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DIPTERA AFRICANA, I.

BY C. F. ADAMS.

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IN my "Dipterological Contributions" (K. U. Science Bulletin, vol. II, No. 2, p. 21, 1903), I mentioned this material and described seven new species from it. I also promised at that time to give the whole collection some study and finally report thereon. It is now my pleasure to offer this paper as the first part of the work. The second part will be on the Muscidæ Calyptratæ,* which are now in my hands for study. This represents all of the material which is mounted, there being a large quantity still unmounted, mostly the minute forms. I hope to have the pleasure some time of working up this unmounted material and offering it as a third part of this series. I am fully aware of the difficulties met with and of the carefulness to be exercised in undertaking a work of this kind. It is no easy task to work successfully in one's own fauna, and therefore it is with some timidity that I offer this contribution on exotic material. But I have done my best to free it of errors, and if any are found herein, I beg kind indulgence or favor at the hands of my confreres.

As stated in the above-mentioned paper, this material was collected near Salisbury, Rhodesia, South Africa. The material, not only of the Diptera but of all the orders, shows that my friend Mr. Frank L. Snow is a diligent collector, and the Kansas University is fortunate in receiving the results of his trip to Africa. In due respect to his generosity, I name one of the species in his honor.

*Since this was written conditions have changed. Some of the manuscript intended for the second part is included in this paper.

I take pleasure in acknowledging my indebtedness to Dr. F. H. Snow and to Dr. S. W. Williston. Without the favors received from these two friends the work would have been impossible.

TABANIDÆ.

HINEA, gen. nov.

Belongs to Pangoninæ. First and second joints of antennæ short, first twice as long as second; third joint with five annuli, first one longest and with a long basal process. Last joint of palpi very large and crescent-shaped. Proboscis straight, about as long as height of head. Face short, convex. Front depressed; its angle with occiput is smaller than in most Tabanidæ. Thorax and abdomen somewhat compressed. Wings considerably longer than the abdomen, first posterior cell open. Type, following species.

Hineia flavipes, n. sp.

Female: Black; front, antennæ, palpi, proboscis, except tip, legs, and tip of abdomen, yellow. Cheeks, occiput and pleuræ with sparse black pile; pile of legs short and yellow. The four hind coxæ are dark brown. Halteres black, knobs white. Wings black, a small hyaline spot in apex of first basal cell. Length, 16 mm.; of wing, 14 mm.

One specimen; December. This genus is dedicated to my friend Prof. Jas. S. Hine, who is doing so much for our knowledge of this family.

TABANUS.

(Linne, Fauna Suecica: 1761.)

Tabanus sagittarius.

Tabanus sagittarius Macq., Dipt. Exot., I, p. 123; Walker, List Dipt., pt. V, Suppl. 1, p. 228 (1850).

Tabanus socius Walker, l. c., pt. T, p. 160.

Tabanus serratus Loew, Dipteren-Fauna Südafrika's, 39, tab. 1, fig. 21.

Eight specimens; November and December. The above synonymy is from Miss G. Ricardo.

Tabanus latipes.

Tabanus latipes Macq., l. c. I, p. 119; Loew, l. c., p. 36.

Tabanus latipes Walker, l. c., pt. I, p. 236; pt. V, Suppl. I, p. 328 (1854).

Tabanus fenestratus Walker, Zoologist, VIII, app. 67 (1850); List, V, Suppl. 1, p. 219 (1854).

Tabanus africanus Grey.

DROSOPHILIDÆ.**ZAPRIONUS.**

(Coquillett, Proc. U. S. National Museum, xxiv, 32.)

Zaprionus vittiger.*Zaprionus vittiger* Coq., l. c., xxiv, 32. Cape Colony, Africa.

Several specimens of this beautiful species, collected during February and April. In perfect specimens the facial carina is also white.

DROSOPHILA.

(Fallen, Geomyz.: 1823.)

Drosophila latifrons, n. sp.

Female: Head and members yellow; front broader than one eye, sides slightly converging anteriorly, opaque, in certain lights with a silvery reflection, three fronto-orbital bristles on each side, middle one small, lower one directed forward, other two upward, two vertical bristles near upper angle of each eye, ocellar bristles strong and pointing forward, a pair of smaller bristles behind the ocelli; antennæ two-thirds as long as the face, third joint about one and one-half times as long as broad, faintly tinged with brown on the upper margin; face subshining, median carina broad and prominent inferiorly, oral margin rounded, prominent, separated from carina by a transverse line. Thorax brownish yellow; one humeral, two posthumeral, two presutural, two supraalar, and one postalar bristle present; scutellum with two bristles on each side; two sternopleural bristles present; halteres and legs yellow. Abdomen obscure, dark brownish yellow, subshining. Wings with a brownish tinge, costa reaches tip of fourth vein, third section of costa about a third as long as the second section, and four-fifths as long as the penultimate section of fourth vein. Length, 3.2 mm.

One specimen; April.

Drosophila quadrimaculata, n. sp.

Male: Head and members largely yellow; front not broader than one eye, frontal triangle opaque yellow, nearly reaching the antennæ, narrowly bordered with brown, sides of front grayish white, four fronto-orbital bristles on each side, the lowest one directed forward, ocellar bristles directed forward, a pair each of vertical and postvertical bristles directed backward, a row of minute hairs just laterad to the fronto-orbitals; third joint of antennæ brownish above and at apex; face with an

indistinct median carina; cheeks and occiput slightly grayish pollinose, former very narrow. Thorax yellow, pile black; mesonotum with five longitudinal, brown vittæ, the central one broader than the others and divided longitudinally by a hair-like line, one humeral, two posthumeral, two supraalar, one postalar and four dorsocentral bristles present; scutellum yellow, with two sublateral, brownish lines, with two pairs of strong bristles: pleuræ with three longitudinal brownish lines, one strong and two small sternopleural bristles; halteres yellow. Abdomen yellow, each segment with a broad apical, brown border, which is continued ventrally, anal segment largely shining black. Legs yellow, tibiæ with a small, but distinct, preapical bristle. Wings hyaline, a small dot at tip of each the third and fourth veins, and each of the cross-veins clouded with brown, costa reaches the fourth vein, third section less than half as long as the second, and not as long as the penultimate section of the fourth vein. Length, 3.7 mm.

One specimen; April.

Drosophila facialis, n. sp.

Male: Head and members yellow; front a little broader than one eye, frontal triangle reaching nearly to the antennæ, not very definitely outlined, three fronto-orbital bristles, small ocellar bristles directed forward, a pair of small postocellar bristles discussate and directed backward; third antennal joint rather short, second with several bristly hairs; facial carina prominent, oral margin bordered with black, vibrissæ strong, facial orbits and cheeks showing a grayish coat; bristly hairs of occiput black. Thorax yellow, pile black; two posthumeral, one supraalar, and a pair of prescutellar bristles; scutellum with two pairs of bristles; one strong and one small sternopleural bristle present. Abdomen yellow, pile black, anal segment, and a small spot on lateral margins of the three preceding segments shining black. Legs uniformly yellow. Wings hyaline, costa reaches tip of fourth vein, third section of costa about one-half as long as the second, and about the length of the penultimate section of the fourth vein, this in turn being a little more than one-half the length of the ultimate section, second and third veins slightly divergent. Length, 2.5 mm.

One specimen; April.

***Drosophila basilaris*, n. sp.**

Male and female: Head and members yellow; front broad as one eye, sides parallel, three fronto-orbitals on each side, two verticals near upper angle of each eye, ocellar bristles strong, a pair of small bristles behind triangle; face excavated, median carina not very prominent; antennæ two-thirds as long as the face, third joint one and one-half times as long as broad, brownish on upper margin; occiput blackish centrally. Thorax reddish yellow; two approximated humeral bristles, two post-humerals, one presutural, two supraalar, one postalar, and a pair of prescutellar bristles; scutellum sometimes with the tip brownish and with two pairs of bristles; pleuræ with a longitudinal brownish band, two sternopleural bristles present; halteres and legs yellow. Abdomen subopaque black, in most specimens the first segment on the posterior half and the second segment on the base yellowish white, in other specimens the first segment is wholly yellow. Wings hyaline, costa reaches tip of third vein, its third section about one-half as long as its second, and about one-fifth longer than the penultimate section of the fourth vein. Length, 2.5 mm.

Ten specimens; April.

***Drosophila flaviseta*, n. sp.**

Female: Reddish yellow, macrochaetæ yellowish. Front about three-fourths as wide as one eye, sides parallel, three fronto-orbitals on each side, two verticals near upper angle of each eye, ocellar bristles and a pair of smaller ones behind the ocelli present; face excavated and with a low median carina; antennæ but little more than half as long as the face, third joint notched above; cheeks very narrow. Thorax with one humeral, two posthumeral, two presutural, two supraalar, one postalar, and a pair of prescutellar bristles; scutellum blackish at apex, with four bristles; two sternopleural bristles present. Legs uniformly yellow. Abdomen yellow on basal half, and shining brownish black on apical half. Wings with a brownish tinge, most prominent between costa and third vein, a black spot at tip of first vein, costa reaches tip of third vein, its third section about one-half as long as its second, and slightly longer than the penultimate section of the fourth vein. Length, 3 mm.

One specimen; February.

***Drosophila apicifera*, n. sp.**

Female: Head yellow; front broad as one eye, opaque, three fronto-orbitals on each side, a pair of verticals, and a pair of smaller ones behind ocelli, ocellar bristles strong, ocellar dot black; antennæ nearly as long as the face, third joint twice as long as broad, brownish at apex; face somewhat excavated, median carina barely perceptible; mouth-parts yellow; cheeks narrow. Thorax yellow, pile black; one humeral, two post-humeral, two supraalar, one postalar, and a pair of small pre-scutellar bristles; scutellum with apex white, convex, with two pairs of bristles; halteres yellow; pleuræ with two sternopleural bristles; legs yellow. Abdomen opaque blackish, pile black, segments yellow on sides at base. Wings hyaline, costa terminating at tip of third vein, third section of costa a little more than one-half the length of the second section, and a fourth longer than the penultimate section of the fourth vein. Length, 3.25 mm.

One specimen; April.

***Drosophila mansura*, n. sp.**

Female: Head and members yellow; front about as wide as one eye, three fronto-orbitals on each side, two verticals, a pair of small bristles behind the ocelli, and a pair of rather strong ocellar bristles present; antennæ three-fourths as long as the face, third joint twice as long as broad; face concave, median carina indistinct; palpi long, viewed from above are broad and with parallel sides, from the side are shown to be thin; cheeks narrow; occiput blackish centrally. Thorax brownish yellow; one humeral, two posthumeral, two supraalar, one postalar, and a pair of small pre-scutellar bristles present; scutellum with two pairs of bristles; halteres yellow; two sternopleural bristles present; legs yellow. Abdomen yellow, posterior borders of second, third, fourth and fifth segments shining black. Wings hyaline, costa reaches tip of third vein, its third section about one-half as long as its second, and little longer than the penultimate section of the fourth vein. Length, 2.5 mm.

One specimen; April.

***Drosophila palpalis*, n. sp.**

Male: Head yellow; front broad as one eye, three pairs of fronto-orbitals, the lower pair directed forward, two pairs of

verticals, ocellar bristles directed forward; third joint of antennæ twice as long as broad; facial carina scarcely perceptible; palpi black, elongate, acute when viewed from the side, broad and rounded from above. Thorax yellow, pile black; mesonotum reddish yellow, with a median gray pollinose vitta, one humeral, two posthumeral, one supraalar, and one postalar bristle; scutellum with two pairs of bristles; pleuræ with a thin coating of gray pollen, two sternopleural macrochætæ present; halteres and legs yellow. Abdomen opaque black, each segment centrally and on posterior border yellowish. Wings hyaline, costa terminates at tip of third vein, its third section a little more than one-half as long as its second, being one and one-fourth times as long as the penultimate sections of the fourth vein. Length, 2 mm.

One specimen; April.

Drosophila proxima, n. sp.

Female: Head and members yellow; front opaque, with three fronto-orbitals on each side, two verticals and a pair of small bristles behind the ocelli, ocellar bristles rather strong; antennæ about two-thirds as long as the face, third joint nearly twice as long as broad; face excavated, median carina perceptible just below the antennæ only; cheeks narrow; occiput black with orbits largely yellow. Thorax reddish yellow; mesonotum with one humeral, two posthumeral, two supraalar, one postalar, and a pair of small prescutellar bristles; scutellum with two pairs of bristles, its apical fourth is white, between this and the remainder of the scutellum is a streak of brown; knobs of halteres brown; two sternopleural bristles present. Legs yellow. Abdomen yellow; second segment with a black spot laterally, brownish in the middle, third and fourth segments with the posterior border shining black, which color extends forward centrally, last segment with the posterior border black. Wings hyaline, costa reaches to tip of third vein, its third section about one-half as long as its second, and a little longer than the penultimate section of the fourth vein. Length, 2.7 mm.

Three specimens; April.

Drosophila mutabilis, n. sp.

Male and female: Yellow, in certain lights the entire body is sericeous; front with parallel sides, sometimes the sides only show silvery, two verticals and three fronto-orbitals on each side; the upper one of the latter is nearly opposite the lower ocellus and directed backward; the other two are very close together, nearly half-way between ocelli and antennæ, directed backward and forward respectively; ocellar bristles small; face scarcely broader than the front, slightly excavated, orbits narrow; antennæ about three-fourths as long as the face, third joint elongate-oval, arista with seven pectinations above and three below; proboscis fleshy, palpi linear, with a few apical bristles; cheeks narrow. Mesonotum with very short black pile, a humeral, two posthumeral, one supraalar, and one postalar bristle; scutellum with the posterior border somewhat oval, and with an apical pair of bristles; pleuræ with a pair of sternopleural bristles; halteres yellow, sometimes with blackish knobs. Abdomen yellow, with considerable variation, in either sex, as to the black markings; some specimens show two large lateral, and one small central spot on fourth segment, and three small ones on fifth segment; others agree with the foregoing with the addition of two sublateral spots on the second segment; others agree with the first set with the addition of a large central spot on the third, and a small central one on the sixth segment; others have the abdomen wholly yellow, and one specimen has the third and fourth segments wholly black. Legs yellow, front femora with from three to four strong bristles on under side. Wings hyaline, costa reaches tip of third vein; the female usually has a small dot at tip of first vein, the male wing as follows: Near the base there is a prominent black spot reaching from costa to fifth vein, the small cross vein is narrowly surrounded by brown; just proximal to the tip of the second vein is a large quadrate spot reaching to the third vein, then it narrows and crosses the first posterior cell to join a large subquadrate spot around the hind cross-vein; the latter spot attains the wing margin just beyond the tip of the fifth vein; the angle between the third vein and the costa is filled out half-way to the tip of the second vein; in the second posterior cell and near tip of fourth vein is a tinge of brown, the apex of the first posterior cell, the base of the

second, the hyaline portion just beyond the tip of the second vein, and hyaline portion from small cross-vein to costa, are in certain lights tinged with gray. Length, 2.5 mm.

Numerous specimens; February and April.

***Drosophila pallida*.**

Drosophila pallida Will., Dipt. St. Vincent, 415. St. Vincent.

Having had access to the types of *pallida*, I have little doubt that my determination is correct. There is a greater variation, however, in the coloration of the abdomen, there being a gradual gradation from specimens with regular bands on posterior borders of segments to those with the abdomen uniformly brown.

Numerous specimens.

ASTEIA.

(Meigen, Syst. Besch., V, 88: 1830.)

***Asteia longipennis*, n. sp.**

Male: Wholly yellow, except the abdomen is of a brownish cast. Front broad, bristles very short, except the large ocellar pair; antennæ short, third joint cordate, second joint with a strong bristle on the upper side and smaller ones beneath at apex (arista broken off): face broad, slightly concave in profile, with an indistinct median carina, oral cavity rather large, clypeus visible, proboscis short. Thorax with two blackish bristles on side of mesonotum near base of wing, and one on pleuræ, a little below and behind the humeri; scutellum with an apical pair of rather long bristles and a smaller one on either side. Abdomen of a brownish cast, except the hypopygium, which is yellow. Legs wholly yellow. Wings hyaline, twice as long as the abdomen, slender, anal angle not prominent, tips of first and second veins about the length of the small cross-vein distant from each other, third and fourth veins parallel, costa reaches tip of fourth vein, posterior cross-vein and anal cell wholly wanting. Length, 2.25 mm.; wing, 2.5 mm.

One specimen; May.