THE NATURAL HISTORY OF BRITISH INSECTS;

EXPLAINING THEM

IN THEIR SEVERAL STATES,

WITH THE PERIODS OF THEIR TRANSFORMATIONS, THEIR FOOD, ŒCONOMY, &c.

TOGETHER WITH THE

HISTORY OF SUCH MINUTE INSECTS

AS REQUIRE INVESTIGATION BY THE MICROSCOPE.

THE WHOLE ILLUSTRATED BY

COLOURED FIGURES,

DESIGNED AND EXECUTED FROM LIVING SPECIMENS.

By E. DONOVAN.

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MDCCXCIV.

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."

PLATE

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.

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 deſcribed 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.

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.

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.

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 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.

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.

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.

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*.

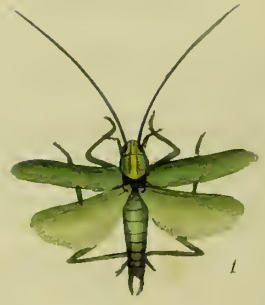

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PLATE LXXIX.

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.

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.

The

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.

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.

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.

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.*

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.

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,

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.

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.

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 his 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.

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 *Hellwig*.

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.

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. Inſ.* 5. 140. 80. *Tab.* 4. *Fig.* 14. 15.

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

CANTHARIS. *Raj. Inſ.* 100. 1.

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

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

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.

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*.

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. Inſ. 2. 104. 5.
Raj. Inſ. 153. 5.
Geod. Inſ. 1. *Tab.* 65.
2. *Tab.* 37.
Merian. Europ. Tab. 39. *Fig.* 140.
Albin. Inſ. 11. *Tab.* 5.
Sepp. Inſ. 4. *Tab.* 5.
Wilk. pap. Tab. 13. *Fig.* 1. *e.* 1.
Reaum Inſ. 2. *Tab.* 21.
Friſch. Inſ. 6. *Tab.* 8.
Degeer. Inſ. 1. *Tab.* 23. *Fig.* 12.
Roeſ. Inſ. 1. *phal.* 2. *Tab.* 19.
Fab. Spec. Inſ. 2. 178. 52.

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.

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.
Schæf. Icon. Tab. 16. *Fig.* 1.
Sesia Fuciformis. *Fab. Sp. Inſ.* 2. 156. 11.

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 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.

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

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.

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.
Schæf. Icon. Tab. 69. *Fig.* 9.

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.

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.
Stræm. 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.

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.

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.

The

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

PLATE XC.

PHALÆNA LŒFLINGIANA.

LEPIDOPTERA.

GENERIC CHARACTER.

Antennæ taper from the baſe: wings in general deflected when at reſt. Fly by night.

TORTRIX.

SPECIFIC CHARACTER.

Anterior wings yellowiſh, or buff colour, marked with tranſverſe ſhort ſtreaks of red, or brick colour, and two irregular marks of the ſame colour, reſembling *XX*, on the anterior margin: poſterior 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.

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 appear again on the wing, 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.

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.

that

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.

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.

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.

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.* 657.

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

SCARABÆUS. *Raj.—Friſch.—Liſter.*

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.

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.

PLATE


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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.

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. Inf.* 1. 174. 7.

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

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

Very plenty on flowers; often on thistles in May.

FIG.

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.

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.

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.

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.

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.

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

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.

PLATE

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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 *bilituralа* 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. Inſ.* 2. 122. 27.

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

PLATE

1

2

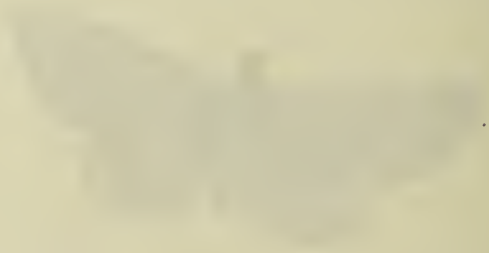

PLATE CIV.

PHALÆNA QUERCUS.

IN THE

WINGED STATE.

FIG. I. The Male.

FIG. II. The Female.

2

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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.
Fueſ. 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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2

3

5

4

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.

1

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.

PLATE

2

1

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

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.

INDEX.

NEUROPTERA.

HYMENOPTERA.

ALPHABETICAL INDEX

TO

VOL. III.

Glauca,

ERRATA

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. Bilituralа, read Bilituratа.