

**NEW SPECIES OF DIPTERA OF THE GENUS ERAX.**

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The various species of Asilinae known by the generic name *Erax* have been considered difficult for a long time. This largely comes from the fact that the genus has not been treated with reference to all the North American species included, but various writers have described such species as have come to their attention in collections that have been made here and there throughout the country. From the study we have made of various species with a view to a treatment of the entire genus eventually we are convinced that quite satisfactory characters are available for the separation of the various forms when they are assembled so that careful comparison may be made. But until that time comes students may depend upon it that they will have abundance of trouble in their attempts at determining these rather large and attractive insects, even though they may appear easy to one unacquainted with them.

In western North America there is a group of species of the genus with two submarginal cells, the first of which is long, or with its base distinctly anterior to the base of the second posterior cell. In the male the abdomen is entirely or in large part silvery-white pollenose and two or more of the segments are furnished with long white hair which is parted at the middle and directed outward. The costa is not expanded and a thoracic crest is never present.

Williston and Osten Sacken have named four species of the group, *stramineus*, *dubius*, *splendens* and *rapax* and six others are described in this paper. It seems that *stramineus* and *rapax* are very much alike and I am not sure but that they are one species. I have seen other undescribed species from the Pacific coast region.

***Erax rapax*** Osten Sacken. *Mystax* straw-yellow, legs black except the bases of the tibiae which are reddish, clothed with abundance of straw-yellow hair and scattering black bristles. Wings hyaline. Length 18 to 23 millimeters.

Palpi black with straw-yellow hairs, beard pale yellow, occipito-orbital and ocellar bristles black, face and front yellow pollinose. Thorax yellowish-brown pollinose with pale hairs on the sides and black hairs and bristles on the dorsum, but the vestiture of this region is somewhat variable and specimens occur with these bristles and hairs partly yellow.

First two segments of the male abdomen colored like the thorax, segments three to five silver white and, except seven, furnished with white hair parted at the middle and directed outward; the posterior part of the second segment may show a few white hairs

directed outward in some specimens. Hypopygium rather large with an extension at the apex and clothed with rather long yellow hairs among which are some black ones.

Female abdomen nearly uniform yellowish pollinose with pale hairs, ovipositor about five millimeters in length, equivalent to the last three abdominal segments. Several specimens from Colorado and New Mexico.

**Erax dubius** Williston. Gray all over, femora black, tibiae and tarsi red, the latter somewhat darker than the former, tibiae with apices somewhat darkened. Total length of the male, 21 millimeters.

Mystax and beard white, ocellar bristles rather large and black, occipito-orbital bristles mostly black, otherwise the hairs and bristles of the rear of the head are white, palpi black and clothed with white hairs; legs with black bristles and white hairs, on the tibiae this white hair is long and conspicuous, but on the femora it is in large part short and recumbent; wings hyaline, very slightly darkened at extreme apex; thorax gray pollinose, most of the hairs and bristles of the dorsum black, of the sides white, scutellum with white hair, and black bristles on the margin.

First four abdominal segments with long white hairs which on two, three and four are parted at the middle and directed outward, fifth and following segments white and with very short white hairs. Hypopygium from above narrower than the last abdominal segment, black, with hairs mostly white, apex truncate except that the upper part of each valve is extended backward and inward toward its fellow of the opposite side thus producing a prominence from lateral view.

I take this to be the species to which Williston gave the name *dubius* in the Transactions of the American Entomological Society XII, page 64. No description of the species appears to have been written but the name is inserted in the key and enough characters pointed out to make identification reasonably certain. There are two males before me from southern Arizona.

**Erax argentifrons** n. sp. Much like *rapax*. Front white pollinose, mystax white, legs with white hair. Length 18 to 23 millimeters.

Palpi black with white hair, occipito-orbital and ocellar bristles black, antennae black, first two segments with white hair, beard white. Thorax yellowish-brown with the usual middorsal stripe darker, hairs of the sides almost uniformly pale, of dorsum variable between pale yellowish and black; wings hyaline, legs black, except the extreme bases of the tibiae which are reddish-yellow, clothed with white hairs and black bristles.

First two segments of the male abdomen colored like the thorax, segments three to seven inclusive silver white, apex of two, all of three and four with long white hair parted at the mid-

dle and directed outward, hypopygium much narrower than in stramineus, clothed with black and white hair, and distinctly notched at the apex.

Female abdomen uniformly yellowish pollenose and clothed with pale hairs, ovipositor about four millimeters in length, equivalent to the last three abdominal segments.

Specimens of both sexes taken in Clark County, Kansas, by Dr. F. H. Snow.

As has been stated the species has much the appearance of rapax, but the somewhat stouter form, the white mystax and beard and much slenderer hypopygium designate it as wholly distinct from that species.

**Erax truncatus** n. sp. Thorax yellowish-brown, above, abdomen gray, first four segments with long white hair, legs black with the exception of the basal part of each tibia which is light reddish. Total length 22 to 30 millimeters.

Mystax and beard white, ocellar, occipito-orbital and a transverse row of bristles on the dorsum of the prothorax black, palpi black with black and white hairs intermixed, dorsum of the thorax, and the scutellum with many black hairs and bristles but there are some white ones intermixed, wings hyaline.

First segment of the male abdomen with long white hairs on each side, second, third and fourth segments with long silvery hair parted at the middle and directed outward, fifth, sixth and seventh segments silvery white pollenose but without long hair; hypopygium rather large, from dorsal view about as wide as the last segment of the abdomen, from side view most prominent near middle above and cut off at tip so as to give a truncate appearance.

First seven segments of the female abdomen silvery white, ovipositor slender, shining black, about seven millimeters in length.

Several specimens from the Huachuca Mountains, Arizona, July 28, 1907.

The large compact hypopygium of the male and the long ovipositor of the female give this species a distinct appearance which makes its separation from others easy.

**Erax pallidulus** n. sp. A pale colored species with black legs and hyaline wings. The male has the hypopygium small and, from dorsal view, very narrow. Total length, 18 to 28 millimeters.

Mystax very pale yellowish, beard white, palpi black with white hair, occipito-orbital and ocellar bristles mostly black; thorax dorsally pale yellowish gray with short black hair anteriorly and black and white bristles and hairs posteriorly, scutellum with pale hairs and bristles, legs black, except bases of tibiae which are pale, wings hyaline.

Male abdomen silver white, first four segments with long white hair, two, three and four with the hair parted at the middle and directed outward, five, six and seven without long hair, hypopygium small, black, narrowed toward apex where, from lateral view, it appears nearly evenly rounded.

Three male specimens from Albuquerque, New Mexico, collected by J. R. Watson.

**Erax argyrosoma** n. sp. Body nearly uniformly white all over, middorsal stripe of the thorax not plainly marked. Length, 23 to 25 millimeters.

Mystax and beard white, palpi black with white hair, some of the occipito-orbital bristles black and some white; legs black except the basal parts of the tibiae which are yellowish-red, wings hyaline; anterior part of the dorsum of the thorax with short black hair, posterior part and the scutellum with black and white bristles and hairs.

First four abdominal segments of the male with long white hair, on two, three and four; this is parted at the middle and directed outward, segments five, six and seven, silver white but without long hair, hypopygium black with short white hair, somewhat notched at the apex with the lower part extended into a prominence.

Female abdomen gray pollinose, ovipositor shining black, four millimeters in length.

Taken by J. R. Watson near Albuquerque, New Mexico.

**Erax inflatus** n. sp. A dark colored species with the mystax composed of black and gray hairs intermixed, wings hyaline, slightly fumose at apices, legs black with the exception of the extreme bases of the tibiae which are yellowish-red. Length of the males 20 to 25 millimeters, of the females 22 to 26 millimeters.

Front yellowish-gray pollenose, antennae black, first two segments clothed with gray hair, occipito-orbital bristles and ocellar bristles black, mystax composed of black and gray hairs intermixed, beard silky white, palpi black with black hairs; thorax brownish-gray pollinose with a dark middorsal stripe abbreviated posteriorly, clothed with gray and black hairs and bristles existing in different proportions in different specimens; legs black, except the extreme apices of the tibia which are yellowish-red, furnished with white hairs and black bristles and some golden pile on the under side of some of the segments; wings hyaline, slightly darkened at the apex.

Male abdomen with the apex of the second segment and all of the segments from three to seven inclusive silver white, segments two and three with long white hair parted at the middle and directed outward, four and five shows this arrangement somewhat but the hairs are short; hypopygium clothed mostly with white hair, enlarged at apical half until it is nearly twice as wide as the seventh abdominal segment.

Female abdomen with each segment white pollinose at sides and apex, otherwise black above, ovipositor black, scarcely five millimeters in length, equivalent to the last three abdominal segments.

Twenty specimens received from F. Grinnell, Jr., and taken in Los Angeles County, California. A very distinct species on account of the male hypopygium which appears as if inflated and is nearly twice as wide as the seventh abdominal segment.

***Erax nemoralis*** n. sp. A dark colored species with yellowish mystax and fumose wings. Femora, tarsi and apices of the tibiae black, bases of tibiae reddish-brown. Length, male about 25 millimeters, female to the tip of the ovipositor, 24 to 27 millimeters.

Face and front covered with yellowish dust, mystax and beard pale yellow, occipito-orbital and ocellar bristles black, as are most all of the hairs and bristles of the front, palpi black, furnished with many black hairs which often are intermixed with pale yellow ones. Prothorax mostly clothed with pale hairs, remainder of thorax with many black hairs and bristles, but these often are reduced by the presence of greater or less numbers of pale ones; middorsal stripe dark and well marked, abbreviated behind and divided anteriorly, on either side the markings are in the form of ill-defined spots caused by the difference in intensity of the rust-colored dust which gives the thorax its peculiar color; legs black except the bases of the tibiae which are reddish-brown, clothed with black bristles and pale hairs of different lengths, the shorter ones recumbent, some of the segments inwardly, more especially the metatarsi and front tibia, clothed with golden recumbent pile.

In the male abdominal segments one, two and base of three dark, largely clothed with black hair, apex of three and all of four, with the exception of a small black triangle on each anteriorly, white with long white hair parted at the middle and directed outward, five and six silver white with very short hair, remainder of the abdomen black, with black hair, however, in some specimens part of seven is whitish and there may be a few pale hairs on the hypopygium.

In the female the segments of the abdomen are gray on the sides and hind margin, otherwise black above but the latter color is not well defined, especially if viewed with a lense; ovipositor about six millimeters in length, equivalent to the last four abdominal segments.

Several specimens of both sexes procured in a brushy woodland at New Roads, Louisiana, July 15, 1905. The specimens were captured while resting near or on the ground. It is a predaceous insect of possible value on account of its size.