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THE
NATURAL HISTORY
OF
BRITISH INSECTS;

EXPLAINING THEM
IN THEIR SEVERAL STATES,
WITH THE PERIODS OF THEIR TRANSFORMATIONS,
THEIR FOOD, ŒCONOMY, &c.

TOGETHER WITH THE
HISTORY OF SUCH MINUTE INSECTS
AS REQUIRE INVESTIGATION BY THE MICROSCOPE.

THE WHOLE ILLUSTRATED BY
COLOURED FIGURES,
DESIGNED AND EXECUTED FROM LIVING SPECIMENS.

By E. DONOVAN.

VOL. XIII.

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PLATE XXII.

TIPULA PLUMOSA.

PLUMOSE, OR SEA TIPULA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a very short membranaceous proboscis, the back grooved and receiving a bristle: beak short and without a sheath: feelers two, incurved, filiform and longer than the head: antennæ filiform in general.

SPECIFIC CHARACTER

AND

SYNONYMS.

[Thorax greenish: wings white glossed with prismatic hues, and a brown dot: antennæ feathered.

TIPULA PLUMOSA: thorace virecente, alis albis: puncto fusco, antennis plumosis. *Fabr. Sp. Inf.* 2. p. 406. n. 31.—*Mant. Inf.* 2. p. 324. n. 37.

Tipula thorace virecente, alis hyalinis puncto nigro. *Linn. Syst Nat.* xii. 2. p. 974. n. 26.—*Fn. Suec.* 1758.

is found in the month of April in marshy places, and has frequently been mistaken for the common guat.

PLATE



P L A T E C C C .

T I P U L A P O M O N Æ .

GENERIC CHARACTER.

Head lengthened out. Upper jaw arched. Palpi two, curved, longer than the head. Proboscis short, and bent inwards.

SPECIFIC CHARACTER

AND

SYNONYMS.

Shining black: wings whitish, with a central dark spot in the anterior margin: thighs ferruginous.

TIPULA POMONÆ: glabra nigra alis lacteis: puncto nigro, femoribus ferrugineis. *Fab. Ent. Syst. T. 4. p. 249. sp. 74.*

We met with both sexes of this uncommon Insect in Coombe Wood, Surrey, in the beginning of June, 1798.—The specimen Fabricius described was taken in this country also, May 13, on a fruit-tree.



P L A T E XLVIII.

FIG. I.

TIPULA CROCAT.

DIPTERA.

Wings two.

GENERIC CHARACTER.

Head long. Palpi 4, curved. Trunk very short,

SPECIFIC CHARACTER.

Black spotted with yellow. Legs tawny, with black feet, and a black ring round the posterior thighs. Wings tawny, with a marginal brown spot.

Syst. Ent. 748. 5.—*Linn. Syst. Nat.* 2. 971. 4.—

Fn. Sv. 1739.

Geoff. Inf. 2. 553. 7. *Tab.* 19. *Fig.* 1.

Degeer Inf. 6. 349. 10.

Raj. Inf. 72. 4.

Schaeff. Icon. Tab. 126. *Fig.* 4.

Scop. carn. 845.

FIG.

F I G. II.

TIPULA RIVOSA.

SPECIFIC CHARACTER.

Brown-grey. Eyes black. Antennæ feathered. Wings larger than the body, with three brown patches near the margin. Tail of the female bifid. Length one inch.

Syst. Ent. 748. 2.—*Linn. Syst. Nat.* 2. 971. 2.

Fn. Sv. 1738.

Geoff. Inf. 2. 554. 2.

Degeer. Inf. 6. 341. 2. *Tab.* 19. *Fig.* 1.

Raj. Inf. 72. 2.

Scop. carn. 846.

Acta Holm. 1739. *Tab.* 9. *Fig.* 8.

Sulz. Inf. Tab. 20. *Fig.* 128.

The Genus *Tipula*, comprises an extensive family of the Dipterous Order, or of such Insects as are furnished with two Wings only. Our largest Species are *Tip. Rivosa*, *Crocata*, *Lunata*, &c. the most common is *T. Oleracea*, generally known by the trivial appellations, *Long Legs*, *Old Father*, &c. It is, as are also the other Species, perfectly harmless and inoffensive; yet their singular form, and more particularly the extraordinary disproportion of their legs, operates frequently to their disadvantage with the ignorant, who readily suppose they have to avoid, the secreted sting, of whatever appears aukward or uncommon.

Our smaller Species are infinitely more numerous, and many of them are not described, being so very minute as to remain unnoticed. The *Tipula Plumosa*, Plate xxii, differs materially in its general appearance from the larger kinds.

We rarely find a specimen of the larger kinds of *Tipula* with the legs complete; the loss of one or two of those members do not materially retard the briskness of its motions, but it cannot fly after suffering a total amputation, though it will then live a considerable time,

The *Tipula Rivosa* being entangled by two of its legs in the snare of a large spider [*ARANEA DIADEMA*], at first endeavoured to disengage them by force, but this rather added to its calamity, and a third leg was attracted by the glutinous matter on the threads; the spider approached, and the creature accelerated its escape by leaving its legs in the web. It is very common to observe the broken limbs of the *Tipulæ* in the snares of this species of spider.

The Larvæ of many *Tipulæ*, more especially the very minute sorts, are found in standing water, but the larger, generally feed on the roots of grass, and may be found by turning up the light surface of the earth. The *Tipula Rivosa* is taken in May and June, the *Tipula Crocata* in June and July; the latter is observed in the flower-garden or orchard.



PLATE XXXV.

FIG. I.

Shews the natural size of the larva, of the

MUSCA CHAMÆLEON,

Described in Plate XXXI. of this work.

FIG. II.

As it appears magnified. We have taken it since that plate was finished, or we would have introduced it with the Fly. Being unacquainted with any perfect representation of this aquatic larva, we are happy to give it before the completion of the first volume.



P L A T E X X X I.

F I G. I.

M U S C A C H A M Æ L E O N.

C H A M Æ L E O N - F L Y.

D I P T E R A.

G E N E R I C C H A R A C T E R.

Mouth with a soft exerted fleshy proboscis and two equal lips :
 sucker furnished with bristles : feelers two, very short or none ; an-
 tennæ generally short.

S P E C I F I C C H A R A C T E R

A N D

S Y N O N Y M S.

Scutel bidentated and yellow : abdomen black, with lateral yellow
 bands.

MUSCA CHAMÆLEON. *Linn. Syst. Nat.* 2. 979. 3.

STRATIOMYS CHAMÆLEON : scutello bidentato luteo : abdomine
 nigro : fasciis lateralibus luteis. *Fabr. Ent. Syst.*
T. 4. 263. 3.

STRATIOMYS. *Geoffr. Inf.* 2. 479. *tab.* 7. *fig.* 4.

Linnæus, in a former edition of the *Fauna Suecica* gave this insect
 the name of *Oestrus Aquæ*, but he afterwards discovered it to be a
 Musca, and called it Musca Chamæleon. It is a common insect in
 some situations, but yet though well known in its perfect state, few
 have attended so minutely to its changes as to discover that these form

the most singular part of its history.—The female deposits her eggs in the hollow stalks of aquatic plants, or broken reeds, or so provides for them that they cannot, but by some unforeseen accident, be carried away. The egg, in due time ripening, produces a Larva, no way resembling the Parent, but rather a Worm of a most singular structure. This happens about the latter end of *May*, or beginning of *June*, if the weather proves favourable; they will then be found in shallow standing waters, crawling on the grass or plants which grow there, or they may be taken floating on the surface of the water. The whole consists of twelve annular divisions, of which the Head and Tail are two. The Tail has a verge of hairs, which, when entirely expanded, support the creature on the surface, with its head downwards. If it wishes to descend, it contracts the hairs in the form of a wine glass, or entirely closes them at the end; and when again it is rising to the surface, it forces a bubble from a small aperture in the center, which immediately makes a passage for its ascension. After remaining some time in the pupa state, the Fly is produced: this appears about the middle of *July*. The nectareous juices of flowers, which it extracts by means of its proboscis, or sucker, from the corolla of flowers, constitute its principal food in the perfect state.

FIG. II.

MUSCA PENDULA.

PENDULUM-FLY.

SPECIFIC CHARACTER

AND

SYNONYMS.

Downy: thorax black, with four yellow lines: abdomen with three yellow bands.

MUSCA



MUSCA PENDULA. *Linn. Syst. Nat.* 2. 784. 28.

SYRPHUS PENDULUS: antennis fetariis tomentosus thorace lineis
quatuor, abdomine fasciis tribus flavis. *Fabr.*
Ent. Syst. T. 4. 282. 17.

Its habits nearly correspond with those of the *Musca Chamæleon*.
Like that Insect it once bore the appearance of an aquatic insect, and
like that also in its last or perfect state, exists upon the nectar of
flowers. It is to be taken in *June*.

FIG. III.

MUSCA LATERALIS.

RED SIDED FLY.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: abdomen sanguineous at the sides, dorsal stripe and tip
black.

MUSCA LATERALIS: nigris abdominis lateribus basi sanguineis.
Fabr. Sp. Inf. 2. p. 443. n. 37.

Visits flower gardens in the month of *June*. Its transformations
are unknown.



PLATE DLIX.

MUSCA EPHIPPIMUM.

RUFIOUS-THORAX MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a short exerted fleshy proboscis, and two equal lips: sucker furnished with bristles: feelers two, very short, or sometimes none: antennæ generally short.

* *Stratiomys.* *Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Scutel furnished with two teeth: thorax rufous, spinous each side.

MUSCA EPHIPPIMUM: scutello bidentato, thorace rufo utrinque spinoso.
Fabr. Sp. Inf. 2. p. 417. n. 2.—*Mant. Inf.* 2.
 330. n. 4.—*Ent. Syst. T.* 4. 264. n. 6.
Geoffr. Inf. 2. 480. 3.

MUSCA INDA. *Schranck. Inf. Austral. p.* 438. n. 891.

Taken in Coombe Wood, on the 4th of June, 1812, by Geo. Milne, Esq. F. L. S.

Musca ephippium is considered as a scarce insect in this country. It is known to have been taken occasionally by the old collectors about
 thirty

thirty years ago, or rather more, in the woods about Highgate, which, in consequence of the recent improvements in that vicinity of the metropolis, are now demolished. It has occurred likewise in the woods of Kent. Our good friend, John Swainson, Esq. of Liverpool, met with three specimens at the same time sticking against the trunks of trees; this happened about twenty years ago, and was then esteemed a rare circumstance.

There is no other species of *Musca* that can be confounded with this; the characteristic rufous colour of the thorax forms such a striking contrast with the black of the body and the duskiness of the wings as to render this impossible: neither do we recollect, among the innumerable tribes of exotic species, any insect so strikingly singular, with the exception of some of the *Mutilla* genus, the very different structure of which can never allow them to be mistaken for *Musca*, even by the most casual observer. When closely examined, the thorax is perceptibly covered with short hairs; the body is quite smooth and black, the legs black, and poisers pale yellowish. The whole surface beneath is black.



PLATE DXIX.

FIG. I. II.

MUSCA ULIGINOSA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two equal lips: suckers furnished with bristles: feelers two, very short, or none: antennæ generally short.

* *Nemotelus*

Sucker with a single recurved bristle without sheath: feelers none: antennæ moniliform, the tip setaceous, and inserted at the base of the proboscis.

SPECIFIC CHARACTER

AND

SYNONYMS.

Male black: abdomen whitish, with black bands at the tip.
Female dark with a dorsal line of pale spots on the abdomen.

FIG.

FIG. I. I. (*mas.*)

MUSCA ULIGINOSA. *Linn. Syst. Nat.* 2. 982. 22.

NEMOTELUS niger abdomine niveo; fasciis duabus nigris *Geoff. Inf.* 2. 543. I.

STRATIOMYS MUTICA. *Fabr. Mant. Inf.* 2. 332. 20.

NEMOTELUS ULIGINOSUS: niger niveo apice atro. *Fabr. Ent. Syst. T.* 4. 269. 229. I.

NEMOTELUS ULIGINOSUS. *Panz. Fn. Inf. Germ. fas.* 49. tab. 21.

FIG. II. II. (*fem.*)

NEMOTELUS MARGINATUS: niger abdominis margine tibiisque albidis. *Fabr. Ent. Syst. T.* 4. 270. 229. n. 3.

STRATIOMYS MARGINATA. *Mant. Inf.* 2. 332. 19.

Nemotelus niger abdomine punctis albis. *Geoff. Inf.* 2. 543.

NEMOTELUS MARGINATUS. *Panz. Fn. Inf. Germ. fas.* 49. tab. 32.

NEMOTELUS PUNCTATUS. *Coquebert Illustr. Icon. Inf. dec.* 3. tab. 23. f. 6.

Notwithstanding the very striking difference that prevails between the two insects above described, we are induced to insert them as the two sexes of the same species, on the authority of W. E. Leach, Esq. by whom they have been captured in some abundance, and who is well convinced of the accuracy of this assurance.

The



The manifest dissimilarity of these insects could have afforded no reasonable ground for apprehending them to be the same ; and this we notice in justification of those numerous writers above mentioned, who have uniformly considered them distinct. The male insect having been previously described under the name of *uliginosa*, we have conceived it right to retain that as the name of the species, in preference to *marginatus*, the term assigned to the female. The male has the eyes large and brown, the thorax black ; abdomen pale yellowish with a small spot of black on the first and second segment, the third immaculate, the fourth with a somewhat sinuous band of black at the base, and the remainder with a narrow black band ; that on the fourth segment being most considerable in size. The underfide is dark with white dots, and the legs yellow with dusky spots. The eyes of the female are large and reddish, thorax dusky, and glossed with bronze, and the abdomen black, with a single dorsal row of white triangular spots : the legs, as in the male, pale yellowish, with the middle of the thigh and flank blackish.

The smaller figures denote the natural size, the larger, their appearance when magnified.



PLATE DLXIV.

TABANUS NIGER.

BLACK TABANUS.

DIPTERA.

GENERIC CHARACTER.

Mouth with a straight exerted membranaceous proboscis, terminated in two equal lips: sucker projecting, exerted, and placed in a groove on the back of the proboscis, with a single-valved sheath and five bristles: feelers two, equal, clavate, and ending in a point: antennæ short, approximate, cylindrical, with an elevated tooth at the base.

SPECIFIC CHARACTER.

TABANUS NIGER. Black: eyes filky green, with the anterior margin and three bands of purple.



A new and very curious species, lately discovered in Hampshire by G. Montagu, Esq. The figures in the annexed plate will shew the upper and lower surfaces as they appear when magnified. The smaller figure exemplifies the natural size.





P L A T E CXXXI.

TABANUS CAECUTIENS.

DIPTERA.

Wings two.

GENERIC CHARACTER.

Antennæ conic, of four segments. Trunks fleshy, terminated by two lips. Palpi, one on each side of the Trunk.

SPECIFIC CHARACTER

AND

SYNONYMS.

Eyes brilliant, green with black spots. Thorax brown with yellowish lines. Body bright yellow with triangular black marks, anterior margin, and center of the Wing black.

TABANUS CAECUTIENS: oculis viridibus nigro punctatis, alis maculatis. *Fab. Syst. Ent. n. 18. p. 790.*

Fab. Spec. Inf. 2. 27. p. 459.

TABANUS CAECUTIENS: oculis nigro-punctatis, alis maculatis.—
Linn. Syst. Nat. 17. p. 1001. ed. 13.

n. 17. p. 2885.

Faun. Suec. n. 1888.

Tabanus fuscus, abdominis lateribus pedibusque flavis, alis maculis fuscis. *Geoffr. Inf. 2. n. 8. p. 463.*

Tabanus nubulosus. *Harris Inf. Angl. tab. 7. fig. 5.*

Musca bipennis pulcra, alis maculis amplis albis pictis. *Rai. Inf. p. 272.*

Le Taon brun, à côtes du ventre jaunes, et ailes tachetées de noir.
Geoffr.

Die buntaugichte Breme. *Panzer's Deutschlands Insecten, &c. — Faun. Inf. Germ.*

In the months of June and July, or earlier in forward seasons, this Insect is found in great plenty in the lanes and skirts of woods; and are very troublesome to persons or animals who pass through such places in the middle of the day: they conceal themselves in the crevices of the bark of trees, or among the foliage till about an hour before noon, when they come forth in great plenty, and settle on the hands and face, or other thinly covered parts, and dart their sharp pointed trunks or proboscis into the flesh: we have observed the sting of this Insect to be most severe about mid-day, particularly when the sun shines bright, and emits much heat; a disagreeable sensation continues in the stung part for some time, and is generally succeeded by a large tumor, and a slight discharge of pungent fluid before it disappears entirely.

To explain more minutely the structure of the trunk, we have given a figure of its magnified appearance at Fig. III: the outer coat, or sheath, terminates at its extremity, in two lateral, moveable lips, and contains a longitudinal, horny, convex blade; the acute point of which is concealed between these lips: this interior tube, when examined with a Microscope, appears to consist of three others, exceedingly sharp at the points; and are used by the Insect as lancets, to lacerate the flesh when it feeds, while it pumps, or sucks up the blood and moisture from the wound, through the capillary tubes with which several parts of the trunk are furnished.

It feeds in the same manner on Insects, but chiefly on those in the larva state.

The species is not uncommon in Germany, France, Italy, and most warm parts of Europe: also received from Georgia, in North America.

Fig. I. Natural Size. Fig. II. Front View of the Head magnified, with the Eyes and Proboscis; the former are most beautiful microscopical objects when the Insect is alive, but turn brown after it dies.



P L A T E D X L I X .

MUSCA ATHERIX.

ATHERIXINE MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two unequal lips: upper beset with bristles: feelers short and two in number, or sometimes none: antennæ usually short.

* Antennæ moniliform, with a terminal bristle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: body with a grey spot on each side of all the segments: in the middle of the costal margin of the wings a dusky spot surrounded by a crescent of hyaline dots, and a dusky spot at the base.

ATHERIX MACULATA (mas) Meig. *Clafs. und. Besch. t. 1. p. 274.*

This insect, which is clearly of the Musca tribe in the system of Linnæus, constitutes a new genus in the work of Meigel, under the name of Atherix.—The last-mentioned genus has been recently adopted by Latreille in his subdivisions of the Muscæ.

There

There is an appearance of novelty and simple elegance in this little insect that strongly demands attention, though the colours are merely black and dusky, with a diversity of the grey,—such in fact as in the more emphatic language of practical collectors might be called the widow's weeds, or half-mourning. The species is very rare.





P L A T E CXXV.

MUSCA SEMINATIONIS.

DIPTERA.

Wings 2.

GENERIC CHARACTER.

A soft flexible trunk, with lateral lips at the end. No palpi.

SPECIFIC CHARACTER.

Head and Thorax black-brown; Abdomen black, with very minute specks of white. Wings clouded and speckled with brown. A yellow streak on the under side of the abdomen.

MUSCA SEMINATIONIS. Antennis setariis, alis atris cinereo punctatis, abdomine basi subtus flavo.
Fab. Spec. Inf. 2. 452. 90.

This species is sometimes met with in meadows, on plaitain, thistles, &c. in May and June.

It is a very pleasing object for the Microscope, particularly the wings, which are finely reticulated and spotted. Its magnified appearance is given with its natural size in our plate.



P L A T E L X I I .

MUSCA ONOPORDINIS?

D I P T E R A .

Wings two.

G E N E R I C C H A R A C T E R .

A soft flexible trunk, with lateral lips at the end. No palpi.

S P E C I F I C C H A R A C T E R .

Head, thorax, and body, yellow brown. Wings, variegated with brown spots.

Syst. Ent. 787. 80.*Fabric. Spec. Inf.* 2. 455. 105.

Whether this is the *Musca Onopordinis* of Linnæus, as quoted, we cannot exactly determine; it answers to his description of that insect, but he speaks so very concisely, that we will not venture to assure ourselves of his *M. Onopordinis* being our species. In this and many other instances we find, that though brevity is the greatest excellence of the Linnæan descriptions, it is also their most essential fault.

The species may, with much propriety, stand under the name *Onopordinis*, as we believe it has never been figured before; and, should the Linnæan species be hereafter discovered to differ from the present, a new name may be readily given to that insect.

Flies in April and May, and is very common in the summer, in woods.



P L A T E CCXCIV.

MUSCA SOLSTITIALIS.

GENERIC CHARACTER.

The mouth formed by a soft fleshy proboscis, with two lateral lips. No palpi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ furnished with a lateral hair. Wings white, with four somewhat connected black bars across. Scutellum yellow.

MUSCA SOLSTITIALIS: antennis setariis, alis albis: fasciis quatuor connexis nigris, scutello flavo. *Linn. Syst. Nat.* 2. 999. 127.—*Fn. Sv.* 1879.

Degeer. Inf. 6. 42. 16. tab. 2. fig. 10, 11.

La mouche des tetes de Chardons. *Geoff. Inf.* 2. 499. 14.

Found in the middle of summer on thistles, and is an elegant object for the microscope.





P L A T E CLXXX.

ASILUS CRABRONIFORMIS.

HORNET FLY.

DIPTERA.

Wings, two.

GENERIC CHARACTER.

Trunk horny? long straight, bivalved.

SPECIFIC CHARACTER

AND

SYNONYMS.

Body hairy; the three segments next the thorax black, the four others yellow.

ASILUS CRABRONIFORMIS: abdomine tomentoso antice segmentis tribus nigris postice flavo inflexo. *Fab. Spec. Inf.* 2. 461. 5.—*Linn. Syst. Nat.* 2. 1007. 4.

Asilus ferrugineus abdominis articulis prioribus ⁴ atris posteribus quatuor flavis *Geoff. Inf.* 2. 468. 3. tab. 17. fig. 3.

Asilus sub-hirfutus, antennis fetigeris, abdomine antice nigro postice flavo fulvo. *Degeer. Inf.* 6. 244. 7. tab. 14. fig. 3.

Musca maxima crabroniformis. *Raj. Inf.* 267.

Erax crabroniformis. *Scop. carn.* 974.

Schæffer. Icon. tab. 8. fig. 15.

——— *Elem. tab.* 13.

This

This is a very confined genus. Fabricius in the *Species Insectorum* describes only thirty-three kinds; of these not more than eight are natives of this country. The *Afilus Crabroniformis* is the largest, and is not uncommon in some places in the summer, particularly frequenting wet meadows, and flying busily about the middle of the day amongst flowers.

Its proboscis is a curious instrument; the sting of it is very painful, and causes a swelling.



P L A T E C C C C X C I V .

MUSCA HOTTENTOTTA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two equal lips : suckers furnished with bristles : feelers two, very short, or sometimes none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Body covered with yellow hairs : wings hyaline, with fuscous rib.

MUSCA HOTTENTOTTA : hirta flavescens, alis hyalinus : costa fusca.
Linn. Fn. Suec. 1787.—*Gmel. Linn. Syst. T.* 1.
p. 5. 2831. 13.—*Fabr. Spec. Inf.* 2. *p.* 415.
n. 16.

NEMOTELUS HOTTENTOTTUS. *Degeer. Inf.* 6. *p.* 190. *n.* 12.
t. 11. *f.* 7.—*Schæff. Icon. t.* 76. *f.* 6.

A large, curious, and elegant species, and one of considerable rarity in this country : in the north of Europe it appears to be very far from uncommon.



1

3



2

P L A T E CXLVI.

BOMBYLIUS MEDIUS.

DIPTERA.

Wings two.

GENERIC CHARACTER.

Trunk taper, very long, between two horizontal valves.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax and body yellowish brown, white at the extremity. Wings, with brown spots.

BOMBYLIUS MEDIUS: alis fusco punctatis corpore flavescente postice albo.—*Linn. Syst. Nat.* 2. 1009. 2. 1919.

BOMBYLIUS PUNCTATUS niger villis fulvis, alis fusco punctatis.—*De Geer. Inf.* 6. 269. 2. tab. 15. fig. 12.

Schæff. Elem. tab. 27. 1.

———— *Icon. tab.* 78. fig. 3.

Fab. Syst. Ent. 802. 2.

———— *Spec. Inf.* 2. 473.

The Bombylius genus is very concise. *Fabricius* in the *Species Insectorum* enumerates only nine species, of those five are found in Europe, major, medius, minor, ater and fuscus; the three former are natives of this country; the fourth is frequent in Germany; the last

last in Italy.—To these Fabricius has added a few species in his last work *Entomologia Systema*, which have not been described before, but they are all exotics.

The species figured in the annexed plate is not common. It lives on the nectareous juice of flowers. Is found in May.

F I G. III.

MUSCA HYPOLEON.

DIPTERA.

GENERIC CHARACTER:

A soft flexible trunk, with lateral lips at the end. No palpi.

SPECIFIC CHARACTER.

Eyes brown. Thorax black, margined with yellow. Abdomen black, with five yellow spots. Legs yellow.

Musca Hypoleon. *Lin. Syst. Nat.*

Stratiomys Hypoleon. *Fab. Mantissa. 2. p. 347. N° 63.*

This Insect was taken last August, flying among some rushes in Battersea meadows. The line at Fig. 2. denotes the natural size.



P L A T E L X V I.

BOMBYLIUS MAJOR.

HUMBLE-BEE FLY.

D I P T E R A.

Wings two.

G E N E R I C C H A R A C T E R.

Trunk taper, very long, sharp, between two horizontal valves.

S P E C I F I C C H A R A C T E R.

Body short, thick, covered with thick yellowish down. Wings dark brown next the anterior margin; transparent next the posterior margin. Legs long, slender, black.

Linn. Syst. Nat. 2. 1009. 1.—*Fn. Sv.* 1918.

Bombylius variegatus, &c.

Degeer. Inf. 6. 268. 1. *Tab.* 15. *Fig.* 10.

Afilus, &c. *Geoff. Inf.* 2. 466. 1.

Reaum. Inf. 4. *Tab.* 8. *Fig.* 11, 12, 13.

Mouff. Inf. 64. *Fig.* 5.

Scop. Carn. 1018.

Raj. Inf. 273.

Schaeff. Icon. Tab. 79. *Fig.* 5.

Huffnag. Inf. Tab. 8. *Fig.* 1.

Aldr. Inf. 350. *f.* 10.

We have only three species of this genus in England, *Major*, *Medius*, and *Minor*.

B. Major is not very rare, its usual time of appearance is June and July.

Together with other species of the *Bombylius* genus, it is sometimes called the Sword-Bee-Fly: this appellation it receives from the singular form of its trunk; to assist our description, we have represented its appearance when magnified, at Fig. I.

It hovers from flower to flower, when the warmth of the sun invites it abroad, and extracts the nectar from flowers, by darting its proboscis into them, but never rests while feeding.



PLATE DXXXVI.

BOMBYLIUS MINOR.

SMALL HUMBLE BEE FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a very long straight fetaceous sucker, formed of two unequal horizontal valves, and containing fetaceous stings.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings immaculate : body yellowish, hairy : legs testaceous.

BOMBYLIUS MINOR: alis immaculatis, corpore flavescente hirsuto, pedibus testaceis. *Linn. Syst. Nat.* 1009. 4.—*Fn. Sv.* 1920.—*Fabr. Ent. Syst.* T. 4. 409. n. 9.

This is the last of the Bombylius tribe we have to describe in the present work ; three species only being found in Britain and of these two are already included.

The

The three species of British Bombylii bear the names of major, medius, and minor; and these are sufficiently expressive of the comparative size of each, major being the largest, minor less by one half; and medius of an intermediate size between the other two. The latter appears to be more rare than either: it is found in spring, hovering over flowers the nectareous juices of which, afford its favourite food. The figure represents this little species in its natural size.



PLATE DLXXIV.

MUSCA TENAX.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis with two equal lips: sucker furnished with bristles; feelers two, very short or none; antennæ usually short.

* *Syrphus*.

SPECIFIC CHARACTER

AND

SYNONYMS.

Downy: thorax grey: abdomen brown: hind-shanks compressed and gibbous.

MUSCA TENAX. *Linn. Syst. Nat.* 2. 984. 32.—*Fn. Su.* 1799.

SYRPHUS TENAX: antennis setariis tomentosus thorace griseo, abdomine fusco, tibiis posticis compresso gibbis. *Fabr. Ent. Syst. T.* 4. 288. 36.



Found in dung and putrid substances.

PLATE





P L A T E D V I I .

MUSCA MORTUORUM.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips :
sucker furnished with bristles : feelers two, very short (or none) antennæ
short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ feathered ; thorax black : abdomen brassy green : legs
black.

MUSCA MORTUORUM : *antennis plumatis, thorace nigro, abdomine
viridi æneo, pedibus nigris. Linn. Syst. Nat.*
2. 986, 66.—Fn. Sv. 1830.—Fabr. Ent. Syst.
T. 4. 318. n. 23.

A native of Sweden, and other parts of Europe ; it is to be
esteemed also a british species, a specimen having been lately taken
by

by Mr. W. E. Leach, in Scotland: this was met with on the bog in which the battle of Bannockbourn was fought, a waste in the vicinity of Stirling, and is the sole authority within our recollection upon which we could venture to consider it a native of these kingdoms. It is a most interesting acquisition, and is represented in its natural size with all possible fidelity, in two different positions.

In addition to the character assigned to this species by Linnæus, we ought to observe that the thorax is lineated with black, and greyish, a circumstance to which Fabricius refers in the expression "*thorax sublineatus*;" in the specimen above described, these lines are pretty distinct.



PLATE CCCLXVI.

MUSCA PULCHELLA.

STRIPED-WING MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two unequal lips : sucker beset with bristles : feelers short, and two in number, or sometimes none : antennæ usually short.

* *Section, Antennæ a naked bristle.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Downy, cinereous : disk of the wings yellowish-brown, with a flexuous white hyaline stripe.

MUSCA PULCHELLA : antennis setariis pilosa cinerea alarum disco fusco flavescente : vitta flexuosa albo-hyalina. *Fabr. Ent. Syst. T. 4. p. 352. sp. 167.*

Musca pulchella antennis setariis pallida testacea pilosa alis patulis late flavo nigro fasciatis. *Rossi. Fn. Etrusc. 2. 314. 1528. tab. 8. fig. 6. mal.*

The Fabrician Entomological work above-mentioned, affords a copious and distinct account of this elegant species of Musca. Fabricius met with it in the cabinet of M. Bosc, and observes that

it inhabits Gardens in Italy. Two years previous, however, to the appearance of *Entomologia Systematica* *, Rossius had described and figured this species in his *Fauna Etrusca* †, as an Italian insect, so that the latter must be considered as the first describer of it. Probably it has not been noticed by any other continental writer since ‡: as a native of Great Britain it is certainly undescribed.

Musca pulchella we must esteem as a very scarce insect in this country. Our specimens were taken in the Wilds of Kent, near Faversham, and it has occurred, though rarely, as we are informed, nearer the vicinity of London.

The upper figure in the plate exhibits an enlarged representation of this curious insect in a flying position, the natural size appears below.

* 1792.

† Published in 1790.

‡ Gmelin omits this and many other very interesting insects described by Fabricius, which we might expect to find in his improved edition of the Linnæan *Systema Naturæ*.



PLATE CCCCLXV.

MUSCA CINGULATA.

YELLOW GIRDLED MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips : sucker furnished with bristles : feelers two, very short or sometimes none : antennæ generally short.

SPECIFIC CHARACTER.

MUSCA CINGULATA. Deep velvety black with a single yellow zone on the first joint of the abdomen : legs yellowish, extreme half of the thighs black.



Taken, though not in abundance, in the month of July, on the hedges near the road-side about Nutfield in Surrey. The smallest figure, No. I. exhibits the natural size.



PLATE CCCCLXVII.

FIG. I. I.

MUSCA VIBRANS.

VIBRATORY FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips : sucker furnished with bristles : feelers two, very short, or sometimes none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings hyaline with the tip black : head red.

MUSCA VIBRANS : alis hyalinis apice nigris, capite rubro. *Linn. Fn. Suec.* 1867.—*Degeer. Inf.* 6. p. 32. n. 11. t. 1. f. 19.

Found about trees, and distinguished in its flight by the brisk vibratory motion of its wings.

The figure resting on the leaf in the annexed plate denotes the natural size, that in the upper part of the plate its magnified appearance.

FIG.

FIG. II. II.

MUSCA QUADRISTRIGATA.

FOUR STREAKED FLY.

SPECIFIC CHARACTER.

MUSCA QUADRISTRIGATA. Brown: band surrounding the eyes, four streaks on the thorax, and scutell yellow.



A minute species represented in its natural size by the smallest figure in the lower part of the plate. Its magnified appearance is shown below.



1



3



2

P L A T E CXLII.

FIG. I.

MUSCA AURATA.

DIPTERA.

Wings two.

GENERIC CHARACTER.

A soft flexible trunk, with lateral lips at the end, no Palpi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Head brown. Thorax polished, greenish, or brassy. Abdomen flat, obtuse, brownish gold-colour. Legs yellowish; Feet brown.

Musca aurata: *antennis setariis nitida thorace æneo, abdomine obtuso aureo.* Fabricius. *Ent. Syst. Vol. VI. 335. 37.*—*Mantissa. Vol. II. p. 347. No. 63.*

This Insect has been only noticed in the latter writings of Fabricius. We have not found it uncommon in the summer upon the leaves of Fruit trees; and particularly on such as grow against a south wall: they fly briskly about noon, when the sun shines.

F I G. II. III.

MUSCA SEMI-ARGENTATA.

SPECIFIC CHARACTER.

Eyes brown. Thorax green; changeable to silver. Abdomen silvery, with shades of bright yellow, and grey, and some transverse streaks of black, very changeable.

Musca semi-argentata. *Marshall's MSS.*

We do not find that this rare and beautiful Insect has been described either by *Linnaeus* or *Fabricius*. It was taken a few years since in Epping Forest by Mr. Bentley, an eminent Collector of English Insects, and noticed by Thomas Marshall, Esq. Sec. L. S. in his Manuscript Notes, under the specific name *Semi-argentata*. Several specimens of it were taken last June in Epping Forest; except them, we have not heard of any being met with for some time.

Fig. 2. natural size.

Fig. 3. magnified.



PLATE DXI.

MUSCA FESTIVA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two equal lips : sucker furnished with bristles : feelers two, very short (or none) antennæ short.

SPECIFIC CHARACTER.

MUSCA FESTIVA. Green and golden, glossed with red, and cinereous : thorax lineated with yellow : abdomen banded with black.

An insect of peculiar beauty, extremely rare, and which does not appear to be described by any author.

The natural size of this very curious species is denoted by the smaller figure in the upper part of the plate : when magnified, as is shewn beneath, its appearance is remarkable for its singularity. The head is rather small and green, with eyes of a deep fuscous colour : the thorax green glossed with blue, with a double golden yellow line in

the

the middle, and a single one on each side : the abdomen greenish, and partaking more of the rich metallic hues of gold, yellow, and tints of red, than the other parts. The whole of the body is of a somewhat slender form; the wings large, and the legs long and slender in proportion

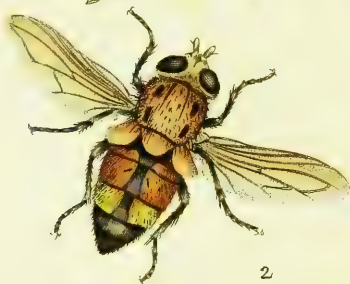
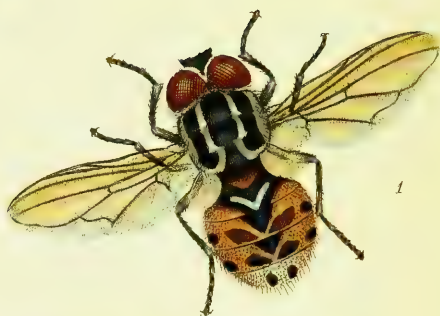


PLATE CCCCXLV.

FIG. I. I.

MUSCA MACULATA.

SPOTTED FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis and two equal lips :
sucker furnished with bristles : feelers two, very short or sometimes
none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Cinereous : thorax lineated with black : abdomen spotted with black,
and marked at the tip with two black dots.

MUSCA MACULATA : antennis plumatis pilosa nigra, thorax nigro-
lineato, abdomine atro-maculato, ano bipunctato.
Linn. Syst. Nat. 12. 2. p. 990. n. 70.
Scop. ent. carn. 870.

MUSCA MACULATA : cinerea, thorace abdomineque maculis nu-
merosis atris. *Fabr. mant. Inf.* 2. p. 342. n. 8.

This is a remarkably pretty species, and appears to considerable advantage before the lens of an opaque microscope. The two small distinct black dots on the extreme joint of the abdomen is a striking character of this interesting insect.

The smallest figure represents the natural size; this species is found on plants in Europe, and is rare.

FIG. II. II.

MUSCA SERICEA.

SILKY MUSCA.

SPECIFIC CHARACTER.

MUSCA SERICEA. Silky: head, thorax and scutellum subtestaceous: first three joints of the abdomen reddish-orange with a dorsal black stripe; tip greyish black.

A curious species and of the size denoted by the smallest figure (No. 2.) in the annexed plate. The whole surface of this insect except the wings has a delicate silky appearance: the thorax is marked in the middle with two distant black lines, and each side with two shorter lines

lines of the same colour, forming altogether a remarkable character of this particular species.

This kind appears to be rare, our specimen was taken in Kent in the neighbourhood of Faverham.



PLATE CCCCXIX.

MUSCA GROSSIFICATIONIS.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft, exerted fleshy proboscis, and two unequal lips: sucker beset with small bristles: feelers short, and two in number, or sometimes none: antennæ usually short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Deep black: wings black, tipped with white.

MUSCA GROSSIFICATIONIS: atra, alis nigris apice albis. *Linn.*

Fn. Suec. 1865.

Musca antennis setariis alis nigris apice albis. *Linn. Syst. Nat.*

Edit. 10. p. 599. n. 84.

Musca nigra alis fuscis, apicibus albis. *Ad. Upf.* 1736. p. 33. n. 50.

Fabr. Sp. Inf. 2. p. 451. n. 83.

Gmel. Linn. Syst. Nat. 2855. 109.

La mouche à aîles noires & tache blanche à l'extrémité. *Geoff. Inf.* 2.

p. 493. n. 1.

This diminutive species of *Musca* is mentioned by Linnaeus as one of the rarest of all the European insects. It is certainly uncommon, and especially in England. Geoffroy found it on flowers in the royal garden at Paris. The smallest figure denotes the natural size.





PLATE CCCCXXIX.

MUSCA HEMIPTERUS.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two unequal lips: sucker beset with bristles: feelers short, and two in number, or sometimes none: antennæ usually short.

* *Syrphus*: antennæ naked.

SPECIFIC CHARACTER

AND

SYNONYMS.

MUSCA HEMIPTERUS. Downy: thorax with a ferruginous border: wings thick, cinereous: fuscous varied with yellowish.

SYRPHUS HEMIPTERUS: *antennis setariis tomentosus thoracis limbo ferrugineo, alis crassioribus cinereis fusco flavescens* variis. *Fabr. Ent. Syst. T. 4. 284. n. 22.*

Schaeff. Icon. Tab. 71. fig. 6?

MUSCA SUBCOLEOPTRATA: *Gmel. Linn. Syst. Nat. 2869. n. 335.*

An insect nearly allied to the Linnæan *Conops subcoleoptrata*, or *Musca subcoleoptrata* of the Gmelinian edition of the *Systema Naturæ*.
Gmelin

Gmelin considers it as the same insect, but Fabricius describes it as a distinct species, distinguishing the *M. Subcoleoptrata* by the black thorax, and cinereous wings with two brown flexuous stripes; and the *M. Hemiptera* (our present species) by the thorax being surrounded by a ferruginous border, and the cinereous wings varied with yellowish.—Fabricius has since constituted a new genus of Dipterous insects, under the name of *THEREVA*, in which both these species of *Musca* are included*.

This insect is very uncommon in England.

* *Suppl. Ent. Syst. I. p. 560. n. 2.*



P L A T E C L I.

FIG. I.

MUSCA BRASSICARIA.

CYLINDRICAL FLY.

DIPTERA.

Wings 2.

GENERIC CHARACTER.

A soft flexible Trunk, with lateral lips at the end: no Palpi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax greenish. Abdomen cylindrical; second and third Segment reddish yellow.

MUSCA BRASSICARIA: antennis fetariis nigra, abdomine cylindrico: segmento secundo tertioque rufis. *Fab. Spec. Inf.* 2. 36. 443.—*Syst. Ent.* 25. p. 88.—*Mant. Inf. I.* 2. 43. 345.—*Ent. Syst.* 4. 327. 63.

Musca cylindrica: Antennis fetariis pilosa cinereo nigra, abdomine cylindrico elongato medio rufo. *Degeer. Inf.* 6. n. 9. p. 30. tab. 1. fig. 12,

Mouche cylindrique. Ibid.

Die Kohlfliege. *Panz. Faun. Inf. Germ.*

The Muscæ, if we follow the arrangement of Linnæus, form by far the most extensive of any genus (except Lepidoptera) we have at present any knowledge of. Fabricius enumerates in his last * Work no less than 202 Species, under the generic title *Musca*; independent of these we find 122, under the head *Syrphus*; 22 under *Rhagio*, and 25 under *Stratiomys*, all of which (with some exceptions) would make according to the Linnæan arrangement 349 species; not to notice the Insects of the same tribe included under his generic appellations, *Anthrax*, *Bibio*, *Nemotelus*, &c.

Musca Brafflicaria is not uncommon in gardens in May and June. Sometimes found on Willows.

Fig. 1, One of the Antennæ magnified.

* Syff. Ent.

FIG. II.

APIS TUMULORUM.

SMALL, LONG HORNED BEE.

HYMENOPTERA.

Wings four, generally membranous. Tail of the female armed with a sting.

GENERIC CHARACTER.

Jaws, with a Trunk bent downwards. Antennæ elbowed in the middle. Wings plain. Body hairy. Abdomen connected by a pedicle.

SPECIFIC CHARACTER

A N D

SYNONYMS.

Antennæ rather longer than the body. Entirely black, with greyish hairs. Jaws yellow.

APIS TUMULORUM. *Lin. Syst. Nat.* 2. 953. 2. edit. 3.—*Fn. Sv.* 1685.

Apis Tumulorum: Antennis filiformibus longitudine corporis nigris maxillis flavis. *Fab. Syst. Ent.* 388. 57.—*Spec. Inf.* 1. 486. 122.

Eucera Tumulorum, vol. 2. 344. 159.

Sulz. Hist. Inf. tab. 27. fig. 14:

This extraordinary Bee is found in Summer, against banks, when the weather is fine. Were it not for the remarkable length of the Antennæ, it would scarcely deserve notice, though it is rather a scarce Insect.

FIG. III.

TABANUS PLUVIALIS.

SPECKLED-WING STINGING FLY.

DIPTERA.

Wings 2.

GENERIC CHARACTER.

Antennæ conic, of four segments. Trunk fleshy, terminated by two lips. Palpi one on each side of the Trunk.

SPECIFIC CHARACTER

AND

SYNONYMS.

Eyes green. Thorax brown grey, with seven longitudinal lines: Abdomen grey with marks of black. Wings brown speckled with white.

TABANUS PLUVIALIS. *Lin. Syst. Nat.* 16. p. 1001. *edit.* 13. n. 16: p. 2885.—*Fn. Sv.* n. 1887.

Tabanus Pluvialis: oculis fasciis quaternis undatis, alis fusco punctatis. *Fab. Syst. Ent.* n. 16. p. 790.—*Spec. Inf.* 2. n. 23. p. 459.—*Mant. Inf.* 2. n. 26. p. 356.—*Ent. Syst.* vol. 4. p. 369. 134. 32.

Tabanus fuscus, alis cinereis, punctis numerosissimis albis. *Geoff. Inf. T.* 2. n. 5. p. 461.

Le Taon à ailes brunes piquées de blanc. *Geoff. Inf.*

Die Regenbreme. *Panz. Faun. Inf. Germ.*

Reaum. Inf. 4. tab. 18. fig. 1.

Harris Inf. angl. tab. 7. fig. 8.

Scop. carn. n. 1012.

Schrank. Inf. austr. n. 978.

Schäffer. Icon. Inf. Ratisbon. tab. 85. fig. 8. 9.

During all the Summer months we find this tormenting little Insect in great abundance, in the narrow lanes and skirts of woods. If it settles on the hands, face, or legs, its sting is very acute, and excites an inflammation and swelling, very similar to that we experience from the sting of the *Tabanus cæcutiens*, described in Plate 131, of this Work.

Its sting is most violent about the middle of the day.

FIG. IV.

MUSCA BOMBYLANS.

DIPTERA.

MUSCA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ feathered. Body black and hairy; extremity of the Abdomen yellow.

MUSCA BOMBYLANS. *Lin. Syst. Nat.* 25. p. 983.—*Fn. Sv. n.* 1792.
Syrphus bombylans: Antennis plumatis tomentosus niger, abdomine
 pollice rufo.—*Fab. Syst. Ent. n.* 1. p. 762.—*Spec.*
Inf. 2. 1. p. 421.—*Mantissa Inf.* 2. 1. p. 334.—
Ent. Syst. 4. p. 279. 232.

Conops pacopyges. *Pod. Mus. græc. n.*

Die hummelartige Schwebfliege. *Panz. Faun. Inf. Germ.*

Harris. Inf. angl. tab. 10. fig. 3.

This is a common Fly; and is found in woods in May. A figure of one of the Antennæ is given at Fig. 4.

FIG. V.

MUSCA TRILINEATA.

TRILINEATED FLY.

DIPTERA.

MUSCA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Yellow green. Three longitudinal black lines on the Thorax. Abdomen marked with black. Two teeth on the scutellum.

MUSCA TRILINEATA: antennis filatis clavatis, scutello bidentato, corpore viridi, thorace lineis abdomineque faciis nigris. *Lin. Syst. Nat. n. 6. p. 980. edit. 13. n. 6. p. 235.*

Stratiomys trilineata: scutello bidentato, corpore viridi, thorace lineis abdomineque faciis nigris. *Fab. Syst. Ent. n. 7. p. 760.—Spec. Inf. 2. 9. p. 418.—Mantissa. Inf. 2. 14. p. 331.*

Stratiomys luteo-virefcens. *Geoff. Paris. t. 2, n. 7. p. 482.*

Stratyomys fasciata. *Fourcroy. Ent. Paris. 2. 7. p. 468.*

Grüne Waffenfliche. Dreygestreifte Waffenfliche.

La Mouche-armée jaune à bandes noires. *Panz. Faun. Inf. Germ.*

A very curious and scarce species. It was found among some elder leaves which were gathered in Battersea Meadows, early in June, 1795.

When

When this Insect is alive the yellow colour of the body is exceedingly bright, and partakes somewhat of a metallic and green hue in several parts, but this brilliant appearance gradually fades after death.

The line denotes the natural size, it being necessary to give a magnified figure of such a minute Insect.



PLATE CCCCI.

FIG. I.

MUSCA PYRASTRÆ.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two unequal lips: sucker beset with bristles: feelers short and two in number, or sometimes none: antennæ usually short.

* Antennæ a naked bristle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Almost naked, black: thorax immaculate: abdomen with three pair of recurved whitish lunules.

MUSCA PYRASTRÆ: nudiuscula, nigra, thorace immaculato, abdomine bis tribus lunulis albis recurvatis. *Linn. Fn. Suec.* 1817.

Scop. Ent. Carn. 931.

Gmel. Linn. Syst. Nat. 2875. sp. 51.

SYRPHUS PYRASTRÆ. *Fabr. Spec. Inf.* 2. p. 432. n. 58.—*Mant. Inf.* 2. p. 340. n. 67.—*Ent. Syst. T.* 4. 305. n. 102.

MUSCA ROSE. *De Geer. Inf.* 6. p. 108. n. 5. t. 6. fig. 18.

Musca thorace nigro-viridi, abdomine atro ovato, tribus paribus lunularum albicantium.—La mouche à six taches blanches en croissant sur le ventre. *Geoffr. Inf.* 2. 517. n. 46.

Frisch. Inf. 11. t. 22. f. 1.

Reaum. Inf. 3. t. 31. f. 9.

The larva of this Insect feeds on the species of aphids that infests the common pear; it is of a fine green colour, with a single yellowish white dorsal line, extending the whole length, from the head to the extremity of the tail. The winged insect occurs in gardens.

FIG. II.

MUSCA CAEMETERIORUM.

SPECIFIC CHARACTER

AND

SYNONYMS.

Brassily black: abdomen depressed, black, and shining: wings blackish.

MUSCA CAEMETERIORUM: nigro aeneus abdomine depresso atro nitido, alis nigricantibus. *Linn. Fn. Suec.* 1842.
Syst. Nat. 2. 992. 82.

SYRPHUS CAEMETERIORUM: *Fabr. Ent. Syst. T.* 4. p. 303. n. 94.

Inhabits Sweden, and other parts of Europe, as well as England.

FIG.

FIG. III.

MUSCA RIBESII.

RED CURRANT-LOUSE FLY.

SPECIFIC CHARACTER

AND

SYNONYMS.

Almost naked: thorax immaculate: abdomen with four yellow belts, the first interrupted.

MUSCA RIBESII: nigra nudiuscula, thorace immaculato, abdomine cingulis quatuor flavis: primo interrupto. *Linn. Fn. Suec.* 1817.—*Gmel. Linn. Syst. Nat.* 2875. n. 50.

Feeds on the aphides ribis, or plant-louse, that infests the red currant.

This insect agrees with the Linnæan specific description of Ribesii; yet we must observe, that the extreme segment of the abdomen being yellow, seems to form a fifth, or additional yellow band, to the four, described by that author and by Fabricius.

brownish red, and the club of the poisers yellow. Its wings are brown midway down from the costal rib, and becomes hyaline towards the thinner margin. The legs are reddish.



P L A T E CCCLXXII.

MUSCA PLUVIALIS.

RAINY FIVE-SPOT MUSCA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft, exerted, fleshy proboscis, and two unequal lips: sucker beset with bristles: feelers short, and two in number, or sometimes none: antennæ usually short.

* *Antennæ a naked bristle.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Cinereous, with five black spots on the thorax, and obsolete spots on the abdomen.

MUSCA PLUVIALIS: cinerea, thorace maculis quinque nigris, abdomine obsoletis. *Linn. Fn. Suec.* 1844.—*Linn. Syst. Nat.* 2. 992. 83.—*Gmel. Linn. Syst. Nat.* T. 1. p. 5. 2847. *Sp.* 83.

MUSCA PLUVIALIS. *Fabr. Spec. Inf.* 2. p. 443. n. 40.—*Mant. inf.* 2. p. 346. n. 47.—*Ent. Syst.* T. 4. p. 329. *Sp.* 71.

La Mouche cendrée à points noirs. *Geoffr. Inf. Par.* 2. p. 529. n. 68.
De Geer. Inf. 6. p. 27. n. 6.

This pretty insect is a general inhabitant of Europe. Before rain it is observed to assemble in swarms, and conceal itself under the leaves of plants, where it remains perfectly tranquil till the rain is over. It is represented both in the natural size, and magnified, in the annexed plate.

2



1



PLATE CCCCXXIV.

FIG. I.

MUSCA ROTUNDATA.

DIPTERA.

GENERIC CHARACTER

Mouth with a soft exerted fleshy proboscis, and two unequal lips : sucker beset with bristles : feelers short and two in number, or sometimes none : antennæ usually short.

* Antennæ a naked bristle.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax lineated : abdomen subrotund, ferruginous, with a dorsal line of black dots.

MUSCA ROTUNDATA: thorace lineato, abdomine subrotundo ferrugineo : linea longitudinali punctorum nigrorum.
Linn. Syst. Nat. 2. 991. 67.—*Fn. Succ.* 1838.
Fabr. Ent. Syst. T. 4. p. 325. n. 57.

MUSCA nigra, abdomine hemispherico rufo, punctorum nigrorum ordine longitudinali.—La mouche noire à ventre hémisphérique roux tacheté de noir. *Geoffr. Inf. T.* p. 509. n. 32.

Less than the common house-fly, *Musca Domestica*. It inhabits various parts of Europe, and is not common in England.

The thorax is of a brownish colour lineated with dusky: the body nearly round, and marked down the middle of the back with a series of blackish spots or dots; the wings are whitish, faintly tinged with testaceous towards the base, and the legs blackish.

FIG. II.

MUSCA ARCUATA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Elongated, black, spots on the sides of the thorax, and four arcuated bands on the abdomen yellow.

MUSCA ARCUATA: nigra, antennis elongatis, thorace maculis lateribus, abdomine cingulis quatuor arcuatis flavis.
Linn. Fn. Suec. 1806.

SYRPHUS ARCUATUS: *Fabr. Ent. Syst. T. 4. p. 293. n. 55.*
Panz. Fn. Germ. 2. tab. 10.

This species is found on flowers. It is a general inhabitant of Europe; in England this insect is scarce.

Fabricius describes a very distinct species from this under the name of *Musca Arcuata*; the insect we have figured is the *Musca Arcuata* only of Linnæus, *Syrphus Arcuatus* of Fabricius.



2



4



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PLATE CCCXLVI.

FIG. I.

MUSCA GROSSA.

GREAT BLACK FLY.

DIPTERA.

GENERIC CHARACTER.

A soft flexible trunk, with lateral lips at the end. No palpi.

SPECIFIC CHARACTER

AND

SYNONYMS.

Body hairy, black. Wings ferruginous at the base.

MUSCA GROSSA: pilosa nigra, alis basi ferrugineis. Linn. & Gmel.

T. 1. p. 5. p. 2845. sp. 75.

Fn. Suec. 1837.

Fab. Sp. Inf. 2. p. 441. n. 30.

Schæff. Icon. tab. 108. fig. 6.

Degeer. Inf. 6. p. 21. n. 1. tab. 1. fig. 1.

The largest of the Musca genus found in this country. Breeds in dung.

FIG.

F I G. II.

MUSCA BICINCTA.

DOUBLE BELTED FLY.

GENERIC CHARACTER.

Black. Sides of the thorax and two belts across the abdomen yellow.

MUSCA BICINCTA: nigra, antennis elongatis, thorace lateribus punctis abdomineque cingulis duobus flavis,
Linn. a Gmel. T. 1. p. 5. p. 2872. sp. 38.
Fab. Sp. Inf. 2. p. 427. n. 30.
Degeer. Inf. 6. p. 126. n. 16. t. 7. fig. 16.

F I G. III.

MUSCA VIBRANS.

VIBRATORY FLY.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings transparent, black at the tip. Head red.

MUSCA

MUSCA VIBRANS: alis hyalinis apice nigris capite rubro.
Linn. a Gmel. T. 1. p. 5. p. 2855. sp. 112.
Fab. Sp. Inf. 2. p. 450. n. 81.
Degeer. Inf. 6. p. 32. n. 11. t. 1. fig. 19.
Geoffr. Inf. p. 2. p. 494. n. 4.

Remarkable for the continual vibratory motion of its wings.

FIG. IV.

MUSCA NOCTILUCA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Somewhat hairy, black ; two pellucid spots on the first segment of the abdomen.

MUSCA NOCTILUCA: subtomentosa atra, abdominis segmento primo maculis duabus pellucidis. *Linn. a Gmel. T. 1. p. 5. p. 2874. sp. 48.*
Faun. Suec. 1814.
Fab. Sp. Inf. 2. p. 431. n. 54.

F I G. V.

MUSCA SCYBALARIA.

SPECIFIC CHARACTER.

Reddish brown, an obscure dot in the Wings.

MUSCA SCYBALARIA: rufa ferruginea, alis puncto obscuriore.

Linn. a Gmel. T. 1. p. 5. p. 2853. sp. 104.

Faun. Suec. 1860.

Fab. Sp. Inf. 2. p. 449. n. 72.

Scop. Carn. 896.

Found on Dung.



PLATE CCCCLXXI.

FIG. I.

MUSCA MYSTACEA.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two equal lips :
 sucker furnished with bristles : feelers two, and short, or sometimes
 none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black : head, margin of the thorax and tip of the abdomen yellow.

MUSCA MYSTACEA : nigra, thorace abdominisque apice flavis.
Linn. Fn. Suec. 1793.

Syrphus mystaceus. *Fabr. Spec. Inf. T. 2. p. 421. 175. 1.—*
Schæff. Elem. t. 131.—Icon. t. 10. f. 9.



Inhabits woods.

FIG.

FIG. II.

MUSCA MERIDIANA.

SPECIFIC CHARACTER.

Hairy, black : front golden : wings ferruginous at the base.

MUSCA MERIDIANA : nigra, fronte aurea, alis basi ferrugineis.

Linn. Fn. Suec. 1827.

Fabr. Sp. Inf. 2. p. 435. n. 3.

Musca nigra, alis basi ferrugineis. *Geoff. Inf.* 2. 495. 5.



Common in woody places throughout most parts of Europe.





PLATE CCCCXC.

FIG. I.

MUSCA INANIS.

DIPTERA.

GENERIC CHARACTER.

Mouth with a soft exerted fleshy proboscis, and two equal lips : sucker furnished with bristles : feelers two, and short, or sometimes none : antennæ generally short.

SPECIFIC CHARACTER

AND

SYNONYMS.

Brown : abdomen pale yellow, with three black bands.

MUSCA INANIS : antennis plumatis pilosa flavescens, abdomine pellucido cingulis duobus nigris. *Linn. Syst. Nat. XII. 2. p. 989. n. 61.—Fn. Suec. 1825.*

SYRPHUS INANIS : fusca, abdomine pellucido : cingulis tribus nigris. *Fabr. Spec. Inf. 1. p. 435. n. 1.—Mant. Inf. 1. p. 342. n. 1.*

Musca apivora. *Degeer. Inf. 6. p. 56. n. 3. t. 3. f. 4.*

Volucella sexta. *Schæff. Icon. pl. 36. fig. 7. 8.*

This is an interesting species, and not common : the figure denotes the natural size.

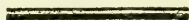
FIG. II.

MUSCA HIRSUTA,

SPECIFIC CHARACTER.

Deep black, glossy, and beset with long bristly hairs : wings blackish, at the base subfuscous.

MUSCA TREMULA. *Fabr. Spec. Inf.* 2. p. 442. n. 32?



The present insect bears a strong resemblance to the *Musca grossa*, of which it might be considered, at the first view, as a dwarf variety, being rather less than half the size of that species. As in *Musca grossa*, the thorax and abdomen are beset with stiff bristly hairs, but these are more numerous, and at least twice the length in proportion, in the present species, to those on the former insect.

The *Musca hystrix* of Drury is very similar to this in appearance, but is larger : it approaches, however, still nearer the insect called by Harris (Expos.) *Musca obsidianus*, than *Musca hystrix*.

From the cabinet of Dr. Letsom,



P L A T E D L.

OESTRUS OVIS.

SHEEP BOT-FLY, GAD-FLY, or BREEZE-FLY.

DIPTERA.

GENERIC CHARACTER.

Mouth with a simple aperture, and not exerted: feelers two, each consisting of two articulations, with the tip orbicular, and seated on each side in a depression of the mouth: antennæ of three joints, the last subglobular, and furnished at the anterior part with a bristle, placed in two hollows of the front.

SPECIFIC CHARACTER

AND

SYNONYMS.

OESTRUS OVIS. Wings transparent, with spots at the base and dotted nerves: abdomen filky white, varied with black dots and spots.

Reaum. Inf. t. 36. fig. 22.—Larva. 8, 9.

OESTRUS OVIS. Wings transparent, with small spots at the base: abdomen chequered with black and white. *Clarke, Linn. Transf. V. 3. p. 313. tab. 23. fig. 14—17.*



This is one of those destructive creatures which infest quadrupeds, and are known under the general appellation of the Bot-flies. The particular species now before us is that peculiar to the Sheep tribe.

Every husbandman is acquainted with the direful effects produced by the ravages of those intruders in the vital economy of that useful race of creatures, though few are correctly acquainted with their history. The Bots, indeed, have never been sufficiently or properly described till within the last few years, when the subject was investigated by Bracy Clarke, Esq. and it must be added, with a degree of accuracy highly creditable to himself and satisfactory to the public. The result of his remarks appeared first in a Memoir published in the third Volume of the Linnæan Transactions, and subsequently in other publications. These observations may be truly said to form the basis of our present knowledge of the *Oestrus* tribe, than which no race of insects whatever, can be more strictly deserving the attention of the Entomologist or the observation of the Agriculturist.

In describing the individual species of *Oestrus* at present under consideration Mr. Clarke observes, that about the middle of June he procured some full-grown larvæ from the inside of the cavity of the bone which supports the horns of the Sheep. They were nearly as big as those of the large Horse-bot, of a delicate white colour, flat on the under side and convex on the upper, having no spines at the divisions of the segments, though provided with two curved hooks at the small end: the other extremity is truncated, with a small prominent ring or margin, which seems to serve the same purpose, though in an inferior degree, as the lips of the *Oestrus equi* and *hæmorrhoidalis*, by occasionally closing over and cleaning the horny plate of respiration.

The larvæ are perfectly white and transparent when young, except the horny plates, which are black: as they increase in size the segments of the upper side become marked with two brown transverse lines, and some spots are observable at the sides. They move with considerable quickness, holding with the tentacula as a fixed point, and drawing up the body towards them. The under-side of the body is marked with a broad line of dots, which, on examination with glasses, appear to be rough points, serving perhaps the double purpose of assisting their passage over the smooth and lubricated faces of these
membranes,

membranes, and of exciting also a degree of inflammation in them where they rest, so as to cause a secretion of lymphor pus for their food.

Mr. Clarke observes, that he has mostly found these animals in the horns and frontal sinuses, though he has remarked that the membranes lining these cavities were hardly at all inflamed, while those of the maxillary sinuses were highly so; and hence he was led to suspect that they inhabit the maxillary sinuses, and crawl, on the death of the animal, into those situations in the horns and frontal sinuses. The breeds, he presumes, are not confined to any particular season, as the young and full-grown larvæ are found together at the same time.

The larvæ, when full grown, fall through the nostrils to the ground, and change to the pupa state, lying on the earth or adhering by the side to a blade of grass: in this state it remains about two months, when the fly appears.—The manner in which this species deposits its eggs is difficult to observe, owing to the obscure colour and rapid motions of the fly, and the extreme agitation of the sheep; but from the mode of defence the sheep takes to avoid it, and its manners afterwards, there can be little doubt that the eggs are deposited in the inner margin of the nostril.

The moment the fly touches the nostril of the sheep, the latter shake their heads violently, and beat the ground with their feet, holding their noses at the same time close to the earth, and running away, earnestly looking on every side to see if the fly pursues: they also may sometimes be seen smelling to the grass as they go, lest one should be lying in wait for them; which if they observe, they gallop back, or take some other direction, as they cannot, like horses, take refuge in the water. To defend themselves against its attacks they have recourse to a rut, or dry dusty road, or gravel-pits, where they crowd together during the heat of the day, with their noses held close to the ground, which renders it difficult for the fly, who attacks on the wing, to get at the nostril.

Perhaps, says Mr. Clarke, (in concluding his general observations,) the removal of the sheep to a distant pasture during the months of June and July, whilst the greater number of the Bots are yet on the ground in the state of pupa, and not bringing them again on such ground till the setting in of winter, would be the means of destroying them most effectually; and this process, repeated for two or three years successively, in places where the Oestri are particularly troublesome, might prove eventually useful to the farmer.

A highly-magnified figure of this species in the winged state is shewn in the annexed Plate, from which it will appear an insect of singular character, and no very inconsiderable beauty. The small figure denotes the natural size.







P L A T E CCLXVIII.

FIG I.

HIPPOBOSCA HIRUNDINIS.

GENERIC CHARACTER.

Rostrum bivalve, wavering : feet armed with many nails.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings tapering from the base to a point fix claws on each foot.

HIPPOBOSCA HIRUNDINIS : alis subulatis, pedibus hexadactylis.

Linn. Syst. Nat. 2. 1010. 3. *Fn. Sv.* 1923.

Geoff. Inf. 2. 547. 2.—*Panz-Faun. Inf. Germ.*

Found adhering to the bodies of the Swallows, and is not unfrequently observed in the nests of those birds.

The smallest figure denotes the natural size.

E 3

FIG.

FIG. II.

HIPPOBOSCA OVINA.

SPECIFIC CHARACTER

Without wings.

HIPPOBOSCA OVINA: alis nullis. *Linn. Syst. Nat.* 2. 1011. 4.
Fn. Sv. 1924.
Frisch. Inf. 5. tab. 18.

This and the preceding, with the two species included in plate 261, are the only described examples of the *Hippobosca* genus found in Britain.



P L A T E CCLXI.

FIG. I. I.

HIPPOBOSCA EQUINA.

HORSE, OR SPIDER FLY.

DIPTERA.

GENERIC CHARACTER.

Rostrum bivalve, wavering: feet armed with many nails.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings obtuse: thorax varied with white: feet armed with three crotchets or claws.

HIPPOBOSCA EQUINA, alis obtusis, thorace albo variegato, pedibus
tetradactylis. *Linn. Syst. Nat.* 2. 1010. 1. *Fn. Sv.*
1921.—*Fab. Ent. Syst. Vol.* 4. p. 415. 1.
Degeer. Inf. 6. 257. 1. *tab.* 16. *fig.* 1.
Reaum. Inf. 2. *tab.* 179. *fig.* 8, 9.

Few species of Hippoboscæ have hitherto been discovered. Four
kinds were known to Linnæus, and Fabricius has not encreased
that

that number in either of his Entomological Systems. A fifth species is described by Gmelin in the last edition of the *Systema Naturæ*, under the name of *Uralensis* *. The species in the *Entomologia Systematica* of Fabricius, are *Equina*, *Avicularia*, *Hirundinis*, and *Lo-vina*. The first is rather larger than the others, and is well known by the common name of Horse Fly, because it frequently molests those animals, and attaching itself to their bodies, penetrates the skin, and sucks their blood. The three other species are also natives of this country, and like the *H. equina*, subsist on the blood of certain animals. The *H. avicularia* is found chiefly on the bodies of birds, and *H. hirundinis* more especially on swallows. These creatures are all of a disgusting form, flat, and hard; they adhere very tenaciously by means of the nails or crotchets of their talons, which in this genus are numerous; and are not easily killed by pressure. The *H. equina* has three sharp incurvated nails to each foot, and *H. hirundinis* is furnished with twice that number on each.

FIG. II.

HIPPOBOSCA AVICULARIA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Wings obtuse: Thorax of one colour.

* *Hippobosca Uralensis*: atra hirsuta dorso ordinibus tribus vesicularum albarum nitentium. Lepechin it. 1. t. 19. f. 9. *habitat in deserto Uralensi*.

HIPPOBOSCA AVICULARIA, alis obtusis, thorace unicolore. *Linn.*
Syst. Nat. 2. 1010. 2.—*Fn. Sv.* 1922. *Fab. Ent. Syst.*
4. p. 415. 2.

The figure of *Hippobosca avicularia* in the works of Sulzer nearly agrees with our insect, except in colour; it is of a dull brown, with less of the green cast.

