# The Natural History of British Insects

Donovan, Edward

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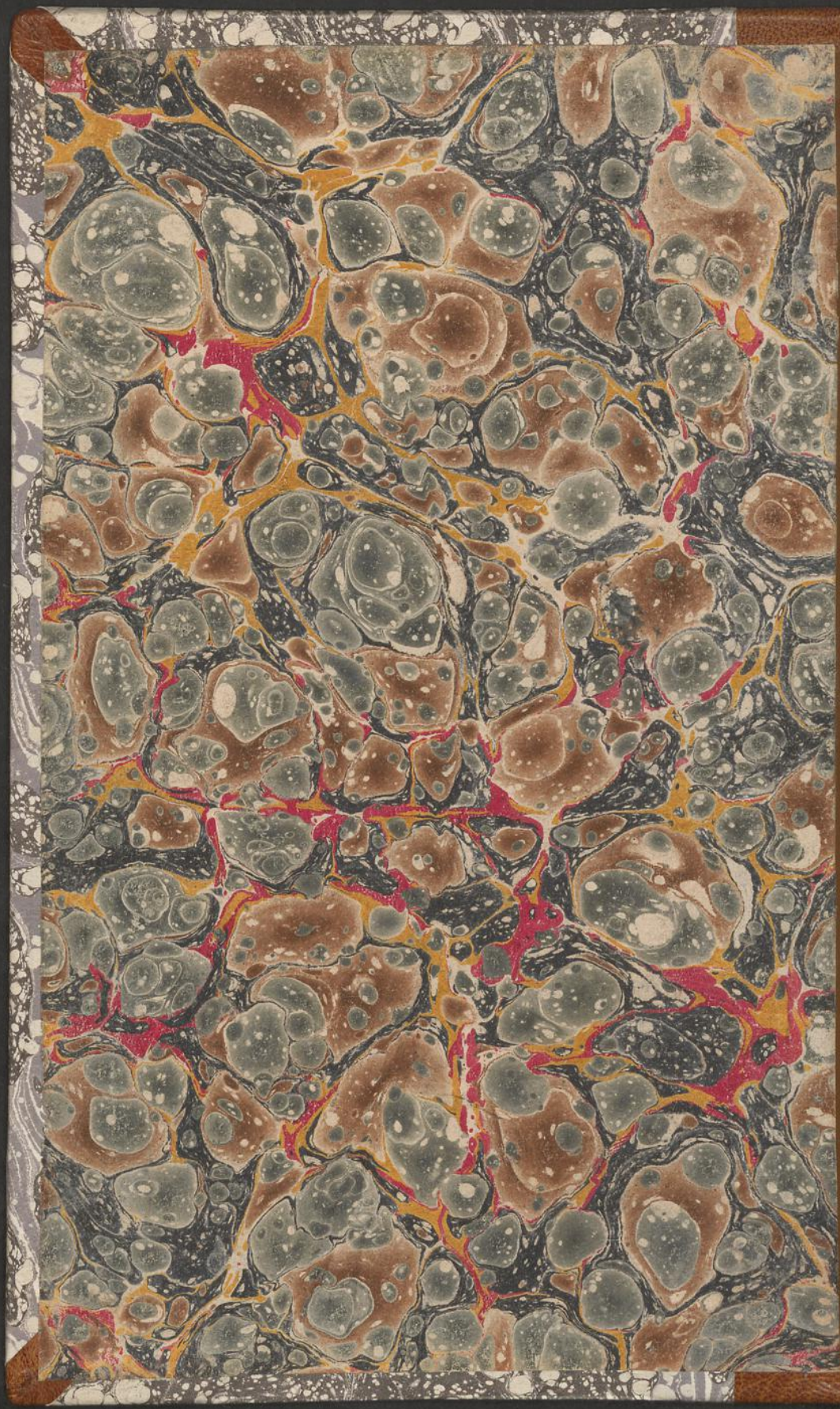

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# NATURAL HISTORY

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.

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BY E. DONOVAN.

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VOL. III.

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MDCCXCIV.

Mr. Thistlethwayte.

# PLATE LXXIII.

## PAPILIO LATHONIA.

LESS SILVER-SPOTTED BUTTERFLY,

OR,

QUEEN OF SPAIN.

FRITILLARY.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ clavated. Wings, when at reſt, erect. Fly by day.

### *SPECIFIC CHARACTER.*

Above yellow-brown, with ſpots of black. Beneath yellowiſh, variegated with dark brown, and black ſpots. Thirty-ſeven ſilver ſpots on the poſterior wings.

*Syſt. Ent.* 5. 17. 314.—*Linn. Syſt. Nat.* 2. 786. 213.—*Fn. Sv.* 1068.—*Geoff. Inſ.* 2. 120. 6.—*Fab. Sp. Inſ.* 2. 110. 481.

*Papilio* Rigenſis minor aureus, maculis argenteis ſubtus perbelle notatus.—*Raj. Inſ.* 120. 6.

*Hufn. Pict. Tab.* 11. *Fig.* 11.
*Robert. Icon. Tab.* 12.
*Merian. Europ.* 2. *Tab.* 157.
*Roes. Inſ.* 3. *Tab.* 10.
*Eſp. Pap.* 1. *Tab.* 18. *Fig.* 2.
*Schaeff. Icon. Tab.* 143. *Fig.* 1. 2.
*Seb. Muſ.* 4. *Tab.* 1. *H.* 1—4.

We have ſeveral ſpecies of the Papilio tribe, which are highly valued in England either for their beauty or ſcarcity; the *P. Lathonia* is little, if by any means, inferior to the moſt beautiful; and as a rare Inſect is eſteemed an invaluable acquiſition.

The upper ſide is only a plain orange or brown colour, with ſpots of ſtrong black, and does not in general appearance differ materially from the greaſy Fritillary Butterfly, which is very common in moſt ſituations; but the underſide is entirely unlike every other Engliſh Inſect: the bright ſilver ſplaſhes on the under wings are ſingular in their form, and ſo beautifully relieved by the orange ground colour, and variegation of black between, as to form a delightful contraſt of the moſt pleaſing colours.

Whether this ſpecies was originally a native of this country, may be doubtful; we certainly have the moſt reſpectable teſtimonies of its being taken alive in different parts of the kingdom, but it might have been introduced by accident in the larva, or more probably in the pupa ſtate: it has been ſeen at *Bath*; and either *Moſes Harris*, or ſome of his friends, bred it from the caterpillar. "Queen of Spain Fritillaria changed into chryſalis *April*, appeared in the winged ſtate *May* 10th.—*Gambling Gay wood*, near *Cambridge*."

It has alſo been taken near *London*; Mr. *Honey*, of *Union-ſtreet*, in the *Borough*, took one a few years ſince in his garden. I requeſted the favour of whatever information he could communicate reſpecting this circumſtance, and received a note with theſe words:—

"*September* 9th, 1785.—I took the Queen of Spain Butterfly in my garden. (Signed) WM. HONEY."

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# PLATE LXXIV.

## CURCULIO BETULÆ.

### COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ clavated; elbowed in the middle, and fixed in the ſnout, which is prominent and horny. Joints in each foot, four.

* Snout long.

### *SPECIFIC CHARACTER.*

Green-gold. Antennæ and eyes black. The anterior verge of the thorax ſpinous in one ſex only.

*Syſt. Ent.* 130. 16.
*Linn. Syſt. Nat.* 2. 611. 39.
*Fn. Sv.* 605.
*Degeer Inſ.* 5. 248. 5. *Tab.* 7. *Fig.* 25.
Rhinomacer, &c. *Geoff. Inſ.* 1. 270. 2.
*Friſch. Inſ.* 12. 17. *Tab.* 8. *Fig.* 2.
*Sulz. Hiſt. Inſ. Tab.* 4. *Fig.* 5.
*Schaeff. Icon. Tab.* 6. *Fig.* 4.

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The Linnæan deſcription of the *Curculio Betulæ*, ſo nearly correſponds with that of *C. Populi*, that if we allow for the variation of colour to which all Inſects are ſubject, a line can ſcarcely be drawn between the two ſpecies; the moſt material diſtinction is the underſide of *C. Betulæ* being of the ſame colour as the back; but the underſide of *C. Populi* is purple, and ſmaller.

The deſcription which *Linnæus* has given of our ſpecies is, " longi- " roſtris, corpore viridi aurato ſubtus concolore;" and *Degeer* has de- ſcribed it in ſimilar words. It is evident that *Linnæus* had reaſon to ſuſpect ſome difference of colour between the two ſexes, but perhaps he never imagined the *C. Purpureus* *, which he had before deſcribed, was alſo one ſex, or a variety of the ſame Inſect.

*Geoffroy* ſays, " *Rhinomacer* totus viridi cœruleus;" and *Fabricius* adds, " Variat ſæpius colore omnino cœruleo. Alter ſexus thoracem " antrorſum ſpinoſum gerit." How thoſe different deſcriptions may be reconciled, ſo as to be deſcriptive of the two ſexes of *C. Betulæ*, will appear more clearly on farther obſervation.

Late in *May*, this ſeaſon, being at *Darent-Wood*, *Dartford*, I met with one of the green kind, and one of a dark blue colour, with a ſhade of green on the elytra; I could not be deceived, they were male and female; as a farther corroboration, I met with a ſecond pair, in a ſimilar ſituation; and on the day following a third: the blue one of this laſt pair had not the ſhade of green as on the former, but was of a rich gloſſy blue purple; and I am greatly miſtaken if it is not the *C. Purpureus* of *Linnæus*, or the Inſect which is arranged in *Engliſh* Cabinets for that ſpecies.

I communicated the circumſtance of meeting with thoſe two Inſects, which have always been conſidered as diſtinct kinds, to a perſon who alſo was collecting Inſects in the wood, on the ſame day, and he informed me that he had juſt before diſcovered them in the ſame ſituation. I have examined them very carefully, but cannot diſcover any ſpines on the thorax of the green and gold kind, though I have five of them, but the three purple ſpecimens are all ſpinous, as deſcribed by authors. I am of opinion, that the bright coloured ſpecimens are all *females*, and thoſe which are purple, I imagine, are *males*.

I mentioned the circumſtance to an eminent Entomologiſt, and he at firſt ſuſpected they might be mule Inſects, generated between the

* *Berkenhout*, in his Outlines of the Natural Hiſtory of *Great-Britain*, ſays, *C. Purpureus*. Gloſſy Purple. Snout very long. *Petiver* found this at *Epſom*.

*C. Betulæ*

*C. Betulæ* and the *C. Purpureus*, but that could not be the caſe, as they were all in copulation when taken.

We have been the more minute in this account, as we conſider the confounding of one ſpecies with another ſhould ever be avoided, with as much care as the ſeparation of varieties into diſtinct ſpecies; both tend to confuſe, or ſubvert that truth which ſhould be the guide of every enquirer into nature.

I have received a letter from my reſpectable friend *T. Marſham*, Eſq; Sec. L. S. accompanied with a ſpecimen of the green kind of *C. Betulæ*, that is ſpinous on the thorax; together with one of the blue or purple kind, which is ſpinous alſo: he informs me, that though his purple ſpecimen has ſpines, he is very certain he has had one without; hence it appears to me that they admit of great variation; indeed it would afford the moſt preſumptive argument, that there are males and females of both colours. Among the purple ſpecimens which I took, there was a conſiderable difference in their colours, but of the five green ſpecimens ſcarcely two exactly agreed; one in particular partook ſo much of a vivid crimſon that it might eaſily have been miſtaken by a curſory collector for the *Curculio Bachus*.

# PLATE LXXV.

## NOTONECTA GLAUCA.

COMMON BOAT-FLY.

HEMIPTERA.

### *GENERIC CHARACTER.*

Antennæ beneath the eyes. Wings croſſed, and complicated. Feet formed for ſwimming. Hind feet hairy.

### *SPECIFIC CHARACTER.*

Head yellow; eyes brown, large. Thorax, anterior part yellow, poſterior black. Shells pale yellow brown, with a bright brown anterior margin, ſpotted with black. Beneath brown. Feet of two joints. Length ſix lines.

*Syſt. Ent.* 689. 1.—*Linn. Syſt. Nat.* 2. 712. 1.—
*Fn. Sv.* 903.
*Notonecta*, &c. *Geoff. Inſ.* 1. 476. 1. *Tab.* 9. *Fig.* 6.
*Nepa notonecta*, &c. *Degeer Inſ.* 3. 382. 5. *Tab.* 18. *Fig.* 16. 17.
*Cicada* aquatica *Mouffeti. Raj. Inſ.* 58.
*Notonecta*, &c. *Petiv. Gazolph. Tab.* 72. *Fig.* 6.
*Cimex* aquaticus anguſtior. *Friſch. Inſ.* 6. 28. *Tab.* 13.
*Cimex* aquaticus. *Roeſ. Inſ.* 3. *Tab.* 27.
*Bradl. Nat. Tab.* 26. *Fig.* 2. E.
*Huffnag. Inſ. Tab.* 12. *Fig.* 19.
*Sulz. Inſ. Tab.* 10. *Fig.* 67.
*Schaeff. Elem. Tab.* 90.
——— *Icon. Tab.* 33. *Fig.* 5. 6.
*Fueſly Inſ. Helv.* 24. 468.

This

This ſpecies is by far the moſt common of the Notonecta genus in *England.* It is an aquatic Inſect, undergoes its ſeveral changes in the water, and in the laſt ſtate is furniſhed with wings for flight.

In the day-time it may be obſerved on the ſurface of ſtill waters; it always ſwims on its back, with its legs extended. In the evening it flies in the air. Found during moſt of the ſummer months. Moſt authors have deſcribed the upper ſhells as being of a brown colour, variegated with clouds of black; but this appearance is not conſtant in every ſpecimen; they loſe much of that colour after being taken out of the water, or if the wings are expanded.

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# PLATE LXXVI.

## PHALÆNA FUNALIS.

### Festoon Moth.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, when at rest, generally contracted. Fly by night.

### *SPECIFIC CHARACTER.*

Upper wings orange, rather inclining to brown; with a black line nearly of a triangular form on each; when the wings are expanded the lines resemble a festoon. Under wings orange, clouded and frosted with black; margin pale.

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We are happy to present our Subscribers with the figure of a Moth which is scarcely known among the English Collectors, and we may venture to assert on the best authority has not a place in any cabinet of Insects in this metropolis, except that of the Author; indeed the only person who appears to have been so fortunate as to meet with it except himself, is Mr. Lewin, who formerly resided at Dartford; he considered it as such an invaluable rarity, that had not a figure of it been discovered in *Roesel*, it would no doubt have been published in the Transactions of the Linnæan Society; it must, however, be observed, that the Insect *Roesel* has figured is a foreign specimen.

On the communication of Mr. JONES, of *Chelſea*, we preſume that this Inſect was formerly known among the Engliſh Collectors, and received from them the appellation *Feſtoon Moth*, but it muſt have been extremely rare even at that time, as it does not appear in Harris's Liſt of Engliſh Moths, nor has a ſingle ſpecimen, or its remains, been found among the old Collections, which have been handed down to the Entomologiſts of the preſent day.

On the 16th of Auguſt, 1793, I ſhook the Caterpillar from one of the high branches of an oak-tree, in Darent wood, Kent; it remained motionleſs for ſome time when in the net, and I concluded that it might have ſuſtained an injury by its fall; but I ſoon after diſcovered that it was naturally a ſluggiſh, inactive creature, and had received no damage; it remained ſeveral days in the Caterpillar ſtate, but as it was almoſt ready to change into Chryſalis, I had only an opportunity of being convinced that oak was its proper food.

This Caterpillar is a moſt ſingular creature; at one time it would flatten itſelf, and be conſiderably extended in breadth, or length; at another time it would gather itſelf up like an hedge-hog, or become almoſt round, and in a few minutes after it would be flat again; and frequently the orange colour on the back would be obliterated; ſometimes it ſo nearly reſembled the Caterpillars of ſeveral of the Papilio tribe, that I ſuſpected it to be one of the *Hair-ſtreak Butterflies*, or rather the Caterpillar of a new ſpecies. On the 23d of Auguſt it began to ſpin, and in a ſhort time after its caſe was completed.

The caſe in which it paſſed to the Pupa ſtate, was very firmly conſtructed, and precluded an opportunity of obſerving the different ſymptoms of change, which would otherwiſe have been viſible. This caſe, which was exactly in the form of an egg, was at firſt of a pale fleſh colour, but in the courſe of a few days it had heightened to a very fine ſanguineous, and after to a ſcarlet, or nearly vermilion colour; this colour it retained for ſeveral months, but as the time for the emancipation of the Moth within approached, the brightneſs of

red

red ſomewhat abated, though even after the Fly came forth, much of the original colour remained.

The manner in which it burſts open the caſe is rather ſingular; it does not force an opening in an irregular form, as moſt Inſects which ſpin a caſe, but deſcribes an exact circle within at one end; after this it divides its caſe according to that circle, only leaving a ſmall portion to act as an hinge; when it has extricated itſelf from the Chryſalis, it forces the top of the caſe back, as ſhown in our Figure, and thereby a free paſſage is opened for its delivery.

The inſide of the caſe is perfectly ſmooth, and appears as if poliſhed by art; it is of a pale blue colour, the Chryſalis within is brown.

The Fly came forth on the 12th of July, 1794.

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# PLATE LXXVII.

## FIG. I. and FIG. II.

## PHALÆNA CRISTALANA.

### Dark-button Moth.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ taper from the baſe. Wings, in general contracted when at reſt. Fly by night.

### Tortrix.

### *SPECIFIC CHARACTER.*

Upper wings yellow-brown, with dark ſhades; a broad irregular white mark, and a tuft or button, on the center of each. Head and thorax white clouded. Lower wings pale brown.

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This ſingular Moth is very rarely met with; it has been taken in *Coombe-wood*, *Surry*, and in *Kent*, but even in thoſe places it is very uncommon.

It is diſtinguiſhed by the unuſual form of the white markings on the upper wings, and particularly by the tuft or button which is ſituated in an upright poſition near the center of each; thoſe tufts appear only ſlightly feathered on the upper parts to the naked eye, but when one of them is examined with a microſcope, or even common magnifier, it preſents the appearance of a bundle of fibres, incloſed within a thin membrane; narrow at the baſe, encreaſing in bulk near the middle,



and

and expanding at the ſummit into a number of ſhoots, in the form of a creſt: ſeveral other tufts are diſperſed near the extremities of the upper wings, but they are not conſpicuous to the naked eye.

I have ſeen an Inſect which correſponds in every reſpect with this ſpecimen, except that it had a line of a dull ochre colour along the poſterior margins of the upper wings; but I ſuſpect it to be either a variety, or perhaps only the difference of ſex.

*Linnæus* has not deſcribed this inſect, neither can we diſcover any deſcription of it in the writings of *Fabricius*; and I have no doubt of its being a nondeſcript ſpecies.

The ſingular creſted tufts, with the white markings on the upper wings, furniſh ſuch an ample ſpecific diſtinction, that we have named it *Criſtalana.*

Found early in the month of *Auguſt.*

Fig. I. repreſents the natural ſize. Fig. II. its magnified appearance.

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## FIG. III. and FIG. IV.

## PHALÆNA RADIATELLA.

LEPIDOPTERA.

PHALÆNA.

TINEA.

### *SPECIFIC CHARACTER.*

Firſt wings, buff, with ſhades of orange; ſtriped or rayed with a very dark purple from the baſe to the apex of each; a white ſtripe near to, and parallel with the poſterior margin, and two ſpots of the ſame colour near the center of each wing. Second wings lead colour, deeply fringed.

This

This insect also appears to be a nondescript species; we have called it *Radiatella*, or rayed, from the form of the dark stripes which rise from the base, and spread in the form of rays to the apices of the upper wings. It is very liable to change after death, and particularly the buff colour, which appears very bright when the insect is fresh, but is sometimes so altered in appearance when placed in the cabinet, that an intermixture of that colour can be scarcely distinguished between the rays of purple; we mention this circumstance, as very few small lepidopterous insects are subject to such alteration.

It is found about the same time as the Phalæna Cristalana, and I believe is equally scarce.

Fig. III. represents the natural size. Fig. IV. its magnified appearance.

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# PLATE LXXVIII.

## FIG. I. and FIG. II.

## CHRYSOMELA BOLETI.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the ends. Corſelet margined.

### *SPECIFIC CHARACTER.*

Antennæ, head, and thorax black, ſhining. Elytra black, with two jagged belts of bright orange colour; extremity orange.

*Syſt. Ent.* 97. 18.—*Linn. Syſt. Nat.* 2. 591. 36. —*Fn. Sv.* 52. 7.—*Sulz. Hiſt. Inſ. Tab.* 3. *Fig.* 9.

Diaperis, *Geoff. Inſ.* 1. 337. *Tab.* 6. *Fig.* 3. *mal.*

Diaperis, *Schaeff. Elem. Tab.* 58.—*Icon. Tab.* 77. *Fig.* 6.

Dermeſtes, &c. *Vdm. Diſſ.* 4. *Fig.* 3.

Tenebrio Boleti, &c. *Degeer Inſ.* 5. 49. 9. *Tab.* 3. *Fig.* 3.

Coccinella faſciata. *Scop. Ent.* 247.

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The Chryſomela Boleti is not very frequent in this country; it is almoſt invariably found in the hollows of ſome of the Boletus tribe of Fungi *, which grow on the ſtumps of trees in the month of *May* or *June*.

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* *Muſhrooms.*

## FIG. III. and FIG. IV.

## CHRYSOMELA CERUINA.

COLEOPTERA.

CHRYSOMELA.

*SPECIFIC CHARACTER.*

Oblong. Dull brown, beſet with very fine hairs.
*Syſt. Ent.* 116. 1.
*Linn. Syſt. Nat.* 2. 602. 115.—*Fn. Sv.* 575.

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There can remain very little doubt of thoſe inſects N° III. and N IV. being ſexes of the ſame ſpecies.

Rarely met with near *London*. *May* and *June*.

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# PLATE LXXIX.

## GRYLLUS BIGUTTULUS.

### HEMIPTERA.

Shells, or upper wings, ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved downward.

### *GENERIC CHARACTER.*

Head maxillous, and with palpi. Antennæ filiform, or taper. Wings folded. Hind legs ſtrong for leaping.

### *SPECIFIC CHARACTER.*

Head and thorax dark brown, marked with lines of white. Wings pale brown edged with yellow, and ſeveral whitiſh marks near their extremity. Body beneath, and legs, red-brown.

*Linn. Syſt. Nat.* 2. 702. 55.—*Fn. Sv.* 875.

ACRIDIUM BIGUTTULUM, &c. *Degeer. Inſ.* 3. 479. 6.
GRYLLUS BIGUTTULUS. *Schaeff. Icon. Tab.* 190. *Fig.* 1. 2.—*Fab. Spec. Inſ.* 1. 370. 45.

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Though few inſects require more elucidation to be well underſtood than thoſe of the *Gryllus* genus, no part of the ſcience has been leſs regarded even by ſyſtematic writers, who certainly appear to have been moſt intereſted to obtain a ſatisfactory knowledge of them: the preſent ſpecies is continued by *Fabricius*, in his *Species Inſectorum*, under the *Linnæan* genus, and ſpecific name GRYLLUS BIGUTTULUS.

All of the Grylli are very liable to variations in colour, and particularly after death; green changes to brown of various hues, the light colours become dark, and the dark colours fade, ſo that no juſt idea of the true appearance can be formed except from the living inſects.

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The larva, and pupa, of moſt ſpecies of the Gryllus genus, ſcarcely differ in appearance from the perfect inſect, except that in the two firſt ſtates they are apterous, or without wings, and either leap or walk; but in the laſt ſtate they are furniſhed with four membranaceous wings.

The ſubject of our preſent deſcription is not an unfrequent ſpecies near London; it is taken in the perfect ſtate in the month of Auguſt.

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## LOCUSTA VARIA.

### *SPECIFIC CHARACTER.*

Antennæ very long. Thorax green, with a longitudinal line of yellow. Anterior wings membranaceous, green. Poſterior wings very delicate pale green. Body pale green, with the three laſt joints pale black.

*Syſt. Ent.* 287. 24.
*Locuſta thalaſſina*, &c. *Degeer. Inſ.* 3. 433. 3.
*Goed. Inſ.* 2. 142. *Tab.* 40.
*Friſch. Inſ.* 12. *Tab.* 2. *Fig.* 4.
*Sulz. Hiſt. Inſ. Tab.* 8. *Fig.* 9.
*Locuſta Varia*, *Fab. Spec. Inſ.* 1. 360. 25.

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It is very plenty in the month of Auguſt, is concealed among the foliage of the lower branches of the oak in the day-time, and is not often obſerved to fly except when the morning dew is on the herbage, or evening approaches. Leaps, if diſturbed.

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# PLATE LXXX.

## PHALÆNA FULIGINOSA.

RUBY-TIGER MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general, contracted when at rest. Fly by night.

* Spiral trunks; back smooth without crest.

### *SPECIFIC CHARACTER.*

Superior wings red brown; a black dot near the center of each. Inferior wings, rose colour with black marks *. Abdomen, rose colour with a chain of black spots down the center, and a row of dots on each side.

*Syst. Ent.* 588. 111.
*Linn. Syst. Nat.* 2. 836. 95.—*Fn. Sv.* 1159.
*Raj. Ins.* 228. 13.
*Harr. Aurel. Tab.* 12.
—— *Ins. Anglic. Tab.* 8. *Fig.* 7.
*Ammir. Ins. Tab.* 30.
*Roes. Ins.* 1. *Phal.* 2. *Tab.* 43.
*Wilk. Pap. Tab.* 3. *a.* 14.

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* The black marks on the under wings of different specimens vary very much; in some the black occupies half the space of the wings; in others the rose colour is predominant.

The leaves of Alder or Birch, the Turnip, Muſtard, and Ragwort, with many other vegetables, are noticed by different authors, as being proper food for the Ruby Tiger Moth in the larva ſtate; I have obſerved that they prefer the leaves of the Ragwort or Groundſel.

The Caterpillars are ſmall in the month of May, in June they paſs to the pupa form, and early in the month following, appear in the winged ſtate *.

This ſpecies is leſs frequent than the Cream Spot Tiger Moth †, lately figured in this work.

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* In a forward ſeaſon like the preſent, the time of their appearance in the different ſtates may vary conſiderably, eſpecially as ſome may have two, or even three broods in one ſummer. I have a Moth from a ſecond brood, which paſſed to the pupa form the 25th of July, and came forth the 10th of Auguſt, 1794.

† *Ph. Villica.*

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# PLATE LXXXI.

## LIBELLULA DEPRESSA.

### NEUROPTERA.

### *GENERIC CHARACTER.*

Wings four. Naked, tranſparent, reticulated with veins or nerves. Tail without ſting.

### *SPECIFIC CHARACTER.*

Eyes brown. Head and thorax greeniſh, with two yellow tranſverſe lines. A dark ſpot on the exterior margin of the wings. Body rather depreſſed; that of the female, bright brown with yellow marks on each diviſion; that of the male, blue grey, with ſimilar marks of yellow.

*Syſt. Ent.* 420. 2.
*Linn. Syſt. Nat.* 2. 902. 5.—*Fn. Sv.* 1413.
*Libellula*, &c. *Geoff. Inſ.* 2. 226. 9.
*Libellula*, &c. *Raj. Inſ.* 49. 5.
*Reaum. Inſ.* 6. *Tab.* 35. *Fig.* 1.
*Roeſ. Inſ.* 2. *Aqu. Tab.* 6. *Fig.* 4.
*Tab.* 7. *Fig* 3.
*Edw. Av. Tab.* 333.

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The Male Inſect of the *Libellula Depreſſa*, differs ſo very materially in colour from the female of that ſpecies, that we cannot imagine it will be improper to give a figure of the former in our preſent

Number, though the latter is already repreſented in the early part of the Work.

We have nothing particular to add to our former account of its hiſtory. In the larva and pupa ſtate, it is found crawling at the bottoms of pools or ditches, and ſubſiſts on the larvæ of Gnats and other Inſects; but in the laſt ſtate, it leaves its aquatic abode, and ſubſiſts on ſmall winged inſects, eſpecially Moths; it is not uncommon to ſee one of this ſpecies ſtop ſhort in its flight, dart down like a Hawk upon a Moth or Butterfly, and tear it to pieces in an inſtant; or fly with it in its mouth, to ſome more convenient place to devour it.

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# PLATE LXXXII.

## PHALÆNA USTULARIA.

### EARLY THORN MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

* *Geometræ.*

Antennæ of the male feathered; of the female setaceous, or like a bristle.

### *SPECIFIC CHARACTER.*

Wings angulated, indented, light brown varied with shades of a scorched colour. Three waves of dark brown across each superior wing; together with a spot of orange or bright brown colour, at the base, and another nearly of the same colour on the exterior margin of each.

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Among the several Moths of the *Geometræ* division of Phalenæ which are known to the English Collectors by the trivial distinction, *Thorn Moths*, our present Insect is neither the most conspicuous, or rare; it is however a beautiful creature when taken immediately from the Pupa case, but rarely fine, when caught in the fly state, in the fowling-net; the down being of such an exquisite texture that the slightest touch must inevitably damage its appearance.

The Pupa is marked with a brown colour at every annulation immediately after the Caterpillar has paſſed to that ſtate, but as the creature within becomes more perfect, that brown is gradually changed to a dark, or black colour.

I have obſerved much variation in the colours of different ſpecimens of this ſpecies; of three male Inſects which I have bred this ſeaſon, one only correſponded with the annexed figure, one inclined much more to a red brown, and the other to a dull purple.

I met with the Caterpillars on the oak, and they always preferred that food to any other. The Caterpillars are ſmall in July, they paſs to the Pupa ſtate in Autumn, and the Moths are to be taken about the middle of March.

Although, as we have juſt obſerved, this Inſect does not particularly claim our regard as a rarity, it does not appear to have been deſcribed by *Linnæus*, or even by *Fabricius* in his Species Inſectorum; and no account of it is included in Berkenhout's Outlines, in Harris's Catalogue of Engliſh Inſects, or any other work we have had an opportunity of peruſing.

In its manners, the Caterpillar is not more ſingular than in its form; when young it is very active and in continual motion; but as it grows larger it becomes more ſluggiſh in its diſpoſition: it will ſometimes affix itſelf by its hind feet to one of the extreme branches of the tree on which it feeds, in the ſame manner as ſhewn in our plate, and will remain in that poſture ſeveral hours without the leaſt apparent ſigns of life.

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# PLATE LXXXIII.

## CICADA CORNUTA.

### HORNED CICADA.

### HEMIPTERA.

Shells or upper wings ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved downward.

### *GENERIC CHARACTER.*

Antennæ taper. Shells membraneous, in each foot three joints. Hind legs ſtrong for leaping.

### *SPECIFIC CHARACTER.*

Black-brown. Antennæ ſhort. Thorax bicornuted, with the poſterior part elongated almoſt to the extremity of the abdomen. Wings diaphanous, croſſed. Brown veins on the ſhells.

*Syſt. Ent.* 676. 8.
*Linn. Syſt. Nat.* 2. 705.—*Fn. Sv.* 879.
CICADA, &c. *Geoff. Inſ.* 2. 243. 18.
*Schreb. Inſ.* 11. *Fig.* 3. 4.
*Degeer. Inſ.* 3. 181. 3. *Tab.* 11. *Fig.* 22.
Ranata cornuta. *Petiv. Gozoph. Tab.* 47. *Fig.* 2. 3.
*Sulz. Inſ. Tab.* 10. *Fig.* 63.
*Schæff. Icon. Tab.* 96. *Fig.* 2.
*Scop. Carn.* 340.
Membracis cornuta. *Tab. Spec. Inſ.* 2. 317. 9.

The Cicada Cornuta is a native of Germany and other parts of Europe, as well as of England; with us it is by no means common. It is met with in the month of May, or June; Berkenhout ſays it is found on trees, ferns, &c. I have taken two ſpecimens this ſeaſon, one at Coombe-wood, Surrey, the other at Dartford; they were both concealed on the under ſides of ſome dock leaves.

At Fig. I. the creature is repreſented of the natural ſize, with the wings expanded; at Fig. II. one is given in a ſtanding poſition; and at Fig. III. the front of the head and ſingularly conſtructed thorax is ſhewn as they appear before the ſpeculum of an opaque microſcope.

Fabricius has placed this Inſect in a diviſion of the ſeventh Claſs of is Genera Inſectorum, RYNGOTA *Membracis*.

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# PLATE LXXXIV.

## FIG. I.

## LEPTURA ARCUATA.

### GREAT WASP BEETLE.

### COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ tapering to the end. Shells narrower at the apex. Thorax ſomewhat cylindrical.

### *SPECIFIC CHARACTER.*

Black. Antennæ length of the body. Target yellow. Three tranſverſe yellow lines on the head; three on the thorax and three yellow arched lines, with as many ſpots of the ſame colour on each ſhell.

LEPTURA ARCUATA. *Linn. Syſt. Nat.* 2. 640. 21. *ed.* XIII.—
*Fn. Sv.* 696.
LEPTURA, &c. *Geoff. Inſ.* 1. 212. 10.
CERAMBYX niger, &c. *Vdm. Diſſ.* 30.
SCARABÆUS, &c. *Friſch. Inſ.* 12. *Th. n.* 22. *p.* 31. *Tab.* IV.
*Fig.* 1—5.
CERAMBYX, &c. *Leche Nou. Spec.* 30.
SCARABÆUS. *Raj. Inſ.* 83. 23.
*Petiv. Gazoph. Tab.* 63. *Fig.* 7.
*Schœff. Icon. Tab.* 38. *Fig.* 6.
*Tab.* 107. *Fig.* 2. 3.
CALLIDIUM *arcuatum. Fab. Spec. Ent. n.* 26. *p.* 192.
*Spec. Inſ. T. I. n.* 35. *p.* 241.
*Mant. Inſ. T. I. n.* 50. *p.* 155.
*Ent. Syſt. T. II. n.* 64. *p.* 333.

*Der Bogen-Widderkäfer. Der Bogenſtrich. Der Holzkäfer mit Bogenbinden. La Lepture aux croiſſans dorés, Panzer Faun. Inſ. Germ. In. N° IV. p.* 14.

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This is the rareſt ſpecies of the Leptura genus we have in England; it is found among rotten wood. May.

Fabricius having ſeparated the Lepturæ of Linnæus, and arranged them under three diſtinct generic diviſions, as Callidium, Donacia, and Leptura, it will be proper to obſerve, that the CALLIDIUM *Arcuatum, Claſs I.* ELEVTERA, *Fab. Spec. Inſ.* is the LEPTURA *Arcuata* of Linnæus; to this we muſt alſo add that the LEPTURA *Arcuata*, figured in the ſeventh Number of *Panzer*'s Faunæ Inſectorum Germanicæ Initia, is a very different ſpecies to our ſpecimen, is a native of Auſtria, and received its name from *Helkwig*.

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## FIG. II.

## LEPTURA MYSTICA.

### *SPECIFIC CHARACTER.*

Antennæ and legs black. Head and thorax black. Shells black, with a triangular grey ſpot and two white lines on each; ſhoulders red-brown.

*Linn. Syſt. Nat.* 2. 639. 18.—*Fn. Sv.* 693.

LEPTURA, &c. *Geoff. Inſ.* 1. 217. 15.

CERAMBYX albo faſciatus niger, &c. *Degeer. Inſ.* 5. 82. 19.

CERAMBYX quadricolor. *Scop. Ent. Carn.* 177.

SCARABÆUS, &c. *Raj. Inſ.* 83. 26.

*Schæff. Icon. Tab.* 2. *Fig.* 9.

CALLIDIUM *myſticum. Fab. Spec. Inſ.* 1. 244. 51. 45.

Common

Common in the months of *May* and *June*; is usually found in the open path-ways near woods. It appears to be most peculiar to a sandy or light gravel soil.

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## FIG. III.

## LEPTURA AQUATICA.

### *SPECIFIC CHARACTER.*

Green-gold. Antennæ black. A tubercle on each side of the corslet. Shells striated and truncated. Posterior thighs larger with a spine on the interior side.

*Linn. Syst. Nat.* 2. 637. 1.—*Fn. Sv.* 677.

LEPTURA aquatica spinosa, &c. *Degeer. Inf.* 5. 140. 80. *Tab.* 4. *Fig.* 14. 15.

STENOCORUS, &c. *Geoff. Inf.* 1. 229. 12.

CANTHARIS. *Raj. Inf.* 100. 1.

SCARABÆUS. *Frisch. Inf.* 12. 33. *Tab.* 6. *Fig.* 2.

DONACIA crassipes. *Fab. Spec. Inf.* 1. 245. 52. 1.

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This Insect is very common in *England* during the early part of summer; it lives on aquatic vegetables, and runs with much celerity when disturbed. It has also been found among the decayed wood of willow trees.

*Fabricius* has altered its specific, as well as its generic title; it stands in his System as DONACIA *crassipes*.

## FIG. IV.

## LEPTURA ELONGATA.

### *SPECIFIC CHARACTER.*

Antennæ with black and brown ſpots alternately. Head and thorax black. Shells yellow, tipped at the extremity with black; alſo two tranſverſe bands and two ſpots of the ſame colour. Thighs and part of the legs light brown. Feet black.

*Degeer. Inſ.*

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Nearly as rare as the Leptura Arcuata in this country; it is taken in dry ſandy places, or among looſe chalk; the ſoil of *Dartford* and ſome other parts of *Kent* is particularly favourable to the increaſe of thoſe creatures. Met with in the month of *June*.

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# PLATE LXXXV.

## PHALÆNA VINULA.

### Puss Moth.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

### *SPECIFIC CHARACTER.*

Antennæ feathered. Wings grey, streaked and waved with dull black; somewhat diaphanous. Thorax and Abdomen grey spotted with black.

*Linn. Syst. Nat.* 2. 815. 29.—*Fn. Sv.* 1112.
*Geoff. Inf.* 2. 104. 5.
*Raj. Inf.* 153. 5.
*Geod. Inf.* 1. *Tab.* 65.
2. *Tab.* 37.
*Merian. Europ. Tab.* 39. *Fig.* 140.
*Albin. Inf.* 11. *Tab.* 5.
*Sepp. Inf.* 4. *Tab.* 5.
*Wilk. pap. Tab.* 13. *Fig.* 1. *e.* 1.
*Reaum Inf.* 2. *Tab.* 21.
*Frisch. Inf.* 6. *Tab.* 8.
*Degeer. Inf.* 1. *Tab.* 23. *Fig.* 12.
*Roes. Inf.* 1. *phal.* 2. *Tab.* 19.
*Fab. Spec. Inf.* 2. 178. 52.

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The Puss Moth appears in the winged state about the latter end of *May*, or early in *June*.

The Caterpillar, from which it is produced, is of a very extraordinary form, and has rather the appearance of a formidable or venomous creature, than the larva of a Moth: it feeds on Willows and Poplars, and is generally found in great plenty where those trees grow, in the month of *July*. The two tails, or crimson filaments at the extremity of the body, are protruded or concealed within their base at the creature's pleasure; when protruded they have a continual writhing or vibratory motion.

It passes to the Pupa state in *August*.

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# PLATE LXXXVI.

## CARABUS CYANOCEPHALUS.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper. Thorax and ſhells margined. A large appendix at the baſe of the poſterior thighs. Five joints in each foot.

### *SPECIFIC CHARACTER.*

Thorax and feet orange colour. Head and ſhells blue green.

*Linn. Syſt. Nat.* 2. 671. 21.—*Fn. Sv.* 794.
CARABUS, &c. *Degeer Inſ.* 4. 100. 17. *Tab.* 3. *Fig.* 17.
BUPRESTIS, &c. *Geoff. Inſ.* 1. 149. 40.
CANTHARIS, &c. *Raj. Inſ.* 89. 1.
*Schæff. Icon. Tab.* 10. *Fig.* 14.

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FIG. I. The Natural Size.
FIG. II. The Magnified Appearance of the Upper-ſide.
FIG. III. The Under-ſide, Natural Size.

This minute Inſect is found in the months of *May* and *June*.

# PLATE LXXXVII.

## SPHINX FUCIFORMIS.

### CLEAR WINGED HUMMING SPHINX.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ thickeſt in the middle. Wings, when at reſt, deflexed. Fly ſlow, morning and evening only.

### *SPECIFIC CHARACTER.*

Antennæ black. Head and Thorax bright yellow; Body rich brown, except the laſt joints, which are yellow; Abdomen bearded with black. Wings tranſparent, with a broad dark brown border; Veins dark.

*Linn. Syſt. Nat.* 2. 803. 28.—*Fn. Sv.* 1092.
SPHINX, &c. *Geoff. Inſ.* 2. 82.
*Roeſ. Inſ.* 3. *Tab.* 38.
4. *Tab.* 34. *Fig.* 1—4.
*Bradl. nat.* 26. *Fig.* 1. *B.*
*Sulz. Inſ. Tab.* 15. *Fig.* 90.
*Poda Inſ. Tab.* 2. *Fig.* 6.
*Schœf. Icon. Tab.* 16. *Fig.* 1.
SESIA Fuciformis. *Fab. Sp. Inſ.* 2. 156. 11.

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The Caterpillar of this Inſect feeds on the wood of Willows, and is concealed within the ſolid ſubſtance of the trunk, in the ſame manner

manner as the larva of the *Sphinx* Apiformis *, and *Sphinx* Tipuliformis †, are concealed within the wood of the Poplar, and ſtalks of Currant buſhes.

*Fabricius* deſcribes the Caterpillar, green with a lateral line of yellow; ſpine at the end of the body red. *Harris* obſerves, that in the winged ſtate the fly is found in Gardens, on flowers, in *May*; *Fabricius* writes on the Honey-ſuckle, &c.

It is very rare; one ſpecimen has been taken this ſeaſon on *Epping-Foreſt*.

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* Plate XXV. of this Work. † Ibid.

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# PLATE LXXXVIII.

## FIG. I.

## APIS TERRESTRIS.

### HUMBLE BEE.

### HYMENOPTERA.

Wings four, generally membraneous. Tail of the females armed with a ſting.

### *GENERIC CHARACTER.*

Jaws, with a trunk bent downwards. Antennæ elbowed in the middle; firſt joint longeſt. Wings plain. Body hairy. Abdomen connected by a pedicle.

### *SPECIFIC CHARACTER.*

Black, very hairy, with a yellow belt on the Thorax, one alſo acroſs the Abdomen. Anus white or yellowiſh.

A. T. hirſuta nigra, thoracis cingulo flavo, ano albo.

*Syſt. Ent.* 379. 5.—*Linn. Syſt. Nat.* 2. 959. 41.
—*Fn. Sv.* 2709.

*Bombylius* major niger, linea duplici tranſverſim ducta lutea, alia ſupra ſcapulas, alia per medium abdominis, imo abdomine albo. *Raj. Inſ.* 247. 5.

*Mouff. Inſ.* 53. *t.* 2.
*Goed. Inſ.* 2. *tab.* 46.
*Bradl. nat. tab.* 26. *fig.* 1. *D.*
*Reaum. Inſ.* 6. *tab.* 3. *fig.* 1.
*Friſch. Inſ.* 9. *tab.* 13. *fig.* 1.

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The manners of the common Humble Bee are too well known to require elucidation; its dwelling is formed very deep in the earth; it

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comes forth when the ſun ſhines to extract the melliferous moiſture of flowers, and is perfectly harmleſs unleſs when irritated. Linnæus deſcribes the Anus of the Apis Terreſtris white, but I find this is not always conſtant; I have ſeveral ſpecimens that agree with the one repreſented in the annexed plate.

I have compared them with the ſpecimen in the Linnæan Cabinet; they perfectly agree in every reſpect except in the brown or yellow colour of the extreme part of the Abdomen: they are certainly only varieties.

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## FIG. II.

## APIS LAPIDARIA.

### RED-TAIL BEE.

### HYMENOPTERA.

### APIS.

### *SPECIFIC CHARACTER.*

Black, hairy, Anus red-orange colour.

A. L. hirſuta atra, ano fulvo. *Syſt. Ent.* 381. 14. *habitat lapidum in acervis.*

*Linn. Syſt. Nat.* 2. 960. 44.—*Fn. Sv.* 1701.—*Geoff. Inſ.* 2. 417.

Bombylius maximus totus niger, exceptis duobus extremis abdominis annulis rufis. *Raj. Inſ.* 246. 1. *Scop. Carn.* 813.

*Friſch. Inſ.* 9. *p.* 25. *Fig.* 2.

*Reaum Inſ.* 6. *t.* 1. *f.* 1. 4.

*Schœf. Icon. Tab.* 69. *Fig.* 9.

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In the Linnæan Cabinet, (now in the poſſeſſion of Dr. Smith) I find under the name Apis Lapidaria two inſects, ſo very different in ſize, that it certainly will admit ſome doubt whether they ought to be

conſidered as the ſame ſpecies: Linnæus does indeed, notice this diſſimilarity of their ſize in his deſcription, and ſays one is three times larger than the other, &c. whence we may conclude that it was after mature deliberation he had ventured to place the ſmalleſt as a variety of the other *.—I do not know whether the largeſt has ever been taken in England; the ſpecimen of it, in the Linnæan Collection, is a Swediſh Inſect: the ſmalleſt (which we have figured) is well known as a native of this country.

It is not found ſo frequently as moſt other ſpecies of the Apis genus; it lives among heaps of looſe ſtones; its honey is ſtrong.

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## FIG. III.

## TENTHREDO VITELLINÆ.

### HYMENOPTERA.

### *GENERIC CHARACTER.*

Abdomen of equal thickneſs, and cloſely united to the thorax. Sting ſerrated, between two valves. Second wings ſhorteſt.

### *SPECIFIC CHARACTER.*

Antennæ clavated. Abdomen above black, very hairy, with a lateral line of rufous. Legs yellowiſh. Thighs behind dentated.

T. V. Antennis clavatis, abdomine ſupra nigro, lateribus rufis, femoribus poſticis dentatis. *Syſt. Ent.* 318. 6.

T. V. Antennis clavatis, ore elabiato, abdomine rufo dorſo nigro, femoribus poſticis dentatis.

*Linn. Syſt. Nat.* 2. 921. 5.—*Fn. Sv.* 1535.
*Strœm. Sundm.* 171. *Tab.* 10. *Fig.* 11.

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* "Varietas triplo minor, vix diſtincta."

Larva vireſcens per aperturam ante anum tanquam e ſiphone aquam exſpuit. *Fabricius. Spec. Inſ.* 1. 407. 7.

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The Larva of this ſpecies is found on the Alder, Oſier and Willow; it is large, of a green colour, and at firſt ſight, greatly reſembles the Caterpillars of ſome Lepidopterous Inſects.

When it firſt appears from the Chryſalis very little of the black of the Thorax and Abdomen can be ſeen, thoſe parts being at that time thickly cloathed with long browniſh hairs.

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# PLATE LXXXIX.

## PAPILIO ANTIOPA.

### CAMBERWELL BEAUTY.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ clavated. Wings, when at reſt, erect. Fly in the day time.

### *SPECIFIC CHARACTER.*

Wings angulated, rich purple-brown, with a pale yellow external border; and an intermediate dark border, with a row of bluiſh eyes; on the anterior margin of the firſt wings two long yellowiſh ſpots.

——Alis angulatis nigris, limbo albida.

*Linn. Syſt. Nat.* 2. 776. 165.—*Fn. Sv.* 1056.
*Geoff. Inſ.* 2. 35. 1.

Papilio maxima nigra, alis utriſque limbo lato albo cinctis.

*Raj. Inſ.* 135. 136.
*Jonſt. Inſ. t.* 9. & 11.
*Schœff. Elem. Tab.* 94. *Fig.* 1.
——— *Icon. Tab.* 70. *Fig.* 1. & 2.
*Sulz. Inſ.* 1. *Tab.* 14. *Fig.* 85.
*Roeſ. Inſ.* 1. *Pap.* 1. *Tab.* 1.
*Eſp. Pap.* 1. *Tab.* 12. *Fig.* 2.
*Seb. Muſ.* 4. *Tab.* 32. *Fig.* 1, 2.
*Bergſtræſs.* 2. *Tab.* 39. *Fig.* 1. 2. 3. 4.
*Wilk. Pap.* 58. *Tab.* 2. *a.* 10.
*Degeer. Inſ.* 1. *Tab.* 21. *Fig.* 8. 9.

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The Papilio Antiopa is found in every part of Europe; in Germany particularly it is very common; it is as frequent in America as in Europe, and is eſteemed as a rarity only in this country: it is, indeed, ſometimes found in abundance with us, but as its appearance is neither annual nor periodical, it is generally valued by Engliſh Collectors.

There have been ſeveral inſtances of this Inſect being found in different parts of the country in mild ſeaſons, as plenty as the Peacock, or Admirable, Butterflies; in the ſummer of 1793 particularly, they were as numerous in ſome places as the common garden White Butterfly is uſually near London.

But as a proof that its appearance does not altogether depend on the temperature of the weather, we need only adduce, that not a ſingle ſpecimen has been taken this ſeaſon, although it has been one of the moſt favourable for all kinds of Inſects that can be recollected; and many ſpecies of Moths and Butterflies, which have not been ſeen for ſeveral years before, have been taken at Combe-Wood, Darn-Wood, and ſimilar adjacent parts, during ſummer, in plenty.

It is from the uncertainty of its appearance that we have ſuch different, and, ſeemingly, irreconcileable accounts of the abundance and ſcarcity of this Butterfly; it was certainly well known as a native of this country to former Collectors, yet it received only a few years ſince the new name *Grand Surpriſe*; this name, which was given by Moſes Harris, or by ſome of the company of Aurelians, of whoſe ſociety he was a member, was evidently intended as a ſignificant expreſſion of their admiration, not of the beauty of the Inſect, but of the ſingular circumſtance of the ſpecies remaining ſo long in thoſe very places where the moſt diligent reſearches of preceding Collectors had been made in vain; of their unwearied induſtry they were well perſuaded, and were therefore unable to account for the appearance of a numerous brood of large Inſects, which muſt have remained concealed many years, or been lately tranſported to thoſe places.

Harris, in his Aurelian, calls it the Camberwell Beauty, though in his liſt of Engliſh Butterflies Hawk-Moths, and Moths, he uſes the name *Grand Surpriſe:* we mention this circumſtance, as it appears very inconſiſtent that the new name he adopts in one work, and the old

old one he ſhould have diſcarded in the other, are equally and indiſcriminately uſed in the ſeveral editions of both; we ſtill find it in the Aurelian, " *Camberwell Beauty*," in the other, " *Grand Surpriſe*," from which it might be readily inferred, that he meant two diſtinct Inſects, were it not for the addition of the Linnæan name *Pap. Antiopa.*

In the general deſcription of this Inſect in the Aurelian, Harris does not ſay that it was ſcarce at that time (1775), which he certainly would if it had been ſo; but Berkenhout, in his outlines of Natural Hiſtory, (1789) adds, after its ſpecific character, that it is " very rare " in this kingdom." To reconcile thoſe accounts, we can only obſerve, that no Inſect is more uncertain as to the time of its appearance; that though found in abundance in one ſeaſon, it may not be ſeen in the next, or even for ſeveral ſucceſſive years; it will then appear in ſmall or large quantities, for one, two, or more ſeaſons, and again diſappear for many years as before.

The Engliſh ſpecimens differ from thoſe of other countries in the colour of the light exterior border of the wings; in the former, that part is of a very pale yellow brown, inclining to a dirty white; in the latter, it is of a deep yellow, marked and ſpotted with brown. *Fabricius* notices this difference, and ſays they are varieties.

The Caterpillars feed on the Willow, and are generally found on the higheſt branches; they caſt their ſkin early in *July*, and paſs to the Chryſalis, as repreſented in the plate. The underſide of the Butterfly is of a black brown, with irregular dark ſtreaks; the yellowiſh border is viſible on that ſide.

# PLATE XC.

## PHÆLÆNA LŒFLINGIANA.

### LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contrasted when at rest. Fly by night.

### TORTRIX.

### *SPECIFIC CHARACTER.*

First wings yellowish, or buff colour, marked with transverse short streaks of red, or brick colour, also two irregular marks of the same colour, resembling *XX*, on the anterior margin. Under wings and body lead colour.

P. Alis anticis flavis luteo reticulatis duplici *xx* notatis.
*Syst. Ent.* 652. 42.
*Linn. Syst. Nat.* 2. 878. 305.—*Fn. Sv.* 1323.—
*Clerk. Phal. Tab.* 10. *Fig.* 6.

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This little Moth has great affinity with the *Phal. Forskahliana* of Linnæus, the wings are indeed more angulated, but the form of the *XX* on the upper wings are nearly the same, and in the general colours both of the upper and under wings they perfectly agree.

Phal. Lœflingiana is found in the greatest abundance on the Oak, in the month of April and May, in the Caterpillar state, and in July every Tree that will afford them a moist retreat during the heat of the day, conceals numbers in the winged state; morning and evening they are on the wing, they come forth at day break, sport about the bushes till after sun-rise. and then retire among the thickest Oak boughs; a little before sun-set they come forth again, but conceal themselves as before about twilight.

The Caterpillars are of a fine green colour, beſet with black ſpecks, the head is ſhining black, a collar of the ſame colour paſſes round the firſt joint, or annulation of the body next the head, but a narrow belt of white paſſing between, ſeparates the black of the head from the ſhoulders. It is a briſk creature, and the thread which it ſpins is of a very ſtrong texture.

It paſſes to the Chryſalis ſtate in the leaf of the Oak, as ſhewn in the plate.

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# PLATE XCI.—XCII.

## SPHINX EUPHORBIÆ.

### Spotted Elephant Sphinx.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ thickeſt in the middle. Wings, when at reſt, deflexed. Fly ſlow, morning and evening only.

### *SPECIFIC CHARACTER.*

Superior wings light brown, with ſpots, and broad ſtripes of dark olive. Inferior wings red, marked with black and olive.

*Sphinx Euphorbiæ* alis integris faſcis, vitta anticis pallida, poſticis rubra. *Syſt. Ent.* 541. 17.

*Linn. Syſt. Nat.* 2. 802. 19.—*Fn. Sv.* 1086.—*Muſ. Lud. Vir.* 356.

*Sphinx Euphorbiæ* alis integris griſeis, faſciis duabus vireſcentibus poſticis rufis baſi ſtrigaque nigris, antennis niueis. *Fab. Spec. Inſ.* 2. 146. 32.

*Sphinx* ſpirilingius, alis viridi fulvo purpureoque varie faſciatis et maculatis, ſubtus purpureis. *Geoff. Inſ.* 2. 87. 11.

*Drury Inſ.* 1. *Tab.* 29. *Fig.* 3.
*Roeſ. Inſ.* 1. *Phal.* 1. *Tab.* 3.
*Reaum. Inſ.* 1. *Tab.* 13. *Fig.* 1. 4. 5. 6.
*Degeer. Inſ.* 1. *Tab.* 8. *Fig.* 6. 11.
*Schæff. Icon. Tab.* 99. *Fig.* 3. 4.
*Friſch. Inſ.* 2. *Tab.* 11.

Spotted Elephant *Harris. Aurel. pl.* 44.

The Sphinx Euphorbiæ, conſidered as a native of this country, is without exception the rareſt ſpecies of the genus we have: and if we omit the Sp. Porcellus, Lineata, Atropos, with a very few others, we have no indigenous ſpecies that can by any means be compared with it as a rare, or, we may add, beautiful Inſect.

*Drury* has given a figure of the Sphinx without its changes among his rare Inſects, but as a native of a foreign country: and before the time of *Harris* it was frequently an object of diſcuſſion among Aurelians, whether it ever had been taken in *England*; *Harris* in his work, expreſſes himſelf thus, "It has been long in diſpute whether "the Spotted Elephant was a native of this iſland; but it is now paſt "a doubt, as I have had the good fortune to find a Caterpillar of this "Moth in marſhy ground at *Barnſcray*, near *Crayford* in *Kent*, about "the middle of *Auguſt* *; it was better than three inches long, of a "dark brown colour; the horn at the tail part, which was about half "an inch long, appeared long and gloſſy. The head was nearly the "ſize of a ſmall pea, of a lightiſh yellow, brown, or tan colour. I "tried various herbs to bring it to feed, but my attempts were fruit-"leſs, and it died for want †. The Chryſalis in the plate was ſent "me from *Belleiſle* in *France*; and the Moth was produced from it "about the beginning of *June*."—*Harris*'s *Aurelian*, plate 44.

We are not informed of more than two ſimilar circumſtances that may place its exiſtence in this country beyond diſpute; a damaged ſpecimen of the Fly has been taken at *Bath*, and is in our cabinet; and Mr. *Curtis*, author of the *Flora Londinenſis*, &c. found four of the Caterpillars laſt ſummer in *Devonſhire*.

In the Caterpillar ſtate it frequently changes its ſkin, and appears as frequently to alter its appearance; we cannot elſe account for the diſſimilarity that prevails among all the coloured repreſentations of the Inſect in that ſtate that have come under our inſpection; in Rœſel's Hiſt. Inſ. we find a figure of the Caterpillar apparently in the laſt ſkin,

* 1778.

† It feeds on plants of the *Euphorbia* genus, as its ſpecific name indicates.

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that very nearly correſponds with our ſpecimen; but that figured by Harris does not agree with either, in the form or number of the ſpots. At an early ſtage of its growth the Caterpillar, according to Rœſel, is bright yellow, with black patches, and minute white ſpecks.

The figure in plate XCII. is copied from a moſt perfect ſpecimen of the Caterpillar, and which is now in our poſſeſſion; but as we cannot aſſure our Subſcribers that it was found in *England*, we have been careful to add it in a ſeparate plate, that ſo it may either be included in the volume with the Sphinx and Pupa, or be excluded with propriety.

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# PLATE XCIII.

## FIG. I.

### SPHEX SABULOSA.

HYMENOPTERA.

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

### *GENERIC CHARACTER.*

Jaws, without Tongue. Antennæ of ſixteen joints. Wings incumbent, not folded. Sting riged.

### *SPECIFIC CHARACTER.*

Antennæ, Head, Thorax, and Legs black. Abdomen club-ſhaped; connected by a ſlender thread; orange colour; extremity black.

SPHEX SABULOSA. *Syſt. Ent.* 346. 1.—*Linn. Syſt. Nat.* 2. 941. 1. —*Fn. Sv.* 1648.

SPHEX, &c. *Degeer Inſ.* 2. 2. 148. 4. *tab.* 28. *fig.* 27.

ICHNEUMON, &c. *Geoff. Inſ.* 2. 349. 63.
*Scop. carn.* 770.
*Friſch. Inſ.* 2. *tab.* 1. *fig.* 6. 7.
*Sulz. Inſ. tab.* 19. *fig.* 120.
*Schæff. Icon.* 83. *fig.* 1.
*Fab. Spec. Inſ.* 2. 442. 112. 1.

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Sphex Sabuloſa is a very buſy and voracious Inſect; it ſometimes ſubſiſts on vegetable matter, frequently on ſmall flies; we have never found it common near *London*.

FIG.

## FIG. II.

### ICHNEUMON CIRCUMFLEXUS.

HYMENOPTERA.

*GENERIC CHARACTER.*

Jaws, without Tongue. Antennæ of more than thirty joints; long, filiform, vibrating. Sting within a bivalve ſheath.

*SPECIFIC CHARACTER.*

Antennæ, Legs, and Body tawny. Head and Thorax black; as is alſo the lower part of the ſecond joint of each hind Leg. Body curved.

ICHNEUMON CIRCUMFLEXUS. *Syſt. Ent.* 341. 80.
*Linn. Syſt. Nat.* 2. 938. 59.—*Fn. Sv.* 1631.

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Not very common; found in *May* and *June*.

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# PLATE XCIV.

## FIG. I.

## RHAGIUM BIFASCIATUM.

COLEOPTERA.

RHAGIUM *.

### *SPECIFIC CHARACTER.*

Thorax ſpined. Shells olive brown, with three longitudinal ſtripes, and two yellow ſpots on each.

*Fab. Spec. Inſ.* 1. 230. 4.
*Sulz. Hiſt. Inſ. Tab.* 5. *Fig.* 8.

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Linnæus never deſcribed this Inſect, or he would have placed it in the *Cerambyx* genus. Fabricius has deſcribed it in his Species Inſectorum under the ſpecific name *Bifaſciatum*; but he has ſeparated it from the Linnæan genus, and given it the new generic title Rhagium: the Cerambyx Inquiſitor, C. Curſor and C. Noctis of Linnæus, our preſent ſpecies, and R. Ornatum, are the only Inſects Fabricius has included in the new genus Rhagium.

The Rhagium Bifaſciatum is rare in this country; it is more frequent in France and Germany. It is generally found in putrid fleſh.

## FIG. II.

## CERAMBYX MOSCHATUS.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ articulated, and tapering to the end. Shells long and narrow, four joints in each foot. Thorax with lateral ſpines or tubercles.

### *SPECIFIC CHARACTER.*

Antennæ length of the body. Shells green, changeable, purple, copper colour, &c. Body dark blue.

CERAMBYX *Moſchatus*, Thorace ſpinoſo, elytris obtuſis viridibus nitentibus, femoribus muticis antennis mediocribus.
*Linn. Syſt. Nat.* 2. 627. 34.—*Faun. Suec.* 652.

CERAMBYX *odoratus*, &c. *Degeer. Inſ.* 5. 64. 2.

SCARABÆUS. *Raj.—Friſch.—Liſter.*

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Few Inſects vary more in their colours than the Cerambyx Moſchatus; in ſome ſpecimens the Green colour is very predominant, in others the Copper colour; in ſome the Purple is the moſt vivid, and again in others the colours are ſo blended as to appear altogether of a dull brown. They feed on the ſoft wood of willow trees; are very plenty in moſt places in ſummer, and emit a very powerful muſk-like odour.

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# PLATE XCV.

## PHALÆNA NEUSTRIA.

LACKEY MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general, contracted when at rest. Fly by night.

### *SPECIFIC CHARACTER.*

Antennæ feathered. Head, Thorax, Body, and Wings light brown; a dark broad wave across the middle of the upper Wings.

*P. Neustria.* B. alis reversis griseis, strigis duabus ferrugineis, subtus unica. *Syst. Ent.* 567. 42.—*Linn. Syst. Nat.* 2. 818. 35.

*Phalæna* pectinicornis elinguis, alis deflexis pallidis, fascia alarum transversali saturatiore. *Geoff. Ins.* 2. 114. 16.

*Phalæna* media tota cinerea. *Raj. Ins.* 214. 8.
*Reaum. Ins.* 2. *Tab.* 4. *Fig.* 1.—11.
*Goed. Ins.* 1. 57. *Tab.* 10.
*Harris's Aurel. pl.* 17.
*Wilk. Pap.* 21. *Tab.* 3. *a* 10.
*Alb. Ins.* 19. *Fig.* 27.
*Frisch. Ins.* 1. *Tab.* 2.
*Roes. Ins.* 1. *Phal.* 2. *Tab.* 6.
*Fab. Spec. Ins.* 2. 180. 58.

The Caterpillar of the Ph. Neuſtria are found in June, either on the white-thorn, black-thorn, or briar; ſometimes on fruit trees: they paſs to the Chryſalis ſtate in July, and the Moths appear in Auguſt.

The female depoſits her eggs with ſuch particular care and regularity, that a cluſter of them forms one of the moſt pleaſing objects for microſcopical inveſtigation; they are cruſtaceous, of a light grey or bluiſh colour, elegantly marked at the broadeſt end; they are diſpoſed with the greateſt ſymmetry around the ſmall branches of the thorn, and are ſo cemented together that they cannot readily be ſeparated.—The appearance of a cluſter is repreſented in our plate.

The eggs are laid in autumn, though they are not hatched till the enſuing ſpring. When the young Caterpillars burſt forth, they form into ſocieties, ſometimes of thirty or forty individuals, ſometimes of a much greater number; they immediately commence the formation of a ſpacious web, and if the weather be fine in two or three days, their work is completed; as however they encreaſe in bulk, it is neceſſary to enlarge their dwelling, and this they manage either by adding new external coverings, or encreaſing and extending the windings within. They ſeldom paſs to the Pupa form in thoſe neſts, but ſeparate in ſearch of a more convenient place for that purpoſe when they have attained their full ſize.

The Caterpillar, when preparing for its next ſtate, weaves a large ſilky caſe; within which it forms another ſomewhat ſmaller; and thus enveloped by its double cone, it changes to the Pupa form. The Pupa is black, and may be juſt diſcerned through the two caſes, as repreſented in our plate.

The figure of the perfect Inſect is copied from a female ſpecimen; the male is rather darker, and has the Antennæ more feathered.

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# PLATE XCVI.

## FIG. I.

## CHRYSOMELA POLYGONI.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the ends. Corſelet margined.

### *SPECIFIC CHARACTER.*

Head, Shells, and underſide blue green. Thorax and Thighs orange colour. Globules of the Antennæ of equal ſize.

C. Polygoni. Ouata cærulea, thorace femoribus anoque rufis.
*Syſt. Ent.* 100. 32.—*Linn. Syſt. Nat.* 2. 589. 24.—
*Fn. Sv.* 520.

*Chryſomela, &c.* *Geoff. Inſ.* 1. 283. 4.
*Chryſomela, &c.* *Degeer. Inſ.* 5. 322. 26.
*Reaum. Inſ.* 3. *Tab.* 17. *Fig.* 14. 15.
*Schæff. Icon.* *Tab.* 51. *Fig.* 5.
*Tab.* 161. *Fig.* 4.
*Tab.* 173. *Fig.* 4.

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This pretty, though common Inſect, is generally found on thoſe plants which grow on the banks of ditches in the months of May or June.

FIG.

## FIG. II.

## CANTHARIS ÆNEA.

### *GENERIC CHARACTER.*

Antennæ taper. Thorax margined. Shells flexile. Sides of the Abdomen papillous, and folded. In each Foot five joints.

### *SPECIFIC CHARACTER.*

Bright green. Shells red on the external ſides; a ſmall red ſpot on each ſide of the Corſelet.

CANTHARIS *Ænea* thorace marginato, corpore viridi æneo elytris extrorſum undique rubris. *Linn. Syſt. Nat.* 2. 648. 7.— *Fn. Sv.* 708.

*Cicindela* viridi ænea, elytris extrorſum rubris. *Geoff. Inſ.* 1. 174. 7.

*Thelephorus æneus*, &c. *Degeer. Inſ.* 4. 73. 6. *Tab.* 2. *Fig.* 16. 17.

*Scarabæus*, &c. *Raj. Inſ.* 77. 12.
*Schæff. monogr.* 1754. *Tab.* 2. *Fig.* 10, 11.
*Icon. Tab.* 18. *Fig.* 12. 13.

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Very plenty on flowers; often on thiſtles in May.

## FIG. III.

## STAPHYLINUS MAXILLOSUS.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ globular. In each Foot five joints. Shells curtailed. Wings covered. Tail defenceleſs, with two veſicles.

### *SPECIFIC CHARACTER.*

Black. Antennæ of eleven globules. Jaws as long as the Head. Shells grey, cover one third of the Abdomen. Length one inch.

Sp. Maxilloſus. Pubeſcens niger, faſciis cinereis. *Syſt. Ent.* 265. 3. *Linn. Syſt. Nat.* 2. 683. 3.—*Fn. Sv.* 841.

*Staphylinus*, &c. *Geoff. Inſ.* 1. 360. 1. *Tab.* 7. *Fig.* 1.

*Staphylinus balteatus*, &c. *Degeer. Inſ.* 4. 18. 4. *Tab.* 1. *Fig.* 7. 8.

*Scarabæus.* *Liſt. Logu.* 391.
*Jonſt. Inſ. Tab.* 17. *Fig.* 1. 2. 3.
*Bocc. Muſ.* 2. *Tab.* 31. *Fig.* AA.
*Schæff. Icon. Tab.* 20. *Fig.* 1.

*Staphylinus olens*, &c. *Müll. Faun. Fridrickſd.* 23. 228.
*Zool. Dan.* 97. 1090.

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Found chiefly in ſandy places; may be often obſerved flying againſt dry banks when the ſun ſhines; makes a buzzing noiſe; feeds on decayed vegetables, but more eſpecially on the fleſh of dead animals. Met with in May, June, and July.

FIG.

## FIG. IV.

## ELATER SPUTATOR.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper, lodged in a groove under the Head and Thorax. Under ſide of the Thorax terminates in a point lodged in a cavity of the Abdomen. Spring to a conſiderable height when laid on their backs.

### *SPECIFIC CHARACTER.*

Thorax black. Shells brown. Body black.

*Linn. Syſt. Nat. ed.* 12. 182. 15.
*Faun. Suec.* 583.

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We have ſeveral ſpecies of this genus that ſo nearly reſemble each other, as ſcarcely to be diſtinguiſhed on the moſt accurate inveſtigation from the E. Sputator. They are found in great abundance in ſummer.

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# PLATE XCVII.

## PHALÆNA LUCIDATA.

### Dartford Emerald Moth.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the baſe. Wings in general contracted when at reſt. Fly by night.

### *SPECIFIC CHARACTER.*

Fine lucid green, two white waves acroſs the upper, and one acroſs the under wings.

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This ſpecies we have ever found peculiar to the woods about two or three miles beyond Dartford (Kent), particularly on the ſkirts of Darnwood, and near the banks of the river Thames at Queenhithe; it has probably never been taken elſewhere, or the name Dartford Emerald would not have been ſo generally adopted by Collectors.

It is not very frequent even in thoſe local ſituations, nor can we learn that its larva and pupa ſtate has been aſcertained before; the ſpecies has neither been deſcribed by *Linneus* nor *Fabricius*; *Harris* does not mention it in his catalogue of Engliſh Moths, nor has a figure of it been given in any preceding publication that have come under our inſpection.

The ſpecific name is intended to expreſs the lucid or tranſparent appearance of the Inſect.

I am not certain whether in the larva ſtate it feeds on the Convolvulus, although I found it on a plant of that kind; as its climbing ſtalks and tendrils were ſo intricated with branches of white-thorn, oak, and broom, as to preclude any accurate determination.

I kept them in a gauze cage for the ſpace of a fortnight, and ſupplied them with freſh portions of the different plants every day, but could never obſerve them take the leaſt ſubſiſtence during the whole time; they affixed their tails and hinder legs in the meſhes of the gauze when I firſt removed them into the cage, and never ſhewed the leaſt ſigns of life after; as they held firmly by the gauze, in the poſitions repreſented in our plate, I was very much diſappointed to find on attempting to remove them, that two were dead; May 23d I obſerved that which was alive threw out a very delicate white thread, as if about to ſpin a cone; the body gradually ſhrivelled at the upper part, while the lower became proportionably thicker; two days after it fell to the bottom of the cage and became a pupa, at firſt of a whitiſh, and after of a fine green colour, marked at the narrow end with ſhort black ſtreaks. June 13th the Moth came forth.

At Fig. I. is ſhewn the head of the Caterpillar magnified; it is grey, with the jaws black, and is concealed beneath two horns or projections of the ſame green colour as the back.

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# PLATE XCVIII.

## CIMEX LURIDUS.

### HEMIPTERA.

Shells or upper wings, ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Back curved downwards.

### *GENERIC CHARACTER.*

Antennæ longer than the thorax. Thorax margined; in each foot three joints.

### *SPECIFIC CHARACTER.*

Thorax ſpined, brown, tinged with green. Shells brown, with a dark ſpot on the center of each.

CIMEX *Luridus.* Thorace obtuſe ſpinoſo ſubvireſcente, elytris griſeis, macula fuſca, clypeo emarginato.

*Syſt. Ent.* 701. 25.
*Fab. Spec. Inſ.* 2. 345. 38.

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*Fabricius* is the only writer who has deſcribed this beautiful Inſect; the deſcription in the Species Inſectorum is taken from a ſpecimen in the collection of *Sir J. Banks, Bart.* A very minute Latin account is alſo given in a Mantiſſa of Entomology lately publiſhed by the ſame author, but in which he does not even mention the larva or pupa ſtate, though their characters differ ſo eſſentially from the perfect Inſect; we ſuſpect in the two firſt ſtates the Inſect has hitherto re-

mained unknown, as in the perfect ſtate it is very rarely met with. We have never ſeen a figure of either in any former publication.

June 10th, 1794.—I found one ſpecimen in the larva ſtate at Coombe-wood, Surrey; it was lurking beneath a branch of hazel, among ſome ſmall Caterpillars that had formed a ſlight web on the leaves; as it was only ſerved with vegetable food when confined in the breeding cage, it died in a few days.

June 26th, 1794.—I ſhook another ſpecimen from the upper branches of a tall oak in Darn-wood, Dartford. At firſt it refuſed to eat, but ſhortly after I obſerved it ſuſpended acroſs a leaf, with its head downward, and its roſtrum extended and transfixed through the head of a ſmall Caterpillar which had unfortunately ſtrayed into the box. I fed it after with dead worms, houſe flies, &c. from which it extracted nutritive moiſture, and encreaſed conſiderably in bulk.—June 29th it caſt its exuviæ—July the 2d. it caſt another, when the perfect Inſect came forth: the larva can ſcarcely be diſtinguiſhed from the pupa ſtate.

Fig. I. the natural ſize of the larva, with its manner of feeding.—underſide.

Fig. II. magnified appearance of the upperſide of ditto.—The perfect ſtate ſhewn above.

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# PLATE XCIX.

## CHRYSOMELA BILITURALA.

### COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the end. Corſelet margined.

### *SPECIFIC CHARACTER.*

Antennæ near the length of the body, black. Head, thorax, and underſide, black. Shells red, inclining to yellow brown, with a broad longitudinal black ſtripe extending from the baſe, nearly to the extremity of each.

---

This Inſect is deſcribed in the manuſcripts of T. MARSHAM, ESQ. S. L. S. who favoured me with the ſpecimen from which the figure in the annexed plate is copied; it does not appear to have been either figured or deſcribed in any preceding Natural Hiſtory, and may therefore be eſteemed as a rare Inſect. The ſpecific name *biliturala* is adopted from that Gentleman's manuſcripts by permiſſion.

Is found on Hornbeam in May.

# PLATE C.

## PHALÆNA CŒRULEOCEPHALA.

### FIGURE OF EIGHT MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general deflexed when at rest. Fly by night.

### *SPECIFIC CHARACTER.*

Antennæ feathered. Superior wings brown, marbled with blueish green; the resemblance of a double figure of eight on each. Inferior wings lighter with a brownish scallopped margin.

PHALÆNA CŒRULEOCEPHALA elinguis cristata, alis deflexis griseis, stigmatibus albidis coadunatis.—*Linn. Syst. Nat.* 2. 826. 59.—*Fn. Sv.* 1117.

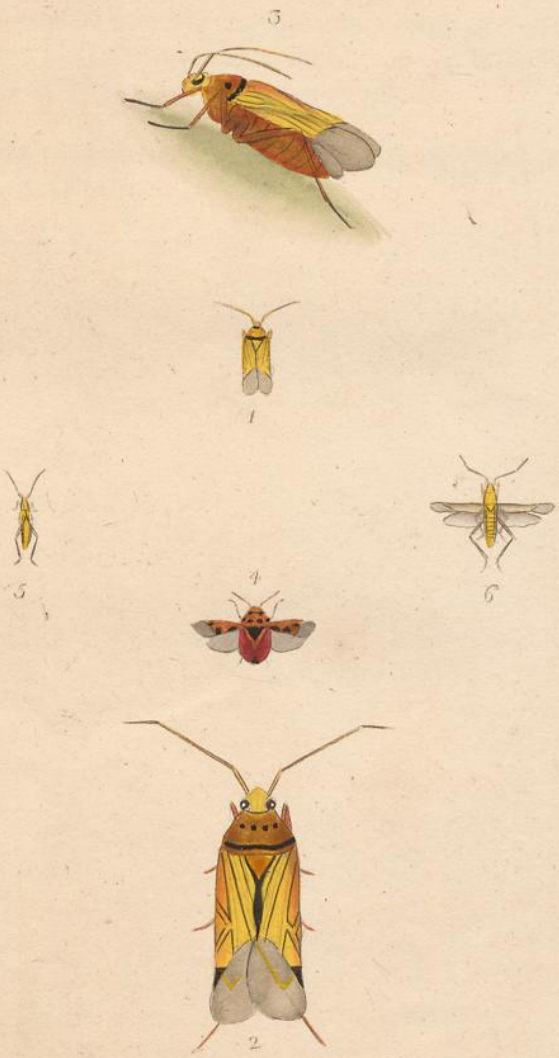
PHALÆNA pectinicornis elinguis, alis deflexis fuscis, macula duplici albo flavescente, geminata. *Geoff. Inf.* 2. 122. 27.

*Raj. Inf.* 163. 17.
*Goed. Inf.* 1. *tab.* 61.
*Reaum. Inf.* 1. *tab.* 18. *fig.* 6. 9.
*Roes. Inf.* 1. *phal.* 2. *tab.* 16.
*Frisch. Inf.* 10. *tab.* 3. *fig.* 4.
*Merian. Europ. tab.* 9.
*Albin. Inf. tab.* 13. *fig.* 17.
*Wilks Pap.* 6. *tab.* 1. *a* 12.
*Haris. Aurel. pl.* 30. *a. b. c. d.*
*Fab. Spec. Inf.* 2. 184. 72.

The Caterpillars of this ſpecies are found in their laſt ſkin about the latter end of May, or early in June; they change into chryſalis a few days after. The Moth is produced in Auguſt.

In the Caterpillar ſtate they are met with in great plenty, either on the crab tree, black thorn, or white thorn; but are not ſo abundant in the laſt ſtate, as many periſh when in chryſalis.

They change into chryſalis within a hard caſe, which they faſten to the ſmall ſtems of trees.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# PLATE CI.

## CIMEX.

### HEMIPTERA.

Shells, or upper wings, ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved downward.

### *GENERIC CHARACTER.*

Antennæ longer than the thorax. Thorax margined. In each foot three joints.

---

## FIG. I. II. III.

## CIMEX QUADRIPUNCTATUS.

### *SPECIFIC CHARACTER.*

Antennæ yellow. Eyes black. Head and thorax yellowiſh orange colour; four diſtinct black ſpots, and a tranſverſe band of the ſame on the latter. Wings yellow, with an orange ſhade, and ſtreaked with black. Legs and body bright orange.

---

This very rare and non-deſcript ſpecies is diſtinct from the *Cimex ſtriatus*, with which it has been ſuppoſed to have ſome affinity; it is ſmaller, the head, thorax, and body are very different, though in the colours of the wings they nearly correſpond.—The four black ſpots on the thorax furniſh our ſpecific diſtinction.

Fig. I. natural ſize. Fig. II. and Fig. III. the Inſect magnified.

## FIG. IV.

## CIMEX FESTIVUS.

### *SPECIFIC CHARACTER.*

Head, thorax, body and ſhells red, with black ſpots; ſix black ſpots on the thorax. Inferior wings pale brown.

C. FESTIVUS. Ovatus nigro rubroque varius, thorace punctis ſex nigris, alis fuſcis, margine albido. *Fabric. Syſt. Ent.* 714. 87. *Linn. Syſt. Nat.* 2. 723. 57.

CIMEX DOMINULUS. *Scop. Carn.* 362. *Fueſly Inſ. Helv.* 26. 490.

Die Staatſwanze. *Panzer Faun. Inſ. Germ.* 6. 19.

---

The Cimex feſtivus is very rarely taken in this country. Our ſpecimen was found on a ſtrawberry bed in june 1794.

---

## FIG. V. VI.

## CIMEX PALLESCENS.

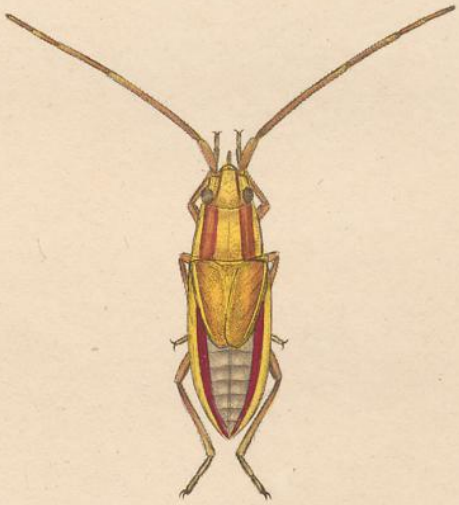
### *SPECIFIC CHARACTER.*

Linear. Upper and under wings very pale brownish colour. Thorax and body pale yellow with two faint crimſon longitudinal ſtreaks from the antennæ to the extreme part of the body.

---

This little Inſect is deſcribed in the manuſcripts of T. Marſham, Eſq. S. L. S. under the ſpecific name C. Palleſcens; it is by no means uncommon though it has never appeared in any former publication.

In the larva and pupa ſtate it is a very beautiful creature, as the colours are much brighter than in the perfect Inſect; they are generally found in April or May, among the graſs and young plants that grow under hedges; in June or July they are taken in the winged ſtate.—Fig. V. the pupa ſtate, and Fig. VI. the perfect Inſect; both of the natural ſize: in the annexed plate we have given the magnified appearance of the former.



# PLATE CII.

THE

LARVA

OF

CIMEX PALLESCENS

MAGNIFIED.

# PLATE CIII.

## PHALÆNA QUERCUS.

### Large Egger Moth.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general, contracted, when at rest. Fly by night.

### *SPECIFIC CHARACTER.*

Antennæ of the Male feathered. Wings dark brown, with a bright yellow bar across each, and a strong white spot on the center of each superior wing.—Female marked like the Male, but of a paler colour.

Phalæna Quercus. *Linn. Syst. Nat.* 2. 814. 25.—*Fn. Sv.* 1106.

Phalæna maxima fulva, alarum exteriorum superioritate intensius colorata, cum macula in media alba, inferiore dilutiore. *Raj. Ins.* 142. 2.

*Merian. Europ.* 1. *tab.* 10.
*Harris. Aurel. pl.* 29. *a. b. c. d. e. f.*
*Albin. Ins. tab.* 18. *fig.* 25.
*Reaum. Ins.* 1. *tab.* 35.
*Ammiral. Ins. tab.* 31.
*Roes. Ins.* 1. *phal.* 2. *tab.* 35.
*Petiv. Gazoph. tab.* 45. *fig.* 5.
*Goed. Ins.* 1. 51. *tab.* 7.

The Caterpillars of this Moth feed on the White and Black Thorn, together with ſeveral herbaceous plants; it has been obſerved to thrive better in the breeding cage when regularly ſupplied with freſh graſs, to keep the former in a proper ſtate of moiſture.

The Female depoſits her eggs in June or July, the Caterpillars are hatched in Autumn, and remain in that ſtate during the Winter; about the middle of May it ſpins a large brown caſe, within which it paſſes to the Pupa ſtate; the Moths appear in June.

In the Caterpillar ſtate it is ſcarcely poſſible to diſtinguiſh the Male from the Female, except that the former is ſmaller than the latter; but in the laſt ſtate their colours are entirely different, the Female being of a pale yellowiſh teint, inclining to fox colour, the Male is of a rich brown.

The Eggs are very curious, they reſemble in ſhape thoſe of a Hen, but are neatly mottled with dark brown.

The Caterpillars caſt their ſkins ſeveral times, and always thereby aſſume a new appearance, though the general colours and character of the ſpecies may be traced through every ſtage. Our figure is copied from a very large and fine coloured ſpecimen of the Female, that was met with at *Darent-Wood*, *Dartford*.

Explanation of the Figure ſhewn in Plate 103.

The Eggs of the natural ſize.

The Caſe which encloſes the Pupa; the former is torn open to expoſe the latter within.

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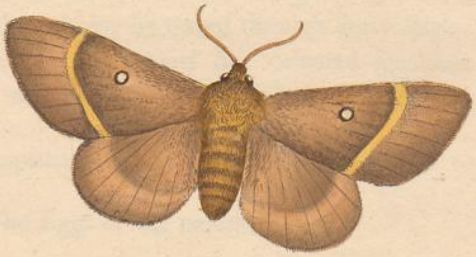

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# PLATE CIV.

## PHALÆNA QUERCUS.

IN THE

WINGED STATE.

FIG. I. The Male.

FIG. II. The Female.

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# PLATE CV.

## NEPA LINEARIS.

### LINEAR WATER SCORPION.

HEMIPTERA.

### *GENERIC CHARACTER.*

Antennæ, or Fore-legs cheliform. Wings crossed and complicated.

### *SPECIFIC CHARACTER.*

Brown, cylindrical. Head small. Thorax long. Legs four. Abdomen red, with two long tails.

NEPA LINEARIS, manibus spina laterali pollicatis. *Linn. Syst. Nat.* 2. 714. 7. *Fn. Sv.* 908.

NEPA LINEARIS corpore angustissimo elongato, thorace longo, tibiis anticis in medio spina laterali. *Degeer. Ins.* 3. 369. 2. *tab.* 19. *fig.* 1. 2.

*Locusta* aquatica. *Mouffeti. Raj. Ins.* 59.
*Fuess. Ins. Helv.* 25. 473.
*Gronov. Zooph.* 683.
*Schœff. Icon. tab.* 5. *fig.* 56.
*Swammerdam Bibl. Nat.* 1. 233. *tab.* 3. *fig.* 9.
*Roes. Ins.* 3. 141. *tab.* 23.

---

This singular species is by no means so common as the *Nepa Cinerea*, already figured in this Work. One specimen was taken at *Ilford*, in *Essex*, last September; and *Thomas Walford*, Esq; met

 with

with another in a bog near *Clare Priory*, *Suffolk*: the latter is preſerved in the Muſeum of Mr. *Parkinſon*.

In the Larva and Pupa ſtate it is very rarely met with, as it lives in deep ſtagnant water; the figure of the latter, which we have given at Fig. I. is copied from the only Engliſh Specimen of the Inſect we have ever ſeen in that ſtate; it was taken out of a Pool, near *Epping*, in the month of June, 1790.

Fig. 2, the perfect Inſect.

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# PLATE CVI.

## FIG. I.

## FIG. V?

## PHALÆNA EMARGANA.

NOTCH WING.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

TORTRIX, *Linnæus.*
PYRALIS, *Fabricius.*

### *SPECIFIC CHARACTER.*

First wings brown, with reticulated dark lines; the anterior margin deeply excavated in the form of a curve. Posterior wings light brown.

P. *Emargana.* Alis subcaudatis flavis fusco reticulatis fasciaque lata fusca, margine crassiori late emarginato. *Syst. Ent. Fab.* 651. 37.

---

The excavations of the superior wings of this Insect contribute such an air of novelty to its general appearance, that it might rather be considered as the effect of chance or design, on a single Insect, if we did not observe that character prevail through every specimen; we find two kinds of them in several cabinets in London, and we are in possession of a third that differs from either.

By moſt practical Entomologiſts they have been conſidered as diſtinct ſpecies, and they may be ſuch; but as we are unwilling to create confuſion by extending the number of ſpecies, we prefer admitting them as varieties under the Fabrician name Emargana.—We are more readily inclined to adopt this meaſure, as we have always found them at the ſame time of the year, in the ſame parts of the woods, and generally ſporting together, which is not commonly obſerved of Inſects that are not either varieties or differ only in ſex.

They are rarely met with; our ſpecimens were taken in June at Dartford.—They have been taken together at Caen-Wood, Hampſtead.

They have not been deſcribed by Linnæus; but were known among Collectors by the (now obſolete) name Excavana.

At Fig. 5. is ſhewn one of the varieties; the third is much yellower but marked with ſimilar reticulated ſtrokes, and exactly correſponds in ſize and form with this figure.

---

## FIG. II.

## PHALÆNA ZOËGANA.

LEPIDOPTERA.

TORTRIX.

### *SPECIFIC CHARACTER.*

Firſt wings yellow, with a brown ſpot on the middle; exterior of each dark brown, with a large ſplaſh of yellow in the center. Second wings dark brown.

PHAL. *Zoëgana* alis flavis puncto medio furrugineo, poſtice ferrugineis macula flava. *Linn. Syſt. Nat.* 2. 876. 289.

*β.* PHAL.

β. PHAL. *hamata* alis ſuperioribus flavis puncto lituraque poſtica hamata ferrugineis. *Linn. Syſt. Nat.* 2. 876. 290.
*Fn. Sv.* 1309.
*Clerk. Phal. tab.* 4. *fig.* 4.
——— *tab.* 4. *fig.* 5. 6.
*Fabri. Spec. Inſ.* 2. 280. 25.

---

Taken on Epping Foreſt in June.—We have rarely met with this Inſect.

---

## FIG. III.

## PHALÆNA QUERCANA.

LEPIDOPTERA.

TORTRIX.

### *SPECIFIC CHARACTER.*

Antennæ very long. Firſt wings pale pink, margined with yellow: yellow ſpots on the center. Inferior wings pale; underſide tinctured with pink.

PHAL. *Quercana* alis anticis flavis, maculis daubus coſtalibus ſulphureis. *Fab. Syſt. Ent.* 652. 39.
PHALÆNA *fagana Wien.* Vers. 28. 7. *tab.* 1. *a. b.*
——— *tab.* 1. *b. b.*

---

The low oaks, and particularly ſuch as are encircled with ivy, generally afford a ſhelter to numbers of this pretty Inſect during the heat of the day; they are ſeldom found in the thickeſt of the wood, they ſeem to prefer the thick hedges by the road ſides.

Is found in the months of May, June, and July.

## FIG. IV.

## PHALÆNA PANZERELLA.

LEPIDOPTERA.

TINEA.

### *SPECIFIC CHARACTER.*

Long, narrow. Anterior wings pale clay colour, with a dark ſtreak down the middle, and a few minute ſpots of the ſame colour near the apex. Poſterior wings almoſt tranſparent, bluiſh, fringe very deep, of a clay colour.

---

This elegant Inſect was found the latter end of autumn, 1794, among ſome high graſs and water plants in the vicinity of Hampſtead, and is now in the poſſeſſion of the author.

It has certainly never been deſcribed or figured before; nor is it in the cabinet of any Entomologiſt within the circle of our friends; if we except a very diſtinct variety which is in the cabinet of Mr. *Honey, Union-Street, Borough.*

We have named it Panzerella in honour of the German Entomologiſt DR. GEORGE WOLFFGANG FRANZ PANZER, Author of Faunæ Inſectorum Germanicæ initia, &c.

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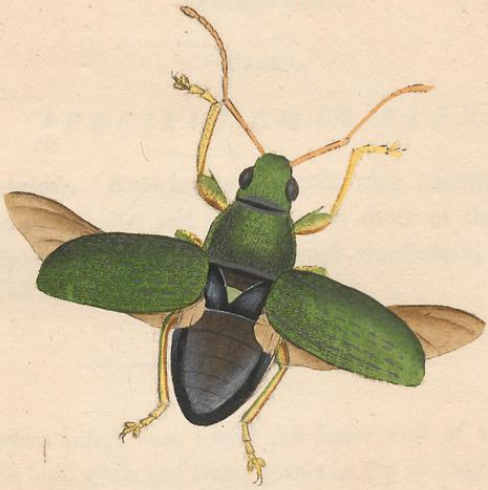

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# PLATE CVII.

## CURCULIO ARGENTATUS.

### COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

### *GENERIC CHARACTER.*

Antennæ clavated, elbowed in the middle, and fixed in the ſnout, which is prominent and horny. Joints in each foot four.

* * Snout ſhort. Thighs dentated.

### *SPECIFIC CHARACTER.*

Covered with fine green bronze ſcales. Antennæ and legs brown.

C. breviroſtris femoribus dentatus; corpore viridi argenteo. *Syſt. Ent.* 155. 148. *Linn. Syſt. Nat.* 2. 615. 75.

CURCULIO ſquamoſus, viridi auratus. *Geoff. Inſ.* 1. 293. 38.

CURCULIO *Urticæ*, &c. *Degeer. Inſ.* 5. 219. 12.
*Sulz. Hiſt. Inſ. tab.* 4. *fig.* 9.
*Fab. Spec. Inſ.* 1. 198. 218.

---

This elegant little Inſect is very common during the ſummer in almoſt every ſituation. It generally appears in abundance in May and June.

At FIG. I. is ſhewn the natural ſize.
FIG. II. the magnified appearance.

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# PLATE CVIII.

## FIG. I.

## APIS LAPIDARIA.

### LARGE RED-TAIL BEE.

HYMENOPTERA.

Wings four, generally membraneous. Tail of the Female armed with a ſting.

### *GENERIC CHARACTER.*

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

### *SPECIFIC CHARACTER.*

Entirely black except the tail, which is red.

*Linn. Syſt. Nat.* 2. 960. 44.
*Fn. Sv.* 1701.
*Geoff. Inſ.* 2. 417.
*Fabri. Spec. Inſ.* 1. 477. 17.

---

In Plate LXXXVIII. of this work I gave a figure of the Small Apis Lapidaria, Red-tail Bee, which is well known as a native of this country; but declined including a figure of the largeſt kind, until I could affirm on credible authority it had been taken in England alſo.

I have lately had the good fortune to be ſatisfied in this particular; LORD WILLIAM SEYMOUR favoured me with the ſpecimen from

which the annexed figure is copied; his Lordſhip told me he met with it in Wiltſhire laſt ſummer, with ſeveral other rare Inſects, which will appear ſhortly in this work.

---

## FIG. II.

## APIS ACERVORUM.

BLACK BEE.

HYMENOPTERA.

APIS.

*SPECIFIC CHARACTER.*

Entirely Black. Hairy.

APIS *Acervorum* hirſuta atra. *Linn. Syſt. Nat.* 2. 261. 50. *Fn. Sv.* 1717. *Schæff. Icon. tab.* 78. *fig.* 5.

---

This ſpecies lives in the earth, it is not often met with near London. We received it through the ſame channel as the former.

# LINNÆAN INDEX

TO

# VOL. III.

## COLEOPTERA.



## HEMIPTERA.

# INDEX.



## LEPIDOPTERA.



* The Star * distinguishes those which have not been named before.

NEUROP-

# INDEX.

## NEUROPTERA.



## HYMENOPTERA.

A

# ALPHABETICAL INDEX

TO

# VOL. III.



Glauca,

## ERRATA TO VOL. III.

Figures on the Plate annexed to Page 19—" for Plate LXXVIII, read Plate LXXIX."

Plate XCVII, page 67, line 11, for Darnwood, read Darentwood.

——————— line 13, for Queenhithe, read Greenhithe.

Plate XCIX, for C. Biliturala, read Biliturata.

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THE

# NATURAL HISTORY

OF

# BRITISH INSECTS;

EXPLAINING THEM

IN THEIR SEVERAL STATES,

WITH THE PERIODS OF THEIR TRANSFORMATIONS, THEIR FOOD, OECONOMY, &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. IV.

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LONDON:

PRINTED FOR THE AUTHOR,

And for F. and C. RIVINGTON, N° 62, ST. PAUL'S CHURCH-YARD.

MDCCXCV.

THE

# NATURAL HISTORY

OF

# BRITISH INSECTS.

## PLATE CIX.

### PAPILIO PODALIRIUS.

SCARCE SWALLOWTAIL.

BUTTERFLY.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ clavated. Wings when at reſt erect. Fly by day.

### *SPECIFIC CHARACTER.*

Above pale yellow, beneath paler. On the firſt wings (upper ſide) ſix pale black ſtripes and a black margin. On the ſecond wings, an oblique black ſtripe, and a black border with five ſemilunar blue ſpots, two long tails. Stripes more numerous on the under ſide.

PAPILIO *Podalirius*, alis caudatis ſubconcoloribus flaves centibus, faſciis fuſcis geminatis, poſticis ſubtus linea ſanguinea.

*Syſt. Ent.* 451. 38.
*Linn. Syſt. Nat.* 2. 751. 36.
*Muſ. Lud. Vir.* 208.

*Papilio* alis pallide flavis, rivulis transversis nigris secundariis angulo subulato maculaque crocea. *Geoff. Inf.* 2. 56. 24.

*Papilio Sinon. Pod. Inf.* 62. *tab.* 2. *fig.* 1.
*Cram. Inf.* 13. *tab.* 152. *tab.* 2. *fig.* 1.
*Merian. Europ.* 163. *tab.* 44.
*Roes. Inf.* 1. *pap.* 2. *tab.* 2.
*Reaum. Inf.* 1. *tab.* 11. *fig.* 3. 4.
*Jonst. Inf. tab.* 5. *fig.* 5.
*Esp. pap.* 1. *tab.* 1. *fig.* 2.
*Schæff. elem. tab.* 94. *fig.* 4.
——— *Icon. tab.* 45. *fig.* 3. 4.
*Raj. Inf.* 111. 3.
*Fab. Spec. Inf.* 2. 15. 58.

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Fabricius * and some other entomological writers have very minutely described the Larva and Pupa state of this rare butterfly; the Larva feed on the leaves of the turnip, cabbage, and other plants of the same genus; it is of a yellow colour, with spots of brown, head pale green. The Pupa is yellow, spotted with brown also, and has two teeth, or sharp points in the fore-part.

We have received the Butterfly from North America, as well as from Germany; it appears to be a native of most parts of the European Continent, though perhaps not frequently found.—*Berkenhout* is the only writer who has described it as an English species †; he says it is rare (in this country,) found in woods. In the perfect state, visits flowers in the day time.

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* Habitat in Europæ Brassicæ.

*Larva* solitaria, flavescens, fusco punctata, capite pallide virescente.

*Puppa* flavescens, fusco punctata, antice bidentata. *Fab. Spec. Inf.* &c.

† Synopsis of the Natural History of Great Britain and Ireland.

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# PLATE CX.

## PHALÆNA PENTADACTYLA.

### WHITE FEATHERED MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the baſe. Wings in general contracted when at reſt. Fly by night.

* 7 * ALUCITÆ.

### *SPECIFIC CHARACTER.*

Every part ſnow white, except the eyes, which are black, anterior wings bifid, poſterior tripartite.

PHALÆNA PENTADACTYLA *Alucita* alis patentibus fiſſis quinque partitis niveis, digito quinto diſtincto. *Lin. Syſt. Nat.* 2. 542. 304. *edit.* 10.

P. Pentadactylus, alis niveis, anticis bifidis, poſticis tripartitis. *Syſt. Ent.* 672. 6—*Fab. Spec. Inſ.*
*Geoff. Inſ.* 2. 91. 1.
*Reaum. Inſ.* 1. *tab.* 20. *fig.* 1. 2.
*Roeſ. Inſ.* 1. *phal.* 4. *tab.* 5.
*Ammir. Inſ. tab.* 23.
*Sulz. Inſ. tab.* 16. *fig.* 10.
*Petiv. Gazoph. tab.* 67. *fig.* 6.

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The Caterpillar of this ſingular Inſect is very common in May; it is of a green colour, with a white ſtripe down the back, and one on each ſide; it caſts its ſkin ſeveral times.

We have obſerved ſome Caterpillars which were quite ſmooth, after caſting their ſkin become rough or covered with hairs; and others which

were white become black by the ſame proceſs; in this caterpillar we have obſerved a ſimilar change: a ſpecimen which was of a plain green as before deſcribed, became ſuddenly ſpotted with black as ſhewn in our plate, that ſkin being caſt off it aſſumed its former appearance and became a pupa.

It feeds on graſs, nettles, &c. near the ſides of ditches, and is found ſporting in the evening, when in the fly ſtate among the graſs and herbage.

The Caterpillar becomes a Pupa about the beginning of June.—It affixes itſelf by the tail to a ſtalk of graſs in the ſame manner as thoſe of the Butterfly genus, and like them is often found with the head ſuſpended downwards; it can by a ſudden ſpring turn itſelf upright again.

In a little book entitled the AURELIAN'S POCKET COMPANION, by Moſes Harris, we find this ſpecies deſcribed, and called the *White Plumed*, but the Linnæan ſpecified Name *Didactyla* is added:—And under the Linnæan name Pentadactyla (our preſent ſpecimen) he has deſcribed the *Brown plumed* *.—The ſame confuſion is extended to his folio work the AURELIAN. In Plate 1. he has figured the White plumed under the ſpecific name Didactyla, and in Plate 30, the Brown plume, under Pentadactyla. Linnæus has compriſed all thoſe Lepidopterous Inſects whoſe wings appear to conſiſt of ſeveral diſtinct feathers, connected only at the ſhafts, under the ſubdiviſion *Alucta*, but Fabricius has given them the new name PTEROPHORUS, and added the name Alucitæ to a ſmall diviſion of the Tinea, as Phal. Chriſtyloſtella, &c. of *Linn.*

The Phal. Pentadactyla appears in the perfect ſtate about the latter end of June, ſometimes earlier.

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* Another ſpecimen of the ſame diviſion of the genus (*Alucta*) but of a brown colour "Alis fiſſis fuſcis, &c." *Linn.*

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# PLATE CXI.

## FIG. I. II.

## CHRYSOMELA 4 PUNCTATA.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ knotted enlarging towards the ends. Corſelet margined.

*** Body Cylindrical.

### *SPECIFIC CHARACTER.*

Head and thorax black. Shells yellow brown with two black ſpots on each. Antennæ ſerrated.

CHRYSOMELA 4 *punctata* cylindrica, thorace nigro, elytris rubris: punctis duobus nigris, Antennis brevibus. *Linn. Syſt. Nat.* 2. 374. 50. *edit.* 10.

CHRYSOMELA 4 *punctata* thorace nigro, elytris rubris, maculis duabus rubris antennis ſerratis. *Degeer. Inſ.* 5. 32. *tab.* 10. *fig.* 7.

Melontha coleoptris rubris maculis quatuor nigris, thorace nigro. *Geoff. Inſ.* 1. 195. *tab.* 3. *fig.* 4.

Bupreſtio 4 punctata. *Scop. Ent. Carn.* 206.

Cryptocephalus 4 punctatus. *Fab. Spec. Inſ.* 1. 138. 3.
*Schœff. Elem. tab.* 83. *fig.* 1.
——— *Icon. tab.* 6. *fig.* 1. 2. 3.

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This ſpecies is ſcarce, though more frequently met with than either of the following Chryſomelæ. It is generally found on the Hazel-nut tree.

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## FIG. III. IV.

## CHRYSOMELA SANGUINOLENTA.

COLEOPTERA.

CHRYSOMELA.

### *SPECIFIC CHARACTER.*

Black blue, a bright orange or red exterior margin to the elytra.

CHRYSOMELA *Sanguinolenta* ovata atra, elytris margine exteriori ſanguineis. *Linn. Syſt. Nat.* 2. 591. 38. *Syſt. Ent.* 101. 40.

CHRYSOMELA nigro cœrulea, elytris atris punctatis margine exteriori rubro. *Geoff. Inſ.* 1. 259. 8. *tab.* 4. *fig.* 8.

*Chryſomela rubro marginata. &c. Degeer Inſ.* 5. 298. 7. *tab.* 8. *fig.* 26.

Bupreſtis Sanguinolenta. *Scop. carn.* 203.

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Extremely rare in England; our ſpecimen was found on the trunk of an aſh tree in June 1794——in Kent.

FIG.

## FIG. V. VI.

## CHRYSOMELA COCCINEA.

COLEOPTERA.

CHRYSOMELA.

### *SPECIFIC CHARACTER.*

Fine red, with two black ſpots on each elytra, and one on the thorax.

CHRYSOMELA *coccinea* oblonga, thorace marginato ſanguineo, macula nigra, elytris ſanguineis maculis duabus nigris. *Linn. Syſt. Nat.* 2. 592. 43.—*Fn. Sv.* 532.

CHRYSOMELA 4 *maculata*, &c. *Degeer Inſ.* 5. 301. 10. *tab.* 9. *fig.* 1.

*Coccinella* Coleoptris rubris maculis 4 nigris. *Vdm. Diſſ.* 13. *Fab. Spec. Ent.* 1. 131. 83.

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Very rarely met with: our ſpecimen was taken on a thiſtle in a field between Kennington Common and Camberwell, May 1794. The ſpecies has not till very lately been conſidered as a native of this country.

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# PLATE CXII.

## SCARABÆUS FULLO.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ clavated, their extremities fiſſile. Five joints in each foot.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Antennæ, of ſeven laminæ *. Head, thorax, and ſhells brown, ſpotted with white. Beneath white.

SCARABÆUS FULLO ſcutellatus muticus, antennis heptaphyllis, corpore nigro pilis albis, ſcutello macula duplici alba. *Linn. Syſt. Nat.* 2. 553. 57.—*Fn. Sv.* 394.

SCARABÆUS, &c. *Geoff. Inſ.* 1. 69. 2.
*Friſch. Inſ.* 11. *tab.* 1. *fig.* 1.
SCARABÆUS Variegatus. *Roeſ. Inſ.* 4. *tab.* 30.
*Schæff. Icon. tab.* 23. *fig.* 2.
*Hæfn. Inſ.* 2. *tab.* 7.
*Sulz. Hiſt. Inſ.* 1. 1.
Melolontha Fullo. *Fab. Spec. Inſ.* 1. 35. 1.

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Except the Stag Beetle, (Cervus Lucanus) which is figured already in this work, this is the largeſt Coleopterous Inſect ever found in England; it is extremely rare, and is ſaid to be met with only in the ſand on the ſea coaſt near Sandwich.

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* The antennæ of the male is very large, as ſhewn in our figure; the antennæ of the female is repreſented at Fig. 1.

# PLATE CXII.

## SCARABÆUS FULLO.

COLEOPTERA.

### GENERIC CHARACTER.

Antennæ clavated, their extremities fissile. Five joints in each foot.

### SPECIFIC CHARACTER,

AND

SYNONYMES.

Antennæ, of seven laminæ *. Head, thorax, and fissile brown, pointed with white. Beneath white.

SCARABÆUS FULLO fuscellatus mutticus, antennis hepatophyllis, corpore nigro pilis albis, fuscello maculis duplici albis. Linn. Syst. Nat. 2. 559. 57.—Fn. Suec. 394.

SCARABÆUS, &c. Geoff. Inf. 1. 69. 2.
Fabr. Ent. 11. tab. 1. fig. 1.

SCARABÆUS Variegatus. Rad. Inf. 4. tab. 30.
Schæff. Icon. tab. 23. fig. 2.
Herb. Inf. 2. tab. 7.
Sulz. Hist. Inf. 1. 1.

Melolontha Fullo. Fab. Syst. Ent. 1. 37. 1.

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Except the Stag Beetle, (Cervus Lucanus) which is figured already in this work, this is the largest Coleopterous Insect ever found in England; it is extremely rare, and is said to be met with only in the road on the Isle of Small near Sandwich.

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* The antennæ of the male is very large, as shown in our figure; the antennæ of the female is hypothecated as 7 to 1.

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# PLATE CXIII.

## FIG. I.

## HEMEROBIUS HIRTUS.

NEUROPTERA.

Wings four, naked, transparent, reticulated with veins or nerves. Tail without a sting.

### *GENERIC CHARACTER.*

Mouth prominent. Palpi four. Wings deflexed. Antennæ longer than the thorax, taper, extended.

### *SPECIFIC CHARACTER.*

First wings transparent reticulated with brown veins, hairy. Veins fewer on the second wings.

HEMEROBIUS hirtus, alis albis fusco reticulatis, fasciis duabus fuscescentibus. *Linn. Syst. Nat.* 2. 912. 6.—*Fn. Sv.* 1507.
*Degeer Ins.* 2. 2 70. 12. *tab.* 22. *fig.* 4. 5.

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This very common Insect is found on the nut tree, and oak. It conceals itself in the middle of the day among the foliage, or flies only in moist, shady places. It is always observed to be very brisk at the approach of a thunder storm, like the Hemorobius Perla, &c.

The nerves on the wings are ſo exceedingly delicate, that it is impoſſible to give an accurate repreſentation of the natural ſize; but to remedy that defect, we have ſhewn the magnified appearance of an upper and under wing at Fig. 2.

The wings are of a pale tranſparent brown; which as the Inſect moves in different directions reflect all the vivid colours of a Priſm.

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# PLATE CXIV.

## PHALÆNA COSSUS.

### Goat Moth.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Grey, with short black irregular curved lines on the upper wings. Antennæ feathered.

Phalæna Cossus. *Bombyx* elinguis, alis deflexis nebulosis, thorace fascia postica atra. *Linn. Syst. Nat.* 2. 504. 40. *edit.* 10.

Phalæna pectinicornis elinguis, alis albo cinereis, striis transversis nebulosis nigris. abdomine annulis albis.
*Geoff. Inf.* 2. 102. 4.
*Degeer Inf. Vers. Germ.* 2. 1. 268. 1.
*Merian. Europ. tab.* 36.
*Roes. Inf.* 1. *phal.* 2. *tab.* 18.
*Reaum. Inf.* 1. *tab.* 17. *fig.* 1. 5.
*Albin. Inf. tab.* 35. *fig.* 56.
*Lyonet Traite de Chenille.*
*Schœff. Icon. tab.* 61. *fig.* 1. 2.
*Goed. Inf.* 2. *tab.* 33.

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The Caterpillar of the Goat Moth feeds on the internal ſubſtance of willow trees; it is ſaid to be alſo found in the body of the oak, but we have never diſcovered any in ſuch a ſituation. The eggs are laid in the crevices of the trees; as ſoon as the Caterpillars are hatched, they begin to pierce into the ſolid wood. In moſt parts of England they are called Auger Worms; the holes which they make in the timber appearing as if bored with that Inſtrument.

It lives in the Caterpillar ſtate three years before it is transformed to a pupa; when full fed it is four inches long, the body appears very fleſhy, and without hairs; the head is black, and armed with very ſharp forceps; the caſe is compoſed of bits of wood and ſaw-duſt, which it unites with a ſtrong web; the inſide is lined with a fine ſmooth white filmy ſubſtance, like ſattin; it paſſes to the pupa ſtate in the cavity which it has perforated in the caterpillar ſtate, within three or four inches of the opening: it remains only two months in that ſtate before the Fly is produced.

Is found in chryſalis in May; in the fly ſtate, the latter end of June, or in July.

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# PLATE CXV.

## CHRYSOMELA CEREALIS.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the ends. Corſelet margined.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Thorax and ſhells ſtriped with blue, crimſon and yellow green inclining to gold. Wings fine ſcarlet.

CHRYSOMELA CEREALIS. Ovata aurata, thorace lineis tribus coleoptriſque quinque cœruleis. *Syſt. Ent.* 100. 33. *Linn. Syſt. Nat.* 2. 588. 17.

CHRYSOMELA aurea faſciis cœruleis cupreiſque alternis, punctis inordinatis.
*Geoff. Inſ.* 1. 262. 14.
*Schæff. Icon. tab.* 1. *fig.* 3.
*Fab. Spec. Inſ.* 1. *p.* 124. 45.

---

This beautiful Inſect is a native of Georgia in North America; and has been received from ſeveral parts of Africa, as Guinea, &c.

It has alſo been found (though we believe very rarely) in the ſouthern parts of Europe, particularly in Italy; and we have reaſon to conclude it has been met with in the ſouth of France, and in Germany *.

We preſume to include it among the Engliſh Chryſomelæ, on the authority of the late Mr. Hudſon, author of the *Flora Anglica*, &c. who appears to be the only Naturaliſt that has taken it in Great Britain, except the Rev. Mr. Hugh Davies, of Beaumaris, who alſo met with a ſpecimen of it on a mountain in Wales ſome years ſince.

The colour of the ſtripes on the ſhells ſometimes vary; and the underſide, which in our Inſect is purple, is often of a ſhining browniſh colour; the tranſparent wings, which are concealed beneath the ſhells, are bright red.

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* Habitat in Europæ auſtralioris ſegete, in ſpartio ſcoparia. *D. Prof. Hermann. Fab. Spe. Inſ.*

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# PLATE CXVI.

## SPHINX CHRYSORRHŒA.

GOLDEN-TAIL SPHINX.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ thickeſt in the middle. Wings, when at reſt, deflexed. Fly ſlow, morning and evening only.

### *SPECIFIC CHARACTER.*

Wings tranſparent with black veins. Head, thorax, body, ſhining black with yellow rings or belts. Tail fine golden yellow.

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In the paintings of *Ernſt*, a figure of a tranſparent-winged Sphinx, ſimilar to this, is given, under the ſpecific name Oeſtriformis: we are not clearly convinced he intended it for this Inſect, nor can we conceive the name to be by any means applicable; we therefore paſs over the reference to that very ſcarce work as doubtful, and reject his ſpecific name leſt he ſhould mean another Inſect.

Linnæus has not deſcribed this ſpecies, nor have we found a deſcription of it in the writings of Fabricius.

It is rare in England. THOMAS MARSHAM, Eſq. Sec. L. S. favoured me with the ſpecimen from which the annexed figure is taken; it was met with in Kenſington Gardens in June.

# PLATE CXVII.

## PHALÆNA CRATÆGI.

### OAK EGGER MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general contracted when at rest. Fly by night.

### *SPECIFIC CHARACTER.*

Wings rounded. Ash-colour, or dull brown, with obscure waves of a darker colour.

PHALÆNA CRATÆGI. *Linn. Syst. Nat.* 2. 823. 48.
*Reaum. Ins.* 1. *tab.* 44. *fig.* 10.
*Degeer Ins.* 1. *tab.* 11. *fig.* 20. 21.

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We have never found this Insect common, though it must not be considered as a rare species; it is seldom met with near London: our specimen was found in the Caterpillar state at Dartford in May. It changed to Chrysalis in June. The fly came forth in September.

The male is rather smaller than the female generally, though not always. The strength of their colours is very inconstant, especially in the female, which we have seen very dark in some specimens; in others nearly as pale as the male; the general distinction however between the two sexes is, the male being of a light grey with spots and waves of brown, the female of an obscure brown with spots more diffused.

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# PLATE CXVIII.

## FIG. I.

## CIMEX LACUSTRIS.

### HEMIPTERA.

Shells, or upper Wings, ſemi-cruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved downward.

### *GENERIC CHARACTER.*

Antennæ longer than the Thorax. Thorax margined. In each Foot three joints.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Above black. Beneath black changeable to white. Antennæ black, of four joints, half as long as the body. Eyes large, prominent. Fore Legs much ſhorter than the reſt.

Cinex Lacuſtris. linearis niger, pedibus anticis breviſſimis. *Linn. Syſt. Nat.* 2. 732. 117.—*Fab. Spec. Inſ. Fn. Sv.* 970.

Inſectum Tipula dictum. *Bauh. Ball.* 213. *fig.* I.

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This Inſect is met with in great plenty on ſtill waters, in ſummer; it runs quick on the ſurface.

## FIG. II.

## CIMEX ACUMINATUS.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Oval. Olive colour. Antennæ of five joints. Snout ſharp. Thorax narrow before. Two brown longitudinal lines from the Eyes to the poſterior margin of the Target.

Cimex Acuminatus, &c.—*Linn. Syſt. Nat.* 2. 723. 59.—*Fn. Sv.* 939.
*Degeer Inſ.* 3. 271. 16. *tab.* 14. *fig.* 12, 13.
Muſca cimiciformis. *Raj. Inſ.* 56. 6.

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Met with in *May*, on the Fern *. We have never found it common.

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# PLATE CXIX.

## PHALÆNA ZICZAC.

PEBBLE PROMINENT MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Brown and white clouded like an Agate; a large clouded Eye, next to the exterior margin of the first Wings; on the interior margin a tuft, or appendage. Antennæ feathered.

PHALÆNA ZICZAC. B. Alis deflexis dorso dentatis apicibusque macula grisea subocellari, antennis squamatis.
*Syst. Ent.* 573. 35. *Linn. Syst. Nat.* 2. 827. 61.—*Fn. Sv.* 1116.
*Geoff. Inf.* 2. 124. 29.
*Merian. Europ. tab.* 147.
*Frisch. Inf.* 3. *tab.* 1. *fig.* 2.
*Degeer Inf.* 1. *tab.* 6. *fig.* 1. 10.
*Reaum. Inf.* 2. *tab.* 22. *fig.* 9—16.
*Fab. Spec. Inf.* 2. *p.* 186. 76.

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This singular and beautiful Caterpillar is found on the Willow, early in *June*; it becomes a Pupa within a fine, brownish web, which it spins between two or three leaves, (as represented in our Plate,) late in the same month; the Moth comes forth in *August*.

# PLATE CXIX.

The trivial name prominent has been given to this Insect, because when the Moth is at rest the remarkable appendages on the interior margin of the upper Wings form a prominent tuft above the back; we have six different species of Phalæna in this country which have the same character, and are known among Collectors by the several names, Pale, Maple, Swallow, Iron, Pebble, and Cockscomb, Prominents; the last is common, the rest are generally very rare.

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# PLATE CXX.

## APIS CENTUNCULARIS.

### CARPENTER BEE.

HYMENOPTERA.

Wings four, generally membraneous. Tail of the females armed with a ſting.

### *GENERIC CHARACTER.*

Jaws, with a Trunk deflexed. Antennæ elbowed in the middle, firſt joint longeſt. Wings plain. Body hairy.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Black. Body long, narrow. Head, Thorax, and Legs covered with greyiſh hair. Abdomen ſmooth, beneath covered with tawny hair.

Apis Centuncularis, nigra, ventre lana fulva.—*Syſt. Ent.* 385. 42.—
*Linn. Syſt. Nat.* 2. 575. 4. *edit.* 10.
*Geoff. Inſ.* 2. 410. 5.
*Scop. carn.* 799.
*Reaum. Inſ.* 6. *tab.* 10. *fig.* 3, 4.
*Fab. Spec. Inſ.* 1. 486. 59.

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The wonderful inſtinct that directs the ſmalleſt Inſects to provide for the ſafety of their future progeny, never fails to ſtrike the attention of the inquiſitive reſearcher into their oeconomy.—To perpetuate their

race

race is the great end of their being, and the moſt aſtoniſhing effort of their ingenuity and care is employed to perfect this grand deſign. We not only find innumerable eggs, and larvæ of Inſect on all kinds of plants; in all ſtanding waters; and in animal matter, when putrid; but many which can only be hatched from the egg by the warmth of living animals; thus the Tabanus pierces the thick hide of the Cow, and plunges its eggs into the fleſh; the heat and moiſture of which nouriſhes both in the egg, and larva; the Hippoboſca equina protrudes its eggs into the *rectum* of Horſes; and the Ichneumon into living Caterpillars: to thoſe we could add many remarkable inſtances of Inſects, who have ſhewn a lower ſpecies of perception, by depoſiting their eggs in places where the larvæ would find abundance of proper food; and with ſuch ingenious contrivances for their ſafety in a defenceleſs ſtate, as we could only expect from the ſagacity of larger animals; but it is only our intention to premiſe with thoſe general remarks, leſt the ſubject we have choſen for our preſent Plate ſhould be conſidered as a ſolitary example of ſuch ingenuity, and care towards their future offſpring.

The Natural Hiſtory of the Common Bee has been both fully and ably treated of, by *Schirach*, *Maraldi*, *Reaumur*, *Debraw*, and other authors of reſpectability, and may be ſuppoſed to be pretty generally known by thoſe converſant in rural affairs; the manners, however, of other ſpecies of the ſame genus has neither been ſo fully explained, nor examined; they yet preſent a fund for the enquiries of the Naturaliſt, equally worthy his attention; though leſs beneficial; as the honey they make cannot be converted to our uſe.

Among the ſolitary Bees, ſome penetrate into the earth, ſcoop out hollow cavities; then poliſh the ſides within, and depoſit their eggs, with proper food for the larvæ, till it becomes a Pupa. Others form neſts of looſe ſand, which they glue together with a ſtrong cement; thoſe neſts are generally formed againſt walls that are expoſed to the ſouth; without, they are rude and irregular, but within are very neatly finiſhed, and divided into ſeveral cells or apartments, in each of which the Parent Bee lodges an egg. Of our preſent, and a few other ſpecies, we may ſay,

« In

« In firmeſt oak they ſcoop a ſpacious tomb,
« And lay their embryo in the ſpurious womb *."

We find this ſeaſon, the Apis Centuncularis has done conſiderable injury among the Timber Plantations in *Eſſex*; and we have ſimilar information from ſome parts of *Cambridgeſhire*. A Gentleman ſent me (early in the Spring) a piece of Oak, containing a quantity of the larva, from his plantation at *Birdbrook*, in *Eſſex*. He informs me, ſeveral Gentlemen in his neighbourhood had found large trunks of apparently healthy Oaks, completely perforated and filled with the larva of this miſchievous Inſect; in many inſtances the trunk had been materially injured, and the caſes were arranged as ſhewn by the horizontal Section at Fig. 4, in our Plate.—The perforations were in a longitudinal direction, ſeveral feet through the ſolid timber, and when the leaves were freſh, appeared as ſhewn at Fig. 1.

The Inſect commences its operation at the upper part of the trunk of the tree; then boring in an oblique direction for about two inches or more, it follows a longitudinal courſe, it divides the ligneous fibres, or threads, till it forms the diameter of the cavity, which is about three-eighths of an inch, its depth various; ſometimes only a few inches, at others, conſiderably more; when the cavity is entirely formed, and all the duſt and fragments cleared away, it finiſhes the ſides perfectly ſmooth; the hardeſt knot in the timber being inſufficient to reſiſt the ſtrength of its jaws.—The cavity, when finiſhed, appears divided by ſlight ridges, placed at the diſtance of about three quarters of an inch from each other; this ſerves to regulate the ſize of each apartment or cell; and it now only remains to be lined for the reception of the egg: this lining is generally compoſed of roſe-leaves; and is applied to the apartments in a very curious manner: the Parent Bee flies with a leaf to the orifice of the perforation, where ſhe clips it round to the ſize of the hole; this is forced to the bottom of the loweſt cell; about ſeven, eight, or ten of ſuch pieces form the firſt layer; it next forms the ſides, or cylindrical part of the lining; this is done by laying ſeveral whole leaves partly over each other,

* Brookes on Univerſal Beauty.

other, as ſhewn in our Plate, and cementing them together with a glutinous ſubſtance; thus the ſides and bottom, each conſiſting of ſeveral layers, being finiſhed, (in the form of a thimble) the Bee partly fills it with a kind of paſte, then throws over it a ſmall quantity of leaves, reduced to powder, and depoſits the egg; the covering to the whole is formed of the ſame materials, and in the ſame manner as the bottom; when ſhe has forced about ten or fifteen circular pieces of leaves into the avenue and cemented them to the top, the covering is completed, and the egg is completely ſecured from accident.—The covering ſeparated is ſhewn in the Plate, at fig. 3, the larvæ, at fig. 2.

In this manner ſhe proceeds with, and finiſhes every cell diſtinctly, till the perforation is entirely filled: in ſome trees forty or fifty ſuch perforations are placed within a quarter of an inch of each other.—The Bee comes forth late in Auguſt; if the loweſt is formed before thoſe above, it eats its way up the channel, through their caſes.

Mr. *Adams*, in his Eſſay on the Microſcope, mentions a remarkable circumſtance of a Bee (we ſuſpect of this ſpecies). "A friend of mine (ſays he) had a piece of wood cut from a ſtrong poſt * that ſupported the roof of a cart-houſe, full of theſe cells or round holes, three-eighths of an inch diameter, and about three-fourths deep, each of which was filled with theſe roſe-leaf caſes, finely covered in at top and bottom."

* We learn this poſt was fir.

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# PLATE CXXI.

## CURCULIO.

COLEOPTERA.

Wings two. Covered by two Shells, divided by a longitudinal ſuture.

### *GENERIC CHARACTER.*

Antennæ clavated, elbowed in the middle, and fixed in the ſnout, which is prominent. Joints in each foot four.

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## FIG. I. II.

## CURCULIO ÆQUATUS.

### *SPECIFIC CHARACTER.*

Roſtrum long, ſlender, dark brown ſprinkled over with bronze; Thorax the ſame. Shells reddiſh brown. Legs brown.

*Fab. Ent. Syſt.*

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## FIG. I. Natural Size.

This Inſect was found in *May* on the hazel; the ſpecies varies in ſize, but more in colour.

# PLATE CXXI.

## FIG. III. IV.

## CURCULIO PYRI.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Snout ſhort. Thighs dentated. General colour bronze changeable to yellow red, brown, green, &c. Shells ſtriated and punctured.

CURCULIO PYRI. breviroſtris femoribus dentatis æneo fuſcus. *Linn. Syſt. Nat.* 2. 615. 72. *Fn. Sv.* 623.

*Curculio* breviroſtris, antennis fractis rufis, corpore oblongo æneo nitido, pedibus rufis *. *Degeer Inſ.* 5. 246. 34.

*Curculio* viridis opacus, pedibus antenniſque magis fuſcis. *Linn. It. Scan.* 355.

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It has been ſuſpected by ſome Entomologiſts, that this Inſect ſhould only be conſidered as a variety of Curculio Argentatus. Much of its beautiful appearance depends on the time we take it in; when firſt hatched its colours are very rich and highly gloſſed with gold, but it gradually becomes dirty brown, or almoſt black.

The cauſe of this alteration in its appearance is eaſily perceived by the microſcope; the firſt, or ground colour is dark brown, but is entirely covered with oblong ſcales of various beautiful colours, particularly of a reddiſh gold, or bronze, interſperſed with thoſe of green, and brown colour; when the Inſect is firſt hatched, the ſcales lay over each other ſo as to conceal the ground colour; but as they rub off, or are otherwiſe injured, the brown becomes the general colour.——They vary alſo very much from red, to

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* Variat pedibus rufis et nigris. *Fab. Spec. Inſ.* 1. 198. 217.

yellow,

yellow, or green hues, when firſt hatched; and are ſometimes found late in the ſeaſon, with almoſt every ſcale rubbed off.

Linnæus and Fabricius ſay, it is found on Pear trees †. We have met with it on ſeveral other trees. Found from *May* to *September*.

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## FIG. V. VI. VII.

## CURCULIO CAPREÆ.

### *SPECIFIC CHARACTER.*

Small, black. A longitudinal whitiſh line down the Thorax. Two waved white lines acroſs the ſhells, with a longitudinal mark of brown on each. Legs black.

CURCULIO CAPREÆ. *Fab. Spec. Inſ.* 1. 168. 39.

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This little Inſect very much reſembles Curculio Salicis, both in ſize and colours; but it is ſufficiently diſtinguiſhed from that ſpecies by its walking or running; as leaping is a particular character of that Curculio.

We have never met with more than one ſpecimen; found on the Ozier in *June*.

It is a very beautiful ſubject for the Opaque Microſcope; its magnified appearance is ſhewn at fig. 6.—The roſtrum fig. 7.—Fig. 5. Natural ſize.

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† Habitat in Pyri foliis, in Corrolis declaratus. *Linn.*

# PLATE CXXII.

## SPHINX ELPENOR.

### ELEPHANT SPHINX, or HAWK-MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ thickeſt in the middle. Wings, when at reſt, deflexed. Fly ſlow, Morning and Evening.

### *SPECIFIC CHARACTER,*

AND

### *SYNONYMS.*

Wings angular, entire; firſt wings ſtriped tranſverſely with greeniſh brown, and red. Second Wings red, with a white poſterior margin; black at the baſe. Body red and brown.

SPHINX ELPENOR. Alis integris, viridi purpureoque variis, poſticis rubris baſi atris.
*Fab. Spec. Inſ.* 2. 148. 43.
*Syſt. Ent.* 543. 25.
*Linn. Syſt. Nat.* 2. 801. 17.
*Fn. Sv.* 1049.

*Sphinx* ſpirilinguis, alis viridi purpureoque faſciatis, faſciis linearibus tranſverſis. *Geof. Inſ.* 2. 86. 10.
*Roeſ. Inſ.* 1. *phal.* 2. *tab.* 33. *fig.* 73.
*Petiv. Gazoph. tab.* 40. *fig.* 11. 12. 17.
*Friſch. Inſ.* 13. 4. *tab.* 2.

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The Caterpillars of this very elegant Sphinx are generally found in marſhy places in *June* and *July*. They feed on the Convolvulus, Vine,

Vine, and ſome other plants, but prefer white ladies bedſtraw; they caſt their ſkins ſeveral times, and when full fed are ſome green, and others of a brown colour. The Caterpillars of the female is a fine green elegantly marked with black, as repreſented in our plate; thoſe of the male are varied with the ſame dark markings, but the colour is a dull brown inclining to black in thoſe parts where the females are green.

It poſſeſſes a faculty peculiar to a very few Inſects, it can protrude its head and three firſt joints to a tapering point; or entirely conceal the head and contract the firſt joints, by drawing them apparently into its body.

The Caterpillars form a white ſpinning among the leaves in *Auguſt*; remains in the pupa ſtate during the winter; the Fly comes forth *May* following. They are frequently deſtroyed by an Ichneumon fly.

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# PLATE CXXIII.

## CIMEX PRASINUS.

### HEMIPTERA.

Shells, or Upper Wings ſemicruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Back curved downwards.

### *SPECIFIC CHARACTER,*

### AND

### *SYNONYMS.*

Head, Corſelet and Shells green. Abdomen black above, with a yellow and black margin, beneath pale orange varied into green. Legs and Antennæ yellowiſh.

Cimex PRASINUS. *Linn. Syſt. Nat.* 2. 722. 49.
*Fab. Spec. Inſ.* 2. 354. 96.

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Not uncommon in the month of *Auguſt* in woods. Found on the Oak.

# PLATE CXXIV.

## PHALÆNA ANOSTOMOSIS.

SCARCE CHOCOLATE-TIP MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general deflexed when at rest. Fly by night.

*BOMBYX.*

Antennæ feathered.

### *SPECIFIC CHARACTER.*

First wings greyish, with three tranverse stripes of dull white. Apex fine chocolate colour. Second wings and body pale brown.

PHALÆNA ANOSTOMOSIS. B. alis deflexis grifeis, ſtrigis tribus albidis ſubanaſtomoſantibus, thorace ferruginato. *Fab. Spec. Inſ.* 2. 189. 85.
*Linn. Syſt. Nat.* 2. 824. 53.
*Fn. Sv.* 1124.
*Goed. Inſ.* 1. *tab.* 33.

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A very rare ſpecies of Phalæna. In the perfect ſtate it is ſeldom met with; and in the Caterpillar ſtate few Collectors are acquainted with its haunts. It feeds on the ſallow, willow, and poplar, and may be found ſometimes by ſtripping off the bark of thoſe trees.

 Our

Our ſpecimen was taken in the vicinity of Oak-of-Honor Hill, Surry. The Caterpillar was met with when it was ready to ſpin its web, in which ſtate it is repreſented; its ſpinning was formed between the folds of a leaf in the month of October, the Moth came forth in May.

The Moth in the upper part of the plate is a ſmall ſpecimen of the female; it differs very little from the male, except that the antennæ of the latter is much feathered, as is ſhewn on the back of the leaf.

The ſpecies is more plentiful on the continent of Europe, and a variety of it is a native of ſome parts of North America.

A Collector of Inſects in London met with a brood of this ſpecies laſt September, in the Caterpillar ſtate, containing more than twenty; ſome were covered with a milk-white down, others inclining to grey, but in general they were like the ſpecimen given in our plate. They changed their appearance frequently, and ſome were much larger than the reſt. The Moths alſo differ very much both in ſize and colour; ſome are dingy, others have the chocolate colour much diffuſed; and in general, when the Inſect is perfect, it is beautifully varied with a pale bloom of a purple hue.

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# PLATE 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. Inſ.* 2. 452. 90.

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This ſpecies is ſometimes met with in meadows, on plaintain, 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.


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# PLATE CXXVI.

## PHALÆNA RUMICIS.

### BRAMBLE MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the baſe. Wings in general contracted when at reſt. Fly by night.

* *NOCTUA.*

Antennæ like a hair.

### *SPECIFIC CHARACTER.*

Firſt wings grey, marked with pale black ſtreaks and clouds, with an eye in the middle, and two white ſpots on the anterior margin. Second wings pale brown.

PHALÆNA RUMICIS. N. criſtata, alis deflexis cinereo fuſcoque variis litura marginis tenuioris alba.— *Fab. Spec. Inſ.* 2. 238. 143.

PHALÆNA RUMICIS. ſpirilinguis criſtata, alis deflexis cinereo bimaculatis, litura marginis tenuioris alba. *Linn. Syſt. Nat.* 2. 852. 164.— *Fn. Sv.* 1200.
*Merian. Europ. tab.* 82.
*Alb. Inſ. tab.* 32.
*Wilk. pap.* 26. *tab.* 3. *a.* 1.
*Degeer Inſ.* 4. *tab.* 9. *fig.* 2.

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The Caterpillar of this Moth are uſually found on the Bramble, from which it has received its Engliſh name; it is not, however, wholly confined to that food, as we have fed it on graſs and other plants indiſcriminately put into its breeding-cage. It paſſes to the chryſalis ſtate in September; the Fly appears in May.

PLATE

# PLATE CXXVI.

## PHALÆNA RUMICIS.

### Bramble Moth.

LEPIDOPTERA.

### GENERIC CHARACTER.

Antennæ taper from the back. Wings in general contracted when at rest. Fly by night.

* NOCTUA.

Antennæ like a hair.

### SPECIFIC CHARACTER.

First wings grey, marbled with pale black streaks and clouds, with an eye in the middle, and two white spots on the anterior margin. Second wings pale brown.

PHALÆNA RUMICIS. N. cilliata, alis deflexis cinereo fuliginoque variis litura marginali lunularis albæ.—
*Fab. Spec. Inf. 2. 298. 143.*

PHALÆNA RUMICIS. Spitilingia cilliata, alis deflexis cinereo bimaculatis, litura marginalis lunularis albæ. *Linn. Syst. Nat. 2. 852. 184.*—
*Fn. Su. 1260.*
*Merian. Europ. tab. 82.*
*Alb. Inf. tab. 32.*
*Petiv. gaz. tab. 3. n. 1.*
*Degeer Inf. 1. tab. 9. fig. 2.*

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The Caterpillar of this Moth are usually found on the Bramble, from which it has received its English name; it is not, however, wholly confined to that food, as we have fed it on grass and other plants indifferently put into its breeding-cage. It pupas to the city this June in September; the fly appears in May.

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# PLATE CXXVII.

## BUPRESTIS SALICIS.

COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper, the length of the thorax: Head half concealed.

### *SPECIFIC CHARACTER.*

Head and thorax fine blue. Shells upper half changeable green; lower part reddiſh purple.

BUPRESTIS SALICIS: elytris integerrimis viridis nitens, coleopteris aureis baſi viridibus. *Fab. Gen. Inſ. Mant. p.* 237.

*Bupreſtis elegantula, Schrank. Inſ. Auſtr. n.* 365. *p.* 195.

*Cucuius rubinus. Fourcroy. Ent. Paris. T. I. n.* 4. *p.* 33.

*Le Richard rubis. Geoff. Inſ. Paris F. I. p.* 126.

Geputzter Stinkkäfer. Weiden-Prachtkäfer. *Panz. Faun. Inſ. Germ.*

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This uncommonly beautiful Inſect has been deſcribed as a native of Algiers in Africa, a figure of it is given in the work of *Olivier*, and another in Panzer's Hiſtory of the Inſects of Germany; we find it alſo deſcribed by *Fourcroy* and *Geoffrory* as a native of France, but cannot learn that it has been conſidered as an Engliſh ſpecies before this time.

We were not ſo fortunate as to take this Inſect, it was communicated by a perſon on whoſe veracity we can rely: he found it on the bark of an old willow tree, between Dulwich Common and

Norwood, on, or about the 8th of June, 1794. As we know the precise spot where it was taken, we shall attend to it particularly next season, and the earliest intimation of success, shall be given through the medium of a future number.

When we consider how much the study of coleopterous Insects has been neglected in this country, even by those who have pursued with unremitting perseverance almost every other branch of Entomology, we cannot be much astonished that such a minute Insect as the *Buprestis Salicis* should have escaped notice; add to this, we can scarcely doubt that it is very rare in this country, and probably lives concealed in the crevices of the tree, or under the rotten part of the bark. The number of new Insects that have been discovered in this country within a few years *, renders it not improbable, that future English Entomologists, by extending their enquiries, may find many more of the species that are now met with in the northern, and perhaps even southern parts of Europe.

Fig. 1, natural size. Fig. 2, its magnified appearance.

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* Among the rarities met with last summer, we may particularly mention the Phalæna Delphinii, *Pease Blossom Moth*. This very beautiful Insect was taken by a Gentleman at Chelsea; it was never ascertained before to be an English Insect.

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# PLATE CXXVIII.

## EPHEMERA VULGATA.

### Common Ephemera, or May-Fly.

NEUROPTERA.

Wings 4. Naked, tranſparent, reticulated with veins or nerves. Tail without a ſting.

*GENERIC CHARACTER.*

Antennæ very ſhort. Two protuberances before the eyes. Wings erect. Second pair ſmall. Two or three tails like briſtles. Short lived.

*SPECIFIC CHARACTER.*

Wings reticulated, brownifh with five or ſix brown ſpots. Body yellowiſh, with black ſpecks. Three tails.

Ephemera Vulgata: cauda triſeta, alis nebuloſo maculatis. *Linn. Syſt. Nat.* 2. 906. 1. *Fn. Sv.* 1472.

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In the larva and pupa ſtate, this Inſect is found under looſe ſtones at the bottom of ſhallow pools; in the winged ſtate it frequents the water.

We have ſeveral ſpecies of this genus in England. The Ephemera Vulgata, is the largeſt among them. A very diſtinguiſhing character of them is the ſhortneſs of their lives, which ſeldom exceeds a few hours. In the month of May theſe Inſects are ſeen in great plenty on the water, where they are greedily devoured by the fiſh; anglers ſay, when the large Ephemera appears, the trout will ſnap at no other bait, than the artificial fly made after its form.— In ſome ſpecimens the wings are more clouded, and the tails longer than in others.

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# PLATE CXXIX.

## FIG. I, II, III.

## PHALÆNA HASTATA.

ARGENT AND SABLE MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general contracted when at rest. Fly by night.

### ** *GEOMETRÆ.*

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

White, beautifully marked and spotted with black.

PHALÆNA HASTATA: seticornis, alis omnibus nigris albo maculatis, fasciis duabus albis nigro punctatis hastata dentatis. *Linn. Syst. Nat.* 2. 870. 254. *Fn Sv.* 1276.

*Phalæna* antennis filiformibus; alis latis albis fasciis undulatis maculisque hastatis nigris. *Degeer. Inf. Verf. Germ.* 2. 1. 334. 7. *tab.* 8. *fig.* 20. *Clerk. phal. tab.* 1. *fig.* 9. *Kleman Inf.* 1. *tab.* 44.

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The Argent and Sable Moth is scarce in the Fly state: though its young caterpillars are not uncommon in some parts of Kent; we have

have met with ſeveral about the narrow lanes in Darent-wood, Dartford, in April, or early in the month of May. It is however very difficult to breed them; they generally die in the pupa ſtate, or before they caſt their laſt ſkin when caterpillars; from ſeveral ſpecimens taken during the three laſt ſummers, we have only had one Moth produced, and that ſo crippled, as merely to enable us to aſcertain the ſpecies.

The ſmall Caterpillars are of a dark purpliſh colour, when nearly full fed they have a yellow under ſide marked with black, with the back purple; before they change to the pupa ſtate, they become almoſt brown.

They remain only a month in the pupa ſtate. The Moth appears about the middle of June.—Food, white-thorn and alder.

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## PHALÆNA ANASTOMOSIS.

### FIG. IV.

Since the publication of the laſt Number, we have been favoured with a moſt beautiful ſpecimen of the Moth figured in the 124th Plate of this Work, and preſent a figure of it to our ſubſcribers, together with the ſeveral changes of the Phalæna Haſtata; it will ſhew how very liable this Inſect is to variation in its colours, ſize, &c.

We find alſo that though this Inſect has been named Phalæna Anaſtomoſis in the moſt ſcientific Cabinets in London, and always received as ſuch by the beſt authority, it is not the Inſect referred to by Fabricius in his Species Inſectorum under that title; that Author, as well as Linnæus, refers under the ſpecific name *Ph. Curtula* to the 43d Plate of the third Volume of Roeſel's Inſects; in this Plate is figured a Moth which is certainly a ſpecies diſtinct from our Inſect, and is well known by its Linnæan name *Curtula*, or Engliſh title *Chocolate Tip*; yet Fabricius gives an additional reference for the ſame ſpecies to the 11th Plate of Roeſel's fourth

fourth Volume of Insects, and in this we find the figure of a Moth whose markings and general appearance correspond with our specimen, though its colours are totally different, being a very pale grey with scarcely any dark colour near the apex of the wings; the larva much more resembles our figure, and induces us to conclude, that though the figure of this last Moth is so extremely different, it is probably intended for the same species as our Insect; and therefore that the two distinct species have been confounded together, by a false quotation of Linnæus's Amanuensis.

And we are partly confirmed in this supposition by the words of Linnæus himself; he says, *Ph. Anastomosis* is very like *Ph. Curtula*, but the Moth figured in Rœsel's plate, and referred to in the Synonyms under Anastomosis, does not bear the least resemblance to it; —our Insect on the contrary, though evidently a distinct species, is not unlike it.

# PLATE CXXX.

## GRYLLUS VIRIDISSIMUS.

### HEMIPTERA.

Shells, or upper Wings, ſemicruſtaceous, not divided by a ſtraight ſuture, but incumbent on each other. Beak curved down.

### *GENERIC CHARACTER.*

Head maxillous, and with palpi. Antennæ filiform. Wings folded. Hind Legs ſtrong, for leaping.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

Head, Thorax, and Wings green, without ſpots. Antennæ very long.

GRYLLUS VIRIDISSIMUS: thorace rotundato, alis viridibus immaculatis, antennis ſetaceis longiſſimis. *Linn. Syſt. Nat. v.* 1. *p.* 430. 38. *edit.* 10.

LOCUSTA VIRIDISSIMA: alis viridibus immaculatis, antennis longiſſimis. *Fab. Syſt. Ent.* 286. 22.— *Spec. Inſ.* 1. 359. 23.

*Locuſta viridis cantatrix* viridis immaculata, thorace rotundato, cauda feminæ enſifera recta. *Degeer Inſ.* 3. 428.

*Agrigoneus. Liſt. Goed.* 301. *tab.* 121.

This Infect is larger than the great green Grafshopper, (*Gryllus verrucivorus*) or any other fpecies of the genus we have in this country; unlefs we notice the *Gryllus Magratorius*, which is well known for its depredations in many parts of the world, but is rarely met with in England.

The prefent fpecies is perhaps not uncommon in many places, but it is very difficult to difcover its hiding-places in the day-time; its chirp is fometimes heard in a calm Summer's evening, about fun-fet, iffuing from the bufhes where it is concealed; and from which it feldom ventures till night: it continues its chirping at intervals till morning.

The female feems to prefer a warm, and rather moift fituation, to depofit her eggs in, and this is commonly the fide of a bank that is expofed to the fun; but is well covered with grafs and other herbage to keep it moift. She is furnifhed with a fharp double edged fheath, like a *fword*, with which fhe opens the ground in a perpendicular direction; firft fcooping out a convenient cylindrical aperture, and then widening the lower part into a fpacious apartment for the reception of the eggs. *See* Fig. I.

When the Infect burfts from the egg it is very minute, and without Wings; in this ftate it nips the tender fhoots of grafs, &c. It foon increafes in fize and affumes the pupa form; in which ftate though the Wings are not perfect, their rudiments appear next the Thorax: it continues in this ftate till it has nearly acquired its full fize before the Wings burft open from the protuberances.

Our fpecimens were taken in Batterfea Meadows; in the egg ftate early in April; winged ftate in June.

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# PLATE 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. Inſ.* 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. Inſ.* 2. *n.* 8. *p.* 463.

*Tabanus nibuloſis. Harris Inſ. Angl. tab.* 7. *fig.* 5.

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

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

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

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# PLATE CXXXII.

## PHALÆNA LUNARIA.

### Beautiful Thorn-Moth.

LEPIDOPTERA.

*GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general deflexed when at rest. Fly by night.

*SPECIFIC CHARACTER.*

Antennæ feathered. Wings angulated, indented; a *lunar* spot near the center of each. General colour, pale red brown, clouded and speckled.

*Kleman Inf.* 3.
*Fab. Spec. Inf.* 2. 245. 18 ?

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We have been furnished with the larva of this extremely rare Insect in a singular manner: a wasted specimen of the female was taken in the Summer of the year 1794, and deposited a quantity of eggs in the box in which it was stuck; these hatching some time after, a great number of young Caterpillars were produced; several of a full size, passed to the pupa state, (in a reddish web spun on the leaves) and four fine Moths came forth last Summer.

The eggs were very minute, perfectly globular, and of a pale greenish colour: the cluster consisted of more than seventy, and few of them proved abortive; but some of the largest Caterpillars devoured

voured the reſt, and many others wandered from the food, and ſo periſhed. The Moths were far ſuperior for the beauty and richneſs of their colours to any ſpecimens we have ſeen before; but this is not remarkable, as moſt of the ſpecimens preſerved in Cabinets near London, have been taken in the winged ſtate.

It feeds on the lime; is found in the Caterpillar ſtate in Auguſt; the Moth appears in June. Is ſometimes taken in the interior part of Darent-Wood, Dartford; and rarely elſewhere near London. It has been met with alſo at Feverſham, in Kent, on the Elm.

*Kleman*, in the laſt volume of German Inſects, lately publiſhed, has given three figures of this Moth; but has neither figured the Caterpillar nor Pupa. *Fabricius* is the only ſyſtematical Writer who appears to have noticed it.

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# PLATE CXXXIII.

## PHALÆNA PSI.

### Grey Dagger-Moth.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general deflexed when at rest. Fly by night.

Noctua, Antennæ setaceous.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

First wings and body grey; on the former three or four black marks, in the form of a dagger*. Second wings pale brown, with a slightly scalloped margin.

Phalæna Psi: cristata, alis deflexis cinereis, anticis lineola baseos characteribusque nigris. *Syst. Ent.* 614. 104.—
*Fab. Spec. Inf.* 2. 235. 129.
*Linn. Syst. Nat.* 2. 846. 135.
*Alb. Inf. tab.* 26.

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The Caterpillars of the Grey Dagger-Moth is frequently found on fruit trees; particularly on the cherry: it feeds also on the willow and poplar, and on almost all plants indiscriminately when confined in the breeding cage. It is not an uncommon Insect: the Caterpillars change in September, remain in the chrysalis state during winter, and the Moth appears late in May, or early in June.

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* Or like the Greek (ψ) *Psi*; from which it receives its specific name.

# PLATE CXXXIV.

## PHALÆNA PLANTAGINIS.

### SMALL TIGER.

### LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general deflexed when at rest. Fly by night.

*Bombyx* antennæ of the male pectinated or feathered.

### *SPECIFIC CHARACTER.*

First Wings yellow, second Wings orange colour; both clouded with black. Body orange and black.

PHALÆNA PLANTAGINIS elinguis. alis deflexis atris, rivulis flavis, inferioribus rubro maculatis. *Linn. Syst. Nat.* 2. 820. 42.—*Fn. Sv.* 1132.

PHALÆNA pectinicornis elinguis, alis deflexis, superioribus fuscis, maculis luteis, inferioribus rubris, maculis quatuor nigris. *Geof. Inf.* 2. 109. 10.

*Phalæna Alpicola. Scop. carn.* 507.
*Wilk. pap.* 24. *tab.* 3. *a.* 5.
*Roes. Inf.* 4. *tab.* 24.
*Fab. spec. Inf.* 2. 196. 115.

L'Ecaille brune. *Geofr.*

Der Wegerichspinner. Die spanische Fahne. Die beschleierte Bärenphalene. *Pans. Fauz. Inf. Germ.*

This ſpecies feeds on nettles, chickweed, plantain, graſs, &c. The Caterpillars very much reſemble thoſe of the large *Garden Tiger* Moth *, except in ſize; they change into chryſalis about the middle of April, and appear in the winged ſtate the latter end of May.

We have not found this Inſect ſo plenty as the *Ruby Tiger* Moth †, and it is infinitely more ſcarce than the great *Garden Tiger* Moth, figured in the early part of this Work.

A variety of this ſpecies, with crimſon under wings, is found in the Eaſt Indies and in America. The under wings of the female, in the European ſpecimens, are much redder than in the male.

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# PLATE CXXXV.

## CIMEX SPISSICORNIS.

HEMIPTERA.

### *GENERIC CHARACTER.*

Antennæ longer than the thorax. Thorax margined. In each foot three joints.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

Antennæ very large. Head, thorax, and ſhells, pale blackiſh brown. Feet yellow.

CIMEX SPISCICORNIS: oblongus niger, pedibus flavis, antennis incraſſatis. *Fabri. Gen. Inſ. Mant. p.* 300.—*Sp. Inſ.* 2. 207. *p.* 372.

Die borſtenhornige Wanze. *Panz. Inſ. Germ.*

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The ſingular ſtructure of the antennæ of this minute Inſect, recommends it to particular notice. They are nearly as long as the body, and in the thickeſt part are very bulky; hence it has received the ſpecific name Spiſſicornis, or large horned Cimex.

It is not uncommon in ſummer; flies amongſt buſhes or low herbage in the day time: the lower wings are of a very beautiful purple colour, and give a blackiſh hue to the outer wings when folded

folded under them. The larva we ſuſpect has not been figured, if noticed, before, and for this reaſon we have given it of the natural ſize at fig. 1. and its magnified appearance at fig. 2.—at fig. 3. the natural ſize of the perfect or winged inſect; fig. 4. the ſame magnified.

Found in the larva ſtate in May, was fed on graſs, the winged Inſect appeared June 19th.

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# PLATE CXXXVI.

## PHALÆNA HEXADACTYLA.

MANY-FEATHERED MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings in general deflexed when at rest. Fly by night.

* PTEROPHORUS.

### *SPECIFIC CHARACTER.*

Wings divided into Feathers, yellowish and grey, with brown Spots.

Phalæna Hexadactyla. *Linn. Syst. Nat.*

PHALÆNA HEXADACTYLUS, alis fissis cinereis, singulis sexpartitis. *Fab. Spec. Inf.* 2. 312. 7.—*Syst. Ent.* 672. 7.
*Reaum. Inf.* I. *tab.* 19.—*Fig.* 19. 21.
*Frisch. Inf.* 7. *tab.* 73.

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Among an almost endless variety of species, which the tribes of Insects present, few have a more singular appearance than the little creature we have selected for our present subject. It is perhaps one of the most curious pieces of natural mechanism (if we may be allowed the expression) that can be conceived, for of a most complicated fabric which the wings appear, every part, though separate,

* *Fabricius.*

acts in perfect unison with the rest; in most winged Insects we find the tendons of each wing united by strong membranaceous webs, which prevent any one from acting without the others, but in this every tendon must perform a distinct part, and yet perfectly in conformity with the rest to assist the Insect in its flight. When the Insect rests the feathers fold over one another; but when it flies, they are thrown open, and resemble a full expanded fan.

The natural size of this singular creature is given at Fig. 1. and as a more correct figure than can be shewn in such a small compass was thought necessary, its magnified appearance is represented at Fig. 2.

The plumes of this Insect differs so much from those of other Moths, that we have also added, at Fig. 3, the appearance of the upper part of one, as seen by a very deep lens of the Microscope; by this the stem or quil is observed covered with scales of the form usually found on other Moths, but the sides are finely feathered with long hairs, in tufts, alternately of a light and dark colour, and which, owing to the minuteness of the Insect appear like patches of an uniform colour, before it is examined with the Microscope.

This Insect is not uncommon in Summer, it flies about hedges in the evening.

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# PLATE CXXXVII.

## PHALÆNA CHRYSITIS.

### BURNISHED BRASS MOTH.

LEPIDOPTERA.

*GENERIC CHARACTER.*

Antennæ taper from the Base. Wings in general deflexed when at rest. Fly by night.

NOCTUA.

Antennæ of both sexes filiform.

*SPECIFIC CHARACTER*

AND

*SYNONYMS.*

First Wings brown, with two transverse broad waves of greenish gold on each. Second Wings blackish grey. Wings margined.

PHALÆNA CHRYSITIS *Linn. Syst. Nat.* 2. 843. 126.

Noctua cristata, alis deflexis orichalceis, margine fasciaque griseis. *Syst. Ent.* 606. 69.—*Spec. Inf.* 2. *p.* 226. 91. —*Fabricius.*

*Phalæna* seticornis spirilinguis, alis deflexis ferrugineo fuscis, fascia duplici transversa viridi aurea. *Geof. Inf.* 2. 149. 97.

*Phalæna* antennis filiformibus, dorso cristato, alis deflexis griseis, fasciis duabus aureo viridibus. *Degeer. Inf. Vers. Germ.* 2. 1. 311. 2.

*Merian. Europ. tab.* 39.

*Albin Inf. tab.* 71. *fig. a. b. c. d.*

*Shæff. Icon. tab.* 101. *fig.* 2. 3.

The pencil can produce but a feeble and inadequate imitation of the metallic ſplendour of this beautiful, yet common Inſect. The upper Wings have the appearance of fine burniſhed braſs, changeable in different directions of the light to green, brown, and rich golden hues; the under Wings are of a blackiſh colour, and ſerve as an admirable contraſt to the more brilliant and varied teints of the upper Wings. The Thorax is creſted.

*Berkenhout* has given a very falſe deſcription of the Caterpillar of this Inſect, he ſays it is " ſmooth, orange with white ſpots;" we think it neceſſary to note this error only as it may miſlead young Collectors, who have no other aſſiſtant than his Synopſis, by which they can determine the Species, when in the Caterpillar ſtate. It is aſtoniſhing how he could poſſibly be led into this error, when *Albin*, *Fabricius* *, and all preceding authors on Entomology, have deſcribed it ſo plainly.

It feeds on Nettles, and other Plants, growing among the low herbage by the ſide of banks; in fine ſeaſons there are generally two broods of them from May, to June in the following year; the firſt are found early in May in the Caterpillar ſtate, appear in June in the winged ſtate; Caterpillars are full fed again in July, the Moths come forth in Auguſt.

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* *Larva* ſolitaria, gibboſa, viridis albo ſtriata. *Fabricius.*

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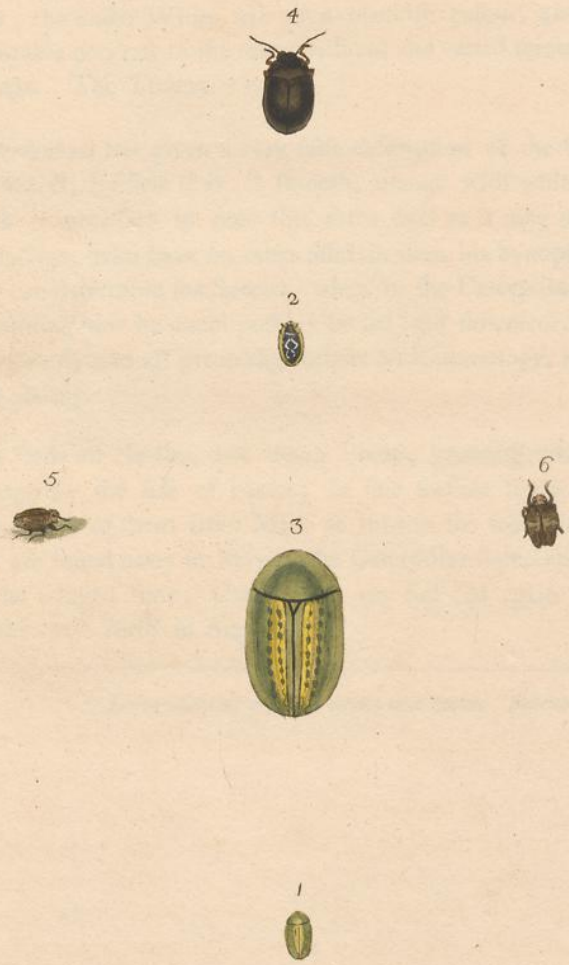
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# PLATE CXXXVIII.

## FIG. I. II. III.

## CASSIDA NOBILIS.

### COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the ends. Shells and Thorax bordered. Head concealed under the corſelet.

### *SPECIFIC CHARACTER.*

Greyiſh Green; on the center of each Shell a ſtreak of gold, which dies with the Inſect. Body beneath black.

CASSIDA NOBILIS: griſea elytris linea cœrulea nitidiſſima.
*Linn. Syſt. Nat.* 2. 575. 4.
*Oliv. Inſ.* 97. *tab.* 2. *fig.* 24.
*Raj. Inſ.* 107. 7.

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This ſpecies is far leſs common than *Caſſida Viridis*. It is a very beautiful Inſect; but, like moſt other minute ſpecies, appears with infinitely more advantage in the Microſcope for opake objects; indeed, without ſuch aſſiſtance, it is impoſſible to perceive the beauty of that part by which it is diſtinguiſhed from every other ſpecies of the ſame genus we have in England, the lines of fine gold and blue, which are ſeen on the middle of the Shells.

When the Inſect is alive, it is of a pale greeniſh colour, inclining to browniſh grey, and along the middle of each Shell appears a ſplendid ſtreak, or line of gold, margined with a fine pale ſky blue, alternately varying into green, and gold. By the Microſcope we alſo

alſo diſcover many minute punctures, and ſeveral waved lines and ſtreaks, which deſcend along the Shells from the baſe, and unite near the apex.

Its colours are more or leſs beautiful as the Inſect is healthy or ſickly; and as it dies, the colours gradually periſh; the ſplendor of gold is no longer viſible than life is retained, it changes to green; from green to a brown, which ſcarcely appears through a faint tinge of blue, and in a few hours it changes altogether to a ruſty brown colour.

This Inſect is admirably protected from external injury by the ſingular form of its Thorax and Shells, which are alſo ſo large as to conceal every other part when the Inſect walks.

The natural ſize is ſhown at fig. 4, (upper ſide.) Fig. 2, under ſide. Fig. 3, upper ſide magnified.

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## FIG. IV.

## CHRYSOMELA BANKII.

### COLEOPTERA.

### *GENERIC CHARACTER.*

Antennæ knotted, enlarging towards the ends. Corſelet margined.

### *SPECIFIC CHARACTER*

Body oval. Head, Thorax and Shells, purpliſh olive colour, changeable, with a bronze appearance. Beneath, reddiſh brown, or teſtaceous.

CHRYSOMELA BANKII: ovata ſupra ænea ſubtus teſtacea. *Fab. Entomologia Syſtematica. T.* 1. 310. 16.

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This is a very rare Inſect in England. It reſembles *Chryſomela bicolor* in ſize, and colour of the Head, Thorax and Shells; but it may be readily diſtinguiſhed from that ſpecies by the teſtaceous colour of the under ſide, that part being wholly of a violaceous colour in *C. bicolor*.

Found in May on a thiſtle.

FIG.

## FIG. V. VI.

## CICADA DILATATA.

### HEMIPTERA.

Shells or upper Wings, ſemi cruſtaceous, divided by an oblique ſuture, and incumbent on each other. Beak bent down.

### *GENERIC CHARACTER.*

Antennæ taper. Shells membraneous. In each foot three joints. Hind legs ſtrong for leaping.

### *SPECIFIC CHARACTER.*

Entirely brown, pale with faint whitiſh and dark lines, a ſmall black ſpot on the center of each wing.

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A figure of this Inſect is given in Villers's Entomology as a native of France; in this he follows the authority of Fourcroy, who has a deſcription of the ſame ſpecies in his Catalogue of Inſects, found in the environs of Paris. This laſt author calls it Le Cigale renflée, from its puffed or ſwelled appearance. The name given by Villers is Cicada dilatata.

The confuſion made by Fabricius, in his alterations of the *Linnæan genera*, renders it doubtful whether he has deſcribed this Inſect, though, from its being commonly found in moſt parts of Europe, we muſt ſuppoſe he has not paſſed over it without notice: we have examined his laſt work, (Entomologia Syſtematica, &c.) and cannot find an Inſect anſwering our ſpecies with any reference either to Fourcroy or Villers, we therefore prefer the ſpecific name given by the latter author.

Is found in June; and is leſs common than any Inſect of the ſame genus hitherto given in this work.

# PLATE CXXXIX.

## PHALÆNA METICULOSA.

### Angle-shades Moth.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general deflexed when at rest. Fly by night.

* *Noctua* antennæ like bristles in both sexes.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

First Wings pale reddish colour, with a broad triangular brown spake in the middle. Second Wings palish, with dark waves; margin of both Wings indented.

Phalæna Meticulosa. *Linn. Syst. Nat.* 2. 845. 132.—*Fn. Sv.* 1164.

Phalæna Meticulosa: alis deflexis, eroso dentatis, pallidis, anticis basi incarnata, triangule fusco. *Fab. Syst. Ent.* 608. 78.

*Phalæna* seticornis spirilinguis, alis deflexis margine erosis cinereo fuscis, superioribus triangulo marginali fuscescente, incarnatum includente, thorace gibbo. *Geof. Inf.* 2. 151. 84.
*Merian. Europ. tab.* 24.
*Albin Inf. tab.* 13.
*Roes. Inf.* 4. *tab.* 9.
*Degeer Inf.* 1. *tab.* 5. *fig.* 14.
*Goed, Inf.* 1. *tab.* 56.

The Phalæna Meticulofa certainly exceeds many other Infects of the fame tribe for elegance and fimplicity: the variety of teints fo delicately, indeed almoft infenfibly foftened into one another, and neatnefs of the waves and lines interfperfed over the whole, amply compenfate for the defection of more gaudy colours. In the caterpillar ftate it is fcarcely lefs deferving attention; the yellow fpecks on a beautiful, yet lucid green, have a very pleafing effect. The web it fpins round its pupa is of a fine white colour, and filky texture; the pupa within of a blackifh chocolate colour.

This fpecies is fometimes met with in plenty, though lefs fo in fome feafons than in others; and not unfrequently is more abundant when the feafon appears moft unfavourable. It feeds on nettles chiefly, but we have found it on feveral other plants; and once on a young oak, in Kent; the leaves of which we fed it on fome time. In the caterpillar ftate it is found in April, changes to the pupa ftate in May, the Moth appears in June.

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# PLATE CXL.

## SCARABÆUS FASCIATUS.

YELLOW BEETLE.

COLEOPTERA.

Wings two, covered by two ſhells, divided by a longitudinal ſuture.

### *GENERIC CHARACTER.*

Antennæ clavated, their extremities fiſſile. Five joints in each foot.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

Head, Body, Thorax, black: covered with long, yellowiſh hairs. Shells pale yellow, with three tranſverſe black ſtripes on each. Abdomen longer than the Shells.

SCARABÆUS FASCIATUS ſcutellatus muticus niger tomentoſo flavus, elytris faſciis duabus luteis coadunatis. *Linn. Syſt. Nat.* 2. 556. 70. *Fn. Sv.* 395.

TRICHIUS *faſciatus:* niger tomentoſo flavus, elytris faſciis tribus nigris abbreviatis. *Fab. Syſt. Ent.* 40. 1. —*Spec. Inſ.* 1. 48. N° I.

*Scarabæus* niger hirſuto flavus, elytris luteis, faſciis tribus nigris interruptis. *Geoff. Inſ.* 1. 80. 16.

*Drury Inſ.* 1. *tab.* 36. *fig.* 2.
*Degeer. Inſ.* 4. *tab.* 10. *fig.* 19.
*Voet. Scar. tab.* 5. *fig.* 43.

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In Germany this Inſect is not uncommon: we believe it is very rare in this country. Found generally on umbelliferous plants.

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# PLATE CXLI.

## PHALÆNA DOMINULA.

SCARLET TIGER MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the baſe. Wings, in general contracted when at reſt. Fly by night.

*Bombyx* antennæ of Male feathered, Female ſetaceous.

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

Firſt Wings black gloſſy green, with orange and white ſpots. Second Wings and Abdomen ſcarlet, with black ſpots.

Phalæna Dominula: alis incumbentibus atris, maculis albo flaveſcentibus, poſticis rubris nigro maculatis. *Fab. Syſt. Ent.* 583. 93.—*Spec. Inſ.* 2. 200. 130.

Phalæna Dominula. *Noctua* ſpirilinguis lævis, alis depreſſis nigris: ſuperioribus cæruleo flavo alboque, inferioribus rubro maculatis. *Linn. Syſt. Nat.* 2. 509. 68 *edit.* 10.

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Formerly this beautiful Moth was found in great abundance at *Charlton* in *Kent*, but within the laſt two or three years moſt of the broods

broods have been wantonly deſtroyed, and they are now ſeldom met with. In the caterpillar ſtate they feed on nettles and hound's-tongue *, changes to the pupa ſtate about the middle of May, and in June the Moth comes forth.

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* *Cynogloſſum officinale.*

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# PLATE 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.

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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.

## FIG. 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. *Marſham's MSS.*

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We do not find that this rare and beautiful Inſect has been deſcribed either by *Linnæus* 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 Marſham, 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.

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# PLATE CXLIII.

## PAPILIO ARGUS.

### Common Blue Butterfly.

### Lepidoptera.

### *GENERIC CHARACTER.*

Antennæ knobbed at the end. Wings, when at reſt, erect. Fly by day.

### *SPECIFIC CHARACTER.*

Male upper ſide fine blue with white margins. Female dark brown, with a patch of blue on the middle of each wing. Underſide of both ſexes lightiſh brown, with black and red ſpots.

Papilio Argus : alis ecaudatis, poſticis ſubtus limbo ferrugineo ocellis cœruleo argenteis. *Fab. Syſt. Ent.* 525. 346.—
*Linn. Syſt. Nat.* 2. 789. 232.
*Fn. Sv.* 1074.
*Roeſ. Inſ.* 3. *tab.* 37. *fig.* 3—5.
*De Geer Inſ.* 4. *f.* 14. 15.
*Wilk. Pap.* 63. *t.* 1. *a.* 1.
*Merian. Europ. tab.* 153.
*Schæff. Icon. tab.* 29. *fig.* 3. 4.

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Though this beautiful Inſect is very common in ſome places in the Butterfly ſtate, we have never met with it's larva, nor with any account of it that appeared ſatisfactory. In that ſtate it ſeems ſcarcely known. It is ſaid, by ſome Collectors, to be a plain green Caterpillar, with very few hairs, bulky, and broadeſt acroſs the middle. It certainly feeds very low among the thickeſt graſs, or perhaps like

ſome larvæ of Moths, never comes above the ſurface of the ground, and lives on the roots of graſs.

The Male is of a fine blue colour on the upper ſide, and elegantly marked on the under ſide with white circles, having a black ſpot in the center of each: the wings are alſo bordered with ſimilar ſpots, marked with a vermillion colour. The Female has very little appearance of the fine blue of the Male: the upper wings are of a dull browniſh black, with a bluiſh colour on parts, and marked with a few red and black ſpots: the underſide as in the Male.

They ſeem to delight in Meadows, and, like all other Butterflies, are on the wing only in the day time. The firſt brood appears in the Fly ſtate in June.

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# PLATE CXLIV.

## PHALÆNA VIRIDANA.

SMALL GREEN OAK MOTH.

LEPIDOPTERA.

### *GENERIC CHARACTER.*

Antennæ taper from the base. Wings, in general deflexed when at rest. Fly by night.

** Tortrix. *Linn.*

### *SPECIFIC CHARACTER*

AND

### *SYNONYMS.*

First Wings pea green. Second Wings dusky.

Phalæna viridana. Pyralis. Alis rhombeis, anticis viridibus immaculatis.—*Fabricius. Syst. Ent.* 656. 4.—*Linn. Syst. Nat.* 2. 875. 266.

*Phalæna* seticornis spirilinguis, humeris latis, antennis flavescentibus, alis dilute fuscis.—*Geof. Inf.* 2. 171. 123.
*Reaum. Inf.* 2. *tab.* 18. *fig.* 6. 7.
*Roef. Inf.* 1. *phal.* 4. *tab.* 1.
*Frisch. Inf.* 3. *tab.* 8.

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Early in July we find this species flying about the narrow paths and lanes in woods where Oaks are plenty. It is observed to shelter itself in the day time, generally among such trees as have the foliage thick

thick and the bark covered with moſs, &c. and very ſeldom among young trees. In the Caterpillar ſtate it lives concealed in a fine ſilky web, ſpun up on the leaves. When it is diſturbed it drops by a ſingle thread from one branch to another, the glutinous ſubſtance of the thread adhering wherever it touches, ſo that if it is damaged in any part the Inſect is in no danger of falling, unleſs the laſt faſtening breaks off. The Caterpillar changes to the pupa ſtate early in June: the firſt appearance of the Moth is commonly about the end of the ſame month.

In England we have another ſmall Moth (Phalæna Chlorana) which at firſt ſight may be miſtaken for Phalæna Viridana. It differs from this Inſect in ſeveral reſpects; the under Wings are whiter, and the ſtripe along the anterior margin of the upper Wings incline more to a cream colour than in our preſent ſpecies; the Caterpillar alſo is very different and feeds on the Willow.

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## HEMIPTERA.



LEPIDOP-

# INDEX.

## LEPIDOPTERA.



## NEUROPTERA.



* Not deſcribed before.

HYMEMOP-

# INDEX.

## HYMEMOPTERA.



## DIPTERA.

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Bankii,
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lunatia,

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## ERRATUM TO VOL. IV.

PLATE CXXIV. *for* Phalæna Anostomosis, *read* Phalæna Anastomosis.

Fig.

1. 2. 3.

1. 2.
1. 2.

3. 4.
2. 3.

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