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Some New Species of *Pseudopanurgus* of the Subgenus *Heterosarus* Robertson (Hymenoptera, Apoidea)

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The present study of *Pseudopanurgus* is limited to certain of our North American species of the subgenus *Heterosarus* Robertson. As herein restricted, this subgenus contains small and finely sculptured species, which are usually more or less dull and have the tibial scopa comparatively short, sparse, and simple. The species of this group range from New England and Alberta, Canada, to Chile and Argentina in South America. In the eastern part of the United States four species occur, of which *P. pauper* (Cresson) has been recorded from Massachusetts and Rhode Island, and farther west *P. stevensi* Crawford is known to occur in Alberta. In the southwestern part of the United States nine species are known, all but one of which have been found in Arizona. This study is primarily concerned with the southwestern species and is based mostly on material in the collections of the University of California (Riverside and Berkeley), the University of Arizona, the University of Nebraska, and the American Museum of Natural History.

The pollen-collecting habits of *Heterosarus* have been poorly observed or not recorded for most of the species. Although many of them have been collected frequently at flowers of Compositae, the structure of the tibial

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- face; face finely and densely punctured above antennae, but much more sparsely below, with punctures of clypeus coarser; lower face shining and strongly convex from side to side; facial foveae not reaching level of antennal sockets; basal area of propodeum rather large and triangular.....
.....*pernitens* (Cockerell)
8. Mesonotum dull or opaque, with punctures extremely minute and dense.. 9
Mesonotum more or less dull, but with punctures more distinct, although generally very fine.....11
9. Facial foveae more or less linear, not distinctly widened at upper end; abdomen not or hardly punctured.....10
Facial foveae distinctly widened at upper end; disk of tergite 1 and raised area of tergites 2 and 3 closely punctured; apical depression of tergites minutely tessellate, dullish, that of tergite 2 more than one-third but less than one-half of median length of segment; mesopleura and mesonotum opaque.....*opacicollis*, new species
10. Facial foveae about four times longer than wide, not distinctly diverging from margin of eye above; abdomen moderately shining, very minutely tessellate and lineolate; apical depression of tergite 2 covering about two-fifths of segment in median line; mesonotum dull, with hardly distinguishable minute punctures.....*parvulus* (Friese)
Facial foveae long and linear, distinctly diverging above from margin of eye; abdomen distinctly tessellate on disk of tergite 1 and on apical depression of tergites; basal impression of tergites 2 and 3 lineolate-tessellate; raised area of tergite 2 very narrow, with apical depression and basal impression about equal in median line; mesonotum opaque.. *impunctiventris*, new species
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- basal area of propodeum triangular and finely rugulose.....
*stevensi* Crawford
16. First joint of flagellum less than twice as long as thick at apex; basal middle of propodeum finely rugulose; punctures of abdomen very minute but more or less distinct, and moderately dense on disk of tergite 1.....
*arizonicus*, new species
- Extremely similar in almost all characters, but first joint of flagellum about twice as long as thick at apex; abdomen less punctate and basal area more obscure.....*flavotinctus* (Cockerell)

MALES

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*opaculus* (Cockerell)
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8. Mesonotum comparatively shiny, with minute, distinct punctures, about one puncture width, or slightly more, apart; parameral lobes (gonostyli) of genitalia simple, with a long fringe on outer margin of apical part.....
*pauper* (Cresson)
 Mesonotum dull, with very minute dense punctures; venter with a small boss on each side of segments 2 and 3; parameral lobes armed with a large process at middle of outer margin, thence fringed to apex which is very acute and strongly hooked upward.....*flavotinctus* (Cockerell)

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Face marks white, lateral marks ending bluntly slightly more than halfway to level of antennae; parameral lobes angularly widened just before beginning of apical third and thence densely fringed on outer margin to apex*arizonicus*, new species
10. Mandibles except tips, labrum, and face marks yellow; lateral marks reaching halfway to level of antennae; black part of face below antennae with fine punctures about one to two puncture widths apart, punctures on parocular areas slightly coarser; fine punctures on disk of tergite 1 almose dense....
.....*stevensi* Crawford
Similar to *stevensi* but labrum black.....*parvus* (Cresson)
11. Mesonotum polished, sparsely punctured, anterior border of mesoscutum with short, erect, white hair; face pale yellow to level of antennae, but supraclypeal mark reaching slightly less high; abdomen shining, disk of tergite 1 with distinct fine punctures, and base of tergite 2 dull, impressed, and with short white hair*dawsoni*, new species
Mesonotum opaque, punctures extremely minute and dense; face below antennae bright yellow, except upper half or more of supraclypeal area black; scape of antennae beneath and tubercles yellow; metanotum white pubescent; abdomen dull, impunctate, apical depression of tergites more shiny.....*nanulus*, new species

***Pseudopanurgus nanulus*, new species**

The small size, dull sculpture, with punctures of mesonotum excessively minute and obscure, and the dense white band of hair on the metanotum are distinctive. In the male the scape of antennae, tubercles, and face below the antennae are bright yellow except for the upper half or more of the supraclypeal area.

FEMALE: Black, tubercles, small spot at base of front and middle tibiae pale yellow. Small joints of tarsi more brownish, tibial spurs pale yellowish. Mandibles rufotestaceous or rufous, darker at base and apex. Antennae blackish, flagellum brown beneath except at base. Eyes dark green. Tegulae testaceous or rufotestaceous, in some cases more yellowish on outer side. Wings dusky, nervures fuscous, stigma dark brown. Head somewhat broader than long, cheeks narrower than large eyes, inner orbits somewhat divergent above. Posterior ocelli occupying a little less than median third of space between eyes and a little closer to margin of vertex than their distance apart. Antennae inserted on middle of face. Sutures of subantennal plates obscure. Facial foveae linear, about one-half to two-thirds as long as scape of antennae. Process of labrum smooth, shining, broader than long, and truncate at apex. Proboscis short, galeae much shorter than stipites and shorter than maxillary palpi. Head and thorax very minutely sculptured and opaque. Face minutely and densely

punctured but punctures becoming coarser and well separated on shining anterior half of clypeus. Punctures of mesonotum extremely minute and dense. Pleura and propodeum microscopically tessellate and impunctate; basal area small, narrowly triangular, minutely roughened. Abdomen dull, minutely tessellate, impunctate, apical depression of tergites more shining and slightly brownish. Width of apical depression of tergite 2 subequal to one-third of median length of segment. Pubescence short and thin, most conspicuous and whitish on face, cheeks, pleura and lateral ridges of propodeum, and forming a compact feltlike band on metanotum. Hair of mesonotum extremely short but rather dense, and hardly visible except when viewed obliquely. Hair of abdomen sparse except for pale ochreous apical fimbria. Scopal hair of hind tibiae sparse, curved, simple, and hardly longer than greatest width of tibia. Length, 3.5–4 mm.; anterior wing, 2.8–3.1 mm.

MALE: Similar to female, but mandibles except red tips, labrum, and most of face below antennae yellow. Upper half or three-fourths of supraclypeal area black, yellow extending obliquely upward and outward from upper corners of supraclypeal mark to anterior end of foveae on orbits. Scape of antennae broadly beneath, tubercles, broad apex of femora, tibiae and tarsi and apex of hind coxae, yellow; incomplete annulus on tibiae tinged with fulvous or even becoming brownish or fuscous; one or more apical joints of middle and hind tarsi more or less brown. Antennae otherwise blackish above, pedicel entirely dark, flagellum ferruginous brown beneath except at base. Eyes pale green. Tegulae and wings like those of female, except tegulae in some cases yellow at base. Head rather large, broader than thorax. Cheeks less than half as wide as the large, broadly oval eyes and broadest opposite upper half of eyes. Antennae inserted distinctly above middle of face. Facial foveae linear, about three times longer than wide. Subantennal plates not defined. Sculpture and pubescence much like those in female, except face below antennae dull and impunctate and abdomen without apical fimbria. Length, 3 mm.; anterior wing, about 2.6 mm.

TYPE MATERIAL: Holotype, female, and allotype, 14 miles southwest of Apache, Cochise County, Arizona, on *Euphorbia*, August 7, 1961 (J. G. Rozen). Paratypes: Arizona: Cochise County: Twenty-four females, five males, taken with the types (Rozen); one female, 2 miles northeast of Portal, September 13, 1961 (Rozen); one female, 3 miles north of Douglas, August 8, 1961 (Rozen); one female, 3 miles southwest of Willcox, on *Wislizenia refracta*, August 3, 1961 (Rozen); one female, Portal, on *Euphorbia*, August 12, 1958 (P. D. Hurd, Jr.); one female, 17 miles east of Douglas, on *Euphorbia*, August 8, 1958 (Hurd); one male, Portal, on

Euphorbia, July 23–31, 1959 (K. V. Krombein). Pima County: One female, Continental, August 2–4, 1959 (Krombein). Pinal County: One female, Picacho Pass, on *Euphorbia*, August 9, 1940 (Timberlake). New Mexico: Hidalgo County: One female, one male, 11 miles north of Rodeo, on *Euphorbia*, August 2, 1961 (Rozen); one male, Cienaga Lake, near Rodeo, August 6, 1961 (M. Cazier and Rozen); one female, Granite Pass, on *Euphorbia*, August 22, 1958 (Hurd). Mexico: Chihuahua: One female, one male, Concho, July 22, 1938 (L. J. Lipovsky). Sonora: One female, Hermosillo, September 9, 1938 (R. H. Crandall); one male, 25 miles south of Navajoa, on *Physalis*, September 21, 1957 (Timberlake). Baja California: One female, one male, Concepcion Bay, October 25, 1941 (E. G. Ross and G. E. Bohart).

The holotype and allotype are in collection of the American Museum of Natural History, New York. The paratypes are in the collections of the American Museum of Natural History, the University of California, Riverside and Berkeley, University of Arizona, and United States National Museum, Smithsonian Institution.

Pseudopanurgus bakeri (Cockerell)

Calliopsis bakeri COCKERELL, 1896, p. 221, male.

Panurginus bakeri COCKERELL, 1901a, p. 163; 1910, p. 245, female; 1912, p. 446; 1916, p. 279; 1918, p. 170; 1919, p. 291; 1922, p. 6; 1936, p. 3.

Panurginus bakeri VIERECK, 1903, p. 50.

Pseudopanurgus bakeri MICHENER, 1951, p. 1099.

This species has been recorded from numerous localities in Colorado, New Mexico, and Arizona, and from Meadow Valley in northern Mexico. The type locality is Chamber's Lake, Larimer County, Colorado. It has been recorded from the flowers of *Potentilla fruticosa*, *P. filipes*, *Phacelia leucophylla*, and (?) *Pseudocymopterus montanus*.

MATERIAL EXAMINED: Colorado: Boulder County: One female, Ward; one female, Ward, 9300 feet, August 8–10, 1919 (F. Lutz); one female, one male, Eldora, on *Phacelia*, August 18–19 (Cockerell); one female, Nederland, on *Frasera speciosa*, July 1, 1939 (Timberlake); one female, Beaver Reservoir, on *Sedum stenopetalum*, July 1, 1939 (Timberlake). Teller County: One male, Florissant, on *Linum lewisii*, July 21, 1907 (Rohwer). Lake County: Tennessee Pass, 10,300 feet, July 30 to August 2, 1919 (Lutz). Park County: One male, Tarryall, July 17, 1956. Costillo County: One female, August 11 (R. W. Dawson); one female, one male, Ute Creek, 9000 feet, July 6 (Dawson); one male, Ute Creek, 9000 feet, July 19 (L. Bruner); three females, two males, Ute Creek 9000 feet, on *Calochortus gunnisonii*, July 30 (Dawson). Arizona: Pima County: One

female, two males, Bear Wallow, Santa Catalina Mountains, about 8000 feet, July 12–17, 1916 (Lutz). Cochise County: One female, Huachuca Mountains, 7500 feet, on *Monarda austromontana*, August 10, 1940 (Timberlake); one female, Rustler Park, Chiricahua Mountains, on *Helenium hoopesii*, August 6, 1958 (R. M. Bohart); two females, Rustler Park, on *Monarda austromontana*, August 26 and 27, 1958 (Hurd and Linsley); one female, Rustler Park, on *Solidago*, August 26, 1958 (Linsley). Mexico: Chihuahua: Two males, Madera Canyon, 7200 feet, July 6, 1947 (W. Gertsch, D. Rockefeller Expedition).

Pseudopanurgus neomexicanus (Cockerell)

Panurginus neomexicanus COCKERELL, 1898a, p. 451, male; 1912, p. 446; 1916, p. 278.

Panurginus nigrinus VIERECK, 1903, p. 50.

This species closely resembles *bakeri* in both sexes, but has the abdomen very shiny, almost impunctate, with the apical depression of the tergites extremely broad and polished.

FEMALE: Black, antennae and legs dark, tibial spurs pale yellow, flagellum slightly brownish beneath. Tegulae brownish piceous. Wings dusky hyaline, nervures and stigma brownish fuscous. Proboscis dark brown. Head slightly broader than long, but less broad than thorax. Lateral ocelli somewhat more distant from occipital margin than their distance apart. Proboscis short, palpi much exceeding glossa; joint 1 of labial palpi distinctly longer than joints 2 to 4 combined. Process of labrum as long as wide, sides slightly converging to rounded apex. First recurrent nervure received closer to middle of second submarginal cell than to base but somewhat closer to base than length of first intercubitus. Head and thorax moderately dullish and for the most part densely punctured. Punctures of face moderately fine, becoming more separated and coarser below level of antennae and much coarser on clypeus. Mesoscutum slightly shining, finely and densely punctured, with a few coarser punctures intermixed. Mesopleura shining, with punctures coarse, like those of clypeus but a little closer, and lacking in dull posterior area above middle coxae. Posterior face and base of propodeum finely rugose, basal area ill defined. Abdomen shining, almost impunctate, but a few minute setiferous punctures close to lateral margins of segments, most evident on tergite 2. Apical depression of tergites polished and extremely broad, that on tergite 2 covering more than half of surface. Pubescence whitish, rather short, thin on face, much denser on cheeks and mesopleura, and longer, erect and slightly tinged with brown on mesonotum. Hair of abdomen mostly confined to sides of segments and rather long and coarse; apical fimbria

fuscous. Scopa of hind tibiae thin and short, the hairs curved and simple. Spur of middle tibia almost as long as basitarsus, finely serrate, with about eight teeth, oblique, spinelike and well separated, but becoming very small and close together toward base. Length, about 5.5 mm.; anterior wing, 4.8 mm.

MALE: Similar to female in color, but clypeus yellowish white and a yellowish streak or mark more or less developed on anterior side of front tibiae. In New Mexico material a small lateral mark present on each side of clypeus. Head as broad as long, inner orbits strongly converging below. Lateral ocelli nearly twice as far from occipital margin as their distance apart. Antennae reaching base of scutellum; middle joints of flagellum slightly longer than thick; joint 2 of flagellum broader than long and shorter than joint 1. Sculpture resembling that of female. Punctures of face below antennae hardly coarser than those of frons but more separated. Mesoscutum more strongly punctured than that of female, with a few coarser punctures intermixed, the punctures close, except a small area just inside parapsidal lines may be impunctate. Mesopleura coarsely and more or less remotely punctured. Posterior face of propodeum and basal area like those of female. Abdomen shining, tergite 1 almost impunctate. Base of tergites 2 to 4 rather broadly impressed, finely and transversely shagreened and dull; basal impression at least on tergites 2 and 3 as broad as elevated part. Apical depression of tergites very broad, polished, and broader in median line than elevated part on tergites 2 to 5. Spur of middle tibiae about three-fifths as long as basitarsus and microscopically serrate, with fine, close-set setae from base to apex. Lobes of sternite 7 narrow, apically slightly divergent, taken together lyre-shaped, with apical third curled upward. Subgenital plate of sternite 8 slender, parallel-sided, about twice as long as thick, quadrate in cross section, and apex truncate. Parameral lobes of genitalia (gonostyli) thick, the inner dorsal margin to apical fourth produced into an arcuate flange, apex beyond flange widened and obliquely truncate; truncation as seen from behind convexly arcuate and densely fringed with short hair; fringe continued basad on under margin of lobe. Sagittae of genitalia united into a slender, sharply acuminate rod, somewhat shorter than parameral lobes; lateral margins from middle to apex fringed with fine short hairs. Length, 5.5 mm.; anterior wing, 4.5 mm.

MATERIAL EXAMINED: Arizona: Graham County: Three females, one male, Graham Mountains, 9000 feet, on "pagoda," *Erigeron*, and thistle, August 16, 1953 (G. D. Butler); one female, Hospital Flat, Graham Mountains, August 10, 1955 (Butler); two females, two males, Graham Mountains, 7000 feet, August 9, 1955 (Butler and Noon); one male, 8000

feet, August 9 (Butler and Noon); two males, 9000 feet, August 9 (Butler and Noon). Cochise County: One female, Chiricahua, August 8, 1955 (Butler and Noon); one female, 4 miles west of Paradise, Chiricahua Mountains, 6000–7000 feet, September 9, 1950 (W. Gertsch and M. Cazier); one female, 4 miles west of Southwest Research Station, Chiricahua Mountains, September 15, 1955 (G. E. Bohart); 29 females, seven males, Rustler Park, Chiricahua Mountains, 1958 [two females, August 1 (Hurd); one female, August 2 (Hurd); seven females, three males, August 3, on *Monarda austromontana*, except one pair (Hurd); six females, two males, on *Cacalia decomposita*, August 6 (Hurd); one female, on *Helenium hoopesii*, August 6 (Hurd); two females, two males, on *Helenium*, August 6 (R. M. Bohart); three females, on *Solidago*, August 26 (Hurd); three females, on *Monarda*, August 26 (Hurd); four females, two of these on *Monarda*, August 27 (Linsley)]; four females, Rustler Park, September 5, 1962 (Rozen, Statham, and Hessel); one male, 5 miles northwest of Southwest Research Station, on goldenrod, July 30, 1961 (J. C. Bequaert). Pima County: One female, one male, Mt. Lemmon Lodge, Santa Catalina Mountains, August 15, 1954 (R. M. Bohart); one male, Santa Catalina Mountains, Hitchcock Highway, Mile 19, on *Penstemon*, August 14, 1954 (G. E. Bohart and Butler); one male, Mile 26, August 14 (Bohart and Butler); one male, Mile 19, on *Ceanothus*, July 18, 1955 (Butler and Werner); three males, Mile 22, July 18, 1955 (Butler and Werner); one female, Mile 22, August 22, 1955 (Butler and Werner); one male, Mile 22, August 12, 1958 (C. W. O'Brien); one male, Mile 24, July 21, 1957 (F. Werner); four males, Mile 26, on *Geranium*, August 14, 1954 (Bohart and Butler); one female, Mile 26, August 22, 1955 (Butler and Werner); one female, Mile 27, July 12, 1958 (C. W. O'Brien); one male, Mt. Wrightson Trail, 0–2 miles, Santa Rita Mountains, September 6, 1961 (Bequaert and Noller). New Mexico: San Miguel County: One female, Sapello, July 25, 1950 (J. G. Rozen); one male, Beulah, August 18 (W. Porter).

***Pseudopanurgus dawsoni*, new species**

Pseudopanurgus dawsoni is known from only two collections, having been taken first at Ute Creek, Colorado, many years ago by R. W. Dawson. Recently it has been rediscovered at Llares, New Mexico, at flowers of an unidentified cruciferous plant. This species is distinguished from other species of *Heterosarus* by having the mesonotum shining and sparsely punctured and the face of the male yellowish white below the level of the antennae.

FEMALES: Black. Mandibles red at apex. Flagellum broadly brown

beneath except on three basal segments. Tibial spurs and small spot at base of front tibiae yellowish white. Tegulae testaceous brown, base fuscous. Wings dusky hyaline, nervures dark brown, subcosta and stigma nearly black. Head slightly broader than long, rather strongly convex across clypeus. Cheeks about one-half as wide as eyes, broadest just below level of summit of eyes. Lateral ocelli about twice their diameter apart and approximately the same distance from occipital margin. Antennae inserted distinctly above middle of face and reaching tegulae. Facial foveae close to margin of eyes, moderately widened above, and reaching from level of middle of antennal sockets about four-fifths of distance to level of anterior ocellus. Process of labrum nearly twice broader than long and broadly rounded at apex. Proboscis short, galeae reaching about halfway to base of stipites. First recurrent nervure received by second submarginal cell about one-third of length of cell from base, and the second close to apex. Spur of middle tibiae slightly curved and armed with four small, spinelike teeth on apical half. Head and thorax shining. Punctures of frons rather fine and one puncture width apart, those of vertex more separated, and punctures of face below antennae widely spaced, shallow, becoming slightly coarser on clypeus. Mesonotum smooth, appearing polished in some aspects, anterior border minutely tessellate; punctures very fine, about two to four puncture widths apart on anterior middle, otherwise more separated, leaving nearly impunctate space just inside parapsidal lines; scutellum with sparse, much coarser punctures and metanotum densely punctured. Pleura and propodeum virtually impunctate, basal area broadened in middle and finely rugulose. Abdomen shining, elevated part of tergite 2 with sparse, extremely minute punctures, basal impression shallow, minutely lineolate and moderately dull. Tergite 1 presumably punctured on disk like tergite 2 but concealed by wings in type. Apical depression of tergites smooth, shining, and covering in median line about one-third of disk on tergites 2 and 3. Pubescence white, thin and rather short, densest on margin of occiput, lateral margins of scutellum and disk of metanotum. Collar of pronotum and tubercles with very short, dense, feltlike, white hair. Hair of mesonotum extremely short, sparse, and fine. Apical fimbria of abdomen pale brown. Venter with rather long erect hair, mostly across apices of segments. Scopal hair of hind tibiae thin, straight, and simple, the longest hairs subequal to greatest width of tibia. Length, about 4.5 mm.; anterior wing, 4 mm.

MALE: Black. Mandibles except red tips, labrum, face below level of antennae, knees, base of tibiae, anterior side of front tibiae, apex of middle tibiae, front and middle tarsi except apical joint or two, and hind basitarsi yellowish white or pale yellow. Yellow of subantennal areas touching

margin of antennal sockets, but yellow of supraclypeal area ending a little below that level; yellow at sides of face ending subacutely slightly above level of antennae. Antennae black, flagellum very broadly dark brownish beneath. Tegulae and wings like those of female. Head somewhat broader than long. Eyes large and broad, diverging above middle and subparallel below. Cheeks about one-third as wide as eyes. Lateral ocelli a little less than their own diameter from margin of occiput and about twice their diameter apart. Face below level of antennae as long as wide and evenly convex. Subantennal plates fused with parocular areas. Process of labrum about twice as wide as long. Antennae inserted well above middle of face and reaching apex of scutellum. Head and thorax shining. Punctures of frons moderately fine, rather shallow and close; those of vertex more separated, and punctures of face below antennae very shallow and well separated. Punctures of clypeus not coarser than those elsewhere on face. Anterior border of mesoscutum finely tessellate and dullish, but most of scutum and scutellum nearly polished; punctures of scutum very fine and sparse, becoming widely spaced on each side just inside parapsidal lines. Mesopleura with rather coarse close punctures. Propodeum dull, flanks minutely shagreened, posterior face and lateral ridges densely and obscurely punctured; base with narrow arcuate and finely plicatulate impression, widened and extending triangularly backward in middle; dorsal side of propodeum otherwise minutely tessellate and impunctate. Abdomen shining; disk of tergite 1 and elevated area of tergites 2 and 3 minutely and closely punctured, but with a broad impunctate space before apical depression on tergite 1, and successively narrower impunctate space on tergites 2 and 3; basal impression of tergites 2 and 3 rather wide, densely lineolate and dull; apical depression of tergites rather narrow and smooth, that on tergite 2 covering not more than one-third of disk in median line. Pubescence whitish, moderately long and erect, densest on cheeks and occiput of head and moderately thin on face; hair of mesonotum thin, suberect and about one-half as long as that elsewhere. Length, about 4.5–5.5 mm.; anterior wing, 3.5–3.9 mm.

TYPE MATERIAL: Holotype, female, and allotype, Llares, New Mexico, on cruciferous flower, August 2, 1962 (D. C. Heninger). Paratypes: New Mexico: Six males, Llares, taken with types (Heninger). Colorado: Costilla County: Three males, Ute Creek, 9000 feet, August 7 (R. W. Dawson); one male, Ute Creek, sage flat, August 9 (Dawson); one female, one male, Fort Garland, August 11 (Dawson). The types are in the collection of the University of California, Riverside; the paratypes are in the collections of the University of Nebraska and of G. E. Bohart.

***Pseudopanurgus subopacus*, new species**

This species, *Pseudopanurgus parvulus* (Fries), and *P. impunctiventris*, new species, are the only members of this group known in the female sex from Mexico and Central America. *Pseudopanurgus subopacus* is distinguishable from *parvulus* and *impunctiventris* by the distinctly punctured mesopleura and by the comparatively long head. In the shape of the head it resembles *P. pernitens* (Cockerell).

FEMALE: Black, legs tinged with reddish, tibial spurs pale testaceous. Antennae dark. Tegulae piceous, more reddish on disk. Wings subfuliginous, nervures and stigma brownish fuscous, subcosta black. Head slightly longer than wide. Cheeks widest just below level of posterior end of eye and equal to width of eye at beginning of posterior fourth. Face below antennae moderately convex and well produced beyond eyes; space from end of eye to apical corners of clypeus nearly one-third as long as eye. Antennae inserted near middle of face and reaching middle of scutum. Facial foveae moderately widened above and reaching from level of antennal sockets nearly to level of anterior ocellus. Process of labrum about as long as basal width and narrowed about one-third to truncate apex. Proboscis moderately long, galeae reaching halfway to base of stipites; labial palpi very long and reaching beyond base of stipites in retracted position of proboscis. First recurrent nervure received by second submarginal cell one-fourth of length of cell from base and second close to apex. Spur of middle tibiae as long as basitarsus and finely serrate, with about 10 short teeth. Spurs of hind tibiae short and rather strongly curved at apex. Head and thorax in general rather dull. Punctures of face fine, crowded on frons, slightly more separated on dullish vertex and on the more shining lower face. Punctures of supraclypeal area about one puncture width apart, and those of clypeus much coarser on apical third, with those on strongly reflexed sides replaced by fine, close ridges. Mesonotum minutely tessellate, rather dull, the punctures mostly about one puncture width apart, minute but distinct. Mesopleura more shining than notum, finely tessellate, with distinct punctures, somewhat finer than those of face, one to several puncture widths apart and lacking toward posterior border. Propodeum dullish, minutely tessellate on flanks, minutely rugulose and obscurely punctate on posterior face; basal groove shallow, widened medially and produced as a shallow channel, the middle part with weak, fine, longitudinal rugae. Abdomen moderately shiny and minutely punctured; punctures on disk of tergite 1 about two or three puncture widths apart, but lacking in a narrow median space and in a moderately narrow space before the apical depression; punctures of

tergites 2 and 3 denser but not quite covering disk to margin of apical depression; punctures on more apical segments becoming progressively fainter and sparser; base of tergites 2 and 3 narrowly impressed, lineolate, and dull; apical depression of tergites distinctly tessellate and moderately wide, those on tergites 2 and 3 covering somewhat more than one-third of disk in median line. Pubescence whitish, rather short and appressed on face, cheeks, and under parts of thorax. Collar of pronotum and tubercles with very short, feltlike, white hairs, hair of mesonotum rather dense but extremely short and fine; a bristle-like hair on each side of scutellum. Lateral ridges of propodeum with short, erect, white hair. Abdomen thinly pubescent except for rather dense brownish apical fimbria. Scopa of hind tibiae sparse, the hairs simple and curved. Length, about 7 mm.; anterior wing, 5.4 mm.

TYPE MATERIAL: Holotype, female, Cuaro, Michoacan, Mexico, August 31, 1958 (L. J. Lipovsky), in the collection of the University of California, Riverside.

Pseudopanurgus pernitens (Cockerell)

Panurginus pernitens COCKERELL, 1922, p. 4.

This species is distinguished from *subopacus* by having the face below the antennae polished, with well-separated punctures, those of the supra-clypeal area minute and those of the clypeus rather coarse, by the longer antennae, and by the finely rugose basal area of the propodeum.

FEMALE: Black, base of tergites and of sternites when exposed and sternite 6 entirely reddish brown. Flagellum broadly brown beneath. Tibial spurs pale testaceous and a small yellowish spot at base of front tibiae. Tegulae brownish testaceous, piceous at base. Wings subhyaline, faintly tinged with fulvous, nervures and stigma brown. Mandibles red, more piceous at base. Head slightly longer than wide. Cheeks hardly more than half as wide as eyes and widest behind summit of eyes. Antennae inserted slightly above middle of face, scape reaching anterior ocellus and flagellum to posterior margin of mesoscutum. Facial foveae like those of *subopacus* but extending from just above level of antennal sockets to level of anterior ocellus. Process of labrum about as long as wide, with lateral margins ridged and converging to ogival apex. Proboscis short, galeae reaching not more than halfway to base of stipites. First recurrent nervure received by second submarginal cell about one-third of length of cell from base and second close to apex. Spur of middle tibiae as long as basitarsus and armed with six fine, acute teeth. Spurs of hind tibiae only slightly curved. Head rather shiny, punctures of frons and vertex fine and

mostly about one puncture width, or less, apart. Face below antennae polished, punctures well separated, and except those of supraclypeal area much coarser than those of frons. Mesonotum dullish, punctures minute and mostly about one puncture width apart. Mesopleura strongly tessellate and dull, sparsely punctured, the punctures about as coarse as those of parocular areas of face. Propodeum minutely tessellate, rather dull, and obscurely finely punctured on posterior face; basal area broadly triangular and finely rugulose, the broad rim between it and posterior face tessellate and impunctate. Abdomen rather shiny, minutely punctate, punctured area of basal tergites almost reaching margin of apical depression; punctures on disk of tergite 1 mostly two or three puncture widths apart, and those on tergites 2 and 3 closer; apical depression of tergites strongly tessellate, those of tergites 2 and 3 covering one-third of disk in median line; basal impression of tergites 2 and 3 very narrow and weakly lineolate. Pubescence white, short and thin on cheeks and under parts of thorax, denser on lateral ridges of propodeum and short and rather dense on metanotum. Face with short, thin, appressed hair, becoming much longer on clypeus. Mesonotum with extremely short, fine, appressed hair, and a bristle-like hair on each side of scutellum. Abdomen with thin white hair, more abundant on lateral margin of apical segments, the apical fimbria golden brown. Scopal hair of hind tibiae moderately long and simple. Length, about 6 mm.; anterior wing, 4.2 mm.

The type female was collected on the southeast side of Kits Peak, Baboquivari Mountains, Arizona, early in August, 1916.

MATERIAL EXAMINED: One female, Atascosa Mountain, Santa Cruz County, Arizona, August 16, 1950 (R. S. Beal).

***Pseudopanurgus opacicollis*, new species**

Pseudopanurgus opacicollis is distinguished from similar species by its opaque notum, the much broadened facial foveae, and by the minutely punctured abdomen.

FEMALE: Black, flagellum narrowly brownish beneath. Mandibles dark reddish, piceous at extreme base. Small joints of tarsi brown, tibial spurs pale testaceous. Sternite 6 and pygidium reddish brown, but the latter blackish at apex. Tegulae testaceous brown, darker at base. Wings dusky hyaline, nervures and stigma dark brown. Head a little broader than long, cheeks as wide as eyes. Lateral ocelli about their own diameter apart and nearly twice as far from margin of occiput, and distinctly but not greatly larger than anterior ocellus. Antennae inserted somewhat above middle of face and reaching slightly beyond middle of mesoscutum. Facial foveae

at upper end almost as wide as diameter of lateral ocelli and reaching from level of antennal sockets to level of anterior ocellus. Process of labrum broader than long and strongly narrowed to rounded apex. Proboscis short, galeae much shorter than stipites. First recurrent nervure received by second submarginal cell somewhat more than one-fourth of length of cell from base, and second close to apex. Spur of middle tibiae as long as basitarsus and serrate, with about four widely spaced, fine, acute teeth. Pygidial plate a little longer than wide, much narrowed to rounded apex, lateral margins of disk narrowly depressed and median area slightly convex on apical half. Frons and vertex dull, very finely and densely punctured; face below antennae more shining and much more coarsely punctured, the punctures mostly a puncture width apart or farther apart on anterior part of clypeus. Punctures on middle of face progressively finer from between antennal sockets, where very fine, to anterior half of clypeus, where very coarse. Mesonotum opaque, microscopically tessellate and very minutely and densely punctured. Mesopleura and metapleura minutely tessellate, opaque, and impunctate. Posterior face of propodeum subopaque, tessellate, and obscurely, minutely punctured, flanks more shining but tessellate and impunctate. Basal area triangular, finely rugulose, but not much impressed, with space between it and posterior face tessellate and impunctate. Abdomen dullish, tessellate, and minutely punctured. Punctures of disk of tergite 1 about one to two puncture widths apart but becoming sparse before apical depression; punctures of tergites 2 and 3 dense but not quite covering disk to apical depression. Basal impression of tergites 2 and 3 very narrow and weakly lineolate. Apical depression of tergites broad and strongly tessellate, those on tergites 2 and 3 covering about two-fifths of disk in median line. Face, cheeks, and under parts of thorax with short, appressed, or subappressed white pubescence, on face densest between antennal sockets and foveae on each side. Collar of pronotum and tubercles with very short, feltlike hair. Hair on lateral ridges of propodeum short and erect, and some very short coarse hair on metanotum. Pubescence of mesonotum extremely short and fine but rather dense. Scutellum with a bristle-like hair on each side and some rather long whitish hair scattered across apex. Apical fimbria of abdomen brown. Scopal hair of hind tibiae sparse and strongly curved. Length, 5.15 mm.; anterior wing, 4.7 mm.

TYPE MATERIAL: Holotype, female, Prescott, Yavapai County, Arizona, on *Eriogonum*, August 31, 1930 (Timberlake), in the collection of the University of California, Riverside.

***Pseudopanurgus impunctiventris*, new species**

The female of *impunctiventris* differs from that of *P. parvulus* (Fries) in having the mesonotum opaque, with excessively minute punctures, facial foveae longer and slender, and abdomen duller and impunctate. It is also similar to *P. opacellus* (Cockerell), known only in the male, so that without the same sex a comparison is less informative, but the recurrent nervures are not nearly equidistant from the base and apex of the second submarginal as in that species.

FEMALE: Black, mandibles red at apex, and tibial spurs pale testaceous yellow. Last six joints of flagellum brown beneath. Tegulae brown, darker at base. Wings dusky hyaline, nervures and stigma brown. Head as broad as long, no wider than thorax. Lateral ocelli their own diameter from margin of occiput, and about the same distance apart. Antennae inserted on middle of face; middle joints of flagellum as long as thick; joint 2 of flagellum broader than long, hardly more than half as long as joint 1. Facial foveae linear, diverging from orbits above, and about as long as distance between outer margins of lateral ocelli. Proboscis short, galeae not reaching middle of stipites. Spur of middle tibiae with three small, fine oblique teeth on apical half, and one or two more minute teeth basally. First recurrent nervure received by second submarginal cell slightly less than one-third of length of cell from base and the second close to apex. Head and thorax dull. Face above antennae finely, obscurely, and subrugosely punctured; punctures of cheeks shallower and less distinct. Punctures of supraclypeal area fine, deep, and well separated, those of parocular areas coarser. Punctures of clypeus very coarse on anterior half, and mostly not much more than half of a puncture width apart. Mesonotum opaque, apparently with excessively minute and dense punctures, which are too fine to be visible at ordinary magnification. Mesopleura and propodeum minutely tessellate and impunctate; basal area of propodeum finely wrinkled. Abdomen dullish, minutely tessellate and impunctate, base of tergite 2 feebly impressed but with a duller, more thimble-like tessellation, the elevated area very narrow medially but broadened toward sides, the apical depression covering more than one-third of disk in median line; apical depression of tergites weakly tessellate and more shining than other parts, and on tergites 3 and 4 covering half of segment in median line. Face, cheeks, pleura, and lateral ridges of propodeum with thin, erect, white hair; hair of mesonotum extremely fine, short and dense, but visible only when viewed obliquely. Hair of abdomen sparse, apical fimbria probably pale brownish (discolored in type). Scopal hair simple and hardly longer than width of tibia. Length, 5.25 mm.; anterior wing,

4.2 mm.

TYPE MATERIAL: Holotype, female, Santa Fé, Distrito Federal, Mexico, August 29, 1903 (W. L. Tower), in the collection of the American Museum of Natural History.

Pseudopanurgus parvulus (Friese)

Panurginus parvulus FRIESE, 1916, p. 322, female.

This species was described from females collected at San Mateo, Costa Rica (Burgdorf). I have one female which I found entangled between the legs of a much larger bee, collected at La Caja, 8 kilometers west of San José, Costa Rica (Heinr. Schmidt). As this specimen agrees closely with Friese's description, there can be no doubt of its identity with *parvulus*.

Pseudopanurgus opaculus (Cockerell)

Panurginus opaculus COCKERELL, 1922, p. 3, female.

The female of *opaculus* is distinguished from that of similar species by the broad and truncate process of the labrum. The male differs from that of *bakeri* and that of *butleri* in the finely sculptured propodeum.

FEMALE: Black, mandibles red, infuscated at base. Base of front tibiae testaceous yellow and tibial spurs pale testaceous. Tegulae pale testaceous brown at base. Wings dusky hyaline, nervures and stigma dark brown. Head somewhat broader than long; cheeks about two-thirds as wide as eyes. Antennae inserted on middle of face and reaching nearly to hind margin of mesoscutum. Lateral ocelli about one and one-half times their own diameter from margin of occiput and about twice their diameter apart. Facial foveae moderately widened above and reaching from level of antennal sockets nearly to level of anterior ocellus. Face below antennae evenly and rather strongly convex. Process of labrum nearly twice as broad as long and broadly truncate. Proboscis short, galeae about one-third as long as stipites. First recurrent nervure received by second submarginal cell slightly less than one-third of length of cell from base and second close to apex. Spur of middle tibiae as long as basitarsus and armed with four small teeth. Head dull, only anterior part of clypeus somewhat shiny. Punctures of frons and vertex fine and dense, those on face below antennae distinctly separated, rather fine on supraclypeal and subantennal area, slightly coarser on parocular areas and considerably coarser on clypeus. Thorax dull, minutely tessellate, pleura and propodeum impunctate; mesonotum minutely punctured, punctures distinct

and about one puncture width apart. Base of propodeum with a triangular, finely rugose area. Abdomen dullish, very minutely and densely punctured, the punctures not quite covering disk of tergites before apical depressions. Basal impression of tergites 2 and 3 narrow and lineolate-tessellate. Apical depressions of tergites moderately wide and tessellate, that on tergite 2 covering about one-third of disk in median line, and that on tergite 3 slightly broader. Hair of face, cheeks, and under parts of thorax sparse, short, and white, but collar of pronotum with dense, feltlike hair. Pubescence of mesonotum fine, appressed, but more whitish and apparent than in allied species; a bristle-like hair on lateral margins of scutellum and also a pair sublaterally at apex. Apical fimbria of abdomen brown. Scopal hair of hind tibiae sparse and only slightly curved. Length, 5 mm.; anterior wing, 4.5 mm.

MALE: Black, mandibles except red tips, process of labrum, and clypeus creamy white. Tubercles brownish. Legs dark, all knees, anterior side of front tibiae, narrow base and apex of middle tibiae, base of hind tibiae, and all tarsi pale yellow. Tegulae and wings like those of female. Head as broad as long, eyes strongly convergent below. Lateral ocelli closer together than distance to occipital margin. Facial foveae small, widened above, hardly as long as distance between lateral ocelli. Antennae inserted at middle of face, joints of flagellum, except second, distinctly longer than thick. Face above antennae finely and densely punctured, punctures becoming sparser and more indistinct in a broad dull area on each side of vertex between ocelli and eyes. Punctures of cheeks less distinct and more separated than those of frons. Face below antennae more shining, the punctures fine, mostly well separated and shallow. Mesonotum dull, minutely and densely punctured, the punctures more separated on scutellum. Pleura and propodeum minutely tessellate and dullish, but more shining on anterior half of mesopleura and with shallow separated punctures. Triangular area at base of propodeum minutely wrinkled. Abdomen shining, disk of tergite 1 and elevated part of tergites 2 and 3 minutely and closely punctured. Base of tergites 2 to 4 moderately impressed, transversely lineolate, and dull. Apical depression of tergites moderately wide, smooth and shining, that on tergite 2 subequal in median line to the elevated part and basal impression. Pubescence whitish, of the usual density, that on mesonotum short, appressed, but more apparent than in allied species. Seventh and eighth ventral plates not seen. Genitalia much like those of *illinoiensis*; parameral lobes (gonostyli) with parallel sides for slightly more than two-thirds of length, then bluntly angled on outer margin, bent inward and tapering to acute apex, with thin fringe of hair on outer side; sagittae very slender, the rods separated in apical third but

very close together, the fused part constricted before the base, the lateral margins thinly fringed with short, very fine hair. Form of insect very slender. Length, 4 mm.; anterior wing, 3.4 mm.

MATERIAL EXAMINED: One female (cotype), Mud Springs, Santa Catalina Mountains, about 6500 feet, Pima County, Arizona, August 19, 1916, and one male, same data, July 17–20 (Lutz). The holotype and the male are in the collection of the American Museum of Natural History.

Pseudopanurgus flavotinctus (Cockerell)

Panurginus pauper var. *flavotinctus* COCKERELL, 1898b, p. 51, male; 1899, p. 128, female; 1901b, p. 128.

Panurginus flavotinctus COCKERELL, 1916, p. 279.

This species was briefly described by Cockerell in the male from the Organ Mountains, New Mexico, and in the female from Santa Fe. The male as determined by Cockerell from the Organ Mountains is very distinctive in the characters of the genital armature. The parameral lobes (gonostyli) have a large process projecting outward at the middle of the outer margin, a character in which *flavotinctus* differs from all other species of *Pseudopanurgus* that I have seen. A small boss on each side of ventral segments 2 and 3 is also very distinctive. The identity of the female is problematical, as it may be nearly identical with that of one or two other species. The following description is based on specimens taken with a male at the Southwest Research Station.

MALE: Black, mandibles except red apices, process of labrum, clypeus and small lateral marks, not going above level of summit of clypeus, yellowish white. Black of face making a small angular projection between lateral marks and clypeus. Tubercles brown, in some cases more testaceous at apex. Legs dark, all knees, anterior side of front tibiae, base and apex of middle tibiae, basal plate of hind tibiae, and all tarsi pale yellow or yellowish white. Joints 3 to 10 or 11 of flagellum ferruginous brown beneath. Tegulae testaceous, darker at base. Wings dusky, nervures and stigma brownish fuscous. Head somewhat broader than long, inner orbits strongly convergent below. Cheeks more than half as broad as large eyes. Lateral ocelli somewhat more distant from occipital margin than their distance apart. Facial foveae about three times longer than wide, slightly oblique to margin of eyes and hardly longer than space between lateral ocelli. Antennae inserted on middle of face, slender, middle joints of flagellum not much longer than thick, joints 2 and 3 together slightly longer than joint 1. Process of labrum nearly twice as broad as long and somewhat narrowed to truncate apex. First recurrent nervure received by second submarginal cell about one-fourth of length of cell

from base and second close to apex. Face above antennae and thorax microscopically tessellate and dullish. Punctures of face above antennae fine and dense, becoming sparse on each side of vertex; those of supra-clypeal area and subantennal plates fine and well separated, and those of clypeus and parocular areas somewhat coarser and more separated. Punctures of mesonotum minute, but distinct and dense. Mesopleura slightly shiny, with indistinct shallow punctures on anterior parts. Basal area of propodeum triangular, minutely rugose, with wrinkles mostly longitudinal. Abdomen dullish, with minute, moderately close punctures on disk of tergite 1, not reaching to apical depression. Basal impression of tergites 2 to 4 minutely, transversely tessellate, that on tergite 2 covering half of disk. Apical depression of tergites narrow and indistinctly tessellate, that on tergite 2 as wide in median line as elevated area, which on following segments become successively broader, more shining, and impunctate. Lobes of seventh ventral segment longer than wide, broadly rounded on outer margin, apex rounded, with about four short setae. Eighth ventral plate recurved in respect to base, slightly widening to truncate apex, with slender median process. In Arizona specimens, median process broader, bluntly rounded at apex, with corners of truncation becoming acute, so that apex of lobe becomes more or less distinctly tridentate or trilobate. Genital armature more robust than usual; parameral lobes (gonostyli) thick, basal half with parallel carinate margins enclosing a flat surface about twice as long as wide as seen from above. Just before middle of lobe a heavy process protruding at right angle with shank and about as long as width of shank; this process protruding downward, arcuately impressed on both sides but much widened at apex, which is concavely arcuate as seen from beneath. Apical half of lobes almost abruptly and thinly compressed, inclined inward and ending in a sharp dorsal uncus. Outer margin of apical half of lobes from apex of lateral process to uncus with dense fringe of long fulvous hair, and a small tuft of hair on ventral margin near uncus. Sagittae with explanate arcuate margins, converging on apical half to very acute apex. Length, 4.75–5 mm.; anterior wing, 3.5–3.9 mm.

FEMALE: Black, mandibles red, except basal third infuscated. Spot at base of front tibiae yellow. Joints 4 to 10 of flagellum ferruginous brown beneath. Apical depression of tergites 2 to 4 and extreme base of tergites 3 to 5 slightly brownish. Tegulae testaceous, brown at base. Wings dusky hyaline, nervures and stigma brownish fuscous. Tarsal spurs pale testaceous. Head as broad as long, inner orbits of eyes slightly diverging above. Cheeks about three-fourths as wide as eyes. Lateral ocelli about their own diameter from occipital margin and nearly twice as far apart.

Facial foveae acute below, ovally widened above, and nearly as long as first two joints of flagellum combined. Antennae inserted slightly above middle of face and reaching middle of scutellum. Middle joints of flagellum as long as wide, and joint 1 about twice as long as apical width and nearly equal to joints 2 and 3 together. Process of labrum broader than long and rounded at apex. Proboscis short, galeae nearly half as long as stipites. First recurrent nervure received by second submarginal cell more than one-third of length of cell from base and second close to apex. Spur of middle tibiae as long as basitarsus and armed with four small, acute teeth. Head and thorax moderately dull. Frons and vertex finely and densely punctured; punctures on upper part of cheeks progressively sparser and more indistinct below; anterior part of cheeks and under surface of head minutely tessellate. Face below antennae shining, with strong, well-separated punctures, coarsest on clypeus, more widely spaced on parocular and supraclypeal areas and finest and closest on subantennal plates. Mesonotum rather dull, minutely and densely punctured, the punctures about one puncture width apart, and becoming slightly larger on posterior half of scutellum. Pleura and propodeum minutely tessellate, dull, and impunctate; basal border of propodeum with short, weak wrinkles, the basal area poorly defined. Abdomen rather dull, minutely tessellate, base of tergites 2 and 3 weakly impressed with minute transverse lineolation; sides of disk of tergite 1 and sides of elevated part of tergite 2 minutely and indistinctly punctured; apical depression of tergites moderately wide, slightly more coarsely tessellate than other parts, and that on tergite 2 covering about two-fifths of disk in median line. Hair of head and thorax short and white, most abundant on cheeks, under parts of thorax and lateral ridges of propodeum and thin on face; hair on collar of pronotum and margins of tubercles dense and feltlike, and that on mesonotum extremely short. Apical fimbria of abdomen brown. Scopal hair of hind tibia moderately curved, the average length only slightly more than greatest width of tibia. Length, about 5.5–5.8 mm.; anterior wing, 4.3–4.5 mm.

MATERIAL EXAMINED: New Mexico: Dona Ana County: Two males, Dripping Spring, Organ Mountains, August 10 (Townsend); one male, Dripping Spring, on *Bigelovia* (Cockerell). Santa Fe County: One female, Edgewood, September 11, 1957 (J. G. Rozen). Arizona: Cochise County: One male, seven females, Southwest Research Station, 5 miles west of Portal, 5400 feet, August 21, 1962 (M. Statham); one female, same locality, on *Sphaeralcea*, August 26, 1958 (E. G. Linsley); two females, same locality, September 1, 1958 (J. T. Bialac). Pima County: One male, Mt. Lemmon Lodge, Santa Catalina Mountains, August 15, 1954 (R. M.

Bohart); one male, Hitchcock Highway, Mile 11, on *Sphaeralcea*, August 14, 1954 (G. E. Bohart and G. Butler).

One female, Organ Mountains, New Mexico (Townsend), determined by Cockerell as *flavotinctus*, differs from Arizona females as follows: Smaller, first joint of flagellum less than twice as long as thick at apex; facial foveae shorter and not much widened above, cheeks distinctly punctured almost to anterior end of eyes, mesonotum more shining, but with punctures equally fine and dense, broad area on middle of base of propodeum minutely rugulose, tergites 1 and 2 very minutely and closely punctured, punctured area extending across middle of disk on both segments, spur of middle tibiae unarmed. Length, about 4 mm.; anterior wing, 3.5 mm.

Another female, Santa Fe, New Mexico, August (Cockerell), determined and recorded by Cockerell as the female of *flavotinctus*, agrees with the Townsend specimen in many ways, but is somewhat larger, with wings comparatively clear, with pale ferruginous nervures and stigma. Length, 4.8 mm.; anterior wing, 4.3 mm.

There seems little likelihood that either female belongs with *flavotinctus*. Both specimens have body and legs more or less tinged with dark ferruginous, possibly owing to fading.

***Pseudopanurgus arizonicus*, new species**

Closely allied and similar to *flavotinctus*, but genital armature of male comparatively simple, without a large lateral process on parameral lobes.

MALE: Black, mandibles except red apical half, labrum, clypeus, and lateral marks creamy white. Anterior margin of clypeus testaceous. Lateral marks subtriangular and almost reaching level of antennae. Tubercles, all knees, base of front tibiae and streak on anterior side, base and apex of middle tibiae, base of hind tibiae and small spot at apex, and all tarsi pale yellow. Apical joint or two of middle and hind tarsi pale brown. Joints 2 to 8 of flagellum brownish beneath. Tegulae pale testaceous, brown at base. Wings dusky hyaline, nervures and stigma fuscous, subcosta black. Head as broad as long, inner orbits slightly diverging above. Cheeks about three-fourths as wide as eyes and widest opposite upper end of eyes. Lateral ocelli about twice as far from occipital margin as their distance apart. Antennae inserted on middle of face, slightly clavate and reaching scutellum; joints of flagellum mostly slightly larger than thick. Facial foveae moderately widened above and a little longer than space between lateral ocelli. Proboscis short, galeae not reaching middle of stipites. First recurrent nervure received by second submarginal

cell one-fourth (type) to one-third of length of cell from base and second close to apex. Head and thorax mostly dull. Face above antennae densely and finely punctured, but shining below antennae, with punctures nearly uniformly well separated. Mesonotum dull, minutely and densely punctured. Anterior part of mesopleura shining, obscurely punctured, remainder of sides of thorax and propodeum very minutely tessellate and dull. Basal area of propodeum poorly defined, but broader in middle and with fine longitudinal wrinkles. Abdomen dullish, minutely and obscurely punctured, punctures close and extending across middle of disk on tergites 1 and 2; basal impression of tergites 2 to 4 rather strong but narrow, very minutely lineolate and no duller than other parts; apical depression of tergites minutely tessellate and moderately wide, that on tergite 2 covering about one-third of disk in median line. Pubescence white and short, most abundant on cheeks and under parts of thorax, very thin on face. Hair of mesonotum extremely short, but whitish and more apparent than usual. Lobes of seventh ventral plate of usual shape, rounded on outer margin, blunt at apex, with little tuft of short hair. Eighth ventral plate nearly four times longer than wide, almost parallel-sided but curled, truncate at apex, with short dense fringe of hair. Parameral lobes (gonostyli) of genitalia thick at base, appearing parallel-sided, with raised margins to middle, then abruptly narrowed, notched and turned inward and tapering; outer margin of oblique part with dense fringe of long hair, inner or inferior margin of apical half also fringed; outer margin of lobe ending in a minute projection at notch, where apical part begins; sagittae slender, parallel-sided although slightly dilated at base, rods free for a short distance at apex and curved inward, hairs fringing lateral margins sparse and short. Length, 4–5 mm.; anterior wing, 3.2–3.6 mm.

FEMALE: Black, joints 3 to 10 of flagellum brown beneath. Mandibles red, but infuscated on outer side at base. Tarsi brownish, tibial spurs pale testaceous. A small yellow spot at base of front tibiae. Tegulae testaceous, brown at base. Wings dusky hyaline, nervures and stigma brownish fuscous. Head as broad as long, eyes slightly diverging above. Lateral ocelli slightly more distant from occipital margin than their distance apart. Facial foveae widened above, and about as long as first two joints of flagellum combined. Antennae inserted on middle of face, reaching middle of mesoscutum, middle joints of flagellum as long as thick, and joint 1 hardly twice as long as thick at apex. Process of labrum well rounded at apex and broader than long. Proboscis short, galeae not reaching middle of stipites. Spur of middle tibiae with three fine teeth. Head and thorax dull. Face above antennae densely and finely punctured, punctures extending onto cheeks but more sparsely and obscurely to anterior end of

eyes. Face below antennae shining, with strong, well-separated punctures, coarsest on clypeus, most widely spaced on parocular area and finest and closest on subantennal plates. Mesonotum almost opaque, with extremely minute and dense punctures, but punctures more distinct than in *opacicollis*, and in paratype virtually the same as in Arizona specimens of *flavotinctus*. Pleura and propodeum minutely tessellate and dull; basal area of propodeum moderately broadened across middle and with fine longitudinal wrinkles. Abdomen minutely tessellate and dullish. Punctures of disk of tergite 1 very minute, close laterally, sparser toward middle, and those on elevated part of tergite 2 similar. Apical depression of tergites strongly tessellate, rather broad, that on tergite 2 covering nearly half of disk in median line. Basal impression of tergites 2 and 3 weak, minutely lineolate, no duller than other parts, but impunctate. Pubescence white, of usual density, very short and inconspicuous on mesonotum, but dense and feltlike on collar of pronotum and tubercles. Apical fimbria of abdomen brown. Scopal hair of hind tibiae of nearly uniform length, strongly recurved, and about as long as greatest width of tibia. Length, 4.5–4.6 mm.; anterior wing, 4 mm.

TYPE MATERIAL: Holotype, male, Prescott, Yavapai County, Arizona, at flowers of *Eriogonum*, August 30, 1930, and allotype, same data, August 31 (Timberlake). Paratypes: One female, taken with the allotype; one male, 10 miles northeast of Ojo Caliente, Taos County, New Mexico, August 17, 1962 (J. G. and B. L. Rozen). The holotype, allotype, and paratype female are in the collection of the University of California, Riverside; the paratype male is in the collection of the American Museum of Natural History.

Pseudopanurgus stevensi Crawford

Panurginus sp. STEVENS, 1919, p. 209.

Pseudopanurgus stevensi CRAWFORD, 1932, p. 78, male and female.

Panurginus borealis COCKERELL, 1937, p. 33, male and female. New synonymy.

This species is included in order to present the above synonymy and to record one female from Colorado Springs, El Paso County, Colorado, taken August 5, 1954, by R. S. Beal.

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