

PROCEEDINGS
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NEW SPECIES OF BLACK TACHYSPEX FROM
NORTH AMERICA (HYMENOPTERA, SPHECIDAE)

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The large genus *Tachyspex* is composed mostly of medium-sized wasps with black head and thorax, and red abdomen. A few species have occasional dark forms, and perhaps twenty in our fauna are customarily all dark or have red only toward the apex of the abdomen. Five of the dark species appear to be new and are herein described.

Important specific characters are the punctation of the head and thorax, shape of the frons and clypeus, relative lengths of flagellar segments (flagellomeres), striation of the propodeum, and number of silvery hair bands on the abdominal tergites. Male genitalia are practically diagnostic, and other secondary sexual characters of value are the extent of the tarsal comb in the male and the nature of the pygidium in the female. For comparative purposes the measurements of flagellomeres and the breadth of the frons and clypeus are given in a ratio in which 86 equals one millimeter.

Holotypes will be deposited in the California Academy of Sciences, and paratypes will be distributed to the U. S. National Museum and to other institutions insofar as possible.

Tachyspex hurdi R. Bohart, new species
Figs. 13-15

Male: Length 8.5 mm. Black, tarsi reddish distally; wings smoky. Face moderately silvery, tergites I-III with silvery apical bands; wing cells densely covered with dark microsetae. Frons and clypeus closely punctate except for low, shiny, well-defined, crescentic clypeal bevel which is separated by an impressed line from a short, smooth lip; punctures of frons overlaid with shagreening; on vertex separated by about one puncture diameter of light shagreening; on scutum mostly about one diameter apart, on scutellum slightly more widely spaced, on mesopleuron a little more closely and the area slightly shagreened. Propodeum

laterally with coarse longitudinal striation, dorsally subreticulate and with short striae behind postscutellum; abdominal tergites with coarse shagreening. Flagellomeres I-III, least interocular distance, and clypeal breadth with the length relationships 23:28:28:68:148 respectively; front tarsus without a comb, setae of basal tarsomere about one-fifth its length. Genitalia as in Figs. 13-15; bristles of volsella and gonostyle relatively few, very stout; serrated crest of volsella produced slightly anteriorly, flat-topped, abrupt posteriorly; aedeagal teeth moderate in size and spacing.

Female: Length about 10 mm. Clypeal lip obtusely angled out, slightly trilobed, without a lateral notch; flagellomeres I-III, least interocular distance and clypeal breadth with the length relationships of 34:41:42:72:174 respectively. Tarsal comb about as long as basal tarsomere; pygidium mostly polished, sparsely and finely punctate, angled at about 33 degrees, not depressed.

Material: Holotype male, Hungry Valley, 5 miles south of Gorman, VENTURA COUNTY, California, 4 May 1959 (P. D. Hurd). Paratypes, 49 males and 26 females from the following California localities during April through July: SHASTA COUNTY: Cassel (R. M. Bohart), Hat Creek P. O. (J. W. MacSwain); MONO COUNTY: Topaz Lake (J. W. MacSwain); ALAMEDA COUNTY: Arroyo Mocho (D. J. Burdick); SANTA CLARA COUNTY: San Antonio Ranger Station (C. D. MacNeill); ALPINE COUNTY: Silver Creek (R. M. Bohart); INYO COUNTY: Big Pine (R. M. Bohart); TULARE COUNTY: California Hot Springs (E. C. VanDyke), Three Rivers (H. R. Moffitt); MADERA COUNTY: Madera (A. J. Kalz); MONTEREY COUNTY: Arroyo Seco Camp (D. J. Burdick); SAN BENITO COUNTY: Idria (D. J. Burdick); KERN COUNTY: Mill Potrero (R. M. Bohart); VENTURA COUNTY: near Gorman (P. D. Hurd, et al.), Quatal Canyon (J. Powell); LOS ANGELES COUNTY: Tanbark Flat (P. D. Hurd, et al.); SAN BERNARDINO COUNTY: Camp Baldy (R. M. Bohart); RIVERSIDE COUNTY: Riverside (R. C. Bechtel); Corona; Anza (R. M. Bohart), Banning (E. C. VanDyke); SAN DIEGO COUNTY: Warner Springs (R. M. Bohart), Alpine (R. M. Bohart). Also, one male metatype, Dufur, Oregon (K. Gray, J. Schuh), and one female metatype, Descanso, Baja California, Mexico (R. M. Bohart).

Remarks: The range of *hurdi* seems to be the Pacific Coast in the Upper Sonoran and Transition life zones. Characteristic among the all-black species are the moderate size, silver hair bands on basal three tergites, moderately broad least interocular distance, laterally striate propodeum, well separated punctures of scutum and mesopleuron, sharply defined clypeal bevel, and in the male the absence of a tarsal comb. The male genitalia are quite distinctive, also. A related species is *schlingeri* which has the smooth area of the clypeus not beveled sharply, more finely punctate vertex, and a weak tarsal comb in the male.

The species is named for P. D. Hurd, Jr., who collected the holotype as well as much of the type series.

***Tachysphex linsleyi* R. Bohart, new species**

Figs. 7-9

Male: Length 6.5 mm. Black, tergites V to VII red, wings with membrane clear, veins dark brown. Face densely silvered nearly to ocelli, tergites with relatively coarse silvery pubescent bands on I-V. Frons shiny with fairly close coarse punctures, clypeal punctation finer, weak clypeal bevel and lip nearly smooth, punctures of vertex, scutum and scutellum moderate, spaced irregularly from one to four diameters apart, especially wide-spaced over most of scutellum, those of mesopleuron about one diameter apart, tergites, finely shagreened, polished apically; propodeum very coarsely granulose above, laterally with strong oblique striae. Flagellomeres I-III, least interocular distance, and clypeal breadth with the length relationship of 18:18:20:67:100 respectively; front tarsus with a definite comb, setae of basal tarsomere three-fifths its length. Genitalia as in Figs. 7-9; bristles of volsella small and numerous, those of blade-like gonostyle inconspicuous; serrated crest of volsella high, semi-conical, somewhat inclined anteriorly, arising gradually posteriorly; aedeagal teeth very small, well spaced.

Female: Length about 8.0 mm. Clypeal lip obtusely angled out, without a lateral notch; flagellomeres I-III, least interocular distance, and clypeal breadth with length relationships of 25:27:28:70:116 respectively. Face extensively silvery, tergites III to VI red. Tarsal comb about nine-tenths as long as basal tarsomere; pygidium mostly polished with sparse fine punctures, angled at about 30 degrees.

Material: Holotype male, Eastgate, 1 mile W, Churchill County, Nevada, August 11, 1958, from honeydew on *Chrysothamnus* (E. G. Linsley). Paratypes, 5 males, 33 females, same data as holotype. Other paratypes from California: 5 males, Paradise Camp, MONO COUNTY (A. E. Menke, F. D. Parker); 1 male, 2 females, Antelope Springs, INYO COUNTY (H. K. Court); 2 males, 1 female, Deep Springs, INYO COUNTY (E. I. Schlinger); 2 males, 1 female, Borrego Valley, SAN DIEGO COUNTY (J. C. Hall, W. F. Barr, L. G. Rozen). Also Willcox, Arizona (R. M. Bohart); Rodeo, New Mexico (R. H. James, R. M. Bohart); Albuquerque, New Mexico (R. and K. Dreisbach); and Powder River, Wyoming (R. Dreisbach and R. Schwab).

Remarks: This species is related to *terminatus* Smith and *fusus* Fox, agreeing with these species in the broad least interocular area, the rather coarse and well separated vertex punctures, and the red abdominal apex of the female and many males. The male of *linsleyi* has a distinctive blade-like gonostyle. In addition the narrower clypeus and clear wings differentiate it from *terminatus*, the definite tarsal comb from *fusus*. The female has clear wings and a shinier frons than that of *terminatus*, and a much broader clypeus than in *fusus*.

***Tachysphex powelli* R. Bohart, new species**

Figs. 1-3

Male: Length 9.0 mm. Black, apices of tarsi brown; wings brown. Face weakly silvered, tergites without silvery bands; wing cells

densely covered with dark microsetae. Frons coarsely granulose, clypeus closely punctate except for a mostly smooth distal crescent and lip; punctures of vertex, scutum, and scutellum less than a diameter apart; those of mesopleuron contiguous; propodeum coarsely granulose, slightly carinulate anteriorly above; abdominal tergites finely shagreened. Flagellomeres I-III, least interocular distance, and clypeal breadth with the length relationships of 22:32:34:65:132 respectively; clypeus convex, not beveled, lip narrow and broadly curved; front tarsus with comb present, setae of basal tarsomere about one-half its length. Genitalia as in Figs. 1-3; bristles of volsella and gonostyle moderate, in a single row and numerous; serrated crest of volsella produced strongly backward; aedeagal teeth moderate, nine in number (varies slightly in paratypes).

Female: Length about 11.5 mm. Clypeal lip slightly undulate, notched laterally, a little concave medially; flagellomeres I-III, least interocular distance, and clypeal breadth with length relationships of 46:52:52:73:198 respectively. Tarsal comb about 0.7 times as long as basal tarsomere; pygidium mostly polished with sparse fine punctures, a little shagreened at extreme base, angled at about 28 degrees, not depressed.

Material: Holotype male, Winnemucca Lake, ALPINE COUNTY, California, 7 July 1949 (R. M. Bohart). Paratypes (all from California), 17 males, 13 females, Mono Pass, INYO COUNTY (J. Powell, D. D. Linsdale); Ruby Lake, INYO COUNTY (J. Powell); Sonora Pass, MONO COUNTY (J. Powell, J. M. Burns, J. W. MacSwain, A. T. McClay, A. S. Menke); Strawberry Lake, EL DORADO COUNTY (E. C. VanDyke); Winnemucca Lake, ALPINE COUNTY (R. M. Bohart, P. M. Marsh); Sonora Peak, TUOLUMNE COUNTY (J. Powell, C. D. MacNeill); Nellie Lake, FRESNO COUNTY (E. P. VanDuzee); Heart Lake, FRESNO COUNTY (E. I. Schlinger). Recorded altitudes: 9,000 to 11,000 feet; recorded dates: 10 July to 1 September.

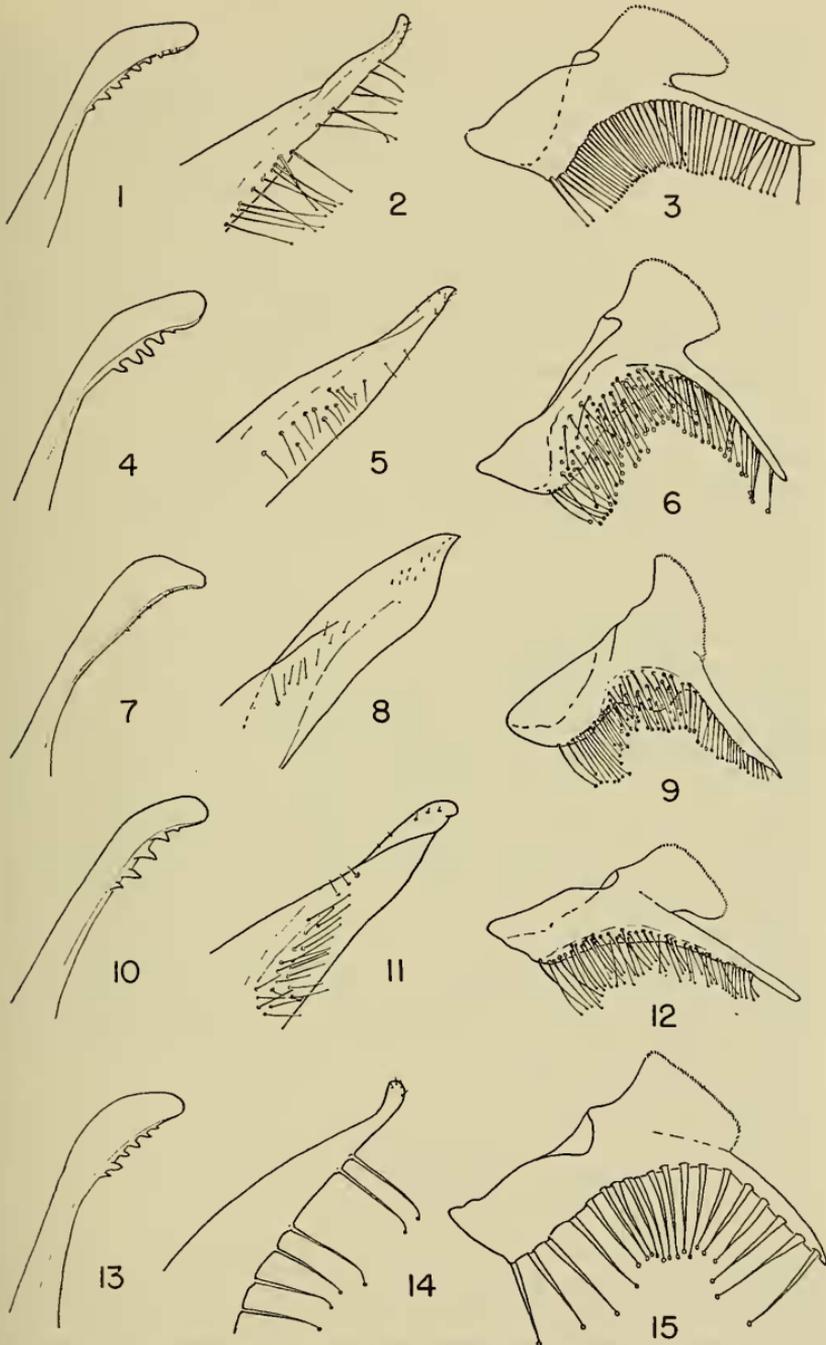
Remarks: This species is clearly a creature of tree-line in the Hudsonian life zone. It is distinguished from other black species by its moderate size, all dark tergal pubescence, propodeum granulose laterally, least interocular distance moderately narrow, in the male the second flagellomere less than twice its breadth, and in the female the pygidium narrow and polished. Its nearest relative is *T. aethiops* Cresson which, however, has the male second flagellomere about twice as long as broad, and the female pygidium wrinkled.

The species is named for Jerry Powell, who collected much of the type series.

***Tachysphex schlingeri* R. Bohart, new species**

Figs. 4-6

Male: Length 8.3 mm. Black, apices of tarsi brown; wings nearly clear. Face moderately silvery, tergites I-III with silvery apical bands; wing cells densely covered with dark microsetae. Frons and clypeus closely punctate except for a small, sparsely punctate clypeal lobe separated by an impressed line from smooth lip; frons granulose and



FIGS. 1-15. Aedeagus, gonostyle, and volsella, respectively, of new species of *Tachysphex*: FIGS. 1-3.—*T. powelli*. FIGS. 4-6.—*T. schlingeri*. FIGS. 7-9.—*T. linsleyi*. FIGS. 10-12.—*T. williamsi*. FIGS. 13-15.—*T. hurdi*. All illustrations are from holotypes, based on camera lucida drawings from dissected mounts.

shagreened; vertex polished, punctures fine and 1 to 2 diameters apart; those of scutum and scutellum moderate, spaced irregularly but averaging about 1 diameter apart; those of mesopleuron coarse and separated by about 1 diameter of shagreening; propodeum granulose and obliquely striate laterally, enclosure granulose, becoming subreticulate anteriorly; abdominal tergites slightly shagreened. Flagellomeres I-III, least interocular distance, and clypeal breadth with length relationships of 16:20:24:56:120 respectively; clypeus convex, not beveled, lip narrow and angular. Front tarsus with comb broadly developed, setae of basal tarsomere about one-third its length. Genitalia as in Figs. 4-6; bristles of gonostyle relatively small, those of volsella numerous and with large terminal spheres; serrated crest of volsella high, abrupt posteriorly; aedeagal teeth rather large and closely grouped.

Female: Length 11.5 mm. Clypeal lip slightly angled, without a lateral notch; flagellomeres I-III, least interocular distance, and clypeal breadth with length relationships of 38:44:46:58:150 respectively. Tarsal comb about two-thirds as long as basal tarsomere; pygidium polished, sparsely punctate, angled at about 43 degrees, somewhat depressed subapically.

Material: Holotype male, Sierraville, SIERRA COUNTY, California, 20 August 1953 (E. I. Schlinger). Paratypes, one male each from the following localities in California: Independence Lake, SIERRA COUNTY, 20 July 1954 (R. M. Bohart); Sardine Creek, MONO COUNTY, 12 July 1951 (E. I. Schlinger); Lake Fontanillis, EL DORADO COUNTY, 21 August 1955 (E. I. Schlinger); Hope Valley, ALPINE COUNTY, 18 July 1948 (P. D. Hurd); Dodge Ridge, TUOLUMNE COUNTY, 7 August 1960 (A. S. Menke). Also Sky Ranch, near Reno, Nevada, 4 July 1952 (E. I. Schlinger). Also, 1 female, Montpelier, Idaho, 6 July 1920. 1 female, Green River, Wyoming, 2 July 1920 (American Museum of Natural History).

Remarks: Essentially a species of the Transition and Canadian life zones, *schlingeri* is characterized by its medium size, faintly indicated silvery pubescence on tergites I-III, laterally striate propodeum, moderate least interocular distance, and absence of a sharply defined clypeal bevel. This last feature, as well as the male genitalia, distinguish it readily from its relative, *hurdi*.

The species is named for Evert Schlinger, who collected much of the type series.

***Tachysphex williamsi* R. Bohart, new species**

Figs. 10-12

Male: Length 7.5 mm. Black, wings lightly stained. Face moderately silvered, tergites with silvery bands on I-IV. Frons granulose; clypeus closely punctate except for very weak, sparsely punctate bevel, and smooth, evenly rounded lip; vertex punctures small and separated by one diameter or less of shagreening; scutum, scutellum, and mesopleuron closely punctate; propodeum granulose above with a partial median carina, laterally evenly granulose; tergites lightly shagreened; trochanters

punctate, not especially polished. Flagellomeres I-III, least interocular distance, and clypeal breadth with the length relationship of 22:26:26:47:102 respectively; front tarsus without a comb, setae of basal tarsomere about one-fifth its length. Genitalia as in Figs. 10-12; bristles of volsella and gonostyle small, placed irregularly, numerous on volsella; serrated crest of volsella produced strongly backward; aedeagal teeth few and irregular.

Female: Length about 10 mm. Clypeal lip slightly indented medially, notched laterally, clypeal bevel fairly distinct; flagellomeres I-III, least interocular distance, and clypeal breadth with the length relationships of 35:45:45:51:148 respectively. Face weakly silvered, tergites I-III with silvery bands, IV-V with tarnished pubescence. Tarsal comb about four-fifths as long as basal tarsomere; pygidium lightly shagreened, with moderate scattered punctures, angled at about 38 degrees.

Material: Holotype male, Lone Mt., SAN FRANCISCO COUNTY, California, 6 July 1920 (F. X. Williams). Paratypes, all from SAN FRANCISCO COUNTY, California: 21 males, 34 females from Lone Mt. (F. X. Williams), Land's End (F. X. Williams), Lake Merced (T. R. Haig), Ingleside (F. X. Williams), San Francisco (E. P. VanDuzee).

Remarks: In most respects this species is similar to *tarsatus* Say. Ordinarily the all-black color of *williamsi* is sufficient for separation; but very rarely *tarsatus* may be all dark. I have seen such specimens from Kill Devil Hills, North Carolina (K. V. Krombein) and from Fraser River, British Columbia (E. I. Schlinger). In such cases the most reliable characters are found in the male genitalia. In *williamsi* the gonostyles have weak bristles and those of the volsellae are short. In *tarsatus* these structures are unusually bristly. Among the black species, *williamsi* is distinctive by its combination of moderate size, rather narrow least interocular distance, granulose propodeum laterally, silvery bands on first four tergites of male and three in female, and the laterally notched female clypeus.

The species is known only from the San Francisco area where most of the type series was collected by its namesake, F. X. Williams.