

XI. *On the Diptera of St. Vincent (West Indies)*. By PROFESSOR SAMUEL WENDELL WILLISTON. (*Dolichopodidae* and *Phoridae*, by PROFESSOR J. M. ALDRICH.) Communicated by DAVID SHARP, M.A., F.R.S., on behalf of the Committee for investigating the Flora and Fauna of the West Indies.

[Read March 4th, 1896.]

PLATES VIII., IX., X., XI., XII., XIII. and XIV.

[THIS paper is a list, accompanied with descriptions, of the Diptera found in the island of St. Vincent, by Mr. H. H. Smith, the well-known American entomologist, who was sent to the islands by F. D. Godman, Esq., F.R.S., to assist the Committee in its investigations. Some general remarks by the Author will be found at the end of the paper. A second memoir, treating of the Diptera of the neighbouring island of Grenada, will, it is hoped, be almost immediately ready for publication, the present instalment having been in the hands of the Committee for upwards of two years.—D. S.]

~~CECIDOMYIIDÆ.~~

~~DIPLOSIS.~~

~~Loew, Dipt. Beitr., iv., 20, 1850.~~

~~1. *Diplosis pictipes*, n. sp.~~

~~♂. Face yellow. Antennæ as long as the wings, yellow, the joints alternately double, with their petioles as long as the thickened portion. Mesonotum opaque red; two slender stripes and the middle portion behind yellow. Abdomen reddish-yellow. Legs black; the distal two-fifths of the front femora, the immediate tip of the hind femora, the tip of the hind tibiæ; a broad ring on the second, third, and fourth joints of all the tarsi, and the terminal portion of the fifth joint, light yellow. Wings with black hair, forming irregular markings; third vein gently curved, terminating just beyond the tip of the wing. Length 1½ mm.~~

~~Four specimens.~~

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Front yellow or yellowish-red ; in width a little less than one-third of the head ; facets of the eyes uniform in size. Antennæ brown or blackish, finely pubescent, composed of thirteen joints, of which the first two are swollen, and the third somewhat dilated. Palpi small, for the most part concealed. Proboscis nearly four times as long as the vertical diameter of the head. Eyes pubescent. Thorax yellow or yellowish-red, the mesonotum a little darker in front, the pleuræ with patches of silvery lustre. Abdomen dark brown, the basal segments more or less yellowish. Legs yellow, the femora with blackish bands on the distal half, the tarsi blackish towards the tip ; hind tibiæ with spurs. Wings pure hyaline.

Four specimens. The present species, though seeming to agree closely in its structural characters with *P. superbiens*, Schiner, differs, aside from the markedly smaller size, in the absence of black spots on the mesonotum. It is not at all improbable that our specimens are conspecific with those mentioned by Osten Sacken (Cat. Dipt., 1978, 17,218) as occurring in Mexico.

Sackeniella, n. n.—Since the appearance of my paper (Kansas Univ. Quart., i., p. 119) in which I described a new genus of this family, I have discovered that the name *Snowia*, there used, has been previously employed for a genus of Lepidoptera. I here therefore substitute *Sackeniella* in honour of Dr. C. R. Osten Sacken.

CULICIDÆ.

MEGARRHINA.

Rob. Desvoidy, Essai, etc., in Mem. de la Soc. d'Hist. nat. de Paris, iii., 412, 1827.

1. *Megarrhina portoricensis*. (Pl. VIII., fig. 28, head of ♂ ; 28a, wing.)

Megarrhina portoricensis, Roeder, Stett. Ent. Zeit., 1885, p. 337.—Porto Rico.

Two specimens, male and female. Sea level.

ÆDES.

Meigen, Syst. Besch., i., 13, 1818.

1. *Ædes pertinans*, n. sp. (Pl. VIII., figs. 29, antenna; 29a, hypopygium.)

♂, ♀. Face, basal joints of antennæ and base of proboscis yellowish; antennæ and proboscis otherwise nearly black, the former only a little more hairy in the male than in the female, the terminal joint of the male only a little longer than the preceding ones. Mesonotum brown, thickly covered with dark brown squamulæ; pleuræ yellow, with white tomentum. Abdomen deep brown, with brown squamulæ; venter yellow, with white squamulæ; male forceps small, yellow. Legs deep brown; the femora, and, in a less degree, the tibiæ showing the yellow ground-colour on the underside. Wings nearly hyaline; veins uniformly brown squamulate. Length 3 mm.

Six specimens. Sea level and 1000 feet.

2. *Ædes perturbans*, ♂, ♀. (Pl. VIII., fig. 30, head of ♀.)

♂, ♀. Head black. Antennæ brown; plumosity of the male long, abundant and black; terminal joint as long as the seven or eight preceding it together, and clothed with short hair; in the female the joints are more slender, and the terminal one is not longer than the two preceding it taken together, the verticils of moderate length. Proboscis black, as long as the abdomen; palpi brown. Thorax yellow, the mesonotum a little darker, and clothed with brown squamulæ. Abdomen yellowish, brownish-yellow or brown, the terminal segments and the hypopygium brown or blackish; clothed above with brown squamulæ. Legs brown or blackish, the femora, for the most part, yellow, and with a purplish or greyish reflection in some lights; in some specimens the tibiæ largely yellowish beneath the tomentum. Veins of the wings uniformly dark-brown squamulate. Length 4-5 mm.

Eight specimens.

HÆMAGOGUS, n. g.

Allied to *Ædes*. Palpi short in both sexes; five-jointed, the first and fifth small, the second nearly as long as the third and fourth together. Anterior claws of male inequilaterally unipectinate; of the female simple.

1. *Hæmagogus splendens*, n. sp. (Pl. IX., figs. 31, head of ♀; 31a, palpus; 31b, claw of ♂; 31c, wing.)

♀. In ground-colour deep black, the base of the femora, and the coxæ in part, somewhat yellowish. Occiput, mesonotum and scutellum wholly covered with brilliant green and coppery squamulæ; pleuræ densely snow-white squamulate. Abdomen brilliant steel-blue, in some reflections black; a spot on the sides of each segment snow-white. Legs blue, like the abdomen, shining black in some reflections; the undersides of the femora, towards the base, with white squamulæ. Wings hyaline, somewhat brownish in front, squamulæ black, evenly distributed. Length 5 mm.

Eight specimens. 1000 feet. The single male specimen was injured after the drawings were made. It does not appear to differ, however, from the female. The colouring must be much like that of *Culex cyaneus*, save of head and thorax.

CULEX.

1. *Culex mosquito*.

Culex fasciatus, Wiedemann (*nec* Fabricius), Auss. Zw. Ins., i., 8.

Culex mosquito, Rob. Desvoidy, Culicides, etc., 390; Guerin et Percheron, Genera, etc., Dipt., pl. ii, fig. 1; Macquart, Hist. Nat. Dipt., i., 35; F. Lynch, A., Dipt. Argent. Culicidæ, 60, pl. iii, fig. 1.

Culex frater, Rob. Desvoidy, Culicides, etc.

A single female specimen, to which Lynch's description applies well, and whom I follow in the above-quoted synonymy. That *C. fasciatus*, Fabricius, is different from *C. fasciatus*, Wiedemann, seems evident, but that the present species is the same as the latter is not so fully apparent to me. Wiedemann says that "An den vordern Fusswurzeln ist die äusserste Basis der einzelnen Glieder schneeweiss," while it is only the first joint that is thus marked in this species.

2. *Culex*, sp.

Several specimens of a luteous species, which are too ill-preserved to describe.

CHIRONOMIDÆ.

CHIRONOMUS.

Meigen, Illiger's Mag., ii., 260, 1803.

TABLE OF SPECIES.

1. Front metatarsi not more than one-and-a-half times the length of the front tibiæ	3
Front metatarsi two or more times the length of the tibiæ	2
2. Wings spotted <i>spilopterus</i> , n. sp.	
Wings not spotted <i>anonymus</i> , n. sp.	
3. Dorsum of thorax yellow, with brown stripes forming a V <i>longimanus</i> , n. sp.	
Dorsum not so marked	4
4. Dorsum of thorax with dark brown spots. <i>innocuus</i> , n. sp.	
Dorsum yellow, or brownish yellow, not-spotted	5
5. Wholly light yellow sp. 6	
Abdomen brown or black <i>lugubris</i> , n. sp.	

1. *Chironomus spilopterus*, n. sp. (Pl. IX., fig. 32, wing.)

♂, ♀. Face and front yellowish brown. Basal joint of antennæ brownish-yellow; flagellum brownish, the plumosity of the male blackish grey. Mesonotum brown or yellowish-brown, lightly whitish dusted; in well-preserved specimens brown vittate on the sides, and in front in the middle. Pleuræ black, in part luteous. Scutellum yellow or yellowish-brown. Abdomen black, with yellowish hair; in the male, slender; in the female, broader, and with a whitish posterior margin to the segments. Legs yellow, with rather abundant yellow hair; femora in part brown or brownish; front tibiæ not more than one-half of the length of the front metatarsi. Wings whitish hyaline, with pale blackish spots, which are more distinct when seen obliquely, and situated as follows: One near the base, another near the middle, and a third near or at the tip of the first posterior cell; a streak near the middle, and a spot near the tip of the cell in front of the forked cell; a spot on the posterior branch of the furcation, and one or two in the anal angle. Length 1½-2¼ mm.

Eight specimens.

DIXIDÆ.

DIXA.

Meigen, Syst. Besch., i., 216, 1818.

1. *Dixa clavulus*, n. sp. (Pl. X., fig. 73, wing.)

♂. Head black, lightly greyish-pruinose; palpi and rostrum a little reddish. Antennæ black, the basal joints somewhat reddish. Thorax yellow, the mesonotum with three dark-brown stripes, the median one abbreviated posteriorly, and divided by a slender line; the lateral ones begin a little before the termination of the median one. Scutellum and mesonotum brownish-yellow. Abdomen dark-brown. Legs brown or yellowish-brown; the tip of the hind tibiæ and their tarsi blackish; the femora, for the greater part, yellowish; hind tibiæ thickened at the tip. Length of body 2 mm., of wings 3 mm.

Four specimens. This species must be closely allied to *D. clavata*, Loew, from Massachusetts, and I was, at first, inclined to identify it with it. It differs from the description, however, in several important points. The pleuræ are immaculate yellowish, the legs are darker coloured, and the wings are uniformly tinged with brownish, not hyaline, with markings.

RHYPHIDÆ.

RHYPHUS.

Latreille, Nat. Hist., etc., xiv., 291, 1804.

1. *Rhyphus dolorosus*, n. sp. (Pl. X., fig. 74, wing.)

♀. Front and occiput black, somewhat greyish-pruinose. Mesonotum yellow with three brown stripes; wings broadly clouded on the distal and posterior margin, with two conspicuous brown spots in front, and narrow brown clouds on the cross-veins. Length of body 4 mm., of the wings 5 mm.

Front a little narrower below, the ocelli situated wholly in front of a line drawn through the angles of the eyes. Face more yellowish. Eyes reaching to the oral margin below. Palpi and proboscis black. Antennæ black, the two basal joints yellowish. Mesonotum opaque yellow with three brown or brownish-red stripes, the middle one abbreviated posteriorly the lateral ones in

front; bristles very short, hair-like. Pleuræ yellow, with obscure brownish spots. Metanotum and halteres yellow. Abdomen deep brown or black, the basal segments with obscure yellow markings. Legs yellow; the tip of hind femora and tibiæ, and the distal joints of all the tarsi brown or blackish. Wings broadly clouded with brown at the tip and along the posterior margin, the inner portion subhyaline; two dark-brown spots in the marginal cell, separated by a yellow spot; costal cell yellowish; the cross-veins with narrow, dark-brown clouds.

One specimen. Allied to *R. fenestralis*, but differs in the abdomen and wings.

STRATIOMYIDÆ.

SARGUS.

Fabricius, Ent. Syst. Suppl., 566, 1798.

1. *Sargus lucens*.

Sargus lucens, Loew, Centur., vii., 11.—Cuba.

Six specimens.

HERMETIA.

Latreille, Hist. Nat. des Crust. et Ins., xiv., 338, 1804.

1. *Hermetia illucens*.

Musca illucens, Linné, Syst. Nat., ii., 979. (For remaining synonymy, see Osten Sacken, Cat. 46, and Williston, Trans. Amer. Ent. Soc. xv., 245.)

Hab. Southern United States; Mexico; Brazil; West Indies.

Eight specimens. Quite like others from the United States and Brazil.

PELAGOMYIA.

Williston, Manual. N. A. Diptera, 48, 1896.

1. *Pelagomyia albitalus*, n. sp. (Pl. X., fig. 75, head of ♂.)

♂. Front and face deep shining green, with long and abundant, erect black hair. Eyes thickly pilose. Antennæ black; second joint a little shorter than the first, the third joint about twice the length of the first two together, gradually tapering, the annuli

mesonotum with black hairs. Scutellum large, with two stout, remote, black bristles. Abdomen brown or blackish, yellowish at base. Legs light yellow; hind femora black at the immediate tip. Wings cinereous hyaline; basal cells complete; penultimate section of the fourth vein a little longer than the posterior cross-vein, or the last section of the fifth vein. Length $1\frac{1}{4}$ mm.

One specimen.

GEOMYZIDÆ.

ANTHOMYZA.

Fallen, Spec. Entom., 1810; *Leptomyza*, Macquart, Hist. Nat. Dipt., 1835; *Anthophilina*, Zetterstedt, Ins. Lapp., 1840.

1. *Anthomyza cinerea*, n. sp. (Pl. XIV., fig. 170, head of ♂.)

♂, ♀. Front broad, narrowest opposite the insertion of the antennæ; yellow, the vertical margin more or less cinereous; with four rows of short bristles, reaching nearly to the root of the antennæ. Antennæ yellow, the third joint orbicular and more or less brownish; arista nearly bare. Face and cheeks light yellow. Eyes small, oval. Occiput flattened, cinereous. Thorax black in ground-colour, but thickly covered with grey dust, that on the mesonotum somewhat yellowish; hair of the mesonotum black, bristly, the true bristles, however, confined to the posterior part in the middle. Abdomen black, but more or less thickly whitish pollinose, and with recumbent white hair; first two segments often in part reddish; remaining segments with a more or less distinct yellowish or whitish hind border. Legs yellow, the moderately-thickened femora often infuscated distally; terminal joints of the tarsi more or less brown; bristles on the posterior inferior surface of the front femora not conspicuous. Wings cinereous or smoky hyaline; third section of the costa only a little longer than the fourth; second vein gently curved; penultimate section of the fourth vein only a little longer than the last section of the fifth. Palpi slender, yellow. Length $2\frac{1}{4}$ - $2\frac{3}{4}$ mm.

Twelve specimens. "March. Common on the sandy sea-shore, alighting on the wet, wave-washed sand." The species seems to be allied to *A. gracilis*, Fallen.

2. *Anthomyza wanthropoda*, n. sp.

♂, ♀. Front narrower than in *A. cinerea*, narrowest below; red, the vertical margin brownish; on either side the vertical margin is white, and bears the outer row of short bristles. Antennae yellow; arista bare. Face and cheeks light-yellow, the latter scarcely more than one-third as wide as the vertical diameter of the eyes. Thorax black in ground-colour, thickly ashy-grey pollinose, with a shade of yellowish on the mesonotum; hair of the mesonotum bristle-like. Abdomen black, greyish pruinose, opaque; rather slender in the male, the hypopygium protuberant; all the segments with a narrow yellowish or whitish hind border; hair short, wholly black. Legs yellow; last joint of all the tarsi brown; bristles of front femora not conspicuous. Proboscis and wings as in *A. cinerea*. Length 2-2½ mm.

Three specimens. The species is readily distinguishable from *A. cinerea* by the narrower front and cheeks, the less densely pollinose thorax, black hair of the abdomen, &c.

In addition to the foregoing species listed or described from the island of St. Vincent, there are, among the specimens submitted to me, about twenty others, the systematic positions of which are yet more or less doubtful. Several of them will probably require the erection of new genera for their reception. The descriptions will be given in a later paper, in connection with the report upon the Grenada Diptera now in my hands for study.

The present collection of Diptera is the first one of any extent that has been studied from the West Indian Islands. Isolated species, or small collections, chiefly of the larger forms, have been studied by various authors, but no collection has ever represented nearly so fully the microfauna as does the present one. The West Indian Diptera-fauna is essentially a common one, with a strong South American facies. Very few of the species, I believe, will be found restricted to any single island or group of islands. But comparatively few of the species will be found to occur in North America, and they for the most part are either species of wide-spread habitats, or else are confined to

the southernmost portions of the United States, especially Florida, whose fauna seems to partake largely of the southern type.

It may, perhaps, occasion some surprise that so large a proportion of the foregoing species are determined as new. This is due to two facts. First, the larger portion of the species of the collection are small or very small, the majority not exceeding four millimetres in length and nearly a half requiring the use of a compound microscope for their study. Second, the small, obscure species are exceedingly difficult to recognize from the majority of the existing descriptions of South American forms. I cannot hope to have avoided all synonyms. That some of the species have been previously described from South and Central America will be a matter of comparative indifference if I have succeeded in so describing and figuring the present ones that the future observer of specimens from these regions will be able to determine them with tolerable certainty.

My thanks are due to Professor Aldrich for so kindly undertaking the study of the families Dolichopodidæ and Phoridæ, to which he has given so much attention in recent years.

EXPLANATION OF PLATES VIII., IX., X., XI., XII., XIII., & XIV.

PLATE VIII.	—	See explanation facing Plate VIII.
PLATE IX.	“	“
PLATE X.	“	“
PLATE XI.	“	“
PLATE XII.	“	“
PLATE XIII.	“	“
PLATE XIV.	“	“