North American *Pterocheilus*. III. Subgenus *Megapterocheilus* (Hymenoptera, Eumenidae).

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Abstract: *Megapterocheilus* is an endemic North American subgenus of *Pterocheilus*. It contains 15 described species, one of them, *nevadae*, new. *P. nevadae* occurs in desert areas of Nevada, Arizona, and New Mexico. Since the most recent key to species is 55 years old, an up-to-date key is given. Four species names are newly placed in synonymy: *peninsularis* R. Bohart = *arizonicus* R. Bohart, *bimaculatus* Provancher = *biplagiatus* Cresson, *inyoensis* R. Bohart = *nigricaudus* R. Bohart, *oregonensis* R. Bohart = *quinquefasciatus* Say.

After my revision of *Pterocheilus* and erection of *Megapterocheilus* (Bohart, 1940), a number of papers have been published which affect this subgenus through description of new species or discovery of synonymy. These are Bohart (1948) (one new species), Bohart (1950) (one new species), and Carpenter (1987) (a secondary homonym and resulting new name). Enough data have now accumulated to make a review of the subgenus desirable, including a new key, one new species, revised synonymy, and additional distribution records.

Megapterocheilus is now composed of 15 species, all found in North America as far south as Michoacan, Mexico. The subgenus contains the largest species of the 3 nearctic subgenera, males rarely less than 10 mm long, and female length sometimes reaching 20 mm. Subgeneric distinctions were enumerated in Bohart (1940) and more recently in Bohart (1989). Briefly, *Micropterocheilus* mandibles are slender and 4-toothed, the male flagellum relatively simple and with 11 articles. *Onchopterocheilus* males have 11 flagellar articles but the final two are reduced to form a small hook, the female has stout and 5-toothed mandibles, and the female clypeus is mostly polished. *Megapterocheilus* males have either a simple flagellum with 10 articles (Figs. 8,9) or 11 (Figs. 2,10). In the latter case the final article may be small and flattened (Figs. 10,14) or the last 2-3 articles may form a terminal curve (Figs. 2,4). Male mandibles have 3 to 4 teeth (Fig. 28) or a fifth tooth may be weakly indicated. Females have the clypeus apically produced and truncate (Figs. 20,22) or apically emarginate (Figs. 21,23), but punctate overall. Female mandibles are stoutly 5-toothed (Fig. 19). A similar subgenus (or genus) is *Cephalochilus*, which has the male flagellum apically coiled (last 4 articles at least). All other exotic species of *Pterocheilus* or closely related genera known to me have a similar coil in the male. This condition occurs also in typical *Odynerus*.

Museums in which holotypes are deposited are listed below. In the synonymy they are identified by the city concerned in capitals. At one time or another I have examined every holotype (or lectotype) except "*Odynerus*" *bradleyi* Cameron (=*decorus* Cresson).

Academy of Natural Sciences, Philadelphia. British Museum of Natural History, London; California Academy of Sciences, San Francisco; Cornell University, Ithaca; Laval University Provancher Collection, Quebec; Musée d'Histoire Naturelle, Geneva; University of California Bohart Museum, Davis; U.S. National Museum (Washington).

Abbreviations used: F, flagellomere; MOD, median ocellus diameter; PD, puncture diameter; S, sternum; s.s, strict sense; T, tergum.

Key to *Megapterocheilus* R. Bohart

1. Abdomen with 7 sclerotized terga, males 2
— Abdomen with 6 sclerotized terga, females 16

2. Flagellum with 10 articles (Figs. 1,8) 3
— Flagellum with 11 articles, last one may be small (Figs. 2,11) 6

3. Midfemur enlarged toward base, depressed on outerside toward apex, clypeus semicircularly emarginate at apex (Fig. 26) 4

— Midfemur more simple, at most a little flattened toward base, clypeal apex slightly concave or truncate (Fig. 25) 5

4. Last antennal article pedicellate (Fig. 1), T-II punctures restricted to posterior one-third ..... *pedicellatus* R. Bohart
— Last antennal article stout (as in Fig. 8), T-II punctures covering posterior one-half ..... *quinquefasciatus* Say

5. Last antennal article nearly regular in profile (Fig. 9), scutum and T-I with hair as long as 4-5 MOD ..... *biplagiatus* Cresson
— Last antennal article irregular in profile (Fig. 8), scutum and T-I with inconspicuous or short pubescence ..... *mirandus* Cresson

6. Last antennal article (F-XI) small, flattened, ventral length less than one-half as long as dorsal length of preceding one (Figs. 10,12) 7
— Last antennal article (F-XI) with ventral length more than one-half as long as dorsal length of preceding one (Figs. 5,6) 11

7. T-II coarsely punctate throughout 8
— T-II not coarsely punctate 9

8. Mesopleuron polished between rather large punctures which are mostly 2 PD apart ..... *chesteri* J. Carpenter
— Mesopleuron with small, close punctures, not polished ..... *texanus* Cresson

9. T-II with a depressed longitudinal spot about 6 MOD inside spiracle (Fig. 24); mandible all or mostly black ..... *decorus* Cresson
— T-II without such a spot; mandible mostly white or yellow 10

10. Clypeus rounded at base (Fig. 27), markings red and white ..... *nevadae* R. Bohart
— Clypeus angled at base (Fig. 28), markings red and yellow ..... *nigricaudus* R. Bohart

11. Midfemur strongly distorted, either channeled or depressed basad beneath, and outwardly apicad (Figs. 15,16) 12
— Midfemur at most depressed basad 13

12. Midfemur strongly channeled outwardly (Fig. 16); hindtibia greatly swollen distally (Fig. 18); mesopleuron, scutum, and T-I with conspicuous long hair ..... *denticulatus* (Saussure)
— Midfemur with basad (ventral) and apicad (lateral) depressions (Fig. 15); hindtibia not swollen distally; mesopleuron, scutum, and T-I with pubescence quite short *crispocornis* R. Bohart

13. T-II coarsely punctate overall, punctures on mesopleural red or yellow spot coarse and less than a PD apart, clypeus angularly emarginate at apex ..... *mexicanus* Saussure
— T-II finely punctate, at least on basal one-half, punctures on red or yellow spot of mesopleuron various, clypeal apex various 14

14. Last antennal article (F-XI) conical (Fig. 7), T-III-IV finely punctate, clypeus truncate at apex, midfemur not appreciably depressed toward base, yellow spot on mesopleuron closely punctate .. .. *trichogaster* R. Bohart
— Last antennal article (F-XI) flattened and curved (Figs. 2,3), T-III and T-IV quite coarsely punctate, clypeus various, midfemur depressed toward base in outer aspect (Fig. 17), red or yellow spot on mesopleuron with well separated punctures 15

15. Clypeus angularly emarginate at apex (Fig. 29), flattened or depressed area of midfemur extending two-thirds its length (Fig. 17) ..... *arizonicus* R. Bohart
— Clypeus semicircularly emarginate at apex (Fig. 30), flattened or depressed area of midfemur extending slightly more than one-half its length ..... *linsleyi* R. Bohart

16. Clypeal apex roundly, almost semicircularly emarginate (Figs. 21,23) 17
— Clypeal apex truncate (Figs. 19,20,22) or with shallow angular emargination 19

17. T-II punctation gradually dispersed forward from apical band ..... *quinquefasciatus* Say
— T-II punctation limited to apical band 18

18. T-III-IV and apex of T-II coarsely punctate ..... *linsleyi* R. Bohart
— T-III-IV and apex of T-II finely punctate ..... *pedicellatus* R. Bohart

19. T-II coarsely and closely punctate at middle 20
— T-II at most finely punctate at middle 23

20. Wings slightly reddish in part; mesopleural punctures 1-3 PD apart, polished between; T-I and scutum with pubescence quite short, clypeus truncate at apex ..... *chesteri* J. Carpenter
— Wings dark, somewhat violaceous; mesopleural punctures mostly less than 1 PD apart, other features various 21

21. T-I and scutum with erect pubescence 2-3 MOD long, clypeus truncate at apex, T-II with scarlike sublateral spot ..... *denticulatus* (Saussure)

— T-I and scutum with pubescence quite short, clypeal apex various, T-II without distinct scarlike sublateral spot 22

22. Clypeus truncate at apex (Fig. 22), average body length 10-12 mm ..... *texanus* Cresson
— Clypeus shallowly concave at apex (Fig. 20), average body length 16-18 mm .... *mexicanus* Saussure

23. Scutellum polished overall, punctation lightly impressed 24
— Scutellum rather closely punctate, not polished .. 25

24. T-II apical band with small but distinct punctures, T-III-VI with abundant yellowish markings ... . *crispocornis* R. Bohart
— T-II apical area with indistinct and lightly impressed punctation, T-III-VI mostly or all black .... *nigricaudus* R. Bohart

25. Scape mostly or all red, T-II extensively red 26
— Scape nearly always yellow with a black dorsal line or sometimes all black, T-II black and yellow (*or* whitish),but not extensively red 27

26. T-II apically and T-III-IV coarsely punctate, wings dark and somewhat violaceous, pale body markings yellow ..... *arizonicus* R. Bohart
— T-II-IV weakly punctate, wing membrane nearly clear, pale body markings white ... *nevadae* R. Bohart

27. Genal area and T-I with abundant long erect hair ..... *trichogaster* R. Bohart
— Genal area and T-I with inconspicuous pubescence 28

28. Clypeus with sides and apex narrowly rimmed in black, T-II not roughened or punctate medially in front of apical yellow band .... *biplagiatus* Cresson
— Clypeus with sides sometimes black rimmed but apex orange or brownish orange, T-II somewhat roughened or punctate medially in front of apical pale markings 29

29. Larger, more extensively yellow species, female 15-20 mm long, propodeal side nearly all yellow, S-II more than one-half yellow .... *mirandus* Cresson
— Smaller, less extensively pale species, usually 10-15 mm long, propodeal side with considerable black area, S-II one-half or less pale, markings yellow (s.s.) or whitish (Rohwer's *leucotaenius*) .... *decorus* Cresson

Pterocheilus arizonicus R. Bohart
(Fig. 2,17,29)

Pterocheilus arizonicus R. Bohart 1940:174. Holotype male, Pima Co., Arizona (San Francisco).
Pterocheilus peninsularis R. Bohart 1948:317. Holotype male, Pescadero, Baja California Sur, Mexico (San Francisco). **New synonym.**

This is a handsome, large (15 mm long female), red and yellow wasp. It belongs to the group with coarsely punctate T-III-IV. As an index to its abundance, my collection contains 10 males and 31 females, widespread in Arizona and New Mexico. Exceptional locality records are Lajitas, Brewster Co., Texas; and 17 mi n. Loreto, Baja California, Mexico. Host plant genera recorded on pinned specimens are flowers of *Baileya*, *Verbesina*, and *Parthenium*. The holotype male of *P. peninsularis* R. Bohart appears to be at most a slight color form.

Pterocheilus biplagiatus Cresson
(Fig. 9)

Pterochilus biplagiatus Cresson 1879:xix. Lectotype female (desig. Cresson 1916:104), California (Philadelphia).
Odynerus bimaculatus Provancher in Huard 1895:157. Lectotype female (desig. Gahan and Rohwer 1918:104), Los Angeles, California (Quebec). **New synonym.**

This medium-sized, black and yellow species (female about 11 mm long) has the male flagellum with 10 articles (Fig. 9) and the free edge of the female clypeus black. The species occurs mostly in foothill and Sierran areas of California below 5,000 feet. An exceptional record is Blue Mts., Columbia Co., se. Washington. It appears to be an early summer form and has been recorded on flowers of *Phacelia*. As an index to its abundance, the Bohart Museum has 12 males and 16 females.

The synonymy of *bimaculatus* Provancher was discovered when I saw the lectotype at Laval University, Quebec in 1978.

Pterocheilus chesteri J. Carpenter
(Fig. 12)

Pterocheilus chesteri Carpenter 1987:79. New name for *Pterocheilus bradleyi* R. Bohart (Ithaca).
Pterocheilus bradleyi R. Bohart 1950:195. Holotype male, Nogales, Santa Cruz Co., Arizona. Nec *Odynerus* (?) *bradleyi* Cameron 1909:81, which equals *Pterocheilus decorus* Cresson 1879:18.

This medium-sized black and yellow (male) or black and red species (female length about 12 mm) occurs rather widely in desert areas of Arizona, New Mexico, and Sonora, Mexico. An index to its abundance are the 33 males and 26 females in the Bohart Museum collection. I collected a series of females which were attracted to a drying mud puddle south of Rodeo, New Mexico.

The synonymy above was furnished by Carpenter (1987).

Pterocheilus crispocornis R. Bohart
(Fig. 6,15)

Pterocheilus crispocornis R. Bohart 1940:178. Holotype male, Inyo Mts., Inyo Co., California (San Francisco).

This large and handsome, red, black, and yellow species (female length about 15 mm) occurs in desert areas of Nevada, California and Arizona. As an index to abundance, the Bohart Museum has 42 males and 26 females. In Nevada it has been taken in Clark Co. and Mineral Co.; in California in Inyo Co., Riverside Co., Imperial Co., and San Diego Co.; in Arizona in Maricopa Co., Pinal Co., and Mohave Co.

Pinned specimens yield flower data of *Tetradymia*, *Phacelia*, and *Psoralea*.

Pterocheilus decorus Cresson
(Fig. 11,24)

Pterochilus decorus Cresson 1897:xviii. Holotype female, Nevada (Philadelphia).
Pterochilus zonatus Cresson 1879:xvii. Holotype male (aberrant), Nevada (Philadelphia).
Odynerus (*Pachodynerus*) *cosmiogaster* Cameron 1903:123. Holotype male, Ormsby Co., Nevada (San Francisco?).
Odynerus (?) *bradleyi* Cameron 1909:81. Holotype female, Durango, Colorado (London).
Pterochilus leucotaenius Rohwer 1911:554. Holotype female, Lethbridge, Alberta, Canada (Washington).

Pterocheilus decorus is a moderate-sized black and yellow or black and white species (female length 10-15 mm). The range is quite broad: northern Arizona, Nevada, and California to Oregon, Idaho, Utah, Wyoming, and southern Alberta, Canada. An exceptional locality record is San Pedro Martir Mts. Baja California, Mexico. The yellow-marked forms seem to occur often in the same localities as the white-marked ones (*leucotaenius* Rohwer), obviating the use of subspecies. I have seen an unusually marked male from Pinedale, Sublette Co., Wyoming, and another from Jacob Lake, Coconino Co., Arizona. These have red spots on T-I and T-II. The relative abundance of the species is indicated by the number of specimens in the Bohart Museum collection: 49 males and 32 females (17 males, 10 females white-marked). Flowering host plant genera taken from pinned specimens are *Pentstemon*, *Eriodyction*, and *Trifolium*. The synonymy of *Odynerus bradleyi* was made by Carpenter (1987).

Pterocheilus denticulatus (Saussure)
(Fig. 5,16,18)

Leptochilus denticulatus Saussure 1855:373. Holotype male, Coscomotepec, Vera Cruz, Mexico (Geneva).
Pterochilus lewisii Cresson 1868:382. Holotype female, New Mexico (Philadelphia).
Pterochilus aztecus Saussure 1871:141. Holotype female, Cordoba, Vera Cruz, Mexico (Geneva).

The peculiar channeled midfemur of the male *P. denticulatus* (Fig. 16) is distinctive. Coloration is black, yellow, and deep red, the female head and thorax extensively red. The male clypeus is characteristically black and reddish near the apex. The species occurs in Mexican states (Vera Cruz, Zacatecas, Nayarit, and Durango), but also in Arizona counties (Pima, Santa Cruz, Santa Clara, Cochise, and Yavapai). Two other southwestern localities are Luna Co., New Mexico; and 11 mi e. Van Horn, Culberson Co., Texas.

The species may be abundant at times. The Bohart Museum has 23 males and 13 females.

Pterocheilus linsleyi R. Bohart
(Fig. 3,30)

Pterocheilus linsleyi R. Bohart 1940:176. Holotype male, Alpine, Brewster Co., Texas (San Francisco).

This is one of the larger species of *Pterocheilus* (female length about 15 mm). Both sexes have the clypeus apically notched (male, Fig. 30) or semicircularly excavated (female, as in Fig. 23). The punctate abdominal band of T-II is apically restricted as in *P. arizonicus*, but the punctures are less coarse. As in *P. arizonicus* and *P. mexicanus*, the terminal antennal segment of the male is ligulate (Fig. 3). All of the 3 males and 5 females in the Bohart Museum collection are from Texas (Kerrville, Concan, Cotulla, Sabinal, Alpine). The only flowering host plant on specimen labels is *Verbesina encelioides*.

Pterocheilus mexicanus Saussure
(Fig. 4,20)

Pterochilus mexicanus Saussure 1870:141. Holotype female, "Mexico" (Geneva).

This is a relatively large species (female length about 17 mm). Markings are predominantly dark red, but abdominal banding is deep yellow. Mexican records are 15 mi ne. Guadalajara (Jalisco), 25 mi se. Tepic (Nayarit), Cotija (Michoacan), and San Bernardo (Sonora). The species ranges north into Arizona: 12 mi e. Nogales (Santa Clara Co.), Madera Canyon and Peña Blanca (Santa Cruz Co.), and Yaqui Canyon and Texas Canyon (Cochise Co.). Flower records on pinned specimens are *Heterotheca grandiflora* and *Acacia angustissima*. Limited collecting in Mexico may be responsible for the few specimens in the Bohart Museum collection: 9 males, 2 females.

Pterocheilus mirandus Cresson
(Fig. 8,25)

Pterochilus mirandus Cresson 1879:xvix. Lectotype female (desig. Cresson 1916:105), Nevada (Philadelphia).

Odynerus robustus Provancher in Huard 1895:157. Lectotype male (desig. Gahan and Rohwer 1918:104), Los Angeles, California (Quebec). **New synonym.**

Pterochilus luteicollis Cameron 1909:84. Female lectotype (here designated), Claremont, California (San Francisco or London?)

This large, black and yellow species (female length usually about 18 mm) has the clypeus nearly truncate in both sexes, the male flagellum with only 10 articles (X distinctively shaped, Fig. 8), the male clypeus nearly horizontal above (Fig. 25), and the female propodeum almost entirely yellow laterally.

The species ranges broadly in California from San Diego County to Siskiyou County, at low to moderate elevations. County records in Nevada are Washoe (Patrick, Nixon) and Lyon (Smith). According to pinned specimens, adults were collected at flowers of species of *Pentstemon*, *Solidago*, *Salvia*, *Tetradymia*, *Phacelia*, and *Trichostoma*. The Bohart Museum collection contains 65 males and 26 females.

Pterocheilus nevadae R. Bohart, new species
(Fig. 14,19,27)

Male holotype: Length 11 mm. Black, light red and whitish; red are: pedicel and basal 8.5 flagellomeres, legs mostly, wing veins basally, lateral propodeal spot, basolateral spots on T-I and T-II, S-I and S-II largely; whitish are: mandible, clypeus, spot above, lower orbital streak, scape in front, postocular spot, pronotum broadly in front, tegula, post-tegula, scutellar spots, metanotum, posterior propodeal spots, mesopleural spot, legs partly, especially in femorotibial area, strong posterior bands on T-I to T-VI and S-II to S-V. Pubescence silvery appressed on clypeus, pale and 2-3 MOD long on frons, inconspicuous elsewhere. Punctures of frons, pronotum, mesonotum, mesopleuron, relatively coarse, separated by 1-2 PD; punctures on abdominal pale bands fine, 3-5 PD apart. Mandible tridentate, F-X a little smaller than F-IX, F-XI tiny, clypeus apically truncate (facial features, Figs. 14,27) midfemur slightly flattened toward base, T-II without any unusual depressed spots.

Female: Length 12 mm. About as described for male except: mandible and antenna red, former 5-toothed, latter darkened above; clypeus red at apex, shape as in Fig. 19; labial palpus and legs all red.

Holotype male (Davis), Searchlight, Clark, Co., Nevada, IV-19-86 (R. M Bohart). Paratypes, male (Davis), 10 mi se. Sutcliffe, Washoe Co., Nevada, on *Cleome lutea* VI-5-60 (F. D. Parker); female (Davis), Tucson, Pima Co., Arizona, IV-15-33 (Bryant); female (Washington), Portales, Roosevelt Co., New Mexico, V-17-61.

Discussion. Localities of the type series indicate a fairly broad distribution in southwestern United States, including Nevada, Arizona, and New Mexico. As shown in the key, characteristics of this medium-sized species are the red and white markings, finely punctate abdominal bands, apically truncate clypeus (Figs. 19,27), and mostly red flagellum, on which male F-XI is tiny (Fig. 14).

The species name is a dedication to the state of Nevada.

Pterocheilus nigricaudus R. Bohart
(Fig. 13,28)

Pterocheilus nigricaudus R. Bohart 1940:181. Holotype female, Owens Valley, Inyo Co., California (San Francisco).

Pterocheilus inyoensis R. Bohart 1940:186. Holotype male, Lone Pine, Inyo Co., California (San Francisco). New synonym.

This medium-sized species (female length about 13 mm) has a distinctively marked red and black female, the last 4 segments of the abdomen all black. The black and yellow male was originally named *inyoensis*, and it was not until I collected a series of both sexes on the flowers of *Tetradymia* in Mineral County, Nevada that the association was made. The range includes desert areas of California from San Diego and San Bernardino counties to Inyo County. The above-mentioned Nevada series was taken 15 mi sw. Mina. Two records from Yuma Co., Arizona are Ligurta and 6 mi se. Parker. *Tetradymia* and *Encelia* are host plants listed on pinned specimens. An index to the abundance of the species is given by the 9 males and 49 females in the Bohart Museum collection. However, most of these came from the single collection: 15 mi sw. Mina, Mineral Co., Nevada.

Pterocheilus pedicellatus R. Bohart
(Fig. 1,21,26)

Pterocheilus pedicellatus R. Bohart 1940:188. Holotype male, 25 mi e. Sonoita, Cochise Co., Arizona (San Francisco).

This large, black, and yellow species (female length about 20 mm) has the male flagellum diagnostic (Fig. 1) and female punctation distinctive (see key). Although none of the large *Pterocheilus* can be considered abundant, *pedicellatus* has been collected over a broad range from Durango, Mexico, north through California to southern Oregon, east through Idaho and Utah, south to western Colorado, New Mexico, and west Texas, and west to Arizona and Nevada.

The Bohart Museum collection contains 55 males and 37 females from about 40 localities. Host plant flowers recorded on pinned specimens are *Asclepias galioides* and *Bigelovia*.

Pterocheilus quinquefasciatus Say
(Fig. 23)

Pterochilus quinquefasciatus Say 1824:347. Syntypes, male, female, "North-west Territory and Missouri". Type material lost.

Pterocheilus oregonensis R. Bohart 1940:182. Holotype female, Lakeview, Lake Co., Oregon (San Francisco). **New synonym.**

As far as known, this widespread and medium large species (female length 13-16 mm) occurs west of the Mississippi River from Missouri and Texas, north to Minnesota, west through the Plains States and Rocky Mountains, north into southern Canada. Thomas Say recorded it from Northwest Territories. My most western localities are eastern Oregon, eastern Washington, and southeastern British Columbia. In fact the only western states in which it may not occur are Arizona, Nevada and California. Over its whole range it has been found only at low and medium elevations. The generally modest abundance is indicated by the fact that the Bohart Museum has 45 males and 37 females.

I have re-examined the holotype of *Pterocheilus oregonensis* and find it to be a small *P. quinquefasciatus* female.

Pterocheilus texanus Cresson
(Fig. 10,22)

Pterochilus texanus Cresson 1872:244. Holotype female, Texas (Philadelphia).

This medium-sized species (female length about 12 mm) occurs in southeastern U.S. east of the 100th meridian. it is an uncommon wasp as indicated by the 7 males and 5 females in the Bohart Museum collection. Records include Texas (Lee Co.), Arkansas (Ashley Co.), North Carolina (Moore Co.) and Florida (Alachua Co.).

Pterocheilus trichogaster R. Bohart
(Fig. 7)

Pterocheilus trichogaster R. Bohart 1940:183. Holotype male, Mt. Diablo, Contra Costa Co., California (San Francisco).

The abundant dark pubescence and the all black, conical F-XI of the male (Fig. 7) distinguish *trichogaster*. It is medium-sized (female length 11-14 mm) and the range extends in California from San Diego Co. to Siskiyou Co., including all of the area on the western slope of the Sierra. Exceptional localities are Klamath Co., Oregon; and Mineral Co., Nevada. Also, it is common on Santa Cruz Island, Santa Barbara Co. The relative abundance in California is indicated by the 216 males and 178 females in the Bohart Museum collection.

The association with an interesting sapygid parasite, *Fedtschenkia anthracina* (Ashmead), was reported by Bohart and Schuster (1972).

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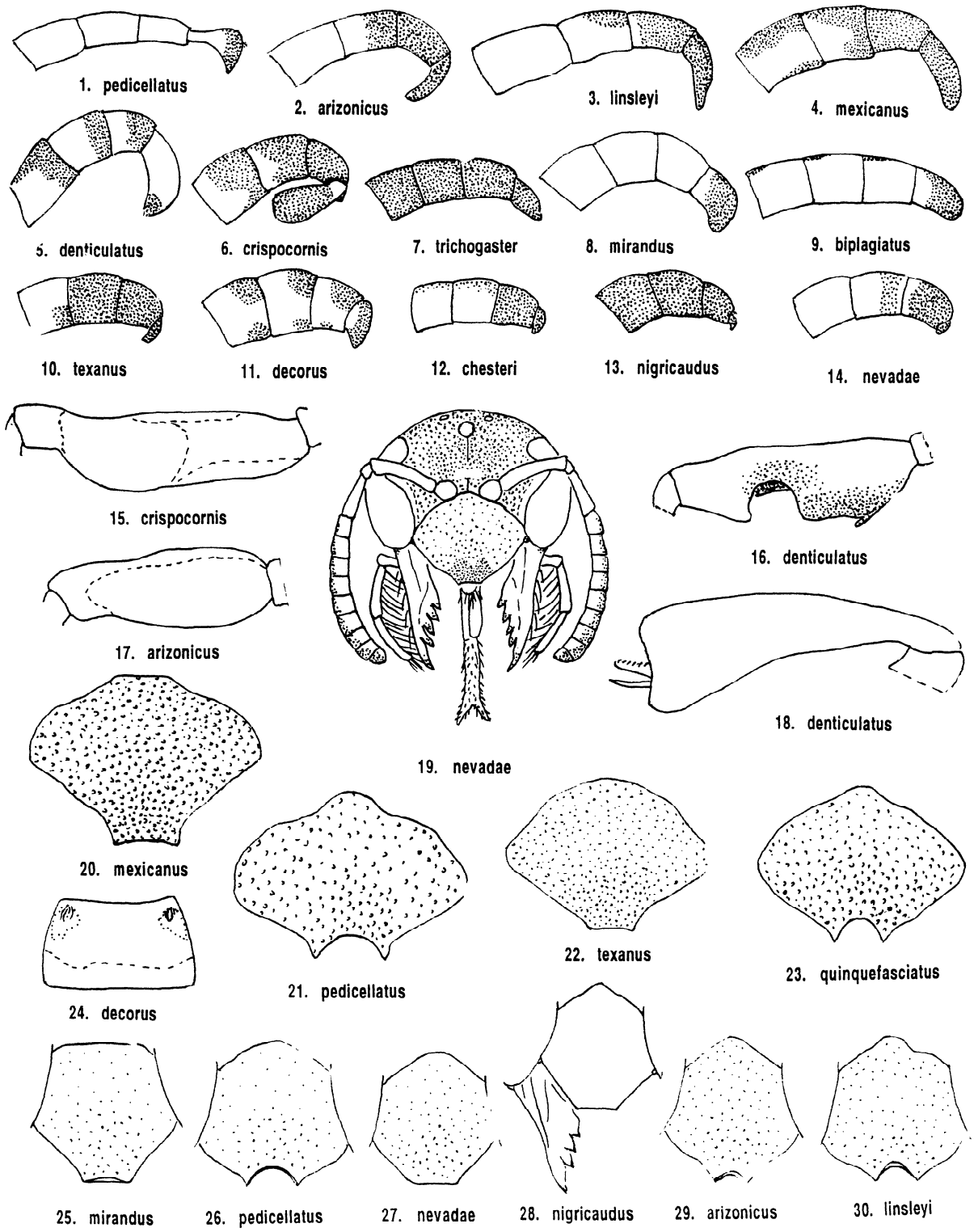

Figures 1-30. Figs. 1-14, terminal 4 male flagellomeres, inner view. Figs. 15-17, male midfemur, outer view, (depressed areas enclosed by dashes). Fig. 18, male hindtibia, outer view. Fig. 19, facial view of female. Figs. 20-23, female clypeus. Fig. 24, male T-II. Figs. 25-30, male clypeus (Fig. 28 with mandible).