

**THREE NEW SPECIES OF *DIPOGON* FOX (SUBGENUS *DIPOGON*)
(HYMENOPTERA: POMPILIDAE) FROM CENTRAL AND WESTERN
NORTH AMERICA**

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Abstract.—Three **new species** are described in the genus *Dipogon*, subgenus *Dipogon* (Pompilidae). They are: *D. kiowa* (Prowers and Delta counties, Colorado), *D. konza* (Douglas Co., Kansas), and *D. anasazi* (Montezuma Co., Colorado).

Key Words: Hymenoptera, Pompilidae, *Dipogon*, new species, North America

Species of *Dipogon* Fox are not often taken by conventional collecting methods, as they are rarely attracted to flowers or honeydew. They occur principally in wooded areas, where most nest in cavities in wood. Males are rarely taken except when reared from trap nests (Medler and Koerber 1957, Krombein 1967). One species of subgenus *Deuteragenia* Sustera has been reared from stems of weeds and garden plants (Williams 1966) and a species of subgenus *Dipogon* has been reared from stems of *Sambucus* (Wasbauer 1966), but most specimens have been taken in association with trees. Townes (1957) recognized five species of subgenus *Dipogon* north of Mexico, but four more have since been added (Wasbauer 1960, 1966; Evans 1987). Three more species are added here, all thus far known only from females. All have the frons and thoracic dorsum polished and largely devoid of recumbent pubescence and the punctures of the frons distinct but minute and widely spaced. Thus they belong to the *graenicheri* group of Townes (1957) provided the limits of that group are expanded to include species in which the microtrichiae of the fore wing are not necessarily much larger and more

crowded in the fuscous bands than elsewhere.

***Dipogon (Dipogon) kiowa* Evans,
new species**

Holotype.—♀, COLORADO: Prowers Co., Lamar, tree trunks, 4–7 Sept. 1998 (D. Leatherman) [National Museum of Natural History].

Paratypes.—♀, same data; ♀, same locality and collector, Willow Creek Park, 15–16 Aug. 1998; 6 ♀, same locality and collector as type, 26–31 July 1999; ♀, COLORADO: Delta Co., Crawford State Park, *ex* Utah juniper, 5 Aug. 1999 (D. Leatherman) [Paratypes in National Museum of Natural History and Colorado State University].

Etymology.—Named for the Kiowa Indians that formerly roamed the Arkansas Valley. On July 27, 1820, members of the Long Expedition visited an encampment of Kiowas not far from the type locality.

Description of type.—Length 5.5 mm; fore wing length 4.2 mm. Head ferruginous, including mouthparts and antenna, except first two and last antennal segments partially infuscated, ocellar triangle and paired streaks just below them weakly infuscated.

Pronotum ferruginous, with a pair of fuscous spots anterodorsally; remainder of thoracic dorsum and central part of propodeum black; meso- and metapleura and lateral parts of propodeum ferruginous; thoracic venter black. Metasoma black except sides of first tergite stained with reddish. Legs ferruginous except suffused with black as follows: upper surface of mid and hind coxae and trochanters, basal and apical extremities of fore and mid femora and much of mesal surface of hind femur, outer surface of fore and mid tibiae and all of hind tibia, basal segment of mid and hind tarsi. Wings hyaline, with a narrow brown band at the basal vein and a large brown area extending from the stigma through the third discoidal cell; microtrichiae slightly denser in the dark bands than elsewhere, especially dense at the basal vein.

Surface of head polished, only very faintly alutaceous; clypeus with several strong setae; frons with small punctures separated by 5–10 times their own diameters, each giving rise to a very short, erect seta. Thorax with integument shining, mesoscutum slightly more alutaceous and more close punctate than frons; scutellum and metanotum with dense, recumbent silvery to golden pubescence; meso- and metapleura polished, very weakly alutaceous; mid and hind coxae strongly silvery-sericeous; propodeum polished, with sparse, small punctures; metasoma sparsely silvery-sericeous.

Width of head 1.05 times length of head to margin of clypeus; middle interocular distance 0.60 times width of head; eyes convergent above, upper interocular distance 0.75 times lower. Postocellar and ocello-ocular distances subequal. First four antennal segments in a ratio of 17:9:29:22. Posterior margin of pronotum arcuate; slope of propodeum low and even, midline not impressed. Second submarginal cell maximum length 3 times its maximum height and 1.6 times maximum length of third submarginal cell.

Variation.—Two of the paratypes are

considerably smaller than the type, with fore wing length 3.2 mm. Otherwise, there is little variation in size or morphology within the series. Two of the Lamar paratypes have the frons wholly ferruginous, and one Lamar paratype as well as the one from Delta Co. have the frons as well as the vertex and occiput black. These darker specimens also have the thorax and legs more heavily infuscated than in the other paratypes.

Remarks.—The polished and nearly bare integument, combined with the contrastingly dense pubescence on the scutellum and metanotum, plus the unusual color pattern, distinguish this species. In contrast to *graenicheri* Banks (1939), the body is more extensively marked with black and the metasoma wholly black; also the fasciae of the fore wing are less intense and the microtrichiae only slightly more dense within the wing bands. *Dipogon parkeri* Wasbauer (1966), described from Nevada, has a color pattern not unlike *kiowa*, but the head, thoracic dorsum, and propodeum are duller, with stronger surface sculpturing and an overlay of appressed pubescence. In *parkeri* the eyes are less convergent above, the upper interocular distance measuring 0.89 times the lower.

***Dipogon (Dipogon) konza* Evans,
new species**

Holotype.—♀, KANSAS: Douglas Co., Lawrence, 25 Aug. 1986, Douglas Yanega, on *Gonolobus* vine [Snow Entomological Museum, University of Kansas].

Paratypes.—3 ♀, same data except 26 Aug., 4 and 27 Sept. 1896; ♀, Lakeview, near Lawrence, 24 Sept. 1966, G. C. Eickwort; ♀, Breidenthal Reserve, 2 mi. N Baldwin, Douglas Co., 22 Aug.–8 Sept. 1982, malaise trap, D. B. Wahl [paratypes at University of Kansas, Colorado State University, and National Museum of Natural History].

Etymology.—Named for the Konza Indians, using the spelling employed by early

explorers in what is now the state of Kansas.

Description of type.—Length 4.2 mm; fore wing length 3.4 mm. Body entirely glossy black except clypeus and sides of pronotum brownish; mandible dark brown basally, yellow-brown apically; antenna wholly light ferruginous, legs also of this color except coxae suffused with brown. Wings hyaline, somewhat luteous, veins on outer part translucent; fore wing unbanded but with a small brown cloud just distad of stigma; microtrichiae of uniform size and distribution except somewhat more crowded along basal vein.

Clypeus with several strong setae. Frons and vertex strongly polished, without surface sculpturing, with minute punctures separated by many times their own diameters, each giving rise to a short, erect seta. Thorax and propodeum similarly polished and sparsely punctate except scutellum finely, closely punctate and mesosternum with fine, appressed, silvery pubescence. Metasoma polished, very weakly alutaceous, with the usual strong setae ventrally and apically; first 3 tergites with only scattered, short setae.

Width of head 1.06 times length of head; middle interocular distance 0.61 times head width; eyes weakly convergent above, upper interocular distance 0.9 times lower. Vertex weakly elevated above eye tops, postocellar and ocello-ocular distances subequal. First 4 antennal segments in a ratio of 17:9:20:17. Posterior margin of pronotum arcuate; slope of propodeum low and even, midline not impressed. Second submarginal cell with its maximum length 3 times the maximum height, 1.5 times maximum length of third submarginal.

Variation.—Individuals in this series vary in fore wing length from 3.0 to 3.8 mm. All have the deep brown to black glossy integument and the light ferruginous antennae and legs (at least beyond the coxae), but the largest female is streaked with ferruginous along the sides of the thorax and propodeum. Although there are no dis-

tinct wing fasciae in any of the specimens, in two there is weak clouding along the basal vein.

Remarks.—The clear wings, with only faint localized clouding in some specimens, set this species apart from other species of *Dipogon* except for *fulleri* Krombein (1962), a member of the subgenus *Winne-manella*. The glossy black integument contrasting to the pale appendages also characterizes this species.

***Dipogon (Dipogon) anasazi* Evans,
new species**

Holotype.—♀, COLORADO: Montezuma Co., Soda Canyon, Mesa Verde National Park, 6 Aug. 1999, B. Kondratieff, S. Wells, W. Cranshaw, P. Pineda, & W. Painter [National Museum of Natural History].

Etymology.—This species is named for the Anasazi, the remains of whose homes provide the major treasures of Mesa Verde National Park.

Description of type.—Length 4.8 mm; fore wing length 4.4 mm. Entire body and appendages light ferruginous, eyes and ocelli contrastingly nearly black. Wings hyaline, slightly luteous basally; fore wing with a weak brown band at basal vein and a broad brown cloud below the stigma and basal half of marginal cell. Microtrichiae of fore wing distinctly darker and more crowded within the two dark bands than elsewhere.

Integument of head, thorax, and propodeum strongly polished and without surface sculpturing, also without appressed pubescence. Clypeus with several strong setae, but frons with only short, erect hairs arising from small punctures separated by many times their own diameters. Thorax and propodeum similarly with sparse, small punctures except posterior fifth of mesoscutum and all of scutellum and metanotum with dense, fine punctures. Metasoma also polished but with rather dense, fine punctures, posterior segments with usual stiff bristles.

Head 1.04 times as wide as high, vertex roundly elevated above eye tops. Middle in-

terocular distance 0.62 times head width; upper interocular distance 0.84 times lower. Ocelli in a compact triangle, ocello-ocular distance 1.2 times postocellar distance. First 4 antennal segments in a ratio of 19:10:25:21. Second submarginal cell with its maximum width 2.8 times maximum height, 1.3 times maximum width of third submarginal cell.

Remarks.—This species has many features in common with *graenicheri* Banks (1939). It differs in the wholly pale coloration and weaker wing bands; also the body is even more highly polished, the vertex more elevated above the eye tops, and the punctures of the frons and thorax are more sparse.

The type and only known specimen was collected by Samuel Wells by beating junipers in a relatively dry canyon that had been burned over a few years earlier.

DISCUSSION

Dipogon diablo Wasbauer (1960) was assigned by the describer to the *graenicheri* group, but the head and thoracic dorsum and dull and minutely granulo-reticulate as well as sparsely covered with appressed pubescence. Thus it does not appear closely related to the species considered here. The following couplets may serve to separate females of the *graenicheri* group as defined here.

KEY

- 1. Fore wing not fasciate (may have a small brown spot distad of stigma); body glossy black, legs and antenna light ferruginous (body may be streaked with ferruginous along sides of mesosoma) *konza*, n.sp.
- Fore wing bifasciate; color not as above 2
- 2. Entire body pale ferruginous, with contrasting dark eyes and ocelli; integument highly polished; vertex roundly elevated above eye tops *anasazi*, n. sp.
- Not entirely ferruginous nor integument as highly polished; vertex more weakly elevated above eye tops 3
- 3. Mesosoma and at least basal third of metasoma ferruginous; legs ferruginous *g. graenicheri* Banks

- Mesosoma fuscous at least dorsally, metasoma wholly black; legs in large part fuscous 4
- 4. Body black, antenna, fore leg, and tarsi except basally, tinged with fulvous; microtrichiae of fore wing much darker and more crowded in fasciae than elsewhere; scutellum and metanotum not more densely pubescent than mesonotum *graenicheri atratus* Townes
- Mesosoma black, pleura and lateral parts of propodeum ferruginous; microtrichiae of fore wing barely darker and more crowded in fasciae than elsewhere; scutellum and metanotum densely pubescent *kiowa*, n. sp.

ACKNOWLEDGMENTS

For the loan of types and other specimens, I am indebted to Robert W. Brooks, University of Kansas; Michael S. Kelley, Museum of Comparative Zoology; Steve Heydon, University of California at Davis; and Wojciech Pulawski and Bob Zuparko of the California Academy of Sciences.

LITERATURE CITED

Banks, N. 1939. Notes and descriptions of native Psammocharidae. Canadian Entomologist 71: 225–231.

Evans, H. E. 1987. The genus *Dipogon* (Hymenoptera: Pompilidae) in the Rocky Mountains. Entomological News 98: 41–45.

Krombein, K. V. 1962. Natural history of Plummers Island, Maryland. XIII. Descriptions of new wasps from Plummers Island, Maryland, (Hymenoptera: Aculeata). Proceedings of the Biological Society of Washington 75: 1–18.

———. 1967. Trap-nesting wasps and bees: Life histories, nests, and associates. Smithsonian Press, Washington, DC, 570 pp.

Medler, J. T. and T. W. Koerber. 1957. Biology of *Dipogon sayi* Banks (Hymenoptera, Pompilidae) in trap-nests in Wisconsin. Annals of the Entomological Society of America 50: 621–625.

Townes, H. 1957. Nearctic Wasps of the Subfamilies Pepsinae and Ceropalinae. Bulletin of the United States National Museum 209. 286 pp.

Wasbauer, M. S. 1960. Taxonomic and distributional notes on some western spider wasps (Hymenoptera: Pompilidae). Pan-Pacific Entomologist 36: 171–177.

———. 1966. A new spider hunting wasp of the subgenus *Dipogon* from western Nevada (Hymenoptera: Pompilidae). Proceedings of the Biological Society of Washington 79: 17–20.

Williams, F. X. 1966. A spider-hunting wasp found nesting in hollow plant stems (Hymenoptera: Pompilidae, Pepsinae). Wasmann Journal of Biology 24: 33–47.



Evans, Howard E. 2000. "Three new species of Dipogon Fox (Subgenus Dipogon) (Hymenoptera: Pompilidae) from Central and Western North America." *Proceedings of the Entomological Society of Washington* 102, 1010–1013.

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