 flagellar segments, segment 20 about 0.65 times as long as wide. Frons shiny, before ocellus with a median carina and on upper 0.3 with a few rugae radiating from ocelli. Temple almost straight, at the middle 0.45 times as long as profile of the eye. Occipital carina weakly diverges below from hind margin of eye. Cheeks slightly swollen, beyond mandible weakly impressed along hypostomal carina. Hy-



postomal carina beyond the mandible as moderately high lobe. Occipital carina slightly laminate before connection with hypostomal carina. Malar space 0.85 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly bordered by carina, but not distinctly projecting laterally. Epomia strong; pronotum beyond the epomia entirely covered with strong longitudinal rugae; upper margin with oblique rugae and rather coarsely punctured. Mesoscutum more or less evenly, rather densely and moderately coarsely punctate, distad to ends of notauli punctures sparse. Mesopleurum entirely longitudinally striate, except for polished speculum and densely punctured black area above the anterior part of sternaulus; lower half of mesopleurum with rather coarse punctures between striae. Metapleurum with coarse, more or less horizontal rugae, partly reticulate; this sculpture expands on pleural part of propodeum. Propodeum basad of basal transverse carina smooth and impunctate anteriorly, and with rugosity and separate punctures just before carina and around spiracles; beyond the basal transverse carina to apex propodeum coarsely transversely rugose, rugae irregular at centre just beyond carina. Apophyses acute and moderately long, about 1.5 times as long as basal width. Areolet about 0.42 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus distinctly antefurcal; nervellus intercepted about at lower 0.13; hind wing with 1 hamulus on costella. Hind femur 6.2 times as long as high. Proportion of hind tarsal segments 5.8 : 2 : 1.1 : 0.4 : 1.7. First tergite polished, with a pair of rather distinct dorsal carinae; interspace between carinae on the spiracles level flat, not impressed and not tuberculate. Tergites 2 and 3 finely granulate, with separate superficial, moderately small punctures, and with very short scarce hairs; punctures and hairs denser on dorsolateral parts of tergite 3. Ovipositor sheath 0.72 times as long as hind tibia; upper valve beyond the nodus 1.27 times as long as 2nd segment of hind tarsus; ovipositor slender (Fig. 59), on median part 0.66 times as thick laterally as hind basitarsus.

A predominantly black and yellow species. Antennae black, flagellar segments 6-10 entirely, segment 5 at apex, and dorsum of segment 11 white. Head yellow anteriorly, with narrowly black clypeal margin and black lateral marks on clypeal suture extending from clypeal foveae to upper corner of mandible, with brownish lateral margins of oral hollow; mandible black except for large yellow spot on its basal half; frons and vertex except for orbits black; orbits entirely yellow, on top of head expand to lateral ocellus. Temples yellow with upper 0.3 entirely black; hypostomal carina black; occiput entirely black,

except for narrow yellow stripe on postgena just behind the lower part of occipital carina. Palpi yellowish with last segment rufous. Propleurum yellow (in paratypes black basally, in holotype basal part not visible). Pronotum black with front and dorsolateral margins widely yellow, its lower corner black; collar with median black spot. Mesoscutum black with yellowish central spot and yellow prescutellar lateral carinae; scutellum yellow dorsally to apex (with black spot at base), and on hind margin. Tegulae yellow. Mesopleurum and metanotum as in *C. spinaria* (Fig. 12); metapleurum, propodeum, and first tergite as in *C. lunai* (Fig. 51). Petiole yellow, blackish ventrally. Tergites 2 and 3 black, yellow laterally and respectively on apical 0.3 and 0.42; tergite 2 with reddish yellow basolateral corners. Other tergites yellow on visible part (in paratypes black about in basal 0.3 on dorsum, tergite 7 entirely black on dorsum), tergite 8 black dorsally. Legs yellow; front and middle coxae (except apically), trochanters and femora black posteriorly; tarsal segments 1 and 2 fuscous at apex, segments 3-5 brownish. Hind coxa yellow with weak brownish basal stripe ventrally; on dorsum, with complete lateral bands (as in *C. lunai*, Fig. 52). Hind trochanter I black with large yellow dorsal and ventral spots; trochanter I predominantly yellow with black lateral marks anterodorsally and posteroventrally. Hind femur yellow, black about on dorsal 0.4 (more widely posteriorly); hind tarsal segment 5 blackish brown. Pterostigma blackish brown; distal margin of front wing without infuscation.

*Males* hardly separated from males of *C. lunai*, usually smaller, and white band on antenna broader, covers about 9 (10-11) segments (usually 6-8 in *C. lunai*).

*Variability.* Females usually smaller than females of *C. lunai*; front wing 7.5-12 mm, flagellum 30-33-segmented (30-31-segmented in specimens with front wing 7.5-9.5 mm); ovipositor sheath 0.65-0.85 times as long as hind tibia and 0.6-0.8 times as thick as hind basitarsus.

*Diagnosis.* *C. silvae* closely resembles *C. lunai*, but differs in having ovipositor shorter and slenderer (Fig. 59); it is also structurally similar to *C. lamentaria*, from which it may be distinguished by black mesosternum and 1 hamulus on costella. These three species differ from all other species with a central white spot on mesoscutum by triangular shape of yellow propodeal spots before apophyses (Fig. 51), and by complete dorsolateral black bands on hind coxa (Figs 52, 53, 55). Hind tibia of male entirely yellow.

*Distribution.* Mexico (Tamaulipas).

*Etymology.* The species is named in honour of Gilma L. Silva Aguirre.

26. ***Cryptanura sostenesi* sp. n.**  
(Figs 3, 4, 41)

*Holotype*: ♀, **Mexico**, Veracruz, Apazapan, Chico Zapote, 347 msnm, 15.I.1992 (Luiz Quiroz).

*Description. Female* (holotype). Front wing 12 mm long. Antenna with 32 flagellar segments; segment 20 about 0.8 times as long as wide. Horn reduced (in form of two acute minute pimples). Occipital carina distinctly divergent downward from hind margin of eye; the temple in profile on lower part 1.8 times as long as on upper part. Temples roundly narrowed to occipital carina; cheeks swollen, just beyond mandible not impressed along hypostomal carina. Hypostomal carina beyond the mandible as moderately high lobe. Malar space 0.6 times as long as basal width of mandible. Dorsolateral margin of pronotum anteriorly rather strongly tuberculate; lateral lobes of pronotum smooth and polished with a few longitudinal rugae on middle 0.3 and with short wrinkles on hind margin. Mesoscutum smooth with moderately coarse and very scarce punctures. Mesopleurum polished with distinct fine punctures, which are very sparse under subtegular ridge and becoming denser at lower part; between hind part of subtegular ridge and speculum, there are some short superficial wrinkles. Metapleurum on anterior 0.4 smooth, almost impunctate, on posterior 0.6 with large moderately dense and rather superficial punctures. Propodeum before basal transverse carina on median 0.6 smooth and impunctate; around spiracles distinctly punctured, punctures rather dense before spiracles; behind basal carina to apex propodeum with strong transverse rugae, except for rather smooth subrhombic area just behind median part of basal carina. Apophyses as short obtuse tubercles (Fig. 4). Areolet about 0.4 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus moderately antefurcal; nervellus intercepted about at lower 0.13; hind wing with 1 hamulus on costella. Hind femur about 5.7 times as long as high. Proportion of hind tarsal segments 4.9 : 2.1 : 1.1 : 0.5 : 1.5. Median dorsal carina of first tergite represented by a pair of low median blunt tubercles between spiracles. 2nd tergite polished at dorsum, punctures very scarce and small, at its lateral parts microsculpture distinguishable but strongly obliterated. 3rd tergite polished. Ovipositor sheath 2.2 times as long as hind tibia; upper valve beyond the nodus as long as 2nd segment of hind tarsus (Fig. 41); dorsum of nodus with sharp fine low ridge slightly jagged at top of nodus (Fig. 41).

A predominantly black and yellow species. Antennae black, flagellar segments 6-13 white, segments 6 and 13 black ventrally. Head yellow

with black clypeal foveae, lower margin of clypeus on median 0.6, apical half of mandible and spot at its base medially, lateral margins of oral hollow, frons and vertex (except on orbits), temples on dorsal half except on orbits (orbits yellow, very narrow on upper 0.2 of temple and widened to occipital carina on lower 0.6 of temple); occiput and hypostomal carina black. Palpi whitish with longitudinal fuscous marks. Propleurum whitish on apical 0.6, blackish on basal 0.4 and medially. Pronotum black, its front and dorsolateral margins yellow (except for black lower and hind corners); collar yellow, black on front edge, with narrow black median spot, and entirely black beyond transverse groove. Mesoscutum black with whitish central spot and yellow prescutellar lateral carinae; scutellum completely yellow dorsally to apex, and on hind margin. Tegulae yellow. Mesopleurum, mesosternum and metapleurum with yellow pattern as in *C. spinaria* (Fig. 12), but black band on front margin of metapleurum narrower. Metanotum black with hind margin and postscutellum yellow. Coloration of propodeum as figured (Fig. 4). First segment whitish yellow with a large black spot on dorsum between spiracles (Fig. 4), its sternite slightly fuscous on basal part. Tergites 2-5 brownish black on basal 0.6-0.7, whitish apically and laterally (lateral pale coloration slightly expands above spiracles); second tergite pale rufous on basolateral corners to thyridia. Tergite 6 blackish brown dorsally with narrow pale apical margin; tergite 7 blackish brown on basal half with apical half brownish rufous, convex and more desclerotized; tergite 8 brownish rufous with dark apical margin. Front and middle coxae, trochanters and femora pale rufous, blackish posteriorly except for apex; all tibiae and tarsi whitish yellow, tibiae white dorsally, segment 5 of tarsi brown (on hind tarsus only ventrally). Hind coxa entirely pale rufous, slightly paler dorsoposteriorly (Fig. 3); hind trochanters I entirely brownish; trochanter II rufous, brownish at apex; hind femur reddish, brownish at extreme base and on posterior side (darker to dorsum). Pterostigma blackish.

*Diagnosis.* *C. sostenesi* differs from other North American *Cryptanura* in the following features: ovipositor very long, ovipositor sheath about 2.2 times as long as hind tibia; propodeal yellow spots rather unusual (Fig. 4); apophyses as short, obtuse tubercles; hind coxa (Fig. 4) and hind femur reddish (femur darkened posteriorly); 2nd tergite subpolished (microsculpture very obliterate), 3rd tergite polished.

*Distribution.* Mexico (Veracruz).

*Etymology.* The species is named in honour of Sostenes E. Varela Fuentes.

## 27. *Cryptanura spinaria* (Brullé, 1846) (Fig. 12)

*banchiformis* Megerle, 1803: 16 (*Ichneumon*; unavailable name, as published in a suppressed work; type: ♂, Georgia, USA; lost); Townes & Townes, 1962: 427 [*Cryptanura*; key, descr.; distribution in USA; = *spinarius*, *albopictus*]; Porter, 1975: 38 (key, Texas); Carlson, 1979: 469; Yu & Horstmann, 1997: 230 (bibl.). – *spinarius* Brullé, 1846: 227 (*Mesostenus*; type: ♀, Carolina, USA). – *albopictus* Cresson, 1864: 312 (*Mesostenus*; type: ♂, Delaware, USA), praecox., non Smith, 1858.

**Material.** USA: 6 ♀, 5 ♂, from New York to Gainesville in Florida, and South Carolina (AEI); 1 ♂, Delaware (type of *Mesostenus albopictus* Cresson) (ANSP). Mexico, Nuevo León: 2 ♂, Chipinque, 8.IX.1981 (E. Ruíz C., H. García); Tamaulipas: 1 ♀, 1 ♂, Madroño, 25 km SSW Cd. Victoria, 3.VI and 26.VIII.1984 (H. & V. Ruíz C.).

**Distribution.** East of USA and Mexico (Nuevo León, and Tamaulipas north of tropic of Cancer).

## 28. *Cryptanura sternoleuca* sp. n. (Figs 65–67, 70)

**Holotype:** ♀, Mexico, Tamaulipas, Llera, rio Guayalejo, 11.VIII.2000 (Kasparyan).

**Paratypes:** Mexico, Tamaulipas: 2 ♀, 2 ♂, same data as in holotype; 2 ♀, 2 ♂, same locality, 1 and 30.IX.2000, 23.I.2002 (Kasparyan), (1 ♂, 1 ♀ in ZIN); 2 ♀, Cd. Victoria, Canyon Libertad, 7 and 25.IX.1988 (R. Thompson F.); 1 ♂, Ej. La Libertad S Llera, 6.VI.1985 (B. Navarro P.), 1 ♀; same locality, 14.X.1989; 2 ♀, Gomez Farias, El Nacimiento, 17.IX.1998 and 24.I.1999 (Kasparyan); 1 ♂, Gomez Farias, Los Cedros, 340 m, tr. Malaise, 26.VI–3.VII.1999 (S. Hernández); 1 ♀, El Limon, 8 km N Cd Mante, Rio Frio, 26.XII.1999 (Kasparyan); 1 ♂, Antiquo Morelos, S Cd Mante, arbusto, 14.XII.1989 (H. Aquino S.); Morelos: 2 ♀, Coatlan, Del Rio, 3 and 10.IV.1991 (G. Penya).

**Description.** *Female* (holotype). Front wing about 9 mm long. Antenna with 34 flagellar segments, segment 20 about 0.66 times as long as wide. Horns very small, on common low base; frons with a median carina above the horn and laterad the carina with radial rugae diverging anteriorly. Temples moderately wide, at the middle about half as long as profile of eye, almost straight, weakly broadened below. Cheeks about 1.8 times as long as malar space, slightly swollen, not impressed before hypostomal carina. Malar space 0.8 times as long as basal width of mandible. Hypostomal carina weakly laminate, a little higher than occipital carina. Dorsolateral margin of pronotum anteriorly bordered with carina (upper horizontal part of epomia), not distinctly projecting laterally. Epomia strong. Lateral lobes of pronotum on upper half polished, with punctures on dorsal margin; its lower part with longitudinal rugae. Mesoscutum rather evenly, coarsely and moderately densely punctate. Mesopleurum on front half with longitudinal rugae, which become weaker to the middle and

above sternaulus; hind 0.4 of mesopleurum finely punctured, speculum polished, impunctate. Metapleurum on the front with strong horizontal rugae, on the hind half and along pleural area of propodeum coarsely and densely punctate. Propodeum before basal transverse carina polished and almost impunctate, except punctato-rugose before spiracles, beyond basal transverse carina to apex coarsely rugose; the rugae transverse laterad and behind apophyses, and radiated from apophyses to basal transverse carina. Apophyses moderately long, rounded at apex and a little depressed (Fig. 66). Areolet about 0.55 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus weakly antefurcal; nervellus intercepted at lower 0.2. Hind wing with 2 hamuli on costella. Hind femur 6 times as long as high. Proportion of hind tarsal segments 4.1 : 1.5 : 0.8 : 0.3 : 1.2. First tergite polished, with rather distinct dorsal carinae. Other tergites dull, tergites 2 and 3 finely granulate, with distinct punctures and very short hairs, which are very scarce on tergite 2 and denser on tergite 3. Ovipositor sheath about 0.65 times as long as hind tibia; upper valve behind the nodus 1.2 times as long as 2nd segment of hind tarsus (Fig. 70).

Head and thorax black and whitish yellow (ivory), abdomen and legs predominantly light orange and yellow. Antenna black; flagellar segments 5–11 entirely white, segment 4 at apex and segments 12–13 (14) on dorsum white. Head yellow anteriorly with a pair of black spots laterad of clypeus, black lower margin of clypeus, and blackish on apical 0.4 of mandible and on its lower margin; frons black except for yellow orbits; yellow band on orbits on upper 0.6 of frons about 1.6 times as wide as on its lower part, on the top of head it expands to hind ocellus. Cheeks and temple yellow, temple black on upper 0.3 (in most of paratypes, orbits entirely yellow, not interrupted with black on temple). Occiput on upper 0.6 black, on lower 0.4 yellow. Palpi whitish with two apical segments on each palpus fuscous. Propleurum entirely whitish. Pronotum black with front and dorsolateral margins widely yellow, except for black lower and hind corners and a black median spot on collar. Mesoscutum black with a yellow central spot and yellow prescutellar lateral carinae. Scutellum yellow dorsally with small black median spot at base (in most paratypes, this spot absent). Tegulae white. Mesopleurum, mesosternum, metanotum and metapleurum as in *C. compacta* (Fig. 13), but in *C. sternoleuca* lower hind corners of mesopleurum and metapleurum without blackish mark and front margin of metapleurum blackish beyond suture (Fig. 65); mesosternum yellow with postpectus black (with black spot before middle coxae). Coloration of propodeum and first tergite as in

Fig. 66. Petiole entirely pale (in paratypes, from light yellow to reddish yellow). Other abdominal segments light orange with indistinct subapical yellowish band on tergites 2-5 and more distinct whitish yellow lateral stripes on hind margin of tergites 3-7. Front and middle legs with coxae white, fuscous posteriorly on basal 0.6-0.7 (black on front coxa and brownish on middle coxa); trochanters yellow, middle trochanter II with posterior blackish spot; femora yellow brownish black posteriorly; tibiae and tarsi yellow, tarsal segments 2 and 3 at apex and segments 4 and 5 entirely brown. Hind coxa, trochanters and femur light orange, extreme apex of trochanter II and extreme base of femur reddish brown (Fig. 67); hind tibia and tarsus yellow; tibia slightly reddish yellow on ventroapical 0.35; tarsal segment 5 brownish. Pterostigma brown-black.

*Male* similar in coloration to female except that white band on flagellum covers segments (9)10-16(17-19), and propodeal yellow spots usually shorter before apophyses and sometimes confluent anteriorly at line of apical transverse carina. Antenna with 35-37 flagellar segments, segments (15)16-20(21-22) with a tyloid. Propodeum usually with discernible apical transverse carina between apophyses; abdomen short, tergites 2 and 3 almost polished.

*Diagnosis.* *C. sternoleuca* may easily be separated from other Mexican species with reddish abdomen by the yellow coloration of mesosternum, entirely red hind femur and coxa, and rather short ovipositor (about 0.65 times as long as hind tibia).

*Distribution.* Mexico (Tamaulipas, Morelos). All specimens (except for one male from Los Cedros) are collected in valleys, close to rivers.

**29. *Cryptanura veraepacis* Cameron, 1885**  
(Figs 26, 27, 32, 33)

Cameron, 1885: 220, ♀ (*Mesostenus*; type: ♀, Guatemala, Panzós in [Alta] Verapaz); Cushman, 1945: 175 (*Cryptanura*; key); Townes & Townes, 1962: 106.

*Material.* **Guatemala:** type (BMNH). **Mexico, Nuevo León:** 1 ♂, presa La Boca, Santiago, tr. McPhail, 14.III.1987 (H. Sosa); **Tamaulipas:** 1 ♀, 2 ♂, Cd. Victoria, Canyon Novillo, 25.V and 13.VII.1985 (A. del Valle); 1 ♂, 25 km SSW Cd. Victoria, Madronyo, 1200 m, 2.IX.1984 (E. Ruíz C.); 1 ♀, El Tigre, Guemez, tr. McPhail, 13.I.1989 (N. Reyes); 1 ♀, Las Aguillas, Padilla, 25.VIII.1989 (S. Calderón); 1 ♀, Libertad, 10.X.1985 (J. Hernández R.).

*Distribution.* Guatemala, Mexico (Nuevo León, Tamaulipas).

**30. *Cryptanura xilitla* sp. n.**

*Holotype:* ♀, **México**, San Luis Potosí, Xilitla, tropical forest, 14.IV.2002 (Kasparyan).

*Description. Female* (holotype). Fore wing 11.5 mm long. Antenna with 33 flagellar segments; segment 20 about 0.8 times as long as wide. Horns rather short, have a common base, about 0.8 times as long as maximum diameter of ocellus. Frons polished, with superficial rugosity at upper 0.3 and with a short longitudinal carina just before front ocellus; upper part of frons on orbits very finely granulate and with separate punctures. Temple slightly widened and buccate on cheeks, at the middle about 0.55 times as long as profile of eye. Hypostomal carina just beyond the mandible and occipital carina on junction with hypostomal carina rather high. Dorsolateral margin of pronotum anteriorly distinctly tuberculate; epomia long, straight; lateral lobe of pronotum beyond the lower end of epomia with longitudinal rugae; its upper margin moderately finely and moderately densely punctate. Mesoscutum with coarse and moderately dense punctures. Mesopleurum above the level of mesopleural pit with longitudinal rugae; speculum polished; lower 0.4 of mesopleurum covered with distinct and moderately dense punctures. Metapleurum completely covered with coarse longitudinal rugae. Propodeum basad of basal transverse carina smooth and almost impunctate, laterally before spiracles with some coarse transverse wrinkles; behind apophyses propodeum with strong transverse rugae, before apophyses rugae radiate to basal carina. Apophyses rather long, about 1.5 times as long as their basal width. Areolet about 0.4 times as long as abscissa of 2nd recurrent vein above the bulla; nervulus weakly antefurcal; nervellus intercepted about at lower 0.15; hind wings with half hamuli on costella. Hind femur slender, 7.8 times as long as high. Proportion of hind tarsal segments 5.3 : 2.2 : 1.1 : 0.5 : 1.5. First tergite polished, without dorsal and dorsolateral carinae; other tergites dull with microsculpture and fine punctures. Tergite 2 with very scarce setiferous punctures on dorsum, hairs very short. Tergite 3 with punctures denser (especially laterally), hairs longer, distances between their bases subequal to length of hairs; on following tergites, hairs become longer. Ovipositor sheath 0.77 times as long as hind tibia; tip of ovipositor dorsally weakly and evenly convex from nodus to apical point; upper valve beyond the nodus 0.95 times as long as 2nd segment of hind tarsus.

A predominantly black and yellow species with hind coxa red and tergites partly reddish brown. Antennae black, apex of flagellar segment 5, flagellomeres 6-10 entirely and dorsum of segment 11 white. Head yellow anteriorly, with black clypeal foveae, lower and lateral margins of clypeus, dorsal and ventral margins of mandibles, their teeth, lateral margins of oral hollow, frons



except on orbits (orbits anteriorly entirely yellow and on top of head broadened almost to lateral ocellus); vertex black; temples on upper 0.33 entirely black; occiput completely black; hypostomal carina just behind mandible blackish. Palpi yellow, slightly fuscous on apical segments. Propleurum yellow, blackish on basal half and laterally. Pronotum black, its front and dorsolateral margins widely yellow except for median longitudinal black band on collar and blackish anterior edge of collar. Mesoscutum black with yellow central spot and yellow prescutellar lateral carinae; scutellum yellow dorsally to apex, with large dorsal black spot. Tegulae yellow. Mesopleurum, mesosternum and metapleurum with yellow pattern as in *C. spinaria* (Fig. 12). Metanotum black with hind margin and postscutellum yellow. Coloration of propodeum as in *C. azteca* (Fig. 24) (propodeal yellow spots abruptly cut just before apophyses). First segment predominantly yellow, postpetiole black dorsally except for hind margin. Tergite 2 unevenly black on basal 0.75, with extreme base, basolateral corners to thyridia, large median spot on posterior margin reddish brown; its lateral and posterior margin (0.25) reddish yellow. Tergites 3 black on basal 0.4 and yellow on apical 0.33 and laterally, with transitional median zone and basal corners reddish brown. Basal part of all subsequent tergites concealed (not visible), their apical parts and sternites reddish yellow. Fore coxa light yellow, black posteriorly at base and with narrow dorsal black stripe from base to apex; middle coxa light yellow, pale reddish posteriorly, with blackish dorsoapical spot. Front and middle femora and trochanters light yellow, trochanters with weak blackish dorsal marks, femora entirely blackish brown posteriorly. All tibiae and tarsi yellowish; front and middle tarsi with two or three apical segments brown; hind tarsus only on apical 0.6 of segment 5 light brownish dorsally. Hind coxa light reddish with large (from base and almost to apex) dorsal yellow spot and with small brown dorsoapical mark; hind trochanters reddish yellow with dorsal black stripe; hind femur predominantly yellowish, entirely blackish dorsally (except for reddish extreme base) and unevenly brownish on apical 0.3-0.4 with ventral part more reddish. Pterostigma blackish.

**Diagnosis.** *C. xilitla* is rather similar to *C. azteca*, especially in the shape of yellow propodeal spots (Fig. 24), coloration of scape (entirely black), mandibles (predominantly white), femora (black posteriorly) and petiole (yellow). *C. xilitla* differs from *C. azteca* in having black mesosternum and ovipositor short, 0.78 times as long as hind tibia (1.15 in *C. azteca*).

**Distribution.** Mexico (San Luis Potosí).

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