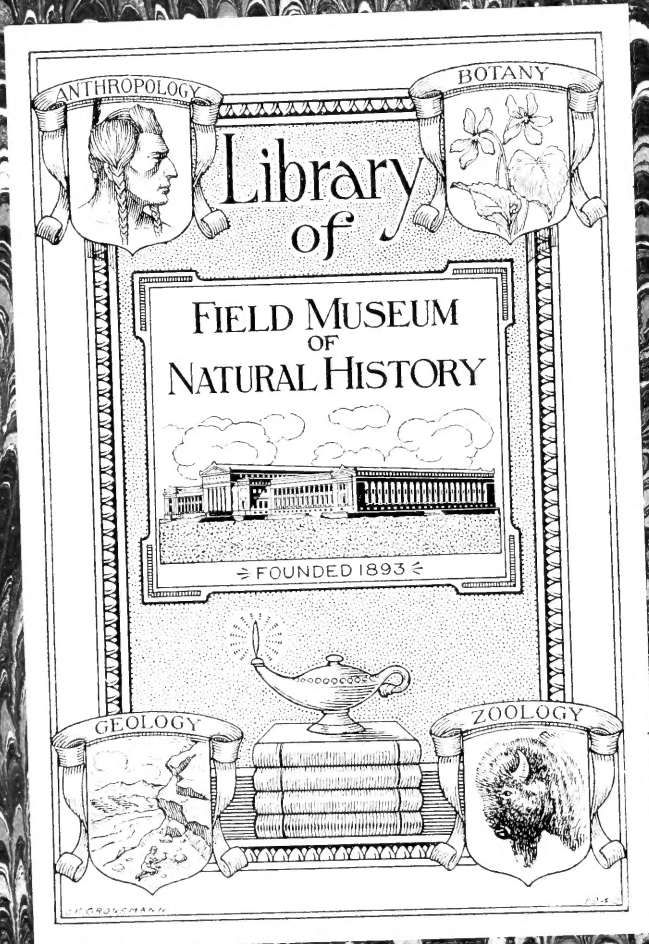




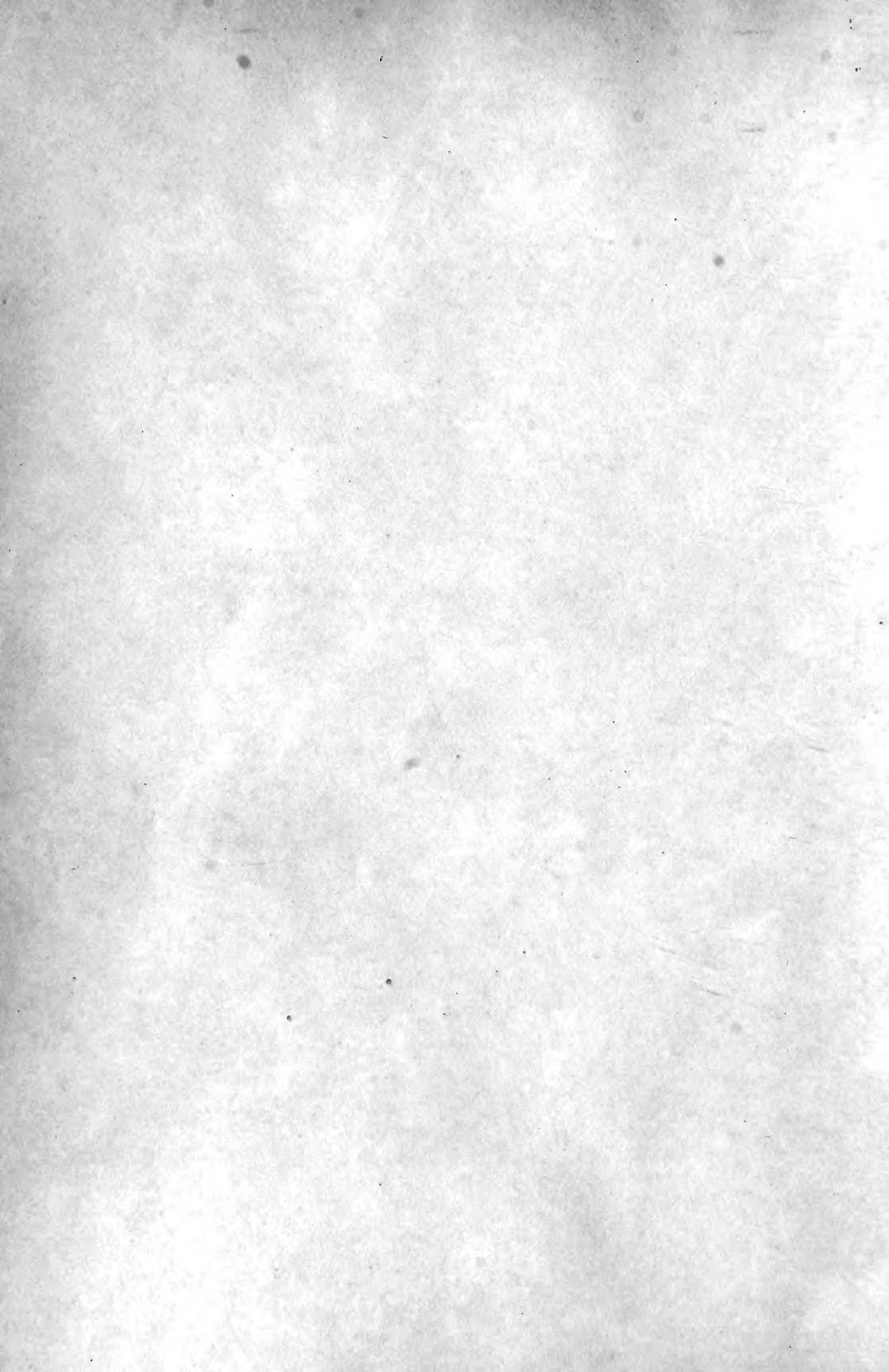
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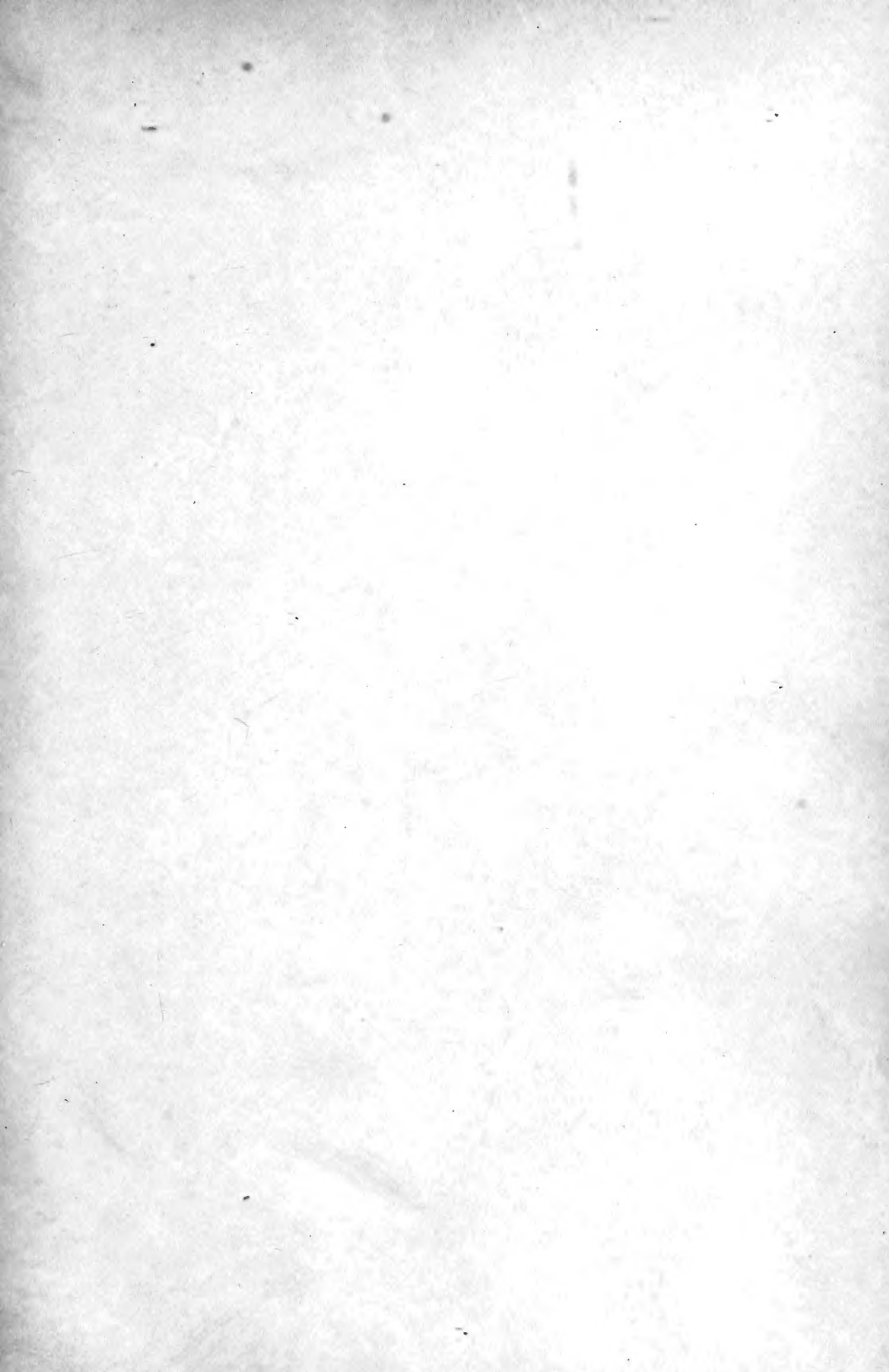


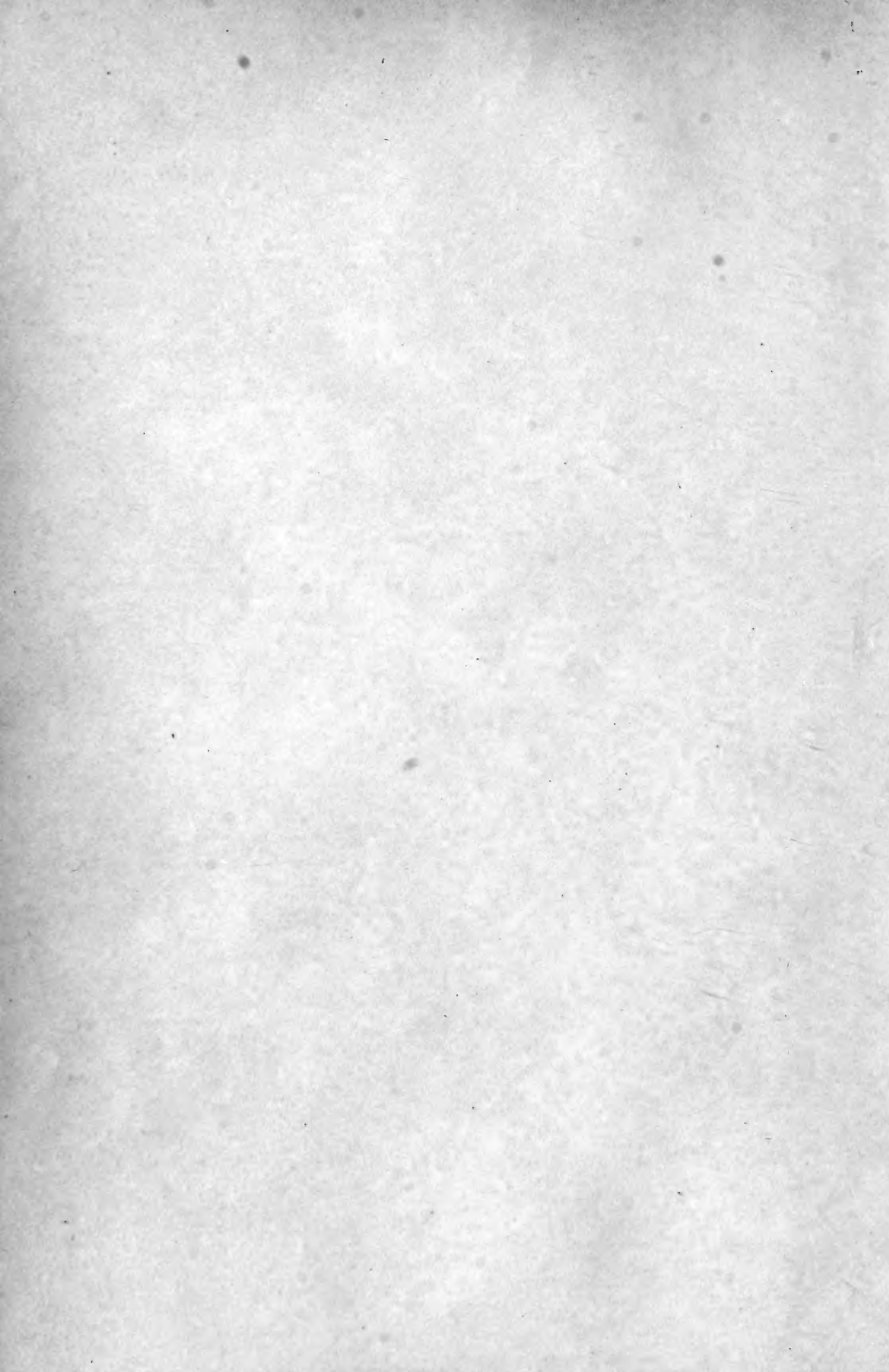
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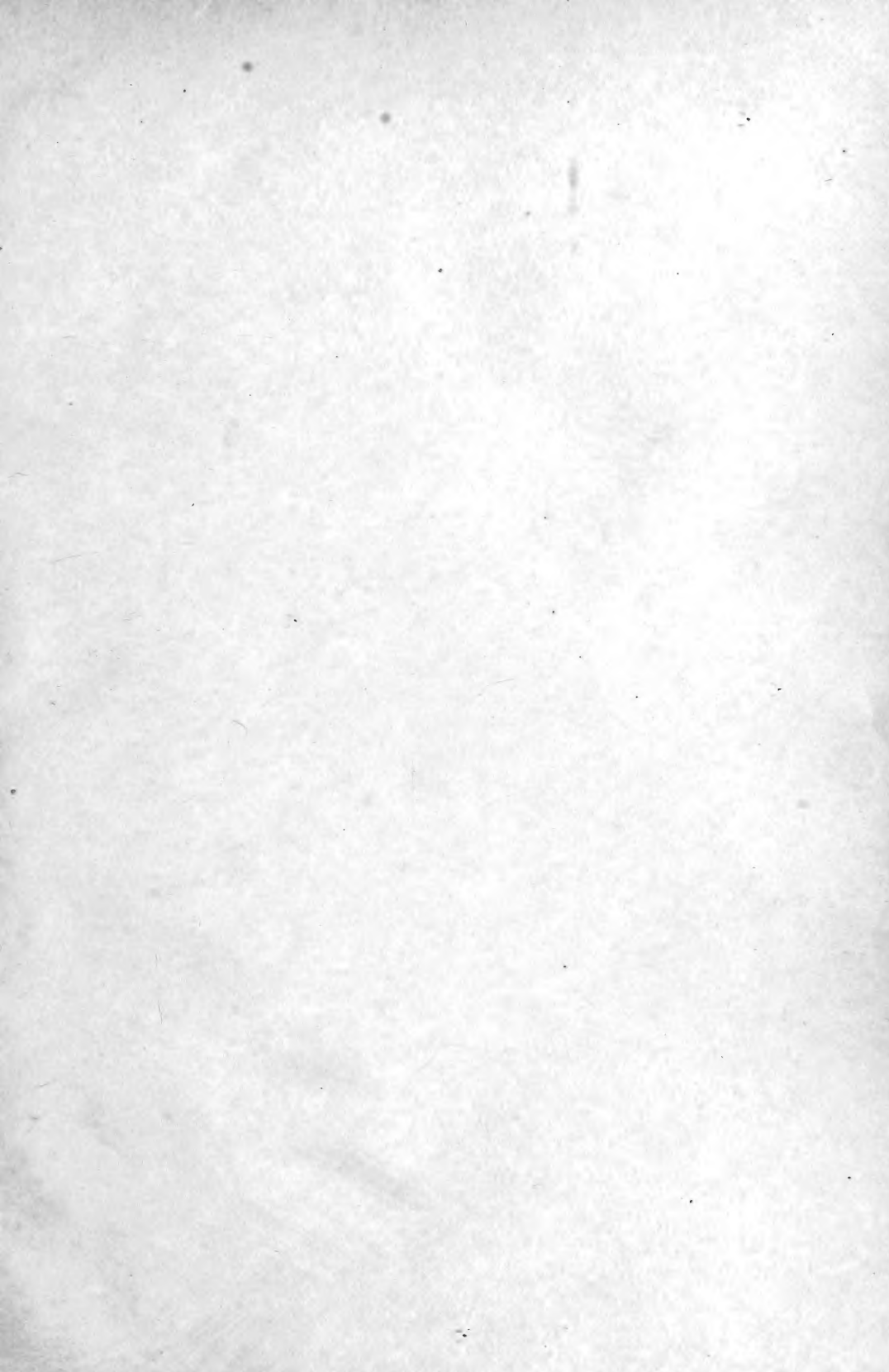
















THE COLEOPTERA
OF
THE BRITISH ISLANDS



THE
COLEOPTERA
OF
THE BRITISH ISLANDS

*A DESCRIPTIVE ACCOUNT OF THE FAMILIES, GENERA, AND
SPECIES INDIGENOUS TO GREAT BRITAIN AND IRELAND
WITH NOTES AS TO LOCALITIES, HABITATS, ETC.*

BY

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VOL. VI (SUPPLEMENT)



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PREFACE

THE last volume of the "Coleoptera of the British Islands" was published in 1891. In the preface to the first volume I expressed a hope that the work might, at all events, prove of some help towards encouraging the study of our native Coleoptera. As far as I can gather, this hope has been, in a measure at least, realised, and to judge by the results, as embodied in this volume, it will be seen that a great deal of work has been done at the Order during the past twenty years. Moreover, that work is by no means exhausted. Almost every month new species are being recorded. The present volume was practically ready some months ago, except for the plates, and the large list of addenda that has accumulated during that period shows the interest that is being taken in our Coleoptera at the present time. Dr. Sharp is of opinion that our indigenous species will be found in the future to number at least 4000, and this makes it evident that there may be much left to discover.

When it appeared that there was need of a supplement to bring the work up to date, Mr. Donisthorpe, hearing of my intention to prepare one, kindly offered me the use of the list of localities, etc., which he had for some years compiled from various records. I therefore asked him if he would collaborate with me, and I am much indebted to him for his help. The first part of the work is, for the most part, mine, and I hold myself responsible for it; while Mr. Donisthorpe has provided the part relating to fresh localities, and the excellent paper on the British Myrmecophilous Coleoptera, and has also undertaken the arrangement of the plates.

W. W. FOWLER

January 10, 1913



CLASSIFICATION, NOMENCLATURE, ETC.

BY W. W. FOWLER.

As it would cause much confusion if the classification adopted in the Supplement were different from that adopted in the preceding volumes, I have, with one or two minor exceptions, followed the same lines in the former as in the latter.

Since 1890, however, our views on the classification of the Coleoptera have been much modified, and it has become obvious that the old systems require a considerable amount of alteration, and, in many points, are very unsatisfactory and incorrect; the Carabidæ, for instance, or rather the Adephaga, instead of being highest in the scale of development, are, through their campodeiform larvæ and structural peculiarities, believed now to be among the lowest and most archaic; it appears more probable, perhaps, that the lowest forms should be looked for among the Malacodermata, but, at all events, they are probably to be found in one or other of these groups. The Rhynchophora again are by no means the lowest in the scale, and by some authors are assigned a high position; they appear to be parallel with the *Phytophaga* but are more highly specialised than that group.

The Lamellicornia seem to stand by themselves at the head of the order as a separate series or sub-order, and they must come either at the beginning or the end, according as we work upwards or downwards.

The chief classifications at present before us are those of Sharp, Ganglbauer, Lameere, and Kolbe, and all these require careful study in conjunction with the older systems. The two first are the simplest. Sharp (Cambridge Natural History, vol. vi. p. 190) considers that the Coleoptera should be divided into three series: (1) Lamellicornia, (2) Adephaga, (3) Polymorpha (including all the other families). Ganglbauer divides the whole into Adephaga and Polyphaga, the latter being equivalent to Sharp's Polymorpha, with the addition of the Lamellicornia; the Polymorpha he divides into six "Familienreihen": (1) Staphyloidea (including in our fauna Staphylinidæ, Pselaphidæ, Seydmænidæ, Silphidæ, Clambidæ, Leptinidæ, Corylophidæ, Sphæriidæ, Trichopterygidæ, Scaphidiidæ, Histeridæ). (2) Diversicornia. (3) Heteromera. (4) Phytophaga. (5) Rhynchophora. (6) Lamellicornia. The Staphyloidea are a homogeneous group, but the Diversicornia form a

very heterogeneous and unwieldy complex, as they contain several of our Clavicorn families, together with the Serricornia and Malacodermata. Ganglbauer appears, however, to have somewhat modified his views with regard to the Clavicorn series (compare his article in the *Münchener Koleopt. Zeitschrift*, i. 316, 1903, with his introduction to *Die Käfer von Mitteleuropa*, vol. iv. p. 1, 1904).

Much valuable work has been done by Kolbe with regard to classification: his most recent articles (*Zeitsch. für Wissenschaftliche Insektenbiologie*, iv. 1908) are the best on the subject that he has written; in many cases his ideas, although apparently revolutionary, may have, in the end, to be adopted.

Lameere's "Notes pour la Classification des Coléoptères" are well worthy of attention (*Ann. Soc. Ent. Belg.* 1900 and 1903).* He makes a few serious mistakes (*e.g.* he places the Brenthidæ under the Clavicorns and considers the Pulicidæ (Fleas) to be coleopterous †), but his work on the phylogeny of the order is, for the most part, very good, although in many points open to criticism.

In considering the general classification of the Coleoptera, it must be remembered that several characters that have ordinarily been largely or entirely neglected are now taken into serious account. More attention is being paid, as it should be, to the larvæ and life history, and also to the venation of the wings; the latter is in many cases very valuable, especially in the Adepaga and Staphylinoidæ; in the other groups it often breaks down; we may, however, say roughly that we have three well marked systems of venation: (1) the Adepagid, (2) the Staphylinoid, and (3) the Cantharid (or Telephorid). The first of these is chiefly characterised by the presence of one or two transverse veins joining the two median veins, or by two transverse veins situated nearer to the base and joining the upper median or an irregular branch of the lower radial vein to the lower median, thus forming a definite oblong, called the *areola oblonga*, which is very characteristic of the majority of the Adepaga, although it is not found in *Cicindela* or *Rhysodes*; in the second group there are no transverse veins and the whole system of the venation is much simpler; in the third, the chief characteristic is the loop formed at a greater or less distance from the apex by the coalescence of the two median veins, one only (it is usually hard to say which) being continued from the centre of the loop to the margin of the wing; this loop is subject to much modification, and is in some families or groups only partially indicated or quite absent, and therefore the veins in the third division in many cases tend to revert to the Staphylinoid type; this detracts much from the general utility of the wing venation as a character for classification, but it is nevertheless very useful when taken in conjunction with other characters.

* A *résumé* of this paper by Mr. Donisthorpe will be found in the "Entomologist's Record" for 1900, p. 332.

† I believe that he has since abandoned this idea.

Much more attention is now paid to the differences in the internal structure—the formation of the internal male and female reproductive organs (ovaries, testicles, &c.), the number of Malpighian tubes, the concentration or non-concentration of the ganglia, &c.; in many cases these appear to be of great importance, but it is doubtful how far the present generalisations will hold good when a larger number of species have been carefully dissected; at any rate, the question need not here be discussed.

As I have for some time past been occupied with the general Introduction to the Coleoptera for the Fauna of British India, which has been lately issued by the India Office,* I need not say more here than to refer any who may be interested in these points to the more detailed account which I have there given.

The classification which seems to me the least open to objection for the present would be a combination of Sharp's and Ganglbauer's systems, as follows (proceeding from the lower to the higher):

- Sub-Order I. ADEPHAGA.
- Sub-Order II. POLYCERATA (Polymorpha or Polyphaga).
 - Division 1. Staphylinoidæ.
 - " 2. Clavicornia.
 - " 3. Serricornia (including Malacodermata).
 - " 4. Heteromera.
 - " 5. Phytophaga (including Longicornia).
 - " 6. Rhyncophora.
- Sub-Order III. LAMELLICORNIA.

The divisions of the Polycerata must be taken as more or less parallel, and not as in any definite order, and it would, perhaps, be more correct to regard the Malacodermata as parallel with the Adephaga, although they cannot in any way be classified with them.

It does not matter which of the terms Polymorpha, Polyphaga, or Polycerata we adopt, but in the face of the terms in such common use for the groups (Clavicornia, Longicornia, &c.) the last of the three seems preferable.

The old classification by means of the number of the joints of the tarsi—Pentamera, Tetramera, Heteromera, &c., is still very important, but has fallen into disuse, probably from the fact that the character has sometimes been counted as applying to a series (Heteromera), sometimes as tribal, sometimes as a mark of family, and sometimes as merely generic; this must necessarily be the case where there is large variation within the limits of a single family (*e.g.* Staphylinidæ).

With regard to nomenclature very little need be said; this is rather a matter for the compiler of the next British Catalogue, which ought seen to be put in hand. One thing is certain, and that is that we must bring the British list, as regards names, as far as possible into

* The Fauna of British India, including Ceylon and Burma; Coleoptera, General Introduction and Cicindelidæ and Paussidæ. 1912.

accord with the European list, even though this may, in many cases, jar upon our susceptibilities: the dates of the last two European Catalogues are 1891 and 1906 respectively, both of them having been compiled by L. v. Heyden, E. Reitter, and J. Weise, "cum aliis sociis coleopterologicis"; the last of these is in every way a great improvement on its predecessor and ought to be in the hands of all our British Coleopterists; it is not, of course, without its defects, and in certain cases species are sunk as synonymous with others to which they have no relation, but it is of course impossible for the authors of a large catalogue to examine every species themselves; on the whole, however, it appears to be very accurate, and it corrects some of the confusing alterations of names which are found in the catalogue of 1891. In the latter, for instance, Bruchidæ is used for Ptinidæ and Bruchus for Ptinus, while Bruchidæ becomes Mylabridæ and Bruchus Mylabris; in the 1906 catalogue the names Ptinidæ and Ptinus are again reinstated as before, but Lariidæ and Laria are substituted for Bruchidæ and Bruchus, which disappear altogether. An alteration that must be followed is the substitution of Cantharis for Telephorus, as the terms "Cantharoidea," "Cantharidiformia," and "Cantharid" are often used in modern systems of classification; the term Lampyridæ is, however, better than Cantharidæ for the large family which includes the Lycinæ, Lampyrinæ, Telephorinæ, Drilinæ, and Malachiinæ.

There are some alterations that we might, perhaps, hardly agree to, such as the reversal of the order Staphylinidæ, which begins with the Piestinæ (*Prognatha*, &c.) and ends with the Aleocharinæ, for which there seems no special reason; only four species are included under *Homalota*, Mann., the majority being placed under *Atheta*, Thoms.

Taken as a whole the catalogue is more synthetic than analytic and is rather inclined to diminish than increase the number of genera. The nomenclature of the species, with a few exceptions, should be followed.

With regard to the question of aberrations and varieties, we have, in order to secure uniformity with the rest of this work, only made use of the latter term; it is open to any future writer to alter this, but it is very doubtful where the one begins and the other ends; roughly speaking, a colour difference (in the general insect, legs, or antennæ) forms an aberration, while a slight structural difference forms a variety; when, however, we come to the question of pubescence or sculpture, there is a great deal of confusion; in one sense, sculpture is a structural character, as also is pubescence, which is often closely connected with sculpture; and, as a matter of fact, we find that differences in these points are in some cases held to be specific, in others varietal, and in others merely aberrational.

Of course this is all most interesting as regards the phylogeny of species, which "in the making" begin as aberrations, pass on into varieties, and then develop into accepted species; it is therefore practically impossible to draw the line, and if it is impossible, as it often is, to draw the line between species and varieties, it is certainly still more difficult to decide what is an aberration, a variety, or a sub-species.

ERRATA, ALTERATIONS, ETC.

VOLS. I-V

VOLUME I.

- Page 78 line 20 *for* "deeper at apex" *read* "not deeper at apex."
" 80 " 46 *for* "tibiæ" *read* "tarsi."
" 87 " 32 *for* "concave margin of elytra" *read* "concave margin of thorax."
" 195 " 21 *for* "posterior" *read* "anterior."
" 252 " 24 *for* "species" *read* "genera."
" 253 " 11 *delete* "legs black," and line 26 *for* "legs black or pitchy" *read* "legs dark or pitchy-red."

VOLUME II.

- Page 6 line 26 *after* "A* Posterior coxæ conical" *insert* "PÆDERINÆ."
" 10 " 7 *for* "Surrey" *read* "Kent."
" 11 " 35 (and elsewhere) *for* "Charlton, Surrey" *read* "Charlton, Kent."
" 27 " 4 *for* "Surrey" *read* "Kent."
" 61 " 1 *for* "seventh segment" *read* "first visible segment" (*v. Ent. Mo. Mag.* xxxvi. (2 Ser. xi.) 1900, p. 236).
" 131 " 19 *for* "1½ mm." *read* "3 mm."
" 171 lines 16 and 17 *omit* "insect apterous" and "insect winged": it is probable that there are winged and apterous forms of both species.
" 214 line 31 *for* "elytra" *read* "hind body."
" 228 " 29 *for* "scutellum smooth" *read* "scutellum finely shagreened."
" 252 " 6 *delete* "Plymouth."
" 261 " 25 *for* "much narrower than elytra" *read* "much narrower than thorax."
" 270 lines 1 and 4 *delete* "anterior coxæ testaceous" and "anterior coxæ entirely dark" and *substitute* "antennæ longer, segments 4-6 of hind body less sparingly punctured" and "antennæ shorter, segments 4-6 of hind body more sparingly punctured."
" 319 line 36 *for* "larger" *read* "smaller."
338 " 24 *for* "head evidently narrower" *read* "head evidently broader."
363 lines 43 and 48 *for* "base" *read* "apex."

VOLUME III.

- Page 13 line 34 for "4-jointed" read "5-jointed."
 ,, 15 ,, 17 for "deeply emarginate" read "shallowly emarginate."
 ,, 15 ,, 22 for "sides" read "disc."
 ,, 15 ,, 24 for "impunctate" read "very remotely punctured" (also page 18 line 2).
 ,, 57 ,, 34 for "4½ to 8" read "4½ to 5."
 ,, 59 ,, 38 for "6-8" read "6 and 8" (also page 61 line 8).
 ,, 96 ,, 12 for "Kew" read "Ken."
 ,, 98 ,, 32 (and elsewhere) for "Seaford, Devon" read "Seaford, Sussex."
 ,, 182 ,, 6 "Dartmoor, Devon" is probably an error.
 ,, 210 ,, 28 for "thorax" read "forehead."
 ,, 226 ,, 41 for "broader" read "as broad as."
 ,, 229 ,, 14 for "2 mm." read "4 mm."
 ,, 256 ,, 1 for "first or first two joints" read "second or first and second joints."
 ,, 283 ,, 9 for "eyes" read "thorax."
 ,, 310 ,, 10 for "tarsi" read "tibiæ."
 ,, 312 ,, 23 for "apex" read "base."
 ,, 337 lines 26 and 30 for "C and D" read "c and d."
 ,, 378 line 37 omit "thorax duller."
 ,, 378 ,, 38 omit "thorax more shiny."

VOLUME IV.

- Page 25 line 26 for "tarsi" read "tibiæ."
 ,, 97 ,, 46 for "third joint" read "fourth joint."
 ,, 102 ,, 5 for "shorter" read "longer."
 ,, 104 ,, 15 for "third joint" read "fourth joint of all the tarsi."
 ,, 146 lines 22, 23 the male characters assigned to *M. fasciatus* are really those of *M. balteatus*: in *M. fasciatus* the posterior tibiæ are simpler.
 ,, 146 line 33 after "fuscous" insert "in the male."
 ,, 233 ,, 17 after "legs black" insert "or red."
 ,, 333 last line delete "APHTHONA, Chev."
 ,, 334 line 9 insert "APHTHONA, Chev."
 ,, 335 ,, 1 the first part "Transverse impression, &c." does not apply to "Epitrix" and the coxal characters alone should be taken into account.
 ,, 353 ,, 7 for "transparent" read "prominent."
 ,, 367 ,, 37 for "apex" read "base."

VOLUME V.

- Page 20 line 38 for "narrowed" read "thickened."
 ,, 74 ,, 15 (and page 75 line 11) for "increasing" read "decreasing."

- Page 78 line 30 for "*A. flava*, L. v. *thoracica*, L." read "*A. costæ*, Emery."
- „ 133 „ 7 for "apex" read "base" (v. p. 144 note).
- „ 134 „ 24 for "black in both sexes" read "black in male, greenish or bluish in female."
- „ 308 last line of table for "rostrum scarcely curved" read "rostrum strongly curved" (also p. 311 line 2 from bottom).
- „ 371 line 42 for "darker, more pitchy" read "lighter, less pitchy."
- „ 430 „ 31 for "transverse" read "concentric."
- „ 438 „ 24 for " $2\frac{1}{2}$ - $3\frac{3}{4}$ mm." read " $2\frac{1}{2}$ - $2\frac{3}{4}$ mm."

ERRATA IN PLATES.

- Plate 34 Vol. I fig. 1 represents *Helophorus porculus* and not *H. rugosus*.
- Plate 118 Vol. IV. fig. 13 represents *Stephanopachys substriatus* Payk., and not *Dinoderus*.
- Plate 125 Vol. IV. fig. 4 represents *Bruchus incarnatus*, Boh., and not *B. pectinicornis*, L.
- Plate 128 Vol. IV. fig. 2 represents *Lema septentrionis*, Weise, and not *L. erichsoni*, Suffr.
- Plate 168 Vol. V. fig. 13 represents *Tychius squamulatus* and not *T. meliloti*.

THE COLEOPTERA OF THE BRITISH ISLANDS.

(SUPPLEMENT.)

ADEPHAGA.

CARABIDÆ.

CARABUS, Linné.

C. violaceus, var. sollicitans, Hartert, *Novitates Zoologicæ*, xiv. pp. 334, 335 (March 1907). (*V. Champion, Ent. Mo. Mag.* xliv. (2 Ser. xix.) 1908, 124). This is the British form of *C. violaceus*, L., and is stated to differ from the type form of that insect (from Silesia, North Germany and Austria) in having "the elytra less finely, more roughly, and somewhat more irregularly granulated, thus appearing much less smooth." According to Hartert, the true *C. violaceus* has the upper surface of the elytra uniformly covered with fine granulations, without any striations, and the margins of a beautiful reddish violet: apparently it is not British; he does not even mention the *var. exasperatus*, Duft. (*Faun. Austr.* ii. 22) which has been recorded from Portland and the New Forest and more recently by Champion from Parracombe in Devon; in this form the granulation of the elytra is much coarser, and there are more or less distinct tracts of raised lines (*v. Brit. Col.* i. 8).

The *var. purpurascens*, F., has been recorded as British, but I am not sure whether it is the true insect; in this variety the elytra are sharply striated with about a dozen elevated lines, between which granulations are visible. The British species of the genus *Carabus* require careful working out with regard to varieties and aberrations; we probably possess many more of these than have been recorded. In the last European catalogue there are no less than forty-one named varieties and aberrations of *C. violaceus* mentioned; twenty of *C. monilis*; seventeen of *C. catenulatus*; twelve of *C. hortensis*; and forty-seven of *C. cancellatus*.

C. convexus, Fab. *Syst. Ent.*, 1778, 238. Although there is no reason why this insect should not occur in Britain, as it is widely spread over Northern and Central Europe, yet it must be at present omitted from our lists. Apparently only one specimen has been recorded (said to have been taken by Holme in Winstanley Park, Lancashire), and its authenticity is very doubtful.

C. cancellatus, Ill. This species has been restored to our lists on the authority of a single specimen taken by Mr. H. J. Cuthbert at Pouladar, a grassy glen opening on the shore about two miles from Roscarbery village, West Cork, Ireland. Mr. Cuthbert in recording it (*Ent. Mo. Mag.* xxxi. (2 Ser. vi.) 1895, 265) says that it differs from the type form of the insect in having the femora entirely black, and he says that "it is probably a south continental survival, of which we have several analogous instances in the fauna of the extreme south of Ireland, and possibly on the point of becoming extinct there." The specimen has been carefully verified, and is now in the Dublin Museum.

This insect is the *C. granulatus* of Stephens (*Illustrations*, Mand. i. 51), who records four specimens as taken in a chalk pit near Gravesend in the spring of 1826; this and the Irish record are the only ones that we possess of its occurrence in Britain; but there is no reason why it should not occur with us, for, as I said in a note on the Irish record (*l.c.* 266), it is widely spread throughout Northern and Central Europe, and reaches as far south as the Pyrenees and Northern Italy.

C. cancellatus in some ways resembles *C. granulatus*, but is altogether a larger and finer insect, with the elytra broader, more ornate, and more convex, and the large rows of tubercles more conspicuous; the thorax, moreover, is less explanate at the sides; in *C. granulatus* the sides of the elytra are not parallel, and, if anything, widest behind the middle. In *C. cancellatus* they are rather strongly rounded and are widest at or about the middle. It also has the first joint of the antennæ red.

C. nitens, var. niger, Semenow, *Horæ. Soc. Ent. Ross.* 1886, xx. p. 234. Of the same size and shape as the type form, but with the upper surface almost entirely black, and the thorax smoother, with the central line well marked: the border of the thorax and elytra show scarcely any golden sheen, and the red ribs on the elytra are resolved into tubercles behind, the intervals being rugose and showing very little green lustre at the sides.

Denny Bog, New Forest, June, 1895; one specimen (Donisthorpe): Mr. Donisthorpe, in recording the capture of this insect (*Ent. Record*, xi., 1899, 71), says that it agrees in every particular with the description of the unique example taken by Semenow at Archangel. On the same day he took (also in Denny Bog) a black example of *C. arvensis*.

NOTIOPHILUS, Duméril

The constitution of the genus is by no means definitely settled, whether as regards the British or the European species. Several of them are so closely allied that it is hard to distinguish them, and as the individuals vary somewhat *inter se*, a considerable number of species have been formed in the past which have gradually been sunk as synonyms.

N. pusillus, *Waterh. Ent. Mag.* i. 33, 207. (*N. bigeminus*, Thom., *Arch.* 1833, 112.) Dr. Joy (*Ent. Mo. Mag.* xlv. (2 Ser. xix.) 1908, 103)

reintroduced this species as British and says that he has examples from Bradfield and Southport. Subsequently (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 12) he withdrew the species, saying that the insects referred to as belonging to *N. pusillus* are merely *N. palustris* with very dark legs. Mr. Champion (*l.c.* 1908, 271), referring to a small mountain form of *N. aquaticus* recorded by him in 1873* (Ent. Mo. Mag. x. 158), comes to the conclusion that the form is probably the *N. strigifrons* of Baudi, which is really a variety of *N. aquaticus*. Subsequently however (*l.c.* 1909, 12) he comes to the conclusion that it is rather a variety of *N. pusillus*. It would, however, considering the great variability of the insects, be best perhaps to regard both *N. pusillus* and *N. strigifrons* as varieties of *N. aquaticus*. Extreme forms are very different in the genus, but they are in many cases closely connected by intervening examples. Dr. Joy records *N. strigifrons* from Dalwhinnie and Blair Athol, and Mr. Donisthorpe from Carrantuohill, Co. Kerry.

N. hypocrita, Putz, Mém. Liège 66, 157; Spaeth, Verh. zool.-bot. Ges., Wien. 49, 1899, 517. Dr. Joy (Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 103) also introduces the above species as British, and says he has examples from Bradfield, Wellington College, Lundy Island and Garve, Ross, and that it is probably generally distributed. It is distinguished by having the tibiae reddish, and is narrower and more convex than *N. palustris*, and the external interstices of the elytra are distinctly alutaceous. It is said to bear somewhat the same relation to *N. palustris* as *N. substriatus*, Wat. does to *N. biguttatus*, F. I have always thought that *N. substriatus* was only a variety, and it is most probable that *N. hypocrita* cannot be regarded as more than a race of *N. palustris*.

In Brit. Col. i. 11, 12, I have wrongly written *N. quadriguttatus*, Dej. for *N. quadripunctatus*, Dej.; this species is very like *N. biguttatus*, but apart from the two large pores on the elytra, it may be distinguished by the almost straight sides of the thorax and its strong sculpture; it is probably rightly assigned specific rank, although some authors have regarded it as a somewhat abnormal form of *N. biguttatus*.

NEBRIA, Latreille.

N. gyllenhalii, Schön, var. **rufescens**, Stroem. 1765 (= *N. arctica*, Dej., Spec. ii. 235). This variety has the elytra and often the tibiae ferruginous or brownish yellow. It has occurred in the shingle of the river Gelt in Cumberland and also in Scotland (Donisthorpe Ent. Record xvii., 1905, 103), Ben-na-Buir (Donisthorpe, 1910).

Var. balbii, Bon., Observ. Ent. i. 45. This is the variety with the legs and usually the first joint of the antennæ red. Ganglbauer records it

* Mr. Champion says that "the insect in question is much smaller than the typical *N. aquaticus*, bronze or bluish-bronze in colour, and has the second and third joints of the antennæ wholly or in part testaceous, the prothorax much narrower behind, and the elytra very finely punctate-striate, the striae almost obsolete towards the apex."

from England, and it is said to be common on Snowdon; it appears to be confined to high mountains. I have a specimen in my collection (without locality) which is considerably smaller than the ordinary examples of *N. gyllenhalii*. Ben-na-Buird (Donisthorpe, 1910).

STENOLOPHUS, Dejean.

S. plagiatus, Gorham. Annals of Scottish Natural History, January, 1901, p. 22. Oblong, subparallel, black with the thorax red, slightly narrowed behind, posterior angles obtuse, base broadly foveolate on each side, upper surface with scattered punctures: elytra yellow, with a blackish band on each near the suture, not reaching either the base or the apex, deeply striate, with a long scutellary stria.

Two specimens taken by Mr. Dunsmore, near Gourrock on the Clyde, Scotland.

Mr. Gorham has described these insects as belonging to a new species. They are allied to *S. discophorus*, Fisch., and an insect identical with them stands under the latter name in the British Museum: it does not, however, accord with Fischer's species, which has a common blue-black patch on the apical half of the elytra, and which was described from a North Siberian insect. Mr. Gorham says: "I possess specimens of *S. discophorus* from Russia, and I may say at once that our insect and that in the British Museum, attributed to South France, are a wholly different species. They are to be distinguished both from it and from *S. skrimshiranus*, not only by each elytra having a long blackish plagia about half the length of the elytra, not reaching the base or apex, and leaving the suture yellow; but also by the rather longer, more parallel form, and by having the thorax longer, and narrowed towards the base, whereas in *S. discophorus* it is nearly quadrate (although rounded on the sides), that is to say, the width at the anterior and posterior angles is about equal, and about equal to the length."

The species may have been introduced, as others have been, in ballast or otherwise, but against this may be alleged the rareness of the insect in Europe. It was found under stones above high-water mark, behind an enclosure on the beach or shore fenced in for timber to season in the water—a natural habitat for the insect: and moreover, two specimens were obtained together.

ACUPALPUS, Dejean.

In the European Catalogue *A. derelictus*, Daws. (Geod. Brit. 159) is given as synonymous with *A. dorsalis*, F. *A. dorsalis* is a very variable insect. Mr. Rye expressed his opinion that Dawson's insect was quite distinct (Ent. Ann., 1866, p. 60), it being larger and wider, with its thorax broader, not straightly narrowed behind, but somewhat rounded and *with the basal fovea quite unpunctured*. Mr. Wollaston pointed out the proportionate superior length of its tarsi, especially of the claw

joints. Mr. Donisthorpe has seen the insect, which is now in the possession of Mr. Dawson's son, and considers it bears out Mr. Rye's remarks.

HARPALUS, Latreille.

H. griseus, Panz., must be omitted from the British list: I know of no authentic specimen.

The insect formerly introduced as *H. luteicornis* by Saunders, appears to be the female of *H. tardus*, Panz. (v. Brit. Col. i. 52).

H. latus, var. erythrocephalus, F. Syst. El. i. 197. This variety differs from the type-form in having the head and mandibles of a dark red colour. The red side-border of the thorax is also more marked, the colour being continued round the margins of the elytra: the scutellum also is reddish. It was recorded by Mr. E. A. Newbery (Ent. Mo. Mag. xxxv. (2 Ser. x.) 1899, 159) as having been taken in numbers by Mr. W. E. Sharp under flood refuse on the banks of the river Lleidr, Dolwyddelen, Carnarvonshire. The examples of *Carabus erythrocephalus*, F. referred to by Dawson (Geod. Brit. 146) as varieties of *H. fulvipes* must probably be referred to this insect. This variety has also been taken on Lazonby Fell, Cumberland (Britten), Snowdon (Sopp & Tomlin), Nethy Bridge, Scotland (Beare & Donisthorpe), and in Co. Antrim, Ireland (Tomlin).

H. froelichi, Sturm., Deutsch. Ins., iv. 117, 67. (*H. tardus*, Panz., Faun. Germ., 37, 24.) Allied to *H. tardus*, Gyll., but distinguished by its shorter thorax, which is narrower in front, and by the broader and somewhat more convex elytra. Black, with the antennæ and palpi yellowish-red. Thorax almost twice as broad as long, with the anterior margin very shallowly emarginate, the scarcely pronounced front angles bluntly rounded, and the posterior angles right angles; the elytra are scarcely a third longer than their breadth taken together, broader than the thorax, strongly striate, with the interstices somewhat convex; the femora and tibiæ are brownish black and the tarsi reddish. L. $7\frac{1}{2}$ – $8\frac{1}{2}$ mm. Neighbourhood of Ipswich.

The species was introduced as British by Mr. E. A. Newbery, Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 84, on specimens taken by Mr. Claude Morley and Mr. Ernest Elliott, in May 1898, under stones and logs on "Foxhall plateau," a barren wind-swept field just a mile from Martlesham Heath and four miles from Ipswich; eighty specimens were taken from May 4, 1897, to August 7, 1899, after which date Mr. Morley considered it to have disappeared (v. Ent. Mo. Mag. xxxvii. (2 Ser. xii.) 61); in April 1903, however, Mr. Morley again took it in the same locality, and Mr. Beaumont obtained three or four specimens in May (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 205).

H. froelichi, by its short, broad, convex form, and thorax not narrowed behind, is chiefly allied to *H. serripes*, Quens; it is the *H. tardus* of Panzer, and the species standing as *H. tardus* in our collections must be referred to *H. rufimanus*, Marsham (Ent. Brit. 441 22); if the

H. tardus of Gyllenhal (Ins. Suec. ii. 120, 33) is synonymous with this insect the name ought to have priority.

The following table, drawn up by Mr. Newbery, may be found useful :

- I. Posterior femora having numerous (12-14) setigerous punctures on the internal margin. Thorax strongly transverse, form short, broad and convex, antennæ short, yellow-red, elytra nearly as shining in the female as in the male H. FROELICHI, Sturm.
(*tardus*, Panz. *nec* Brit. Cat.)
- II. Posterior femora having from three to eight punctures.
- i. Antennæ and palpi having the middle joints spotted with black, form broad and convex, elytra nearly as shining in the female as in the male H. SERRIPES, Quens.
- ii. Antennæ and palpi entirely yellow-red, form narrower and but little convex, male shining, female dull H. RUFIMANUS, Marsh.
(*tardus*, Brit. Cat.)

ANISODACTYLUS, Dejean.

A. nemorivagus, Duft., Faun. Austr. ii. 79, 84. Closely allied to *A. binotatus*, Fabr., but plainly smaller, and with shorter elytra; palpi ferruginous; thorax a little more contracted behind, and with the posterior angles projecting in a somewhat sharper tooth; the base is finely and less rugosely punctured, and has an impressed stria on each side; the elytra are only a third longer than together broad, and are more strongly sinuate behind; legs entirely red. L. 8 mm.

Taken by Mr. Champion on the heaths about Woking and Chobham; it has also occurred at Bournemouth. Dr. G. W. Nicholson has found it at Cromer.

The typical form of this species had not been recorded from Britain until introduced by Mr. Champion in 1896 (Ent. Mo. Mag., xxxii., 2 Ser. vii. 253); it was taken by him in company with the variety with the legs entirely black, or black with reddish tarsi; this variety, which had not up to that time been noticed on the Continent, is the *A. atricornis* of Stephens, and the *var. atricornis* of *A. binotatus*, Dej., of our catalogues, the latter determination being in error. Mr. Champion adds in his note the following distinctive characters for separating *A. binotatus* and *A. nemorivagus* :

Marginal sulcus of the prothorax extending rather broadly to the anterior angles; elytra with the sides and apex broadly and distinctly pubescent in both sexes, the sides moderately sinuate near the apex; legs black, or black with the tarsi reddish (*binotatus*, Fabr., *rufitarsis*, Steph., and *calceatus*, Steph.) or entirely reddish (*sparcaticornis*, Dej.) *binotatus*, Fabr.

Marginal sulcus of the prothorax becoming very narrow in front : elytra shorter and less parallel, with the sides very narrowly, and rarely the extreme apex, indistinctly pubescent in both sexes, the sides strongly and abruptly sinuate near the apex ; size much smaller ; legs black or black with the tarsi reddish (*atricornis*, Steph., and *nigricornis*, Steph., 1832), or entirely reddish (*memorivagus*, Duft., 1812, *gilvipes*, Dej., 1828) *memorivagus*, Duft.

The type, red-legged variety, appears to be much scarcer than the black-legged form, the same being the case with *A. binotatus* ; the species lives at the roots of heather on sandy commons, and is generally found in company with *Harpalus honestus*, which it much resembles ; it is widely distributed in Central and Northern Europe.

PTEROSTICHUS, Erichson.

P. cupreus, L., var. **erythropus**, Fald., Faun. Tr. i. 50. In this variety the legs are almost entirely yellowish-red, and the third joint of the antennæ is also of the same colour : in the var. *affinis*, the femora only are red or reddish, and the first two joints only of the antennæ, as in the type, are yellowish-red.

P. cupreus, L., var. **cœrulescens**, L. Some blue specimens of *cupreus* were recorded as above (Irish Nat., 1903, p. 61), but Ganglbauer and the last European catalogue regard *cœrulescens*, L. as the same insect as our *versicolor*. In the 1891 catalogue, *versicolor* was given as a synonym of *cupreus*, and *cœrulescens* as a var.

AMARA, Bonelli.

A. anthobia, Villa, Col. Eur. Dupl. (Mediol. 1833), 33, 5. This species is allied to *A. familiaris*, Duft. and *A. lucida*, Duft. It is a little smaller than the former and distinctly, as a rule, larger than the latter, which it much resembles in general appearance, and with which it has been confused in our collections ; from both species, however, it differs in its shorter thorax which is narrower towards the base, and is smaller, thus giving the insect a heavier appearance behind ; the chief difference, however, lies in the very distinct prescutellary pore on each elytron, which is umbilicate and piliferous and is attached to the base of the scutellary stria ; the upper surface is more shining (especially in the ordinary bronze specimens) and the legs are of a colder and more umber shade of red than in either *A. familiaris* or *A. lucida*. L. 5-6 $\frac{3}{4}$ mm.

Leighton Buzzard, Deal, Shirley, Chatham, Carshalton, King's Lynn, Oxford, New Forest, Barnes Common, Burwell Fen, &c.

This addition to our lists was introduced by the Rev. George A. Crawshay (Ent. Mo. Mag. xli. (2 Ser. xvi.), 87) ; and he gives further details in Vol. xlii. (2 Ser. xvii.), 46 ; Mr. Crawshay has carefully worked out the range in size of a large number of examples of *A. familiaris*, *A. lucida*, and *A. anthobia*, and finds it to be respectively, 5 $\frac{1}{4}$ -7 $\frac{1}{4}$ mm., 4 $\frac{3}{4}$ -6 mm., and 5-6 $\frac{3}{4}$ mm.

A. continua, Thoms., Opusc. 1873, 529, **var. convexior**, Steph., Mand. i. 131. If Stephens' insect is to be considered as a mere convex variety of *A. continua*, as it probably ought to be, his name must have the priority, as it has in the European catalogue of 1891, and we must therefore alter the nomenclature to *A. convexior*, Steph. var. *A. continua*, Thoms.; the variation, however, appears to be a very slight one.

A. famelica, Zimm., Gistl. Faun. i. 36. (*A. contrusa*, Schiödte, Danm. Eleuth. 186, 21. *A. vulgaris*, Thoms., Skand. Col. i. 249 (*nec* Panz).) As a rule somewhat larger than the largest examples of *A. spreta* which it chiefly resembles in sculpture and colour; the two basal joints of the antennæ are usually red, but the second is often black on the upper side and sometimes both are black; the thorax is very short, double as broad as long posteriorly, rounded at the sides, with the anterior angles produced and moderately sharp, and the hind margin nearly straight; the posterior angles are slightly less than right angles; the base on either side is furnished with two distinct impunctate impressions; the elytra are long, more than double as long as the pronotum, and broader in the middle than its base, and the striae are rather fine and do not become deeper behind; legs entirely black. The colour is variable, nigro-cæruleous or almost black specimens occurring. Female with two setigerous pores on each side of the anal segment. L. 6-8 mm.

Woking and Chobham; taken by Saunders and Champion (Ent. Mo. Mag. xxxii. (2 Ser. vii.), 97). Netley Heath (Walker).

The species as Mr. Champion (*l.c.*) says is intermediate between *A. spreta*, Dej. (= *curta*, Steph.) and *A. lunicollis*, Schiödte (= *vulgaris* Panz. *nec* Thoms.); from the first of these it may be separated by its more elongate elytra, the distinctly more slender and elongate black legs (the tibiæ are pitchy red in *A. spreta*) and the darker first and second joints of the antennæ; the males, moreover, have the middle and hind tibiæ less bowed, and the females have two setigerous pores (instead of one as in *A. spreta*) on either side of the fifth ventral segment near the margin; from *A. lunicollis*, with which it agrees in the dark basal joints of the antennæ and the black legs, it differs in having the thorax less dilated, with the hind angles more rectangular, and the elytral striae not more deeply impressed towards the apex, the insect in this respect agreeing with *A. spreta*. The species is widely distributed in northern and central Europe, but it is very rare in Germany, and has not been recorded from France.

LÆMOSTENUS, Bonelli.

L. (Læmosthenes) complanatus, Dej., Spec. Col. iii., p. 58. (*L. alatus*, Woll., Ins. Mader. 27; *L. chilensis*, Gory., Ann. Soc. Ent. Fr. 1833, p. 232; *L. rufitarsis*, Curtis., Trans. Linn. Soc. xviii., 1839, p. 189.) This insect is very like *Pristonychus terricola*, Herbst., with which it has been found mixed in several collections; it is, on

the average, very slightly smaller, with the elytra more parallel sided and the thorax less contracted behind; the shape of the thorax, however, in both species is somewhat variable; the colour is of a more pronounced black, a slight bluish reflection being present in *P. terricola*; the legs are considerably shorter, and the insect is winged; in the last named species the wings are obsolete. L. 13-15 mm.

First recorded as taken on sandy soil near the sea, about three miles from Nelson's Pillar, Dublin, by Mr. Stanley W. Kemp (Ent. Mo. Mag. xxxviii. (2 Ser. xiii.), 216; Strood, in a granary (Hudson Beare); Woolwich (Bedwell); Plymouth, in a deep crevice in a tree, blown down by a storm on the previous day (J. H. Keys); Isle of Sheppey (J. J. Walker), very plentiful in August 1905 in a large heap of sewage and condemned sacks from the Sheppey Glue and Chemical Works; Calbourne, Isle of Wight (Pool); Southwick near Brighton (Dollman).

The species has a very wide range and is evidently distributed by commerce; Mr. Walker has observed it at Gibraltar, Valparaiso (Chili), and Port Adelaide (South Australia), and also in abundance near all the ports in New Zealand which he has visited; it is a common circum-Mediterranean insect.

ANCHOMENUS, Erichson.

A. (Agonum) Viduus, Panz., var. **emarginatus**, Gyll., Ins. Suec. iv., 450. The insects with projecting shoulders and emarginate base of elytra, standing in our collections as *v. moestus*, Duft., must be referred to the above insect. The true *v. moestus* is only a deep black form of *A. viduus*, without any metallic reflection.

BEMBIDIUM, Latreille.

B. iricolor, Bedel, Faun. Col. Bass. Seine. i., p. 35. In introducing this species as British, Mr. Newbery (Ent. Mo. Mag. xxix. (2 Ser. iv.), 250), states that it is the insect described by me as *B. riparium*, Ol., and that he has seen specimens of it, all taken near brackish water, from Rainham, Plumstead, Plaistow, Sheerness and Southsea, and he further proceeds to reinstate *B. lunulatum*, Fourc. (1785) = *riparium*, Ol., and auct., as distinct from Bedel's species, and gives the following table :

- I. Elytra with the 7th stria indicated by a row of seven or eight punctures **B. BIGUTTATUM**, F.
- II. Elytra with the 7th stria wanting.
 - i. Middle joints of antennæ about three times as long as broad; interstices of elytra broader and flatter. L. 4-5 mm. **B. IRICOLOR**, Bedel.
 - ii. Middle joints of antennæ at most $2\frac{1}{2}$ times as long as broad; interstices of elytra narrower and more convex. L. $3\frac{1}{2}$ mm. **B. LUNULATUM**, Fourc. = **RIPARIUM**, Ol., et auct.

I appended a note to Mr. Newbery's article as follows: "In my book I have allowed *B. riparium* (? = *lunulatum*, Fourc.) to stand as a separate species, on the ground of the total absence of the 7th stria of the elytra, but I felt considerable doubt in the matter, and believe it to be only a form of *B. biguttatum*. As for *B. iricolor*, the characters assigned to it by Bedel are certainly not enough to give it specific rank; they are purely comparative and very slight, and at most the insect appears to be a local variety found, as above stated, near brackish water; forms found in such localities are often somewhat different from the type. It is a pity, too, to further confuse the nomenclature and, in any case, to revive *B. lunulatum* is to cause a confusion with *B. lunatum* that is far best avoided, if possible; several of the groups of Bembidium are quite confused enough already. Beare and Donisthorpe in their catalogue (1904) retain *B. iricolor*, as separate from *B. riparium*, but have refrained from reinstating the name of *B. lunulatum* for the latter species."

Since the above was written Mr. Newbery has discovered that the disc of the thorax in *B. iricolor* and *B. lunulatum* is not alutaceous, and has kindly sent me the following table of all the species of the *Philochthus* group of the genus Bembidium. The head is alutaceous in all the species, most conspicuously so in *B. æneum*, Germ., and least conspicuously in *B. biguttatum*, Fab.

I. Disc of thorax alutaceous:

- i. 7th stria of elytra indicated by about ten or more punctures; first joint of antennæ, and the legs, red-yellow. L. $3\frac{1}{2}$ -4 mm. *B. BIGUTTATUM*, F.
- ii. 7th stria of elytra wanting, or (rarely) indicated by two or three punctures near the base.
 1. Legs and antennæ black, or very nearly so; size larger; apical elytral spot usually wanting (at most indistinct). L. 4 mm. *B. ÆNEUM*, Germ.
 2. Legs and first joint of antennæ (at least at base) reddish; smaller species. L. $2\frac{3}{4}$ - $3\frac{1}{4}$ mm.
 - A. Contour of elytra more parallel, with shoulders more marked; apical spot nearly always present; colour more æneous *B. GUTTULA*, F.
 - B. Contour of elytra more ovate and convex, with the shoulders nearly effaced; apical spot usually absent; colour black or brown (? immature), not æneous *B. MANNERHEIMI*, Sahl.

II Disc of thorax not alutaceous.

- i. Size larger; middle joints of antennæ about three times as long as broad; elytral striæ less deeply punctured in front. Found in tidal marshes, on the banks of tidal rivers, and on the sea-shore. L. 4-5 mm. *B. IRICOLOR, Bedel.*
- ii. Size smaller; middle joints of antennæ two and a half times as long as broad; elytral striæ more deeply punctured in front; common everywhere. *B. LUNULATUM, Fourc.*

All these species are regarded as distinct in the 1906 European catalogue, but there is still something to be said on the other side. It is difficult to describe the differences between *B. guttula* and *B. Mannerheimi*, but when the insects are put side by side they are quite obvious; the shape of the elytra and the colour are quite different. The presence or absence of the elytral spot is of little value as a character.

B. callosum, Kust., Käfer, 9, 23 (1847). (*B. laterale*, Dej., Spec. v., 185.) This insect was introduced by Dawson (Geod. Brit. p. 206, Plate iii. fig. c.) on one specimen "captured by Mr. Stewart on Woking Common in the summer of 1851," and the species has been reinstated by Beare and Donisthorpe (Catalogue, p. 4) on the ground that it is still extant. The following is Dawson's description:

This species very nearly resembles 4-guttatum, but is rather smaller, narrower, and more delicately formed. The principal characters which distinguish it from that species are stated as follows: The colour of a deeper black; the base of the first joint of the antennæ alone testaceous red; the elytra more finely striated and the punctuation more minute, the humeral spot continued, but more narrowly, along the lateral margin till it unites with the lower one, which is smaller and less round than the corresponding one in 4-guttatum; in other respects they do not differ. L. 2 lines.

Dawson's figure does not agree with his description, which he has evidently copied, as is proved by his use of the words, "are stated as follows." In the figure the posterior spot is quite distinct and not joined to the lateral extension of the anterior spot; the colour of the base of the antennæ varies considerably in *B. quadriguttatum*, and I have specimens from Luccombe Chine (Isle of Wight) with the base almost entirely black. I have not seen Dawson's example. His collection is now in the possession of his son, and Mr. Donisthorpe, who has seen it, says it agrees well with the figure.

B. virens, Gyll., Faun. Suec. iv., 407. (*B. pfeiffi*, Sahlb., Ins. Fen. i. 195, 13: Thoms. Skand. Col., i. 201.) Very closely allied to *B. prasinum*, Duft., but distinguished by having the basal joint of the antennæ entirely black (in *B. prasinum* the joint is always testaceous

underneath, and sometimes entirely so), and especially by having the striae of the elytra distinctly, though finely, punctured: the insect, moreover, is evidently less depressed, more shining, and of a brighter aeneous colour. L. 5 mm.

Shores of Loch Maree, Ross-shire, Scotland.

This species was taken not uncommonly by Mr. Champion and Mr. R. W. Lloyd on July 6, 1892, and was introduced as British by Mr. Champion, who had placed it in his collection near *B. prasinum* and forgotten it, in 1895 (Ent. Mo. Mag. xxxi. (2 Ser. vi.) 263). It has occurred in Sweden, Lapland, Finland, Norway, and Switzerland, but has not been recorded from Germany or France. As both Gyllenhal's and Sahlberg's descriptions appeared in 1827, it is not quite certain which of the above names has priority, but as Mr. Champion (*l.c.*) says it may be remarked that C. R. Sahlberg himself quotes Gyllenhal's name, at the same time using that of *B. pfeiffi* for the insect.

B. argenteolum, Ahr., Neue Schrift. Hall. Gesells., ii. 2, 23, 3, t. i., f. 12. Closely allied to *B. paludosum*, Panz., with which it has been confused in collections, but distinctly larger and more robust, with the thorax more evidently broader than long and the posterior angles sharp and prominent: in *B. paludosum* the thorax is at most slightly broader than long, and the posterior angles are not prominent; the colour, moreover, of the latter insect is dull, or very dull, whereas *B. argenteolum* is more shining and more distinctly bronze; this character, however, is somewhat variable. L. 6 mm.

Ardmore, Lough Neagh, Ireland (Rev. W. F. Johnson).

The Rev. W. F. Johnson first captured this species in June 1899, and it was introduced as British by Mr. Johnson and Mr. J. N. Halbert in their excellent "List of the Beetles of Ireland" (Proceedings of the Royal Irish Academy, 3 Ser., vol. vi., No. 4, p. 587). The Irish records hitherto existing for *B. paludosum* must be referred to this species.

Apart from the differences above mentioned the hue of the antennæ and the tibiæ are lighter than in *B. paludosum*: in the latter species the tibiæ are in my specimens almost entirely black, whereas in the specimens of *B. argenteolum*, kindly given me by Mr. Johnson, they are almost entirely red; the characteristic impressions on the elytra are said to be oblong in *B. paludosum* and quadrate in *B. argenteolum*. I cannot see much difference in this respect, but in my specimens of the latter species they are less marked than in *B. paludosum*.

B. argenteolum has been recorded from Germany, Northern France, Sweden, and Siberia.

TRECHUS, Clairville.

T. subnotatus, Dej. Spec. v. 18. Pitchy, with an oblong spot on shoulder, a subrotundate one before apex, and the inflexed margin of elytra, testaceous. Antennæ with the second joint shorter and thicker than fourth. Thorax subcordate with sides a little arched, and posterior angles small, prominent and acute. Elytra sub-oblong-ovate, punctate-

striate, the marginal striae nearly obsolete. Introduced by Mr. Newbery (Ent. Mo. Mag., 1910, p. 131) on a single specimen shaken out of a tuft of grass at Shaldon, near Teignmouth, on February 26, 1910, by Mr. P. de la Garde. The species occurs in Italy, Greece, Asia Minor, &c., and can only provisionally be regarded as British till further captures are made.

DROMIUS, Bonelli.

D. angustus, Brullé, Silb. Rev. ii. 1834, 105 (*testaceus*, Er. Kaf. Mark. Brand. 30). Ferruginous, with the elytra often dark reddish brown, antennae, palpi and legs light reddish yellow; forehead longitudinally rugose at the sides only (and not completely across as in *D. meridionalis*, Dej.), smooth or feebly punctured in the middle: thorax about as broad as long, not strongly narrowed behind, with the sides less broadly dilated than in *D. agilis*, F.; elytra longer and relatively narrower than in the last two mentioned species, with a row of punctures on the seventh interstice only, in which it agrees with *D. meridionalis*, and differs from *D. agilis*. L. $5\frac{1}{2}$ – $6\frac{1}{2}$ mm.

Mr. Champion (Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 124), records five specimens as having been taken by his son at Woking in January 1906, under bark of old posts. Ganglbauer mentions it as found rarely in Central Europe, under bark. It is very likely in several of our collections under *D. meridionalis*.

D. agilis, var. bimaculatus, Dej. Spec. I. 240. This variety differs from the type form in having on their anterior half a light spot extending to the base, and before the apex a further small spot which is often obsolete.

A single specimen of this variety was taken by Mr. Donisthorpe at Battle, near Hastings, in the early part of 1906. (Ent. Record, 1906, p. 75.) This insect is evidently very rare. Subsequently recorded by Mr. Tomlin, from the New Forest.

HALIPLIDÆ.

HALIPLUS, Latreille.

It has long been known that the species of *Haliplus*, especially those of the *H. ruficollis* group, were very ill-defined, and it has been impossible to determine them with any satisfaction; more than thirty years ago Julius Gerhardt called attention to the value, as a differential character, of an extremely fine irrorate punctuation found on the elytra of the females (Zeitschr. für Ent. Breslau, 1877, 34); this, however, has been made but little use of until recently. Mr. Newbery was aware of the character when he introduced his *H. immaculatus* (Ent. Mo. Mag. xliii., 1907, 4), but it has been left to Mr. J. Edwards to show its full value in separating the species; this he has done in a paper published by him in the "Entomologist Monthly Magazine" (vol. xlvii. 2 Ser. xxii.) 1911, i.), in which he gives a table containing no fewer

than sixteen British species. The shape of the ædeagus and its side lobes form a valuable character, and Dr. Joy has, by dissecting out these parts in several of the species, proved their distinctness. The new species mentioned in the paper are my var. *pallens* of *H. confinis* (Brit. Col. i. 153), which Mr. Edwards now raises to specific rank, *H. fulvicollis*, Er., *H. heydeni*, Wehncke, *H. wehnckeii*, Gerh. (= *immaculatus*, Newbery), and *H. immaculatus*, Gerh. (*nec* Newbery). It is probable that there will be one or two other species, if not more, to be brought forward.

We give Mr. Edwards' table :

- I. Elytra with sub-regular rows of shallow punctures :
- i. Base of thorax without a longitudinal impression opposite the fourth row of elytral punctures. Prosternum not margined, coarsely punctured *H. OBLIQUUS, F.*
 - ii. Base of thorax with a longitudinal impression, bounded outwardly by a distinct ridge, opposite the fourth row of elytral punctures. Prosternum margined, finely punctured.
 1. Pale yellow, black lines on elytra obsolete on the basal fourth. Thorax little more than two and a half times as broad as long, less contracted in front *H. PALLENS, Fowler.*
 2. Usually red-yellow, black lines on the elytra complete to the base. Thorax at least three times as broad as long, more strongly narrowed in front *H. CONFINIS, Steph.*
- II. Elytra with regular rows of deep punctures :
- i. Base of thorax without a longitudinal impression on each side opposite the fourth row of elytral punctures.
 1. A row of large punctures across the base of the thorax.
 - A. Elytra without dark markings. Front edge of thorax not roundly produced in the middle.
 - a. Head large, more than half as wide as the base of the thorax. Body sub-elliptic with parallel sides. Front edge of thorax biconcave, produced into a slight angle in the middle *H. MUCRONATUS, Steph.*
 - b. Head moderate, less than half as wide as the base of the thorax.

- Body widest before middle of elytra.
 Front edge of thorax not produced
 in the middle H. FLAVICOLLIS, *Sturm.*
- B. Elytra with dark spots. Front edge
 of thorax sinuate, slightly roundly
 produced in the middle.
- a. Elytra with the suture and a
 variable number of oblong spots
 which are situate on the interstices
 and do not, any of them, touch the
 suture, blackish. Sides of thorax
 straight H. FULVUS, *F.*
- b. Elytra with the suture and a variable
 number of irregular spots, which
 are not markedly oblong, and some of
 which touch the suture, blackish.
 Sides of the thorax distinctly con-
 vex H. VARIEGATUS, *Sturm.*
2. Punctures on the base of the thorax
 but little larger than those across the
 apex. Sides of thorax straight and
 forming a distinct angle with the out-
 line of the elytra. The latter with
 more or less interrupted dark lines H. LAMINATUS, *Schall.*
 = CINEREUS, *Aubé.*
- ii. Base of thorax with a longitudinal im-
 pression on each side opposite the fourth
 row of elytral punctures.
1. Head, in greater part, pale. Thoracic
 impression not falcate, nor reaching the
 half length of the thorax. Metasternum
 simple.
- A. Elytra with the dark lines 1-4 un-
 equal in width, distinctly widened on
 the disc, 5-7 interrupted at the base, in
 the middle, and at the apex, and often
 confluent.
- a. Thorax apparently more than twice
 as broad as long, the sides strongly
 convergent in front. Elytra evidently
 widest before the middle.
- a*. Elytral interstices in the female,
 wholly or in part, with an extremely
 fine irrorate punctuation.
- a†. Elytral interstices in the female
 punctate throughout. Usually a
 little larger than *H. heydeni*, and

- much less rapidly narrowed behind. Inner claw on front tarsi of male about two-thirds as long as the outer, wider and more strongly curved H. RUFICOLLIS, *De Geer*.
- b†. Elytral interstices in the female punctate across the apex and sometimes along the distal half of the suture. Similar to *H. ruficollis*, but scarcely so wide at the shoulders and more gradually narrowed behind. Dark red-yellow in colour with the black markings on the elytra more pronounced . . . H. FULVICOLLIS, *Er*.
- b*. Elytral interstices in the female without punctuation, generally smaller than *H. ruficollis*, comparatively wider at the shoulders and more rapidly narrowed behind. Claws on front tarsi of male subsimilar . . . H. HEYDENI, *Wehncke*.
- b. Thorax not more than twice as broad as long, the sides moderately convergent in front. Elytra widest in the middle, with an oblique pale band from the shoulder to the suture, followed by another oblique band of approximately equal width, but composed of short, black, longitudinal lines H. FLUVIATILIS, *Aubé*.
- B. Elytra with the dark lines 1-4 of uniform width throughout, 5-7 less decidedly, or not at all, interrupted.
- a. Sides of elytra usually sub-parallel, as in *H. lineatocollis*. Elytral interstices of the female punctate throughout. Left side-lobe of ædeagus sub-falcate, without a fringe on its concave edge H. STRIATUS, *Sharp*.
- b. Sides of elytra continuously curved.
- a*. Elytral interstices of female punctate on the apical half, the punctuation becoming gradually evanescent about the middle. Left side-lobe of the ædeagus with a fringe of long, more or less coherent, hair-like strips of delicate membrane on the distal half of its concave edge.

Ædeagus obtusely rounded at the apex with a subrectangular projection near the apical third of its convex edge

H. WEHNCKEI, *Gerh.*

b*. Elytral interstices of female without punctuation. Left side-lobe of ædeagus with a large triangular tooth near the middle of its concave edge. Ædeagus narrowly pointed, its convex edge a little subangularly dilated near the middle

H. IMMACULATUS, *Gerh.*

2. Head black or blackish. Thoracic impression falcate, reaching at least to the half length of the thorax. Metasternum with two straight, divergent keels

H. LINEATOCOLLIS, *Marsh.*

The above characters seem to be satisfactory, but it should be remembered that Bedel, who is usually a very accurate observer, remarks (*Faune. Col. du Bassin de la Seine*, i, 222) on the occurrence of every shade of transition in colour, form and punctuation in a large series of the *H. ruficollis* group, and he also alludes to the dimorphic character of the sculpture of the elytra in the females, some having the elytra smooth, whereas in some it is more or less "alutaceous"; Mr. Edwards says that he has found no tendency towards dimorphism in the species, and rightly objects to the term "alutacées" by which, however, Bedel evidently refers to the irrorate punctuation.

H. pallens, Fowler (*Edwards, Ent. Mo. Mag.* xlvii. (2 ser. xxii.) 1911, 5). *H. confinis*, *Steph.*, var. *pallens*, Fowler, *Brit. Col.* i. 153. The ground colour in this species is the same as in *H. obliquus*, from which it differs in the possession of a longitudinal impression, bounded outwardly by a distinct ridge on the base of the thorax, opposite the fourth row of elytral punctures. The black markings on the elytra somewhat resemble those of *H. obliquus* at first sight, but the four inner lines are not interrupted behind the middle as in that species; the suture and the base of the elytra are narrowly black. It is paler and narrower than *H. confinis*, with the thorax longer in proportion to its width and the elytral pattern different. L. $3\frac{1}{4}$ - $3\frac{1}{2}$ mm.

Loch Leven (Power): Mr. McNab appears to have taken the species, probably at Loch Leven, and there are examples in Mr. Waterhouse's collection, probably from Mr. Bold.

H. fulvicollis, Er., Käf. Mk. Brand, 37, 186 (*Edwards, l.c.* p. 7). Similar to *H. ruficollis*, but scarcely so wide at the shoulders and more gradually narrowed behind, the ground colour dark red-yellow, the black markings on the elytra more pronounced, and the punctuation of the elytra in the females confined to the apex and the distal

half of the suture. The prosternum is sparingly and coarsely punctured, grooved down the middle of the front half, flat behind. L. $2\frac{3}{4}$ mm.

Merton, Surrey; Cambridge (Sharp); Isle of Sheppey (J. Walker).

H. heydeni, Wehncke, Deutsch Ent. Zeits. 1875, 122 (Edwards, *l.c.* p. 8). Smaller than *H. ruficollis*, comparatively wider at the shoulders and more abruptly narrowed behind; the interstices of the elytra are without punctuation in the female, whereas in the last-named species they are punctate throughout. L. $2\frac{1}{2}$ mm.

Locally common; Hampstead; Lee; Brighton District; New Forest; Stony Stratford; Leicester; Hornsey; Cotswold District (abundant in ponds).

H. wehnckeii, Gerh. Deutsch Ent. Zeits. 1877, 448 (Edwards, *l.c.* 9); *H. immaculatus*, Newbery (*nec* Gerh.), Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 4. The characters of this species are given fully in the table; specimens which are not fully coloured might be mistaken for *H. fluvialtilis*. L. $2\frac{3}{4}$ mm.

Bury St. Edmunds; Cotswold district (very common in mill ponds); Whitwell Common, Felthorpe and Brundall (Norfolk); Mallow, Ireland (Mitford).

H. immaculatus, Gerh. (*nec* Newbery), Zeit. für. Ent., Nouv. Sér., vi. p. 36, Breslau, 1877 (Edwards, *l.c.* 9). This species is closely allied to the preceding; the females are easily distinguished by the punctuation of the elytral interstices as described in the table; the males can only be known with certainty by reference to the genitalia, but Mr. Edwards has noticed that there is a tendency in this species for the elytral punctures forming the apex of the ninth row to become merged in a black marking, this tendency being apparently absent in *H. wehnckeii*. L. $2\frac{3}{4}$ mm.

Lee, Kent; Sandown, Isle of Wight; Norwich; Deal; Isle of Sheppey; Colwall; Braunton; Stony Stratford; Campeltown.

DYTISCIDÆ.

HYDROPORUS, Clairville.

H. hopffgarteni, Schilsky, Deutsch Ent. Zeitsch. 1892, 193. Elongate oval, sub-depressed, head and thorax dark, the margins of the latter somewhat lighter, elytra dark or pitchy-brown with traces of lighter colour towards base near the shoulders; these, however, are probably variable, and are more or less obscure; superficially the elytra appear unicolorous; head extremely finely sculptured, thorax with very diffuse fine punctures, the interspaces being very finely alutaceous; elytra moderately closely and distinctly punctured, rather strongly alutaceous; antennæ dark, with lighter base; legs pitchy. L. $2\frac{1}{2}$ mm.

Not uncommon in March in the ditches behind the sandhills at

Deal, on the road to Sandwich (Chitty); Isle of Sheppey (Walker); Camber (Bedwell).

This is the insect introduced by Mr. Chitty as *H. bilineatus*, Sturm (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 1903, 144); it is, however, quite distinct by its narrower form, its colour, and the more diffuse punctuation of the elytra. It is allied to *H. granularis*, L., but differs entirely in shape, in the punctuation of the elytra, and in the absence of the two yellow lines on each elytron.

Gerhardt (Deutsch Ent. Zeitsch., 1909, 423) has a note on this species, which he still regards as a variety of *H. bilineatus*, but thinks it may very probably turn out to be a distinct species; Bedel (Faune. Col. du Bassin de la Seine, i. 262, note) says that *H. bilineatus* is the male of *H. granularis*; this is evidently not the case; *H. bilineatus* appears to be confined to Central Europe and does not, probably, occur in Britain.

H. palustris*, L., var. *tinctus, Clark. Ann. Mag. Nat. Hist. x. 326. I have before referred to this variety (Brit. Col. i. 182); the testaceous spots are almost if not quite obsolete, and the whole insect is of a reddish or fuscous colour; it occurs in the New Forest, where it was taken by Turner. Dr. Sharp (Dytiscidæ, p. 813) says that he believes it to be a variety of *H. palustris*, but it may possibly be *H. incognitus*, Sharp, in which case the name *H. tinctus* must stand, as it has seven years' priority. Ganglbauer does not mention the variety, but in the last European catalogue it is given as a variety of *H. jonicus*, Mill, which can hardly be correct, as *H. jonicus* is a Mediterranean species; it is described by Ganglbauer as being 4 mm. in length (the size of large specimens of *H. palustris*), and as distinguished from *H. palustris* by its much more elongate and narrower form, the shining upper side in both sexes, the much more strongly punctured elytra, the more strongly punctured hind coxæ, the longer and more slender tarsi, and the very slightly uneven claws of the anterior tarsi in the male.

In vol. i. p. 183, *H. celatus*, Clark, is given as a synonym of *H. longulus*, Muls.; Clark's name should stand, and it has priority assigned to it in the European catalogue (1906); the species is variable, and we ought, perhaps, to say *H. celatus*, Clark, and *var. longulus*, Muls.

AGABUS, Leach.

***A. bipustulatus*, L.**, Syst. Nat. x., ii. 1767, 667. As I have before said (Brit. Col. i. 197), in the mountainous districts of England, Wales or Scotland, the examples of this species become smaller, narrower, more oblong and depressed: the males become more shining, and one form of the female much duller, so that the disparity of the sexes appears much greater than in the type form: to these forms must be referred the *var. snowdonius*, Newman (Ent. Mag. i. 1832, 55), and the *var. solieri*, Aubé.

In the European Catalogue of 1906, *A. bipustulatus* and *A. solieri* are treated as separate species, with the following synonyms:

ADEPHAGA.

- A. bipustulatus*, L.
luctuosus, Geoffr.
carbonarius, F.
v. abdominalis, Costa.
v. picipennis, Sahlb.
A. solieri, Aubé.
tarsatus, Zett.
alpestris, Heer.
sexualis, Reiche.
v. kiesenwetteri, Seidl.

I believe, however, that all these must be referred to *A. bipustulatus*, which Dr. Sharp (Dytiscidæ, Royal Dublin Society, 1880-1882, p. 532), speaks of as "Species pervariabilis."

As the question of variable sexual dimorphism is brought out more strongly in this species than in almost any other, it is worth while to quote Dr. Sharp's remarks on the different forms at length, as they are not generally available to students (*l.c.* 553-554).

"The variation found in this species is very complex and interesting. The ordinary form may be considered to be that in which the female has the surface duller than the male, and the longitudinal scratches finer, denser and more oblique, the general form in both sexes being rather regularly oval, the female, however, being generally just a little narrower and more oblong than the male; on examination under the compound microscope, with a half-inch object-glass, it appears that the dulness of the surface in the female is caused by minute scale-like reticulations, which are not so deep in the male as in the other sex; this form is that universally found in temperate Europe, and I have it in my collection as far East as Persia; the size about 9-11 mm. long, 5-5½ mm. broad; this may be called the ordinary or typical form.

"In some of the warmer parts of Europe, there are found large specimens in which the sculpture of the female is quite similar to that of the male, which, as in the ordinary form just mentioned, consists of very elongate, narrow meshes on the basal portion of the elytra; this may be called the South European variety.

"In the highland districts of Britain, and in the Alps and Iceland, the specimens become smaller, and of a narrower, more oblong and depressed form, with the base of the thorax narrower than that of the elytra, and the surface in the female excessively dull, so that the disparity in the appearance of the sexes is very great; but this form (for females of which Aubé proposed the name '*Agabus solieri*') is connected with the common temperate European form by every shade of dimorphic variation; this may be called the dimorphic Alpine form.

"In some localities in the Alps and Pyrenees there are found (I believe always at a great elevation) specimens of elongate, narrow and depressed forms, with very shining surface, the sculpture in the female being similar to that of the male, and the meshes of the

reticulation of the elytra being generally rather broader and shorter than in the ordinary temperate European form. This form has been found by Kiesenwetter in the Alps of Carniola; and has also occurred at Lago Pinter, and in the Hautes Pyrenees; it may be called the monomorphic Alpine form.

“ We have thus the peculiar anomaly that in some Alpine districts the sexual divergence in sculpture of the female from the male is much increased, while in other Alpine districts there is on the contrary convergence of the sculpture of the female to the male, or in fact absolute similarity. I have no evidence that these two Alpine forms of the female are ever found together, indeed all the evidence I have indicates the contrary; thus though I have found great numbers of the dimorphic Alpine form in the mountains about Braemar, I have never found a single female with sculpture at all like that of the male, while the females before me from Lago Pinter, seven in number, are all similar to the males. There thus appear to be two Alpine races, the males of the two being similar while the females are very different. The species, however, not only varies in sculpture both absolutely (that is in both sexes considered together) and sexually, but it shows quite as great and even more interesting modifications, in what may be called quite structural characters; thus the shape becomes in the Alpine forms quite different from that obtained in the plains, and in correspondence with this modification of shape is a change in the legs, which are very much more elongate and slender (that is less highly developed for swimming) than they are in the individuals of the plain; this diminution in the power of the legs reaches its extreme in the most divergent females of both the Alpine forms.

“ The male tarsi also are subject to much variation, the amount of their incassation and the sexual structure of the front claws being each inconstant; the greatest development of the male feet and claws is found in the large individuals of the plains, the smallest in the Alpine forms; in these latter the amount of dilatation of the tarsus is greatly diminished, and the posterior of the claws on the front feet becomes more slender, the dilatation of its hinder edge being in extreme cases very greatly diminished; the front claws moreover are variable independently of Alpine or boreal localisation, for I have a male (from Corsica?) in which the anterior claw retains pretty nearly the normal shape, but is not longer than the front one.

“ It seems very difficult to comprehend these variations. Especially peculiar seems the fact that the males of Alpine and boreal districts depart from the dwellers of the plains in one direction only, and yet their females depart in two opposite directions; equally difficult of explanation is the fact that though disparity in sculpture of the sexes is the rule, yet this disparity disappears in the two forms which in other respects are most widely different from one another, viz., the large and powerful South European variety, and the feeble, monomorphic Alpine variety; we seem, however, at any rate, justified in

inferring that the peculiar sculpture of the females bears no correlation to the development of the male tarsi."

A. uliginosus, var. ♀ dispar., Bold. Zoologist, app. xxiv., 1849. This is the dull variety of the female which I have recorded as not uncommon in Ashham Bog, York (Brit. Col. i. p. 192); Dr. Sharp (Dytiscidæ, p. 507), speaking of *A. uliginosus* writes: "The female generally resembles the male in sculpture, but a form occurs rarely (? in Britain only) in which the upper surface in this sex is excessively densely and finely reticulate, so as to be quite opaque" (v. Donisthorpe. Ent. Record, xi., 1899, 160).

A. affinis, Payk; **A. unguicularis**, Thoms. There has always been great difficulty with regard to the separation of *A. affinis*, Payk and *A. unguicularis*, Thoms., but this has been cleared up by an excellent paper on the two species by Mr. F. Balfour-Browne (Ent. Record, xviii., 1906, 273); in any case the species require careful microscopical examination before they can be definitely separated.

The following is Mr. Balfour-Browne's summary of the distinctions:

1. Form more parallel, colour black; metasternal lacinia or wings less sharply pointed; reflexed margin of elytra black, and apex more sharply pointed. In male, anterior claw on anterior tarsi with a triangular tooth, the apex of which is directed neither forward nor backward; stridulatory files shorter, with ridges very fine and close together. Less reliable characters; legs more infusate; antennæ less infusate; occipital spots more distinct *A. AFFINIS, Payk.*

Form more oval; colour of a slightly æneous cast; metasternal lacinia or wings more sharply pointed; reflexed margin of elytra obscure-red, and apex less sharply pointed; in male, anterior claw on anterior tarsi with a tooth, in which the apex is directed forwards towards the apex of the claw; stridulatory files longer, with ridges stronger and farther apart. Less reliable characters; legs less infusate; antennæ more infusate; occipital spots less distinct *A. UNGUICULARIS, Thoms.*

Roughly speaking, *A. affinis* is a Scotch species and *A. unguicularis* an English species. Mr. Balfour-Browne says that he has taken the latter not uncommonly in East Norfolk and near York, and the

former fairly commonly in Dumfriesshire, Kirkcudbrightshire and Dumbartonshire, the only three counties in which he has done any extensive collecting.

PLATAMBUS, Thomson.

P. maculatus, var. immaculatus, Donisthorpe. (Ent. Record, xi. 1899, 160). This name must be substituted for the insects standing in our collections as *var. pulchellus*, Heer: Mr. Donisthorpe fully discusses the question and the evidence he adduces appears conclusive. *Agabus pulchellus*, Heer is recorded in the Ent. Annual, 1857, p. 69, as having been captured by G. Wailes near Loch Achray, on the north side of Loch Katrine, in September 1853. E. Newman records in the Zoologist, 1856, p. 5003, having received *A. pulchellus* from Mr. Wailes, and that he thought it was *A. maculatus*, but did not venture to differ from Wailes and Heer. He then goes on to say that the elytra are entirely dark and immaculate. Heer, however, in his description, expressly says "elytra margine maculisque pallidis." Dr. Sharp (Dytiscidæ, p. 549) says of *P. maculatus* that the smallest vars. come from Scotland, being dark and having the striæ on the elytra deeper: this is evidently the form which Dr. Sharp had in his mind when he added *var. pulchellus* to the 1893 Catalogue, but it is not Heer's insect, and Mr. Donisthorpe's name must stand. The insect has been taken at Braemar by Champion, as well as near Loch Katrine by Wailes and Hislop. Mr. Bagnall has taken it in the Derwent Valley, and Mr. Donisthorpe in the New Forest.

HYDROPHILIDÆ.

HYDROBIUS, Leach.

H. fuscipes, L., var. chalconotus, Steph. Ill. Mand. ii. 128 (1829) (= *var. æneus*, Sol., Ann. Soc. Ent. Fr., 1834, 314). This is the variety which I have before referred to (Brit. Col. i. 222), as having the upper surface of a strongly metallic greenish or bluish colour: it may also be coppery, brassy, or violaceous: according to Stephens it is more closely punctured than the type form, and has the elytra more deeply striate; the legs are more or less testaceous. It has been recorded as *var. æneus*, Sol., but Stephens' name has the priority and must stand. It has occurred in the London district, but is decidedly rare; Suffolk (Morley); Barnes Common (E. C. Rye); Tottenham and Portsmouth (Donisthorpe and Pool); Sheppey and Woking (Walker). Stephens' records are; Spitchweek, Devonshire (Leach) and Bottisham (Jenyns).

PARACYMUS, Thomson.

P. æneus, Germ., Ins. Spec. Nov. 1824, 96. *Hydrophilus*, Thoms. Skand. Col. ix. 120. We possess apparently two species of the genus *Paracymus*, in *P. scutellaris*, Ros. = *P. nigroæneus*, Sahlb., and *P. æneus*, Germ. The former is well known as a British insect, although it is one of the most local of our Hydrophilidæ. The latter, however, although

regarded as very likely to occur in Britain, has only comparatively recently been recorded by Mr. R. S. Mitford (Ent. Record xix. 1907, 254) as having been taken on the North Essex coast by Mr. W. H. Harwood of Colchester. It may be distinguished from *P. scutellaris* (*nigroæneus*) by being of a somewhat longer and narrower form, with the antennæ, palpi and legs ferruginous or yellowish-red (in *P. scutellaris* the antennæ, palpi and legs are darker, and the last joint of the maxillary palpi is quite dark or only reddish at the base), and by having the intermediate tibiæ scarcely pubescent to the middle, whereas in *P. scutellaris* they are pubescent beyond the middle; the mesosternum moreover presents points of difference which are, however, hard to discriminate. *P. æneus* is usually supposed to be the smaller of the two insects, but as a matter of fact it is, on the average, rather the larger.

The genus *Paracymus* is widely spread over the Palearctic and Nearctic regions; according to Ganglbauer the European species have the antennæ 5-jointed, whereas in the American species they are from 7- to 9-jointed. Sharp (Ent. Mo. Mag. xxi. 112) is of opinion that *P. nigroæneus* and *P. æneus* may very likely have to be placed in separate genera, the former having nine joints to the antennæ and the latter only eight, but he is not quite satisfied on this point, as the antennæ which he had mounted in balsam did not turn out very satisfactorily as a preparation. It appears, however, to be evident that the number of antennal joints do differ in the various species, and it is open to any author to form new genera if he considers this point of sufficient importance to outweigh the similarity of the other characters. The genus is most closely allied to *Anacæna*, from which it may be separated by having the mesosternum strongly carinate or cristate before the intermediate coxæ, and the posterior femora entirely glabrous and shining. The character which I have before given depending on the thorax being bordered or not bordered at base is by no means an evident one.

ANACÆNA, Thomson.

Mr. James Edwards, in an article on the British species of *Anacæna* (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 169), introduces *A. ovata*, Reiche as a separate species. *A. ovata* is only regarded as a synonym of *A. limbata*, F., by Ganglbauer (Käf. Mittel Europ. iv. 240), and in the last European catalogue it is placed as one of ten or twelve synonyms of that variable species.

Mr. Edwards gives a table of our species, which we quote, adopting the arrangement we usually follow in our tables:

- I. Mesosternum simple. Insect broad-oval, very convex, pitch-black with the sides of the thorax and elytra conspicuously pale . . . *A. GLOBULUS*, Payk.
- II. Mesosternum produced into a sharp triangular more or less backwardly-directed tooth in front of the middle coxæ.

- i. Upper side pitch-black, the sides of the thorax very narrowly and the apex of the elytra paler. Sides of thorax strongly curved in the front half, nearly straight behind. Punctuation of elytra deeper than in *A. ovata*. Body in the lateral aspect higher in proportion to its length, the apical slope of the elytra consequently more steep *A. LIMBATA, Fab.*
- ii. Elytra yellow-brown or brownish-yellow : in life bearing a common oblong black spot just before the middle, and a narrow dark sutural stripe, but these markings are very fugitive and usually absent in specimens which have been long dead. Body in the lateral aspect not so high in proportion to its length, the apical slope of the elytra consequently less steep.
1. Head black, sometimes with the free edges of the forehead narrowly yellow-red ; thorax piceous, with the sides broadly and suffusedly pale ; maxillary palpi with the last joint entirely pitch-black. Sides of thorax evenly and feebly curved throughout. Body in the lateral aspect higher in proportion to its length than in *A. bipustulata* *A. OVATA, Reiche.*
2. Head black, with a large triangular yellow-red spot on each side in front ; maxillary palpi with the last joint suffusedly red-yellow for a greater or lesser distance from the base ; thorax brownish-yellow, with three, usually contiguous, dusky spots, viz., a rhomboid one in the middle, and one on each side in the shape of a triangle, of which one point touches the base ; the situation of these markings gives the effect of two pale triangles standing on the base of the thorax, one to the right and the other to the left of the scutellum *A. BIPUSTULATA, Marsh.*

Dr. Sharp's *A. variabilis* (Ent. Mo. Mag. vi. 1870, 275) has been long dropped as being synonymous with *A. limbata*, and *A. ovata* seems to have no more claim to specific rank ; the characters above given for the species are often more or less variable. Mr. Edwards says that

A. ovata is the commonest in his experience of all the species: Cumberland (Day).

LACCOBIUS, Erichson.

A considerable amount of interest has been taken in this genus of recent years by British Coleopterists, and the result has been the addition of three or four species to our lists, two at least of these being new to science; probably more will have to be added. Confusion has been caused by the retention of Motschulsky's names: *L. sinuatus*, for instance, must drop; Motschulsky described this species from examples from Carthage, and the type is lost; the insect standing under the name in our collections is *L. oblongus*, Gorham; whether this is synonymous with *L. obscuratus*, Rey., seems doubtful. *L. regularis*, Rey., must be substituted for *L. scutellaris*, Mots.; it does not even answer to Motschulsky's description and no type apparently is extant.

A new character for the genus has been recently noticed by Dr. Sharp, viz. the presence of oval, or almost circular lens-like spaces or "goggles," on the front of the labrum; in one or two cases they are very useful in the determination of species; they are not invariably present, but sometimes, as in *L. ytenensis*, Sharp, are especially conspicuous.

The following table will serve to distinguish our species as at present determined; for part of it I am indebted to Mr. Newbery (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 30), and for part to Dr. Sharp.

- I. Thorax not alutaceous between the larger punctures.
- i. Under surface of the intermediate femora in the male with a spot of pubescence behind the apex of the trochanters.
 1. Size larger (3-4 mm.).
 - A. Sides of thorax broadly testaceous; elytra without coppery reflection *L. NIGRICEPS*, *Thoms.*
 - B. Sides of thorax very narrowly testaceous; elytra with a strong coppery reflection *L. PURPURASCENS*, *Newbery.*
 - ii. Under surface of the intermediate femora in the male without a spot of pubescence.
 - A. Form shorter, sub-orbicular, or short oval.
 - a. Rows of punctures on elytra not arranged in regular rows; male with the "goggles" on the front of the labrum large and conspicuous and sepa-

- rated by a space less than the diameter of one of them L. YTENENSIS, *Sharp.*
- b. Rows of punctures on the elytra regular; male with the "goggles" on the front of the labrum distinctly smaller and more widely separated L. REGULARIS, *Rey.*
- B. Form longer oblong ovate; rows of punctures on the elytra more or less irregular; colour, as a rule, lighter L. OBLONGUS, *Gorham.*
= OBSCURATUS, *Rey.*, L.
= SINUATUS, *Mots.*, L.
2. Size smaller ($2\frac{1}{4}$ – $2\frac{1}{2}$ mm.); rows of punctures on elytra regular; apex of elytra with two very distinct white spots (these are present, but never so well marked, in other species) L. BIGUTTATUS, *Gerh.*
(*bipunctatus*, *Bedel, nec F.*)
- II. Thorax alutaceous between the larger punctures.
- i. Size larger ($3\frac{1}{2}$ mm.); punctuation of elytra more or less confused L. ALUTACEUS, *Thoms.*
- ii. Size smaller ($2\frac{1}{2}$ mm.); punctuation of elytra regular L. MINUTUS, *L.*

L. purpurascens, Newbery, Ent. Mo. Mag. xlix. (2 Ser. xix.) 1908, 30. Smaller on the average than *L. nigriceps*, Thoms., from which it may be distinguished by its very distinct colour; the thorax and head are almost entirely brown-red, the side margins of the former being only narrowly testaceous, the testaceous colour being only narrowly and linearly continued towards the scutellum; the whole insect has a more or less distinct and usually well-marked coppery-purple or coppery-green reflection, which is quite absent in the type form; the "goggles" on the labrum are not large and somewhat distant, and are, perhaps, a little more marked than in *L. nigriceps*; they do not, however, differ very materially. L. 3– $3\frac{1}{2}$ mm.

Taken in abundance by Mr. Philip de la Garde in May 1906, crowding in large numbers among the slimy ooze where water had trickled down the sandy cliffs on the north side of the River Teign at Shaldon, Devon; Mr. Champion has taken it in the same locality, and Mr. Keys has found it near Plymouth.

The species seems a little doubtful, and at first I preferred to follow the opinion of Captain Deville, that it is a new variety of *L. nigriceps*, analogous to a variety of *L. oblongus* (*sinuatus*) which Rey has described

as *L. cupreus*; it is, however, now apparently recognised as a good species by some authorities, and we therefore insert it as such.

L. ytenensis, Sharp, Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, p. 250. Oval, rather narrow, acuminate behind, black, with the base of the antennæ and the palpi yellow, the sides of the thorax rather narrowly testaceous, and the elytra more or less dark, with the margins and apex testaceous. The punctuation is close and distinct, but is not arranged in evident rows; the legs are yellow, with the posterior femora as a rule, but not always, darker. Male with two lens-shaped shining spaces on the labrum of large size and almost circular form, separated from one another by a rather less space than the transverse diameter of one of the spaces; the middle femora have no spot of pubescence. L. $3\frac{1}{2}$ –4 mm.

New Forest in profusion in September (Sharp); Devonshire (de la Garde and Champion); Cornwall (Champion and Lamb; the latter found one specimen at Padstow). The species varies considerably in the colour of the posterior femora, and to a certain extent in that of the elytra. Dr. Sharp places it between *L. oblongus*, Gorh. and *L. regularis*, Rey., but it appears to be most closely allied to *L. nigriceps*, from which it differs in the size, shape and distance of the lens-shaped spaces on the labrum or "goggles" as Dr. Sharp calls them; in *L. nigriceps* they are much smaller, less circular and further apart. Captain Deville has sent us this species from Ponferrada.

L. regularis, Rey. Ann. Soc. Linn. Lyon. 1884, xxxi., 1885, 14, 300. Very closely allied to *L. oblongus*, Gorham, but much darker in colour; the dark colour of the thorax is more extensive and there is no pale mark on the side of the head; the hind and middle femora are black, and the lines of black spots on the elytra are nearly confluent on the disc, which is sometimes entirely black; the series of punctures on the elytra are coarser and more regular than in *L. sinuatus*, and the punctures of the thorax are more numerous; the shape is short oval. It is the darkest species of *Laccobius* in our lists, and may be known superficially by its colour and shape. L. 3– $3\frac{1}{2}$ mm.

Chobham (Champion), Brockenhurst (Sharp), River Tavey, near Horrbridge, Devon, and Newbury (Tomlin).

Dr. Sharp, who introduces the species as British (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 217), is of opinion that Motshulsky's description is not drawn from this insect, although Kuwert and Ganglbauer apply the name thereto; the beetle certainly does not agree with Motschulsky's very meagre account of it, and, as we have said above, no type apparently is in existence.

L. oblongus, Gorham, Ent. Mo. Mag. xliii. (2 Ser. xviii.), 1907, 54. Allied to *L. nigriceps*, Thoms., with which it agrees in colour, but easily distinguished by its distinctly longer oblong-ovate form; the head is more finely alutaceous and the intermediate femora of the male have no spot of pubescence at the base; the sculpture of the elytra appears to be stronger, but this may be variable; it is irregular, but less so than in *L. nigriceps*. L. 3– $3\frac{1}{2}$ mm.

Not a common species. Lundy Island (Joy and Tomlin); Cambridge (Gorham); North Wales (W. E. Sharp). This species is not mentioned in the catalogue of Heyden, Reitter, and Weise, 1906.

The synonymy of *L. sinuatus*, Mots., is there given as follows:

- L. sinuatus*, Mots.
- minor*, Rott.
- albescens*, Rott.
- neapolitanus*, Rott.
- obscuratus*, Rey.
- subregularis*, Rey.

It is certainly not the *L. sinuatus* of Motschulsky, but whether it may be one of the species here given as synonyms I am not prepared to say.

LIMNEBIUS, Leach.

Mr. F. Balfour Browne has kindly sent me the following note as to the distinctive characters of *L. truncatellus*, Thunb., and *L. papposus*, Muls., which have always been a crux to Coleopterists. "The males," he says, "are, of course, easily separated by the form of the maxillary palpi, &c., but there is an excellent character in the mesosternal process (projecting between the coxæ and the second pair of legs), which is broad in *L. truncatellus* and narrow in *L. papposus* in both sexes."

HELOPHORUS, Fabricius.

Mr. James Edwards (Ent. Mo. Mag. xliv., Ser. 2, xix. (1908) 218) gives a valuable table for distinguishing the British species of this difficult genus. I feel considerable doubt as to the specific value of certain of the species (*e.g.*, *H. æqualis*, Thoms., *H. crenatus*, Rey., and *H. strigifrons*, Thoms.), but much remains yet to be cleared up with regard to the genus, and I therefore give the table practically as published, with one or two alterations.*

- I. Elytra with a scutellary stria.
 - i. Elytra black; 3rd, 5th, and 7th interstices tuberculate *H. TUBERCULATUS*, Gyll.
 - ii. Interstices not tuberculate.
 - 1. Alternate interstices of elytra cariniform and setose.
 - A. Humeral angles of elytra almost acute *H. RUFIPES*, Bosc.
(*rugosus*, Ol.)
 - B. Humeral angles of elytra rounded off.
 - a. Intermediate furrows on the thorax angulated near the middle *H. PORCULUS*, Bedel.

* Mr. Edwards' table is numbered at the sides and does not fit at the end: it should be 19 (34) and 20 (31) instead of 19 (31) and 20 (34). I have translated the whole into the straightforward table which I always use, as it always appears to me to be so much simpler and easier to work from.—W. W. F.

- b. Intermediate furrows on the thorax nearly as straight as the dorsal one H. NUBILUS, *Fab.*
2. Alternate interstices of elytra not cariniform and setose.
- A. Last joint of maxillary palpi symmetrically fusiform. Eleventh elytral interstice not cariniform H. INTERMEDIUS, *Muls.*
(*alternans*, *Gené.*)
- B. Last joint of maxillary palpi more convex on the outer than on the inner side, the latter nearly straight. Eleventh elytral interstice cariniform.
- a. Joints 2-4 of the hind tarsi successively decreasing in length, the second hardly $1\frac{1}{2}$ times as long as the third. Hind margin of the last ventral segment evidently denticulate H. AQUATICUS, *L.*
- b. Second joint of the hind tarsi more than $1\frac{1}{2}$ times as long as the third, the latter a little longer than the fourth. Hind margin of the last ventral segment nearly entire H. AQUATICUS, VAR.
EQUALIS, *Thoms.*
- II. Elytra without a scutellary stria.
- i. Last joint of maxillary palpi symmetrically fusiform.
1. Thorax coarsely granulate throughout, its sides strongly rounded before the middle, the subsequent narrowing excavate H. ARVERNICUS, *Muls.*
2. Thorax coarsely granulate at the sides only, which are moderately rounded before the middle with the subsequent narrowing straight H. BREVIPALPIS, *Bedel.*
- ii. Last joint of the maxillary palpi more convex on the outer than the inner side, the latter nearly straight.
1. Thorax widest before the middle.
- A. The longitudinal furrow on the head widened in front.
- a. Elytra dark brown with an oblique suffused patch on the basal third, another near the middle of the outer margin, and a sharply-defined roundish spot near the apical fifth next the suture, on each, yellow H. QUADRISIGNATUS, *Bach.*
(*dorsalis*, *Brit. Cat.*)

b. Elytra without the markings of

H. quadrisignatus.

a*. Sides of thorax evidently convergent in front as well as behind.

a†. Thorax at the base twice as wide as its length down the middle, much narrowed behind. Elytra brown-bronze, or at least with a bronze reflection, the fine punctuation on the interstices in the scutellar region irregular or in double rows.

H. VIRIDICOLLIS, *Steph.*
(*æneipennis*, *Thoms.*)

b†. Thorax at the base $1\frac{1}{2}$ times as wide as its length down the middle, but little narrowed behind. Elytra without bronze reflection, the punctures in the interstices in the scutellar region in a single row

H. DORSALIS, *Marsh*, *nec*
Brit. Cat. (*mulstanti*, *Rye*)

b*. Sides of thorax not evidently convergent in front, contracted from the apex to the base in a nearly straight line.

a†. Elytral interstices usually quite flat, nearly three times as wide as the length of the section of stria between each puncture. The rows of interstitial punctures relatively more evident than in the two following species by reason of the comparatively smaller size of the punctures in the striæ. Disc of thorax simply punctured

H. AFFINIS, *Marsh.*

b†. Elytral interstices usually distinctly convex, less than twice as wide as the section of stria between each puncture. Punctuation of disc of thorax areolate, *i.e.* the punctures placed singly in the meshes of an impressed irregular reticulation.

a†. Elytra, in the lateral aspect, resembling those of *H. brevipalpis*; compared with *H. granularis*, longer in proportion to their height, the slope of their apical third very gradual. Flattened part of sides of thorax broad

H. GRISEUS, *Herbst.*

b‡. Elytra, in the lateral aspect, shorter in proportion to their height than in *H. brevipalpis* and *H. griseus*, the slope of their apical third distinctly more abrupt. Flattened part of sides of thorax very narrow

H. GRANULARIS, *L.*
(*brevicollis*, *Thoms.*)

B. The longitudinal furrow on the head not widened in front.

a. Granulation of thorax about equally strong throughout. Elytra, in the lateral aspect, distinctly longer in proportion to their height than in *H. viridicollis*, the apical slope more gradual

H. CRENATUS, *Rey.*

b. Granulation of thorax somewhat more feeble on the disc than at the sides. Elytra, in the lateral aspect, distinctly shorter in proportion to their height than in *H. viridicollis*, the apical slope more abrupt

H. STRIGIFRONS, *Thoms.*

2. Thorax widest in the middle.

A. Sides of thorax strongly granulate; size larger

H. LATICOLLIS, *Thoms.*

B. Thorax smooth and shining, at most feebly granulate at the sides

H. NANUS, *Sturm.*

H. porculus, *Bedel*, *Faun. Col. du Bassin de la Seine*, i. 298.

Convex, rather broad, scarcely pubescent, testaceous or rufo-testaceous above, with the elytra paler, variegated with black, under side fuscous; antennæ, palpi and legs entirely red; head with the eyes arcuate in front; thorax transverse, granulate, anterior angles obtuse, very little produced, with the central intervals rather flat, and angularly dilated in the middle, and the lateral ones divided; elytra strongly punctate-striate, with the scutellar series distinct; the alternate intervals are costate and entire (except the small scutellary costa); metasternum with scattered piligerous punctures, not carinate between the coxæ. L. $4\frac{1}{2}$ –5 mm.

First recorded from Scotland by *M. Javet* (*Bedel. Faun. Seine*, i. 322), and lately discovered by *Mr. Newbery* mixed with *H. rugosus* in *Dr. Power's* collection from *Balmuto*, *Moss Morran*, *Cowley* and *Esher*, and also in his own collection from *Merton*, *Surrey*; *Commander Walker* has recently found it near *Oxford*, and it has also occurred in *Norfolk*; *Mr. Donisthorpe* has taken it in the *Isle of Wight*, and *Dr. Joy* at *Bradfield*, the *Scilly Islands*, and *Garve*, *N.B.*; it is probably common and mixed with *H. rugosus* in many of our collections.

From *H. rugosus*, Ol. (for which we ought perhaps to substitute the name *H. rufipes*, Bosc.) the species may be known by its average smaller size, flatter dorsal costæ of the thorax, and the fact that the elytra are not sinuate near the base and have the humeral angles rounded, whereas in *H. rugosus* the elytra are sinuate before the base, and the humeral angle is turned outwards forming a distinct tooth; from *H. nubilus*, it is distinguished by its larger size, somewhat irregular dorsal costæ of the thorax, and the much more elongate second joint of the maxillary palpi. The species, in fact, has longer and more slender maxillary palpi than any of our other *Helophori* (*v. Ent. Mo. Mag.* xliv. (2 Ser. xix.), 1908, 88).

H. æqualis, Th., has always appeared to me to be a variety of *H. aquaticus*, and is so regarded in the last European Catalogue. *H. crenatus* has only apparently been recorded as British by M. Pandellé and has not been confirmed. Our information with regard to *H. strigifrons* rests where Blackburn left it in 1876, as Mr. Edwards points out, and I have not seen any British example of the species.

H. viridicollis, Steph. (= *æneipennis*, Brit. Col.) is a very variable insect, and in the European Catalogue has no less than twelve synonyms under it, apart from three varieties. *H. planicollis*, Thoms., is regarded as a synonym, as well as *H. obscurus*, Rey.

Since I wrote the above, Mr. F. Balfour-Browne has sent me the following note: "I do not consider *æqualis* a good species, nor, in my opinion, is *strigifrons* distinct from the very variable *æneipennis*. *H. affinis* and *griseus* are varieties of a single species, but *H. brevicollis*, Thoms. (*granularis*, L., ?) is distinct. I have taken the latter lately in Donegal West (Dunfanaghy), Co. Down, Mayo W., and recently in numbers in Co. Antrim in one pool. There is a single specimen in the Chitty collection at Oxford. Otherwise I have not seen British specimens."

H. viridicollis, Steph., Ill. Br., ii. 29 (= *æneipennis*, Thoms. = *obscurus*, Rey.), **var. shetlandicus**, Kuw. Ver des Natur. Ver. in Brünn, xxviii. p. 227. This variety, from the Shetland Isles, has the elytra black, shining and metallic; it is evidently one of the melanic forms of insects which are found in northern localities (*v. Donisthorpe*, Ent. Record xi., 1899, 184).

This variety appears in the last European Catalogue, but is not mentioned by Ganglbauer.

H. brevipalpis, Bedel, Faune. Col. Bass. Seine, 1881, 301, 323, **var. bulbipalpis**, Kuw., *l.c.* p. 196. This variety, also from the Shetland Isles, has the last joints of the palpi so strongly thickened that they almost appear to be deformed.

In the Entomologist's Record, xi. 1899, 184, Mr. Donisthorpe recorded this insect as a variety of *H. griseus*, and as such it was described by Küwert, but it seems best to assign it to *H. brevipalpis*, Bedel. In the last European Catalogue it appears merely as a synonym of *H. brevipalpis*, but Ganglbauer regards it as a variety of that species.

HYDROCHUS, Leach.

H. nitidicollis, Muls., Palpic, 1844, 49. Ganglbauer, Käfer. von Mitteleuropa, iv. 179: "In general shape like *H. carinatus*, Germ., from which it may be known by the not, or only slightly, raised third interstices of the elytra, and the less deep and more closely set punctures of the elytral striæ; the colour is variable, being black or bronze, or with the pronotum metallic blue-green or green, and the elytra violaceous or with a purple reflection; antennæ rust-red with the club dark; palpi yellow with a black tip to the last joint, or quite dark; legs yellow-red or brown-red, with the knees and the tips of the tarsal claws, or the whole femora and tarsi black. Head and thorax less deeply and closely punctured than in *H. carinatus*. Thorax about as broad as the head and about as long as broad, narrowed behind, with rather deep impressions. Elytra much less elongate than in *H. angustatus*, but with similar coarsely punctured striæ, with the third interstice not or scarcely, and the fifth, seventh and ninth interstices plainly raised in blunt keels, the keel of the seventh usually interrupted by an impression." L. $2\frac{1}{4}$ - $2\frac{1}{2}$ mm.

In running water. River Meavy, Yelverton, Devon (Donisthorpe and Keys). Introduced by Mr. Donisthorpe (Ent. Record, 1906, p. 133). Subsequently taken by Mr. de la Garde in other parts of Devonshire. Our other four species are usually found in stagnant pools or ponds. The species also occurs in Central and Southern France.

OCHTHEBIUS, Leach.

O. lejolisi, Muls. et Rey., Mem. Soc. Cherbourg., viii. 1861, p. 431. Elongate, dull bronze or black-bronze; head rather long, somewhat shiny in front, with two deep impressions at base, eyes prominent, penultimate joint of the maxillary palpi strongly inflated; pronotum almost as long as broad, closely punctured, with the sides moderately rounded, with a shallow transverse impression in front, a central furrow and an oblique furrow on each side meeting at the base of this, and forming a rough figure of the government broad arrow in well marked specimens; the character, however, is somewhat variable; elytra long and narrow, not strongly rounded at the sides, distinctly punctate-striate, with the lateral margins serrate; legs dull red or ferruginous. L. $1\frac{3}{4}$ mm.

Ilfracombe, Devon: taken by Mr. W. H. Bennett in June 1895, and introduced by him as British (Ent. Mo. Mag. xxxi. (2 Ser. vi.) 181); Bedel (Faun. Col. du Bassin de la Seine, i. p. 317) says that it is found in France "in small pools of salt water on rocks on the coast, rare." It has been recorded from Cherbourg, the coast of Provence, and doubtfully from Algeria. Mr. Bennett found it in some numbers in small pools of very stale and putrid sea-water just above high-water mark at the base of the cliffs, but not beyond the reach of the spring tides. They were confined to a very limited area.

Since the above was written the insect has been found in the following localities: Greystones, Co. Wicklow (Carpenter); Dalkey, Co. Dublin (Halbert); Dunfanaghy and Bunbeg, Co. Donegal, Bangor, Co. Down, and Larne, Co. Antrim, and Douglas Hall, Kirkcudbrightshire (F. Balfour-Browne); Llanstephen, Carmarthenshire (Kidson Taylor); Rame Head, Plymouth district (Keys); Falmouth, Gerrans Bay, Cornwall, and St. Mary's, Scilly Isles (Champion); N. Somerset; Seaview, Isle of Wight (Dollman and Donisthorpe); Saunton and Croyde, Devon (Champion).

Mr. E. A. Newbery (Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 173) introduces *O. viridis*, Peyron (Ann. Soc. Ent. Fr. 1858, 404) as new to Britain, the only difference apparently between this insect and *O. margipallens*, Latr. (Gen. i. 70) being that the latter has the metasternum entirely dull and alutaceous whereas in *O. viridis* it is smooth and shining in the middle. There is considerable doubt with regard to the synonymy of *O. margipallens*; the insect so named by some of the older writers (Marsham, Sturm, &c.) appears to be synonymous with *O. marinus*, while the *O. viridis* of Peyron seems to be one of the varieties of *O. margipallens*, Muls. (Palpic. 5-8). Ganglbauer (Die Käfer von Mitteleurop, 193-194) leaves out *O. margipallens* altogether, and places part of the insects so named under *O. marinus* and part under *O. viridis*. It does not seem quite evident why Latreille's name should be sunk, unless it be to avoid confusion, and, at all events, there does not seem at present to be sufficient reason to consider that *O. viridis* and *O. margipallens* are distinct species.

HYDRÆNA, Kugelann.

H. britteni, Joy (Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 79). Rather elongate, pitchy or reddish-brown, with head pitchy-black; head shining, somewhat diffusely and strongly punctured; antennæ reddish-testaceous, club darker; maxillary palpi reddish-testaceous, tips of the last joint black, differing in the sexes; in the male the first and second joints are swollen at the apex, the third arcuate, gradually broader for three-quarters of its length and then abruptly cone-shaped to the tip, having a small smooth tubercle on the inner or convex side at the junction of these two parts; in the female all the joints are simple, the last rather short, narrow, and broader in the middle; thorax transverse, somewhat obsoletely impressed at sides and base, disc shining and diffusely punctured, punctuation thick near the margins; sides of thorax dilated in middle in a rounded obtuse angle, contracted in a straight line to base, posterior angles distinct, but obtuse, opposite 8th or 9th row of punctures on elytra; elytra subparallel, not dilated behind, broadest about middle, with nine or ten rows of closely-set square punctures between the suture and humeral angle, sutural angles separately rounded; legs reddish-testaceous. L. $1\frac{3}{4}$ -2 mm.

Newton Moss and Edenhall, Cumberland (Britten); S. Brent (de la Garde); Ranworth, Norfolk (Champion); Ballycastle (Tomlin); Mullimore, Co. Armagh (Johnson); Ayrshire and Renfrewshire, Kirkcudbright and Wigtown (F. Balfour-Browne). Probably not uncommon in various localities in England and Ireland. *H. britteni* is most closely allied to *H. riparia*, Kug., but differs from it in being smaller and not quite so parallel, and in the structure of the maxillary palpi of the male, the last joints of which are more arcuate, and the penultimate joint is more dilated at apex; the thorax moreover is less strongly and evenly punctured, and the sides are not so distinctly angled in the middle, and are less strongly contracted behind; in the female the last joint is proportionally shorter than in *H. riparia*.

From *H. nigrita*, Ger., which it resembles in size, the species may be known by its more parallel form, lighter colour, and the less strongly and more diffusely punctured thorax, which is much less strongly contracted behind: the curved last joint of the maxillary palpi of the male will further suffice to distinguish it.

Dr. Joy says that Ganglbauer, who at first could not identify this species, afterwards sent him specimens of *H. morio*, Kies (a species occurring in Eastern Europe) and suggested that *H. britteni* might be identical with it. *H. morio* certainly has the last joint of the maxillary palpi arcuate, but is somewhat larger, and has the thorax more strongly narrowed behind and the posterior angles right-angles and not obtuse.

H. longior, Rey. Ann. Soc. Linn. Lyon, Ann. 1884, xxxi., 1885, 29; Ann. 1885, xxxii., 1886, 91. Very closely allied to *H. angustata*, Sturm, but easily distinguished by its longer and more parallel form, and by having the thorax very distinctly and sharply angled at the sides in the middle; the forehead and thorax are, moreover, more strongly and thickly punctured; the species may at once be known by the formation of the posterior tibiæ in the male, which are dilated on their inner side a little before apex, the dilatation being furnished with three small teeth; between the dilatation and apex they are again narrowed and furnished sparingly with short ciliate hairs which are easily rubbed off. L. 2-2 $\frac{1}{4}$ mm.

I have taken the species in abundance near Brockenhurst with Dr. Sharp; it has also been found by Mr. de la Garde at Christow, near Exeter, and Dr. Power's specimens, standing under *H. angustata*, from Polmont, Glasgow, must, according to Mr. Newbery, be referred to it: it is evidently very widely distributed, and probably common.

SPHÆRIDIMUM, Fabricius.

S. scarabæoides, L., Syst. Nat. x. 25, **var. lunatum**, Fab., Ent. Syst. i. 78. This variety has no red markings at the shoulders, the clytra being black, with the exception of the broadly testaceous apex.

Recorded by Mr. Donisthorpe in the *Irish Naturalist* for 1903, p. 61, from the sand-hills at Rosbeigh, Co. Kerry.

CERCYON, Leach.

C. littoralis, Gyll. Ins. Suec. i. 111, **var. binotatum**, Steph., Ill. Br. ii. 137. Johnson and Halbert., List of the Beetles of Ireland, 1902, 615. This variety is very marked, the elytra being yellow, with a black spot on the posterior third close to the suture. It occurs in many Irish localities: Coasts of Donegal, Sligo (abundant), Mayo (Achill), Galway and Meath (Laytown). Stephens records it from Barham, Suffolk, and South Creak, Norfolk. Not uncommon in the Isle of Wight, Ventnor, Bembridge, &c. (Donisthorpe).

C. bifenestratus, Kust., Kaf. Eur. 56, 14 (1848); (= *C. palustris*, Thoms. V. A. 1853, 55). This species was introduced as British by Mr. E. A. Newbery (Ent. Record xi. 265) on specimens taken by himself "in the broad ditch near Sandown Castle, Deal," in July 1896. It is so nearly allied in appearance to *C. marinus*, Thoms. (which name must be substituted for the *C. aquaticus* of our collections) that it has probably for this reason escaped notice as British. Bedel (Faun. Col. du. Bass. de la Seine, i. p. 338) separates it as follows:

Mesosternum narrow. Body more oval. Apical spot of the elytra more reduced inwardly, but mounting laterally up to near the shoulders.—*marinus*, Thoms. (*aquaticus*, Brit. Colls.).

Mesosternum oval: Body more thick-set. Apical spot larger inwardly, but only mounting externally up to the level of the metasternum.—*bifenestratus*, Kust. (*palustris*, Thoms.).

Thomson in describing *C. marinus* (l.c. p. 54) speaks of the mesosternum as "lanceolate-linear," and contrasts with it *C. palustris* (= *bifenestratus*) as having the mesosternum broader and oval; such being the case Küwert (Fauna Baltica, 1890, p. 112) seems quite justified in placing it in another sub-genus, *Epicercyon*, which might perhaps be given generic rank, as the characters of the mesosternum are the most important in this group. Those of *Cercyon*, *Megasternum*, and *Cryptopleurum* will be found figured in the last plate of vol. i. of the larger edition of my British Coleoptera. Colour differences are usually worth very little consideration in the genus *Cercyon* except in two or three well-marked species.

STAPHYLINIDÆ.

ALEOCHARA, Gravenhorst.

A. (Polychara) discipennis, Muls. et Rey. Opusc. Ent. ii. 1853, 61. Shining black, elytra red with a common black sutural stripe and blackish sides, legs brown with reddish tarsi; head finely and diffusely punctured; antennæ only moderately thickened, the fifth and following joints hardly increasing in breadth, slightly broader than long, and the penultimate joint at most one and a half times as broad as long; thorax transverse, strongly rounded at the sides, a little more

narrowed in front than behind, rather finely and thickly punctured and with rather long and thick pubescence; elytra as long as the thorax, somewhat coarsely punctured; hind body with the front dorsal segments moderately strongly and thickly punctured, more strongly and diffusely punctured behind; male with the eighth dorsal segment sharply toothed on its hind margin. L. $5\frac{1}{2}$ -6 mm.

An immature specimen was taken by Commander J. J. Walker in sheep-dung at Queendown Warren, Chatham, and a specimen was found before this among Dr. Capron's insects by Mr. Champion; most of his captures were from Shiere, Surrey, but no locality was attached to this specimen.

Mr. Champion, in introducing the insect (Ent. Mo. Mag. xliii. (2 Ser. xviii.) p. 102), says that "*A. discipennis* may be briefly described as a small *A. fuscipes*, with the antennæ formed much as in *A. lanuginosa*. The elytra are shorter than the prothorax, rufescent, with the sutural region and the sides infuscate, much as in *Oxyptoda lividipennis* and its allies. The hind body is somewhat densely punctured towards the base and more sparsely towards the apex, a character separating *A. discipennis* from all the forms of *A. succicola*. The elytral punctuation is finer and denser than in *A. lanuginosa*. *A. discipennis* is found in France, the Alps, the Pyrenees, Tyrol, &c., and is apparently not rare. I have recorded it from Moncayo, North Spain." Ganglbauer records the species as rare, and as occurring in France, Switzerland, the Tyrol and the Caucasus.

A. brevipennis, Gr., var. ***curta***, Sahlb. (= *fumata*, Er., nec Gr.). In vol. ii. p. 14, this form is referred to as *fumata*, Gr., in error, as *A. mycetophaga*, Kr., is a synonym of *fumata*, Gr. It should be *fumata*, Er., which is a synonym for the var. *curta*, Sahlb., of *brevipennis*, Gr. Dr. Nicholson, who has pointed this out to us, has recently taken this form in Epping Forest.

A. (Polychara) crassiuscula, Sahlb., Ins. Fenn. i. 396. Sub-elongate, somewhat broad, sub-parallel, moderately convex, finely and densely pubescent, the pubescence being wholly decumbent; black, moderately shiny, with the elytra yellowish-red or testaceous, with a common, more or less distinct, dark triangular patch at the base of the suture, and with the sides also darker, mouth, base of the antennæ and legs rufo-piceous, the knees and tarsi paler; antennæ distinctly thickened with the second and third joints about equal and the fourth distinctly smaller than the fifth; thorax large, moderately transverse, narrowed in front, finely punctured; elytra distinctly shorter and almost narrower than thorax, finely, but distinctly and somewhat roughly punctured, somewhat broadly rounded at their posterior external angles. Hind body rather long, sub-parallel, uniformly, distinctly, and thickly punctured to apex.

Male with the sixth abdominal segment sub-sinuously or simply truncate, and very finely and obsoletely crenulate along the apical margin. Sixth ventral segment sinuate on the sides and sub-acutely

prolonged in the middle, somewhat thickly sinuate along the posterior margin. L. 4-5½ mm.

Taken by Mr. West on the Denes at Great Yarmouth, under dung, in May 1908, and in October and November 1908 at Lewisham, by Mr. Hereward Dollman at Hanwell, and also by Commander J. J. Walker at Oxford. It is probably widely distributed, although it is commoner in the south of Europe than further north. The elytra vary in colour, being sometimes almost entirely testaceous, and sometimes more or less strongly infuscate at the suture and the sides. Mr. Champion, who introduced the species as British (Ent. Mo. Mag. xlv. (2 Ser. xix.) 194), points out that the very densely punctured hind body and the colouration of the elytra renders it easy of recognition; these characters will separate it from *A. tristis*, Grav., to which species it is most closely allied. There is some confusion as to the name of this species; in the last edition of Reitter's Catalogue its name is given as *A. mæsta*, while the well-known *A. mæsta* of our British lists takes the name of *A. sparsa*, Heer. (= *succicola*, Thoms.). As, however, Ganglbauer adopts the name of *A. crassiuscula* (Die Käfer von Mitteleuropa, ii. 34), and the species has been introduced into our lists under this name, it is best to retain it. Perpetual confusion is being caused by this alteration of long-established names on very slight grounds.

A. (Baryodma) succicola, Thoms., Skand. Col. ix., p. 216. Mr. Champion, in introducing this species as British (Ent. Mo. Mag. xxxiii. (2 Ser. viii.) 97), writes as follows:

"Under the name *A. mæsta*, Grav., two species are confused in British collections. One of them is common and widely distributed; this is the *A. succicola*, Thoms., not hitherto recorded from Britain; the other, the true *A. mæsta*, Grav., appears to be very much rarer, and of the thirty specimens representing *A. mæsta* in my collection, two only are referable to it (from the London district and the Isle of Sheppey respectively), all the others belong to *A. succicola*." Dr. Sharp, at Mr. Champion's request, examined his British exponents of *A. mæsta*, and found that all were *A. succicola*, except one from Glasgow. Mr. Champion gives the following characters for distinguishing the species:

Maxillary palpi with the third joint long and gradually widening outwards (subg. *Polychara*, Muls. and Rey.); head and thorax coarsely punctate; hind body very sparsely punctate . . . *A. MÆSTA*, Grav

Maxillary palpi with the third joint shorter and sub-triangularly dilated (subg. *Homœochara*, Muls. and Rey.); head and thorax finely punctate; hind body still more sparsely punctate, appearing almost impunctate . . . *A. SUCCICOLA*, Thoms.

The size varies very much, as also does the colour, specimens occurring with reddish elytra or antennæ. Thomson gives no size; Mulsant and Rey give 1½ lines.

There is considerable confusion as to the synonymy of this species; according to Thomson *A. mæsta*, Grav., is synonymous with *A. sparsa*, Heer.; but according to Ganglbauer (Die Käfer von Mitteleuropa, ii. p. 38, 41), the latter species is synonymous with *A. succicola*, Thoms.; if the latter is right, Heer's name must have the priority.

EXALEOCHARA, Keys, Nov. gen.

This genus has been formed by Mr. J. H. Keys (Ent. Mo. Mag. xliii. (2 Ser. xviii.), p. 102), for the reception of the small Staphylinid hitherto known as *Aleochara morion*, Grav. (*Baryodma morion*, Muls. et Rey.); this insect possesses tarsi with 4.5.5 joints, whereas the Aleocharina have all the tarsi five-jointed; at first sight therefore it ought to be transferred to the Myrmedoniina, but it possesses the small accessory joint of the palpi which is characteristic of the genus *Aleochara*, and is therefore intermediate between the two tribes and affords another proof of the impossibility of obtaining really reliable characters for classification in large series; in spite of the accessory joint of the palpi, we should be inclined to place it under the Myrmedoniina, for we are of opinion that the tarsal formula is the more important character.

OXYPODA, Mannerheim.

Oxyпода metatarsalis, Thoms. (Skand Col. ix. 246, 1867), introduced by the Rev. H. S. Gorham as British (Ent. Mo. Mag. xlii. (2 Ser. xviii.) 53) on some examples taken at Mathon, near Malvern, by himself and Mr. Tomlin, is synonymous with *O. longipes*, Muls. et Rey., Opusc. Ent. xii. (1861) 102, 234, which has been included for a very long time in our lists on the strength of a single specimen taken at Aberlady, in the Forth district of Scotland, by Dr. Sharp. It has turned up in several localities in various parts of the kingdom in moles' nests, and seems fairly common near Oxford. I am indebted to Mr. Collins, of the University Museum, for several specimens. The species is most closely allied to *O. vittata*, Maerk, from which it differs in having the second joint of the posterior tarsi longer in proportion to the first, the antennæ longer and thinner, and the legs more infusate (in *O. vittata* they are clear yellow). The colour of the elytra, as a rule, appears to be more sharply defined.

O. perplexa, Muls. et Rey., Ann. Soc. Linn., Lyon, vii. 1860, 359; Opusc. Ent. xii. 1861, 106. Reddish-brown, very finely and thickly pubescent, slightly shiny, with the head and the middle segments of the abdomen black, the mouth parts reddish-yellow, and the legs ferruginous; antennæ slightly thickened towards the apex, third joint somewhat shorter than second, fourth to tenth each a little thicker, sixth to tenth slightly transverse. Thorax transverse, strongly narrowed in front, with bluntly rounded posterior angles, finely and thickly punctured; elytra somewhat longer than thorax, plainly emarginate on their hind edge before the exterior angles, very thickly and some-

what rugosely punctured; hind body very finely and thickly punctured to apex, with very fine greyish pubescence. First joint of the hind tarsi as long as the three following taken together. L. 3 mm.

In rabbit burrows and sandpits, Streatley, Berks, and Cornwall (Joy). Dr Joy in introducing this species (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 52) compares it with *O. exoleta*, Er., which it appears to resemble more closely than any other of the known British species. It differs from this species in being distinctly larger, with the sculpture of the elytra stronger, the thorax more ample and the elytra slightly shorter in proportion to the thorax; the antennæ are less strongly and more gradually thickened; the second and third joints are much more slender, and the third is longer in proportion to the second. Mr. Champion gives as other localities, Shirley, Surrey, Gravesend, Sheerness and Weymouth; Stoke Edith Park, Herefordshire (Tomlin).

Since the above was written a specimen of an insect previously named *O. purpurea*, Rey. by Captain Deville, has been identified by Dr. Sharp as his *O. verecunda*. There appears to be considerable difficulty with regard to the synonymy of *O. exoleta* and its allies, and they seem in some cases to have been confused by authors. Mr. Newbery (Ent. Mo. Mag. 1910, 230) has a note on the species, which states, but does not clear up the confusion; this cannot be done without the examination of further specimens.

O. sericea, Heer. Faun. Col. Helv. i. 321, 10; Fairm. et Lab., Faun. Ent. Fr., i. 432, 5, *nec* Boisd. et Lac. Rather elongate, fusiform, slightly convex, very finely and thickly pubescent, black or fuscous black, slightly shining, mouth parts and legs dark testaceous; head finely and thickly punctured; antennæ scarcely as long as the head and thorax together, slightly and gradually thickened, with the third joint shorter than the second, and the sixth to the tenth strongly transverse; thorax rather strongly transverse, narrowed in front, slightly rounded at the sides, as broad behind as the elytra, with the posterior angles obtuse but not rounded, obsolete foveolate towards the base, and with an obsolete central channel, finely and very thickly punctured. Elytra somewhat transverse, plainly longer than the thorax, finely, very thickly and subrugosely punctured. Hind body distinctly narrowed and slightly setose towards apex, very finely shagreened; posterior tarsi with the first joint equal in length to the two following taken together; the apex of the abdomen and the base of the abdominal segments are reddish-brown. Male with the last ventral segment angularly prolonged at apex. Female with the last ventral segment obtusely rounded at apex. L. 2 mm.

Dulwich Wood: introduced by Mr. H. Donisthorpe on a single specimen taken by him on June 17, 1904, and recorded in the Entomologist's Record, xvii. 67. Woking, Guildford, Frensham and Putney (Champion). The species is quite distinct from *O. nigrina*, Wat., with which it is confused by several continental authorities. It comes

nearest to *O. umbrata*, from which it may be separated by being smaller and having the tarsi a little shorter and thicker, the first joint being only as long as the two following, whereas in *O. umbrata* it is rather longer than the three following taken together. From *O. nigrina* it may be known by its longer antennæ and more strongly notched elytra. The species is widely distributed in France and Central Europe.

OCYUSA, Kraatz.

O. (Cousya) nigrata. Fairm. et Lab. Faun. Ent. Fr., i. 380, 10. Shining black, very finely and sparingly pubescent; head almost as broad as thorax, rather thickly punctured on the vertex; antennæ black or brown with the base pitchy red, gradually thickened, a little shorter than the head and thorax together, the first joint rather long and somewhat thickened, the second almost as long as the first, and the third scarcely half as long as the second, four to ten gradually thickened, more or less transverse, the last as long as the two preceding, subovate, very obtusely acuminate at the apex; thorax almost square, slightly rounded at the sides, rather convex, with a shallow depression in front of the scutellum, finely and rather thickly punctured; elytra longer than thorax, slightly transverse, rather finely and thickly punctured, with the punctuation somewhat oblique and evidently stronger than that of the thorax; hind body parallel, with less close punctuation, shiny, the three first segments with rather strong impressions at the base; femora brown, knees, tibiæ and tarsi light red. L. 3 mm.

One specimen taken by Mr. Claude Morley on June 2, 1900, in an unoccupied martin's hole in the side of a sand-pit at Levington, Suffolk, a place about half-way between Ipswich and Felixstowe: recorded as British by Mr. E. A. Newbery (Ent. Mo. Mag. xl. (2 Ser. xv.), 1904, 251). The species has a wide range in Central and Southern Europe.

O. defecta, Muls. et Rey. Brevipennes Aleochariens, 427. Elongate, slightly convex, very finely and rather scantily pubescent, shining black, with the mouth and the base of the antennæ brownish, and the knees and tarsi pitchy testaceous; head punctured; antennæ rather short, with the third joint a little shorter than the second, penultimate joints rather strongly transverse; thorax slightly transverse, scarcely narrowed in front or rounded at the sides, evidently narrower than the elytra, not deeply and rather closely punctured; elytra almost quadrate, evidently longer than the thorax, somewhat depressed, finely and rather thickly punctured; hind body sub-parallel, very finely, not deeply, and rather thickly punctured, the punctuation being less on the fifth segment. L. $2\frac{1}{4}$ – $2\frac{1}{2}$ mm.

Introduced as British by Mr. E. A. Newbery (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 150) on a single specimen taken by Mr. S. G. Rendel among dead leaves in a dry ditch near Tiverton, Devon, in November

1908. It is smaller and less convex than *O. maura*, Er., from which it may further be known by the distinctly transverse fourth joint of the antennæ, the less apparent dorsal depressions of the hind body, and the shape of the thorax. It has occurred very rarely in Provence and Corsica. Mulsant and Rey. (*l.c.* 427) had only seen one specimen and were doubtful, when they described it, whether it really belonged to the genus *Ocyusa*.

Mr. E. A. Newbery (*Ent. Mo. Mag.* xl. (2 Ser. v.) 1904, 251) proposes the following table for distinguishing the species, and has kindly modified it for me to include *O. defecta*:

- | | |
|---|-----------------------------|
| I. Elytra (with head and thorax) distinctly and roughly alutaceous; thorax broader than long, with shallow central furrow | O. INCRASSATA, <i>Muls.</i> |
| II. Elytra not alutaceous; thorax at most with a basal depression. | |
| i. Hind tarsi shorter than tibiæ, first joint subequal to the two following united, and not longer than fifth. | |
| A. Thorax with a rather deep depression in front of scutellum, as long as broad, distinctly narrowed in front | O. NIGRATA, <i>Fairm.</i> |
| B. Thorax without a depression. | |
| a. Fourth joint of antennæ broader than long; thorax transverse, narrowed in front, with the sides scarcely rounded | O. DEFECTA, <i>Rey.</i> |
| b. Fourth joint of antennæ longer than broad; thorax not transverse, scarcely narrowed in front, with the sides evidently rounded. | |
| a.* Antennæ more robust, usually entirely red-yellow, as are the legs; average size larger | O. PICINA, <i>Aubé.</i> |
| b.* Antennæ less robust, usually infusate at apex; femora infusate; average size smaller | O. MAURA, <i>Er.</i> |
| ii. Hind tarsi subequal in length to the tibiæ, first joint very long, subequal to the three following joints united, and plainly longer than the fifth; legs entirely testaceous | O. HIBERNICA, <i>Rye.</i> |

With regard to *O. hibernica*, Rye, in describing it as an *Aleochara* (*Ent. Mo. Mag.* xii., 175), admits that it is not an *Aleochara* at all, and it certainly is not an *Ocyusa*. It must probably be referred to a new genus, but a closer examination of further specimens is necessary before any certain conclusion can be come to. The British species of *Ocyusa* probably belong to three or four separate genera.

STICHOGLOSSA, Fairmaire.

S. semirufa, Er., Gen. et Spec. Staph., 128, 105. Fairm. et Lab., Faun. Ent. Fr. i., 442, 1. Sub-parallel, rather robust, shining, finely pubescent; black, with the thorax and elytra rufous, the latter with the scutellary region and an indistinct patch at the sides about the middle slightly infusate; legs and mouth parts rufo-testaceous; antennæ reddish with the basal joints paler. Head finely and rather thickly punctured; antennæ rather strongly thickened, about as long as the head and thorax united, joints 5-10 strongly transverse, 11 suboval, as long as 9 and 10 united. Thorax strongly transverse, almost as broad behind as the elytra, very convex, finely and thickly punctured, with the posterior angles very obtuse. Elytra transverse, a little longer than the thorax, slightly convex, rather finely and thickly punctured; hind body slightly narrowed behind, shining black, sparsely punctured, fifth dorsal segment without a transverse impression.

Male with the last and penultimate ventral segments each with a prominent oblong tubercle or carina in the centre before the apex.

Female with the last segments simple. L. $2\frac{2}{3}$ -3 mm.

Obtained by Mr. B. S. Harwood in the vicinity of Colchester when beating oaks for larvæ in May 1898, and introduced as British by Mr. Champion (Ent. Mo. Mag. xxxv. (2 Ser. x.), 55).

The genus *Stichoglossa*, Fairm. (= *Stenoglossa*, Kraatz) is very closely allied to *Ischnoglossa*, Kraatz; the insect above described differs from its nearest ally *Ischnoglossa proluxa*, Er., in being more robust, with much stouter antennæ, and also in the general colouration and the characters of the male. It is widely distributed in France, and occurs in the Alps and South Germany, and probably in many parts of Central Europe.

Mulsant and Rey. unite the species of *Ischnoglossa* under *Stichoglossa* (Hist. Nat. des Col. de France, Brév. Aleoch. 399).

CALODERA, Mannerheim.

C. protensa, Mann, Brachelytra, 86; Muls. et Rey. Brévip. Aleoch. 536. Elongate, sub-depressed, very finely and very densely punctured, finely pubescent, sub-opaque, black, the mouth, the base of the antennæ, the knees and tarsi rufo-testaceous. Antennæ with the third joint shorter than the second, 7-10 moderately transverse. Thorax sub-quadrate, slightly narrowed behind, not quite so wide as the elytra, obsoletely canaliculate longitudinally in the middle. Elytra almost as long as broad, depressed, of about the same length as the thorax. Hind body sub-parallel, very finely and very thickly punctured throughout. Male with the sixth dorsal segment obtusely or subsinously truncated at its apical border; sixth ventral segment obtusely angulated at apex. L. 3 mm.

Colchester, in an osier bed (B. Harwood). *C. protensa* is very closely allied to *C. nigrita*, with which it may very likely be found mixed in our collections; it is, however, considerably smaller; the antennæ are shorter and have joints 5-10 more transverse and the

4th much narrower, about half the size of the 5th; it may further be known by the more densely punctured and duller hind body, and the fact that the basal depressions of the first four visible segments are finely punctured and not rugose as in *C. nigrita*; *C. protensa* and *C. nigrita* are distinguished from all the other species of the genus by their longitudinally channelled thorax (v. Champion, Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 225).

C. rufescens, Kraatz, Naturg. Ins. Deutsch, ii. 144. Very closely allied to *C. riparia*, but somewhat smaller on the average and more brightly coloured; pitchy-brown or rufescent, with the head and the hind body (except the apex and the hind margins of the segments) pitchy-black; the colour, however, is variable. Antennæ and legs brownish-red; the fifth to the tenth joints of the antennæ are more strongly transverse than in *C. riparia*, and the fourth is plainly narrower than the fifth; in *C. riparia* these two joints are of about equal breadth; in the last-mentioned species the abdomen is sparsely punctured upon the first four segments, more densely so upon the fifth, while in *C. rufescens* the abdomen is densely and sub-uniformly punctured. L. $2\frac{1}{2}$ –3 mm.

Sandown, Isle of Wight (Champion); Colchester (Harwood). This species is introduced by Mr. Champion (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 52), who says that it is probably mixed with *C. riparia* in our collections; the differences, as described, seem hardly to warrant their separation.

LOMECHUSA, Gravenhurst.

L. strumosa, Grav., Micropt. 91; Gyll. Ins. Suec., ii. p. 371. Ferruginous, with the elytra mouth, parts and legs lighter, and the head, the base of the middle or of all the segments of the hind body dark brown or blackish; the colour, however, is somewhat variable and is sometimes almost uniform; form oblong, rather broad and not convex; head small, antennæ stout, but scarcely thickened from the first basal joint, which is broad; joints five to ten not transverse; thorax strongly transverse, explanate and raised at the sides, disc shining and comparatively smooth, sides duller with obsolete granulations, posterior angles produced; elytra short, very finely punctured; hind body slightly rounded at the sides, smooth and shining on disc, with strong yellowish pubescence especially at the sides and towards base; legs strong and stout with slender tarsi. L. $5\frac{1}{2}$ –6 mm.

This fine species, which has been looked for for many years, is one of the most interesting, if not the most interesting capture recorded in this supplement. The previous records of its occurrence in Britain are one specimen taken by Sir Hans Sloane on Hampstead Heath in 1710, and a second captured by Dr. Leach while travelling in the mail coach between Cheltenham and Gloucester. Both the specimens are in the British Museum, but the insect has long been omitted from our lists. It was rediscovered by Mr. Donisthorpe on May 25, 1906, in

company with its normal host *Formica sanguinea*, at Woking, and he has since found it in large numbers. It has not been found with any other ant in Great Britain, but it has been taken on the Continent with *Formica rufa* and *F. pratensis*.

DINARDA, Mannerheim.

D. hagensi, Wasm. Wien. Ent. Zeit., 1889, p. 281; Ent. Record xvii., 1905, pp. 181-182. Closely allied to *D. dentata*, but on the average, smaller and paler, the red colour being more tinged with a yellowish shade; thorax broader in proportion to the elytra; the thorax and the elytra have the posterior angles less sharply pointed, and are not so strongly punctured as in *D. dentata*, the punctures being of the same character as in the last-named species but less strongly marked; the elytra are less explanate at the sides; the antennæ are slightly more slender and longer, joints 4-10 being less strongly transverse. L. $2\frac{3}{4}$ -3 mm.

Taken by Mr. Donisthorpe (who adds it to the British list, *l.c.* p. 181) in numbers at Bournemouth in nests of *Formica exsecta*, and subsequently with the same ant at Parkhurst Forest, Isle of Wight, in 1909. *F. exsecta* makes a small nest of ling and grass, and is very scarce in this country.

Most of the English examples, as pointed out by Wasmann, (Zoologist, 1908, 69), show no raised keeled border to the elytra, in which point these specimens depart from the generic diagnosis of *Dinarda* ("elytrum margine laterali carinato").

D. pygmæa, Wasm. Deutsch Ent. Zeit., 1894, p. 277. Smaller than the preceding, from which it is distinguished by having the thorax at base scarcely broader than the elytra. This is due to the shape of the thorax, which has the sides less strongly rounded and sub-parallel before base; the thorax is more strongly sculptured and rugose than in *D. hagensi*, and the joints of the antennæ are more transverse than in *D. dentata*; there is a distinct furrow or central impression on the head. L. $2\frac{1}{2}$ - $2\frac{3}{4}$ mm.

Cornwall, Bovisand near Plymouth (J. H. Keys); in nests of *Formica rufibarbis*, var. *fusco-rufibarbis*, Forel., sometimes in company with *Atemeles paradoxus*. The species is very abundant in the nests of this ant at Whitsand Bay. Introduced as British by Mr. Donisthorpe (Ent. Record xviii., 1906, 217).

We now possess four species of *Dinarda* as British; * they may be distinguished as follows:

- I. Thorax distinctly broader than the elytra;
 - L. 3-4 mm.
 - i. Posterior angles of thorax less produced;
 - L. $3\frac{1}{2}$ -4 mm.; head without longitudinal furrow or marked central impression. D. MAERKELI, Kies.

* In the European catalogue of Heyden, Reitter and Weise the other three of these species are regarded as varieties of *D. dentata*: and Wasmann apparently considers them as subspecies. I retain them here as species in deference to Mr. Donisthorpe, who has devoted much study to the ants' nest beetles.—W. W. F.

- ii. Posterior angles of thorax more produced;
L. $2\frac{3}{4}$ -3 mm.
1. Head with a longitudinal furrow; sides of elytra more explanate; penultimate joints of antennæ more transverse D. DENTATA, *Grav.*
 2. Head with a distinct impression; sides of elytra less explanate, occasionally serrate; penultimate joints of antennæ less transverse D. HAGENSI, *Wasm.*
- II. Thorax scarcely broader than elytra; head with a distinct furrow; L. $2\frac{1}{2}$ - $2\frac{3}{4}$ mm. D. PYGMÆA, *Wasm.*

HOMALOTA, Auct.

H. (Dacrila) pruinosa, Kr., *Naturg. der Insect. Deutsch*, ii. 228.

Narrow, sub-parallel, dull black, with the elytra dark pitchy castaneous, and the base of the antennæ and the legs testaceous-brown or yellowish with the femora darker; tarsi light; upper surface extremely finely punctured throughout and with very fine and close greyish pubescence; head narrower than thorax, antennæ moderately long, gradually thickened, with the penultimate joints plainly, but not strongly, transverse, and the last joint long; thorax sub-quadrate, slightly broader than long, a little narrower than the elytra; elytra plainly longer than thorax; hind body parallel, strongly margined; sexual differences not marked. L. $2\frac{1}{2}$ mm.

Taken by Mr. Elliman at Chesham, Bucks, and introduced as British, by Mr. Champion (*Ent. Mo. Mag.* xxxiii. (2 Ser. viii.), 274).

Subsequently taken by Champion on Guildford Downs. The species is widely distributed in the circum-Mediterranean region, and has been found in Austria. Its capture in Britain is very interesting.

The species is most nearly allied to *H. fallax*, Kraatz, and *H. luteipes*, Er., these three species being the only real European representatives of Thomson's section *Dilacra* and Rey's section *Dacrila*.

H. clavigera, Scriba, *Stett. Ent. Zeit.*, 1859, p. 414 (= *Gyrophaena clavicornis*, Epp., *Deutsch Ent. Zeit.*, 1878, p. 40). Black, shining, with the thorax and elytra sometimes pitchy, base of antennæ and the legs light testaceous; upper surface with moderately distinct pubescence; head small, somewhat rounded, sub-parallel immediately behind the eyes, with a shallow central channel; antennæ very short and strongly thickened, joints 4-10 becoming more and more transverse, 11 about as long as 9 and 10 united; thorax transversely sub-quadrate, hind body parallel, with the anterior segments sparingly and finely punctured, and the posterior segments smooth. L. 2 mm.

Discovered by Mr. Elliman of Chesham, Bucks, at Tring, in rotten leaves in a ditch at the base of one of the southern slopes of the Chiltern Hills: introduced by Mr. Champion as British (*Ent. Mo. Mag.* xxxiv. (2 Ser. ix.), 266).

The insect has the appearance of a *Gyrophaena*, the head being plainly narrower than the thorax, and the thorax than the elytra, and

as such it was described by Eppelsheim (1878). In 1891, as pointed out by Mr. Champion (*l.c.* p. 267) the Staphylinidæ were dealt with by Eppelsheim in Von Heyden, Reitter and Weise's list, and here he places *H. clavigera* in the genus *Atheta*, Thoms., subgenus *Ceritaxa*, Rey., which includes *H. testaceipes*, Heer, and *H. dilaticornis*, Kr., &c. Ganglbauer (Die Käfer von Mitteleuropa, ii. p. 192 (1895)) makes *H. clavigera* the type of a new subgenus *Rhopalocera*, but it seems a pity to adopt a name so universally used for Lepidoptera.

H. (Pycnota) paradoxa, Rey. Op. xii., 111. Rather shining, black, with the elytra and apex of the abdomen sometimes pitchy, finely pubescent; head transverse, thickly and finely punctured; antennæ rather long and stout, black or obscurely testaceous, 1st joint a little longer than 3rd, transverse, 5-10 gradually broader, strongly transverse, the last as long as the two preceding together, acuminate at apex; thorax transverse, a little narrower at base than the elytra, finely, densely and rugosely punctured; hind body broad, rather strongly margined at the sides, very gradually narrowed from the middle to the apex, with the 2nd, 3rd, 4th, and base of the 5th segments finely, thickly and rugosely punctured, and the rest sparingly and obsoletely punctured; legs lighter or darker testaceous. L. 2 mm.

Bradfield, Berks, and Kingswear, S. Devon (Joy); London district and Guildford (Champion); Woolton Hill, Hants, and Great Blakenham, Suffolk (Donisthorpe); Oxford district (Walker); Coulsdon, Surrey, and Lowestoft (Bedwell); Huntingfield (Chitty); West Malvern (Tomlin); Exeter and Cheshunt (Nicholson). It occurs in moles' nests; Dr. Joy records it as British (Ent. Mo. Mag. xlii. (2 Ser. xvii.), 201), and says that it is most closely related to *H. cribrata*, Kr., from which, and in fact from all its allies, it may be known by the thickness of its antennæ. Fauvel, who identified the species, says that it has been taken in the runs of rodents in France, so that it is evidently attached to mammals and has therefore escaped notice hitherto.

H. (Acrotona) parens, Muls. et Rey., Opusc. Ent. i. 1852, 44. Sub-elongate, rather broad, fusiform, somewhat convex, very finely and densely pubescent, pitchy black, the elytra and antennæ brownish or reddish-brown, the base of the latter and the mouth and legs testaceous, and the tip of the hind body reddish. Head very finely and closely punctured. Antennæ distinctly thickened towards the apex, shortly pilose, with joints 2-3 subequal, 4 moderately, and 6-10 strongly, transverse. Thorax strongly transverse, rather convex, slightly retracted in front, as broad behind as the elytra, moderately arcuate laterally, feebly sinuate at the base on each side, very finely and densely punctured. Elytra strongly transverse, a little longer than the thorax, sub-depressed, finely, densely and sub-rugosely punctured. Hind body attenuated towards the apex, setulose, and with long, sub-equally distributed pubescence, finely and densely punctured towards the base, a little less densely so behind. Posterior tarsi elongate, a little shorter than the tibiæ. L. 2 mm.

Guildford (Champion), one specimen : apparently generally distributed over Central Europe, in moss and old faggots, &c.

According to Mr. Champion, who introduced the species (*Ent. Mo. Mag.* xlv. (2 Ser. xx.), 1909, 5), this insect has the general facies of *H. (Coprothassa) melanaria*, Mann., but it is not nearly so large, and has much shorter antennæ. The stouter antennæ, with joints 6-10 strongly transverse, separate it from the more nearly allied *H. parva*, Sahlb., and *H. aterrima*, Grav.

H. (Atheta) fussi, Bern., *Verh.-Zool.-Bot. Ges. Wien.*, 1908, p. 40. *H. nitens*, Fuss., *Berl. Ent. Zeitschr.* 1868, 354.* Somewhat depressed, black, rather shiny, elytra brown, reddish-brown behind, hind body brownish at apex. Antennæ as long as the head and thorax, moderately stout, pitchy-black, scarcely paler at the base, 1st joint almost half as long again as 3rd, 4th small, shorter than 3rd, the following joints scarcely varying in breadth, the outer ones strongly transverse, 11th as long as the two preceding united, pointed at apex. Head moderately large, shining, sparsely and finely punctured; thorax about as broad as the elytra, about one-half broader than long, with rounded anterior and posterior angles, rounded at the base and sides, narrowed in front, rather sparingly and finely punctured, black, moderately shining, convex, without impressions. Elytra slightly longer than the thorax, thickly and distinctly punctured, depressed, each elytron more rounded at the sutural angle than is usual in *Homalota*; hind body a little narrowed posteriorly, segments 2-4 somewhat thickly and finely, and 5 and 6 sparsely punctured, legs yellow, with the knees somewhat darker. Pubescence of the upper surface short and fine, the hind body furnished at the sides with slightly longer protruding hairs. L. 2 mm.

One specimen taken by Mr. Champion at Mickleham on September 5, 1875 (*v. Ent. Mo. Mag.* xlv. (2 Ser. xx.), 1909, 31).

The insect, as observed by Kraatz, is very like a *Placusa* in the flattened, sub-parallel form, relatively large head, &c.; it is of about the same size and shape as *P. pumilio*, but it is more shiny, less densely punctured, and has more slender antennæ.

H. (Dimetrota) picipennis, Mannh., *Bull. Soc. Imp. Nat. Mosc.* 1843, iii. 224. Head and thorax brassy black, elytra brown, these parts being plainly shagreened and not very shining, hind body shining black; head very finely and sparingly punctured; antennæ pitchy-black, with rather long outstanding hairs, somewhat thickened towards the apex, 3rd joint equal to or a little longer than the 2nd, 4-6 slightly longer than broad, 6-10 as long as broad, the last nearly double as long as the penultimate, sharply pointed; thorax narrower than elytra, one-third broader than long, moderately rounded at the sides and slightly narrowed behind, finely pubescent, closely and rugosely punctured, sides with rather strong outstanding setæ; elytra distinctly longer than the thorax, very closely and somewhat rugosely sculptured, finely

* The alteration in name has been made because *nitens* is preoccupied to the genus *Homalota*.

pubescent; abdomen sub-parallel, narrowed behind, with segments 2-4 finely and rather diffusely punctured, the remainder very finely and sparingly punctured, with distinct setæ at sides; legs brownish testaceous, femora darker. Male with the posterior portion of the 7th ventral segment of hind body emarginate. L. $2\frac{3}{10}$ - $2\frac{4}{5}$ mm.

Dalwhinnie, Inverness-shire, September 1909, one specimen, and Aviemore, September 10, 1910, a few examples in rotting fungus (Joy); Rathmullan, Donegal, Ireland (Cameron). This species is allied to *H. atramentaria*, Gyll., and *H. cinnamoptera*, Thoms.; from the former it may be distinguished by having the elytra much more finely and closely punctured, the antennæ less thickened towards apex (the penultimate joints being about as long as broad, instead of distinctly transverse), and the last joint more pointed; the legs, too, are lighter. From *A. cinnamoptera* it differs in having the fore-parts less brassy and duller, the somewhat more parallel-sided hind body and the rather stouter antennæ.

The insect will probably be found in many other localities in Great Britain, for, according to Ganglbauer, although rare, it occurs throughout the greater part of the Palæarctic region. The species was introduced as British by Dr. Joy (Ent. Mo. Mag. xvi. (2 Ser. xxi.), 1910, 252).

H. (*Atheta*) *divisa*, Märk., **var. *blatchi***, Ellis, Ent. Rec. 1901, p. 251. *H. angulata*, Fowler and Sharp Cat., 1893. A very distinct form differing from the type in that the base of the thorax is much wider than the elytra owing to the strongly developed posterior angles.

Taken by the late Mr. W. F. Blatch in dead moles and hedgehogs at Knowle, Warwickshire. Mr. H. Willoughby Ellis, who described this form in honour of Mr. Blatch, has also taken it in similar situations.

H. (*Aleuonota*) *scotica*, Elliman. Ent. Record, xxi. 1909, 33. Elongate, somewhat parallel, depressed, finely and rather densely pubescent; reddish-testaceous, with the mouth parts, base of the antennæ, and the legs paler, head and hind body, excepting apex, pitchy, the two or three basal segments being slightly lighter; head, thorax and elytra rather dull, hind body a little more shiny. Head sub-triangular, strongly narrowed from base to front of eyes, about as broad as thorax, slightly convex, very finely punctured. Antennæ somewhat strongly thickened towards apex, joints 1-3 elongate, third joint a little shorter than second, 4 and 5 about as long as broad, 6 and 7 transverse, 8-10 strongly transverse, last joint half as long again as penultimate. Thorax very slightly transverse, narrowed a little in front, very slightly contracted towards base from the anterior third, with faint traces of a dorsal channel. Elytra transverse, very little longer than thorax, very finely punctured. Hind body sub-parallel, very finely and densely punctured; last ventral segment furnished with rather long black hairs. L. $2\frac{3}{4}$ -3 mm.

Nethy Bridge, Scotland, in flood refuse on the banks of the Spey;

taken sparingly by Prof. Hudson Beare and Mr. Donisthorpe in September 1908.

The insect is related to the *H. circellaris* group, from which it may be known by the triangular shape of the head, and the broader and less convex thorax; its nearest ally is *H. macella*, Er., but the latter is a smaller and narrower insect, with longer elytra and differently formed antennæ. In the European Catalogue of 1906, *H. circellaris* is placed under *Sipalia*.

H. (Atheta) inhabilis, Kraatz, Ins. Deutsch. ii. 251. Black, depressed; head thorax and elytra somewhat shining, alutaceous, and very finely and diffusely punctured; head nearly as broad as thorax, strongly channelled in the centre; antennæ short, black, with the base pitchy, third joint shorter than second, fourth strongly transverse; thorax transverse, distinctly channelled; elytra half as long again as thorax; abdomen more shining than the front parts, basal segments very finely and diffusely punctured, the last two segments almost impunctate; legs pitchy testaceous, femora darker. L. $2\frac{1}{2}$ mm.

Two specimens taken under pine bark at Blair Athol, Perthshire, September 5, 1909, by Dr. Joy, who introduced the species as *Epipeda nigricans*, Thoms. (Ent. Mo. Mag. xlv. (2 Ser. xx.), 268). Just as we are going to press he has corrected this (Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, 111) and says that he has taken further specimens at Pitlochry, Perthshire, and that it is unlike any other member of the genus *Homalota*, and can only be compared to *Epipeda plana*, Gyll.

MYRMECOPORA, Sauley.

M. brevipes, E. A. Butler (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 29). Closely allied to *M. uvida*, Er., but smaller and narrower, and with distinctly shorter legs; the antennæ and the penultimate joint of the maxillary palpi are proportionately shorter, and the former are pitchy with paler base, whereas in *M. uvida* they are entirely reddish-testaceous. In the last-named species the thorax is not broader than long, and the dorsal segments of the hind body have, in addition to the ordinary pubescence, strong erect setæ, which are easily seen in profile, whereas in *M. brevipes* the thorax is distinctly broader than long and the setæ on the dorsal segments are scarcely perceptible; the legs (which in *M. uvida* are more or less testaceous) are pitchy with testaceous tarsi. L. $2\frac{1}{2}$ – $2\frac{3}{4}$ mm.

West of England, Tintagel and Plymouth, &c. (Keys); Isle of Man (Bailey); Scilly Islands and Thurlestown, Devon (Joy); Isle of Wight (Donisthorpe); Weymouth (Beare).

Mr. E. A. Butler has recently introduced this species (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 29), and is confirmed in his opinion of it by Captain Sainte-Claire Deville and M. Fauvel, who have found it in Jersey and in Brittany.

Diestota testacea, Kraatz, Wieg. Arch., 1859, 7; *D. mayeti*, Muls. et Rey, Op. Ent. xiv. 196. Mr. W. E. Sharp (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 269) records the capture of this exotic species among the *débris* of decayed wood, &c., at Shirley, Surrey; it has also been found in Southern France; it is, however, originally an Indian insect, and numerous species of the same genus have been described by Dr. Sharp from Central and South America and the Hawaiian Islands. It cannot therefore be regarded as indigenous, although, as Mr. W. E. Sharp observes, it may be difficult to conjecture the exact method of its transplantation to the hills of Surrey if it be indeed an alien. The following is a short description of the insect as given by the finder:

"Light castaneous, with the head, the apical portion of the elytra, and the extremity of the hind body darker; antennæ stout, strongly thickened at apex, apical joints transverse; head very transverse and as broad as thorax; thorax strongly transverse, with all the angles rounded, very finely and densely punctured, with a strong impression at the base; elytra quadrate, rather wider than, and punctured similarly to, the thorax; hind body sub-parallel, exceedingly finely punctured. L. $2\frac{3}{4}$ mm."

Superficially the insect resembles a *Sipalia*, but is much more shiny and more robust and broader than either of the British members of the genus, and the elytra are more convex.

ARENA, Fauvel.

A. octavii, Fauvel (Ann. Soc. Ent. Fr. 1862, p. 292). Elongate, linear, finely pubescent, pitch-black, with the antennæ, thorax, elytra, apex of the hind body and the legs reddish castaneous; head as broad as the thorax, rather coarsely punctured; antennæ a little shorter than the head and thorax together, strongly and gradually thickened towards the apex; first joint scarcely thickened, 2-3 obconical, 4-10 gradually thicker, sub-moniliform, 7-10 strongly transverse, eleventh joint equal to the two preceding together; oval or oval-oblong, obtusely acuminate at apex; thorax sub-transverse, finely and thickly punctured; elytra transverse, evidently shorter than the thorax, rather finely and thickly punctured; hind body sub-parallel, about as broad at base as the elytra, somewhat shiny, sparingly pubescent, and sparingly and obsoletely punctured. Male with the last segment of the hind body evidently rounded and a little overlapping the last ventral segment; female with the last segment obtusely rounded. L. 2 mm.

Ilfracombe (Tait); Weymouth, Chesil Beach (Blatch); Dawlish Warren (De la Garde); Llanbedr (Attlee). Introduced as British by the late Mr. W. G. Blatch (Ent. Mo. Mag. xxviii. (2 Ser. iii.), 1892, 160). The species is found on the sea-shore under stones, &c., embedded in the sand, or in dead birds on the shore.

The genus *Arena*, Fauv., is closely allied to *Phytosus*, Curt., from which it differs in being a little more parallel, with the hind body less

elongate and the penultimate segment smaller, and by the anterior and intermediate tibiæ being furnished with stiff hairs, but not spinose; the posterior tibiæ are longer, with the first joint more elongate.

PHYTOSUS, Curtis.

P. nigriventris, Chev., Rev. Zool. 1843, p. 42. As *P. nigriventris*, Chev., appears to be a distinct species from *P. balticus*, Kraatz, it may be of use to quote *in extenso* Mr. Champion's note on the subject (Ent. Mo. Mag. xxxv. (2 Ser. x.), 1899, 1):

"Fowler (Col. Brit. Islands, ii. p. 170) treats *P. balticus*, Kraatz, and *P. nigriventris*, Chev., as forms of one species, he at the same time calling attention to some specimens in his collection, from Mablethorpe, Lincolnshire, with the hind body much widened posteriorly and very distinctly punctured. As these insects are regarded as specifically distinct by Continental authorities, and both occur in Britain, it is worth while to call attention again to the matter. They are easily separable by the characters given by Dr. Kraatz (Berl. Ent. Zeit, 1859, pp. 52, 53):

"Brunneus seu brunneo-testaceus, cinereo-pubescent, capite infuscato, punctatissimo, abdomine crebre punctato, nitidulo, nigropiceo, basin versus magis minusve infuscato, apice fusco-testaceo, elytris thorace dimidio brevioribus BALTICUS, *Kraatz*.*

"Stramineus, cinereo-pubescent, capite basi infuscato, confertim perspicue punctato, abdomine confertissime punctato, opaco, segmentis quarto quintoque totis nigris, sexto basi nigro, apice rufo, elytris thorace dimidio brevioribus NIGRIVENTRIS, *Chev.*

"It may be noted that *P. nigriventris* averages much larger in size, the largest specimen in my collection measuring nearly $3\frac{1}{2}$ mm. in length, and that it has the hind body much more widened posteriorly than in *P. balticus*, and more distinctly punctured; the black band, too, is very sharply defined, and confined to the fourth and fifth segments and the basal half of the sixth, whereas in *P. balticus* the hind body is nigro-piceous, with the base and apex indeterminately testaceous."

P. balticus is found generally along the south coast of England, and is probably general on the east and west coasts also; it also occurs in Scotland and Ireland. *P. nigriventris* appears to be rare; it has been taken on the Chesil Beach by Mr. Walker. My specimens from Mablethorpe, which Mr. Champion refers to, are not, as far as I can make out, to be referred to this species. Mr. Walker has taken

* Originally described and figured by Dr. Kraatz under the name of *P. nigriventris* (Stett. Ent. Zeit. xiv., p. 257, t. 3, fig. 6; Naturg. Ins. Deutsch, ii. p. 43).

P. spinifer, *P. balticus*, and *P. nigriventris* in company, in one day, at Weymouth. *P. nigriventris* is taken freely by Mr. Keys at Tregantle, Whitsand Bay, and is recorded by Messrs. Chaster and Sopp in the Southport list as frequent on the shore in spring and autumn in empty egg-capsules of *Buccinum undatum*, the common whelk: Boldoyle, Co. Dublin (Kemp). It has also quite recently (1910) been recorded from Dawlish, Devon.

DIGLOSSA, Haliday.

Mr. Champion (Ent. Mo. Mag. xxxv. (2 Ser. x.), 1899, 264) points out a discrepancy in my account of the species (Brit. Col. ii. 171), in that I speak of *D. mersa*, Hal., as apterous in the table, and then after description say that I have taken it on the wing settling on large pebbles &c. in the sun at Ventnor, Isle of Wight. I cannot at this distance of time remember, especially as there were large numbers of Homalotæ &c. on the wing at the same time, but I have a strong idea that there must have been both winged and apterous forms, as Mr. Champion suggests.* It is better, however, to adopt his table of differences, but I prefer to keep to my own names, which are those adopted in the last European Catalogue.

Abdomen not, or very slightly, widening posteriorly, the sixth dorsal segment more sparsely punctured than those preceding; antennæ piceous, paler at the base; prothorax feebly sinuate at the sides towards the base; head, prothorax and elytra slightly shining

D. MERSA, Halid.

Abdomen widening to the apex of the sixth segment, with the dorsal segments closely, minutely punctate; antennæ ferruginous or fusco-ferruginous, paler at the base; prothorax strongly sinuate at the sides towards the base; head, prothorax and elytra opaque

D. SUBMARINA, Fairm.
sinuatocollis, Rey.
crassa, Rey.

D. mersa occurs all along the southern coast—Southend, Sheppey, Sandown, Ventnor, Studland (Dorset), Weymouth, Portscatho, Falmouth—as well as at Tenby, Cleethorpes, Hunstanton, the Forth and Clyde districts of Scotland, Ireland, &c. It appears to be much the commonest species in Britain. The second species has been taken freely by Mr. Champion at Sheppey, and he gives as other localities, Weymouth (Walker) and Altcar, Lancashire (Tomlin). In Mr.

* This is borne out by Mr. Keys (Ent. Mo. Mag. xlvi. (2 Ser. xxi.), 1910, 117), who records the capture of a winged and an apterous specimen of a species of *Diglossa* at the same time and place; the species is not mentioned.

Mason's collection there is a very small form of it, probably found by Haliday in Ireland.

As the name *Diglossa*, Haliday (1837), has been preoccupied in Zoology (Wayler, 1832), Mr. Champion proposes to alter the name to *Diglotta*, but, as the name has not yet been accepted by the European authorities, it is better, perhaps, to retain *Diglossa*, at any rate for the present.

TACHYPORUS, Gravenhorst.

T. fasciatus, Nicholson, Ent. Rec. 1911, p. 24. Broad, shining, reddish-testaceous, with the head, breast, the sides and a broad band at base of elytra, and hind body black. Head and thorax exceedingly finely punctured. Antennæ long and fine, not thickened towards apex, with base testaceous, darker towards apex, penultimate joints longer than broad, 11th joint half as long again as 10th. Elytra longer than thorax, with disc reddish, side margins to just before apex broadly black, a slightly zigzag and not very well-defined broad band occupying nearly the basal half of elytra, black; where this band joins the marginal black bands it is narrowest, so that here the reddish colour of the disc of elytra extends to nearly the base on each side as a tongue-like projection; very finely and closely punctured, the punctures bearing a rather obvious black pubescence; marginal bristles stout and long. Hind body black, with the apical margins of segments testaceous, finely and closely punctured. Mouth parts and legs testaceous. L. $3\frac{1}{2}$ mm.

This species in shape and size most closely resembles *T. solutus*, Er., but the punctuation of the head, thorax, elytra, and especially of the hind body is much finer. The antennæ, although of the same length, have the penultimate joints considerably narrower. The 11th joint is only half as long again as the 10th, whereas in *T. solutus* it is nearly twice as long. The elytra, besides the difference in colour, are more pubescent, and the marginal bristles are stout and long; in *T. solutus* they are short and fine. From *T. chrysomelinus*, L., it differs by its broader form, by the colour of the elytra and the punctuation, which is closer and deeper, and by the greater length of the antennæ, whose penultimate joints are not quadrate or slightly transverse, as in the latter species. The marginal bristles of the elytra are even stouter and longer than in *T. chrysomelinus*.

Two specimens of this very pretty species were taken by Dr. G. W. Nicholson by sifting sedge-refuse in Wicken Fen, one on April 24, and the second on July 20, 1910.

TACHINUS, Gravenhorst.

T. frigidus, Er., Gen. et Spec. Staph., 256. This insect appears to be synonymous with *T. pallipes* and must therefore be so regarded. The synonymy in the last European Catalogue is as follows, *T. pallipes*, Grav. = *propinquus*, Mäkl. = *frigidus*, Er.

HETEROTHOPS, Stephens.

H. prævia, Er., Käf. Mark. Bandeburg, i. 480, **var. nigra**, Kraatz, Berl. Ent. Zeit., 1868, 352. Apparently we possess two forms of *H. prævia*, Thoms., *nec* Er., one a lighter coloured form of variable colour, but in part at least more or less pitchy or reddish-brown, and a deep black shining form which has hitherto been found very rarely and has passed under the name of *H. quadripunctula*, Gr.; the latter insect does not appear to occur in Britain; the *var. nigra*, however, has occurred very abundantly in moles' nests in many parts of the country (*v.* Ganglbauer, Käf. von Mitteleurop, ii. 387). Mr. Donisthorpe has taken specimens in nests of *Formica rufa*, and *Lasius fuliginosus*, at Weybridge and Wellington College, which appear to be a little larger than *nigra*, and with the punctuation more alutaceous, and consequently less shining (*v.* Trans. Ent. Soc. Lond. 1909, p. 407).

QUEDIUS, Leach.

To the table of characters for the sub-genera (Brit. Col. ii. 228) the following may be added:

Section II. (Sub-gen. *Quedius*, i.sp.). Elytra not very closely punctured.

Section III. (Sub-gen. *Microsaurus*, Steph.). Elytra very closely punctured.

Section IV. (Sub-gen. *Sauridus*, Muls. et Rey.). Scutellum smooth in all the species.

Section V. (Sub-gen. *Raphirus*, Steph.). Scutellum punctured and pubescent.

The insect introduced by Mr. E. A. Newbery (Ent. Mo. Mag. xli. (2 Ser. xvi.), 1905, 197) as *Quedius variabilis*, Heer (on a single specimen taken by Mr. Kidson Taylor in Sherwood Forest, in rotten fungus, in company with *Q. xanthopus*, Er.) must apparently be referred to *Q. fagei*, Thoms., which, in the last European Catalogue, is regarded as a synonym of *Q. maurus*, Sahlb. *Q. maurus* appears to be a good and distinct species. The punctures at the sides of the thorax, as Dr. Joy pointed out, cannot be relied on in this group as specific characters. (*Cf.* Newbery, Ent. Mo. Mag. 1910, 230.) Mr. Dollman records *Q. maurus* from Highbeach, Epping.

Q. nigrocæruleus, Muls. et Rey.; Brevipennes, Staphyliniens, p. 500. Closely allied to *Q. mesomelinus*, Marsh, of the size of the largest examples of this species; proportionately a little broader, and of a deeper colour throughout; antennæ slightly stouter; head larger and more distinctly punctured, with two punctures (instead of one) toward the postero-interior border of the eyes; thorax with from two to four punctures in an arched series upon the sides of the disc, with the lateral pore a little less distant from the margin; elytra shorter in proportion to the thorax, more densely punctured, usually with a blue

metallic reflection, violaceous in immature examples; abdomen less iridescent; legs black or pitch-black with the anterior tibiæ and all the tarsi more or less red. L. $8\frac{1}{2}$ –9 mm.

Male with the two penultimate ventral segments of the hind body furnished with rather conspicuous tufts of black hairs at apex; these are present in *Q. mesomelinus* but appear to be less distinct.

First recorded as British by Mr. Champion (Ent. Mo. Mag. xxxii. (2 Ser. vii.), 1896, 50) on a single specimen taken by Mr. W. H. Tuck near Bury St. Edmunds in a nest of *Bombus hortorum*; afterwards taken by Mr. Ernest Bedwell beneath a log by a sluice on the beach near a rabbit warren at Kessingland, Suffolk. Mr. Morley, who records this (Ent. Mo. Mag. xxxiv. (2 Ser. ix.), 1898, 267) gives a drawing of the maxilla as compared with that of two allied species, but this is often a variable character. Mr. Champion in the same place (p. 268) records a second specimen from Tostock, Bury St. Edmunds, and it has occurred since in a few localities; Barton Broad (Joy); in moles' nests not uncommon, Plymouth (Keys); near Cambridge in moles' nests, and in sand-pit and wasps' nests, Ditchling (Dollman); Oulton Broad (Beare and Donisthorpe); Woking (Champion); Exeter (Nicholson). It is found rarely in France in the sand and under stones in damp caves. Mulsant and Rey. (*l.c.* p. 505) also describe the larva of *Q. nigro-cæruleus*; it is said to live in caves with the perfect insect, and does not present any striking peculiarity except that the first joint of the cerci is considerably shorter than the anal process.

Q. talparum, Deville (Bull. Soc. Ent. Franc. 1910, 158), *vexans*, Brit. Col. *nec* Eppl. Deutsch. Ent. Zeit. 1881, xxv. p. 297. This species is most nearly related to *Q. brevicornis*, from which it may be distinguished by having the head always at least as long as broad, the eyes smaller, the shape more parallel-sided and the average size smaller; the penultimate joints of the antennæ are less strongly transverse; the apical border of the last dorsal segment of the abdomen is often, but not always, yellowish, and the hind body is slightly duller and more closely punctured than in *Q. brevicornis*. The small size of the eyes, as pointed out by Dr. Joy, who first introduced the species as British (under the name of *vexans*, Eppl.), is an important character, and in this respect the insect is allied to *Q. longicornis*, which evidently inhabits much the same situations. L. 10–11 mm.

Found by Dr. Joy near Bradfield in moles' nests, to which it is apparently exclusively attached. It is very widely distributed in Britain. I have one or two specimens in my collection without locality which probably occurred in flood rubbish. Dr. Joy (Ent. Mo. Mag. xlii. (2 Ser. xvii.), 1906, 201) adds a note to the effect that a difference in the habits of *Q. talparum* and *Q. brevicornis* is of much interest. *Q. brevicornis* is found in old birds' nests, and when one of these is being examined for beetles it will lie quiet for a very long time, and will not attempt to run until it knows it is discovered. *Q. talparum* runs off at a great pace at the first alarm. The latter would

profit nothing by lying still, the mole using its nose and not its eyes for discovering its prey, whereas birds would see a moving insect at once.

The following table is given by Dr. Joy (*l.c.* p. 201), who has purposely left out the characters derived from the punctures on the thorax as being unreliable in this group; this we have already pointed out under *Q. variabilis*:

- | | |
|---|--------------------------------|
| I. Penultimate joints of antennæ hardly transverse; last dorsal segment of abdomen entirely reddish yellow . . . | Q. FULGIDUS, <i>F.</i> |
| II. Penultimate joints of the antennæ strongly transverse; last dorsal segment of abdomen with never more than the apical margin yellowish. | |
| i. Hind body diffusely punctured, elytra bright red, legs black, average size smaller | Q. PUNCTICOLLIS, <i>Thoms.</i> |
| ii. Hind body closely punctured, elytra dull red, legs reddish, average size larger. | |
| 1. Head transverse even in ♀, eyes larger, shape fusiform, average size larger . . . | Q. BREVICORNIS, <i>Thoms.</i> |
| 2. Head, even in well-developed ♂, as long as broad, eyes smaller, shape more parallel-sided, average size smaller . . . | Q. TALPARUM, <i>Deville.</i> |

Q. cruentus, Ol., Ent. iii. 42, 27, **var. virens**, Rottbg. (Berl. Ent. Zeitschr. 1870, 29). This variety has the elytra black, often with a greenish reflection, and is reddish at the suture and often at the sides also.

Ireland, Antrim (Murlough Bay) and Armagh (Loughgilly) (Irish List, 1902, 644); Basingstoke (Dollman), Torquay (Donisthorpe), Birkdale, rather common (Chaster and Sopp), Ballycastle (Tomlin), New Forest (Walker), Bovey Tracy (Keys).

Q. hammianus, Sharp (Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, 57). This species is closely allied to *Q. molochinus*, Grav., but is larger, distinctly broader, and of more clumsy appearance. *Q. molochinus* is a very neatly formed insect. The elytra are slightly longer; the wings are 7 mm. long and pointed, and sub-truncate at the extreme apex, whereas in *Q. molochinus* they are $4\frac{1}{2}$ mm. long and very obtuse. There are also differences in the aedeagus of the male. The species appears to be quite distinct. L. 15 mm.

Deal, Strood, Lymington and Hayling Island (Sharp); Portland, Chatham, and I. of Sheppey (Walker); St. Helens, I. of W. (Holland); Bembridge, I. of W. (Donisthorpe). It is a salt-marsh species. I once found it in great profusion under stones, &c., in a salt marsh, but only took a few specimens, and cannot remember the exact locality: I believe, however, that it was in Wales, not far from Borth or Aberystwith.

Q. riparius, Kellner. Stett. Ent. Zeit. 1843, iv. 31. Fusiform, slender, black, the head and thorax being very shiny with a very faint tinge of green in certain lights, elytra with a slight bronze reflection, rarely bluish; head sub-orbicular, eyes large and rather projecting, antennæ pitchy black, rather long and slender, second joint much shorter than the first and third, 4-7 much, 8-10 slightly, longer than broad, the last joint about one-third longer than the penultimate, the basal half of the second joint and the base of the following four or five joints testaceous; elytra long, widest behind, somewhat dull owing to the rather dense punctuation and pubescence; hind body iridescent, pubescent, the pubescence being thicker and paler at the base of each segment, and forming a triangular patch on either side (arranged much the same as the golden pubescence on the abdomen of *Q. auricomus*, Kies), all these parts being furnished with strong outstanding black setæ; legs pitchy-black, knees and tarsi lighter, the anterior tarsi strongly dilated in both sexes.

Male with the last ventral segment plainly emarginate angularly at apex, with a smooth oblong space before the emargination. L. 6-7 mm.

Taken sparingly at Porlock, Exmoor, by the late Mr. W. G. Blatch, and introduced by him as British (Ent. Mo. Mag. xxxii. (2 Ser. vii.), 1896, 80). Beaulieu Castle, Inverness-shire (Chitty); Bovey Tracy, Devon (Keys); banks of R. Wye, Derbyshire (Kidson Taylor); Cusop Dingle, Herefordshire (Tomlin). Professor Beare and Mr. Donisthorpe found it in some numbers at Porlock in 1907. This species is very distinct; it has been found in similar situations in the Alps and Pyrenees and in the Thüringer Wald in Germany, &c. Mulsant and Rey. compare it with *Q. mesomelinus*, from which it differs in its smaller size and larger eyes; it comes near *Q. maurorufus* (both belonging to the *Sauridus* group), but may easily be distinguished from that species by its colour and pubescence.

Q. kraatzii, Bris. Ann. Soc. Ent. Fr., 1859, Bull. 231. Rather narrow, sub-fusiform, pitch-black with a slight bronze reflection, elytra dark pitchy-red, with the apical border light; hind body slightly iridescent, pitchy, with the apex of the segments lighter, clothed with more or less close yellowish-white pubescence, which lies in thick patches on the sides of the segments; head sub-orbicular, narrower than the thorax, with four punctures on the front; antennæ rather long and scarcely thickened, dark with the base lighter, thorax about as long as broad, very shiny; elytra a little longer than broad, about a third longer than the thorax, finely and thickly punctured and pubescent; hind body strongly narrowed to apex with long setæ at the sides, and pubescent as above stated in patches on each side, which are very distinct if the insect is viewed from behind in a strong light; legs testaceous with the tibiæ and base of the tarsi darker, anterior tarsi dilated, posterior tarsi with the first joint about equal to the two following together. L. $5\frac{1}{2}$ - $6\frac{1}{2}$ mm. Mr. Donisthorpe points out that the male, which was unknown, has the anterior tarsi more strongly

dilated than the female, and the sixth ventral segment of the abdomen strongly emarginate.

Taken in some numbers at Chiddingfold, Surrey, and introduced as British by Mr. Donisthorpe (Ent. Record, x. 1898, 196). It has never been taken in any other part of Britain, but Mr. Donisthorpe found it in numbers last year (1910) in the old locality. The species is recorded by Mulsant and Rey from the Pyrenees, and is very rare. In form it is like *Q. riparius*, from which it may be known by its colour and by the four punctures on the forehead.

Mr. Donisthorpe (Ent. Record, xi. 1899, 266) describes the larva of this species, which he says bears a very strong superficial resemblance to the perfect insect:

“Head and prothorax horny; head of a yellowish-red, prothorax dark ruby-red; mesothorax and metathorax of a less horny consistency, same colour as prothorax; abdomen soft, of a dirty blackish-brown colour above, grey beneath, legs and antennæ yellow; head sub-quadrate, flat, smooth; antennæ four-jointed, the basal joints being the longest; third joint curved, and with a very small joint, or appendage, on its outer side near apex; last joint small; mandibles strong, curved and furnished with a large tooth in middle of inner side; labrum transverse; labium small; labial palpi two-jointed, second joint very short and pointed; maxillæ cylindrical; maxillary palpi two-jointed, second short and pointed; prothorax transverse, almost as broad as head; mesothorax and metathorax transverse, a little less broad than prothorax; abdomen nine-jointed, segments of about equal length, but getting gradually narrower to apex; the terminal segment furnished with two long cerci, which are two-jointed and furnished with numerous simple setæ; anal appendage elongate and horny, used to assist progression; legs three-jointed. L. 6 mm.”

Considerable difficulty is sometimes found in separating *Q. rufipes*, Grav., and *Q. attenuatus*, Gyll.: the following character, for which I am indebted to Mr. Newbery, will be found useful:

- | | |
|--|-----------------------------|
| I. First joint of posterior tarsi distinctly (one third) longer than the last joint. | <i>Q. RUFIPES, Grav.</i> |
| II. First joint of posterior tarsi subequal to the last joint | <i>Q. ATTENUATUS, Gyll.</i> |

Q. obliteratus, Er. (Gen. et Spec. Staph., 549, 38). Elongate, fusiform, finely pubescent, black, with the palpi, the base of the antennæ, the legs, the apical margins of the segments of the hind body, the suture, sides, and posterior margins of the elytra, and a humeral spot or streak yellow or reddish-yellow; sometimes the elytra are entirely yellow, with the scutellary region and a broad streak extending therefrom and nearly reaching the apex, black; head and thorax smooth, shining, the latter about as long as broad, narrowed in front, and a little narrower than the elytra at base; elytra sub-quadrate, about as long as the thorax, finely and densely punctured, rather less plainly behind, iridescent; first joint of posterior tarsi scarcely longer

than the next two together, and slightly longer than the last joint. L. $5\frac{1}{2}$ - $6\frac{1}{2}$ mm.

Plymouth (Keys); St. Margaret's Bay, Plymouth (Beaumont); Bury, in wasps' nest (Tuck); Lee, Kent (Champion); Isle of Sheppey (Walker); Shirley, Surrey, and Gibside, Durham (Donisthorpe); Solway Firth, Cumberland (Britten); Birkdale (Chaster and Sopp); Herefordshire (Tomlin); Wimbledon Common (Nicholson). This species, as Mr. Keys points out (Ent. Mo. Mag. xxxviii. (2 Ser. xiii.), 1902, 147), can hardly be regarded as new to Britain, as it is enumerated by Mr. T. V. Wollaston in his "Note on the Coleoptera of the South of Ireland" (Zoologist, 1847, pp. 1570-6), and it is also ascribed to Great Britain, on the authority of Wollaston, by Fauvel in his Faune Gallo-Rhénane, vol. iii. p. 524; it has never, however, been recognised hitherto in our British Catalogues. The species differs considerably in size and colour; it is, perhaps, most closely allied to *Q. maurorufus*, Grav., from which it may at once be known by its colour, average smaller size, rather wider elytra, &c.; it is rather widely distributed in Western Europe from Norway and Sweden to Piedmont.

PHILONTHUS, Curtis.

P. intermedius, Boisd., var. **donisthorpei**, Dollman (Ent. Rec., 1910, p. 295). In sculpture, size and colouration of head, thorax, and hind body, similar to the "type-form." In the colour of the elytra, which are of a bright vivid red (with a faint metallic-green reflection), the specimen departs in a striking manner from the normal. The contrast between the bronze-green thorax and the clear red elytra makes this form a most beautiful and distinct one.

Taken by Mr. Hereward Dollman, in company with many normal specimens, by sifting the refuse heaps in a farm-yard at Ditchling, Sussex, on August 30, 1910.

P. concinnus, Grav., Micr. 21; *P. ebeninus*, var. *minor*, Er. (Gen. Spec. Staph. 461). This is the insect standing for the most part under *P. ebeninus*, Grav., in our collections (Joy, Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 51). The true *P. ebeninus* is larger ($7\frac{1}{2}$ -8 mm.), and has the penultimate joints of the antennæ distinctly less transverse, and the hind body less closely and finely punctured. In *P. ebeninus*, the fine transverse impressed line at the base of the first three or four dorsal segments of the antennæ is sharply angled backwards in the centre; in *P. concinnus* it is quite straight, or, at most, slightly angled. L. 5-7 mm. Sometimes the legs are brownish testaceous; this is the var. *ochropus*, Gr.

There seems no particular reason why *P. concinnus* should not be regarded as a variety of *P. ebeninus*, but the Continental authorities seem to consider it a distinct species. *P. ebeninus* (the true form) appears to be a rare insect as British. Mr. Champion possesses it from Godalming and Sandown, Isle of Wight. *P. corruscus*, Grav., cannot, I think, be regarded as a distinct species from the true *P. ebeninus*, as there appear to be no structural differences between them.

P. varians, Payk., Mon. Staph. 45; var. **agilis**, Grav., Mon. 77. I have before (Brit. Col. ii., 273) said with regard to *P. agilis* that it comes exceedingly close to *P. varians* and might be mistaken for a rather small and narrow variety of that species; in the European Catalogue (1906) it is placed rightly, I believe, as a variety of *P. varians*.

GABRIUS, Stephens.

This genus is well distinguished by the tarsi being simple in both sexes, by the shape of the labial palpi, of which the last joint is evidently more slender than the preceding and somewhat subulate, and especially by the shape of the ædeagus, which apparently consists of a single lobe, but the inferior lobe forms a Y-like furca closely applied to the basal part of the superior lobe; this character, which has been worked out by Dr. Sharp, distinguishes the genus of itself, for in *Philonthus* proper the inferior lobe never forms a furca; it is, moreover, very variable in the genus (although quite constant in the separate species) and affords a very good character for the determination of the species. Dr. Sharp tells me that he has dissected over one hundred specimens of *P. nigritulus* and that there is no variation.

Philonthus thermarum, Aubé, has been wrongly included in the genus *Gabrius* by Mulsant and Rey, Ganglbauer and others; it has the tarsi dilated slightly even in the female. Our species are *G. astutus*, Er., *vernalis*, Grav., *splendidulus*, Grav., *nigritulus*, Grav., *trossulus*, Nordm., and six new species recently described by Dr. Sharp, viz.: *stipes*, *velox*, *pennatus*, *bishopi*, *keysianus*, and *appendiculatus*. The group is certainly a very difficult one, but there can be no doubt that these are all distinct species, especially if the characters of the ædeagus are studied; these are noticed below, except in the case of the three first mentioned species; of these *G. astutus* has the appendage very long and slender, almost as long as the rest of the ædeagus, gradually tapering from base until a little before apex, where it is parallel-sided; viewed laterally it is slightly curved and resembles a long bird's beak; in *G. vernalis* the appendage is long, slender and pointed; in *G. splendidulus*, it is more closely allied to the *G. nigritulus* group, but is extended further behind the duct-exit and terminates in a larger and more developed apical portion; laterally the whole appendage roughly resembles in outline the head and neck of a goose.

The following table will serve to distinguish the species; the greater part of it (from *G. trossulus* onwards) has been kindly drawn up for me by Dr. Joy, assisted by Dr. Sharp.

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| I. Dorsal series of thorax each consisting of five punctures. | |
| i. Elytra shorter than thorax; size larger. L. 6-7 mm. | G. VERNALIS, Grav. |
| ii. Elytra longer than or at least as long as thorax, size smaller. L. 5-5½ mm. | G. SPLENDIDULUS, Grav. |

- II. Dorsal series of thorax each consisting of six punctures.
- i. Elytra very finely and thickly punctured; size larger. L. $6-6\frac{1}{2}$ mm.* . G. *ASTUTUS*, *Er.*
- ii. Elytra comparatively coarsely punctured; size smaller. L. $4-5\frac{1}{2}$ mm.
1. Elytra shorter than, and scarcely broader than thorax, legs testaceous . G. *TROSSULUS*, *Nordm.*
2. Elytra longer and broader than thorax.
- A. Penultimate joints of the antennæ strongly transverse; first joint black; head very broad; femora dirty testaceous; tibiæ pitchy . G. *STIPES*, *Sharp.*
- B. Penultimate joints of antennæ not strongly transverse.
- a. Legs testaceous, tibiæ at most a little darker; first two joints of the antennæ, and the palpi, testaceous or pitchy testaceous; elytra generally brownish.
- a*. Size larger; form broader; head, even in female, scarcely longer than broad G. *NIGRITULUS*, *Grav.*
- b*. Size smaller; form narrower; head in both sexes distinctly longer than broad.
- a†. Form slightly longer in proportion to width; ædeagus exposed in the male G. *VELOX*, *Sharp.*
- b†. Form shorter in proportion to width; ædeagus not exposed in the male G. *PENNATUS*, *Sharp.*
- b. Legs and palpi pitchy testaceous or pitchy; elytra black.
- a*. Size larger.
- a†. Form narrower and more elongate (like *G. pennatus* and *G. velox*), antennæ longer and not thickened towards apex G. *BISHOPI*, *Sharp.*
- b†. Form broader; antennæ shorter and distinctly thickened towards apex G. *KEYSIANUS*, *Sharp.*
- b*. Size considerably smaller; first joint of antennæ black; head about as broad as thorax, somewhat rounded at the sides G. *APPENDICULATUS*, *Sharp.*

* The lengths given before (vol. ii. pp. 274, 278) are too little.

G. trossulus, Nordm. Symb. 102. This species is very distinct and can be easily known by the short elytra; the head is large and broad and the antennæ rather short, with the penultimate joints slightly transverse. The thorax is often pitchy; in the male the ædeagus ends in a very slender appendage like a cat's claw; it is perfectly distinct and entirely different from the same organ in *G. nigrutilus*. L. 5 mm.

This is by no means a common species and very local. Dr. Joy records it from one locality only, in Berkshire. Mr. J. Taylor has taken it in the Isle of Wight, Dr. Sharp at Braemar. I had not a single specimen among those standing under the name in my collection.

G. nigrutilus, Grav., Micr. 41. This insect may be recognised by its large size, broad head and long antennæ, of which the penultimate joints sometimes appear to be longer than broad, and also by the light yellow palpi, legs and antennæ; the elytra are often, but not always, brownish. The male characters are practically the same as in *G. velox*, which is described below. L. $5\frac{1}{4}$ - $5\frac{1}{2}$ mm.

This is the commonest British species; it is found everywhere in grass heaps, &c., but is not confined to these. I have taken it in shingle almost below high-water mark at Branscombe, near Sidmouth, Devon.

G. stipes, Sharp (Ent. Mo. Mag. xvi. (2 Ser. xxi.), 1910, p. 129). This is a black-looking species, with the head large and broad, especially in the male; it is about the size of *G. trossulus*, but is broader, and the elytra are exceptionally broad in proportion to the thorax; it is distinguished from all its allies by the distinctly transverse penultimate joint of the entirely black antennæ; Dr. Joy says that the legs are rather intermediate in colour between the light- and dark-legged species, but in my specimens they are variable and in some are almost black; the species may further be distinguished by the last ventral segment of the hind body being rounded and entire in the male; in the other species it is more or less broadly emarginate; the ædeagus has at the apex a soft appendage which is not reflexed or acuminate. L. $5-5\frac{1}{2}$ mm.

Very scarce, as far as is at present known: Plymouth (Keys); Mickleham (Champion); Cambridge (Sharp); Ryde, I. of W. (Donisthorpe). I have taken a small series in a grass heap in my garden at Earley, Reading, and Dr. Joy has obtained a good series by carefully searching among many hundreds of *G. nigrutilus* and *G. pennatus* from flood rubbish collected from Thatcham, Berks.

G. pennatus, Sharp (Ent. Mo. Mag. xvi. (2 Ser. xxi.), 1910, p. 130). This species is smaller and narrower than the three preceding, and has a proportionately much narrower head; the penultimate joints of the antennæ are about as long as broad; the base of the antennæ, the legs and the palpi are testaceous; apart from its narrower form it is chiefly distinguished by the male characters, which are quite distinct from those of any other species; in this sex the last ventral

segment of the hind body has a small but deep excision in the centre which is almost entirely filled with a transparent membrane; the ædeagus is furnished at its apex with a stout, abrupt, sharp and roughly pentagonal appendage. L. $4\frac{3}{4}$ mm.

Widely distributed in Britain; Dr. Joy says it is almost as common as *G. nigritulus* in the south of England.

G. velox, Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.), 1910, p. 130).

A narrow black species, with the base of the antennæ and the palpi testaceous; the legs also are more or less testaceous; the head is long and narrow; the species is very similar externally to *G. pennatus*, and the females are scarcely distinguishable, but the male characters are very different; in *G. velox* the ædeagus naturally projects between the two styles so that the form of its apex can be seen without dissection; the last ventral segment of the hind body is furnished with a narrow deep excision, which is almost entirely filled with a transparent membrane; the ædeagus is rather elongate, with the apex obtuse and furnished with a reflexed appendage, which is badly defined and is as it were merged into the front part of the ædeagus; it is, however, distinct, if viewed laterally; this organ is very like that of *G. nigritulus*, but the latter insect is distinctly longer and twice as broad as *G. velox*. L. $4\frac{3}{4}$ mm.

Lymington (Sharp); Oxford district (Walker): apparently a rare species.

G. keysianus, Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, p. 130). This is one of the larger species and somewhat resembles *G. stipes*. It is, however, distinctly narrower; the head is narrower in proportion to the thorax; the penultimate joints of the antennæ are much less transverse, although they are slightly so, and the femora and elytra are darker; it is a narrower species than *G. nigritulus*, and has darker and thicker antennæ and darker legs, which are pitchy, with the tarsi reddish. In the male the last ventral segment has a broad excision which is in great part filled with a transparent membrane; the ædeagus is remarkable, being elongate and transparent at apex, with the extreme apex subacuminate, but really very minutely bidentate. L. $5\frac{1}{4}$ mm.

A scarce species: Devon, Slapton Ley (Keys and Champion), Cornwall, and Kerry, Ireland (Joy); Southport (Donisthorpe).

G. appendiculatus, Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, p. 131). Very similar to *G. keysianus*, but considerably smaller; deep black, with the base of the antennæ and the palpi pitchy and the legs rufo-piceous, or almost black, with short, robust, reddish tarsi; from *G. pennatus* it may be easily distinguished by its much darker colour, broader head and shorter legs and antennæ; in the male the last ventral segment of the hind body has a deep excision, in great part filled with a transparent membrane; the ædeagus is very remarkable, being short and robust, with a broad, short and very hard reflexed appendage. L. $4\frac{3}{4}$ mm.

Not common in England, but Dr. Joy says that he has found it by far the commonest member of the group in flood rubbish from Blair Athol and Dalwhinnie, Scotland.

G. bishopi, Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, p. 131). A narrow black species, with the base of the antennæ and the palpi pitchy, and the legs testaceous; head narrow, oblong-ovate, thorax slightly narrowed in front; elytra longer than the thorax, more finely punctured than the rest of the species above mentioned; tarsi slender.

This is the most narrow and elongate species, and in size is a little shorter than *G. keysianus*. The antennæ are long with the penultimate joints slightly longer than broad; the elytra are exceptionally long in proportion to the thorax; it most closely resembles *G. pennatus*, but is distinctly larger and darker and has longer antennæ; it is also very like *G. velox*, but is a little broader, with slightly darker palpi, and has the punctuation of the elytra less impressed.

The male characters are very distinct: in this sex the last ventral segment of the hind body has a deep excision in great part filled with transparent membrane; the ædeagus is long, with the apex hard, rounded, and almost bulbous. L. 5 mm.

Scotland, very rare: Beattock and Thornhill (Bishop and Sharp); Bungay, Suffolk, one specimen from flood rubbish, December 1910 (Joy); Oxford district (Walker).

ACTOBIUS, Thomson.

This genus has been divided by Ganglbauer (Die Käfer von Mitteleuropa, ii. 414) into two, *Actobius* containing *A. cinerascens* and *A. signaticornis*, and *Neobisnius* including *A. villosulus*, *A. procerulus*, and *A. prolixus*. He distinguishes the characters as follows:

Second joint of the antennæ thickened, as thick as the first and much thicker than the third. Epimera of the prosternum developed into membranous triangular lobes; metasternum without transverse raised line	ACTOBIUS.
Second joint of the antennæ not thickened. Epimera of the prosternum wanting; metasternum with a curved raised line.	NEOBISIUS.

In the European catalogue of Heyden, Reitter and Weise, *N. prolixus* is regarded as a variety of *N. procerulus*. I am inclined to think that this is the case, although Ganglbauer (*l.c.* p. 465) apparently regards them as distinct.

XANTHOLINUS, Serville.

X. cribripennis, Fauvel, Faune gallo-rhenane, iii. 390. Closely allied to *X. distans*, but on the average larger, with a pronounced bronze reflection; the head is more thickly punctured at the sides, and the thorax has the anterior angles more strongly rounded, and the

dorsal rows with from thirteen to fifteen punctures in each, those on the sides being twice as close and very irregular. The elytra are longer than in *X. distans*, and are considerably more finely and three times more closely punctured. L. 7-10 mm.

Ireland: Donegal and Derry.

The species was introduced as British by the Rev. W. F. Johnson and Mr. J. N. Halbert (Irish List, Proceedings of the Royal Irish Academy, 1901, 656). The Irish specimens are on the average smaller than those which have been found on the Continent, and are probably a small race. The general colour of the insect seems to be lighter than in *X. distans*, especially that of the elytra, and the head and thorax have a very noticeable greenish-bronze lustre. The best distinction, however, is afforded by the punctuation, which is very evident on comparison of the species.

The name *X. angustatus*, Steph., must be substituted for that of *X. ochraceus*, Gyll., and *X. longiventris*, Heer., must be regarded as a variety of *X. linearis*, Ol.

LEPTACINUS, Erichson.

L. linearis, Grav., appears to be only a variety of *L. batychnus*, Gyll. The former is usually distinguished from the latter by its more slender form and smaller size, the lesser number of punctures in the rows on the thorax, and the entirely dark elytra; but Ganglbauer points out that specimens are found which combine the colouring of *L. batychnus* with the punctuation of *L. linearis*. *L. batychnus*, moreover, varies very much in size and punctuation.

OTHIUS, Stephens.

O. fulvipennis, F., var. **donisthorpei**, Chitty (Ent. Record, xv., 1903, 151). This insect differs from the type form in having the elytra concolorous with the thorax, and in being altogether somewhat darker and narrower; the antennæ are dark chocolate, brighter toward the tips, and the palpi are of the same colour, as also are the legs, the anterior tarsi being lighter. The only structural difference appears to be found in the fact that the punctures of the head are finer; the pubescence and outstanding hairs entirely agree with the type.

Taken by Mr. A. J. Chitty by digging at the roots of a large oak near Brockenhurst, in the New Forest.

LATHROBIUM, Gravenhorst.

L. elongatum, L., Syst. Nat. i. 2, 685, var. **fraudulentum**, Gangl., Käf. der Mitteleurop., ii. 510 = var. **nigrum**, Joy (Ent. Mo. Mag. xlii. (2 Ser. xvii.), 1906, 271). In this variety the whole of the elytra are black, or show a very slight trace of pitchy colour at the apex.

Slapton Ley, Devon (Joy). According to Ganglbauer this is a very rare variety on the Continent.

L. lævipenne, Heer., Faun. Helv., i. 240, 14. Elongate and

sublinear; sparingly pubescent, shining black, with the elytra bright red, slightly darkened in the scutellary region; antennæ and palpi red; head subtriangular, a little broader than the thorax, sparingly setose at the sides, rather finely and sparingly punctured, almost smooth in the centre; thorax oblong, subparallel, slightly narrower than the elytra, rather strongly and thickly punctured with a smooth central longitudinal line; elytra a little longer than the thorax, somewhat strongly and sparingly punctured; hind body shining, finely and thickly punctured; legs reddish-testaceous, with the femora slightly darker. Male with the last ventral segment of the abdomen broadly impressed in the middle for its whole length, and broadly and angularly emarginate on its posterior margin, which is raised in a ridge in the centre, the emargination being bounded on each side by a large, sharp, projecting tooth, which is furnished with black cilia. L. 6 mm.

Oxted, Surrey: one specimen taken by Mr. W. E. Sharp in a sandpit (*v. Ent. Mo. Mag.* xlii. (2 Ser. xvii.), 55); Lewisham, Gosfield, Manchester district (Tomlin). The localities given by Mr. Blatch for *L. rufipenne* in the Midlands (see *Col. Brit. Isles*, ii. 300) all refer to this species.

The formation of the last ventral segment of the male renders this insect quite a distinct species. *L. lævipenne* is found very rarely in Bavaria and Switzerland, in mountainous districts under stones on the margins of streams; it is, therefore, rather strange that it should occur in Surrey.

L. longipenne, Fairm. et Laboulb. (*Faune Ent. Franc.* i. 555). Dark brown, rather shiny; antennæ reddish, testaceous, as long as the head and thorax, third joint scarcely longer than the second, the rest almost moniliform, gradually and slightly diminishing in length; head very slightly broader than the thorax, almost square behind the eyes, with the posterior angles strongly rounded; thorax oblong, one and a half times as long as broad, with all the angles rounded, scarcely narrowed towards the base, strongly and not very closely punctured, with a rather broad, smooth central line; elytra broader and a little longer than the thorax, rather strongly depressed at the suture, which is somewhat reddish, or they are entirely brick-red with a darker base; the punctuation is finer than that of the thorax, and very diffuse; hind body with very fine and close punctuation, narrower at base than the elytra, widened towards apex, fifth segment with a whitish apical border, sixth reddish at apex; legs pale reddish testaceous; anterior femora broad, with a rather strong tooth on their under side. L. 4 mm.

Roydon, Essex, one specimen in a tuft of grass at the roots of a willow (Nicholson); Tubney, Oxon, one specimen under a plant of *Echium vulgare* in the middle of a dry, sandy field (Walker). Fairmaire described it from one specimen found by M. Brisout, at Bondy, France. There are two specimens in Dr. Sharp's collection at the Natural History Museum, which have red elytra, and exactly agree with Dr. Nicholson's specimen. Both by Ganglbauer and in the last European

catalogue this species is placed as a variety of *L. longulum*, and it perhaps ought to be so regarded. Fairmaire points out its great resemblance to this species, but says it is larger, more shining, and with evidently longer elytra.

The species was introduced as British by Dr. Nicholson (Ent. Record, xxii. 1910, 159). There are one or two slight errors in his translation of Fairmaire's description: the punctuation of the elytra is said to be finer and closer than that of the thorax, whereas Fairmaire says, "plus fine que celle du corselet et très peu serrée."

L. dilutum, Er., Käfer. Mark. Brandbg., i. 509. Of the same shape as *L. longulum*, but somewhat larger, entirely brownish, testaceous, with the antennæ, palpi, and legs yellowish-red; head a little larger than in *L. longulum*, less strongly punctured, with the eyes plainly smaller; elytra, in the typical form, shorter than thorax. In the male the fifth and sixth ventral segments of the abdomen are very feebly channelled, and the sixth is rather broadly and triangularly emarginate at the apex. From *L. pallidum* it may be known by its smaller size, and the longer and more parallel-sided head, which is more finely and less diffusely punctured, and is much more narrowly rounded off at the posterior angles of the temples; the antennæ, moreover, are much shorter and thicker, and the abdomen is much less closely punctured. L. $4\frac{1}{2}$ mm.

Loch Ericht, Inverness-shire, and River Truim, Dalwhinnie; three specimens, 1909, Joy (Ent. Mo. Mag. xlv. (2 Ser. xx.), 268).

ASTENUS, Steph.

Astenus, Steph., Ill. Brit., v. 275 (1832).

Sunius, Er., Käf. Mark. Brandenburg, i. 523 (1839).

A. (Sunius) lyonessius, Joy (Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 177). Closely allied to *A. angustatus*, Payk. (of which Joy at first believed it to be a variety), but slightly smaller, with the elytra shorter and distinctly narrower in proportion to the thorax (the insect is winged), and the punctuation closer and more rugose, so that they are duller; the general colour is distinctly more fuscous, the thorax being sometimes reddish-brown; the yellow on the elytra is not nearly so bright and is never so sharply defined as in *S. angustatus*; the elytra vary in colour from being entirely dirty testaceous to having a narrow border of yellow, the rest of the elytra being fuscous. The commonest form has the elytra dirty testaceous, with a fuscous spot at the scutellum, and one in the middle of the outer margin of each elytron.

Scilly Islands, Cornwall, apparently not uncommon (Joy); Sandown, Isle of Wight (Donisthorpe).

This is evidently a good species and not a variety. Although the insect appears to be fairly common in the Scilly Islands, not a single specimen of *S. angustatus* was found in company with it.

STENUS, Latreille.

S. palposus, Zett., Ins. Lapp. 70, 6; *S. argentellus*, Thoms., Skand. Col. ii. 222; *S. bupthalmus*, Gyll., Ins. Suec. iv. 475, 111 (*nec* Grav.); *S. carbonarius*, Er., Gen. et Spec. Staph. 696, 11, Kraatz, Ins. Deutsch. ii. 570, 10 (*nec* Gyll.). Elongate, depressed, dull black, rather thickly and coarsely pubescent; head a little broader than thorax, almost as broad as the elytra, rather strongly and thickly punctured, with broad and shallow frontal furrows, the interval between these being only slightly convex; antennæ short, black, with a distinct three-jointed club, the last joint being short, oval and acuminate; thorax strongly oblong, slightly convex, gently rounded at the sides, sparingly pubescent, thickly, strongly and subrugosely punctured, with a short, more or less obsolete, central furrow; elytra subquadrate, about the length of the thorax, with thick silvery pubescence, forming whitish bands or spots on the sides of the disc, a noticeable spot being present near the apex of each; shoulders rounded; hind body parallel, scarcely narrowed behind, with somewhat thick silvery pubescence, rather finely and thickly punctured, the five basal segments being transversely impressed and bearing four longitudinal keels; underside and legs rather shiny black. L. 4-4½ mm.

Ireland: Lough Neagh district, between Toome and the mouth of the Ballinderry River; one specimen (Johnson and Halbert, Irish List, p. 665); Co. Meath (Nicholson). The species is rare in Northern and Central Europe, and in France, near running streams, mostly in mountainous districts. The close ally of this species is *S. bupthalmus*, Grav. et Brit. Coll. (*nec* Gyll.); it may be distinguished from this insect by its larger size, different and stronger pubescence, shorter and stouter antennæ, and closer and deeper punctuation. It has since been taken in some numbers on the shores of Lough Neagh.

S. fornicetorum, Mann., Bull. Mosc. 1893, p. 183. Of a leaden-black colour, with the head, thorax, and elytra with deep foveolate punctures, sparingly clothed with ashy pubescence; hind body strongly, but less closely, punctured, without side margins. Closely allied to *S. nigritulus*, Gyll., but much smaller, shorter, and with the punctures on the thorax and elytra much larger. Antennæ and palpi entirely black, the former rather short, with the third joint very slightly longer than the fourth; head with eyes about one and a half times as broad as the thorax, strongly and deeply punctured, with the forehead broadly and obsoletely bisulcate; thorax half the breadth of the elytra, rounded at the sides, even; base and apex of about equal length; elytra as long as thorax, even; hind body rather short, gradually and slightly narrowed towards apex; legs entirely black. Female with the sixth ventral segment of the hind body rounded at apex; male characters apparently not known. L. 1½-2 mm.

Ditchling, Sussex (H. C. Dollman), by sifting a faggot stack, August 2, 1910. Recorded by him as British in the Ent. Rec. 1911,

p. 95. Mr. Dollman points out that it is very nearly allied to *S. crassus*, Steph., from which it may be known by its much smaller size, different sculpture, and darker appearance, the shorter and more cordate thorax, the presence of a fovea near the base of the thorax, and the narrower elytra, the shoulders being much less prominent. The species was first described by Mannerheim from two specimens in a list of twenty-seven species, taken by him in nests of *Formica rufa*, during the summer of 1842, in Finland. Wasmann gives North Siberia as a locality, and Ganglbauer records it as rarely found with *F. rufa* in North and Central Europe. More evidence is probably required before it can be considered a regular inhabitant of ants' nests.

S. ossium, Steph., var. **insularis**, Joy (Ent. Mo. Mag. xlii. (2 Ser. xvii.), 5). This variety differs from the type form in being decidedly smaller, narrower, and more shining; the elytra especially are narrower in proportion to the thorax, and have the depressions much less marked; the punctuation of the thorax, elytra, and hind body is not quite so thick; and the femora have the ring of black less developed. L. 3 mm.

Lundy Island (Joy). It certainly differs considerably from the type, and at first I was inclined to consider it a distinct species.

BLEDIUS, Mannerheim.

B. diota, Schiödte, Nat. Tidsskr. 1866, 146; *B. hinnulus*, Er. (?) Gen. Staph. 762.

Dr. Sharp points out (Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, p. 34) that we have two species in our collections under *B. bicornis*, Germ. One of these is the true *B. bicornis*, but the other is the *B. diota* of Schiödte, which probably is the same as the *B. hinnulus* of Erichson, although there seems some room for doubt on this point. The question is discussed at some length by Dr. Sharp. In the last European catalogues *B. diota* is placed as a synonym of *B. tricornis*, Herbst., with which insect it has nothing in common.

B. diota may be easily separated from *B. bicornis* by the much paler colour of the elytra, and their more obsolete and sparing punctuation, and also by the form of the elevations on the head of the male. These, when viewed from the side, have in *B. bicornis* almost the form of short compressed horns; in *B. diota* they have a greater extension in the longitudinal axis, so that they appear only as elevated laminae. In the female sex the cephalic laminae are less elevated, and the distinctions greatly reduced, but in *B. bicornis* the elevation in front is a little greater and more abrupt; as, however, the development of the horns in the male is very variable, the best character will be found in the colour and sculpture of the elytra. The two species certainly look very distinct when compared side by side.

Wells, Norfolk, in abundance (Brewer); recorded in the Ent. Mo. Mag. for 1868, p. 201, as *B. bicornis*, from Cleethorpes, Lincolnshire (J. Kidson Taylor); also taken recently at Wells by Professor Beare, Mr. Donisthorpe, and Dr. Joy.

There has always been great confusion, both in Great Britain and on the Continent, with regard to *B. pallipes* and its allies. Dr. Sharp has recently been studying the genus, and has added three species to the British list, two of which are new to science (*Ent. Mo. Mag.* xlvii. (2 Ser. xxii.), 1911, 31-34). The synonymy in the last European catalogue, according to him, is entirely wrong, and may be disregarded.

B. pallipes, Grav., *Mon.* 197 (*Er. Gen. Staph.* 772; Sharp, *l.c.* p. 31). Gravenhorst included several species under his *B. pallipes*. Erichson, however, carefully described the right one as we regard it, and, as he had carefully examined Gravenhorst's series, we may accept his decision, and the insect ought perhaps to have his name assigned to it as the author. *B. pallipes* appears to be widely distributed, but to be more abundant in the Midlands and South of England. I have taken it in the greatest profusion on the banks of the Severn, near Tewkesbury, as above recorded (ii. 368).

B. annæ, Sharp, *l.c.* p. 31. Black, with the antennæ, palpi, and the legs (including the coxæ) yellow; thorax slightly transverse, sparingly and obsoletely punctured, strongly coriaceous, and very dull; elytra evidently longer than the thorax, finely and closely punctured. L. 4 mm.

"Closely allied to *B. pallipes*, but easily distinguished by the sculpture of the thorax and the shorter elytra. The coxæ are always clear yellow, and so are the antennæ. The length of the elytra as compared with that of the thorax is four to three: in *B. pallipes* it is three to two. The large punctures on the thorax are only slightly impressed, and are therefore more than usually indistinct, while the fine sculpture renders the surface rougher and more dull than in *B. pallipes*. The punctuation of the elytra is very similar in both. The thorax is abruptly narrowed behind, and the basal margin projects so that the hind angles are rectangular, but immediately in front of the angle the outline of the thorax by its direction would form a strongly obtuse angle with the base if the short basal projection alluded to were removed. In *B. pallipes* the angle itself is less prominent, and the direction of the side in front of it is less oblique." The sexual characters are very different from those of *B. pallipes*, but these have not yet been worked out.

Banks of the River Nith near Thornhill, Dumfries, in September 1867, and July 1910 (Sharp); River Nethy, Moray, 1907 (Sharp); Pitlochry, 1910 (Joy); Dowles Brook, Severn Side, August 1, 1881 (Harris in Col. Bates).

B. filipes, Sharp (*l.c.* p. 32). Slender, with the base of the antennæ and the legs yellow, the former being darker towards apex; thorax not transverse, closely and finely punctured, coriaceous, finely margined, with the posterior angles scarcely prominent, well marked, but almost obtuse; elytra longer than the thorax in the proportion of five to three. L. 4 mm.

This species, Dr. Sharp says, is really very distinct, though it has hitherto apparently quite escaped detection. The tarsi are longer and more thread-like than in any of its allies, and the thorax is just about

as long as broad; the elytra are considerably longer than the thorax. In the more slender specimens the greatest width of the body (*i.e.* the abdomen beyond the middle) is only $\frac{2}{3}$ mm.: in the broadest examples it is just 1 mm. The punctuation of the elytra is very similar to that of *B. pallipes*, to which species it is most closely allied; it is, however, much narrower, with more slender legs, and the thorax is not transverse.

Overstrand, near Cromer, Norfolk, dug out from the nearly perpendicular clay cliffs in numbers, June 1897 (Elliman); Mundesley (Elliott).

B. fracticornis, Er. Dr. Sharp (Ent. Mo. Mag. xlvii. (2 Ser. xxii.) 1911, 57) discusses the question of *B. fracticornis* and its British allies. The group, he says, is distinguished by there being no open chink on the side of the prothorax, by the pronotum possessing a channel on the middle, and by the existence of a rather large delicate membrane on the hind part of the fifth ventral segment in the male. *B. fracticornis* is the type of the genus *Tadunus* of Schiödte. In his genus *Bargus* (of which *pallipes* is the type), there is an open chink, over the coxæ, on the prothorax, and the males do not have a membrane on the fifth ventral plate. *B. fracticornis* appears to be far from abundant in Britain. Dr. Sharp has only taken one specimen, at Hammersmith Marshes, April 16, 1863, but Mr. de la Garde finds it at Braunton, and Mr. Champion at Woking. Large examples of *B. femoralis* are apt to be confused with it, but the sexual characters of the two species are different, and *B. fracticornis* is rather larger and broader, and has clear yellow legs and antennæ; in this species, too, the hind margin of the fifth ventral plate terminates in the middle as a delicate white transparent membrane: in front this membrane joins the body of the plate in a very evident, curvilinear manner, and at the point of junction on the hind margin of the two tissues there is thus formed a very obtuse, but distinct, angle, which does not project as a tooth.

After discussing as above the question of *B. fracticornis*, Dr. Sharp proceeds to comment upon two insects which he regards as probably new species, *B. lætior*, Muls. et Rey, and *B. sp. n.?*; for the present, however, it seems best to consider them as varieties, although the former, at any rate, may very probably be given specific rank. As yet it is not quite clear whether Sharp's and Mulsant and Rey's insects are really identical.

B. fracticornis, var. **lætior**, Muls. et Rey. We have in Britain, according to Dr. Sharp, what is considered to be a variety of *B. fracticornis*, with red elytra; this, he believes, will prove to be the *B. lætior* of Mulsant and Rey. All that is known about the species is a remark made by the French authors at the end of their description of *B. fracticornis* (Col. Fr. Brach. Oxytétiens, p. 151): "The colour of the elytra ranges from black to pitchy red, and even to clear red, with the scutellary region very slightly darker. In this last-mentioned variety there occurs a form slightly smaller, with the posterior angle of the prothorax a little less rounded, and which has all the appearance of a distinct species (*B. lætior, nobis*)." This description applies, Dr. Sharp says, perfectly to the insect under consideration, except as to size. The

British insect is almost the same length as *B. fracticornis*, but is slightly broader; it has thicker legs, the elytra are bright red, more or less blackish about the base and suture; the thorax is broader, so as to be distinctly transverse, and the hind angles have not so completely disappeared. In the male, the membrane on the margin of the fifth ventral segment is less extensive, and there is no angle formed on the hind margin at its junction with the harder tissue.

This variety was found in Yorkshire (Scarborough or neighbourhood) by W. Lawson; four of the specimens are in Mr. Champion's and Dr. Sharp's collections. Dr. Sharp possesses two others, one taken in Hammersmith Marshes, May 2, 1868; and there is one in the collection of Mr. de la Garde, originally from the Crotch collection.

B. fracticornis var. sharpi, var. nov. In the same article (*l.c.* p. 59), Dr. Sharp says that there is a male *Bledius* in Mr. Champion's collection, belonging to this group, which he cannot reconcile with my description. It is slightly larger than *B. fracticornis*, and has the elytra of a dark red colour. The fifth ventral segment is abruptly and deeply emarginate, the emargination being longer and narrower than in the type *B. fracticornis*, or in var. *letior*. Mr. Champion's specimen came from Dr. Power, and similar specimens in Dr. Power's collection are labelled as having been taken at Brentford. Dr. Sharp possesses a specimen which he doubtfully records as from flood refuse on the banks of the Nith, near Thornhill, Dumfriesshire, September 4, 1875. It is best to name the variety which may very likely be regarded in the future as a separate species, *B. sharpi*. In the Bates collection there is a long series of this insect, taken by Harris, and labelled "Severn Side, August (1st, Monday), 1881."

B. femoralis, Gyll. This species comes extremely close to *B. fracticornis*, but is on the average a little smaller, with the legs and base of the antennæ somewhat darker, and the male characters more pronounced, there being a very distinct tooth on each side of the fifth ventral segment at the junction of the membranous part with the harder part. The elytra vary from black to brown-red. This insect is much commoner than *B. fracticornis* in the South of England, but has not been recorded from the North. Until recently, it has been regarded as very rare indeed, but it has evidently been confused with *B. fracticornis* in collections.

B. fuscipes, Rye (Ent. Mo. Mag. ii. 1865, p. 154). *Baryus rastellus*, Schiödte, Naturhist., Tidskr., 1866, p. 149. Dr. Sharp has examined a series of Schiödte's insects from the Copenhagen Museum, and found them identical with the original examples of *B. fuscipes* captured by himself and Mr. Rye on the shores of the Firth of Forth, near Aberlady, in June 1865. The species has a wide range, occurring in the estuaries of the Mersey (Liverpool) and the Tor (N. Devon). The individuals from various localities differ somewhat in size and colour, but there is no real difference between them. A long series taken by Mr. Bishop and Dr. Sharp at Forres, in 1910, are rather smaller and darker, the legs being sometimes nearly black, and they have the thorax rather shorter. The Mersey specimens closely resemble these. In a

long series taken by Mr. de la Garde at Braunton, Devon, the form is less robust, the size a little less, and the legs rather paler.

B. terebrans, Schiödte, Naturhist. Tidskr. 1866, p. 149. This species is allied to *B. pallipes*, but is smaller, with the elytra much shorter, their length compared with that of the thorax being only seven to five; they are, moreover, less densely but more coarsely punctured, and the antennæ and front coxæ are clear yellow in colour.

Harburn, near Carstairs (Dr. Sharp); borders of the Truim, about two miles above Newtonmore (Mr. Bishop and Miss A. Sharp). Dr. Joy has found it at Birkdale, Southport, and Mr. Donisthorpe in some numbers at Chiddingfold, Surrey, in 1898. The insect agrees entirely with the examples of *B. terebrans*, Schiödte, in the Copenhagen Museum.

B. denticollis, Fauvel, Bull. Soc. Linn. Norm., 2 Sér. vi. 1870, 44. Very closely allied to *B. opacus*, from which it may be distinguished by the right-angled, projecting, tooth-like posterior angles of the thorax; colour, black or pitchy, with the elytra pitchy-brown, or brown or more or less reddish (as in *B. femoralis*), base of antennæ and legs reddish; head narrower than the thorax, finely shagreened and dull; thorax scarcely narrower than the elytra, about as long as broad, very slightly rounded at the sides, narrowed behind, finely shagreened and dull, with shallow large punctures, and with a fine, but distinct, central furrow; elytra longer than the thorax, moderately shiny, rather strongly and closely punctured, with fine and sparing pubescence; hind body shining, very finely sculptured, with scattered punctures; seventh ventral segment in the male slightly emarginate on each side, somewhat more strongly produced in the middle in the female. L. 4-4½ mm.

Nethy Bridge, Inverness-shire, Scotland (Bishop and Sharp); it appears to be found rarely on the Continent, in Central Europe and Finland, and also in the Caucasus and Siberia.

The species is also allied to *B. femoralis*, Gyll., but is broader and more robust, and differs in the shape of the thorax and the sculpture of the thorax and elytra.

Dr. Sharp kindly gave me a specimen of this insect, which he had determined as *B. denticollis*, some months before the description was published by Mr. Fryer in the Ent. Mo. Mag. 1909, p. 6.

The following Table may help towards the determination of these difficult species. For the greater part of it I am indebted to Dr. Joy. It may be substituted for the corresponding portion of the Table of *Bledius* already given in vol. ii., p. 364.

- a*. Elytra black or pitchy black*; punctuation of thorax fine.
- a†. Mandibles slender; first joint of antennæ (except extreme apex) and palpi fuscous;

* The elytra are variable in *B. denticollis*, in the specimens I have seen they are pitchy or pitchy-black, but they may be brown or reddish-brown with blackish interspaces.

- elytra more than $1\frac{1}{2}$ times as long as thorax
- b†. Mandibles stout; first joint of antennæ and palpi testaceous. B. SUBTERRANEUS, *Er.*
- a†. Thorax as long as broad.
- aa. Tarsi very long and slender; elytra rather more than $1\frac{1}{2}$ times as long as thorax, rather finely and closely punctured B. FILIPES, *Sharp.*
- bb. Tarsi moderate; elytra about $1\frac{1}{3}$ times as long as thorax, rather strongly and diffusely punctured B. TEREBRANS, *Schiodte.*
- b†. Thorax transverse.
- aa. Thorax dull; sides of thorax not angled but rounded from a little behind middle, and sinuate just before posterior angles, which are strong and very prominent; antennæ dark, with base red B. DENTICOLLIS, *Fawc.*
- bb. Thorax quite dull; sides distinctly angled behind the middle, and from thence more strongly narrowed towards the base; sinuate just before posterior angles, which are prominent; antennæ yellow B. ANNÆ, *Sharp.*
- cc. Thorax somewhat shiny; sides not strongly angled behind middle, less strongly narrowed towards the base, scarcely sinuate just before posterior angles, which are less prominent.
- aa*. Size larger; club of antennæ narrower; elytra $1\frac{1}{2}$ times as long as thorax; legs and apex of antennæ testaceous B. PALLIPES, *Grav.*
- bb*. Size smaller; club of antennæ broader; elytra scarcely $1\frac{1}{3}$ times as long as thorax; legs and apex of antennæ darker B. FUSCIPES, *Rye.*

PLATYSTETHUS, Mannerheim.

P. alutaceus, Thoms., Skänd. Col. iii. 123. Very closely allied to *P. cornutus*, with which it has been considered as synonymous by such authors as Erichson, Kraatz and Fairmaire, but now, apparently, considered as separated by the following characters: "Upper surface dull, finely but more distinctly alutaceous, especially the elytra; elytra black with very shallow scattered punctures." In *P. cornutus* the upper surface is shining and very finely alutaceous, the elytra have

a more or less distinct testaceous patch on the disc, and very distinct scattered punctures; in *P. cornutus* the sixth ventral segment of the abdomen of the male is gently sinuate, whereas in *P. alutaceus* it is less broadly sinuate, and the sinuation is terminated on each side by a small tooth. In both species the elytra are margined at the apex as well as along the suture. The colour of the elytra, as Mr. Champion points out, is perhaps variable in both insects and not to be relied on as a character. L. $3\frac{1}{2}$ -4 mm.

Taken by Mr. Champion, who introduced the species as British (Ent. Mo. Mag. xxxiii. (2 Ser. viii.) 1897, 98), at Morden, Surrey, in 1869, and by Mr. Keys at Slapton Ley, Devon. Also at Sandown, Isle of Wight (J. Taylor); Sittingbourne (de la Garde); Chobham (Saunders); Oxford and New Forest (Walker); Woking (Champion); Hanwell (Donisthorpe); Pulborough, Sussex (Nicholson); Bradfield (Joy). The species is widely distributed in Europe, North Africa and Asia Minor.

OXYTELUS, Gravenhorst.

O. perrisi, Fauvel. Bull. Soc. Norm. vi. 1861, 42 (1861). In the Irish List, p. 672, the variety of *O. maritimus* with yellowish elytra is recorded as the var. *perrisi* of *O. maritimus*, Thoms., Skand. Col. iii. 131 (1861); the elytra, however, in this species vary through several shades of colour from brownish or brownish-red to yellowish; in the last European catalogue *O. maritimus* is only regarded as a synonym of *O. perrisi*, and Ganglbauer is of the same opinion (Käf. der Mitteleurop. ii. 640); the date in each case is 1861, but Fauvel's name appears to have the priority.

O. saulcyi, Pand. Mat. Cat. Gren. 1867, 172. Closely allied to *O. tetracarinatus*, from which it is distinguished by the externally emarginate apex of the anterior tibiæ, the deeper foveæ on the vertex, the shorter and more granulose elytra, the more shining and very sparingly punctured abdomen, and the male characters. It resembles *O. fairmairei* in the formation of the apex of the anterior tibiæ, but differs in having the fore parts a little more coarsely sculptured; the hind body, moreover, is alutaceous and very finely and diffusely punctured, whereas in *O. fairmairei* this part is not alutaceous, but is strongly and closely punctured.

In the male the sixth ventral segment is produced in the middle of its hind border into a short and broad transverse plate, at the base of which is a tubercle which is carinate behind; the seventh ventral segment is broadly emarginate, and the centre of the emargination is feebly produced. L. $1\frac{3}{4}$ -2 mm.

Taken at Bradfield, Berks, in moles' nests by Dr. Joy who has introduced the species as British (Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, 4); Cheshunt and Broxbourne (Nicholson); Isle of Grain, Kent, and Widley, Hants (Cameron); Coulsdon (Bedwell); Harrow (Dollman). All the small examples of *Oxytelus*, which have been taken in moles' nests, and have mostly been referred to *O. fairmairei*, most

probably belong to this species; the last-named insect appears to be an inhabitant of dung, although, like many dung-feeders, it has been taken in moss, &c.

TROGOLINUS, Sharp.

Trogophlœus, *auct.* subg. nov. *Trogolinus*, Sharp (Ent. Mo. Mag. xxxvi. (2 Ser. xi.), 1900, 231). Dr. Sharp characterises this subgenus, which appears to deserve generic rank, as follows: "Antennæ with none of the joints transverse; head strongly constricted behind; pronotum level, not distinctly impressed; abdomen not acuminate, with the fifth segment equal in breadth to the second." The genus, when described by Dr. Sharp, included one species from Chili, two from New Zealand, and one from Plymouth, the latter being closely allied to one of the New Zealand species, and perhaps having been originally imported, although it seems to have at any rate established itself as British.

T. (Trogophlœus) anglicanus, Sharp (Ent. Mo. Mag., *l.c.* 232). Black, with the antennæ and legs fuscous-red, depressed, very finely and thickly punctured, dull; elytra much longer and broader than the thorax. L. 3 mm.

Plymouth (J. H. Keys and Cameron). First discovered by Mr. Keys.

"This insect," according to Dr. Sharp, "is about the size of *T. arcuatus*, but in nearly all other respects differs greatly from that species; the form is depressed, the surface densely and very finely punctate, and dull on account of this sculpture and the minute pubescence; in these respects *T. anglicanus* reminds one of *Cafius sericeus* and other maritime species. The antennæ are not much thicker towards the apex and the angles of the joints are more rounded than they are in the other species of *Trogophlœus*; they are dark in colour, but not black, the basal joint being rather darker than those following it. The head is narrower than the thorax, very finely punctured, a little depressed near the antennal tubercle, but the surface between the two tubercles is but little convex; the eyes are rather small, and do not extend to the back of the head, from which indeed they are separated by a considerable interval. The thorax is much narrower than the elytra, a good deal narrowed behind; the front angles are remarkably rounded and broad, in fact, quite indistinct; there is no transverse impression on the surface, but there is a distinct, though very slight, longitudinal elevation at the base in the middle. The elytra are one and a half times the length of the thorax, very flat, completely dull. The abdomen is remarkable for the extremely dense and fine punctuation and pubescence."

Mr. Keys and Dr. Cameron took a fair series of the insect in a tidal creek near Plymouth at a locality more inland than Plymouth Sound; there is no foreign shipping in it, and no ballast is allowed to be put out in the neighbourhood. No foreign vessel, as far as can be ascertained, has been in the creek for forty or fifty years. It is,

however, curious that the species is almost identical with *T. unicolor* from New Zealand. Subsequently taken by Mr. Donisthorpe (in 1908) at Bembridge and St. Helens, Isle of Wight.

TROGOPHLÆUS, Mannerheim.

T. subtilis, Er. This species rests as British upon a few rather doubtful examples, and no record of its capture has been recorded for many years; it is a question, therefore, whether it ought not to be omitted from our lists.

[Since the above was written Mr. Donisthorpe has recorded a specimen from the banks of the Derwent at Winlaton Mill (Ent. Rec. 1909, p. 231). This specimen was confirmed by Capt. Sainte Claire Deville.]

THINOBIUS, Kiesenwetter.

T. bicolor, Joy (Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, 10). Closely resembling *T. linearis*, Kraatz, but differs in its distinctly broader and less parallel form, conspicuously longer antennæ, more transverse thorax, of which the angles are more distinct, longer and broader elytra and the finer punctuation of the upper parts. Head and thorax fuscous, or dark reddish-brown, elytra testaceous, hind body dark, upper surface very finely pubescent; antennæ testaceous, reaching to the apical third of the elytra; thorax distinctly narrower than the elytra, slightly contracted behind, very finely and closely punctured, shining; elytra about twice as long as thorax, somewhat dull, very finely and closely punctured; hind body rather broad, more distinctly and less closely punctured than thorax and elytra; legs testaceous, tibiæ strongly widened in the centre. L. $1\frac{1}{2}$ mm.

Three specimens taken on the banks of the River Truim, at Dalwhinnie, Inverness-shire, on May 1, 1910; they occurred in company with *Homalota (Atheta) fragilis*, under stones at the edge of the water.

Dr. Joy (*l.c.* 11) says that apart from the broader and less parallel form and longer antennæ, this species differs from *T. linearis* in having the head relatively broader and the fovea on each side of the vertex more distinct, the elytra of a brighter testaceous colour (especially in life) and broader in proportion to the thorax, and the legs more robust.

T. pallidus, Newbery (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 4). A very narrow, flat, delicate, pale testaceous insect, with the antennæ and legs pale yellow and the front of the head and more or less of the abdomen infuscate; antennæ longer than the head and thorax together, submoniliform, joint four very small, five globular, six a little shorter than five and seven, slightly transverse, seven to ten almost globular, but gradually larger, eleven subcylindrical, obtusely rounded at apex; head large, with the eyes not prominent; thorax subquadrate or slightly transverse, widest just behind the anterior angles and from thence very gradually narrowed to base, very closely sculptured; elytra nearly twice as long as thorax, longer than broad, dull, very finely

alutaceous, with three short projecting bristles on each side (in fresh specimens); hind body linear, parallel, very closely punctured at the base, less closely at apex, shiny; apex of sixth segment with fine black setæ. L. $1\frac{2}{3}$ mm.

Great Salkeld, Cumberland (Britten): taken very sparingly, both in spring and autumn, under stones on a gravel bed, at the side of a stream.

This species may be known from our other British species by the colour and the structure of the antennæ; it seems to be very distinct, and superficially is quite unlike either of our other species.

The list of our species as at present constituted appears to be as follows:

- T. angusticeps*, Fauv.
major Fauv., nec Kraatz.
T. linearis, Kraatz.
 ? var. *brunneipennis*, Kraatz.
T. bicolor, Joy.
T. pallidus, Newbery.
T. longipennis, Heer.
T. brevipennis, Kies.

T. angusticeps, Fauv. (*major* Fauv., nec Kraatz) is especially recorded from England by Ganglbauer; *T. brunneipennis*, Kraatz, which is included in our catalogues, is evidently regarded as doubtful by Continental authorities, and must at most be regarded as a variety of *T. linearis*.

LESTEVA, Latreille.

L. fontinalis, Kies. (Stett. Ent. Zeit. 1850, 222). Ganglbauer, Die Käfer. Mitteleurop., ii. 713. Black, rather strongly shining, moderately thickly pubescent, with the legs and antennæ brownish-red; as in the other species of *Lesteva* examples occur that are entirely reddish or reddish-brown, the colour being not fully developed, although they appear to be mature; head finely and thickly punctured, with two broad frontal furrows which are deepened in front; thorax longer and more convex than in *L. pubescens*, to which species it is closely allied, and a little less strongly rounded and widened at the sides before the middle, shining; the punctuation is fine and moderately dense, but much less dense than in the last-named species. Elytra longer and more convex than in *L. pubescens*, finely and thickly punctured and more strongly than the thorax; in the male (according to Ganglbauer) straight behind, in the female somewhat obliquely truncate at the suture; hind body extremely closely punctured. The first joint of the posterior tarsi is a little longer than the two following united; in *L. pubescens* it is about equal to the three following united. L. 4 mm.

Amongst wet moss on the face of the cliffs at Shaldon, Devon; three specimens taken by Mr. P. de la Garde (Feb. 1908, and March 1910), in company with *L. pubescens* and *L. punctata*.

This species was introduced as British by Mr. E. A. Newbery (*Ent. Mo. Mag.* xlv. (2 Ser. xxi.) 1910, 109); the chief distinguishing characters lie in the less strong pubescence and less close punctuation, which render it a much less dull insect, the head and thorax being conspicuously shiny.

Sandown, I. of W. (Champion); Luccombe Chine and Chiddingfold, Surrey (Donisthorpe); Crowcombe, Somerset (Nicholson); Kew (Dollman).

L. sharpi, Rye, appears to be synonymous with *L. monticola*, Kies., and *L. sicula*, Er., is apparently only found in Sicily, our insect being *L. heeri*, Fauv.

OLOPHRUM, Erichson.

O. assimile, Payk. (*Faun. Suec.* iii. 409). Reddish-yellow-brown, rather shining, with the hind body above and below darker; head rather strongly and thickly punctured, last joint of the antennæ finely pointed; thorax about half as broad again as long, rounded at the sides, with bluntly rounded basal angles, disc coarsely and thickly punctured, side margins flattened and with a furrow in the middle; elytra about half as long again as the thorax and somewhat more coarsely, but not less thickly punctured. L. $3\frac{1}{2}$ –4 mm.

Taken in some numbers by Professor Hudson Beare and Mr. Donisthorpe in flood refuse on the banks of the river Spey, near Nethy Bridge, during the second and third weeks of September 1908 (*Ent. Record*, vol. xx. (1908) 255). The species appears to be widely distributed in Northern and Central Europe.

This species appears to be on the average of rather smaller size than our other four species; from *O. consimile*, Gyll., it may be known by having the sides of the thorax completely rounded and not slightly sinuate behind the middle, and from *O. piceum*, Gyll., and *O. fuscum*, Grav., by having the posterior angles of the thorax bluntly angled and only rounded at their extreme apex.

O. nicholsoni, Donisthorpe (*Ent. Record*, 1910, p. 139). Shining reddish testaceous, occasionally darker with elytra red. Depressed and somewhat parallel-sided. Head triangular, red with two black spots or blotches in front of ocelli, finely and distinctly but variably punctured; antennæ testaceous, slightly thickened at apex, first joint elongate, third longer than second, 4–10 not transverse, 11 about twice as long as 10, joints 7–9 being the shortest. Palpi long, darker than antennæ, the second joint being the longest, last joint pointed, about twice as long as third. Thorax transverse, $1\frac{1}{4}$ times as broad as long, slightly more narrowed in front than behind, posterior angles rounded, finely and distinctly punctured, with a bare oblong spot on disc. Elytra parallel-sided, $2\frac{1}{4}$ times as long as thorax, finely and distinctly but diffusely punctured, the punctures arranged more or less in rows. Punctures on scutellum variable. Hind body alutaceous, with a few very fine scattered punctures. Legs testaceous,

under-side testaceous, metathorax smooth and almost impunctate, abdomen alutaceous, reflexed margin of elytra finely punctured. L. $4-4\frac{1}{2}$ mm.

It comes nearest to *O. fuscum*, Grav., from which species it may be at once known by its more parallel shape, and more fine, distinct but diffuse punctuation, and lighter colour. The under-side is also much less punctured. The thorax is considerably less transverse, and is more narrowed in front. It is a brighter insect than either *fuscum* or *piceum*, Gyll., the latter species being larger, broader, more convex, more strongly punctured, and with thicker antennæ and palpi.

Taken under sedge-stack refuse in Wicken Fen by Mr. Donisthorpe and Dr. Nicholson, and subsequently in some numbers by Mr. Hereward Dollman, some fifty specimens being taken in all. It is remarkable that such a distinct species should not have been detected before.

OROCHARES, Kraatz.

Orochares, Kraatz (Naturgeschichte der Ins. Deutsch, ii. 955). This genus was founded by Kraatz for the reception of the species described below, which is the *Deliphrum angustatum* of Erichson. The genus is very closely allied to *Deliphrum*, Er., and scarcely differs from it except in having one of the mandibles toothed in the middle, and in the general shape of the head and thorax. It is also allied to *Aspedium*, Er., in one or two points, but has a different facies.

O. angustatus, Er. (Gen. et Spec. Staph. 874). Of rather slender build, black, shining, with the elytra fuscous or fusco-testaceous; head long, produced before the eyes, with two distinct and deep roundish impressions between the eyes, and a transverse furrow in front of these; antennæ long and slender, gradually but not strongly thickened towards the apex, blunt, with the base reddish-testaceous; thorax not much broader than the head, but much narrower than the elytra, about as broad as, or a little broader than long, truncate before and behind, with the sides slightly rounded and all the angles obtuse and sub-rotundate, sparingly and very finely punctured; scutellum distinctly impressed; elytra more than double as long as thorax, somewhat depressed, rather thickly and finely, but distinctly, punctured, the punctures being more or less plainly arranged in rows, at all events in certain parts, extreme apical margin light testaceous; legs testaceous or reddish-testaceous; abdomen very shiny, smooth, and scarcely visibly punctured, with the apex acuminate. L. $3\frac{1}{2}$ mm.

Leverstock Green, Herts.: one specimen taken by Mr. Piffard hibernating in November at the roots of rushes in a disused clay pit. Dr. Joy has also taken it near Bradfield. It has been recorded from Germany and France, but appears to be very rare. Fauvel (Faune Gallo-Rhénane, Staph. p. 100) says it is found in dung and in rotten vegetables, and also on flowers, on plains, and on mountains from November to early spring. Ganglbauer also records it from North

America. M. Bondroit has recently recorded the species as abundant in the winter in Belgium, always in beetroot fields, under the decaying leaves.

HOMALIUM, Gravenhorst.

H. cæsum, Grav., Mon. 209, **var. tricolor**, Muls. et Rey (Omaliens, p. 218, 1880). This is the *O. nigriceps* of our collections. It is, however, only a colour variety of *O. cæsum*. I have before (Brit. Col. ii. 415) referred to it as a very unsatisfactory species, and as probably only a variety. *O. nigriceps*, Kies., is quite a distinct insect from *O. cæsum*, having the head less rugose, the elytra shorter, the antennæ longer, &c. Mr. Champion (Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 17) has pointed this out and says further that the real *O. nigriceps* is a mountain species found in the Auvergne, Vosges, Pyrenees, &c., while *O. tricolor* is generally distributed in France as well as in Great Britain. *O. nigriceps*, Kies., must therefore be erased from our lists.

H. cæsum, var. subrucorne, Bagnall. This variety differs from the type in having the antennæ pitchy black with the five basal joints of a clearly defined rufo-testaceous colour, whereas in the type form the antennæ are entirely reddish, with the base very slightly lighter or darker. Mr. Bagnall (Ent. Record xviii. 1906, 72) says that among hosts of *H. cæsum* examined only three or four examples occurred, and there were no intermediate forms. According to Mr. Donisthorpe the insect recorded by the Rev. Theodore Wood from Rannoch as *H. monilicorne*, Gyll. (Ent. Mo. Mag. xv. (2 Ser. xl.) 1904, 260) must be referred to this variety. The insect was found at Gibsie in October 1905, in rotten *Polyporus*.

H. foraminosum, Mäkl. (Bull. Soc. Imp. Mosc. ii. 321, 1852); *H. brevicolle*, Thoms., Opusc. x. 1033. Dr. Joy (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 103) records the capture of this beetle, and gives the following description: "Black, shining, base of antennæ pitchy, legs pitchy-testaceous. Head with two strong roundish impressions between the eyes, strongly and closely punctured at the base, more finely and diffusely in front. Thorax strongly transverse, broadest at the anterior angles, which are rounded, sides rather strongly contracted almost in a straight line to the posterior angles, which are sharp right angles; moderately strongly and closely punctured; disc with two deep longitudinal impressions. Elytra broader than thorax and about twice as long, slightly broadened behind, strongly, very closely and rugosely punctured. Hind body dull, extremely finely punctured." L. 2-2½ mm.

Great Salkeld, Penrith (Britten); Rannoch and Thornhill (Dr. Sharp).

The species comes nearest, in the British list, to *O. exiguum*, Gyll., but is larger, and has the thorax much more strongly narrowed behind and the elytra more strongly, closely and rugosely punctured.

PROTEINUS, Latreille.

P. limbatus, Mäkl. (Bull. Soc. Imp. Nat. Mosc., 1852, ii. 323). *P. crenulatus*, Pand. (Mat. Cat. Gren., 1867, 169). *P. mäklini*, Fauv. (Bull. Soc. Ent. Fr., 1868, 494). Allied to *P. brachypterus*, F., but blacker, and more shining, with the base of the antennæ darker, and the thorax narrower; in the male the basal joint of the anterior tarsus is dilated and elongate, as long as the other four joints taken together; the middle tibia is slightly curved, and its inner margin is armed along the anterior edge with a series of distinct crenulations. Dr. Sharp, who has recently introduced the species as British (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 268), says that it differs from its allies, inasmuch as the male patella is formed by the elongation of the basal joint, whereas in *P. brevicollis* the basal two joints are involved, and in *P. brachypterus* the patella is altogether smaller. The greatly elongated first joint of the anterior tarsus is the principal distinguishing character. L. $1\frac{1}{2}$ mm.

Nethy Bridge, Scotland; two specimens in 1906, and two in 1907. The nomenclature of the species is doubtful. I have followed the latest European catalogue, but probably the name should stand as *P. crenulatus*, as the characters of the typical *P. limbatus* appear not to have been satisfactorily defined.

MICROPEPLUS, Latreille.

I have previously (Vol. ii., p. 217) included the Micropeplidæ under the Clavicornia, and placed them between the Histeridæ (*Onthophilus*) and Nitidulidæ, and I still think that it is doubtful whether their affinities are not rather towards the last-named family than to the Staphylinidæ; as, however, they are placed under the Staphylinidæ by Ganglbauer, Sharp, and other leading authorities, it is best to retain them in this position. The larva of *Micropeplus* is very peculiar, but, as Ganglbauer points out, it bears an analogy to that of *Syntomium*, and the formation of the ninth segment agrees rather with that of a Staphylinid than a Nitidulid larva. The formation of the anterior coxæ agrees with that of *Proteinus*, and the antennæ, with their knobbed three-jointed club (which has chiefly brought about the idea that the genus should be placed with the Nitidulidæ), are not considered by Ganglbauer to differ fundamentally from those of the other Staphylinidæ, except in the fact that the three vertical joints are soldered together in this formation. It must, however, be admitted that the general appearance is rather Nitidulid than Staphylinid.

The members of the genus are almost entirely of northern distribution in both hemispheres; and Dr. Sharp, in describing one from Guatemala, expresses his surprise at a species having been discovered so far south.

M. cælatatus, Er. (Käf. Mark. Brand., i. 647; Gen. Spec. Staph. 912). Closely allied to *M. porcatus*, F., but shorter, broader, more convex, and more shining, and further distinguished by having the head

more coarsely sculptured, without a central furrow, but as a rule with a plain, though minute, keel on the vertex; black; antennæ (except club) and legs testaceous; central portion of thorax very rough, with the three basal impressions indistinct, and the middle impression on the disc shallow; sides of thorax plainly less angled than in *M. porcatus*; elytra with five raised lines on each, interstices deeply and rather closely punctured; first three visible segments of abdomen divided into deep squares and longitudinal ribs, the fourth segment strongly rugose, with the ribs only indicated at base, distinctly shorter than in *M. porcatus*. L. $1\frac{3}{4}$ –2 mm.

Taken by Joy and Tomlin at the end of April 1909, in marshy ground, near Cloghane, co. Kerry, Ireland (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 149). Dr. Joy is right in saying that the length of *M. porcatus* should rather be $2\frac{1}{3}$ – $2\frac{1}{2}$ mm. than 2 mm., as I have before stated (Brit. Col. iii., 218).

SILPHIDÆ.

CLAMBUS, Fischer.

C. punctulum, Beck (Beitr. Baier. Ins. Faun. 1817, 8. p. i. f. 4). According to Ganglbauer (Käf. Mitt. Europ. iii. 259), this insect only differs from *C. minutus*, Sturm., in size, and he says that the difference of size in the length of the last joint of the antennæ as stated by Reitter (in *minutus* much longer than broad, in *punctulum* as long as broad) is not confirmed by his experience; Donisthorpe, however, who has reintroduced the species recently as British (Ent. Record, xx. 1908, 293) on the authority of a specimen taken at Chattenden, Kent, says that the antennæ of his insect are as described by Reitter. I have felt very doubtful as to whether the insect is more than a small variety of *C. minutus*, but the antennal character is apparently to be depended upon. Britten and Newbery have lately gone into the question (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, p. 250) and have distinguished the species as follows:

C. minutus, Sturm. Last ventral abdominal segment distinctly more rugose than the preceding segments; pubescence of abdomen longer and more thickly placed in middle of apex of last segment. Apex of elytra somewhat pointed; upper side thinly covered with moderately strong pubescence, which is more thickly placed on the head. Colour of disc of elytra usually lighter (brown). Size larger. L. $1-1\frac{1}{4}$ mm.

C. punctulum, Beck. Last ventral abdominal segment alutaceous, but not more rugose than the preceding segments; pubescence of abdomen shorter, not more thickly placed in middle of apex of last segment. Apex of elytra very bluntly rounded; upper side more closely covered with short pubescence which is much more thickly placed on the head; colour of disc of elytra usually darker (black). Size smaller. L. $\frac{3}{4}$ – $\frac{3}{4}$ mm.

C. punctulum has occurred at Highgate; Guildford, Woking and Ashstead, Surrey; Cobham, Kent; Soham, Cambs.

In any case *C. minutus* and *C. punctulum* are extremely closely allied; they both have the upper side smooth and shining and may by this character be distinguished from *C. armadillo* and *C. pubescens*, in which the upper side is alutaceous.

AGATHIDIUM, Illiger.

A. badium, Er. (Naturg. der. Ins. Deutsch. iii. 98); **A. orbiculatum**, var. b. Gyll. (Ins. Suec. ii. 574). Very closely allied to *A. seminulum*, L., but on the whole of a lighter brownish-red colour, the head and thorax smooth and shining, with a scarcely perceptible reticulation, even under a high magnifying power; elytra with much weaker sutural striæ, which are very shallow or obsolete towards the middle, and often only noticeable more or less towards the apex; metasternum with less strong and much shortened lateral lines; hind femora of the male with a very sharp-edged apical angle, forming a broad three-cornered tooth; the third joint of the antennæ is about half as long again as the second, and as long as the three following joints taken together. L. 2-2½ mm.

Pattendale, Lake Ullswater; taken under bark by Dr. Chaster in September 1903, and recorded by him as British (Ent. Record. xvi. 1904, 18); Gibside, Durham, not uncommon (Bagnall and Donisthorpe); Cumberland (Britten).

ANISOTOMA, Illiger.

A. humeralis, F. (Ent. Syst. i. 1792, 79), **var. globosa**, Payk. (In. Suec. i. 70, iii. 437; Ent. Mo. Mag. x. 1874, 84). This variety has the shoulders of the elytra ferruginous or yellowish-brown, darker, or more or less blackish at the suture and apex, with the dark colour of the thorax often resolved into two spots.

In the var. *clavipes*, Herbst., the body is entirely reddish with the shoulders rather lighter. Rye believed this insect to be merely an immature example of the species, but this applies equally well to the var. *globosa*, Payk.

LIODES, Latreille.

L. anglica, Rye (Ent. Mo. Mag. x., 1874, 135) has been for a long time regarded as a variety of *L. cinnamomea*, Panz., and as such is included under the last-named species in the European catalogue of 1906. Dr. Joy (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 219) contests this, and says that the general shape is quite different, *L. anglica* being shorter and having less parallel-sided elytra, and being more like *L. lucens* than *L. cinnamomea*; the thorax, moreover, in *L. anglica* is more strongly contracted in front and is broader at the centre (and not behind as in the last-named insect) and the posterior angles are sharper. In *L. cinnamomea* the club of the antennæ is always quite black, while in *L. anglica* it is at most very slightly darker than the basal portion.

The male characters also differ, the male organ in the latter insect being much more slender than in the former, and being parallel-sided, whereas in *L. cinnamomea* it is slightly conical in shape, being broadest at the base. Taking all the characters into consideration it would seem that *L. anglica* ought to be regarded as a good species.

L. lucens, Fairm. (Ann. Soc. Ent. Franc. 1855, lxxvi.; Jacq. Duval Gen. Col. d'Eur. i. pl. 36, f. 179 & 179b). Mr. Champion (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 198) points out that the insect somewhat doubtfully introduced into the British list under the name of *L. oblonga*, Er., is really to be referred to *L. lucens*, Fairm. It belongs to a different section of the genus, and is separable from the members of the *L. cinnamomea* group by the short row of punctures at the base of the ninth elytral interstice, and the peculiar character of the armature of the posterior femora of the male; this is well shown by Jacquelin Duval (*l.c. supra*); the apical tooth is obtuse instead of being sharply hooked, and the median tooth is very large and angular. It has occurred at Farnham (Champion); Shiere, Surrey (Capron); Bradfield and Wellington College (Joy); Woodhay in some numbers (Donisthorpe).

In the last European catalogue *L. grandis*, Fairm., is given as a synonym of *L. cinnamomea*, Panz., while *L. anglica*, Rye, and *L. oblonga*, Er., are regarded as varieties of that species. Ganglbauer regards *L. oblonga*, Er., as a separate species and further appears to be inclined to think that *L. grandis*, Fairm., and *L. anglica*, Rye, are distinct *inter se* and from *L. cinnamomea* (Käf. der Mitteleurop. iii. 213). In any case we do not appear to possess *oblonga* as British. As a matter of fact we have hardly, as yet, material enough to settle the question.

L. davidiana, Joy (Ent. Mo. Mag. xlvii. (2 Ser. xxii.) 1911, 11). Allied to *L. dubia*, Kug., but broader and more convex, the antennæ shorter, the head more strongly punctured, the thorax broadest at the base, the scutellum much larger, and the striæ of the elytra more finely and closely punctured, the third being distinctly sinuate in the centre. Oval, strongly convex, ferruginous, head and thorax darker, often fuscous; head rather strongly punctured, antennæ rather short, testaceous, with the club fuscous, the latter rather narrow, with the last joint about as broad as the penultimate; thorax broadest at the base (and not before it as in *L. dubia*), finely and moderately diffusely punctured; scutellum large, thickly and strongly punctured; elytra rather short, rounded at the sides; striæ with fine and very closely set punctures, third stria distinctly sinuate outwards in the middle, fourth stria sometimes very slightly sinuate, first stria not reaching the base, but ending at the side of the scutellum about $\frac{1}{4}$ to $\frac{1}{3}$ from its base, interstices distinctly and not very finely punctured; legs testaceous, tibiæ strongly widened towards apex.

Male with the posterior femora furnished at apex with a small blunt tooth; posterior tibiæ very feebly bisinuate, rather strongly curved inwards at apex. L. $2\frac{1}{2}$ to 3 mm.

Southport, Deal and Llancillo, and probably fairly generally dis-

tributed in England (Joy). Dr. Joy has found two specimens in the late Mr. Gurney's collection, now in my possession, but unfortunately no locality is attached.

Dr. Joy points out that in *L. dubia* the thorax is distinctly narrowed before the base, the scutellum is much smaller than in *L. davidiana*, and the first stria reaches the base of the elytra at some distance from the scutellum. In the shape of the thorax *L. davidiana* resembles *L. scita* and *L. ovalis*, but the former has longer antennæ, a smaller scutellum, much less closely punctured striæ and the third to fifth striae strongly sinuate. *L. ovalis* is rather longer, with much longer antennæ, the third stria of the elytra straight, and the interstices more finely punctured.*

L. algerica, Rye (Ent. Mo. Mag. xii. 1875, p. 151). A specimen taken in a sandpit at Cumnor, near Oxford, by Messrs. Collins and Donisthorpe, was named as above by Dr. A. Fleischer. It was unfortunately a female, but may be known from small pale *calcarata* by the more obsoletely-punctured thorax, of which the base is not sinuate, the more slender club of the antennæ, the apical joint not being noticeably narrower than the penultimate, &c.

Introduced as British by Mr. Donisthorpe (Ent. Rec. xxiii. 1908, 44). Mr. Rye described the species from a male taken by Mr. Rippon in Algiers.

L. calcarata, ab. **nigrescens**, Fleischer (Wien. Ent. Zeit., 1906.) Specimens, swept in Parkhurst Forest, Isle of Wight, in August 1910, by Mr. Donisthorpe, have been named as above by Dr. Fleischer.

L. curta, Fair., var. **donisthorpei**, Fleischer (Ent. Rec. xxiii. 1911, 43). Differs from the type form in its smaller size and colour, but chiefly in the striking short form, and rounding of the side-borders of the thorax; short oval, very arched; head, thorax, and the club of the antennæ black, the rest of the body red-brown; not completely coloured individuals yellow-brown; antennæ as short as in the type, the club likewise very broad, the last joint hardly perceptibly narrowed; the thorax less contracted to the base than in the type, somewhat in the same way as between the type of *dubia* and its variety *obesa*; head and thorax as strongly punctured as in the type, but the elytra with the striæ somewhat more strongly punctured, with still thicker rows of punctures; the interstices also more strongly punctured. The construction of the legs in the male and female is the same as in the type; the form of the male organ is also identical. The similarly-shaped, short-arched, small forms of *dubia* (ab. *subglobosa*, ab. *bicolor*), are easily separated through their much thinner antennæ, the much finer sculpture of the thorax, and much less close rows of punctures in the striæ. Small females of this race can be separated further from similarly coloured females of *calcarata*, ab. *nigrescens*, Fleischer, by the much shorter form, and broad front tibiæ, as well as by the sculpture. L. $2\frac{1}{2}$ - $3\frac{1}{2}$ mm.

* In a paper published in the Ent. Mo. Mag. xlvii. (2 Ser. xxii.) 1911, 166, Dr. Joy sinks this species as a variety of *L. dubia*.

Dr. Fleischer suspects that this form might prove to be the type, if Fairmaire's type could be procured, as it is not likely that he would have called a long insect *curta*. The long form, which is recognised by all authors as the type, is not a pure sand-hill beetle, but is also found inland, and on mountains in Central Europe, &c.

Mr. Donisthorpe took a number of specimens of this race by sweeping, and on the sand-hills, at Hartlepool, in October 1910.

L. flavicornis, Ch. Bris. (Ann. Soc. Ent. Fr., 1883, cxliii.). Very closely allied to *L. parvula*, Sahlb., but easily distinguished by the broader form, entirely yellow antennæ, the very fine and diffuse punctuation of the thorax, the more plain transversely rugose sculpture of the elytra, and the sexual characters. The club is slightly broader than in *L. parvula*, and the last joint is narrower in proportion to the penultimate. In the male there is a large, sharp, thorn-shaped tooth at the apical angle of the posterior femora, and in the female the posterior femora are distinctly angled beneath. In *L. parvula* they are simple in both sexes. Length $1\frac{1}{2}$ –2 mm.

Dr. Joy first noticed this species as British (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 174), having taken it by sweeping near Bradfield. It appears, however, to be mixed with *L. parvula* in several of our collections. Mr. Donisthorpe has taken it near Ryde, in the Isle of Wight. Ganglbauer mentions it as very rare on the Continent, but it is widely distributed from Finland to Italy, and is probably much commoner than he considers it to be. *L. parvula* appears to be much the rarer species in Britain.

AGARICOPHAGUS, Schmidt.

A. conformis, Er., is at most a variety of *A. cephalotes*, Schmidt, and is regarded as such in the European catalogue of 1906.

SILPHA, Linné.

S. (Phosphuga) subrotundata, Steph. This so-called variety must be regarded as a separate species. It is larger, rounder, and broader, and has the disc of the thorax less closely punctured; the reflexed portion of the elytra is very strongly developed, and extends almost to the apex, whereas in *S. atrata* the margin is much feebler and scarcely reaches beyond the middle of the elytra; the central raised line of the elytra is the longest. It occurs commonly in Ireland, and is found in the Isle of Man, but a true example of *S. atrata* does not appear to have been taken in either. In the European catalogue of 1906 it is regarded as distinct, the localities given being Ireland and Scotland, but I know of no record from the latter, and the English localities are probably in error. I quite agree with the remarks of the Rev. W. F. Johnson on the species (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 1903, 96), from which the above is in part taken.

CATOPS, Paykull.

C. fuliginosa, Er., Kf. Mk. Brandbg., i. 239. Closely related to *nigricans*, but differs from it by its much smaller size, much less convex form, and shorter antennæ, which are nearly always blackish towards apex, and whose eight joint is much shorter in both sexes, being transverse even in the male. The posterior angles of the thorax are less produced posteriorly, and the base of the thorax is more weakly sinuate on each side. The elytra are flatter. The anterior tibiæ of the male have a much more distinct hump-like dilatation in the middle of their inner sides. The species closely resembles specimens of *nigrita*, in which the apical joint of the antennæ is not lighter, and differs from these only by the somewhat acutely produced posterior angles of the thorax, by the presence of faint longitudinal striæ on the anterior half of the elytra, and by the hump-like dilatation on the middle of the inner sides of the anterior tibiæ of the male. L. $3\frac{1}{2}$ – $4\frac{1}{2}$ mm.

This species was introduced by Dr. G. W. Nicholson upon specimens taken by himself (males and females) at Alphington in Devonshire under dead leaves (Ent. Record 1911, p. 67). He points out that Mr. Donisthorpe has taken it in carrion at Hartlepool, and Mr. Dollman in moles' nests in the Harrow district, and that it is probably widely distributed in this country. Captain Sainte Claire Deville, who takes it in rabbit-burrows, says it is common in France.

Dr. Nicholson also gives the following very useful table, partly taken from Ganglbauer's Käfer v. Mitteleuropa :

- | | |
|---|---|
| 1. Outline of body elliptical. Thorax at base as broad as, or hardly narrower than elytra, only narrowed and rounded in front (Subg. <i>Sciodrepa</i> , Th.). | WATSONI, <i>Spence</i> ,
FUMATA, <i>Spence</i> . |
| Body with an angular constriction between thorax and elytra. Thorax plainly narrowed towards base, at base narrower than base of elytra | 2 |
| 2. Thorax finely, and very closely, granulate, without punctures | KIRBYI, <i>Spence</i> . |
| Thorax finely punctured, the punctures impressed obliquely from behind forwards. 3 | |
| 3. Antennæ more or less slender, with feebly marked club, sixth joint never transverse. 4 | |
| Antennæ with strong club, sixth joint transverse | 10 |
| 4. Thorax broadest in posterior third | FUSCA, <i>Pz.</i> |
| Thorax broadest at, or just behind, middle. 5 | |
| 5. Body short and broad. Thorax of male broader, or at least as broad as elytra, very strongly rounded at sides | GRANDICOLLIS, <i>Er.</i> |

- Body more slender. Thorax in both sexes narrower than elytra 6
6. Size larger, $4\frac{1}{2}$ – $5\frac{1}{2}$ mm. Elytra convex, falling off more strongly towards apex. Thorax with posterior angles strongly produced, base plainly sinuate on each side NIGRICANS, *Spence*.
 Size smaller, 3 – $4\frac{1}{2}$ mm. Elytra less convex, falling off more gradually towards apex 7
7. Thorax with posterior angles produced, and base sinuate at each side (but not as strongly as in *nigricans*). Anterior tibiæ of male with a hump-like dilatation on inner side FULIGINOSA, *Er*.
 Base of thorax almost straight; posterior angles right angles. Anterior tibiæ of male without a hump-like dilatation 8
8. Anterior femora of male with a small knob on inner side before middle CORACINA, *Kell*.
 Anterior femora of male without knob 9
9. Head moderately finely and very closely punctured NIGRITA, *Er*.
 Head strongly, and not so closely, punctured MORIO, *Er*.
10. Last joint of antennæ only slightly shorter than the two preceding together CHRYSOMELOIDES, *Pz*.
 Last joint of antennæ much shorter than the two preceding together 11
11. Eighth joint of antennæ only slightly shorter than sixth; body oblong LONGULA, *Kell*.
 Eighth joint of antennæ only about half as long as sixth; body shorter TRISTIS, *Pz*.

We have added the differences between *C. watsoni* and *fumata*, which appear to be alternately considered as separate species or varieties of one species.

- I. Posterior angles of thorax right angles, not projecting; antennæ with the fourth to the sixth joints short, and plainly transverse; punctuation of the upper side a little coarser and less thick; pubescence lighter brown *C. WATSONI*, *Spence*.
- II. Posterior angles of thorax not right angles, somewhat projecting; antennæ with at least the sixth joint large and not transverse; punctuation of the upper side finer and thicker; pubescence darker brown *C. FUMATA*, *Spence*.

PTOMAPHAGUS, Illiger.

P. sericatus, Chaud. (Bull. Mosc. 1845, iii. 199). Two recognised species as pointed out by Mr. Champion (Ent. Mo. Mag. xl. (2 Ser. xv. 1904, 78) are confused in our collections, *P. (Catops) sericeus*, Panz., and *P. (Catops) sericatus*, Chaud.; these may be distinguished as follows:

Larger and more convex; elytral rugæ very distinct; anterior tarsi of male broadly dilated, as wide as or wider than the antennal club; posterior tibiæ of well developed males more or less hollowed below the base (and appearing widened from thence to the apex), straight, as in the female, in feebly developed males.

P. SERICEUS, Panz.

Smaller and more depressed; elytral rugæ very fine; anterior tarsi of the male much less dilated, narrower than the antennal club; posterior tibiæ always straight in both sexes; pubescence of the upper surface finer and more silky.

P. SERICATUS, Chaud.

The size of *P. sericeus* is given by Ganglbauer as $2\frac{1}{2}$ to $3\frac{1}{3}$ mm. and of *P. sericatus* as 2-3 mm., but while the former species is very variable in size, the latter is much more constant in this respect and is almost constantly of the size of the smallest specimens of *P. sericeus*; *P. sericatus* may be easily distinguished by the finer sculpture, silky pubescence, and the structure of the anterior tarsi of the male. It has been recorded from the London district, Sheppey, Brighton and other localities, and is probably widely distributed in Britain; Ganglbauer speaks of it as abundant in Austria, and it has occurred in Russia, Germany, the Pyrenees, Spain, &c.

COLON, Herbst.

In our British catalogues and collections *C. zebei*, Kr., and *C. barnevillei*, Kr., have been usually regarded as varieties of *C. dentipes*, Sahl. *C. zebei*, however, is undoubtedly a good species and differs from *C. dentipes* in the following respects: In shape it is broader and less parallel-sided; the pubescence is coarser, less thick, and of a darker yellowish colour, and the punctuation is much stronger and more diffuse. The tooth in the posterior femora in the male is, as in *C. dentipes*, very long and slender and strongly and evenly curved from two-thirds of its length from apex.

C. barnevillei is not generally regarded as a good species, but probably is distinct. It is of the same shape as *C. zebei* but considerably and uniformly smaller, and the thorax is more strongly and diffusely punctured; the tooth on the posterior femora in the male is proportionately shorter, less slender and differently shaped, being straight for nearly two-thirds from base and then rather sharply curved. The female is of the same size as, and much resembles the female of

C. brunneum, but has the thorax more strongly punctured and more shining; the club of the antennæ is broader and ferruginous; in *C. brunneum* it is generally infuscate.

I am indebted for these remarks to Dr. Joy, who has been more successful than any other entomologist in capturing and observing the habits of this rare and obscure genus; his observations on the assembling of two or three species, without any apparent reason, on a small and very limited spot, are particularly interesting (*Ent. Mo. Mag.* xlv. (2 Ser. xxi.) 1910, 25).

C. calcaratum, Er., was deleted in Beare and Donisthorpe's British catalogue, but has recently been reinstated by Joy, who, in a paper entitled "Further Notes on the Genus *Colon*" (*Ent. Mo. Mag.* xlv. (2 Ser. xxi.) 1910, p. 267), while reintroducing this species, deletes *C. microps*, Czwal., and *C. puncticolle*, Kraatz; the former, however, he has since again added to our list, and it is probable that the latter may have to be replaced. The following corrected table, based on the characters common to both sexes, has been kindly sent to me by him; the greater part of it has already been published (*Ent. Mo. Mag.*, *l.c.* p. 268).

I. Tarsi linear (*Colon*, i. sp.):

- i. 8th joint of antennæ not, or scarcely, narrower than 9th; thorax as broad as elytra, and about as strongly punctured; form long oval. *C. VIENNENSE*, *Herbst.*
- ii. 8th joint of antennæ distinctly narrower than 9th; thorax broader than elytra, and more strongly punctured; form shorter oval *C. SERRIPES*, *Sahlb.*

II. Tarsi dilated, more strongly in male (*Mylæchus*, Latreille).

- i. Form much broader; border of elytra near base broad and distinctly visible from above *C. LATUM*, *Kraatz.*
- ii. Form longer, oval; border of elytra much narrower, and not or scarcely visible from above.
 - 1. 8th joint of antennæ distinctly narrower than 9th; thorax about as long as broad, deeply and closely punctured, more strongly so than elytra *C. ANGULARE*, *Er.*
 - 2. 8th joint of antennæ as broad as, or scarcely narrower than 9th; thorax distinctly transverse:
 - A. Thorax more strongly punctured than elytra.
 - a. Last joint of club of antennæ scarcely narrower than the penultimate;

- thorax deeply and rather diffusely punctured; sutural stria, towards the base, deep and strongly sinuate; form elongate and parallel-sided *C. RUFESCENS, Kraatz.*
- b. Last joint of club of antennæ distinctly narrower than the penultimate; sutural stria, towards the base, evanescent and almost straight.
- a*. Form parallel-sided; sides of thorax slightly sinuate before posterior angles.
- a†. Size larger; thorax finely punctured, only slightly more so than elytra *C. DENTIPES, Sahlb.*
- b†. Size smaller; thorax strongly punctured, much more so than elytra *C. MICRIPS, Czwal.*
- b*. Form fusiform; sides of thorax not sinuate, posterior angles blunter
- a†. Outer border of anterior tibiæ straight, simply right angled at apex; thorax rather dull *C. ZEBEI, Kraatz.*
- b†. Outer border of anterior tibiæ distinctly curved, ending in a small projecting tooth or very acute angle; thorax shining *C. BRUNNEUM, Latr.*
- B. Thorax very finely and not more strongly punctured than elytra.
- a. Elytra more evenly rounded at the sides, broader about the middle, without traces of striæ; colour dark brown. L. $1\frac{1}{3}$ - $2\frac{1}{3}$ mm. *C. DENTICULATUM, Kraatz.*
- b. Elytra broadest near the base.
- a*. Size larger, length $2-2\frac{1}{3}$ mm.; colour generally dark brown; elytra with slight traces of striæ *C. APPENDICULATUM, Sahlb.*
- b*. Size smaller, length $1\frac{1}{2}-1\frac{1}{3}$ mm.; colour testaceous or reddish-brown; elytra without traces of striæ *C. CALCARATUM, Er.*

The above table does not differ very materially from the tables of the species given in Vol. iii. pp. 66, 67, but several fresh characters are noted, and it will probably be found of considerable service in identifying the females of this very difficult genus.

Dr. Joy gives the following table of the male differences, which are in some cases very striking (*l.c.* p. 269).

- I. Anterior tibiæ strongly bent; posterior femora simple C. LATUM and C. RUFESCENS.
- II. Anterior tibiæ straight.
- i. Posterior femora terminating in an angular tooth at apex C. ANGULARE and C. VIENNENSE.
- ii. Posterior femora simple at the apex, but armed near the centre with a tooth
1. Tooth small C. SERRIPES, C. BRUNNEUM
and C. DENTICULATUM.
2. Tooth long, curved, and sharply pointed. . . . C. DENTIPES and C. ZEBEL.
3. Tooth long and terminating in a tuft of hair C. APPENDICULATUM
and C. CALCARATUM.

If *C. puncticolle* be reinstated, it belongs to the first group with the simple linear tarsi; the differences will be found in the table in Vol. iii., p. 66, and need not be repeated.

SCYDMÆNIDÆ.

NEURAPHES, Thomson.

N. planifrons, Blatch (Ent. Mo. Mag. xxvi. (2 Ser. i.) 1890, 93).

Head and thorax rufo-testaceous, elytra more or less pitchy-testaceous; antennæ reddish-yellow with the first joint pitchy at apex; legs reddish-yellow, tarsi lighter. Head large, vertex very broad, flat and smooth, eyes prominent, antennæ with joints eight to ten gradually increasing in size, strongly transverse, and forming with the terminal joint (which is almost twice as long as the tenth) a distinct club. Thorax longer than broad, convex, broadest before middle, with the basal angles slightly acute, base with four faint foveæ, one near each side margin, and one on each side of a slight central carina. Elytra rather broad, oval, convex, with the shoulders raised, the base with four foveæ, the outer pair shallow, the inner pair deep, and filled with tufts of yellow hairs; femora strongly clavate. The whole of the body, on the upper surface, is covered with long yellow bristles, which are more or less decumbent on the head and thorax, and sub-erect on the elytra. The punctuation is distinct and somewhat coarse on the elytra and is entirely setigerous. L. 1 mm.

Sherwood Forest, Notts., under bark of birch stumps, in company with *Scydmaenus godarti*, Latr., and *S. exilis*, Er.

The nearest ally of the species is *S. sparshalli*, from which it may be distinguished by the broad flat vertex of the head, the more prominent eyes, longer joints of the antennæ, and the more oval form of the elytra, which are set with stronger and more erect bristles.

N. sparshalli, Denny, and **N. minutus**, Chaud (= *pumilio*, *Schaum*) must be regarded as separate species. According to some continental authorities the colours are reversed (*v.* Brit. Col. iii. 75, 76), and *N. sparshalli* is said to have dark elytra, while *N. minutus* is unicolorous testaceous. Denny (*Mon. Psel. et Seyd. Brit.* 1825, plate 13, fig. 3) gives an excellent figure of *N. sparshalli*, which he represents as quite unicolorous, and of a ferruginous or rufo-testaceous colour, so that our determination is evidently the correct one.

SCYDMÆNUS, Latreille.

S. barnevillei, Reitter (*Best. Tabellen der Europ. Col.* 10, 29). Allied to *S. poweri*, Fowler, and like that species pitchy or pitchy-black with the anterior femora of the male evidently thickened and not regularly dilated as in *S. pusillus*; it is of about the same size as *S. poweri*, if anything slightly smaller, and differs from that species in having the thorax more transverse and the elytra narrower. The antennæ are shorter and more thickened towards the apex, the penultimate joints being distinctly more transverse; the pubescence on the elytra is rather more diffuse, but much longer and more distinct. From *S. pusillus* it differs in the slightly broader elytra, shorter antennæ and much longer pubescence. L. $1\frac{1}{2}$ mm.

Found in débris of cormorants' and gulls' nests sent from the Scilly Islands by Dr. Joy, who introduced the species as British (*Ent. Mo. Mag.* xlv. (2 Ser. xx.) 1909, 54).

S. poweri is given as a synonym of *S. scutellaris* in the last European catalogue. It is, however, entirely distinct from that species in size, shape, antennæ, sculpture, &c., and cannot possibly be confounded with it.

EUCONNUS, Thomson.

E. mäklini, Mann. (*Bull. Mosc.* 1844, i. 193); *Napochus claviger*, Thoms. (*Skand. Col.* iv. 882). Of about the size and shape of *E. hirticollis*, Ill., but easily distinguished by the very short and stout antennæ, which are scarcely as long as the head and thorax and terminate in a very broad and abrupt four-jointed club. The insect is of an obtuse pitchy colour with the thorax and elytra sometimes lighter, shining, very sparingly and finely pubescent, except at the base of the head and thorax, which have rather sparing but coarse bristly pubescence; head subrotundate, about as broad as the middle of the thorax; antennæ and palpi testaceous; thorax as long as broad, scarcely narrower at base than the elytra, slightly narrowed towards apex, with the sides hairy, especially in front, base with a deep furrow, slightly interrupted in the middle, and bounded towards the posterior angles (which are right angles) by an elevated fold; elytra about three times as long as the thorax, widened in the middle, sparingly and finely pubescent, scarcely visibly punctured, base with a deep impression

terminated by a fold near the shoulders, which are not prominent. L. 1 mm.

Bradfield, Berks. One specimen taken by Dr. Joy, probably in dead leaves. Ganglbauer records it as taken in Northern and Central Europe with *Formica rufa*. Thomson records it as found under fallen leaves.

EUPLECTUS, Leach.

Mr. Champion points out (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 74) that the two larger species of the genus *Euplectus*, which are named *E. kunzei*, Aubé, and *E. duponti*, Aubé, must be referred to *E. aubeanus*, Reitter, and *E. brunneus*, Grimmer, respectively. He is only speaking for his own specimens, but it appears to be most probable that we do not possess *E. duponti*, Aubé, at all as British. The real species is much smaller than *E. brunneus*. The localities given by me (Brit. Col. iii. 102) for *E. kunzei* must therefore be transferred to *E. aubeanus*, with the addition of Guildford (Champion), Shiere (Capron), and the New Forest, while those for *E. duponti* must probably be assigned to *E. brunneus*, with the addition of Cobham Park (Champion).

The following are the characteristics of the two species as given by Champion:

Elongate, narrow, flattened; antennæ rather slender; head with a deep, triangular notch on the vertex; elytra scarcely rounded at the sides, subparallel, the humeri but little swollen. Male: metasternum with a very faintly impressed median line; fourth ventral segment feebly sinuate at the apex, fifth with a very broad transverse pit at the base, the outer portions swollen, sixth transversely flattened across the median third, widely and shallowly emarginate at the apex, and bearing on each side a large flattened tuberculiform prominence, which is clothed behind with long hairs; femora moderately stout; intermediate tibiæ curved

E. AUBEANUS, *Reitt.*
(*kunzei*, Brit. Coll.)

Broader, and rather convex; antennæ stouter; head with a shallower notch on the vertex; elytra distinctly rounded at the sides; the humeri swollen. Male: metasternum deeply sulcate from near the base to the apex; fourth ventral segment drawn out into an obtuse angle in the middle behind; fifth with a very broad, sharply-defined, semi-circular pit at the base, extending in the middle to near the hind margin; sixth, more deeply emarginate at the apex, and

with a transverse depression extending across the middle, and a fovea in the centre; femora very stout; anterior tibiæ armed with an extremely minute tooth on the inner edge towards the apex, and obliquely truncate thence to the tip; intermediate tibiæ strongly bowed to near the base

E. BRUNNEUS, *Grimmer*
(*kunzei*, Aubé)
(*erichsoni*, Thoms.)

E. bescidicus, Reitt. (Verh. zool.-bot. Ges. Wien. 1881, 524; Naturg. Ins. Deutschl. iii. 2, 121). Closely allied to *E. duponti*, Aubé (with which it is compared by Ganglbauer), but smaller, with the antennæ longer, the last joint especially being more elongate; the head is smooth between the frontal furrows; the central furrow of the thorax is shorter, and the dorsal striæ of the elytra are shorter and do not reach the middle; the two depressed areas on the abdomen are wider, occupying about one-third of the breadth of the segments; in the male the ventral segments are flattened and the penultimate segment has a small fovea to the middle; in the male of *E. duponti* the last ventral segment is transversely impressed. L. 1½ mm.

This species has been introduced as British by Dr. Joy (Ent. Record, xx. (1908), 56) on the authority of six specimens recently taken by Mr. Pool at Enfield and two in the Bates collection taken many years ago by Mr. Lawson at Scarborough. Mr. Pool's examples were taken under fir and elm bark. New Forest (Donisthorpe).

E. bescidicus belongs to the section of the genus which is distinguished by having the raised border on each side of the depressed area, in the middle of the base of the two first visible dorsal segments, reaching at least to the middle.

E. tomlini, Joy (Ent. Mo. Mag. xlii. (2 Ser. xvii.) 1906, 99). Rufo-testaceous, with elytra, antennæ and legs lighter, finely pubescent; head large, very transverse, strongly and thickly punctured, hind angles prominent, frontal furrows not deep; antennæ rather long; thorax about as long as broad, distinctly narrower than the head without eyes, much contracted behind, strongly and thickly punctured, dorsal furrow deep, not quite reaching basal and apical margins, lateral foveæ distinct; elytra ample, longer than together broad, finely but distinctly punctured, with the scutellary stria completed, and one strong stria on each reaching about half way to apex; hind body narrower than elytra, very finely punctured throughout, with the basal depressions on the first segments narrow and feeble.

Male with the fifth ventral segment of the abdomen deeply and sharply emarginate in the middle, with a conspicuous round fovea on each side of the emargination, and having the base of the emargination projecting backwards in the form of a rounded lobe which is surmounted by two small membranous hairs; sixth segment short,

transversely depressed at base and widely emarginate; last segment with two more or less obsolete foveæ; intermediate tibiæ with a small tooth on the inner side near apex.

Female with the ventral segments of the hind body simple. L. $1\frac{3}{8}$ mm.

Habitat, Bradfield, Berks.: found by Dr. Joy in some numbers in a starling's nest in February 1906.

This insect is chiefly distinguished by its male characters, as will be gathered from Dr. Joy's description; in this point it has a resemblance to *E. karsteni*, Reich, but it is considerably larger and much more strongly punctured than the last-named species, and has the foveæ, &c., much more strongly developed; from *E. punctatus* it may be known (apart from the male characters) by its relatively broader head and stronger punctuation.

TRICHOPTERYGIDÆ.

The species belonging to the genera of this family, and more especially those of the large genus *Trichopteryx*, have been known for some time to be in considerable confusion; it was hardly to be expected that all the species of the Rev. A. Matthews (founded in several instances on single specimens) would stand, but it is doubtful whether the present workers at the group are not going somewhat too far the other way; in the catalogue of Heyden, Reitter and Weise (1906) only fifteen species are assigned to *Trichopteryx* (not counting five species placed under the line at the end of the list as doubtful), and of these two do not occur in Britain. In our 1903 catalogue Dr. Sharp and I recorded no less than thirty-nine species as British.

Mr. H. Britten, assisted by Mr. E. A. Newbery, has been doing very good work on the genus *Ptenidium*, and a joint paper by these two workers entitled "A Revision of the British Species of *Ptenidium*" has recently been published in the Entomologist's Monthly Magazine (*Ent. Mo. Mag.* xlv. (2 Ser. xxi.) 1910, p. 178). We reprint the table which is based to a great extent on Flach's "Bestimmungs Tabellen" (*Verh. zool.-bot. Ges. Wien.* xxxix. 1889).

PTENIDIUM, Erichson.

I. Scutellary furrow with a minute but distinct middle keel.

i. Prosternal keel broad and furrowed for nearly its entire length . . .

Sub-genus MATTHEWSIUM,
Flach.

1. Thorax broadest at the base, the two middle basal foveæ wanting. Body regularly oval; upper side castaneous-brown, front parts often darker; pubescence scanty, extremely short, and scarcely visible; elytra sometimes paler

- at base, very finely alutaceous; scutellum with punctures in basal furrow absent or obsolete. L. 0·8–0·84 mm. *P. GRESSNERI, Er.*
2. Thorax broadest a little before base, basal foveæ small, but distinct, middle pair placed at some distance from base; scutellum with a very minute (and in *P. turgidum* sometimes obsolete) puncture, placed between the middle keel and side angles, but rather nearer to the latter.
- A. Upper side distinctly alutaceous, with fine, scattered, shallow punctures and scarcely visible pubescence; thorax not strongly margined; scutellum with a distinct puncture on each side of middle keel, placed as above; elytra usually castaneous-brown, the head and thorax darker, but colour somewhat variable. L. 0·86–0·94 mm. *P. LÆVIGATUM, Er.*
- B. Upper side with distinct hairs, which are especially long on sides of thorax; thorax strongly margined, with punctuation rather strong and deep; scutellum with punctures extremely small or obsolete; elytra not or scarcely alutaceous; body broader in proportion to its length than that of *P. lævigatum*. L. 0·92 mm. *P. TURGIDUM, Thoms.*
- ii. Prosternal keel simple, at least in front; thorax broadest a little before base.
1. Scutellum with about six minute semi-equal ridges on each side of the central keel, the interspaces being punctiform, without larger puncture close to the side angles; prosternal keel with a short furrow between the anterior coxæ Sub-genus *WANKOWICZIUM, Flach.*
- Basal thoracic foveæ very small; thorax and elytra with widely and irregularly placed shallow punctures; elytra usually castaneous, with somewhat raised scattered hairs, fore-parts darker. L. 0·86–0·92 mm. *P. INTERMEDIUM, Wank.*
2. Scutellum with a distinct central keel, and two punctures which are placed

just within the side angles; prosternal keel simple, narrow; pubescence long, evident, and semi-raised (except in *P. myrmecophilum*, Mots.).

Sub-genus PTENIDIUM,
Mots.

- A. Thorax and elytra coarsely punctured with simple deep punctures, the interspaces being minutely punctulate; thorax with a broad impunctate central line; body black; antennæ and legs dark yellow. L. 0·8–0·84 mm..

P. PUNCTATUM, Gyll.

- B. Thorax not coarsely punctured.

- a. Metasternum smooth, not alutaceous.

- a*. Body deep black, clothed with long grey hairs; head and thorax with distinct, scattered, shallow umbilicate punctures, with a central impunctate line; elytra with simple punctures, which are either not confluent (type form) or very large, deep and confluent on the apical third (var. *rugosum*, Britten); antennæ dark pitch-brown. L. 0·74–0·8 mm.

P. FUSCICORNE, Er.

- b*. Body, or at least elytra, castaneous brown, longish, strongly convex; head and thorax scarcely punctured; elytra with evident punctures and very short scattered hair; antennæ yellow. The var. *kraatzi*, Matth., has the outer basal thoracic foveæ deeper than in the type form. L. 0·88–0·96 mm.

P. MYRMECOPHILUM, Mots.
= *formicetorum*, Kraatz.

- b. Metasternum alutaceous, at least at the sides.

- a*. Thorax, especially at sides, almost as strongly punctured as elytra, sides less rounded; elytra distinctly punctured in eight or nine irregular longitudinal rows, furnished with long, semi-erect, grey hairs; antennæ yellow, at most with the last two joints slightly darker. L. 0·90–0·94 mm.

P. PUSILLUM, Gyll.
apicale, Er.

b*. Upper side of thorax scarcely punctured, sides more rounded, inner basal foveæ less distinct than in *P. pusillum*; elytra more scantily punctured in six or seven irregular longitudinal rows; hairs much shorter and more slender than in *P. pusillum*; antennæ with the first two joints and the club nearly always infusate, the middle joints being more slender than those of *P. pusillum*. L. 0·8-0·9 mm.

P. BRISOUTI, *Matth.*
= *nitidum*, *Bris.*, *nec* *Heer.*

II. Transverse furrows of scutellum without a middle keel, with four deep equidistant foveæ; prosternal process with two furrows between the anterior coxæ.

Sub-genus GILLMEISTERIUM,
Flach.

Basal thoracic foveæ deep, proportional size of outer foveæ very variable in respect to inner; length of pubescence, size and colour also very variable. L. 0·74-0·96 mm.

P. NITIDUM, *Heer.*
= *pusillum*, *Er.*, *nec* *Gyll.*
= *laevigatum* (*ex parte*),
Matth., *nec* *Gyll.*

In their subsequent notes Mr. Britten and Mr. Newbery discuss the various species with localities and give illustrations, which show the distinctions of the scutellary keels and punctures, and of the metasterna. The paper is certainly a great addition to our knowledge of the genus.

The genus *Trichopteryx* is now under revision by Professor Ericson, Mr. Britten, and others, and we may expect great alterations in the nomenclature; as far, however, as I can judge from specimens returned to myself, I am not prepared to sink as many of Mr. Matthew's species as seems likely to be done by others; at the same time the number cannot but be largely reduced; these minute insects seem to vary somewhat in shape, impressions, colour, &c., and ought never to be described except on a fairly long series; many of Mr. Matthew's English species rest on unique examples.

***Trichopteryx intermedia*, Gillm., var. *thomsoni*, I. B. Ericson** (*Entom. Tidsk.* 1908, p. 123).

A number of specimens of a *Trichopteryx* taken by Prof. Beare and Mr. Donisthorpe at Newtonmore, N.B., in June 1907, by beating fir-tops were identified as above by Prof. I. B. Ericson (*Ent. Record*, xxi. 1909, p. 58).

The genus *Ptilium*, as far as the British species are concerned, will probably not require very much attention.

PHALACRIDÆ.

PHALACRUS, Paykull.

The genus *Phalacrus* is very confusing, and but little attention has been paid to it by British Coleopterists until quite recently. Mr. Newbery, however, has studied the species carefully, and has, probably rightly, sunk *P. brisouti*, Rye, and drawn up a table in which only five species are admitted as British, including *P. hybridus*, Flach., of which a description is given below (*Ent. Mo. Mag.* xliii. (2 Ser. xviii.), 1907, 223). This table should be substituted for the one given by myself (*Brit. Col.* iii. 148) as being more satisfactory and resting on better defined characters.

I. Thorax bordered in front of scutellum.

i. Elytra alutaceous throughout.

1. Thorax not alutaceous. *P. HYBRIDUS*, Flach.

2. Thorax and elytra similarly alutaceous.

A. Last joint of antennæ slender, nearly three times as long as broad; form of body broader and more convex; alutation finer; punctuation of interstices of elytra not in rows. L. $1\frac{1}{2}$ -3 mm. *P. CORUSCUS*, Panz.

B. Last joint of antennæ stout, about twice as long as broad; form of body narrow elliptical, less convex; alutation coarser; interstices of elytra with rows of punctures. L. $1\frac{1}{2}$ -2 mm. *P. CARICIS*, Sturm.

ii. Elytra not alutaceous, except sometimes at extreme apex, dorsal interstices with a single row of large punctures on the inner side of each striæ; thorax not alutaceous. L. $1\frac{1}{4}$ - $1\frac{2}{3}$ mm. *P. SUBSTRIATUS*, Gyll.

II. Thorax not bordered in front of scutellum; thorax not, and elytra feebly, alutaceous; form short, broad and convex. L. 2 mm.

P. CHAMPIONI, Guill.

(= *brunnipes*, Rye, nec Bris.)

I have already pointed out that *P. humberti*, Rye, has been sunk as a variety of *P. coruscus* (*l.c.* iii. 148); *P. brisouti*, Rye, is also apparently a form of this common species; *P. caricis*, Sturm, may be superficially known by its rather flat elliptical form, and *P. substriatus* by its short and convex appearance. *P. championi*, Guill., is allied in form to both *P. substriatus* and small *P. hybridus*, but differs from the former by its finely alutaceous elytra, and from both by the absence of a border in front of the scutellum. *P. brunnipes*, Bris., is a longish oval insect, narrowed behind, and somewhat resembling an *Olibrus*; it has not been taken in Britain according to Newbery (*l.c.* 1907, 225); but Mr. Rye (*Ent. Mo. Mag.* ix. 1872, p. 9) pointed out that

M. Brisout had corroborated as true *brunnipes* an insect from Mr. G. R. Waterhouse's collection taken by Mr. Brewer.

P. hybridus, Flach. (Verh. Nat. Ver. Brünn, xxvii. 61, 62). Rotundate oval, of about the same average size as *P. coruscus*, and very variable in size, like that species, but distinguished from it by the fact that the head and thorax are not alutaceous; the elytra are punctured in more or less regular rows, and the interstices are scarcely visibly punctured; the colour is shining black; the head and thorax are very finely and rather thickly punctured, the spaces between the punctures being quite smooth; the elytra are very delicately reticulate or alutaceous, if viewed under a high power; the last joint of the antennæ is shorter than in *P. coruscus*; the thorax has the posterior angles right angles and the base margined in the middle; the antennæ and legs are black, but a variety occurs in which they are reddish. L. $1\frac{1}{2}$ - $3\frac{1}{2}$ mm.

Chiefly, but not altogether, a coast species: Lewisham, Sheppey, Southend, Erith, Felixstowe, Bognor, Deal, Sandwich. It is probably mixed with *P. coruscus* in collections; in the var. *confusus*, Guillet, the sutural interstice is very finely and diffusely punctured, while in the type form it has a row of four or five larger punctures.

OLIBRUS, Erichson.

The following table of our British species will be found useful: it was published by Mr. E. A. Newbery in the Entomologist's Record, vol. xl. 1899, p. 136.

- I. Elytra almost entirely alutaceous.
- i. Elytra greenish or blackish-bronze, underside and club of antennæ dark.
 - A. Form longer, plainly narrowed behind O. *ÆNEUS*, F.
 - B. Form shorter and more convex, nearly regularly elliptical O. *MILLEFOLII*, Payk.
 - ii. Elytra brown, paler towards apex, antennæ and underside pale red-yellow.
 - A. Suture and outer margin of elytra darker than disc O. *CORTICALIS*, Panz.
(*affinis*, Steph., *nec* Sturm)
 - B. Suture and outer margin of elytra not darker than disc O. *LIQUIDUS*, Er.
- II. Elytra not alutaceous, except sometimes at extreme apex.
- i. Size moderate ($1\frac{1}{2}$ - $2\frac{3}{4}$ mm.).
 - A. Elytra entirely black, average size larger O. *FLAVICORNIS*, Sturm. [?]
(*helveticus*, Rye?)
 - B. Elytra with at least traces of a brown spot at apex.

- a. Form shorter and less narrowed behind. Insect more shiny . . . *O. PARTICEPS*, *Mus.*
 b. Form longer and more narrowed behind. Insect less shiny, striae more apparent *O. AFFINIS*, *Sturm.*
 ii. Size very small (1 mm.); thorax and elytra entirely black *O. PYGMÆUS*, *Sturm.*

O. flavicornis, Sturm, was described by Sturm as a variety of *O. bicolor*, but is regarded as a good species by Ganglbauer and others; it is of about the size of *O. liquidus* or rather longer. Mr. Champion took one specimen (recorded as *O. helveticus*, Rye) at Caterham and subsequently others in the same locality; he has also found it at Sandown, I. of W. Mr. Newbery has taken it at Dover and Mr. Elliman at Chesham (Bucks). The late Mr. Chitty took it in some numbers at St. Margaret's Bay.

O. affinis, Sturm. This species, which I have not included in my previous list (Brit. Col. iii. 150), is longer and less metallic as compared with *O. particeps*, and usually of a paler colour. It has been taken at Hythe, Hants, and at Lyndhurst by Mr. Newbery, and, apparently, by Mr. Champion in the New Forest.

Mr. Newbery allows that the separation of *O. particeps* and *O. affinis* (which I placed together as far as British specimens were concerned) is a matter of great difficulty; Mr. Newbery says that this is in a measure due to foreign authors having placed *O. particeps* among the species with entirely black elytra; as a rule they are almost, if not always, inclined to brown, at all events at apex. They are, however, so close as to be hardly distinct. The species has been taken by Mr. Keys near Whitsand Bay, Plymouth, and by Mr. Elliman at Chesham.

COCCINELLIDÆ.

ADONIA, Mulsant.

A. (Hippodamia) variegata, Goeze, var. engleharti, Rye (Ent. Record, iv. 1893, 243). This variety, described by B. G. Rye, and figured in the Transactions of the Leicester Literary and Philosophical Society, is only a form of the type and hardly a variety at all.

COCCINELLA, Linné.

C. 10-punctata, L., var. confluens, Haworth (Trans. Ent. Soc. Lond., 1807, 278). This variety has the spots on the thorax confluent, and the three central spots on the elytra confluent in a large lobed patch with a red spot in the centre.

Taken by Donisthorpe in Darenth Wood. Apparently very seldom met with (Ent. Record, xxi. 1909, 136).

C. 11-punctata, L., var. confluens, Donis. (Ent. Rec. 1902, p. 99). This form has the lower pairs of spots on each elytron

confluent, it is also brightly coloured. Canon Cruttwell found it in some numbers on a patch of sandy coast near Renvyle, co. Galway, in August, 1899, the type form not being present. Mr. Chitty recorded it from the Cullin sandhills, and Commander Walker as abundant on Machrihanish beach, Campbellton, N.B., in both cases unaccompanied by the type. Mr. Donisthorpe found it in plenty on the sandhills, Dingle Bay, co. Kerry. Dr. P. Mason captured it in Iceland (*Ent. Mo. Mag.* 1890, p. 199). This seems to be the var. *brevifasciata*, Weise, but as that appears to include three different forms, it is perhaps as well to retain Mr. Donisthorpe's name, which is recognised in the last European Catalogue.

ANATIS, Mulsant.

A. ocellata, L., var. **hebræa**, L. (*Syst. Nat.* ed. x. 365). This is a very beautiful and striking variety and is well figured in the Transactions of the Leicester Literary and Philosophical Society (iii. xi. 1895, Pl. I. fig. 11); the ground colour of the elytra is brownish-yellow with an irregular black band just before base continued along the margins for about two-thirds the length of the elytra, but at some little distance from their edges; on the disc are two elongate parallel broad lines, parallel also to the marginal lines, the part near the suture being the longer.

Oxshott (Surrey): one specimen, taken by B. G. Rye, unique as British; it is, apparently, a very rare variety in Central Europe.

PULLUS, Mulsant.

P. (Scymnus) limonii, Donisthorpe (*Ent. Record*, xv. 1903, 287). Broad oval, convex, black with white pubescence; antennæ and palpi testaceous; head with labrum, black; thorax black with base narrower than base of elytra, giving the appearance of a shoulder to the latter; elytra black, or black with four yellow spots, the posterior pair being always the larger, or with the spots confluent, coarsely punctured, the punctuation consisting of larger and smaller punctures mixed together in about equal proportions; underside entirely black, the post-coxal foveæ with raised sides incomplete; femora dark or quite black; tibiæ and tarsi testaceous. L. $1\frac{1}{2}$ – $1\frac{3}{4}$ mm.

On the flowers and at the roots of the sea-lavender, *Statice limonium*; Yarmouth, Isle of Wight (Donisthorpe and Burr); Isle of Sheppey (Champion).

The nearest allies of this species are *P. mulsanti*, Wat., and *N. redtenbacheri*, Muls. From the former it differs in having the raised sides of the post-coxal foveæ incomplete, very nearly as in *N. redtenbacheri* (whereas in *P. mulsanti* they form a more or less complete semicircle round the posterior coxæ), in the dark femora and the entirely black abdomen (in *P. mulsanti* the legs are entirely testaceous, and the apex of the abdomen red); the elytra also are much more strongly punctured. From *N. redtenbacheri* it may be known by its

larger size, more convex and rounded shape, and stronger punctuation. The colour is very variable. The species is probably, as Mr. Donisthorpe points out, one of the ground feeders, which prey upon the aphides at the roots of sea-lavender, and other salt marsh plants.

P. lividus, Bold. This species must be deleted, as it is only a small pale example of *P. testaceus*, Mots. (v. Newbery, Ent. Mo. Mag xli. (2 Ser. xvi.), 1905, 161).

P. nulsanti, Wat., has apparently proved such a puzzle to foreign coleopterists that it is omitted altogether from the last European Catalogue; it may be synonymous with, or a variety of *P. testaceus*, Mots.

ENDOMYCHIDÆ.

The table for the *Mycetæina* must be altered (Brit. Col. iii. 179), as the antennæ of *Symbiotes*, Redt., are 11-jointed and not 10-jointed.

I. Antennæ 11-jointed.

i. Thorax with a strong impressed line on each side extending from base to beyond middle SYMBIOTES, Redt.

ii. Thorax with impressed line extending from base to apex MYCETEA, Steph.

II. Antennæ 10-jointed ALEXIA, Steph.

EROTYLIDÆ.

DACNE, Latreille.

(**D. fowleri**, Joy (Ent. Mo. Mag. xli. (2 Ser. xvi.), 1905, 274). Dr. Joy describes this species on specimens found in a hole in a large oak log at Bradfield, Berks; he believed them to be distinct from *D. humeralis* on the ground that the reflexed margins of the thorax were much broader than in the last-mentioned species and almost explanate in front, the anterior angles being more prominent; the insects, moreover, appeared to be much more active than *D. humeralis*. From the first I was doubtful of the species, and Dr. Joy is now of opinion that it cannot be retained; it is, at most, a variety or sub-species.)

TRIPLAX, Paykull.

T. (Platychna) bicolor, Gyll., Ins. Suec. vol. i. p. 205 (1808); *T. scutellaris*, Charp., Horæ Ent. 1825, 244 (*teste* Ganglbauer). Usually of about the same size as *T. russica*, L.; the British examples, however, which have been hitherto taken, are on the average decidedly smaller, and intermediate between that species and *T. aenea*, Schall.; easily distinguished from *T. russica*, which it most nearly resembles, by having the base of the thorax very finely and scarcely visibly bordered and never provided with a transverse furrow (subg. *Platychna*, Thoms.), by its more ovate shape, the sides of the elytra being distinctly more rounded, and by the reddish or reddish-yellow colour of

the base of the antennæ, the scutellum, and the whole of the underside of the body; head large, finely but distinctly punctured; thorax about twice as broad as long, with the sides distinctly more narrowed in front than in *T. russica*, very finely, and not very closely punctured; elytra somewhat distinctly punctate striate, interstices very finely and irregularly punctured; the sculpture of the elytra is, however, distinctly stronger than in *T. russica*. The var. *Gyllenhalli*, Crotch, Ent. v. 7, appears to have the sculpture much more marked. L. $4\frac{1}{2}$ – $5\frac{1}{2}$ mm.

Gibside, Northumberland; taken in fungus growing on elms and holly by Mr. R. S. Bagnall. The account of the capture and of its intricate synonymy will be found in the Entomologist's Monthly Magazine, vol. xli. (2 Ser. xvi.), 1905, pp. 86 and 135; the synonymy was worked out by Professor Hudson Beare, and it still remains somewhat of a problem in certain points. The species is found rarely in Northern and Central Europe.

COLYDIIDÆ.

AULONIUM, Erichson.

A. trisulcum, Geoff. (Entom. Paris, i. 1785, 23); *A. sulcatum*, Ol. (Entom. ii., 18, 4, pl. 1, f. 1). Elongate and parallel, reddish-yellow or light castaneous, unicolorous, or with the hinder part of the head and the central portion of the thorax darker, and the suture of the elytra, especially towards the apex, blackish; head narrower than thorax, with the eyes rather prominent, antennæ short, with a strong and rather loose 3-jointed club; thorax quadrate, strongly bordered, with very fine sculpture, and with three strong longitudinal furrows, the central one being broad and divided into two which diverge from just behind middle to base (some authors describe these as four, the central ones nearly meeting and running close together from middle to apex); elytra long, parallel sided, with five regular rows of punctures, interstices very finely and sparingly punctured; tibiæ dilated at apex, with one apical spur more strongly developed than the other and gently curved (this is one of the characters that separates the genus from *Colydium*); the upper surface is not very shiny, but has a somewhat greasy (fettglanzend) appearance. L. $4\frac{1}{2}$ –7 mm.

Enfield; under elm bark in the burrows of *Scolytus multistriatus*. Subsequently Mr. Pool took it both at Edmonton and Winchmore Hill. This very interesting addition to our list (Ent. Record, xvi. 1904, 310) was made by Mr. C. J. C. Pool in July, 1904. The insect is found rarely under elm bark in Central and Southern Europe in the burrows of *S. destructor* and *S. multistriatus*.

The larva of this species is briefly described by Westwood (Classification L., 147, Fig. 12, 5); it is long, subdepressed, and slightly curved, with three pairs of short thoracic legs and a pair of short

recurved horny sharp points upon the terminal segment of the body. The pupa is very much elongated, with two short obtuse points at its extremity.

HISTERIDÆ.

HISTER, Linné.

H. quadrimaculatus, L., var. **gagates**, Ill. (Mag. für Insettenkunde, vi., 1807, 31); Donisthorpe (Ent. Record, xi., 1899, 217). This is a totally black form of *H. quadrimaculatus* and differs from the var. *athlops*, Heer., in having one marginal stria on the elytra, the outer one being entirely absent, whereas in the latter variety there is always a trace of the outer stria.

Iwade, in flood rubbish (J. J. Walker); apparently a very rare variety.

GNATHONCUS, Duval.

G. nidicola, Joy (Ent. Record xix. (1907) 133, plate vi.). Black or pitch black, extreme apex of elytra sometimes rufescent; head closely punctured, frontal stria wanting; antennæ reddish; thorax somewhat diffusely punctured, more thickly at the sides; elytra with striæ as in *G. rotundatus*, Kug., diffusely punctured at base, very thickly punctured towards apex, the punctures running together into rows in the apical third, so that this part appears dull and very finely striated longitudinally; anterior tibiæ distinctly dilated, with nine to ten small teeth, the spaces between them very slightly emarginate* or nearly flat; the apical tooth and the next towards the base are separated by a distinctly longer interval than the others; intermediate tibiæ slightly dilated. In the male the ædeagus is almost straight and bent rather sharply at the tip, whereas in *G. rotundatus* it is strongly and evenly curved throughout. L. $1\frac{3}{4}$ - $2\frac{1}{2}$ mm.

In old birds' nests; apparently not uncommon.

Dr. Joy, in introducing and describing this species, says that in *G. rotundatus*, Kug., which Mr. Lewis (v. Ent. Record, xvi. 290) apparently regards as synonymous with *G. punctulatus*, Thoms., the front tibiæ are distinctly narrower than in *G. nidicola*, and possess large teeth with well marked, strongly emarginate intervals, whereas in the last-named species the teeth are small and the intervals nearly flat. The intermediate tibiæ are less dilated and have conspicuously longer teeth. *G. rotundatus* has the apex of the elytra shining and diffusely punctured.

Apparently we do not possess *G. nannetensis*, Mars. (the *G. rotundatus* of the old British catalogues) as British. If this is the case, and if we admit *G. nidicola* as distinct, we still have two species, which may be separated as follows:

* Dr. Joy in his description uses the term "convex," but this is wrong as the spaces are emarginate between the teeth and not produced.

- Anterior tibiæ narrower, with large teeth and emarginate intervals; apex of elytra shining, diffusely punctured; male organ strongly and evenly curved throughout; habitat, carrion *G. ROTUNDATUS*, *Kug. (?)*
- Anterior tibiæ broader, with small teeth and almost flat intervals; apex of elytra dull, closely punctured; male organ almost straight, bent at tip; habitat, birds' nests *G. NIDICOLA*, *Joy*.

It must be admitted that these two species are closely allied. The difference in the punctuation of the apical portion of the elytra certainly seems striking, and the variation of the front tibiæ is always a good character in the *Histeride*. At the same time the whole question of the synonymy and constitution of this small genus is far from settled. Ganglbauer considers *G. nanmetensis*, Mars., to be synonymous with *G. rotundatus*, Kug., whereas, according to Lewis, *G. rotundatus*, Kug., is synonymous with *G. punctulatus*, Thoms., and we do not possess *G. nanmetensis* at all.

Dr. Joy rightly lays stress upon difference of habitat, but the point must not be pressed too far, for, as a matter of fact, we know very little about races and species, and what we now consider as species may, in many cases, be races of one species which have become more or less modified by the adoption of different habits and modes of living; if it is so in the higher forms of life it is probably the same in the lower also.

SAPRINUS, Erichson.

S. immundus, Gyll. (Ins. Suec. iv. 1827, 266). In the catalogue of Heyden, Reitter and Weise (1906) this species is sunk as a variety of *S. æneus*, F. In the Entomologist's Monthly Magazine for January 1897, Mr. E. A. Newbery discusses the question, but it seems to be settled by the note of Mr. George Lewis (Ent. Mo. Mag. xxxiii. (2 Ser. xiii.) 1897, 45), where he gives the following characters:

"Perhaps," he says, "the two most important characters noted by Marseul are: (1) In *S. immundus* (Mon. p. 408) the prosternal striæ are divergent at both extremities, and in *S. æneus* (pp. 413, 414) the prosternum is narrowed in the middle and the striæ are divergent before and behind; in other words, the keel of the prosternum is wider in *S. immundus* (especially in the median area) than in *S. æneus*, but the striæ are somewhat similarly divergent in both; (2) in *S. immundus* the mesosternal marginal stria is interrupted; in *S. æneus* it is entire. Marseul also gives a sexual character for *S. æneus*, viz. a shallow impression on the metasternum of the male, which does not exist in *S. immundus*.

"These are salient and reliable characters, and there are others equally so; (3) in *S. æneus* the tarsi are relatively long and slender, and in *S. immundus* they are shorter and more robust; (4) in *S. æneus* the femora are comparatively narrow and the punctuation vague and

feeble; in *S. immundus* the femora are broader and distinctly and somewhat densely punctulate."

The dorsal striae vary in most of the *Saprinini* and do not afford a reliable character.

Four further genera have been introduced into the *Histeridæ* by Mr. Lewis, *Pachylopus*, Er., including *Saprinus maritimus*, Steph., *Kissister*, Marseul, including *Carcinops minima*, Aubé, *Halaeritus*, Schmidt, to which *Acritus punctum*, Aubé, is to be referred, and *Hypocaccus*, Thoms., containing *Saprinus rugifrons* and *metallicus*. The only one of these genera which is recognised as a genus in the European catalogue of Heyden, Reitter and Weise is *Pachylopus*. Ganglbauer does not mention *Pachylopus*, and treats the other three as not genera; under these circumstances it is perhaps the best course in our limited fauna to keep to the old arrangement, at any rate for the present; the differences do not appear to be very important.

MICROMALUS, Lewis.

In the *Annals and Magazine of Natural History*, 7 Ser. vol. xix. 318 (1907), Mr. Lewis forms a new genus, *Micromalus*, to receive certain species hitherto included in *Paromalus*; among these are both the species in our lists, *P. flavicornis*, Herbst., and *parallelopipedus*, Herbst. The generic name *Micromalus* must therefore be substituted for these species. The new genus differs from *Paromalus* (the type of which is *complanatus*, Panz.) in being somewhat cylindrical and elongate, but not much depressed as in *P. complanatus*, and the form of the prosternum is on a different plan, being without striae and having the keel narrowed anteriorly and not much flattened out; the metasternum, moreover, throughout its length is relatively more narrow.

NITIDULIDÆ.

CARPOPHILUS, Leach.

C. sexpustulatus, F., has been usually regarded as an introduced insect, and as very doubtfully British. Mr. E. G. Bayford, however (*Ent. Mo. Mag.* xlii. (2 Ser. xvii.) 1906, 179) records two species taken under circumstances that would seem to give it a claim to be regarded as indigenous; one of these was taken by himself, probably under bark, at Edlington or Wadworth Wood, Doncaster, and the other by Dr. Corbett, at Sandall Beat, some four miles from these woods, under the bark of an elm. In February 1907 Dr. Corbett and Mr. Bayford captured six more specimens in carcasses of hooded crows in Wheatley Wood, near Sandall Beat (*Ent. Mo. Mag.* xviii. 1907, p. 82).

EPURÆA, Erichson.

Dr. Joy (*Ent. Mo. Mag.* xlv. (2 Ser. xix.) 1908, 106) gives a very good table of the British species of this genus (excluding *E. decemguttata*

and *E. diffusa*, which fall under the subgenus *Dadopora*, Thoms., which might well be given generic rank). We do not possess *E. oblonga*, Herbst.; the insects standing under this name in our collections must be referred to *E. thoracica*, Tourn.

- I. Thorax broadest behind middle of sides, much more narrowed in front than behind.
- i. Species convex; middle tibiæ of male simple.
1. Club of antennæ concolorous, last joint broader than penultimate. E. ÆSTIVA, *Er.*
 2. Club of antennæ dark, last joint narrower than penultimate.
 - A. Size larger, more parallel-sided E. MELINA, *Er.*
 - B. Size much smaller, sides more rounded E. NANA, *Reitt.*
- ii. Species more or less depressed.
1. Thorax with anterior margin strongly emarginate.
 - A. Elytra with very broad flattened sides.
 - a. Brown or brownish-black, thorax and elytra reddish at the sides; club of antennæ dark E. PARVULA, *Sturm.*
 - b. Reddish-yellow, elytra sometimes to a greater or lesser extent blackish; club of antennæ concolorous.
 - a*. Narrower; more strongly and diffusely punctured; apex of elytra more rounded; middle tibiæ of male simple E. DELETA, *Er.*
 - b*. Broader; less strongly and more thickly punctured; apex of elytra more truncate; middle tibiæ of male sinuate E. SILACEA, *Hbst.*
 - B. Elytra with moderately broad, or quite narrow sides.
 - a. Apex of elytra broad and truncate E. NEGLECTA, *Heer.*
 - b. Apex of elytra rounded.
 - a*. Elytra with very short shining golden hairs; rust-red or reddish-yellow, elytra generally with a small dark discal spot; middle tibiæ of male simple E. VARIEGATA, *Herbst.*
 - b*. Elytra with longer, not shining hairs; middle tibiæ of male sinuate.
 - a†. Narrower, less shining; anterior margin of thorax more emarginate; last joint of antennæ distinctly narrower than penultimate E. OBSOLETA, *F.*
 - b†. Broader, more shining; anterior margin of thorax less emarginate;

last joint of antennæ about as broad
as penultimate

E. TERMINALIS, *Mann.*
(*immunda*, Sturm.)

2. Thorax with anterior margin very slightly
emarginate.

A. Apex of elytra broad and truncate; club
of antennæ concolorous

E. FLOREA, *Er.*

B. Apex of elytra rounded; club of antennæ
darker

E. LONGULA, *Er.*

II. Thorax broadest at middle of sides, not or
not much more narrowed in front than
behind; elytra parallel-sided as far as middle.

i. Punctuation extremely fine; last joint of
antennæ infusate

E. THORACICA, *Tourn.*

ii. Punctuation much stronger.

1. Size larger; club of antennæ concolorous;
thorax a little broader at base than at apex

E. PUSILLA, *Illig.*

2. Size smaller; club of antennæ infusate;
thorax a little narrower at base than at apex

E. ANGUSTULA, *Sturm.*

E. nana, Reitt. (Verh. Nat. Ver. Brünn, xii. 1873, 19). Most nearly allied to *E. melina*, *Er.*, but very much smaller, more oval and less elongate, with the upper surface more shining and more finely punctured; the antennæ have the last two joints of the club abruptly black, the apical joint being broader than in *E. melina* and nearly as wide as the tenth; the thorax is more narrowed behind and the elytra are more rounded at the apex. From *E. aestiva*, *L.*, it may be known, apart from its small size, by the sparser punctuation of the upper surface, and the slightly narrower apical joint of the antennæ, this and the preceding joint being black. From *E. florea*, *Er.*, and its allies, the short oval shape, and the colour of the club of the antennæ will easily distinguish it. L. 2-2½ mm.

Thorpe-le-Soken, Essex: one specimen taken by sweeping herbage in the vicinity of saltings by Mr. Champion, who records the species as British, *Ent. Mo. Mag.* xxxii. (2 Ser. vii.), 1896, 4: Ganglbauer says that the species is rare in Northern and Central Europe under pine bark and in fungi.

MELIGETHES, Stephens.

M. viduatus, Sturm, **var. æstimabilis**, Reitt. (Seidlitz, *Fauna Trans.*, Ed. ii., 1891; Ganglbauer, *Käfer. Mitteleurop.* iii., 514); **M. æstimabilis**, Reitt. (*Berl. Ent. Zeitsch.*, 1872, 133). This insect is distinguished from the type form by the more finely punctured elytra and the more distinct cross-striation or reticulation of their whole surface; the sculpture is present to a less degree on the apical portion of *M. viduatus*, but is often quite obsolete on the front part; as, however, intermediate specimens appear to occur it is best retained as a variety. L. 1¾ mm.

Four examples have been taken in Cumberland by Mr. F. H. Day (*v. Ent. Mo. Mag.* xlv. (2 Ser. xix.) 1908, 89).

In *M. pedicularius*, Gyll., the cross-striation of the elytra is wanting, and the upper surface is usually more strongly and deeply punctured; the two species, however, can only be satisfactorily distinguished by the male characters; in *M. pedicularius* the male has a large smooth tubercle at the extremity of the last abdominal segment, and behind this an inclined smooth and shiny space, while in *M. viduatus* this segment is simple.

M. lugubris, Sturm, **var. gagatinus**, Er. (*Naturg. Ins. Deutsch.* iii., 201). This variety is larger and more convex than the type, with darker pubescence, and has the anterior tibiæ more finely denticulate; it has, however, been generally regarded as a variety; Reitter, apparently, desires to separate it as a species on the structure of the last ventral segment in the male, which in *M. lugubris* has two small prominences separated by a shallow impression, whereas in *M. gagatinus* there is only a small raised transverse band; as however (according to Ganglbauer, who does not recognise the insects as separate) a complete set of transitional forms occur, there seems no reason to alter what I have said before, viz., that *M. gagatinus* is not specifically distinct.

M. bidentatus, Bris. (*Mat. Cat. Gren.*, 1863, 61). I have come to the conclusion that this insect must be struck out of our lists; it is very close to *M. erythropus*, but is larger and has very peculiar male characters; the tibiæ are wider, the forehead is roundly and deeply emarginate and there is an almost total absence of alutaceous markings on the elytra.

The insect which I recorded (*Ent. Mo. Mag.* xlvi. (2 Ser. xxi.), 1910, p. 15) was wrongly determined; I have since, through the kindness of Mr. Newbery, been enabled to see an authentic specimen of *M. bidentatus*, and have not come across anything like it in the collections I have had experience of.

CYCHRAMUS, Kugelann.

C. fungicola, Heer., is regarded in the 1906 European Catalogue as a variety of *C. luteus*, F. Dr. Sharp (*v. Ent. Mo. Mag.* xxv., 1889, 404) believes them to be the sexes of one species, *C. luteus* being the male, and *C. fungicola* the female. Mr. Newbery tells me that he has on more than one occasion taken them in cop. in Highgate Wood on Umbelliferae, which strongly corroborates Dr. Sharp's opinion. Mr. E. W. Janson (*Ent. Ann.*, 1861, p. 66) states that out of a dozen specimens taken indiscriminately on the honeysuckle seven were *C. fungicola* and five *C. luteus*, but he gives reasons for considering them to be distinct species.

RHIZOPHAGUS, Herbst.

In *R. dispar*, Payk., the pygidium is indistinctly punctured, whereas in *R. bipustulatus*, F., it is strongly punctured.

R. oblongicollis, Blatch and Horner (Ent. Mo. Mag. xxviii. (2 Ser. iii.), 1892, 303); *R. punctulatus*, Guilleb. (Ann. Soc. Ent. Fr. 1897, Bull. 226). Of a ferruginous colour throughout, although the head and thorax are occasionally dusky or pitchy; the insect is more cylindrical and convex than the other species, except *R. nitidulus*, F., to which it most nearly approaches. Head rather elongate, very slightly narrowed behind, scarcely as wide as the thorax, uniformly punctured, the punctures being distinct and not close. Eyes rather small and not very prominent, antennæ ferruginous, with an ovate club; thorax oblong, parallel-sided, with all the angles rounded, margined at sides and base, punctuation not close, a little stronger than that of the head, a distinct but very small space behind the centre smooth, base gently emarginate. Elytra elongate, narrowed behind, rather finely and closely punctured in regular rows, the sutural rows only being in evident striæ, punctuation at sides finer than on disc, interstices equal, flat, and finely alutaceous, the sutural interstices only with a row of fine punctures on each. Legs ferruginous. Abdomen and underside punctured, the last ventral segment without any depression. L. $3\frac{1}{2}$ –4 mm.

Sherwood Forest, Notts, and Bagot's Park, Staffordshire, under oak-bark (Blatch and Horner). Mr. Champion (Ent. Mo. Mag. xxxiii. (2 Ser. viii.), 1897, 278) points out that this insect is evidently conspecific with *R. punctulatus*, Guillebeau, described from Nantua, Southern France: this insect is stated by its author to differ from *R. ferrugineus*, Payk. and *R. parallelcollis*, Er., by the fine punctuation of the thorax, and the shortness of the second joint of the antennæ, and from *R. nitidulus*, F., by its ferruginous colour and the absence of the fovea on the last ventral segment. Mr. Champion possesses a specimen from the Rev. T. Blackburn's British collection, without locality attached.

MONOTOMIDÆ.

MONOTOMA, Herbst.

M. Fauvel (Ent. Mo. Mag. xxxi. (2 Ser. vi.), 1895, 141), in a letter to Mr. Champion, has pointed out that I am in error in considering *M. quadrifoveolata*, Aubé, as synonymous with *M. subquadrifoveolata*, Wat., and that the synonymy ought to stand as follows:

1. *M. rufa*, Redt., 1849:
 - Subquadrifoveolata*, Waterh.
 - Quadri-impressa*, Reitt.
 - Ferruginea*, Bris.
 - Quadrifoveolata*, Fowl.
2. *M. quadrifoveolata*, Aubé, Crotch.
 - Subquadrifoveolata*, Fowl.

This alteration must therefore be made (v. Brit. Col. iii. p. 274).

LATHRIDIIDÆ.

LATHRIDIUS, Herbst.

L. bergrothi, Reitt. (Verh. zool.-bot. Ges. Wien, 1880, 53). In general appearance something like *Enicmus transversus*, Ol., but at once distinguished by its larger size, and the sharply carinate interstices of the elytra (there are three prominent carinæ on each elytron and the suture is also raised), the margins of the latter being also conspicuously explanate towards base; according to Ganglbauer (Die Käfer von Mitt. Eur. iii. 781), the chief distinguishing point between this and allied species seems to be that on the posterior half of the elytra between the last raised interstice and the side margin, instead of the usual double row of punctures there are four rows; this is very evident under a good lens; the upper surface is somewhat dull, ferruginous, with the head and thorax usually darker, without pubescence; head narrower than thorax, with rather small prominent eyes; antennæ with a feeble club; thorax about as long as broad, gradually narrowed behind apex, sub-parallel behind, finely rugose; elytra ample, ovate, much broader than thorax, carinate and with the interstices punctured; legs red. L. $2-2\frac{1}{4}$ mm.

Four taken by Professor Carr from a dried specimen of Burdock (*Aretium*) in the herbarium of the University College, Nottingham, and introduced as British by the Rev. A. Thornley (Ent. Mo. Mag. xxxvii. (2 Ser. xii.), 1901, 18); afterwards taken in numbers by Mr. W. Holland in his cellar at Oxford by beating firewood faggots and lumber. London in a granary (Donisthorpe); Reading and Wells, Norfolk (Joy); Southampton (Gorham); Winlaton, Durham (Bagnall); Chesham (Elliman); Loudwater, Bucks, in moss (W. E. Sharp); Carlisle (Day); West Malvern (Tomlin); Plymouth (Keys). It is gradually spreading its range on the Continent; it was not described until 1880, and has been found in Russia, Denmark, Germany, Austria, Silesia, and France. It has comparatively recently been described, as pointed out by Mr. Holland, as having been found in an old straw hat at Wimereux, Pas de Calais, and in old baskets in Normandy.

ENICMUS, Thomson.

E. fungicola, Thoms. (Skand. Col. x. 336). Pitchy black, with the elytra reddish-brown and the antennæ and legs ferruginous; head obsoletely channelled, with the eyes large and prominent; thorax a little shorter than broad, scarcely cordate, with the sides dilated before the middle and obsoletely crenulate, central longitudinal channel more or less distinct, elytra about twice as broad and four times as long as thorax, slightly shiny, with very finely punctured striæ, which, with the exception of the strong sutural stria, become obsolete towards apex; underside pitchy black. L. $1\frac{3}{4}-2\frac{1}{4}$ mm.

Edenhall, Cumberland, in dry fungi on a tree, May 13, 1906; taken

by Mr. Britten and recorded by Mr. E. A. Newbery (Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 103); Cannock Chase (Tomlin); Aviemore, Scotland (Champion); Egglestone-in-Teesdale (Gardner); Langworthby (Day). Closely allied to *E. rugosus*, Herbst., but larger and broader and differently coloured, and further distinguished by the absence of impressed lines on the first ventral segment of the abdomen; the differences in the central channel and the lateral and basal impressions of the thorax are not reliable as they vary in different specimens of *E. rugosus*. Ganglbauer records the species as very rare, but as widely spread over North Europe, Germany, Austria and Hungary; it is very distinct and an interesting addition to our list.

E. histrio, Joy and Tomlin (Ent. Mo. Mag. xlii. (2 Ser. xxi.) 1910, 250). Closely allied to *E. transversus*, and probably to be found with that species in many collections. It is, however, abundantly distinct, being smaller and less elongate; the club of the antennæ is plainly shorter; the thorax is more rugose and duller, and the borders are evidently narrower; the elytra are shorter and broader in proportion, with the striae much more strongly punctured; the punctures are more closely placed, and the interstices are convex; on the first ventral segment there are about six very fine, short, impressed lines starting from near the posterior coxæ, whereas in *E. transversus* there is a single, well-marked, long impressed line on this segment. The ædeagus in the male is simple, very slightly curved, about four times as long as broad, with the apex not sharply pointed; in *E. transversus* it is very remarkable, being long and thin, sharply pointed at the apex, and strongly bent twice at a right angle, somewhat like the letter Z. L. $1\frac{2}{5}$ – $1\frac{3}{5}$ mm.

The species is generally distributed and is usually found in hay. It is probably very widely distributed: Oxford; Bradfield; Southport (1898); Herefordshire (Whitbourne-on-Teme, Symond's Yat, Malton and West Malvern). I have two specimens from the late W. Gurney's collection, taken by him in hay rubbish in 1859 at Bedingfield, Suffolk, and there are others in Dr. Sharp's collection.

CORTICARIA, Marsh.

Corticaria, Marsh (Ent. Brit. i. 106; Mann. Germ. Zeitschr. v. 16; Lacordaire, Gen. Col. ii. 437; Thoms. Skand. Col. v. 224; Ganglbauer, Die Käfer von Mitteleuropa, iii. 793). In the Entomologist's Monthly Magazine (vol. xlv. 2 Ser. xix. (1908) 125), Dr. Joy has published a valuable paper entitled "Notes on the genus *Corticaria*," in which he describes three species not hitherto recorded as British, and a fourth which had only recently been introduced; two of these, *C. linearis*, Payk., and *C. longicollis*, Zett., I had already, as he says, particularly mentioned as likely to occur in Britain (Col. Brit. Islands, iii. 292), and I think it very probable that many other of the Continental species which belong to these minute and obscure genera, will before long find a place in our lists, seeing that so much

interest is being taken in them by some of our most energetic workers. Dr. Joy also adds a new and complete table of the genus proper, which is here quoted :

- I. Elytra with longer, somewhat erect pubescence, or with alternate rows of longer and shorter hairs.
- i. Eyes feebly convex and not prominent, temples well developed; antennæ with the first two joints of the club not longer than broad; colour rust-red or reddish testaceous; elytra with alternate rows of longer and shorter hairs C. FULVA, *Com.*
 - ii. Eyes strongly convex and prominent.
 1. Temples well developed; thorax much narrower than elytra; all the joints of the club of the antennæ evidently longer than broad; size larger C. PUBESCENS, *Gyll.*
 2. Temples rudimentary; thorax broader in proportion to elytra; first two joints of the club of the antennæ about as long as broad; size smaller C. CRENULATA, *Gyll.*
- II. Elytra with shorter, depressed pubescence, the hairs being of equal length.
- i. Antennæ with at least the first joint of the club distinctly longer than broad C. DENTICULATA, *Gyll.*
 - ii. Antennæ with the first two joints of the club globose, as long as broad or somewhat transverse.
 1. Elytra with punctured striæ evanescent behind middle; species convex and broad.
 2. Elytra with punctured striæ continued to apex C. FENESTRALIS, *L.*
 - A. Size larger; length 1·8–2·5 mm.; temples obsolete or absent.
 - a. Sides of thorax strongly serrate C. SERRATA, *Payk.*
 - b. Sides of thorax obsoletely serrate.
 - a*. Colour dark brown; elytra more depressed, shoulders with well marked callosities C. LINEARIS, *Payk.*
 - b*. Colour testaceous; elytra more convex, shoulders with callosities obsolete C. EPPELSHEIMI, *Reitt.*
 - B. Size smaller; length 1·3–1·8 mm.; temples small, but distinct.
 - a. Thorax strongly punctured; elytra somewhat rounded at sides.

- a*. Thorax much narrower than elytra, scarcely transverse, broadest before middle; elytra more rounded at sides; pubescence not conspicuous . . . *C. LONGICOLLIS*, *Zett.*
- b*. Thorax not much narrower than elytra, strongly transverse, broadest at middle; elytra less rounded at sides; pubescence conspicuous . . . *C. CRENICOLLIS*, *Mannh.*
- b. Thorax finely punctured, elytra parallel-sided . . . *C. ELONGATA*, *Gyll.*
- III. Elytra with rows of short erect bristles, parallel-sided and cylindrical . . . *C. UMBILICATA*, *Beck.*

C. linearis, Payk. (Faun. Suec. i. (1798), 302). Rather elongate, slightly convex, moderately shining, with very fine and thin decumbent pubescence; head and thorax black, elytra piteily black or brownish-black with the shoulders ferruginous, antennæ and legs ferruginous, the club of the former sometimes darker; head narrower than the thorax with very short but distinct temples; antennæ with joints 4, 5, and 6 a little longer than broad, 7th and 8th globose, the first two joints of the club as long as broad; thorax much narrower than elytra, about as long as broad, evenly more or less rounded and feebly dentate at the sides, rather strongly and thickly punctured, with a deep round fovea before the middle of the base; elytra oblong, with the shoulders rounded but almost rectangular, and with rather well-marked callosities, somewhat depressed, broadest in the middle, rather strongly punctured in rows, and with much finer rows of punctures on the interstices; male with the anterior tibiæ very feebly curved on their inner side behind the apex, first joint of the tarsi dilated, fifth ventral segment very feebly impressed at apex. L. $1\frac{3}{4}$ -2 mm.

Bradfield, two specimens (Joy); the species occurs in Northern Europe and North Asia, and also in Germany and Austria in mountainous districts on pine and fir trees.

This insect may be known from *C. serrata* by its proportionately narrower thorax, with the sides much less strongly serrate, and by the more depressed and more parallel-sided elytra.

C. epelsheimi, Reitt. (Stett. Ent. Zeit, 1875, 423). Exceedingly closely allied to *C. linearis*, but distinguished by its entirely ferruginous or reddish-yellow colour and more convex elytra, which are more strongly rounded at the shoulders, and also by the fact that the interstices of the elytra are more or less distinctly rugose transversely; the antennæ, moreover, are slightly longer and more slender and the humeral callosities are less developed. L. $1\frac{3}{4}$ -2 mm.

Working common in powdery fungi on fir stumps during one season only and New Forest (Champion); Ganglbauer mentions the species as "very rare," and as occurring in Finland, Austria and Germany.

C. longicollis, Zett. (Ins. Lapp., 200). A small, and entirely ferruginous species, which may be easily distinguished by the very thick rugose punctuation of the thorax, and by the convex, oval, and more or less rugose elytra which are coarsely punctured in thick set rows; the pubescence is very fine and short. The head is narrower than the thorax with short but distinct temples; the antennæ have the fourth joint somewhat longer than broad, the following joints are short, and the two first joints of the club are transverse; the thorax is much narrower than the elytra, as long as broad or plainly transverse, broader a little before the middle, feebly dentate at the sides, with the hind angles produced into a distinct tooth, very thickly and rugosely punctured, and with a rather large fovea at middle of base; elytra longish oval, broader in the middle, moderately convex, with rounded shoulders, with strong rows of punctures which become obsolete towards apex, interstices narrow and rugose; male with the first joint of the anterior tarsi slightly dilated, fifth ventral segment with a somewhat deep transverse fovea. L. $1\frac{1}{4}$ – $1\frac{3}{4}$ mm.

The species was first noticed as British by Mr. Pool, who took it under bark at Epping; Richmond Park (Rye and Champion); Darent Wood, under bark (Donisthorpe); Malvern, in cellar, and Sherwood Forest, under bark (Tomlin): according to Ganglbauer (*l.c.* iii, 804) it is not rare in nests of *Formica rufa* and *exsecta*.

C. crenicollis, Mannh. (Germ. Zeitschr., v. 37). Entirely yellow or reddish-yellow, rather elongate; head narrower than thorax, with short but distinct temples behind the eyes, distinctly punctured; thorax broader than long, at broadest about as wide as the elytra, with the sides strongly rounded and denticulate, thickly and comparatively strongly punctured, with a deep impression (round or transverse) before the base; elytra oblong, subparallel, plainly, though finely pubescent, with the sides feebly rounded, and with rather strong rows of punctures, the interstices being more or less rugose; the sculpture becomes more or less obsolete towards apex; legs yellow-red. Male with the first joint of the anterior tarsi somewhat widened, and the fifth ventral segment of the abdomen with a transverse impression. L. $1\frac{1}{4}$ – $1\frac{1}{2}$ mm.

Basildon, Berks, in dead and quite dry oak branches (Joy); Farnham (Power); Chiddingfold, Surrey, in moss in company with ants (Donisthorpe); Peckham (ex Coll. Chaney); Wicken Fen, very abundant in sedge stack refuse (Beare and Donisthorpe).

It appears to be a scarce species, but has occurred in North Europe, Germany, France, Spain and Madeira.

The species is most closely allied to *C. longicollis*, Zett., from which it differs in having a broader thorax and more parallel elytra, and in its distinctly more conspicuous pubescence; from *C. serrata*, Payk., it may be known by its smaller size, lighter colour, and more parallel and less strongly punctured elytra. Superficially it resembles *C. elongata*, Gyll., but may be at once known by the shape of the thorax and the fact that

the elytra are distinctly, though slightly, rounded at the sides, whereas in the last-named species the sides are quite parallel.

C. truncatella, Mann. (Germ. Zeitschr., v. 59). Very closely allied to *C. fulvipes*, of which it is regarded as a variety by Belon (Revue d'Entom. Caen, 1897, 205); it may, however, be distinguished by its entirely reddish-yellow colour (in *C. fulvipes* the breast and abdomen are always, and the elytra are generally, fuscous), thick-set shape, proportionately broader thorax, the shape of the antennal club and the absence of callosities at the shoulders; head much narrower than the thorax, without pronounced temples behind the eyes; antennæ slender, with a longish club, of which the first joint is plainly longer than broad; thorax about twice as broad as long, strongly and regularly rounded at the sides, with sharp projecting tooth-like hind angles; elytra oval and convex, with strong punctured striae, which are deeper at the sides, and with very fine rows of punctures on the slightly raised interstices; first joint of the front tarsi dilated in both sexes, but more strongly in the male; in the latter sex the front tibiæ are rather strongly thickened and the front tibiæ are furnished with a small tooth on their inner side before the middle; these characters of the male are the same as in *C. fulvipes*. L. $1\frac{1}{2}$ – $1\frac{3}{4}$ mm.

Dr. Joy, who introduced the species as British (Ent. Record, xx, (1908) 91), records the capture of two specimens by himself in Norfolk (August, 1904), probably at Sheringham or Wells; Mr. Newbery has also taken it at Lowestoft; it is probably very widely distributed, but overlooked.

Dr. Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, 105), gives some interesting notes on the genus *Corticaria* and describes two new species; like Ganglbauer, he rejects the genus *Corticarina* of Reitter, as there is nothing to distinguish it from *Corticaria* except the existence of a minute denticle on the anterior tibia of the male; this denticle is in some cases very difficult to detect, and is clearly inadequate as a generic distinction.

Unlike Ganglbauer, however, he accepts *Melanophthalma*, Mots., as a good genus; he says that in the last-named genus "the species have in common a positive character that distinguishes them satisfactorily, viz., the existence of strongly marked coxal lines on the first ventral segment. Moreover, I find a supporting character in the structure of the feet, viz., that in *Melanophthalma* the second tarsal joint is simply interposed between the first and third, so that the tarsi are conspicuously three-jointed and are quite linear, as there is not any dilatation of the basal joint. In *Corticarina* the basal joint is enlarged and the second joint is inserted so far forward on its upper surface that it is frequently difficult to detect. Several species of *Corticaria* and one of *Corticarina* (*C. gibbosa*) are intermediate as regards the tarsal structure; nevertheless it remains true that *Melanophthalma* forms the extreme of the series in this respect, and, therefore, may be quite naturally retained on account of its coxal lines. The genus *Melanophthalma*, then, will

comprise only two British species, *M. transversalis* and *M. distinguenda*; our other species must be placed as a section of *Corticaria*, and it is to this section that the two new species described by Dr. Sharp belong; with regard to the first, *C. lambiana*, it is interesting as being the most highly developed species belonging to the section *Corticarina* as regards the tarsal structure, but the least developed as regards the tibial denticle of the male (which is almost obsolete). *C. fowleriana*, on the other hand, departs from its immediate ally, *C. fuscula*, and approaches *Melanophthalma* in the form of the head, there being a well marked interval between the back of the eye and the constriction behind it."

C. lambiana, Sharp (*l.c.* 106). Closely allied to *C. similata*, Gyll., but rather smaller (our *C. similata* average $\frac{1}{2}$ mm. in length), with shorter, more oval elytra, more transverse thorax, much shorter legs, and finer sculpture and pubescence on the elytra; the first joint of the tarsi is in each sex thicker, and the second joint is inserted so far back on the first joint that it scarcely projects beyond the end of it, and the tarsi appears to be two-jointed. In the male the anterior tibiae are denticulate, but the little tooth is placed so much at the back of the tibia (as in *C. truncatella*) that it is, on account of this, and the small size and short tibia, very difficult to detect, whereas in the male of *C. similata* it is very conspicuous. L. $1\frac{1}{2}$ mm.

New Forest, 1908 and 1909; found on an oak tree; it was first discovered by Mr. C. G. Lamb, of Cambridge; it occurred in company with *C. similata*; the latter very rare species has been taken recently by Mr. Champion at Woking and by Dr. Sharp in Scotland as well as in the New Forest; in the latter locality it has only occurred on the oak, but at Nethey Bridge, N.B., it was taken by Dr. Sharp from the spruce fir. *C. lambiana*, however, has only as yet occurred on the one small oak tree on which Mr. Lamb originally discovered it. Subsequently recorded by Mr. Champion from Seaton, Devon.

C. fowleriana, Sharp. (*l.c.* 108). Allied to *C. fuscula*, but more convex, with a longer and more coarsely punctate thorax, and remarkable for the coarse sculpture of the elytra, their convex interstices, and their more highly developed setosity. The legs are stouter, with thicker tarsi, and the eyes are more distant from the thorax as they are not close to the constriction that forms the neck of the head. Dr. Sharp says that after the examination of a long series of the varieties of *C. fuscula* he feels certain of the distinction of the form, nor does he believe that it can be referred to the rare variety of *C. fuscula*, found in Lapland by Sahlberg and described by him (Notes Fauna, Flora, Fenn. xi. 1871, p. 359) as *C. latipennis*, as, although approaching it by having more convex interstices on the elytra, and by the shorter and more developed setosity, it differs considerably in other particulars, especially as regards the head and thorax. L. $1\frac{3}{4}$ mm.

Braemar, June 1871. One specimen taken by Dr. Sharp; it is the example referred to by me (Brit. Col. iii. 294) as a variety of *C. similata*,

which was at that time only represented in British collections by one or two specimens.

MELANOPHTHALMA, Motschulsky.

M. transversalis, Gyll. (Ins. Suec. iv. 133). Hitherto the var. *Wollastoni*, Wat., has only appeared in our lists, but Mr. Donisthorpe has recently taken the type form at Pevensey (Ent. Record, xvii. 1905, p. 103); it is a little smaller and narrower than the variety, which was first taken by Wollaston at Mablethorpe, Lincolnshire, and subsequently by myself in numbers at the same locality. It has also been recorded from Sheerness, Darenth, Chatham, Southend, Kingsgate, Wicken Fen, Weymouth, Devonshire, and co. Cork. *M. transversalis* is apparently a very variable species.

M. distinguenda, Com. (Coleopt. Nov. 38); *M. angulata*, Woll. (Cat. Canar. Col. 148). Ferruginous, with black-brown or black elytra, or entirely ferruginous or reddish-yellow; antennæ and legs yellow, the club of the former occasionally darker; thorax considerably narrower than elytra, before the middle somewhat angulated, and from this strongly contracted in front, more feebly behind; transverse impression not strong; elytra oval and convex with strongly punctured striae and rows of rather long hairs. In the male the last joint of the anterior tarsi, on the inner side near the middle, is armed with a distinct spiriform tooth. L. $1\frac{1}{2}$ -2 mm.

Lundy Island (Joy, 1905); Ent. Mo. Mag. xli. (2 Ser. xvi.), 1905, p. 275. Not uncommon.

Ganglbauer says the species is most closely allied to *M. transversalis*, from which it differs in its shorter form and the characteristic pubescence of the elytra. In general shape, however, it rather resembles *C. fuscata*, Gyll., and *C. curta*, Woll., from both of which it is easily separable.

CUCUJIDÆ.

LÆMOPHLEUS, Stephens.

L. monilis, Fab. (Mont. Ins. 1787, 116; Er. Naturg. Ins. Deutsch. iii. 316); *L. denticulatus*, Preysl. (Mayer, Samml. Phys. Aufs. i. 1791, 117, t. 3, f. 17). By far the largest and most conspicuous species of the genus which we possess; it is, however, very variable in size.

Male: depressed, shining, head and thorax reddish, elytra pitchy, each with a reddish-yellow spot on the disc, antennæ and legs reddish-yellow; head large, broader than thorax, finely punctured; mandibles bifid, prominent; antennæ long, with the joints longer than broad; thorax very transverse, strongly contracted behind, as broad as the elytra, finely punctured, with a deep stria on each side, parallel with margin, sides slightly denticulate; elytra very finely punctured, with

three finely punctured striæ and a raised line near the margins; legs comparatively short.

Female: similar to the male, but with the head distinctly narrower than the thorax, the antennæ shorter, with at least the eighth and tenth joints as broad as long, the thorax not nearly so much contracted behind and considerably narrower than the elytra, and the elytral spots much larger. L. $2\frac{1}{2}$ -5 mm.

Streatley, Berks. (Joy and Chitty): about a dozen specimens found under beech bark in October 1905, and a few subsequently in the same tree. It occurs in Northern and Central Europe, chiefly under beech bark, but also under bark of plane trees.

This is one of the most interesting additions to our list that has been made for some years.

HYPOCOPRUS, Motschulsky.

H. quadricollis, Reitt. (Verh. zool.-bot. Ges. Wien., 1877, 180). This is the insect standing in our collections as *H. lathridioides*, Mots., which has not hitherto occurred in Britain. The species are very closely allied, but *H. quadricollis* is distinguished by having the head plainly narrower than the thorax, the thorax considerably narrower than the elytra, not longer than broad, and the elytra distinctly shorter, being only twice instead of two and a half times as long as together broad. The size is the same in both species, $1-1\frac{1}{5}$ mm.

In the Ent. Mo. Mag., vol. xxxix. (2 Ser. xiv.) 1903, 301, Mr. E. A. Butler, in recording several specimens from Camber, near Rye, says that Mr. Newbery has pointed out the necessity of the above alteration to him, and that its correctness has since been confirmed by Mr. Champion.

SILVANUS, Latreille.

S. mercator, Fauvel (Rev. d'Entom. Caen. 1889, 132, note); *S. frumentarius*, Duv. (Gen. Col. d'Eur. ii. pl. 50, f. 248). Very closely allied to *S. surinamensis*, L., but distinguished by its larger eyes, and as a consequence the small tuberculiform temples, which equal only one-fifth of the diameter of the eyes, and by the male characters; the antennæ are somewhat shorter and have the two penultimate joints more transverse. In the male the head and posterior trochanters are unarmed, and the posterior femora are dentate; in the female the posterior femora are unarmed and the posterior trochanters are very small and simple. L. $2\frac{1}{3}$ - $3\frac{1}{2}$ mm.

King's Lynn, in a bakery (Tomlin); Merton, Surrey (Newbery); Oxford (Walker). A very useful table of the species of *Silvanus* is given by Mr. Champion in the Entomologist's Monthly Magazine for 1896 (xxxii. (2 Ser. vii.), p. 268), and he there predicts that *S. mercator* is certain eventually to be found in Britain. Mr. Tomlin's record appeared in 1905 (Ent. Mo. Mag. xlv. (2 Ser. xvi.) 37).

This is one of the unsatisfactory introductions that, apparently,

must be given a place in the British list, but which are in no sense indigenous; it is impossible, however, to draw the line, and many more of the same sort will probably be added from time to time.

CRYPTOPHAGIDÆ.

CRYPTOPHAGUS, Herbst.

This is one of our most difficult genera, and its composition has been somewhat more complicated of late years by the discovery of fresh species and especially by doubtful questions as to varieties. A considerable amount of attention was given to the genus by the late Mr. A. J. Chitty, whose loss both as a friend and a worker we so much deplore; had he lived he would probably have done very much more to advance the knowledge of our Coleopterous fauna. As it was, however, he wrote very little, and we therefore have much pleasure in including his table of the genus *Cryptophagus* in this work, as it appears to us to be the best yet published (*Ent. Mo. Mag.* xliii. (2 Ser. xviii.), 1907, 165). The position of the six species now added to our list is indicated under their descriptions, but they are not included in this table, as this would have necessitated a good deal of alteration of the whole in one or two cases.

- I. Elytra with the pubescence entirely decumbent, without longer outstanding hairs.
- i. Eyes with tolerably fine facets. Antennæ stouter, the seventh joint not or hardly longer than broad.
1. The thickened part of the anterior angles of the thorax (callosities) occupying a fourth or fifth of the sides.
- A. The lateral tooth of the thorax in or near the middle of the side.
- a. Antennæ with a two-jointed club . . . PUBESCENS, *Sturm.*
- b. Antennæ with a three-jointed club.
- a*. Elytra closely but not strongly punctured, punctuation almost the same at apex as at base . . . VALIDUS, *Kraatz.*
- b*. Elytra becoming much more finely punctured at apex.
- a†. Thorax almost as long as broad, with strongly thickened anterior angles, and the sides almost straight with an obsolete middle tooth . . . FUMATUS, *Marsh.*
- b†. Thorax strongly transverse, with less strongly thickened anterior angles and a distinct middle tooth.

- aa. Thorax with sides more or less strongly margined.
- *. Elytra with the punctures at base as strong as those of the thorax, but more widely separated; colour uniform reddish.
- †. Average size larger; punctures finer, hair longer *BADIUS, Sturm.*
- ††. Average size smaller; punctures coarser, hair shorter and more sparing *FUSCICORNIS, Sturm.*
- **.
- †. Antennæ stout; colour ferruginous, the elytra sometimes with a black patch at the suture spreading out towards the sides; often, however, entirely ferruginous; usually the largest species, but occasionally quite small *POPULI, Payk.*
- ††. Antennæ less stout; elytra dark, with a reddish-brown base or entirely ferruginous or brownish-yellow.
- ‡. Smaller, sides of thorax more angled at the central tooth, which is distinct; elytra shorter in proportion to thorax; pubescence shorter *SCANICUS, L.*
- ‡‡. Larger, thorax less angled at the central tooth, which is small; elytra longer in proportion to thorax; pubescence longer; colour ferruginous *SUBFUMATUS, Kr.*
- bb. Sides of thorax very feebly margined, the whole insect parallel-sided *CYLINDRUS, Kiesw. (parallelus, Bris.)*
- B. The lateral tooth of the thorax well before the middle of the side.
- a. Shorter and broader, thorax strongly margined at sides *SAGINATUS, Sturm.*
- b. Narrower and slighter, thorax less strongly margined *DENTATUS, Herbst.*

2. The thickened part of the anterior angles of the thorax occupying only a sixth or seventh of the sides.
- A. The lateral tooth of the thorax before the middle of the sides, very indistinct SCUTELLATUS, *Newm.*
(*bicolor*, *Sturm.*)
- B. The lateral tooth of the thorax in the middle of the sides, distinct.
- a. Shorter and more convex, punctuation stronger; thorax more parallel-sided, lateral tooth smaller UMBRATUS, *Er.*
(*ruficornis*, *Reitt.*, *nec Steph.*)
- b. Longer and slighter, punctuation weaker; thorax more contracted behind, lateral tooth stronger DISTINGUENDUS, *Sturm.*
- ii. Eyes with larger facets; antennæ somewhat slender, especially joints 6, 7 and 8, and fifth and seventh joints longer than broad; anterior angles of thorax reflexed and produced into a large hook-shaped tooth ACUTANGULUS, *Gyll.*
- II. Elytra with longer, more erect outstanding hairs, in addition to the more or less decumbent pubescence.
- i. Anterior angles of thorax with a tooth, which may, however, be blunt; lateral tooth in or behind middle of sides of thorax.
1. Anterior tibiæ produced externally into a distinct tooth; upper surface strongly punctured and setose LYCOPERDI, *Herbst.*
2. Anterior tibiæ not so produced; upper surface less strongly punctured.
- A. Eyes with large facets; elytra longer, finely and closely punctured; between the long and somewhat decumbent pubescence are a few outstanding long and less decumbent hairs arranged in rows CELLARIS, *Scop.*
- B. Eyes with facets normal, but not so small as in Section I. i.; elytra shorter, more coarsely punctured, with less close decumbent pubescence; outstanding hairs not in rows, except in *affinis*, in which species they are easily abraded.
- a. Elytra and thorax strongly and evenly

- punctured; thorax almost square, colour wholly or in part dark RUFICORNIS, *Steph.*
- b. Elytra and thorax not so punctured, thorax transverse, colour ferruginous.
- a*. The thickened part of the anterior angles of the thorax occupying a sixth of the sides, and prolonged behind into a sharp tooth; thorax nearly one and a half times as broad as long.
- a†. Elytra with the punctures at base about three times as far apart from one another as are those on the thorax, pubescence longer and more abundant PUNCTIPENNIS, *Bris.*
- b†. Elytra with the punctures at base hardly less coarse than those of thorax, pubescence less abundant and not so long PILOSUS, *Gyll.*
- b*. The thickened part of the anterior angles of the thorax occupying a fourth or fifth of the sides, and blunt or feebly toothed behind, outstanding hairs in rows, thorax about twice as broad as long AFFINIS, *Sturm.*
- ii. Anterior angles of thorax not produced into a tooth; lateral tooth before, or at any rate not behind, middle of thorax (but the character is difficult to appreciate); sides of thorax strongly margined.
1. Short and broad, very coarsely punctured SETULOSUS, *Sturm.*
2. Somewhat elongate, much more finely punctured SCHMIDTI, *Sturm.*

C. lycoperdi, Herbst., may be distinguished from *C. setulosus*, Sturm., which it superficially resembles, by having joints 9-10 of the antennæ not strongly transverse; in the latter species they are strongly transverse. *C. pilosus*, Gyll., may be known from both by its finer punctuation and the less coarse pubescence of the elytra. I have recorded it (*Brit. Col.* iii. 316) as one of the commonest species of the genus, but have since then modified my opinion, and believe that I must have confused it with *C. badius*, Sturm., which I have spoken of (*l.c.* p. 320) as one of the less common species, whereas it is apparently much commoner than *C. pilosus*. Mr. Newbery has sent me the following additional characters for distinguishing these last two species :

- Anterior angles of thorax callose, but not strongly cup-shaped, bearing a sharp spine directed backwards. Pubescence of elytra with longer hairs outstanding from the decumbent pubescence. Anterior tibiæ of the male triangularly dilated from base to apex *C. PILOSUS*, *Gyll.*
- Anterior angles of thorax strongly cup-shaped, not bearing a spine. Pubescence of the elytra short, even, without longer hairs. Anterior tibiæ almost linear in the male, and more slender in both sexes than in *C. pilosus* *C. BADIUS*, *Sturm.*

C. bimaculatus, Panz. (Faun. Germ. 57, 7). A small species which may be known from all others by the coloration and the structure of the thorax, which is very transverse, about twice as broad as long, with the sides scarcely rounded, and strongly and regularly serrated, there being no trace of the stronger lateral tooth, which is usually such a constant character in the genus. The general colour is reddish-brown, variable in shade, rather shining, with a more or less defined black band across the elytra; this is divided often at the suture and gives the insect a bimaculate appearance; the head is thickly and rather deeply punctured, and the antennæ are rather short and slender; the thorax is somewhat convex, deeply and very thickly punctured, and the elytra are longish oval, gently rounded at the sides, rather strongly and not very closely punctured in front, more finely behind. L. $1\frac{3}{4}$ – $2\frac{1}{4}$ mm.

Taken by Mr. Halbert and the late Mr. C. W. Buckle from June to September 1902 by sweeping amongst large beds of rushes on the shore of Lough Neagh, Ireland, bordering Shane's Castle demesne. Introduced by Mr. Halbert as British (Irish Naturalist, xix. 2, p. 30, February 1910).

This insect is one of the most distinct of all the members of the genus *Cryptophagus*. Ganglbauer (who places it first in his table and first in his descriptions of the species) says that it is found rarely in North and Central Europe and Siberia.

C. lævendali, Ganglbauer = **C. pubescens**, var. **lævendali**, Ganglbauer (Die Käfer von Mitteleuropa, iii. 678 (1899)). This species very closely resembles *C. pubescens*, Sturm., but it has the club of the antennæ three-jointed instead of apparently two-jointed as in the last-named species, the ninth joint being only slightly less dilated than the eleventh; it may further be known from this species by its darker colour and the rounded sides of the thorax; it resembles in colour the typical dark form of *C. scanicus*, from which it differs in its broader shape, coarser sculpture, and slightly less dilated ninth joint of the antennæ. L. $2\frac{1}{4}$ – $2\frac{1}{2}$ mm.

In a hollow tree, amongst dry dead leaves and fungoid growth two specimens taken by Mr. Champion in the New Forest in a hollow

beech tree on July 23, 1907; it has also been found in France and Denmark (*v. Ent. Mo. Mag. xlix. (2 Ser. xix.) 1908, 123*).

In the European Catalogue (1906) this species is regarded as a variety of *C. pubescens*; this may be correct.

C. subdepressus, Gyll. (*Ins. Suec. iv. 287*). This species is distinguished from its close allies and especially from *C. scanicus*, L., to which it is most nearly related, by the very thick and regular punctuation of the elytra, which scarcely becomes finer at the apex; the pubescence, moreover, is shorter and finer than in the last-named species, the thorax is much more narrowly margined, and the callosities of the anterior angles are smaller. The lateral tooth is in the middle of the sides and is small. As regards the punctuation of the elytra the species resembles *C. validus*, with which it is classed by Ganglbauer, but the latter insect is much larger with thicker antennæ; it has, moreover, a well-marked transverse impression at the base of the thorax, whereas in *C. scanicus* this is very feeble. The upper surface is brownish-red or ferruginous with rather short recumbent pubescence, and is only slightly shining. L. $1\frac{1}{2}$ - $2\frac{1}{2}$ mm.

Strathpeffer, Ross-shire, N.B.: two specimens taken in August 1907 by Dr. Joy, and introduced by him as British (*Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 225*); Nethy Bridge, Inverness-shire (Beare); Aviemore (Champion); Great Salkeld, Cumberland (Britten), on branches of Scotch fir; Bradfield (Joy); Woking and Guildford (Champion and Walker); Wytham Park (Walker); Wellington College, Berks., West Malvern and Tarrington, Herefordshire (Tomlin). It will probably be found abundantly in various localities by beating the lower branches of fir trees. On the Continent it appears especially to affect *Picea excelsa*.

C. fowleri, Joy. Somewhat resembling *C. scanicus*, but rather broader, duller, and with the elytra more parallel-sided and differently punctured. Ferruginous or reddish-testaceous, without a trace of darker colour on the elytra; antennæ with the club smaller than in *C. scanicus*, the last joint distinctly narrower than the penultimate (in *C. scanicus* the last joint is scarcely narrower than or as broad as the penultimate); thorax as in *C. scanicus*, but with the median tooth smaller and the punctuation not so strong and much closer; elytra dull, parallel-sided or even slightly widened to beyond the middle, and from thence somewhat abruptly narrowed, the punctuation nearly as strong at apex as at base, slightly rugose at base, closer and less strong than in *C. scanicus*, the pubescence rather longer and more erect than in that species.

Bradfield (Joy): mostly in dry wood dust in old beech trees, and one or two on freshly-cut wood; Bedingfield, Suffolk, and Headenham, Norfolk (Garneys); Water Eaton, Enslow Bridge, and Weston-on-the-Green, Oxon (Collins); Wytham, Berks. (Collins). The species has also been taken by Captain Deville in the Forest of Haute Séve, near Fougères, France, on a felled oak.

By separating and describing this species, Dr. Joy appears to have

settled a difficulty which has puzzled several coleopterists who have included this insect doubtfully under *C. scanicus*; it is considerably duller than that species and differently shaped and punctured; it is rather closely related to *C. subfumatus*, Kr., but is smaller. The anterior angles of the thorax are more strongly callose and more strongly toothed behind, and the elytra are broader, duller, and more strongly punctured than the thorax; from *C. hirtulus*, Kr., it may be known by the much wider margin of the thorax. In the strong punctuation of the apex of the elytra *C. fowleri* comes near *C. validus*, Kr., and *C. subdepressus*, Gyll., but is much smaller than the former, and has a quite differently shaped thorax as compared with the last-named species (v. Ent. Mo. Mag. xlv. (2 Ser. xxi.) 1910, 205).

C. hirtulus, Kraatz (B. 1858, 138). Closely allied to *C. scanicus*, L., and intermediate, as a rule, in colour between the type form of that insect and the *var. patruelis*, Sturm. It may be known from *C. scanicus* and also from the Central and South European species, *C. thomsoni*, Reitt., by the longer, coarser and thicker pubescence, and by the structure of the thorax, the anterior angles of which are more prominent, and terminate behind in a sharp tooth; the middle tooth is larger and the sides are strongly angled and more contracted behind. It may further be distinguished from *C. scanicus* by the much more finely margined sides of the thorax, a character in which it agrees with *C. cylindrus*, Kies., from which it may be separated by its much broader form. The head and thorax are usually ferruginous, sometimes brownish, and the elytra brownish-yellow, but the whole body is often ferruginous or brownish-yellow; the punctuation of the upper surface is strong throughout, and the elytra are somewhat more strongly punctured than in *C. scanicus*. L. 2-2½ mm.

Tresco, Scilly Isles, and Reading (Joy); Merton, Surrey (Newbery); Woking (Champion). The species was introduced by Dr. Joy as British (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 178).

C. pallidus, Sturm. (Deutsch. Ins. xvi. 69, t. cccxiii. f. c.). Very closely allied to *C. dentatus*, and perhaps scarcely distinct from that insect, but it is generally rather smaller, with the thorax narrower in proportion to the elytra, and the elytra shorter and less parallel. The callosities also of the thorax are distinctly less developed; the differences appear to be constant. The manner of life, too, is different, *C. dentatus* occurring in houses and cellars and under fallen leaves and bark, whereas *C. pallidus* is found on flowering shrubs, especially a species of *Prunus*, and in haystack refuse. L. 1½-2½ mm.

Lowther Castle, Westmorland, and Great Salkeld, Cumberland, in some numbers (Britten). It is probably to be found in many of our collections, mixed with *C. dentatus* (v. Ent. Mo. Mag. xliii. (2 Ser. xviii.) 1907, 271, Joy). Woking (Champion); West Malvern (Tomlin); Bradfield (Joy); Bedingfield and Bungay, and other Norfolk and Suffolk localities (Garneys); Crystal Palace windows (Garneys); Repton, Derbyshire (Garneys); Ditchling (Dollman).

Var. argenteus, Joy. At the meeting of the Entomological Society, held on November 3, 1909, Dr. Joy exhibited specimens of *C. pallidus*, which he named *var. argenteus*, because they differed from the type form in having silvery pubescence.

MICRAMBE, Thomson.

M. villosa, Heer., Faun. Helv. i. 425 (Cryptophagus).

Paramecosoma pilosula, Er., Naturg. Ins. Deutsch. iii. 373.

M. vini, Gangl. (*ex parte*), Käf. Mitt. Europ. iii. 672.

This species is distinguished from *M. vini*, Panz., by being, on the average, larger, and by having the pubescence of the elytra with conspicuously longer upright hairs mixed with the decumbent pubescence. Both these species may be known from *M. abietis*, Payk., by the fact that the anterior angles of the thorax are more broadly explanate, forming an angular and projecting tooth at the anterior third of the sides of the thorax, which is much narrower immediately behind the tooth. In *M. abietis* the anterior angles are narrowly explanate, the tooth is small and obtuse, and the thorax is scarcely narrower behind this tooth. L. $1\frac{3}{4}$ -2 mm.

A single specimen was beaten off hawthorn at Chingford, Essex, and since this capture it has been taken at Nethy Bridge, in Scotland, by Mr. Bishop and Dr. Sharp, and other localities. On the Continent it occurs rarely on Carduaceæ.

Ganglbauer (*l.c.* 672) includes the species under *M. vini*, and it is placed as a synonym of this species in the European Catalogue (1906). Newbery, however (*Ent. Mo. Mag.* xlv. (2 Ser. xix.), 1908, 105), says that Ganglbauer now regards it as distinct. *M. abietis* occurs on firs, and *M. vini* on gorse, whereas *M. villosa* is found on broom, hawthorn, and various thistles.

PARAMECOSOMA, Curtis.

P. melanocephalum, Herbst., *var. infuscatum*, Halbert (*Ent. Mo. Mag.* xlvi. (2 Ser. xxi.), 1910, 66). According to Mr. Halbert, the ordinary form of this insect, with the black head and thorax, and chestnut-brown elytra, has not been recorded from Ireland. In mature examples of the prevalent Irish form the head, thorax and elytra are black and very shining, the femora and the apical part of the tibiae are infusate, and the general punctuation, especially of the elytra, is noticeably stronger than in the type; for this well-marked variety he proposes the name *var. infuscatum*.

This form has been found in Donegal, Cavan, Armagh, Dublin and Kerry, and is therefore widely spread in Ireland. It has also been taken by Mr. Keys near Plymouth (*Ent. Mo. Mag.* xlii. (2 Ser. xvii.) 1906, 137).

Var. univeste, Reitter (*Deutsch. Ent. Zeitsch.* 1877, 294); Ganglbauer (*Die Käfer von Mitteleurop.* iii. 670). Of a uniform chestnut-brown colour, with the legs and antennæ slightly lighter; the thorax is more transverse than in the type form, and the general

punctuation of the upper surface is noticeably stronger; the pubescence also is more scattered.

Shane's Castle, Lough Neagh, Ireland (Buckle); the specimens are rather large (2 mm.). This variety has been recorded from Hamburg, Prague, Vienna and the Caucasus (*v.* Halbert, *Ent. Mo. Mag.* 1910, 66).

CÆNOSCELIS, Thomson.

C. (Atomaria) ferruginea, Sahlb. (*Ins. Fenn.* i. 58). Mr. Champion (*Ent. Mo. Mag.* xxxi. (2 Ser. vi.), 1895, 174) points out that the insect doing duty under this name in our collections should be referred to *C. (Atomaria) pallida*, Woll. (*Ann. and Mag. Nat. Hist.* xviii. p. 452, t. 9, fig. 1, 1846). *C. ferruginea* Sahlb. (= *subdeplanata*, Bris.) is larger (2-3 mm. as against $1\frac{1}{2}$ - $1\frac{3}{8}$ mm.), and has stouter antennæ and a more closely-punctured thorax; the thorax, moreover, has a sharply-defined submarginal carina extending from the base to the apex. In *C. pallida* the submarginal carina is faint, obliterated in front, and, viewed from above, it appears to join the margin before the apex.

ATOMARIA, Stephens.

Atomaria divisa, Rye, is placed as a synonym of *A. rubricollis*, Bris. (*Mat. Gren.* 1863, 68) in the last European Catalogue.

A. rhenana, Kr., appears to be now regarded as a variety of *A. gutta*, Steph., and not as a separate species.

SCAPHIDIIDÆ.

SCAPHISOMA, Leach.

S. assimile, Er., is very doubtful as British, and should be omitted from our lists.

MYCETOPHAGIDÆ.

LITARGUS, Erichson.

L. coloratus, Rosenh. (*Thier. Andal.* 1856, 105); Kraatz (*Berl. Ent. Zeitsch.* 1858, 144). This species resembles *L. bifusciatus*, F. (*connexus*, Geoffr.), in general colouring and appearance, but is smaller and more narrowed in front and behind, and is more bright and shining; the punctuation is much finer, and the pubescence yellower and thicker; the club of the antennæ is narrower, the last joint being plainly longer, and the thorax is without a distinct longitudinal impression at the base; the pattern of the coloration is somewhat different, the bands being more or less resolved into spots or patches; the general effect, however, is much the same. L. $2-2\frac{1}{4}$ mm.

Fourteen specimens are recorded by Dr. Joy (*Ent. Mo. Mag.* xlv. (2 Ser. xix.), 1908, p. 104) as having been taken by Mr. J. Ray Hardy in June, 1907, in Sherwood Forest, from a fungus growing on a dead holly log and from the leaves round it.

DERMESTIDÆ.

GLOBICORNIS, Latreille.

(**G. (Hadrotoma) nigripes**, F. (Ent. Syst. i. 233, t. 57). Oblong, black; elytra depressed, not very shiny, thickly and deeply punctured, slightly pubescent, with numerous raised setæ on the margins; head much narrower than thorax, thickly punctured; eyes prominent; antennæ testaceous, with the club fuscous; thorax transverse, much narrowed in front, strongly sinuate and produced in the middle at base, closely and deeply punctured; legs fuscous, with the tarsi testaceous. } .3 mm.

A specimen of this species was taken by Mr. Blatch by beating and sweeping at the side of a wood near Tewkesbury, under circumstances that might seem to prove it indigenous, but more confirmation is required. The genus contains thirteen European species, and is placed in the European Catalogue after *Megatoma*.)

BYRRHIDÆ.

SIMPLOCARIA, Marsham.

Simplocaria ? sp. In the Ent. Mo. Mag. for September, 1907, 205, Mr. Gorham records two specimens of a *Simplocaria*, standing in his collection under *S. semistriata*, Fab., which appear to differ materially from that species in being smaller, darker, and, more particularly, in having all the striæ deeper and continued to, or nearly to, the apex of the elytra. He considers that they are probably the insect referred by Stephens (Ill. Brit. Ent. Mand. iii. p. 140) to *Byrrhus picipes* of Olivier, but that they are not the *B. picipes* of Gyllenhal, which is larger than *B. semistriata*, whereas Mr. Gorham's insects are smaller. I have seen Mr. Gorham's examples, although I have not examined them very closely, and it is possible they may belong to a new species, but it is quite probable that they are merely small varieties, and they could not be described without further material. There is a great deal too much hair-splitting already in these small and more or less obscure genera, often on single specimens.

One of Mr. Gorham's specimens is from Wyre Forest, Shropshire; the locality of the other is unknown.

DRYOPIDÆ (PARNIDÆ).

DRYOPS, Olivier (**PARNUS**, Fabricius).

The British species of this genus have by no means been satisfactorily worked out as yet, and much confusion appears to exist regarding them; certain of them appear to rest chiefly on differences in the male genitalia, which, apart from other distinctions, are always

more or less unsatisfactory, although in some cases very valuable; it does not appear to be proved that the differences are always constant in all cases, and the synonymy is still uncertain in several instances.

Dr. Sharp has kindly drawn up for me the following table of superficial differences, which will be found useful for determination.

I. Hair short.

i. Club of antennæ long.

- 1. Insect broad, pale D. ANGLICANUS, *Edwards*.
- 2. Insect narrow, pale D. AURICULATUS, *Geoffr.*
= *prolificornis*, *Fabr.* sec
Ganglb.
- 3. Insect rather dark and moderately
broad D. GRISEUS, *Er.*

ii. Club of antennæ short.

- 1. Insect broad, slightly striate, brownish D. LURIDUS, *Er.* = *pro-*
lificornis, *Brit. Coll.*
- 2. Insect narrow, greyish black D. STRIATELLUS, *Fairm.*
= *algericus*, *Brit. Coll.*,
nec Luc.

II. Hair long.

- 1. Insect broad, dark, coarsely and irre-
gularly sculptured D. ERNESTI, *Des Gozis*,
= *auriculatus*, *Panz.* et
Brit. Coll., *nec Geoffr.*
- 2. Insect smaller, greyer, and more
regularly sculptured D. NITIDULUS, *Heer.*

By no means the last word has been said with regard to the British species of this genus, and a great deal more work is needed at examples from various localities before the question can be in any way settled.

D. (Parnus) luridus, *Er.* (*Naturg. Ins. Deutsch.* iii. (1847) 513). Exceedingly closely allied to *D. auriculatus*, *Geoffr.* (= *prolificornis*, *Fabr.* and *Brit. Cat.*), and only to be distinguished with any certainty by the formation of the male genitalia; in *auriculatus* the apex of the ædeagus is drawn out into a beak-like point; in *luridus* it is rounded; in *auriculatus* the basal half is compressed into an almost knife-like edge, and the side pieces (*paramera*) which form the boundary of the sub-oval opening at the apex of the ædeagus are thickened and widened at the base; in *luridus* the ædeagus is not compressed on its basal half, and the paramera are not thickened or widened at base. The colour of the pubescence varies, in both species being greyish-brown, or golden-brown, or whitish- or yellowish-grey; the forehead is usually more bluntly convex between the bases of the antennæ in *D. luridus*, but this cannot be depended upon as a reliable character; the average size is considerably smaller than that of *D. auriculatus*, L. $3\frac{1}{2}$ - $4\frac{1}{2}$ mm.

Norfolk: taken by Mr. James Edwards in three widely separated localities, and introduced by him as British (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 102); Kidlington (Walker); Wellington College. The species is probably common.

Mr. Edwards gives figures of the ædeagus in the two allied species, and, as a guide to every one wishing to examine the male characters, points out that in the male the upper surface of the last dorsal abdominal segment is evidently more pubescent than the remainder of the dorsum, whereas this is not so in the female.

The true synonymy and constitution of this species is not, apparently, settled with any certainty. Dr. Sharp is of the opinion that Mr. Edwards has confused two species under *D. auriculatus* (= the old *prolificicornis* of Erichson).

D. (Parnus) anglicanus, Edwards (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 218). "Male similar in appearance to *D. griseus*, Er.; antennæ at the base nearer to each other than either is to the eye; thorax equally narrowed in front and behind, the sides evenly curved from the base to the apex; tarsi red, with the apex of the claw joint narrowly darker. Ædeagus subterete, in outline continuous with that of the base of the paramera, the latter not swollen at the base, their inner edges thin throughout, and their apices drawn out into a fine point; male organ cariniform in its basal half, the apical half forming a subsagittiform expansion. In what I believe to be the female the sides of the thorax are distinctly straighter in the front half than they are behind." L. 5-5½ mm.

Horning, Norfolk (Edwards). Taken in company with *D. auriculatus*, Fourc. (*prolificicornis*, Fabr.) and included by him under this species, until, on the authority of Sharp and Ganglbauer, he described it as a new species (*l.c. supra*). The distinction of these closely allied species by the characters of the ædeagus may be correct, but raises great difficulties for the ordinary student.

It must be remembered that the *D. prolificicornis*, F., of our collections is now called *D. luridus*, Er., and that our old *D. auriculatus*, Panz., stands under the name of *D. ernesti*, Des Gozis.

RIOLUS, Mulsant et Rey.*

The genus *Riolus* must be regarded as distinct, and its members may be separated from the species of *Elmis*, or *Latelmis*, as the genus containing them is now called, by the absence of sublateral dorsal striae on the thorax.

Mr. Edwards (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 76) gives a table of our species, as follows:

- I. Elytra with the fifth and seventh interstices (sometimes the third also) distinctly more elevated than the others.

* Hist. Nat. Col. France, Uncifères 1872, 29.

- i. Elytra oblong-ovate, appearing about one and a half times as long as wide . . . R. CUPREUS, Müll.
- ii. Elytra elongate-ovate, appearing about twice as long as wide, their sides evenly rounded throughout . . . R. SUBVIOLACEUS, Müll.
- II. Elytra with only the seventh interstice more elevated than the others.
 - i. Elytra oblong-ovate, their sides almost straight in the middle third . . . R. NITENS, Müll.
 - ii. Elytra ovate, a little widened behind . . . R. SODALIS, Er.

R. sodalis, Er. (Naturg. Ins. Deutsch. iii. 532). Of the same size as *R. subviolaceus*, Müll., from which species it may be known by its much broader form and more shining upper surface, the broader thorax and wider elytra, which are more widened behind the middle, the fine punctured striæ, the quite flat six inner interstices, and the very strongly raised seventh interstice; it resembles *R. nitens* in the red-yellow antennæ and claws, but is broader and flatter, with the thorax broader in proportion to its length, and the basal angles more produced. The thorax is less convex than in *R. subviolaceus*, finely granulate before the base and at the sides, very dull, being very finely punctured, with an irregular admixture of larger, but yet fine, punctures; the general colour is bronzy, with the elytra lighter æneous, legs brown or reddish-brown.

Christow, Devon (Champion): one specimen taken by Mr. Champion in 1907, and recorded by Mr. Edwards (*l.c.* p. 78). This species appears to be very rare, or perhaps overlooked, on the Continent.

HETEROCERIDÆ.

HETEROCERUS, Fabricius.

Considerable doubt still exists with regard to this genus, which I have before discussed at considerable length (Brit. Col. v., Appendix, 459-464); one of the most discussed species is *H. arenarius*, Kies., which is given in the last European Catalogue as a synonym of *H. flexuosus*, Steph., another synonym being *H. femoralis*, Kryn; the insect standing under the name in our collections has occurred, apparently, only in Ireland, in co. Down (Strangford Lough), and near Dublin (Baldoyle and Portmarnock), but its identity has not been definitely ascertained. Mr. Champion has suggested that it may be identical with *H. rectus*, Wat. As there seems also to be some doubt as to the identity of our specimens standing under *H. femoralis*, Messrs. Johnson and Halbert think it best to retain the name *H. arenarius* for the Irish species (*v.* Irish List, 1902, p. 727), but judging from Kiesenwetter's own description (*v.* Brit. Col. v. 462) and the conclusion that Mr. Crotch came to that the Irish specimens did

not differ materially from *H. femoralis*, I am inclined to follow the synonymy of Heyden, Reitter and Weise, as follows :

- H. flexuosus*, Steph., Ill. Brit. ii. 1829, 101.
femoralis, Kryn., Bull. Mosc. v. 1832, 115.
marginatus, Gyll., Ins. Suec. i. 137 (*nec* Fab.).
arenarius, Kies., Linn. Ent. v. 284.

Ganglbauer (Die Käfer von Mitteleurop., iv. 133) gives the same synonymy and says that he cannot distinguish the Irish specimens of *H. arenarius* from uncoloured examples of *H. flexuosus*.

SCARABÆIDÆ.

APHODIUS, Illiger.

A. niger, Panz. (Faun. Germ. 37, 1). Almost cylindrical, black, shining, antennæ ferruginous with the club black; head gently convex, with the cheeks scarcely produced, forehead without prominences, thickly punctured; thorax as broad as elytra, almost parallel-sided, with scattered larger punctures and the interspaces with fine punctures; elytra almost parallel, slightly widened behind the middle, with fine and finely crenulate striae, interstices flat, extremely finely and almost invisibly punctured; prosternum thickly punctured and with very fine grey pubescence at the sides, mesosternum finely keeled between the coxæ, metasternum in the middle in both sexes very finely and diffusely punctured; legs dark, more or less reddish, front tibiæ somewhat dilated, posterior tibiæ narrow, tarsi with the first joint long, as long as the upper spur, and only a little shorter than the three following joints taken together, these being of diminishing length.

In the male the metasternum is impressed in the middle and the head is less convex; in the female the metasternum is flat and the head more convex. L. 4-5 mm.

New Forest, near Brockenhurst (Sharp, Champion and Walker, 1909). The species is considerably larger than the immaculate variety of *A. plagiatus*, L., which it strongly resembles; the following are the characters by which Erichson distinguishes *A. niger* from this form of *A. plagiatus*: (1) greater size; (2) the head more closely punctate with the cheeks less projecting; (3) the large punctures of the thorax smaller; (4) the metasternum less punctate in the middle and in the male not hairy; (5) the hind feet with the first joint long, as long as the upper spur of the tibia, and but little shorter than the three following joints together. It must, however, be admitted that some of these distinctions are not very evident (*v.* Sharp, Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 124). *A. niger* has been alternately admitted to and rejected from our lists; it must, however, be now reinstated.

Dr. Sharp (*l.c.* 124-126) discusses the whole question at length, and believes that he possesses one, if not two, other closely allied new species of *Aphodius*, which come close to *A. niger*, but differ in important particulars.

A. scybalarius, F., var. **nigricans**, Muls. (Lamellicornes, 1 ed. 1842, 179). This insect has the elytra entirely dark, with the exception of the first and second interstices on each side of the suture, which are lurid-testaceous for part of their length; the extreme apex is also dark testaceous.

Wallasey, Cheshire (Bailey); Deal (Priske); the latter specimen (with the description) was recorded by Mr. J. H. Jennings (Ent. Mo. Mag. xlv. (2 Ser. xix.), 1908, 155).

In my experience *A. scybalarius* varies considerably. I have one specimen with the elytra almost entirely testaceous, another quite dark with the sutural interstices in part light testaceous, and others varying from the type form.

A. depressus, Kug., var. **nigripes**, Steph. (Ill. Brit. Mand. iii. 201). This is the black variety of the species; the type form has scarlet elytra and is much the rarer insect.

I have added the above varieties, as they have appeared in some of our catalogues; but a large number of further varieties might be admitted; the most variable of our species is, of course, *A. luridus*, F., the elytra varying from entirely deep black to altogether testaceous, and the intermediate forms being often very striking.

DIASTICTUS, Mulsant.

Diastictus, Muls. (Lamell. p. 319); *Psammobius*, Heer. (Faun. Col. Helv. i. 531, 2 (*ex parte*)); *Psammodius*, Er. (Naturg. der Ins. Deutsch. 912 (*ex parte*)). Thorax without a fringe of hairs at the sides, and without transverse furrows on disc separated by raised interstices; metasternum with a triangular space in front of the posterior coxæ bounded by a raised line; tarsal claws small and weak; posterior tarsi with the apical spurs narrow, and longer than the first joint, which is feebly triangular.

D. vulneratus, Gyll. (Ins. Suec. iv. 244, 7; Sturm., Faun. Germ. i. 175, 64, Taf. 15, D). Somewhat smaller and more strongly convex than *Psammobius sulcicollis*, which it superficially resembles; obovate, of a pitchy colour, very slightly shining; head reddish-brown in front, thickly granulose; antennæ yellowish; thorax a little narrower than the elytra, transversely convex, with blunt anterior angles and with the hind angles entirely rounded, thickly and coarsely punctured, the punctures being often confluent, with more or less distinct traces of a central furrow, and with a feebly impressed oblique transverse furrow on the sides of the disc; elytra strongly convex, with the punctured furrows becoming deeper behind, and the interstices being more or less carinate; legs brown, apical spurs of the front tibiae in the male widened and almost lancet-shaped. L. $2\frac{1}{2}$ mm.

Brandon, Suffolk, one specimen taken by Mr. Claude Morley in June, 1902. Mr. Newbery, in his note on the species (Ent. Mo. Mag. xxxviii. (2 Ser. xiii.), 1902, 253) gives a useful table of the numerous small genera which come at the end of the Aphodiidæ.

ANOMALA, Samouelle.

The *A. donovani* of Marsham, referred to by Stephens (Ill. Brit. iii. 226) has nothing to do with *A. cenea*, De G., or the *var. frischii*, F., but is a North American species, which was named *A. irrovata* by Blanchard, forty-eight years after Marsham named his insects. The original description in Marsham's *Coleoptera Britannica*, p. 44 (as stated by Mr. G. J. Arrow, Ent. Mo. Mag. xxxv. (2 Ser. x.) 1899, 269) was drawn up from two specimens found by Donovan at Newton Nottage, in Glamorganshire. It is not known whether these are in existence, but the description leaves no doubt that they were specifically identical with the two British Museum examples, of whose origin there is no record. It is just possible that they may be the same specimens.

The name *var. donovani* has sometimes been applied to the entirely greenish-æneous form of *A. cenea*, with which, of course, it is in no way connected.

TRICHIUS, Fabricius.

It is very doubtful whether we possess *T. zonatus*, Germ., which has been wrongly regarded as a synonym of *T. abdominalis*, a Caspian insect which is certainly not British. *T. fasciatus* is followed in the 1906 European Catalogue by twenty varieties, and it is probably to one of these that any departure from the type in our specimens should be referred. At present we should only be credited with one species, although it is possible that we may possess *T. zonatus* (*v. Brit. Col. iv. 61, 62*).

BUPRESTIDÆ.

MELANOPHILA, Eschscholtz.

M. acuminata, De G. (*Mém. Ins. iv. 133*); *M. appendiculata*, F. (*Ent. Syst. i., ii. 210, 102*); *M. morio*, Payk. (*Faun. Suec. ii. 230*). Unicolorous black or blackish-bronze, somewhat depressed, upper surface rugulose and sub-opaque; head thickly punctured; elytra somewhat longer than the thorax, dentate, thickened in the middle; thorax quadrangular, somewhat broader than long, slightly widened in front, with the sides rounded, and with sharp posterior angles, furrowed longitudinally in the middle, finely granulosely punctate; elytra much broader than the thorax, with the sides finely serrate, finely granulosely punctate, upper surface more or less uneven, with traces of raised lines; underside very finely punctured, rather shiny, with a more or less distinct metallic sheen; legs very finely punctured. L. $6\frac{1}{2}$ – $11\frac{1}{4}$ mm.

Several specimens taken in August and September, 1909, and subsequently in some numbers, by Mr. Champion on charred pine trunks near Woking. He says that when at rest on the charred pine trunks it exactly resembles a small piece of burnt bark. The larva has the greatly-developed, flattened prosternal segment which is characteristic of the Buprestidæ. This addition to our Coleopterous fauna is one of the most interesting that has been made for some years. It has recently been found in the New Forest.

APHANASTICUS, Latreille.

A. emarginatus, Fab. (Syst. El. ii. 213, 151). Longer and more cylindrical than *A. pusillus*, Ol., from which insect it may also be known by the less transverse thorax, and by having the elytra more compressed at the sides before middle, and also by their stronger sculpture. Black, shining, with slight bronze reflection; head large and convex, with a very strong impression in the centre; thorax convex, strongly margined, not strongly transverse, with the sides rounded in front and narrowed behind, plainly margined, with the transverse furrows in front and behind more marked than in *A. pusillus*; centre of disc rather strongly, but not closely, punctured; elytra elongate, with well-marked shoulders; widest behind the middle and thence narrowed to apex, with rather regular punctured striæ, which become confused and more or less obsolete towards apex; legs nigro-æneous. L. $2\frac{2}{3}$ –3 mm.

Parkhurst Forest, Isle of Wight; a considerable number of examples taken by sweeping rushes in flower by Mr. Donisthorpe, who introduced it as British (Ent. Record, 1903, p. 265). The specimen of *A. pusillus* recorded by myself (Brit. Col. iv. p. 71) as captured at Carisbrooke Castle, Isle of Wight, and then lost, must, as Mr. Donisthorpe has pointed out, be probably referred to this species, and this locality for *A. pusillus* must therefore be deleted.

ELATERIDÆ.

CARDIOPHORUS, Eschscholtz.

C. erichsoni, de Buysson (Elat. p. 318). Elongate-oblong, rather depressed, black, shining, without metallic reflection; pubescence very fine and scanty, brown on the upper side; head finely and thickly punctured; antennæ black, longer in the male than in the female; thorax longer than broad, subparallel; sides slightly rounded, extremely finely and thickly punctured, almost smooth except under a high magnifying power; elytra oblong, more or less attenuated behind, with deep and strongly punctured striæ; interstices finely sculptured; legs red; tarsi black or brown. L. 7–9 mm.

Lundy Island (Joy and Tomlin), in some numbers at the roots of grass and under small stones, April 1906. The *Cardiophorus* recorded by Mr. Champion, which was taken by Mr. Dunsmore at Corkendale Law, in Renfrewshire (Ent. Mo. Mag. xiii. 1877, 227), as *C. rufipes* belongs to the same species. *C. erichsoni* has occurred in France, Germany, Austria and Russia, and is found on pines at the end of May and the beginning of June: its occurrence, therefore, on Lundy, which is quite treeless, is very strange. *Melanotus rufipes*, however, another bark-feeding insect, also occurs on the island.

De Buysson has separated *C. erichsoni* from *C. rufipes* mainly on account of its brown (instead of grey or black) pubescence, the absence

of a shining oblique fascia across the elytra, and the less metallic reflection. It seems very doubtful, however, whether it is really distinct.

CRYPTOHYPNUS, Eschscholtz.

In the Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 207, Mr. P. B. Mason recorded a specimen of *C. meridionalis*, Lap., as found in the collection of the Rev. A. Matthews. The species is black, with the thorax uniformly rugose, and is easily distinguished from *C. dermestoides*, Herbst., by its dark antennæ and legs, the trochanters and apices of the tibiæ only being reddish. The specimen referred to is labelled "Pegwell Bay." It cannot, however, be as yet allowed a place in our lists (although it is possible it may be found, as we have had several surprises of late years), for, as Mr. Champion points out (*l.c.* p. 207), the insect is apparently not known from Northern France or Germany, and it is unlikely to occur in Britain.

C. quadriguttatus, Lap., and *C. dermestoides*, Herbst. The additional note on these species in Brit. Col. v. Appendix, p. 464, appears to have been overlooked by readers, and it may be as well to call attention to it.

MELANOTUS, Eschscholtz.

In spite of the fact that *M. castanipes*, Payk., is used as a synonym (and not even a variety) of *M. rufipes*, Herbst., in the European Catalogue (1906), and although many authorities believe this to be correct, I cannot help thinking, from specimens I have seen, that the real insects are distinct. *M. castanipes* is apparently rare, and is represented in many collections by a sex of *M. rufipes*. The distinctions are given in Brit. Col. iv. p. 96. Mr. Donisthorpe has taken the former insect in the New Forest and at Rannoch.

ATHOUS, Eschscholtz.

A. niger, L., and *A. hirtus*, Herbst. Mr. Newbery (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 53) states that the insect standing in our catalogues as *Athous niger* is not the true *A. niger*, L. (= *alpinus*, Redt., *deflexus*, Thoms.), but *A. hirtus*, Herbst. As it is possible that both species may be found in Britain he adds the following particulars for separating them:

- | | | |
|-----|---|-------------------|
| I. | Prosternal projection flat between the anterior coxæ, rectilinear and not deflexed beyond the latter: sexes but little different in form.
L. 12-17 mm. | A. HIRTUS, Herbst |
| II. | Prosternal projection curved downward between the anterior coxæ, forming with the profile of the prosternum a distinctly arched line, in form of a very elongate S: sexes very differently formed, the female being broad, obtuse and gibbous. L. 10-14 mm. | A. NIGER, L. |

A. subfuscus, Müll. This is evidently a Scotch insect exclusively, and the record from Llangollen (Brit. Col. iv. 102) must be omitted. The insect recorded from that locality as *A. subfuscus* is probably a small form of *A. hæmorrhoidalis*, F., which is common there: my series of the latter insect varies from 8 mm. to 15 mm. in length.

ADRASTUS, Eschscholtz.

A. limbatus, F. (Gen. Ins. 1777, 235). There is considerable confusion with regard to the synonymy of this insect: this was first noticed by Mr. Gorham and afterwards by Mr. Newbery; the insect standing under the name in our collections should, apparently, be referred to *A. nitidulus*, Marsh. = *pullens*, Er., and may be known from *A. limbatus* (which has not yet been recorded as British) by the following characters:

- I. Antennæ longer, black or brownish with
the basè testaceous, third joint about
double as long as second **A. LIMBATUS**, F.
- II. Antennæ shorter; entirely testaceous;
second and third joint subequal . . . **A. NITIDULUS**, Marsh.

In the European Catalogue (1906, Col. 391), the confusion is made worse confounded by the synonymy, which is as follows:

- A. limbatus*, F, Gen. Ins. 1777, 235.
nitidulus, Marsh., Ent. Brit. I. 1802, 380.
A. nitidulus, Marsh., Ent. Brit. I. 1802, 380 (*sic*).
limbatus, Payk., Fn. Su. III. 1800, 43.

A. nitidulus, it will be noted, is here given (with the same reference) as a synonym and as a good species.

CORYMBITES, Latreille.

C. impressus, F., var. **rufipes**, Schilsky (Deutsch. Ent. Zeits. 1888, 187). This variety has the legs red: it is, apparently, the "var. *pedibus ferrugineis*" of Erichson (Naturg. Ins. Deutsch. iv. 292); according to him the legs vary from black through shades of pitchy-brown to ferruginous. It is recorded from Barron Wood, Cumberland, by Mr. Donisthorpe (Ent. Record, 1903, p. 263).

C. bipustulatus, L., var. **semiflavus**, Fleisch. (Wien. Ent. Zeit. 1886, 235) = *flavescens*, Schilsky (Deutsch. Ent. Zeits., 1888, 190). This is the variety with the elytra entirely testaceous. I have before referred to it (but without name) (Brit. Col. iv. 115): it resembles the var. *ochropterus*, Steph., of *C. quercus*, Gyll., but may be known by its shorter, less parallel-sided and less closely punctured thorax, and the more rounded sides of the elytra, as well as by the shorter antennæ and the non-carinate posterior angles of the thorax.

CANTHARIDÆ (TELEPHORIDÆ).

CANTHARIS, Linné (**TELEPHORUS**, Schaeffer).

As we have said before, the name *Cantharis*, L., must be substituted for that of *Telephorus*, and Cantharidæ for Telephoridæ. When a new catalogue or new edition of this work is issued, our arrangement and nomenclature must be brought, as far as possible, into conformity with the latest received results although not necessarily into complete agreement with the catalogue of Heyden, Reitter and Weise (1906), which is in some points open to criticism.

C. figurata, Mann., var. **cruachana**, Chitty (Ent. Mo. Mag. xxix. (2 Ser. iv.), 1893, 143). This name was given by Mr. A. J. Chitty to a black form of *C. figurata* found on or near Ben Cruachan, Scotland; it is evidently one of the northern melanic varieties. The specimens are entirely black, with the exception of the labrum, mandibles, knees, claws, extreme side margins of thorax, outside of anterior and intermediate tibiæ, and pubescence.

The insect standing in our collections as *Telephorus (Ancistronycha) abdominalis*, F., must be referred to the var. *cyanipennis*, Bach (= *cyanea*, Curtis): the type form, with the thorax of the male entirely black, does not occur in Britain, as far as is known (*cf.* Newbery, Ent. Mo. Mag. 1910, 230).

C. thoracica, Ol., var. **suturalis**, Schilsky (Deutsch. Ent. Zeitsch. 1890, p. 178). This form has a yellow splash at the suture which broadens at the base and does not quite reach the apex; in some specimens the yellow coloration is mainly confined to a transverse patch at the base of each elytron.

Gosport (Pool); Woking (Champion). Mr. Champion in recording this form (Ent. Mo. Mag. 1911, 17) says that he believes it is not rare in Britain, but I have not seen it in any collections. Mr. Pool swept a large number in one marshy spot near Gosport.

MALTHODES, Kiesenwetter.

M. minimus, L., var. **marginicollis**, Schilsky (Deutsch. Ent. Zeit. 1892, p. 198). Mr. Donisthorpe swept a male specimen of this variety at Cobham Park in July 1907. Schilsky's description is as follows: "The black colour, in a form which occurs not rarely in Herzegovina (von Hopffgarten), extends so that only the borders of the thorax remain yellow; in some examples only the hind corners are yellow, whilst the arched side portions of the thorax always remain yellow. The tibiæ are then also darker, and the first joint of the antennæ alone remains yellow. In this form the insect may easily be confused with *M. pellucidus* (*v.* Donisthorpe, Ent. Record, xx. 1908, 82).

MELYRIDÆ.

MALACHIUS, Fabricius.

M. barnevillei, Puton (Monog. des Malachiides, pp. 55, 56). Metallic-green, the mouth parts (the apical joint of the maxillary palpi excepted), the anterior portion of the head, the basal joints of the antennæ laterally and beneath, the anterior tarsi, the anterior tibiæ on the inner side towards the apex, a small spot at the apex of the anterior femora (and sometimes another on that of the intermediate pair), the intermediate tarsi in part, and the apical margin of each ventral segment, testaceous or flavous: the upper surface very finely pubescent and also thickly clothed with long, erect, blackish hairs. Tarsal claws very little longer than the membrane.

Male with the first joint of the antennæ much thickened, and joints 2-9 more or less serrate, the latter flavous at the inner apical angle. Each elytron with a narrow transverse impression at the apex.

Female with the antennæ shorter and darker, the basal joint not dilated, and the others very feebly serrate. Length 4-4½ mm.

Hunstanton, Norfolk, on the sandhills on *Convolvulus* flowers in June: taken by Mr. H. J. Thouless and recorded as British by Mr. Champion (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 15), from whose notes the above description is taken. *M. barnevillei* forms the type of Mulsant's subgenus *Hypoptilus*, distinguished by the narrow transverse excavation at the apex of the elytra in the male, and the strongly developed membrane of the tarsal claws in both sexes. On the Continent the species inhabits the Basses or Hautes Alps, the Pyrenees, &c., and would hardly have been expected to occur in Norfolk.

M. vulneratus, Ab. (Bull. Ac. Marseille, 1900, sep. p. 18). Elongate, rather narrow, dull brassy green, the front of the head flavous, the apex of the elytra rufous or flavous: clothed with a fine cinereous pubescence, the elytra without setæ. Antennæ very similarly formed in the two sexes, a little longer in the male than in the female, the basal joint not dilated. Elytra at the base not wider than the thorax, subparallel in the male, widened towards the apex in the female; the apex in the male rufous, very deeply, transversely excavate, the upper and lower lobes horizontal, about equal in length, the upper lobe with a large, toothlike, emarginate prominence on the inner (sutural) edge beneath, above which is a setiform appendage: the apex in the female broadly fulvous, shining, transversely depressed. L. 4½ mm.

Sheerness; taken by Mr. Champion in company with *M. viridis*. F. (which it much resembles) in 1869 and introduced by him as British (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 66) as *M. spinosus*, Er., the record being corrected by him to *M. vulneratus*, Ab. (*l.c.* 88). The two last-named species are, as Mr. Champion remarks, very similar, *M. vulneratus* differing from *M. spinosus* in its narrower elongate form, the more slender antennæ and the absence of the erect blackish hairs on the elytra: according to Mulsant, however, these blackish hairs are

sometimes absent in *M. spinosus* and Mr. Champion had already noted this. The distribution of *M. vulneratus*, as far as at present known, is as follows: France, Saxony, Austria-Hungary, Roumania and Persia.

PTINIDÆ.

PTINUS, Linné.

P. pusillus, Sturm. (Faun. xii., p. 65, t. 251A; Boield., Ann. Soc. Ent. Fr. 1856, 643). Oval, very elongate, nearly parallel, of a testaceous red colour, pubescence yellow. Head large, decumbent, longitudinally channelled, covered with yellow hairs. Antennæ as long as the body, with slender cylindrical and elongate joints. Thorax longer than broad, very convex in form, depressed transversely and contracted behind, with a feeble central furrow somewhat coarsely sculptured, but with the disc more even than in the allied species, and with the prominences at the posterior angles not strongly marked; on the disc there are four more or less distinct transverse prominences formed of stiff and erect yellow hairs; scutellum, as a rule, yellowish-white; elytra with distinct rows of punctures, the intervals smooth and furnished with rows of erect hairs, shoulders not marked; there are also two transverse rows of spots formed of white hair, often more or less obsolete, one near the shoulders and the other before apex; these are variable and easily rubbed; underside with yellow hairs; legs long and pubescent. L. 2-2½ mm.

Introduced by Mr. Donisthorpe (Ent. Record 1906, p. 45). Edmonton (Pool and Donisthorpe); Reading (Joy); probably common in many granaries; it is found plentifully in France and Germany. It is a very active species, running much faster than others of the genus.

The species may easily be known from its near allies by its small size, parallel shape, and long antennæ.

M. Boieldieu described the species on a single specimen in M. Chevrolat's collection from Brazil. It is one of the unsatisfactory importations which gradually find a place in our British list.

P. brunneus, Duft., var. **testaceus**, Boield. (Best. Tab. der Euröp. Col. 654, 16). According to some authorities *P. testaceus*, Boield., is a distinct species, according to others it is synonymous with *P. brunneus*, Duft., while in the catalogue of Heyden, Reitter and Weise it is considered to be a variety.

P. tectus, Boield. (Ann. Soc. Ent. Fr. 1856, 552). Short and thick-set, dark brown, with thick yellowish pubescence, which is easily rubbed; in some specimens it is whitish, especially on the scutellum; head almost as broad as thorax; antennæ thick and comparatively short; thorax about as long as broad, uneven, with longitudinal furrows and with strong prominences at the posterior angles; sculpture rather coarse, concealed by the pubescence; elytra oblong, acute, and flatter in the male, rounded, ovate, and very convex in the female, with strong and coarsely punctured striae; legs rather long, ferruginous, more or less pubescent. L. 2½-3 mm.

London district, Strood, Edmonton, &c., in granaries; a cosmo-

politan species; introduced as British by Professor Hudson Beare (Ent. Mo. Mag. xl. (2 Ser. xv.) 1904, 4). Mr. Waterhouse considers the original home of the species to be Tasmania.

The female somewhat closely resembles that of *P. fur*, but has the elytra shorter and more rounded and without white patches, the antennæ shorter and stouter, and the sculpture stronger; the males are entirely different.

It has occurred in the following localities: Edmonton (Pool); Strood (Beare); Liverpool (Richardson); Hoylake (Sopp); Kensington Mansions and in a granary, Holborn, in numbers (Donisthorpe); Liverpool (Bedwell); Dunfermline (W. Evans); Stromness, Orkneys (Ellison); Salkeld Dykes, Cumberland (Britten); Reading (Joy); Queenborough and Faversham (Walker).

TRIGONOGENIUS, Solier.

T. globulum, Sol. (Gay. Hist. Chil. iv. p. 464). Short, thick-set, very convex; with strong, light brown pubescence and large and strong outstanding black setæ; head long, deflexed, with small and not prominent eyes, antennæ short and thick, with the first joint comparatively long and stout, and the last elongate and acuminate; thorax about as long as broad, bluntly angulate about the middle, with a deep central furrow, and less marked and shorter side furrows with large and not close coarse punctures; elytra globular, with the small dark patches on each side of the scutellum reaching base, and the apical portion more or less rubbed and dark; striæ fine and not very evident; legs very stout, reddish and brownish, pubescent. L. $2\frac{1}{2}$ – $3\frac{1}{2}$ mm.

Oldham, Manchester, &c., in corn mills and granaries; Tottenham (Girningham); Birmingham (Ellis). The beetle is a native of Chili. It must not be confused with *Trigonogenium angulosum*, Sol. (also a Chilian insect), which belongs to the Buprestidæ.

ANOBIIDÆ.

ERNOBIUS, Thomson.

The specimen standing as *E. abietis*, F., in Dr. Power's collection appears to be *E. mollis*, L., which is a somewhat variable species, and it has been somewhat doubtful whether *E. abietis* can be regarded as a British insect. There is, however, a specimen in the late Mr. F. Bates' collection, which was sent to him alive by C. Guliver from the New Forest in June, 1899, which is undoubtedly this species. (Ent. Record, 1899, p. 340.)

BOSTRICHIDÆ.

DINODERUS, Stephens.

Mr. Donisthorpe (Ent. Record, xii. 1900, p. 16) points out the confusion that has hitherto existed with regard to the *Dinoderus*

substriatus of our British collections. As a matter of fact, we possess three species under one name, and the true *Dinoderus substriatus*, Payk., must be referred to a new genus, *Stephanopachys*, which was proposed by Mr. C. O. Waterhouse (Ann. Mag. Nat. Hist. 1888, pp. 348-350) for this insect. M. Lesne, who discusses these genera thoroughly in the Ann. Soc. Ent. Franc. 1897, 318-350, remarks that almost all authors wrongly apply the name of *Dinoderus* to the species of the genus *Stephanopachys*, and that Mr. Waterhouse was the first to correct this mistake and to establish the fact that the type species of the genus *Dinoderus* was the *Apate minuta* of Fabricius, and not the *Apate substriata* of Paykull, as Stephens had believed to be the case.

The genera may be separated by the following characters :

- I. Front indistinct or markedly shorter than the clypeus; lateral suture of thorax always well marked behind **DINODERUS, Steph.**
- II. Front at least as long as the clypeus; distinctly limited in front and behind; lateral suture of thorax wanting, or only marked at the posterior angles **STEPHANOPACHYS, Wat.**

The following is Stephens' description of the genus *Dinoderus* (Ill. Brit. iii. 352) : "Antennæ inserted in front, close to the eyes; the basal joint short, robust, the second subglobose, the five following minute, nodose, subcoarctate, the remainder forming an elongate, perfoliated club, of which the two basal joints are conic-trigonate, slightly produced within, and the terminal one subglobose, compressed. Palpi short, terminal joint minute, conic; mandibles exerted, acute; head short, transverse, with the neck thick; eyes globose, thorax short, rounded, very gibbous, and rugose in front; elytra setose posteriorly; body elongate, cylindrical; tibiæ compressed, denticulated externally; tarsi short, simple."

A fair number of species belong to this genus, the members of which appear to be cosmopolitan, feeding on corn, bamboo, various imported roots, &c.; four are mentioned in the last European Catalogue; we possess two as British, which may be separated as follows :

- I. Central foveæ of the posterior area of the thorax obsolete; frontal region furnished at the ends with upright, thick and rather long hairs **D. OCELLARIS, Steph.**
(*pilifrons*, Lesne.)
- II. Central foveæ of the posterior area of the thorax well marked; upright hairs of the frontal region usually shorter and not plentiful; scutellum twice as broad as long **D. MINUTUS, F.**
(*substriatus?* Steph.)

D. ocellaris, Steph. (Ill. Brit. iii. 352 note); *D. pilifrons*, Lesne (Ann. Soc. Ent. Fr. 1897, 327). Of a reddish-brown colour, with the

antennæ and legs and the lateral margins of the elytra lighter; funiculus of the antennæ furnished with the same upright hairs as the frontal region; second joint of the club of the antennæ scarcely transverse, rounded on its internal border; lateral portion of the granulate anterior portion of the thorax more or less punctured, with the granulations scarcely prominent; punctuation of the posterior area of the thorax fine and rather thick, not at all ocellate, central foveæ obsolete; scutellum plainly transverse; elytra with the punctuation rather fine near the base, but very strong, confluent and areolate on the posterior declivity, where it is distinctly ocellate; suture slightly projecting and somewhat bicarinate on the declivity. L. $3\frac{1}{2}$ – $3\frac{3}{4}$ mm.

Cosmopolitan: Europe, India, Indo-China, Philippine Islands. There are also specimens in the British Museum from Japan and Hong Kong which probably belong to this species; the only British examples which have been recorded are one in the Power Collection labelled "Darenth, Lewis," and one mentioned by Stephens (*l.c.*) as "Taken at Little Chelsea in July last by Mr. Westwood. It is probably exotic, having been found in a cup of coffee."

D. minutus, Fabr. (Syst. Ent. 1775, 54); *D. substriatus* (?), Steph. (Ill. Brit. iii. 352 (*nec* Payk.)); *D. siculus*, Baudi (Berl. Ent. Zeit. 1873, 336). Slightly elongate, brown, with the dorsal basal half of the elytra lighter, sometimes reddish, or with the thorax dark and the elytra dark reddish, antennæ and tarsi lighter; raised hairs of the frontal region always very short and scanty; marginal rows of the granulate portion of the thorax formed of teeth more or less pointed at apex, somewhat widely separated from one another, the central being more projecting than the lateral. Punctuation of the sides of the posterior area of the thorax thick and strong, but not confluent, very finely ocellate, central foveæ distinct. Scutellum dull, not carinate; elytra furnished with thick, short red hairs on their posterior declivity; punctuation of elytra thick, deeper towards base than at apex, more or less confused, though in parts showing strong signs of rows; punctuation of the posterior declivity plainly ocellate; suture not projecting on the declivity as in the preceding species. L. $2\frac{1}{2}$ – $3\frac{1}{2}$ mm.

Cosmopolitan: in roots, cotton, &c.; the pair described by Stephens were said to have been taken in the New Forest; it was found by Professor Hudson Beare in some numbers in his house at Richmond, before he moved to Edinburgh, in the wood of an old paper-basket.

STEPHANOPACHYS, Waterhouse.

This genus is very near *Dinoderus*, but may be known by the characters of the front and the lateral thoracic suture: it contains a few species which appear to be chiefly palæartic in their distribution; three occur in Europe.

S. substriatus, Payk. (Faun. Suec. iii. 1800, 192; Lesne, Ann. Soc. Ent. Franc. 1897, 337); Fowler (Brit. Col. iv. 200, plate cxviii. fig. 13). This is the insect which I have described and figured (*l.c.*) as

Dinoderus substriatus, Payk.: the following details may, however, be added, chiefly from Lesne's description: thorax narrower than the elytra, broadly rounded in front, widened behind; teeth of the marginal row of the granulate portion of the thorax separate, posterior area of thorax furnished with dull raised granules; elytra strongly punctured in irregular rows, each puncture on the dorsal region being accompanied by a small projection; posterior declivity furnished with upright and rather long hairs; on the basal half of the elytra the hairs are sunk in the punctures and are invisible if viewed from the side: the general colour is pitchy brown or lighter brown; the elytra are sometimes shiny and sometimes dull; this is not a sexual character. L. 6 mm.

Extremely rare: I know of only one British specimen, which was taken at Skellingthorpe Wood near Lincoln by the Rev. A. Matthews, and is now in Mr. Gorham's collection: the species occurs on the Continent and in Siberia, chiefly under bark of *Pinus sylvestris*.

CISSIDÆ.

CIS, Latreille.

The following characters will be found useful for separating *C. festivus*, Gyll., and *C. vestitus*, Mell.

- | | |
|--|----------------------------|
| I. First ventral segment of abdomen of male rugose all over but with no umbilicate depression in the middle. | <i>C. FESTIVUS</i> , Gyll. |
| II. First ventral segment of abdomen of male bearing a small umbilicate depression in the middle. | <i>C. VESTITUS</i> , Mell. |

C. dentatus, Mellié (Ann. Soc. Ent. Franc. 1848, p. 324. pl. 3, fig. 6). Elongate oblong, pitchy black, pubescent; head deflexed, finely punctured, concave in the middle with a small tubercle, anterior margin sharply and narrowly emarginate and minutely bidentate in the male, simple in the female; thorax about as broad as long, narrowed in front, with the anterior angles subacute, anterior margin in the male with two distinct short teeth in the centre, sides margined and rounded, base margined, posterior angles rounded, upper surface finely punctured and pubescent; elytra comparatively long, slightly depressed towards suture on their anterior third, uniformly and finely punctured, pubescence yellow and rather shining; legs ferruginous. L. $1\frac{1}{2}$ – $2\frac{1}{2}$ mm.

This species was introduced as British by Mr. Donisthorpe (Ent. Record. xix. (1907) 136) on a single female specimen taken at Sandown, Isle of Wight, in July 1907 by Mr. R. S. Mitford, probably by beating. It occurs on the Continent in boleti on pine trees. It will probably be found commonly in localities in the south of England.

C. dentatus is closely allied to *C. bidentatus* from which it may be known by the comparatively longer elytra, narrower thorax, much narrower space between the produced teeth of the thorax, closer punctuation and longer pubescence; the anterior angles of the thorax are not produced in front at the sides as in the latter insect.

CERAMBYCIDÆ.

ASEMUM, Eschscholtz.

A. striatum, L., var. **agreste**, F. (Mant. i. 152). This is the variety with light brown elytra; it is usually considered rare, but has been taken in some numbers in the New Forest; it has also occurred near Reading, and at Bournemouth.

CRIOCEPHALUS, Mulsant.

Criocephalus, Muls. (Col. de Fr. Longicorn, 1^{re} éd. 65, 2^e éd. 125); *Arhopalus*, Steph. (Man. Brit. Ent., 273). Large insects; elongate, subparallel, not convex, very finely pubescent; head deflexed, almost perpendicular, with a distinct furrow between the eyes and a strong depression in front; eyes convex, reniform, distinctly, but not strongly emarginate. Labrum small, labium rather short, broadly and shallowly sinuate with the lateral anterior lobes produced and rounded; maxillary and labial palpi long and slender; antennæ longer in the males than the females, in the former sex about three-quarters the length of the body, rather thick at base, but distinctly tapering to apex; thorax broader than long, strongly rounded at the sides, with the disc more or less uneven, and with or without a central furrow, narrowly margined on the basal border; elytra long, a little broader at base than the thorax, subparallel, slightly narrowed towards the apices, which are rounded externally but have the sutural angles well marked; on each there are more or less distinct traces of raised lines; prosternum ending in a sharp point; legs comparatively short, with the femora compressed and slightly enlarged in the centre, and the tarsi short; anterior tibiæ with only one spur; the latter character will separate it easily from the Asemides, with which it has been classed by Thomson, Lacordaire, Leconte and Horn and others. Dr. Sharp (Trans. Ent. Soc. 1905, 147) considers the *Criocephaline* as at present known to consist of four genera only, viz.: *Criocephalus*, Muls., *Megasemum*, Kraatz (which is scarcely different from *Criocephalus*), and two new genera added by himself, *Cephalocrius* and *Cephalaltus*, and he says that "the *Criocephaline* should come at the beginning of the sub-family Cerambycides, as being one of the most primitive forms of Longicorn Coleoptera. The only other genus that I have found to agree with the *Criocephaline* as to the unicalcarate tibiæ is the genus *Philus*, which forms an annectant link between *Cerambycides* and *Prionides*. This character is not to be looked on as primitive. The primitiveness of *Criocephalus* depends not on such points as this, but on the fact that it differs so little from Coleoptera

of other families ; that it lacks all the specialisations that are so remarkable in other divisions of Longicorns, while but little changes would suffice to make it a member of other divisions, either of *Cerambycides* or of *Prionides*."

The larva of *Criocephalus fesus* is figured by Dr. Sharp (Trans. Ent. Soc. 1905, Plate ix. fig. 5) ; it is a broad fleshy grub, with the prothoracic segment the longest and broadest, and with the body narrowed gradually to the fifth or sixth abdominal segment and then again widened ; the apical segment terminates in two small spinose processes in the centre of its margin ; the sides of the whole body are furnished with setæ ; the legs are very short and terminate in rather a long single claw.

C. rusticus, L. (Syst. Nat. x. 398, t. 75 ; Sharp, Trans. Ent. Soc. Lond. 1905, 151) ; *C. coriaceus*, Mots. (Bull. Mosc. 1845, 89). Very variable in size, form, and sculpture ; ferruginous-brown or fuscous-black, never quite black, rather depressed ; head strongly depressed between the antennæ, the latter in the male sex with the base distinctly thicker than in the female ; labrum without a pencil of hairs in the fovea or the middle of its area ; eyes with long hairs between the facets ; thorax plainly transverse, uneven, with the sides more or less strongly rounded, closely and somewhat granulosely sculptured ; elytra long, dull, with two rather plain raised lines on the disc, which meet or become obsolete at some little distance from apex ; there is also a more or less marked line at the sides ; the surface generally is closely and subrugosely sculptured, the space between the punctures being alutaceous ; legs plainly more robust in the male than in the female. The species may be known by the strongly transverse thorax and by the gular area being very indefinitely limited, rugose in front and feebly punctate behind, and with only a few suberect long hairs. L. 14-30 mm. The width varies from 4-7½ mm.

Nethy Bridge, Scotland ; first found by Colonel Yerbury and subsequently by Dr. Sharp, Mr. Bishop, and others. This fine insect is undoubtedly a native of Scotland, but, as it is found throughout the temperate zone of the Old World in the Northern Hemisphere, it is sometimes imported, and a specimen has been found in a coal mine in Wales which was almost certainly brought in in coal props. The species is attached to Coniferæ.

C. fesus, Kraatz (Berlin Ent. Zeitschr. 1863, 107 ; Sharp, Trans. Ent. Soc. Lond. 1905, 156). *C. rusticus*, var. *fesius*, Dej. (Cat. Coll. (not described) Mulsant ; Long. Franc. ed. i. p. 4). *C. ? polonicus*, Mots. (Bull. Mosc. 1845, 88). *C. epibata*, Schiödte (Kr. Tidskr. 3, ii. 41). Very variable in size, male fuscous-black, female black ; thorax longer than in *C. rusticus* ; elytra with the two raised costæ on the disc more distinct and with traces of a third one between these ; the sculpture of the elytra is very fine and alutaceous, without the punctuation of *C. rusticus* ; in these points, however, there is probably considerable variation ; the chief differential character, perhaps, lies in the labrum, which is provided with a pencil of hairs placed in a fovea in the middle near the front ; there are, however, as Dr. Sharp points out (*l.c.* 156) numerous points

of difference, especially in the sexual characters. In the male of *C. ferus* the basal portion of the antennæ is only a little thicker than in the female; in the female the front of the prosternum is more convex, and the metathoracic episterna are considerably broader than in *C. rusticus*. The under surface is more closely and finely punctured and pubescent, and therefore less shining. The scutellum in *C. ferus* is never in the least depressed along the middle, and the sculpture and pubescence of the gular area are very different. In *C. rusticus* the tarsi have the third joint divided almost to the base, and the setæ on the eyes are very conspicuous, while in *C. ferus* the eyes appear to be bare, and the tarsal lobes are less perfect. Superficially *C. rusticus* and *C. ferus* are very much alike. L. 10-30 mm.

As Dr. Sharp says, the variation in size is extraordinary, so much so that it would take twenty or thirty of the small males to make up the bulk of one of the largest females.

First found in the New Forest in Scots' fir (*Pinus sylvestris*) by Mr. F. Gilbert Smith, and introduced as British by Mr. Willoughby Ellis under the name of *C. polonicus*, Mots. (Ent. Record, xv. 1903, 259); also taken in the same locality by Mr. Willoughby Ellis and Mr. Donisthorpe; also taken in 1909 by Mr. Champion on pines in the Woking district, which had been injured by fire. The species often varies (as *C. rusticus*) in several particulars, such as shape of thorax, the depressions on its disc, the proportions of certain parts of the body, the distance between the eyes on the underside of the head, the sculpture, &c., but all the examples appear to belong to one species.

The life history of the species has been carefully worked out by Mr. F. Gilbert Smith, and the results of his observations are embodied in an excellent paper on "The habits of *Asemum striatum* and *Criocephalus ferus*," published in the Transactions of the Entomological Society for 1905, p. 165-176.

TETROPIUM, Kirby.

Tetropium, Kirby (Faun. Bor. Amer. 174). Form subparallel, rather robust, not convex; head narrower than thorax, concave between the antennæ, antennæ widely separated at base, rather short and tapering, longer in the male than in the female, but in the former sex scarcely longer than half the body; eyes almost completely divided (hence the name of the genus); maxillæ short and broad with the outer one elbowed exteriorly; labium slightly sinuate on its anterior margin with the lateral angles produced; thorax almost as long as broad, strongly rounded at the sides, about as much narrowed in front as behind; scutellum rounded behind; elytra almost parallel, with the apices separately rounded, with more or less distinct raised lines; prosternum terminating in a sharp point between the anterior coxæ and not produced beyond them; mesosternum very narrow; legs comparatively short and robust, with the femora claviform, somewhat compressed, the posterior femora being the longest. The insects belonging to this genus

appear to be attached to temperate and cold countries, and are mostly, if not entirely, found in Coniferæ.

The larva and pupa of *T. gabrieli* are described and figured by Mr. Crawshay (Trans. Ent. Soc. 1907, 194, 202, Pl. xx.). The larva is a white fleshy grub with a small head and a large and broad prothoracic segment, the two succeeding segments being very short; it is widest in front, narrowed in the middle and gradually widened towards apex; the surface is scantily clothed throughout with short hairs; scansorial prominences are present on the ventral surface of the abdominal segments; the legs are small and somewhat corneous; the apical segment of the abdomen on its dorsal surface has two very small corneous tubercles, which appear after the third month; these are useful as distinguishing the larva from its very near ally *Asemum* and also from *Criocephalus*.

The pupa has the whole dorsal surface, the ventral surface of the abdomen and the apex of the femora sparingly furnished with short spines, which, on the dorsal surface of the abdominal segments, are arrayed chiefly in small groups, one on either side of the median line; and the apical segment of the abdomen terminates in two strong spines curved inwards towards one another. These, as Mr. Crawshay (*l.c.* 202) points out, provide the pupa with a firm hold on the wood and admit of an active rotatory movement as it lies vertically in its cell.

T. gabrieli, Weise (Deutsch. Ent. Zeitschr. 1905, 136); var. *crawshayi*, Sharp (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 271); *T. fuscum*, Sharp and others (*nec F.*) (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 1903, 198, 228); *T. castaneum*, Newbery and others (*nec L.*) (Ent. Mo. Mag. xl. (2 Ser. xv.) 1904, 86; xli. (2 Ser. xvi.) 1905, 69); *T. luridum*, var. ? Sharp (*nec L.*) (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 273); *T. parcum*, Sharp (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 272). Colour and size variable, black or pitchy black, or more or less castaneous, or black with the elytra lighter or darker fuscous; head and thorax more or less shiny, the former narrower than the latter, not deeply sunk in the thorax, rather strongly punctured in front, more closely behind; antennæ lighter or darker pitchy or reddish, robust and slightly tapering; thorax varying in length and also in sculpture, the punctuation being stronger in front than behind, duller at sides which are punctate-granulate, basal margin more or less distinctly, sometimes obsoletely, raised, with more or less defined smaller areas, longitudinal channel distinct, sides strongly rounded; scutellum channelled; elytra dull, more or less depressed, very finely sculptured with more or less distinct raised lines, and with fine silky yellowish-white fugitive pubescence towards base, which is very evident in freshly emerged specimens; legs robust, pitchy or red; underside pubescent.

Male with the joints of the front tarsi and the femora broader, and with the antennæ longer than in the female. L. 10-16 mm.

One specimen was first introduced by Dr. Sharp (Ent. Mo. Mag. 1903, 198) under the name of *T. fuscum*, F., as having been taken on

June 26, 1903, by Miss M. A. Sharp near Brockenhurst, Mr. Edward Saunders (Ent. Mo. Mag. 1903, 228) then recorded another specimen of the same insect taken in July, 1901, near Betchworth, Surrey, but not recorded, because it was thought to be a casual introduction; records of other captures then began to be made known and Mr. Bouskell announced a new species taken by him in 1902 at Market Bosworth (Ent. Rec. 1903, p. 288) under the name of *T. castaneum*,* which is now rightly regarded as the same insect as the others; the capture of another specimen of *T. castaneum* at Esher was soon afterwards announced by Mr. G. E. Bryant (Ent. Mo. Mag. 1905, 69); the great discovery of the species, however, was made by the Rev. G. H. Crawshay, who reared a very fine series of it from larch at Leighton Buzzard, and supplied most of the British collections with it; Mr. Crawshay further worked out the life history of the species with the greatest care and embodied his researches in the very valuable paper in the Transactions of the Entomological Society above referred to (1907, Part ii. 183-212, Plates xv.-xx.); this paper, which is a model of research in the life history of a single insect, practically exhausts the subject.

Taken in some numbers at Bardon Hill, Leicestershire, by Messrs. Talbot and Payne in 1910, and by Mr. Donisthorpe at Oxshott in 1911. It has also occurred at King's Lynn, Norfolk (Atmore), Enfield (Pool), Bradfield (Joy), Oxford (Walker), &c.

All Mr. Crawshay's examples, which were first taken, had pitchy-black legs, and it was chiefly on this character that Dr. Sharp (Ent. Mo. Mag. 1905, 271) described *T. crawshayi* as a separate species; it was soon, however, obvious that the character was variable and that the species was nothing more than a variety of the recently described *T. gabrieli*, Weise. It appears to be almost certain that all the specimens captured in Britain must be referred to the last-named species, as the differences of colour, length and sculpture of thorax, &c., afford very doubtful characters. I have before me two specimens bred by myself from a batch of four larvæ sent to me by Mr. Crawshay: one has the legs pitchy-black and the thorax just about as long as broad, almost slightly transverse; and in the other the legs are pitchy-red (they were brighter red in life) and the thorax is plainly narrower, longer than broad, and rather differently sculptured; it is these differences in specimens of one brood that should make coleopterists very chary of erecting new species on slight variations.

I believe that *T. parcum*, Sharp (Ent. Mo. Mag. 1905, 272) is at most a variety of *T. gabrieli*, but, as there may be some doubt, I here quote his description and remarks:

"*Tetropium parcum*, sp. n.

"♂ Sat angustum, haud depressum, prcthorace parum transverso, sat nitido, subtiliter punctato, areis lævigatis parum magnis, margine basali parum elevata." L. 14-15 mm.

* Mr. Bouskell's insects were the first red-legged specimens of *T. gabrieli* taken in Europe.

“The male, compared with the same sex of *T. crawshayi*, is a little more robust and convex, with thicker legs and antennæ, has the vertex canaliculate, and the thorax less densely and less uniformly punctate and rather shorter in proportion to its width, and the colour is different.

“The female of *T. parcum* differs from the male by its more slender legs and antennæ, and by a more punctate thorax, with only very small and smooth areas on the disc. The female differs from the female of *T. luridum* by the rather shorter thorax, and the longitudinally depressed vertex, as well as by the form of the base of the pronotum and by other characters.

“The important character by which this species differs from *T. luridum* is the imperfect condition of the centre of the breast. This exists in both sexes, although (as is usually the case in this genus) there is a sexual difference in the structure at this point, due to the female having the meso- and prosterna more flattened than they are in the male. In the male the front of the mesosternum slopes upwards, and no junction with the mesosternal process can be seen. In the female the mesosternal process is broader than in the male, and there is a considerable gap between its apex and the most prominent part of the metasternum.

“*T. parcum* is allied both to *T. luridum* and *T. fuscum*. It is well distinguished from the former by the sternal structure, by the much less developed broad margin of the thorax and by the more dense white pubescence on the base of the elytra. It is longer than *T. fuscum*, and has not the peculiar granular sculpture on the thorax which distinguishes *T. fuscum* from all the other species. *T. parcum* is at present known only by two specimens in the Crotch Collection of British *Coleoptera* in our Museum at Cambridge. They are labelled ‘near Manchester, 1865.’ Inquiry at Manchester has failed to elicit any further information as to their history.”

Even, therefore, if *T. parcum* be regarded as a good species, its record as British is very doubtful, and it can hardly be admitted at present to a place in our lists.

PHYMATODES, Mulsant.

P. (Callidium) lividus, Rossi (Mant. Ins. ii. App. 1794, p. 98). Elongate and parallel-sided, very like a *Telephorus* in general appearance; head testaceous, antennæ much longer in the male than in the female with the first joint considerably thickened at apex; thorax small and shining, testaceous, darker at the sides (the dark colour occupying more or less of the upper surface) or with two dark spots, broadest behind middle and narrowed towards apex and base, with more or less traces of a central line, distinctly and not closely punctured on disc; scutellum shiny, dark testaceous; elytra elongate, parallel, of a livid leaden colour, very closely and rugosely sculptured; legs strong, with the femora considerably dilated, testaceous, with the femora (except base and apex), the apex of the tibiæ and the tarsi dark. L. 6-9 mm.

Reading; taken by Mr. W. E. Butler, bred from larvæ, feeding on the wooden hoops of wine and brandy casks. Mr. Butler distributed them at first as *Callidium variabile*, F., which they much resemble, and from which they may be known by the much more evident sculpture of the elytra, more distinct pubescence, smaller size, the absence of a longitudinal line on the head, and the thinner antennæ, which have the third joint distinctly longer than the fourth. The beetle has evidently been introduced from France, where it is not uncommon in the wine districts, and it has occurred in Italy and Greece, and has been introduced into the United States. The species was introduced as British by Mr. Bouskell (Ent. Record, 1905, 294).

In the European Catalogue (1906) *Callidium variabile*, L., and *C. alni*, L., are placed under this genus, the former being classed as an aberration of *C. testaceum*, L. *C. sanguineum*, L., forms a genus *Pyrrhidium*, Fairmaire.

CLYTUS, Laicharting.

C. (Anaglyptus) mysticus, L., var. **hieroglyphicus**, Herbst. (Füssl. v. 99). In this insect the shoulders of the elytra are black, the red colour, which is usually present, being entirely wanting; it has occurred at Chester and in one or two other localities, but is apparently very rare in Britain.

GRAMMOPTERA, Serville.

G. holomelina, Pool (Ent. Record. xvii. 1905, 133, 182). Of the same size and shape as *G. ruficornis*, F., but entirely of a deep black colour, and with the pubescence very scanty and quite different from the silky yellowish pubescence of the last-named species. L. 6-8 mm.

Enfield, Middlesex, in some numbers (Pool); Yorkshire (E. A. Waterhouse), one specimen taken thirty years ago.

Mr. Pool first recorded this insect as a black variety of *G. ruficornis*, and it is possible that this is right, but Mr. Donisthorpe (*l.c.* 182), who has taken it with Mr. Pool, believes that it deserves specific rank (as does also Dr. Sharp), for the difference of colour and pubescence, and also because of the fact that although it was taken in company with *G. ruficornis*, and the various forms of this insect were found *in cop.*, yet no case occurred of *G. holomelina* and *G. ruficornis* being found *in cop.* The question can hardly be regarded, however, as settled, as there are no structural differences.

Since the above was written Dr. Sharp has discovered a specimen in the collection of Mr. T. G. Bishop, which was found among the duplicates of the late Mr. S. Stevens, and must be fifty or sixty years old; it has no label affixed (Ent. Mo. Mag. xlvi. (2 Ser. xxi.) 1910, 71).

G. ruficornis, F., var. **pallipes**, Steph. (Mand. iv. 1831, p. 246); var. *flavipes*, Pic. (Ech. 1892, 139?). This form has the mouth, legs, and antennæ pale rufo-testaceous. It is stated to be not uncommon in Ireland (Johnson & Halbert, Irish List, 1902, p. 754).

Mr. Champion points out (Ent. Mo. Mag., 1910, p. 70) that it appears to have escaped the notice of Continental Coleopterists, and that presumably it is the var. *flavipes*, Pic.

LAMIDÆ.

MONOCHAMMUS, Curtis.

(**M. titillator**, Fabr. (Syst. Ent. p. 172; Leconte, Journ. Ac. Phil., ser. 2, ii. p. 148). This pretty brown and white mottled species of *Monochammus* has been taken alive in Britain several times and was recorded by Mr. Donisthorpe (Ent. Record, 1903, p. 153) as taken in a willow tree in the Freemans' Gardens, Aylestone Road, near Leicester, by Mr. Tristram in the summer of 1895, but as evidently an importation. Mr. E. A. Waterhouse found it in Battersea Park thirty years ago, and there is a specimen in the British Museum labelled "taken alive in Surrey"; it has also been captured by Mr. Robson at Hartlepool. The species, however, is not even indigenous to Europe, being a typical North American insect, and it cannot be admitted to our lists.)

OBEREA, Mulsant.

O. oculata, L., var. **quadrinaculata**, Donisthorpe (Ent. Record, x. 1898, 302). The ordinary forms of *O. oculata* have two black spots on the disc; in this variety there are two more black spots, situated behind the others, but nearer to the sides of the thorax.

Taken in Wicken Fen by Mr. Donisthorpe and Professor Hudson Beare.

LARIIDÆ.

LARIA, Scopoli = **BRUCHUS**, L.

The family and generic names must be altered for this group as there has been considerable confusion in the use of the terms *Bruchidæ* and *Bruchus* which have been applied to the family *Ptinidæ* and the genus *Ptinus* respectively. All the chief authorities are now agreed as to the necessity of the change.

Mr. Champion (Ent. Mo. Mag. xxxvii. (2 Ser. xii.) 1904, 144) discusses the synonymy, &c., of several species of *Bruchus*, and certain alterations must be made in our lists

L. pectinicornis, L. The insects which stand in our collections under this name must be referred to *L. incarnata*, Boh., a species recorded from Egypt, Spain, and Southern France. Mr. Donisthorpe has found it in a granary in London. The true *B. pectinicornis*, L., appears to have been found by Mr. E. A. Waterhouse near Putney, quite away from houses, and by Mr. O. E. Janson at Highgate, and bred from the chick pea from a London warehouse; West Malvern, in a house (Tomlin); Coulsdon, sweeping (Bedwell).

L. viciæ, Ol. The insects recorded under this name as having been taken by Dr. Power at Hurst and the Devil's Dyke, Brighton (the specimens, however, are not in the Power collection), and by Mr. Champion on the chalk hills at Caterham, must be referred to *L. Fahræi*, Gyll., which is really a variety of *L. atomaria*, L., from which it differs in the almost entirely black legs and antennæ. The true *L. viciæ*, Ol., does not apparently occur in Britain; it has the legs black, the thorax shorter than that of *L. atomaria*, and the intermediate tibiæ of the male bidentate at the apex: it differs from *L. rufipes*, Herbst., in its trapezoidal thorax. The males of *L. atomaria* differ from those of *L. rufipes* in having the intermediate tibiæ armed with a short tooth at some distance before the apex and their inner apical angle acute.

L. luteicornis, Ill. (1794) is a variety of *L. rufipes*, Herbst. (1783) (= *nubila*, Boh.). The colour of the antennæ and of the anterior and intermediate legs in *L. rufipes* is very variable, but the females always have at least the six outer antennal joints black, and the males usually have the antennæ entirely rufo-testaceous. In both sexes the four anterior legs and the antennæ are occasionally almost entirely black; the tendency, however, is always for the male to have these parts more lightly coloured than the female. The males, Mr. Champion says, may easily be identified by the slightly curved intermediate tibiæ, which are sinuous on the inner edge and sharply bidentate at the inner apical angle. In Mr. Champion's examples captured at different times at Claygate and Ashtead, Surrey, there are all the gradations in the colour of the legs and antennæ; the species also occurs at Hanwell and Guildford, and Mr. Donisthorpe has found a specimen in lichen, on a gate-post at Budleigh Salterton, Devon.

L. lentis, Boh., is placed in the last British Catalogue (Beare and Donisthorpe) among the introduced species at the end; it has, of course, been introduced, but it has at least as much claim to be included in our lists as some of the other species: the records of the insect as taken by Dr. Power at Birchwood and Gravesend are probably in error.

L. rufimana, var. *velutina*, Muls. (Op. viii. 27). Mr. Champion (Ent. Mo. Mag. xliiii. (2 Ser. xviii.) 1908, 1) has the following note on *Bruchus affinis*, Fröl. (*flavimanus*, Boh.): "Some years ago Schilsky examined the so-called *B. affinis* of my British collection and pronounced them to be *B. rufimanus*, Boh., var. *velutinus*, Muls. (Schilsky in Küsters Die Käfer Europa's xxxxi. 22): I have also seen specimens of this form in the British Museum and in the collection of Commander Walker. It occurs sparingly in various parts of Kent (Sittingbourne, Sheppey and Chatham) in company with the true *B. rufimanus*, from which it differs in the greyer and more uniformly coloured vestiture of the elytra. The true *B. affinis* (which I have taken in Corsica) probably has no claim to a place in the British list; it has two almost bare black spots on the pygidium as in *B. pisi*, L., as noted by Boheman." Donisthorpe,

however, has pointed out (Ent. Mo. Mag. 1908, p. 40) that he has taken the true *B. affinis*, Fröh., in Darenth Wood in 1893. He has swept the *var. velutina* off beans at Whitstable.

CHRYSOMELIDÆ.

ORSODACNA, Latreille.

In the Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 175, Mr. Champion adds a European variety of *O. cerasi*, L., to the British list, and, having taken a considerable number at Ashtead, Surrey, gives the following table of forms of this species and *O. lineola*, Panz., which are represented in his British collection :

O. lineola, Panz.

1. Testaceous, with a dorsal vitta on the thorax, the head and breast, and sometimes the suture of the elytra, black.—*O. lineola*, Panz. (Ashtead, Surrey, female.)
2. Entirely testaceous above, the breast sometimes infusate (Ashtead, male ; Paisley, female.)
3. Testaceous, the head and breast infusate or black.—*O. nigriceps*, Latr., *O. mespili*, Lac. (Ashtead, Gravesend, Paisley, female.)
4. Bluish-green, the shoulders of the elytra, and sometimes the sides of the thorax rufescent or fulvous.—*O. humeralis*, Latr. (Ashtead and Paisley, male.)
5. Bluish-green, the sides of the thorax broadly, the base of the femora, and the tibiæ, fulvous (Ashtead, male.)
6. Entirely bluish-green above.—*O. cærulescens*, Duft., and *O. nematodes*, Lac. (Ashtead and Paisley, male.)

Eight varieties are enumerated by Weise, one only of which, his form C, is not known to Mr. Champion as British. It is black, with the elytra testaceous, the lateral margins excepted, or entirely piceous (*O. nigricollis*, Ol., and *O. marginella*, Duft.). Weise does not appear to have noticed that some of the forms are restricted to one sex only.

O. cerasi, L.

1. Upper and under side testaceous.—*O. chlorotica*, Ol., *O. fulvicollis*, Panz. (Male ; no definite locality.)
2. Testaceous, the suture of the elytra at the base, and the under surface, infusate or black.—*O. lineola*, Lac. (Coleford and Matlock, male and female.)
3. Testaceous, the apex of the elytra and the under surface blackish.—*O. melanura*, F. (Male ; no definite locality.)
4. Black, the thorax and the front of the head rufo-piceous ; the legs obscure ferruginous.—*O. glabrata*, F. (Matlock, Garneys, female.)

O. cerasi may be easily distinguished from *O. lineola* by the almost glabrous and more sparsely punctured upper surface ; as both species

are so variable, they are hard to recognise at first sight. Several specimens of the var. *glabrata* were taken at Matlock Bath by Professor Beare and Mr. Donisthorpe.

LEMA, Fabricius.

L. septentrionis, Weise (Ent. Mo. iii. 158; Naturg. d. Ins. Deutsch. vi. i. 63); (*v.* Champion, Ent. Mo. Mag. xxxiii. (2 Ser. viii.) 1897 135). *L. erichsoni*, Thoms. (Skand. Col. viii. 141, et Brit. Col. *nec Suffr.*). This is the insect standing in our collections as *L. erichsoni*; but it must be referred to Weise's insect, which is described by its author as being "more slender than *L. erichsoni*, Suffr., and nearly as elongate as *L. melanopa*, L.; sky-blue, the thorax darker, nearly black, the head generally greenish; the latter shaped as in *L. erichsoni*, but rather more distantly, strongly and more deeply punctured. The thorax is very similar to that of *L. erichsoni*, but distinctly narrower and deeply constricted before the base, the constriction rather remotely impressed with deep punctures of different sizes, but more finely and evenly punctured at the sides, where the constriction is more shallow; the disc scarcely visibly, and not closely, punctured, very shining, with large punctures nearly arranged in rows towards the anterior angles and in three longitudinal rows in the middle. The elytra are moderately shining, coarsely punctate-striate, the striae deep, the interstices very narrow, partly touched by the punctures."

Not uncommon in meadows in Ireland, but rather local; Mr. C. W. Buckle obtained it plentifully on young shoots of oats, in company with the larva, in July (Irish List, Johnson and Halbert, 760). Dr. Power took it at Waterford, and it was considered one of our rarest British species for some time, but it has now been found in Donegal, Derry, Antrim, Down, Galway, Louth, Westmeath, Dublin, King's County, Wexford and Cork (Mr. Donisthorpe has taken it near Caragh Lake, co. Kerry); it does not appear to have occurred in England or Scotland. It lives on a species of *Nasturtium*.

In shape it is very like *L. melanopa*, Gyll. At one time I was inclined to agree with Crotch and others in regarding it as a form of that insect, but it differs in its average less elongate shape and in having the thorax distinctly wider behind the constriction, and therefore apparently shorter. On the Continent it has been recorded from Müggelsee near Berlin, and from Southern and Central Sweden.

L. erichsoni, Suffr. (Stett. Zeit. 1841, 104, *nec Thoms.*). This is the insect referred to by Mr. Champion (*l.c.* 136), and afterwards by Mr. Halbert and Mr. Johnson, as a variety of *L. septentrionis*, with the thorax metallic green and the elytra relatively broader; it appears, however, to be quite distinct and to be the true *L. erichsoni*, Suffr.; as such it is an interesting addition to our list. Apart from the colour of the thorax, which is, however, very constant in *L. septentrionis* (being always black, with a bronze reflection), it may be at once known by the broader, shorter, and less parallel elytra (which are shaped more as in

L. cyanella, L., or *L. lichenis*, Voet.), and the much less strong striae punctation of the elytra; the thorax, moreover, is rather differently punctured, and, under a high power, shows more traces of minute punctures between the scattered larger ones. L. 4-4½ mm.

Rye (Donisthorpe); Slapton Ley, Devon (Joy); Hastings (Bennett)—all single specimens. There is also an old specimen in the Stephensian Collection. The species is widely distributed in Northern and Central Europe and occurs in the Caucasus; it will probably be found in greater numbers. These two species may be distinguished as follows:

- I. Thorax black; elytra blue, elongate, with the punctures of the striæ relatively large and deep *L. SEPTENTRIONIS*, *Weise*.
 II. Thorax and elytra blue, less elongate, with the punctures of the striæ less large and deep *L. ERICHSONI*, *Suffr.*

L. septentrionis has hitherto been only found in Ireland, and *L. erichsoni* only in the south of England.

CAMPTOSOMATA.

LABIDOSTOMIS, Redtenbacher.

L. tridentata, L. (Syst. N. x. 374). Mr. Donisthorpe (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 1903, 205; Ent. Rec. 1908, 108, pl. ix.) gives an account of the oviposition of this insect and of the young larva, which closely resembles that of *Clythra*. The female lays white bunches of from five to twenty-five eggs on birch leaves, and each egg is covered with a case which the female constructs from her excrement, rolling it round the egg with her hind tarsi. When hatched the little larva remains inside the egg case, which it breaks off from the rest, and looks a very curious object walking rapidly along with the case sticking up upon its hind body.

CLYTHRA, Laicharting.

C. quadripunctata, L. (Syst. N. x. 374). Mr. Donisthorpe has given a long and interesting account of the life-history of this insect, with coloured figures, in the Transactions of the Entomological Society of London (1902, Part ii., Plate ii.).

GYNANDROPTHALMA, Lacordaire.

Gynandrophthalma, Lac. (Mon. Phyt. vol. ii. p. 256 (1848)). Body subcylindrical, short, more or less convex, with the upper side rarely pubescent; head moderate with the eyes round and somewhat prominent; antennæ with the joints variable; thorax transverse, more or less gradually narrowed and rounded in front; scutellum variable, but usually truncate at apex; elytra feebly sinuate at the sides, with the epipleural lobes projecting beyond the margins; anterior coxæ not

strongly developed, obconical; legs, as a rule, short, more slender in the male than in the female; tibiæ straight; tarsi usually slender, the first and second joints of variable length, the third split to base, and the fourth long, extending plainly beyond the lobes of the third.

In the female the body is somewhat widened behind, the eyes are less prominent, and the legs more slender, and there is a fovea in the centre of the last abdominal segment.

The genus is a very large one, containing nearly two hundred species, which are widely distributed in Europe, Asia, Africa and Central and South America (from Mexico to Brazil). It belongs to the Clytrinae, and is allied to *Melitonoma*, Lac., and *Chilotoma*, Lac.

G. affinis, Rossi. (Faun. Etrusc. p. 97 (1795)); *G. collaris*, Schrank. (Faun. Ins. Austr. p. 176 (41) *nec* Fab.). Oblong, subparallel; head dark, closely and somewhat rugosely punctured, with a strong depression at base; eyes rather large and prominent; antennæ short and rather stout, red at base, infusate towards apex, with the first joint large and stout, the second much shorter, but nearly as broad, the third very small, the fourth longer and dilated at apex, 5-10 stout, transverse and subserrate, and the last about as long as, and rather narrower than, the penultimate; thorax much broader than the head, finely punctured, almost smooth, red, with the central parts broadly dark; elytra blue or greenish-blue, strongly and more or less irregularly, in parts somewhat rugosely, punctured; legs clear orange-red, the anterior pair being the longest. L. $2\frac{1}{2}$ -4 mm.

Wychwood, near Witney, Oxfordshire (Holland). Mr. Holland took a single specimen on June 18, 1899, and in 1890 found it in numbers at about the same time. The species has occurred throughout the greater part of Europe up to Finland, where, according to Lacordaire, it is very rare: it is said to occur in Germany from May to July on oak shoots or in flowers.

At first sight it superficially resembles *Gastrophysa polygoni*, but the short and stout antennæ, and the structure of the legs and tarsi will easily distinguish it from any others of our Chrysomelidæ.

The occurrence of this insect in numbers in the centre of the country is very interesting, and leads us to expect that many more species new to Britain may be found when the vast number of woods and other localities which have not been touched, are worked systematically.

CRYPTOCEPHALUS, Geoffroy.

C. bipunctatus, L. (Syst. Nat. x. 374). This appears to be really the type insect, of which our well-known *C. lineola*, F., is only a variety. *C. bipunctatus* is a variable insect, the elytra being almost unicolorous-red or reddish-yellow, or yellowish-red with one black spot on each, or with four black spots, the bar on each side being sometimes confluent, but in no case is there a thick black regular band as in *C. lineola*.

Taken by Mr. Mitford in 1907 at Niton, Isle of Wight, and

subsequently by Mr. Donisthorpe in numbers at the same place in July, 1908 (*v. Ent. Record. xx.* (1908) 208).

Var. thomsoni, Weise (*Nat. Ins. Deutsch. vi.* 167). Entirely black, with the apex of the elytra reddish-yellow: very like *C. biguttatus*, and probably confused with it in our collections, but distinguished by the less strong punctuation.

Introduced as British by Champion (*Ent. Mo. Mag. xxviii.*, 1892, 193), who took it by beating shallows at Woking, and subsequently found by Dolman near Lewes. Walker has also recently taken it at Woking.

C. parvulus, Müll. var. **barbareæ**, Steph. *nec* L. (Champion, *Ent. Mo. Mag. xxxiii.* (2 Ser. viii.), 1897, 91). This insect is entirely black above, with the sides and under surface bluish-violaceous: the serrate punctures on the elytra are very coarse and transverse in shape, making the interstices appear to be transversely wrinkled. The trochanters are testaceous.

Taken by Mr. W. H. Bennett and Mr. Donisthorpe at Battle, Sussex, on birch, in August 1895; also by Mr. Champion at Hermitage Wood, near Woking, and at Chobham in 1909.

The *C. barbareæ* of Linnæus, according to recent writers, is a black variety of *C. 10-maculatus*, L. (= *10-punctatus*, L.). Mr. Champion is of opinion that the present insect may probably be the var. *C. of C. flavilabris*, Gyll. (*Faun. Suec. ii.* 623), "*supra niger, subtus nigrocæruleus.*" *C. flavilabris*, Gyll. (*nec* Fabr.) is, however, treated by Weise as synonymous with *C. cærulescens*, Sahlb., which has not occurred in Britain.

CYCLICA.

CHRYSOMELA, Linné.

[**C. (Chrysochloa) gloriosa**, F. (*Sp. Ins. ii.* App. 497), var. **superba**, Suffr. (*Mon.* 168). A specimen of this beautiful insect, which is about the size of a large *C. menthrasti*, of a golden-green or green colour with broad longitudinal red stripes, was found alive on the cliffs at Southwold, in June, 1897, by a friend of Mr. Tomlin, and sent to him; how it reached the locality is a mystery; it is uncommon on the Continent, and is certainly not likely to prove indigenous; the specimen is imperfect and looks as if it had been subjected to rough usage; it may have been washed over, but this seems doubtful.]

C. brunvicensis, Grav. (*Vgl. Zool. Syst.*, 1807, 135). This is the insect standing in our British collections as *C. didymata*. In the latter species the upper side is almost always blue, and the punctures between the elytral striæ are more distant and less numerous. We do not, apparently, possess *C. didymata* as British (*Newbery, Ent. Mo. Mag. xli.* (2 Ser. xxi.), 1910, 229).

PARAPHÆDON, Sharp.

Paraphædon, Sharp (*Ent. Mo. Mag. xli.* (2 Ser. xxi.) 1910, 4). This genus has been formed by Dr. Sharp for the reception of our well-known species *Phædon tumidulus*, Germ.; he characterises it as follows:

"*Linea metasternali externe antrorsum curvata ; elytra humeris, cumque mesosterno antice, ad receptionem femoris profunde impressis ; prosternum in medio carinatum.*" The cavity for the reception of the femora and the carinate prosternum are certainly sufficient characters to separate it from *Phædon*, Latr., in which there is no such cavity and the prosternum is not carinate; in the latter genus the metasternal line is elongate, and is turned backwards externally and meets the episternal suture nearer the hind margin than the front.

PHÆDON, Latreille.

As there has been considerable confusion between some authors who regard *P. concinnus*, Steph., and *P. cochleariæ*, F., as identical, and others who consider them to be distinct, and as it seems clear that we possess three, and not two species of *Phædon* proper, it may be well to quote some of the additional remarks of Dr. Sharp on these species (*l.c.* pp. 5 and 6).

P. armoraciæ, L. (*betule*, Küst.). This species, which must not be confounded with *Plagiodera versicolora*, Laish (*armoraciæ*, F.), is usually larger than the other members of the genus, and of a dark steel-blue colour, with a prominent shoulder to the elytra which is always marked on the scutellar side by a well-defined depression; the joints of the club of the antennæ are broad and short, 7-10 being distinctly transverse, and there is no trace of any red colour on the undersides of the basal joints; the sculpture of the elytra is strong (all the striæ being well marked) and the punctuation of the interstices is quite distinct; on the underside the margin of the terminal plate is pale red. The variation is only slight.

P. concinnus, Steph. Rather smaller, narrower, and more convex than the preceding, with the humeral callus somewhat less marked and the serial punctuation of the elytra more shallow; the antennæ are always quite black, and on the underside there is no red colour on the terminal plate. The colour is usually bright green or golden-green, and occasionally violet-green or coppery, but never the same steel-blue as in *P. armoraciæ*; on both the upper and undersides there is a peculiar faint strigosity.

P. cochleariæ, F. In this species the humeral callus is indistinct; the first and second joints of the antennæ are obscurely marked with red underneath, and the club is comparatively slender; the tips of the tibiæ are usually red beneath, and there is only a very slight red coloration on the hind margin of the last ventral plate of the abdomen; the usual form is bright blue, or more rarely greenish-blue; specimens, however, occur coloured as *P. armoraciæ*. These may be distinguished by the indistinct humeral callus.

Dr. Sharp further says that the shape of ædeagus is different in the three species. In *P. concinnus* the apical portion is longer than in the other species, more curved, but parallel-sided. In *P. armoraciæ* this part is narrowed towards the tip, while in *P. cochleariæ* the apical part is only about half as long as in *P. concinnus*.

LOCHMÆA, Weise.

L. suturalis, Thoms., var. **nigrita**, Weise (Naturg. Insect. Deutsch, vi. 614). This insect is the jet-black variety of *L. suturalis*; it occurs on Cannock Chase, and, I believe, in other localities (v. Ent. Mo. Mag. xl. (2 Ser. xv.), 1904, 183 (Tomlin)).

GALERUCELLA, Crotch.

G. pusilla, Duft. (Faun. Aust. iii., 230). A little smaller than *G. californiensis*, less marked with black on the upper side and with the colour of the upper surface a little paler. It may be known by having the last two segments of the abdomen entirely red. L. 3-4 mm.

Horning, Mildenhall, New Forest (Dr. Sharp); Wicken Fen (Champion); Lewes (Dollman); Catfield, Norfolk (Beare and Donisthorpe); Balrath, co. Meath (Donisthorpe and Nicholson).

Bedel (Faune. Col. Bassin du Seine, v. 279) refuses to regard this as a valid species, and it is very doubtful whether it can be accepted. Sharp, however, who introduces it as British (Ent. Mo. Mag. xlvi. (2 Ser. xxi.) 1910, 28), is of opinion that it must stand, and it is regarded as distinct in the last published European Catalogue.

G. fergussoni, Fowler (Ent. Mo. Mag. xlvi. (2 Ser. xxi.) 1910, 228). Allied to *G. sagittariae*, but much smaller and shorter, entirely, or almost entirely, black, the margins of the elytra and thorax being often more or less lighter, usually very narrowly so; antennæ with the second joint proportionately longer than the third; the lateral angles of the thorax are more distinct, and the interstices of the elytra are more plainly alutaceous. L. 4-5½ mm. (In vol. iv. p. 329 the length of *G. sagittariae* should be 6-7½ mm. instead of 4-5 mm.)

Taken first at Possil Marsh, near Glasgow, by Mr. Adie Dalglish, and subsequently in numbers in the same locality and at Frankfield Loch, Glasgow, by Mr. Anderson Fergusson. The insect occurs on the marsh cinquefoil, *Comarum palustre* (the *Potentilla palustris* of the London Catalogue) in June and August.

This is the *G. sagittariae* var. B of Dr. Sharp (Ent. Mo. Mag. 1910, 90); it is about the size of *G. lineola*, from which it is quite distinct; it is evidently closely allied to *G. sagittariae*, but is totally unlike the ordinary examples of that species in facies. *G. sagittariae* appears to be very rare or local in Scotland; Dr. Sharp has taken it at Dabton Loch, Thornhill, Dumfriesshire, and Mr. Dalglish at Milngavie, near Glasgow. Both these, it must be admitted, are somewhat intermediate forms, and the synonymy may require revision in the future.

LONGITARSUS, Latreille.

This genus requires very careful working out as far as our British species are concerned: there are a great many errors in our collections

and our doubtful examples (of which there are very many) require to be carefully compared with authentic European co-types. We hope that one of our many students of the group will soon undertake the task. We cannot here do more than indicate a few corrections with regard to synonymy, &c.

L. niger, Koch. It is very doubtful whether we possess the true *L. niger*, Koch., and for the present, at all events, the species should be omitted from our lists; the very few examples should most probably belong to *L. luridus*.

L. castaneus, Duft., and **L. brunneus**, Duft., are synonymous and the latter name must stand. *L. brunneus* may be distinguished from *L. luridus* as follows (Bedel. Faune. Col. Seine, 190):

- I. Elytra with several long curved cilia towards the extremity of their external margin, and a single longer and upright hair at their apical angle **L. BRUNNEUS**, Duft.
castaneus, Duft.
- II. Elytra with no cilia, or very short ones, at their apex **L. LURIDUS**, Scop.

[**L. nigerrimus**, Gyll. (Ins. Suec. iv. App. 656; Weise, Naturg. Insect. Deutsch. vi. 943). A shining, entirely black, convex species, with or without a slight aneous reflection; tarsi pitchy; antennæ slender, with the fourth joint just a little longer than the third; head very finely sculptured; thorax sparingly punctured in the middle, more closely towards base, the punctuation being rather coarse; elytra with evenly rounded sides and well-marked shoulders, closely, evenly, and comparatively strongly punctured, suture more or less depressed behind, sutural angles right angles, spur of posterior tibiæ long. L. 2½ mm.

Cleethorpes, Lincolnshire; taken by Dr. W. Wallace, of Grimsby, by sweeping at night on September 7, 1907; in Mr. Tomlin's collection there is a specimen labelled "Greathide" (Joy, Ent. Mo. Mag. xliv. (2 Ser. xix.) 1908, 104).

The species may be known by its deep black colour, large size, and comparatively strong and even punctuation of the elytra; the thorax is sometimes almost smooth; apparently smaller specimens are found on the Continent, as Weise gives the size as 1.5 to 2.2 mm. I have not seen a Continental specimen of *L. nigerrimus*, and feel somewhat doubtful as to the identification of the species. Weise compares it with *L. holsaticus*, and says that the species are so close to one another that they might be confused; the insect, however, described above is totally different from *L. holsaticus* in colour, shape, and punctuation, and could not in any way be mistaken for it.]

Since writing the above Mr. Donisthorpe says that the insect above described is only a variety of *L. luridus*, as, in company with Dr. Wallace, he has taken this insect and *L. luridus* and all the intermediate

varieties in the locality above referred to. I have left the description, &c., as it stands, as it shows the confusion that may so easily arise with regard to the members of the genus.

L. curtus, All. (= *Teinodactyla pratensis*, All. *nec* Panz.) (Gal. Anis. 137, 832). Ovate, short and broad; head pitch-black, shining, antennæ dark towards apex; thorax short, transverse, testaceous or piceous, with obsolete scattered punctuation; elytra, at base, broader than thorax, with the shoulders well marked and the sides almost parallel for two-thirds from this point, rounded and terminating in an obtuse sutural angle, scarcely a third longer than broad, with rather strong but confused and not close punctuation, testaceous, or with the suture narrowly ferruginous; under side pitchy; legs testaceous, posterior femora pitchy towards apex. Length, $1\frac{3}{4}$ mm.

Introduced as British by Mr. Tomlin on specimens taken at Colby, Isle of Man (Ent. Mo. Mag. xl. (2 Ser. xv.) 1904, 60, 179). According to him it has the appearance of a small *L. melanocephalus*, All., but is less finely and closely punctured, besides the difference in size; its food-plant, as a rule, is *Echium vulgare*.

Mr. Newbery (Ent. Mo. Mag. xlii. (2 Ser. xvii.) 1906, 87) disputes the determination of these specimens, but Mr. Elliman (*l.c.* 137) records the species without doubt as British, having taken it at Chesham, Bucks (he believes on *Myosotis*); he compares it with *L. atriceps*, from which it may be known by its paler colour and by the punctuation of the elytra not being quite so deep; his specimens have the suture of the elytra slightly rufescent, and the apex only of the femora pitchy or rufescent, whereas these parts in *L. atriceps* are usually wholly black, or at all events dark brown, and the tibiæ also.

L. pratensis, Panz. (*nec* All.) (Faun. Germ. 21, 16); *L. pusillus*, Gyll. (Ins. Suec. 3, 549); *var. medicaginis*, All. (Gal. Anis. 124); *reichei*, All. (Gal. Anis. 132). It is probable that the above synonymy must stand; the *var. medicaginis*, is somewhat larger (the sizes given by Allard are *L. medicaginis*, $1\frac{4}{5}$ mm., *L. pusillus*, $1\frac{1}{2}$ mm.) and is said to be less obsoletely punctured, but this varies within certain limits. *L. reichei* is merely regarded as a synonym and not even a variety of *L. pratensis* in the catalogue of Heyden, Reitter and Weise; it is, however, probably the insect recorded by Mr. W. E. Sharp (Ent. Mo. Mag. xlii. (2 Ser. xvii.) 1906, 39) as a dark form of *L. pusillus*, apparently the *Thyamis collaris* of Stephens, and probably synonymous with the *L. reichei* of British collections; it occurred abundantly in Buckinghamshire, between Reading and Maidenhead, in September 1905.

L. æruginosus, Foudr. (Ann. Soc. Linn. Lyon. vi. (1859) pp. 239 and 315; Altis. pp. 127 and 203). (Ent. Rec. 1904, p. 82). This is the *L. lævis* of the British Catalogues and the *L. lævis* of Allard is the *L. succineus* of Foudras. *L. pellucidus*, Foudr., seems somewhat doubtful, and the localities given for it (Brit. Col. iv. 354) probably belong, either in whole or in part, to one of the other two species.

Bedel (Faun. Col. du Bassin de la Seine, vi. 194) thus distinguishes the species:

- I. Elytra with some rather long hairs towards the extremity of their external border and a still longer raised hair at the sutural angle. Antennæ with joints 4-10 very elongate. Insect usually apterous, rarely (var. *luctator*, Weise) winged. On *Eupatorium cannabinum* . L. *ÆRUGINOSUS*, Foudr.
- II. Elytra without or with very short cilia at apex. Antennæ of normal length. L. $1\frac{1}{2}$ - $2\frac{3}{4}$ mm.
- i. Elytra subdepressed above, with the shoulders usually well marked and the punctuation distinct L. *PELLUCIDUS*, Foudr.
- ii. Elytra regularly convex, with the shoulders almost always effaced and the punctuation obsolete L. *SUCCINEUS*, Foudr.

L. pellucidus occurs on *Convolvulus arvensis*, and is in any case rare, even if we possess it at all as British, which seems very doubtful; and *L. succineus* is found on *Achillea millefolium*, *Leucanthemum vulgare*, *Artemisia campestris*, &c. We appear to possess the var. *luctator*, Weise, if it can be counted as a variety.

L. rubiginosus, Foudr. (*flavicornis*, All.), var. **fumigatus**, Weise. This is a dark form and occurs with the type on *Convolvulus sepium*. Lewes (Dollman), Catfield, Norfolk, not uncommon (Donisthorpe).

PHYLLOTRETA, Foudras.

P. diademata, Foudr. (Alt. 257). Closely allied to *P. atra*, F., from which it is distinguished by having the vertex impunctate and very finely granulate, and separated from the forehead by a semicircular punctured line, and also by having the punctures of the elytra strong, close and confused; in *P. atra* the head is entirely and deeply punctured, and the punctuation of the elytra is coarser and more regular, and almost in lines, especially near the base; the average size is also larger. *P. area*, All. = *punctulata*, Brit. Col., has the punctuation of the elytra confused as in *P. diademata*, but finer, and may further be known from it by its entirely punctured head. L. $1\frac{3}{4}$ mm.

South Devon (P. de la Garde); near Padstow, Sept. 1907 (C. G. Lamb); not rare in France on *Cardamine pratensis* (Newbery, Ent. Mo. Mag. xliv. (2 Ser. xix.) 1908, 148).

APHTHONA, Chevrolat.

A. cœrulea, Fourc. (= *non-striata*, Harold) var. **ænescens**, Weise (Naturg. Insect. Deutsch. vi., 912). This variety differs from the type form in having the upper surface greenish-æneous in colour; it was

described and figured by Panzer under the name of *Altica hyoscyami*; like the type it is attached to *Iris pseudacorus*.

Between Pembroke and Tenby (J. J. Walker); Candleston, near Bridgend, Glamorganshire (Tomlin); (*v.* Champion, Ent. Mo. Mag. xxxv. (2 Ser. x.) 1899, 15); Rosbeigh, co. Kerry (Donisthorpe).

The specimen standing in our collections as *A. atratula*, All., must probably be referred to *A. atrovirens*, Först. = *tantilla*, Foudr.

CREPIDODERA, Chevrolat.

C. impressa, Fabr. (Syst. El. i. 496; Illig. Mag. vi. 57; Allard, Gal. Anis. 49). One of the largest species of the genus, moderately convex, brownish-red or sometimes blood-red; upper side glabrous, underside clothed with scanty pale yellow pubescence; closely allied to *C. transversa*, but larger and of a darker colour; it is more shining and has a shorter thorax, the transverse depression in which is very deep; it may be most readily distinguished by the punctuation of the elytra of the male, which consists of a series of five depressions, augmented by other punctures placed near to these; hence the internal series appears double; the interstices between the series are broad and definite. The female of *C. transversa* has a similar scheme of punctuation on the elytra, but in the last-named insect the punctures are larger and in the male sex are very confused. L. $5\frac{1}{2}$ –6 mm.

Taken by Mr. G. C. Lamb at Hayling Island in September, 1909, and introduced as British by Dr. Sharp (Ent. Mo. Mag. xlv. (2 Ser. xxi.), 1910, p. 27).

The species is littoral in its habits, the specimens having been found on a spot covered by the sea at high tide; it appears to be chiefly a Mediterranean species, and Dr. Sharp is of opinion that the specimens recorded may prove to belong to a variety peculiar to Britain.

CHÆTOCNEMA, Stephens.

C. arida, Foud. (Alt. 122; Allard, Gal. Anisop. 573). A small ovate species, very like *C. hortensis*, Geoff., from which it may be distinguished by its narrower, proportionally longer and more finely punctured thorax, as well as by the sculpture of the vertex, of which the granulation is scarcely visible; the sculpture of the elytra is more or less confused, but the striæ are traceable, more distinctly so near suture and towards apex; according to the descriptions the first six joints of the antennæ are said to be ferruginous, but in the only specimen I have seen the upper part of the basal joint is black, and this is the case with Mr. Champion's specimens; all the femora are piceous or black. L. $1\frac{1}{2}$ – $1\frac{3}{4}$ mm.

Taken by Mr. Donisthorpe in the Whitefield Woods near Ryde, Isle of Wight, in August 1909, and introduced by him as British. (Ent. Record. xxi. 1909, 259), and by Mr. Champion at Chobham, Woking, and in the London district; S. Devon (Joy).

This insect has apparently been doing duty in our collection as

C. aridula, Gyll., and the latter insect must apparently be erased from our lists; it is a longer insect with the basal joint of the antennæ darker, and more like *C. confusa* in shape.

Mr. Donisthorpe's specimens of *C. arida* are smaller and narrower than *C. hortensis*, and have the shoulders more sloping.

DIBOLIA, Latreille.

Dibolia, Latr. (Cuv. Règn. anim. (2 ed. v.) 1829, p. 155). Ovate and convex; antennæ short, with the basal joint robust; head small, flat in front, concealed beneath the anterior margin of the thorax, which is short and transverse; elytra broad and rather long; legs with the posterior tibiæ thickened towards apex, and armed at the apex with a bifid spur, which, with the concealed head, will easily distinguish the genus from its allies.

D. cynoglossi, Koch. (Ent. Hefte. ii. p. 20, t. 2, fig. 2). Oblong-ovate, convex, nigro-æneous, with a greenish reflection; antennæ fuscous, with the first five or six joints red; thorax comparatively small, transverse, narrowed gradually in front, finely and not very closely punctured; elytra with the shoulders rounded, thickly punctured, with the punctures fine and arranged in more or less regular rows, which are feebler towards apex, interstices very finely sculptured, under a high power sub-alutaceous; legs red or reddish-testaceous, with the femora and tarsal claws more or less dark, posterior tibiæ somewhat pitchy towards apex, spinulose exteriorly. L. 3 mm.

One specimen was recorded by Stephens (Ill. Mand. iv. 325) as from the neighbourhood of Bristol, but the species has long been omitted from our lists, and is practically a new British record. Several specimens were captured by Mr. Donisthorpe at Pevensey in 1902 (Ent. Record 1902, p. 365), and he found it in abundance in 1905, when he discovered the food-plant—*Galeopsis ladanum*, var. *canescens*, Schultz, a variety of the common red "Hemp Nettle" (Ent. Mo. Mag. 1905, p. 256). *D. cynoglossi* occurs in Central Europe and Spain and is very rare in France.

A single specimen of *D. occultans*, Koch., was also recorded by Stephens (l.c. p. 325) from the neighbourhood of London; it is the only species that occurs in Norway and Sweden (Thoms. Skand. Col. viii. 211) and may very likely be found in Britain; it differs from *D. cynoglossi* in being blacker with a bluish rather than a greenish reflection, with the thorax and elytra more thickly punctured, and in having black legs, with pitchy tarsi; the antennæ also are darker, with the base ferruginous.

CRYPTOSTOMATA.

CASSIDA, Linné.

C. murræa, L., var. **maculata**, L. (Syst. Nat. xii. 575). This is the ordinary green variety of the species, which is apparently as common as the type form.

The following characters will serve to separate more easily *C. vittata*, Vill., and *C. nobilis*, L. (Bedel. Faun. Col. du Bassin de la Seine, v. 211):

- I. Facial grooves forming a **V** of which the branches commence at the insertion of the antennæ; thorax scarcely less shiny than the elytra, convex behind *C. VITTATA*, Vill.
- II. Facial grooves almost forming a **Y**, their two branches in front uniting on the median line; thorax very dull, not convex behind *C. NOBILIS*, L.

Mr. Dollman and Mr. Donisthorpe took several specimens of a form of *C. nobilis* at St. Helens, I. of W., in August 1909, on *Chenopodium*, marked with a beautiful crimson horse-shoe on the elytra (Ent. Rec. 1909, p. 275).

TENEBRIONIDÆ.

ALPHITOPHAGUS, Stephens.

A. bifasciatus, Say (Journ. Ac. Phil. 1823, 268); *A. quadripustulatus*, Steph. (Illust. Brit. v. 32, 12). Say's name has the priority of Stephens' by nine years and must be adopted; it was referred doubtfully by its author to the genus *Diaperis*; the insect, as Mr. Champion says (Ent. Mo. Mag. xxxi. (2 Ser. vi.) 1893, 283), is no doubt of American origin, like *Gnathocerus*; *Latheticus*, *Tribolium*, *Tenebrio*, *Alphitobius* and *Palorus* are almost certainly of Eastern origin.

PENTAPHYLLUS, Latreille.

Pentaphyllus, Latr. (Cuv. Règn. anim. ed. 2, p. 30; Lac. Gen. des Col. v. 312; Jacq. Duv. iii. 28, pt. 8, f. 39). Oblong-ovate, moderately convex. Head short, narrowed in front, almost triangular, eyes moderate, widely separated underneath; maxillæ with the internal lobe small and narrow, simple at the apex, maxillary palpi with the last joint rather large, thicker than the preceding. Subovate, narrowed towards apex, truncate at the tip; antennæ rather short, with a five-jointed club; thorax transverse, bordered at the sides, feebly subsinuate at the base; elytra with the epipleura entire or almost entire; pronotum extended in a strong projection behind the anterior coxæ, which are subglobose; legs slender and linear, tarsi elongate, the posterior with the first joint a little longer than the two following united.

Pentaphyllus is easily separated from *Diaperis*, *Scaphidema*, *Platydema*, &c., by the abrupt five-jointed club, from which it derives its name: it has been a source of considerable difficulty to authors, some of whom have referred it to *Mycectophagus* and others to *Hypophlœus*.

P. testaceus, Hellw. (Schneid. Neu. Mag. i. 4, 1792, p. 400). Testaceous, sparingly clothed on the upper surface with fine hairs; thorax distinctly punctured; scutellum rounded, posteriorly broader than long; elytra at base as broad as the base of thorax, rounded and narrowed behind; underside black; anterior coxæ globulose; legs reddish-testaceous. L. $2\frac{1}{2}$ mm.

Widely spread in Europe under the bark and in the worm-eaten parts of dead or decaying oaks; a single specimen was taken in June 1876 by Mr. O. E. Janson under a decaying boletus (*Polyporus squamosus*) which he had placed as a trap for coleoptera in the hollow trunk of a partially decayed oak in a hedgerow in a field at Crouch End, Hornsey.

The species, as Mr. Janson when introducing it as British remarks (Ent. Record. xv. 1903, 128) bears a general resemblance to some of the Anisotomides and especially to *Agaricophagus cephalotes*. If properly searched for the insect will probably be found again, and may be overlooked owing to the fact that old decayed oaks in fields are very unproductive of beetles and are usually passed over by collectors.

PALORUS, Duval.

There has been considerable confusion in our lists with regard to the genus *Palorus*, Duv. (*Hypophlæus* auct. *passim*): the species which has stood in the British collections as *Hypophlæus depressus*, Fabr., is not the Fabrician insect and must be referred to *P. ratzeburgi*, Wissm. (= *ambiguus*, Woll.) and we must also add another species, *P. subdepressus*, Woll. (= *bifoveolatus*, Baudi); the true *P. depressus*, F., does not appear as yet to have been found in Britain, although it probably will be. Mr. Champion (Ent. Mo. Mag. xxxii. (2 Ser. vii.) 1896, 27) gives an excellent account of the distinctions between the three species, which we here quote:

I. Antennary orbits (or sides of the front) moderately prominent, not extending backwards so as to hide the anterior margin of the eyes as seen from above.

i. The antennary orbits separated from the epistoma (or clypeus) by a distinct furrow; head (the episterna excepted) and prothorax coarsely, closely punctate, the punctures on the prothorax becoming very coarse and dense towards the sides; prothorax much broader than long; elytra coarsely punctate-striate, with one or more of the inner interstices irregularly biseriately punctate and the others uniseriate-punctate

P. DEPRESSUS, *Fabr.* (1790).
(= *unicolor*, Oliv. (1790).)

ii. The antennary orbits not separated from the epistoma by a

distinct furrow; head and prothorax more finely and more sparsely punctate, the punctures on the prothorax becoming very little coarser towards the sides; prothorax considerably broader than long in the male, still broader in the female;* elytra more finely punctate-striate, the interstices uniseriate - punctate throughout, in some specimens transversely wrinkled; size smaller

P. RATZEBURGI, *Wissm.* (1848)
= *ambiguus*, *Woll.* (1857).

II. Antennary orbits (or sides of the front) prominent and more raised, extending backward so as to hide the anterior margin of the eyes as seen from above, and limited inwards by a deep oblique furrow extending backwards from the transverse frontal groove; head and prothorax finely and moderately closely punctured, the punctures on the prothorax becoming coarser towards the sides; prothorax much broader than long; elytra finely punctate-striate, the punctures closely placed, the interstices uniseriate-punctate, the inner ones in some specimens irregularly biseriate - punctate; body slightly flattened above. .

P. SUBDEPRESSUS, *Woll.* (1864)
= *bifoveolatus*, *Baudi (nec Dufts.)* (*Seidlitz*) (1876).

P. depressus, F., is found under bark, especially of oaks, and has not yet occurred in meal in granaries; it is generally distributed in Europe, but has not yet been found in Britain.

P. ratzeburgi, *Wissm.* (= *P. depressus*, *Brit. Coll.*) has been found under bark, but is commonly found in granaries and bakehouses; it has been taken in various localities in Britain, and is widely distributed in Europe, and occurs also in Asia Minor, Tunis, and Madeira.

P. subdepressus, *Woll.*, occurs in granaries; it has occurred in London, and is very widely distributed, being found in the South of

* Dr. *Seidlitz* in his work on the Tenebrionidæ of Germany gives the prothorax "as long as broad," as Mr. *Champion (l.c.)* points out, and it can hardly be described as more than slightly broader than long.

Europe, Tangier, Syria, Cape Verd Islands, Mexico—from which it has been described as *P. melinus*, Herbst., by Mr. Champion, who makes the correction (*l.c.* 25)—Texas, Gilbert Islands, &c.

HYPOPHLÆUS, Fabricius.

H. linearis, Fab. (Syst. El. ii. 559, 4; Gyll. Ins. Suec. ii. 582, 6). Elongate, linear, subcylindrical, parallel-sided, strongly convex, shining: head and thorax pitchy-black, the latter half as long again as broad, closely and very finely punctured: elytra and legs testaceous.

Easily distinguished from our other species by its very small size and its colour and sculpture. L. *vix* 2 mm.

Oxshott, Surrey: taken by Mr. H. Heasler in the burrows of *Tomicus bidens* in felled pines, and recorded by him as British (Ent. Record, x. 1898, 176); Woking (Champion); Esher (Dollman).

CISTELIDÆ (ALLECULIDÆ).

CTENIOPUS, Solier.

C. sulphureus, L., var. **bicolor**, F. (Ent. Syst. iv. App. 447). This insect differs from the type in having the head, thorax, antennæ and abdomen black; it appears to be very rare; Mr. Donisthorpe records (Ent. Rec. 1907, 293) the capture of a single ♂ specimen at Deal by himself in the early autumn of 1907. I have two or three specimens with the head blackish, and the antennæ and tarsi are variable in colour, but the thorax very seldom varies from the yellow colour, and I have never seen or heard of a specimen with dark elytra.

MELANDRYIDÆ.

MELANDRYA, Fabricius.

M. barbata, Sturm. (Faun. ii. 1807, p. 275, t. 52, f. A, a); **M. flavicornis**, Duft. (Faun. Austr. ii. 1812, p. 262); **M. rufipes**, Chev. (Guér. Ic. p. 126, t. 33, f. 2). This is the very scarce species which stands in the older British list as *M. canaliculata*, Fabr. (*M. dubia*, Schall.): the differences between the two species (as stated by Mr. Champion, Ent. Mo. Mag. xxxvii. (2 Ser. xii.) 1901, 255) are clearly and concisely given by Dr. Seidlitz (Naturg. des. Ins. Deutsch. Col. v. 2, pp. 628, 630) as follows:

M. barbata. Black, antennæ and legs for the most part yellow, thorax rounded and narrowed in front, with a slight central channel, impressed on each side at base: elytra not dilated behind, not depressed in front, with strongly channelled striæ, and five broad convex even interstices. L. 9–10 mm.

M. canaliculata (*dubia*). Black, thorax with the sides almost straight, channelled, rather strongly impressed on each side at base; elytra dilated behind, depressed in front, with channelled striæ behind, interstices even, the alternate ones elevated. L. 10–15 mm.

M. barbata, it will be seen, is a much smaller insect than *M.*

canaliculata and differs from it in many respects: both species are widely distributed on the Continent, but the latter extends much further north than the former. *M. barbata* above must stand in our lists; it is extremely rare and has only occurred in the New Forest at wide intervals of time: the last specimen was taken, as far as I know, at Brockenhurst, on an oak trunk, in the evening, in June 1901 by Mr. Bedwell; Mr. Heasler took several specimens the same year. C. Guliver has taken four or five specimens, now in the collections of Mr. Gorham, the late Mr. F. Bates, and the late Dr. P. Mason; the first, well figured by Curtis, was captured on the wing by Mr. Bentley in the same locality in June 1823.

CARIDA, Mulsant.

C. (Hallomenus) affinis, Payk. (Faun. v. ii. 181, 3; Gyll. Ins. Succ. ii. 529, 3). A small pitchy-brown species, with the head and thorax sometimes darker; much resembling at first sight a small species of *Anaspis*: elongate, subconvex, extremely finely and obsoletely punctured, and clothed with exceedingly fine and short testaceous pubescence; antennæ subfiliform, entirely yellowish-red; second joint sub-transverse or about as long as broad, third longer than the fourth, palpi with the last joint securiform; thorax at base about as broad as the base of the elytra, feebly margined at the sides, which are narrowly and obscurely reddish; elytra with the shoulders lighter; legs entirely pale red or yellowish-red. L. 2-2½ mm.

Found at Strathspey, Scotland, in fungus on trees, by Mr. C. G. Lamb in July 1905, and subsequently by Colonel Yerbury. (First recorded as British in the Proc. Lancs. & Ches. Ent. Soc. 1905, 34.) Dr. Sharp (Ent. Mo. Mag. xlii. (2 Ser. xvii.), 1906, 220) says that there is some doubt as to whether the species has been found in Britain before, as according to Seidlitz (Ins. Deutsch. v. a. p. 524) *Abdera picea*, Walker, is a synonym of *Hallomenus affinis*, Payk.; he thinks, however, that Seidlitz is wrong, as Walker's brief description and locality (near London) are neither suitable to *C. affinis*.

The species occurs in Scandinavia, Germany and France. It is allied to *C. flexuosa*; but is very distinct, being smaller, more convex, with shorter and much more slender antennæ and quite differently coloured.

OSPHYA, Illiger.

O. bipunctata, F. In the Entomologist's Record for 1899 (xi. p. 267), Mr. F. Bouskell describes three new varieties of this insect as follows:

"Type-form of male. Elytra greyish-black, sometimes yellowish-red at the margins, posterior femora strongly thickened.

"*Var. maculata*. Elytra grey-black, apical half red-brown, margins red-brown. (The general appearance of this insect is exceedingly like the brown and black form of *Toxotus meridianus*.)

"Type-form of female. Thorax red, with two black spots varying in size, elytra brownish-red, apex black, posterior femora simple.

“*Var. impunctata.* Thorax without spots, apex of elytra only just black (Mr. Donisthorpe has captured specimens intermediate between this and the type, the spots being only just visible).

“*Var. 4-punctata.* Elytra with two small black humeral spots, in addition to the two on the thorax, the margins of the anterior angles of the elytra black; apex also black.

“In addition to these forms the size of the spots and of the apical black marking of the elytra vary considerably.”

Mr. Bouskell does not appear to have compared his insects with a Continental series, and it is possible that one or two at least should be referred to *var. innotata*, Pic. (1898), *var. obscuripennis*, Pic. (1897) or *var. vittipennis*, Seidl., all of which are mentioned in the last European catalogue.

It is worthy of note that Mr. Donisthorpe has taken a form of the male in Huntingdonshire, with the femora quite simple.

PYTHIDÆ.

RABOCERUS, Sharp *nec* Mulsant.

In Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, p. 245, Dr. Sharp revives this genus of Mulsant, but adds to it the genus *Colposis* of the same author; both of these are easily distinguished from *Salpingus* as ordinarily constituted by reason of their long and much exerted mandibles; in the last European catalogue the name *Sphæriestes*, Steph., is substituted for *Salpingus*, Gyll., the latter being considered as a synonym of *Rhinosimus*.

Rabocerus then, as now constituted, consists of two forms:

- I. Mandibles very elongate, regularly serrate along their inner margin, the teeth being 12-13 in number **RABOCERUS**, i. sp.
- II. Mandibles shorter, obscurely denticulate on their inner margin **COLPOSIS**, *Muls.*

The species described below belongs to the subgenus *Colposis*.

R. bishopi, Sharp (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 245). Æneous black, shining, with the base of the antennæ red and the tibiæ and tarsi fuscous, the former yellowish towards base; thorax with four impressions, strongly punctured; elytra deeply impressed behind the scutellum, punctured in rows. The species is closely allied to *R. mutilatus*, Beck., but the colour is different, the tarsi are more elongate and slender and the antennæ somewhat slighter. Head and rostrum rather closely punctured, the sculpture on the front of the latter not rugose; antennæ with the first four joints red, the rest black, club 5-jointed, the sixth joint a little broader than the fifth, the penultimate joints each about as long as broad, palpi infuscate. Thorax closely and rather coarsely punctured, shaped as in *R. (Salpingus) mutilatus*, with the four depressions usually deep. Elytra with the basal depressions

always deep, comparatively rather shorter and more convex behind than in *R. mutilatus*; legs darker than in the last-named species, with the tarsi longer and more slender.

Grantown, Inverness-shire: Dr. Sharp and Mr. Bishop took fifteen specimens in the summer of 1909 by shaking twigs and branches of dead birch. Dr. Sharp seems a little doubtful as to whether the insect is merely a variety of *R. mutilatus*, but describes it as new, as all the specimens agree *inter se*, and none are intermediate.

CEDEMERIDÆ.

CEDEMERA, Olivier.

C. virescens, L. (Syst. Nat. ed. 12, p. 650; Muls. Col. de France, Angustipennes, 149). Closely allied to *C. lurida*, Marsh., but distinguished by the fact that the hind femora of the male are distinctly incrassate (but not strongly so as in *C. nobilis*, Scop.) whereas in the last-named species they are simple. Mr. James Edwards, who recorded the species as British (Ent. Mo. Mag. xxxix. (2 Ser. xiv.) 1903, 64) says that as a rule the female is evidently larger than in *C. lurida*, and has the raised line down the middle of the thorax much more distinct, but that after a careful study of considerable material he is forced to the conclusion that this sex of the two species cannot be separated with certainty apart from the males. L. 6-7 mm.

Central Norfolk, one locality only, but there not uncommon. The species is widely distributed on the Continent from Norway and Sweden to Italy and from England to Austria.

MORDELLIDÆ.

MORDELLISTENA, Costa.

M. (Mordellochroa) abdominalis, F. Mr. Champion (Ent. Mo. Mag. xxvii. (2 Ser. ii.) 1891, 287) describes the peculiar characters of the sexes in this species (with figures): in the male the apical joint of the maxillary palpi is about three times as broad as long, deeply excavate along the upper side within, with the upper and lower sides subparallel, the tip rounded and the base subtruncate; it may be described as boat-shaped (or rather like the somewhat elongate end of a golf "driver"); in the female it is oblong-ovate, rather narrow, with the apex obtuse. In vol. xxxiv. (2 Ser. ix.) 1898, 128 *et seq.*, Mr. Champion quotes the sexual peculiarities of our British species of *Tomoxia*, *Mordella* and *Mordellistena* as described by Shilsky (Die Käfer Europ. xxxi.).

M. newaldeggiana, Panz. (Faun. Germ. 36). This name must be substituted for *M. brunnea*, F., as it has five years' priority.

ANASPIS, Geoffroy.

A. latipalpis, Schilsky (Die Käfer. Europ. xxxi., No. 73, 1895). Elongate, sericeous, testaceous, with the eyes and the apex of the

antennæ black, and the joints of the tarsi darker at apex; thorax very finely and the elytra finely strigose transversely, the former with the posterior angles acute; antennæ slender with the third and fourth joints equal and even and joints 6-10 obconical; palpi broad and strongly securiform, epipleuræ of the elytra long.

Male with the third segment of the abdomen strongly produced in the centre and furnished with two subparallel appendages or laciniæ which are approximate at the base and reach the apex of the abdomen; fourth segment of the abdomen very short, simple, fifth foveolate in the middle with the apex slightly emarginate; tarsi somewhat dilated at the apex, with the first joint almost twice as long as the second. L. $2\frac{1}{2}$ -3 mm.

Mr. Champion (Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 101) says that two well-marked species have hitherto been confused under the name *Anaspis subtestacea*, Steph.: one of these is correctly named, the other is the species described above. The two species are apparently almost equally common in Britain and are both probably widely distributed. The male characters of the two insects are very different as will be seen from the description of the characters of the abdominal segments of *A. subtestacea* given under the genus *Anaspis* (Brit. Col. v. 80); the tarsi moreover are more strongly dilated and the apical joint of the palpi in both sexes is distinctly broader.

A. costæ, Emery (Mon. Mord. supp. p. 33; Schilsky, Die Käfer Europ. xxxi. No. 80). Mr. Champion (*l.c.* p. 102) points out that the insect known in British collections under the name of *A. flava*, L., *var. thoracica*, L., is really the *A. costæ* of Emery and Schilsky and must bear that name. The following is a translation of Schilsky's description:

Elongate, fuscous, with fuscous pubescence, with the palpi, head, thorax, base of antennæ and legs testaceous, and joints 7-10 of the antennæ moniliform in the male, submoniliform in the female. Male narrower, with the third segment of the abdomen slightly produced in the middle, with two laciniæ which are approximate at the base, slightly curved internally, exceeding the middle of the fifth segment, the fourth segment a little shorter, emarginate in the middle with long appendages, fifth segment incised at apex, bilobed. L. $2\frac{3}{4}$ - $3\frac{1}{2}$ mm.

The species is local but widely distributed; several varieties are enumerated by Schilsky, including one with a reddish humeral spot, which is not uncommon in Britain.

In *A. flava*, L., the abdomen is without laciniæ; the species does not apparently occur in Britain, nor the *var. thoracica*, Emery; *A. thoracica*, L., is a different insect altogether.

A dark variety of *A. maculata*, Fourc., occasionally occurs. Mr. Champion has taken it at Ashted and Woking, and Mr. Donisthorpe has taken it at Enfield. It may be known by the moniliform outer joints of the antennæ.

A. hudsoni, Donisthorpe (Ent. Record, xxi. 1909, 60). Elongate, somewhat boat-shaped, broadest in the middle, black, clothed with very

fine, sparse, yellow pubescence; antennæ with the first four joints yellow, the rest black, palpi fuscous-yellow; head large, black, with a thin yellow streak at the clypeus, rounded in front, straight or almost straight behind, with acute posterior angles; thorax narrowed in front, a little broader at base than long; sculpture evenly transversely strigose; elytra elongate, broadest about middle, sculptured as thorax; legs slender, black, knees at apex of tibiæ and spurs fuscous-yellow; anterior tarsi feebly dilated, intermediate tarsi slightly sinuate on their inner side.

In the male the third ventral segment of the abdomen is longer than the others, and is furnished in the middle at the apex with two long laciniae or appendages which reach to the middle of the fifth segment, approximate at base, separated in middle, and convergent and truncate at apex, with a slight depression between them at apex; fifth segment long and pointed, contracted a little beyond middle to apex, giving the appearance of a sixth segment, with a small pit or depression which lies in the centre of the apical third of the segment, the lips of which appear to be slightly raised. L. $3\frac{1}{2}$ mm.

Described from a male specimen taken by Mr. Donisthorpe in the centre of a woody fungus on Scotch fir at Nethy Bridge, Inverness-shire, and first recorded by him in error as *A. septentrionalis*, Champion.

Mr. Donisthorpe gave a plate (*l.c.*) with all the male appendages figured of the British species. He has since bred the female (Ent. Rec. 1911, 300), which differs from the female of *A. rufilabris* in the shape of the antennæ and the strigosity of the thorax and elytra.

A. geoffroyi, Müll. (Germ. Mag. iv. 21, 214 (*v.* Champion, Ent. Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 103)). We have several forms of this insect in Britain, the two most abundant being the type form with a large humeral spot on each elytron, and the form with a humeral and apical spot on each elytron (var. *4-maculata*, Costa); a rare variety (var. *vulcania*, Schilsky = *subfasciata*, Steph.) has four elytral spots, and the basal and apical margins of the thorax fulvous; it is apparently rare; it has been taken by Mr. Champion at Ashstead, Surrey. Another variety has the thorax entirely fulvous (*fulvicollis*, Schilsky). This apparently does not occur in Britain. Mr. Harwood has taken a variety near Colchester, entirely black, with only the faintest trace of a lighter humeral spot, and Mr. Champion has recorded an entirely black variety from near Putney. A well-marked male character in this species is the strongly sinuous inner edge of the intermediate tibiæ (*l.c.* 1895, 207).

A. ruficollis, F., var. **alpicola**, Emery (Essai. Mon. Mord. 1876, 22 (*v.* Champion, Ent. Mo. Mag. xxxi. (2 Ser. vi.) 1895, 207)). Mr. Champion (*l.c.* 207), in discussing a series of *A. ruficollis* submitted to him by Mr. F. and Mr. E. A. Waterhouse, says that "they vary from their normal colour to entirely black, legs, antennæ, and palpi included. Some of them have the thorax fuscous, with the sides rufescent and the legs fuscous, these specimens being clearly referable to the var. *C.* of *A. alpicola* of Emery. In this species the elytra usually have a broad

sutural stripe of blacker pubescence, this becoming wider towards the apex, the rest of the pubescence being greyish." Mr. Donisthorpe has taken a form near Dublin with the elytra yellow.

XYLOPHILIDÆ.

XYLOPHILUS, Latreille.

X. brevicornis, Perris (L'Abeille, vii. p. 211, 1869). This species must be added to the British list, as the insect recorded from the New Forest as *X. neglectus*, Duv. (*nigripennis*, Villa) is not that insect, but *X. brevicornis*. The specimens of *X. neglectus* referred to by myself (Brit. Col. v. 91) as from Wandsworth, must be referred to *X. populneus*. As my description belongs to the true *X. neglectus*, which must, of course, be now omitted, I append the description of the male of *X. brevicornis* given by Mr. Champion (Ent. Mo. Mag. xxviii. (2 Ser. iii.) 1892, 69). Perris does not state the sex of the specimen described by him, but from the name he gives to the species it was probably a male. The species may apparently be easily distinguished from all others belonging to the section *Olotelus*, Muls., by the very short antennæ in the male.

"Male: moderately elongate, narrow, parallel; pitchy brown, the head black, the antennæ fusco-testaceous, with the three basal joints and the apical one paler, the legs entirely testaceous; the upper surface clothed with fine greyish pubescence, the elytra moderately shining, the head and prothorax dull; head very finely, rather sparsely punctured; the eyes unemarginate, separated by a space about equal to three-fifths of the breadth of the head; antennæ thickening outwardly, stout, short, extending very little beyond the base of the prothorax, joint 1 incrassate, conical, 2 rather narrower, submoniliform, 3 slightly longer than 2, 4-10 strongly transverse, 7-10 wider than 6, 11 nearly twice as long as 10, ovate; prothorax moderately convex, about as long as broad, parallel at the sides behind, densely and rugulose punctured, and with a deep transverse basal groove, which is interrupted in the middle by a distinct dorsal carina; elytra elongate, parallel, each with a deep oblique depression below the base, densely and rather coarsely punctured, the punctuation becoming still coarser towards the base and finer towards the apex; the posterior femora angularly dilated on the lower side beyond the middle." L. 1½-2 mm.

MELOIDÆ.

SITARIS, Latreille.

S. muralis, Först, var. **flava**, Hamm (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 277). In this variety the whole of the elytra, wing membrane, and abdomen are clear yellow instead of black.

Oxford: several specimens taken by Mr. A. H. Hamm in the neighbourhood of one village near Oxford, and, with a single exception, on one and the same wall.

Aræocerus fasciculatus, De Geer = *Phlæobius griseus*, Steph. (Ill. Mand. iv. 211). Mr. F. H. Day (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 265) reintroduces this exotic insect, which appears to have become cosmopolitan, and mentions it as occurring in numbers in a biscuit factory in Carlisle. It has, perhaps, as good a right to a place in our lists as several other importations which appear not to be accepted as indigenous, but, as a matter of fact, it does not deserve a place even in the European Catalogue. It is an interesting species as having the power of leaping like *Choragus sheppardi*. For this reason, apparently, on account of a slight superficial resemblance, it has been placed next that insect, but it is doubtful whether this is its proper position; in some ways it seems to be more closely allied to the Bruchidæ, and may, perhaps, be regarded as intermediate between the Anthribidæ and Bruchidæ. The general shape of the body is much like *Brachytarsus*, but the long and slender legs and antennæ, and the elongate tarsi, quite separate it from that genus. The following is a description of the species:

Rather broad, oblong, narrowed in front; fuscous with greyish pubescence; head considerably produced into a short and broad rostrum before the eyes, which are prominent and deeply emarginate; antennæ long and slender; thorax about as long as broad, rounded and narrowed in front, almost semicircular, with the base and the sides behind more or less elevated; elytra convex and sub-cylindrical, with minutely punctured striæ, and with the interstices set with pale spots of grey pubescence; shoulders rather broadly pubescent; legs long and slender, mostly ferruginous, tarsi slender. L. 4-6 mm.

It was recorded from a London warehouse by Mr. Newbery (in error under the name of *Tropideres hilaris*, Fahr.), Ent. Rec. 1902, p. 338; and by Mr. Evans as taken in the Herbarium of the Botanic Garden, Edinburgh (J. F. Jeffrey), Ann. Scot. Nat. Hist. 1900, p. 93. It has also occurred in Kew Gardens.

The original habitat is unknown, but it has been ascribed to Australia and to various Eastern localities. It has occurred, however, in so many countries that it may well be called cosmopolitan. Wollaston met with it as an importation in St. Helena; Stephens records it from London, Suffolk, and Devon, and, as said above, it occurs plentifully at Carlisle. It appears to be attached to berries of various sorts—coffee, cocoa, almonds, &c.

CURCULIONIDÆ.

RHYNCHITES, Schneider.

R. ophthalmicus, Steph. (Ill. Brit. iv. 1831, p. 200); *R. olivaceus*, Gyll. (Schönh. Gen. Curc. i. p. 228). In the European catalogue of 1891, and also in the catalogue of Gemminger and Harold, *R. ophthalmicus*, Steph., is placed as a synonym of *R. sericeus*, Herbst. Mr. Champion

(Ent. Mo. Mag. xl. (2 Ser. xv.) 1904, 79), however, says that *R. sericeus*, Herbst, is not a British insect at all, and that it is easily distinguished from *R. ophthalmicus*, Steph., by its larger size, brighter metallic colour, and the fact that the elytral interstices are multipunctate. Numerous specimens were captured by him in Northern Spain in 1903.

The above synonymy must stand, as Stephens' name appeared two years before Gyllenhal's.

APION, Herbst.

A. (Exapion) Kiesenwetteri, Desbr. (Mittheil. Schweiz. Ent. Ges. iii. p. 204 (1870)). Black, dull, with the upper side clothed with whitish pubescence, with the breast at the sides more thickly clothed with white pubescence, base of antennæ and legs rufescent, the knees, apex of tibiæ and the tarsi being black; head strongly transverse, closely punctured; eyes large, moderately prominent; rostrum almost straight, not very long, strongly dilated and toothed at the base, and from thence cylindrical; the antennæ are inserted at its base; thorax slightly transverse, rounded and somewhat dilated at the sides, closely and deeply punctured; elytra elliptical, with regular rows of punctures, interstices flat, finely punctured.

Male with the eyes large, the elytra subparallel, and the first joint of the posterior tarsi produced into a tooth on the inner side; joints 3-7 of the funiculus transverse.

Female with the forehead broader, the elytra ovate, and joints 2-5 of the funiculus not transverse and more slender. L. 2-2½ mm.

Chattenden, Kent, not uncommon on *Genista tinctoria* (J. J. Walker and G. C. Champion); Sandown, Isle of Wight, one specimen (W. Holland); Ditchling, Sussex (Donisthorpe and Dollman). Mr. Holland first brought this insect before Mr. Champion's notice as a new British species, and the latter introduced it as such in the Ent. Mo. Mag. for March 1907, p. 52. Two males had been standing in his collection as *A. fuscirostre*, to which insect it is very closely allied; it is, however, smaller and less elongate, with the rostrum shorter and more strongly dentate at the base; the thorax is more rounded at the sides and more transverse; the elytra are not compressed at the sides; the fine clothing of the upper surface is closer and more uniform; and, according to Mr. Champion, the oblique streak at the shoulder is quite absent (this, however, does not seem to be always the case, although it is not marked); from *A. genista* the species may be known by the more dilated thorax and the stronger tooth at the base of the rostrum; it is almost the same size and shape as *A. semivittatum*, from which it may be distinguished by the more rounded thorax and the basal dentation of the more slender rostrum.

A. cantianum, Wagn. (Münch. k. Z. iii. 33). *A. brevicorne*, Schilsky (Küst. Die Käfer. Eur. xxxix. 31). Similar to *A. filirostre* in shape and colour, and very like that species, but with the antennæ shorter and stouter, the thorax much more finely punctured, the

anterior tibiæ straight, the middle tibiæ slender, and the posterior tibiæ curved at the base (straight in *A. filirostre*); body black, shining, apparently glabrous; antennæ black, stout, glabrous, inserted almost at the middle of the rostrum; thorax with the disc moderately thickly and strongly punctured; elytra long-oval, rounded at the sides, strongly arched, very sloping behind, striate-punctate, interstices almost level, twice as broad as the striæ, the suture itself raised (in *A. filirostre* it is level). L. 2 mm.

One specimen only is known, found by Commander Walker in the Chatham district, Kent (in 1872 or 1874, probably at Chattenden).

Mr. G. C. Champion gives the whole particulars with a much more detailed description in the Ent. Mo. Mag. for August, 1910, p. 188-9.

This species requires confirmation by additional examples; it seems distinct, but single abnormal specimens occur in several genera of Curculionidæ.

A. gyllenhali, Kirby (= *A. unicolor*, Kirby). As pointed out by Mr. Hereward Dollman (Ent. Rec. 1910, p. 96), who has carefully studied the subject and the types in the Kirby collection, *unicolor* must be sunk as a synonym of *gyllenhali*, these being sexes of the same species. The species standing in our collections under the name of *unicolor*, Kirby, must therefore be referred to the *platalea* of Germar.

OTIORRHYNCHUS, Germar.

O. auropunctatus, Gyll. (Gyll. Schön. Gen. Curc. ii. p. 564; Dej. Cat. 3 ed. p. 291). Black, rather shiny; head finely punctured, rostrum with a not strongly marked raised line behind; antennæ long and slender, pitchy; pronotum about as long as broad, with the sides evenly rounded, variably and not strongly granulate; elytra comparatively long, bluntly acuminate at apex, coarsely punctate-striate, and with the interstices rugose; in fresh specimens there are minute patches of whitish pubescence; legs long, ferruginous, with the femora darker. L. 7-8 mm.

Ireland: locally common on hedges from March to October. Derry, Louth, Carlingford, Newtown, Meath, Dublin, Wicklow, &c. Messrs. Johnson and Halbert (List of Beetles of Ireland, 791) say that the headquarters of this insect would seem to be in the counties of Dublin, Meath, and Louth, where it is locally abundant on mixed hedges of hawthorn, ash, and privet, as a rule not far from the coast. It has also occurred on beech and alder. It has occurred abroad in France (Auvergne) and the Pyrenees (v. Ent. Mo. Mag. xxxi. (2 Ser. vi.) 1895, 133).

The species is very distinct; it comes nearest to *O. maurus*, Gyll., from which it may be easily known by the longer legs and antennæ, the less distinct raised line on rostrum, the narrower and more evenly rounded thorax which is less strongly granulose, and the more elongate and less ovate elytra; from *O. atroapterus*, De G., it may be separated at once (apart from many other characters) by its much coarser sculpture.

This same character will also distinguish it from *O. tenebricosus*, Herbst., and it is, moreover, a very much smaller insect. As Mr. Champion remarks in his note on the insect, it seems an extraordinary thing that so conspicuous an insect has not before been noticed, especially as it seems to be far from uncommon. Mr. W. E. Sharp has discovered that the food plant of this species is *Carduus arvensis* (Ent. Mo. Mag. 1910, p. 33).

TRACHYPHLÆUS, Germar.

In the Ent. Mo. Mag. for February 1909, p. 33 (Vol. xlv., 2 Ser. xx.), Mr. Newbery points out further characters for separating *T. aristatus*, Gyll., and *T. olivieri*, Bedel (= *squamulatus*, Ol.).

- I. Scape of antennæ nearly straight, gradually dilated to apex; eyes larger and less prominent **T. ARISTATUS**, Gyll.
- II. Scape of antennæ angled outwards about the middle, and rather strongly dilated from the angle to apex; eyes smaller and more prominent **T. OLIVIERI**, Bedel (= *squamulatus*, Ol.) *nec* Herbst.

Bedel (Faun. Col. Bass. Seine, vi. 41) says that he substitutes the name of *olivieri* for *squamulatus*, because Olivier refers to *Curc. squamulatus*, Herbst., which is plainly a different species and is probably synonymous with *T. scabriculus*, L.

BARYPEITHES, Duval.*

B. pyrenæus, Seidlitz (Die Otiiorhynchiden, p. 73 (1868)) The author of this species considered it to be only a variety of *B. aranei formis*, Schrank. = *brunnipes*, Ol., but it is a good species, and may easily be separated by its more elongate shape, and different punctuation and pubescence. Mr. Champion (Ent. Mo. Mag. xxxiii. (2 Ser. viii.) 1897, 134) points out the differences of the two species as follows :

Rostrum in the male strongly, in the female feebly, sinuated at the apex; thorax with very coarse, deep, scattered punctures; elytra convex in the male, a little flattened on the disc in the female, coarsely seriate-punctate, the punctures not very closely placed, becoming much finer and shallower towards the apex, and placed in shallow

* For *Barypeithes duplicatus*, sp. n. Keys, and further note on the genus see Addenda at the end of this volume and Ent. Mo. Mag. xlvii. (2 Ser. xxii.) 1911, 128, published after this Supplement was in the press.

striae, which are sometimes obsolete, the interstices flat or feebly convex; body glabrous or very finely and sparsely pubescent. L. 3-3½ mm.

B. ARANEIFORMIS, *Schrank.*
(*brunnipes*, Ol.)

Rostrum feebly dilated at the apex in both sexes, and also more parallel; thorax somewhat closely and coarsely punctured, a narrow smooth space down the middle excepted; elytra convex in both sexes, very coarsely and deeply punctate-striate, the punctures closely placed and the striae deep to the apex, the interstices more or less convex; body distinctly pubescent, the elytral interstices each with a regular series of decumbent hairs.

L. 3-3½ mm. B. PYRENEUS, *Seidl.*

E. pellucidus, Boh., may be distinguished from both these species by its thicker and longer pubescence, and, as a rule, by its colour, apart from other differences. *E. pyreneus* has been taken by Mr. J. H. Keys in the Plymouth district (Radford, Lipstone Park, Bovisand, and Whitsand Bay) at roots of grass, in faggots, under bark, and by beating hawthorn. It originally occurred in the Pyrenees, and has also been taken in the woods of Calvados, France; it is probably overlooked owing to its superficial likeness to *E. araneiformis*.

Mr. Halbert records the capture of a specimen by Mr. R. Gordon, taken amongst grass on the banks of the River Tolka, near Finglas, Ireland, in September 1908 (Irish Nat. 1910, p. 32).

LIOSOMA, Stephens.

L. troglodytes, Rye, is only a variety of *L. pyreneum*, Bris., differing in having the thorax more regularly punctured, the upper surface less shining (the thorax appearing duller) and the general shape a little less oblong. The small size is of no importance, as *L. pyreneum* varies greatly in this respect. There is no doubt in the matter as M. Bedel at the request of Mr. Champion compared a specimen of *L. troglodytes* with the type of *L. pyreneum*.

BAGOUS, Schönherr.

In the Entomologist's Record for 1902, vol. xiv. p. 149, Mr. Newbery publishes a valuable revision of the British species of this difficult genus, with notes on localities, &c.; he certainly has succeeded in clearing up several obscure points, and some of these require notice. He has wrongly left out *B. lutosus*, Gyll.

B. petro, Herbst. (Käf. vi. 366). This is certainly a separate genus; the formation of the club of the antennæ puts this beyond question, and the name *Helmidomorphus* (*Elmidomorphus*) of Cussac (Ann. Soc. Ent. Fr. 1851, 366) must be adopted for it; Mr. Newbery speaks of the first British specimen as having been taken by myself some twenty years ago; the name, however, has been in our lists for a much longer time, but it stood for another insect. In the catalogue of Gemminger and Harold it is regarded as synonymous with *limosus*, Gyll., and it is to the latter insect that all the localities mentioned in vol. v. p. 288 of this work must be referred, with the exception of Askham Bog; four specimens only have been taken since I captured mine, in company with Archdeacon Hey, on August 6, 1880.

B. binodulus, Herbst. This is an extremely rare species and has been confused with *B. nodulosus*; I am inclined to agree with Mr. Newbery that the Sandwich and Arundel localities given by me (Brit. Col. v. 288) must be referred to the latter insect. I expressed the opinion myself that there was probably a mistake with regard to the Arundel specimens. *B. nodulosus* has since been taken at Pevensey Bay (Bennett) and Beccles, Suffolk (Janson and Piffard).

B. limosus, Gyll. = *petrosus*, W.C. This insect has caused the greatest confusion in our collections, partly through one of its names being confounded with *petro*, Herbst. It is allied to *B. frit*, but may be distinguished by the characters of the thorax and the short tibial spur.

B. brevis, Gyll., has affinities with *B. limosus*, *B. frit*, and *B. claudicans*; from the former it may be known by the almost impunctate striæ, and from the two latter by the broad, shallow central furrow of the thorax, and by its sides being strongly rounded at apex.

B. tempestivus, Herbst, is the most elongate of our species except *B. cylindrus*.

B. frit, Herbst, and **B. claudicans**, Boh., are very closely allied and by some authors have apparently been considered identical; the latter is omitted in the preceding volume of this work (Brit. Col. v. 291), and must be inserted between *B. frit* and *B. diglyptus*, as it must be regarded as a separate species; it is the *B. frit* of Brisout, but not of Herbst. Mr. Newbery distinguishes the two as follows:

- I. Three first joints of the posterior tarsi elongate and sub-equal; elytra with finely punctured striæ,* and (in a fresh state) a whitish punctiform spot in the third interstice behind middle; hind tibiæ long, strongly and regularly curved at apex, with very long apical spur *B. FRIT*, *Herbst*.

* Mr. Newbery, however (*l.c.* p. 152), separates *B. limosus* from its near allies on the ground that the elytral striæ are strongly punctured, whereas in the others the striæ are "feebly or not at all punctured except in rare forms of *frit*."

II. Second joint of posterior tarsi distinctly shorter than first; elytra with simple striæ and variable markings, which usually take the form of transverse spots, but are sometimes altogether wanting; hind tibiæ shorter and thicker, less regularly curved, with only a moderate apical spur

. B. CLAUDICANS, Boh.

B. lutulosus, Gyll., and **B. diglyptus**, Boh., form a small group by themselves, distinguished by the short tarsi. They are both rare, the latter extremely so, having only occurred at Burton-on-Trent (Harris), Gipping near Ipswich (Morley), and Sutton Broad (Donisthorpe).

B. lutosus, Gyll. This species is omitted by Mr. Newbery, who says that the large form of *B. glabrirostris* has been doing duty for it in our collections. Mr. Edwards, however (Ent. Mo. Mag. xxxviii. (2 Ser. xiii.) 1902, 240), reinstates the species, and says that his single specimen (taken on Wretham Heath, Norfolk) agrees not only with the descriptions, but with authentic specimens examined by him, except that the sutural stria is not so conspicuously deeper than the remainder. He has since taken further specimens.

The characters given by Bedel (Faune Col. Bassin de la Seine, vi. p. 106) for *lutosus*, Gyll., and *glabrirostris*, Herbst, are as follows :

Hind body attenuated in a rather long beak.

Sculpture finer; granules of the elytra more numerous, usually 4×4 upon the base of the first interstice; 3rd interstice not raised, with a yellowish, hardly defined spot

B. LUTOSUS, Gyll.

Hind body somewhat abruptly declivous behind. Sculpture coarser; granules of the elytra less numerous, usually 3×3 upon the base of the first interstice; 3rd interstice with a whitish well-defined spot. Tarsi sometimes black (var.

nigritarsis, Thoms.), sometimes red B. GLABRIROSTRIS, Herbst.
(*lutulentus*, Gyll.).

B. glabrirostris, Herbst. This is a very variable species, both as regards size, markings, and colour of legs; it is easily separated from all our indigenous species (except *B. ulismates*) by its broad bilobed third tarsal joint, and from the last-named it may be known by the characters of the prosternum and funiculus, and by the absence of distinct pubescence on the upper surface of the tarsi. The var. *nigrirostris*, Thoms., may possibly be a distinct species; it has the tarsi and antennæ piceous or black and the sculpture coarser; there is also a larger form which Mr. Newbery considers to be the *B. lutosus* of our collections, and which may be called var. *major* (v. Champion, Ent.

Mo. Mag. xxxiv. (2 Ser. ix.) 1898, 52-54); the forms may be thus separated :

I. Tarsi red.

i. Size smaller ; 3rd joint of posterior tarsi as broad as long ; interstices of elytra narrower and alternate ones more raised ; tarsi shorter B. GLABRIROSTRIS, *Herbst.*
(type form).

ii. Size larger ; 3rd joint of posterior tarsi elongate ; interstices of elytra broader ; alternate ones scarcely raised ; tarsi longer B. GLABRIROSTRIS,
(*var. major*, n. var.).

II. Tarsi piceous or black ; sculpture coarser B. GLABRIROSTRIS,
(*var. nigratarsis*, Thoms.)

The *var. major* is rare : Merton (one specimen), Power ; Sandown (one specimen), Champion ; Pevensy and Rye (Bennett) ; the ordinary form and the *var. nigratarsis* are widely distributed, and the former is sometimes abundant.

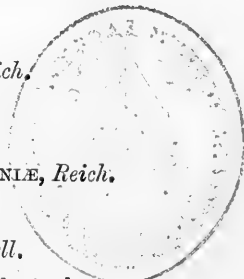
Mr. Heasler has taken three specimens of a new variety named *var. heasleri* by Mr. Newbery, which evidently belong to *B. tempestisus*, by reason of its form, &c., but which he places in the same section as *B. glabrirostris* in his table, because it has the third joint of the tarsi distinctly broader than the second, although scarcely bilobed, whereas in the type form the tarsi have the third joint not or very little broader than the second ; in the type form, moreover, the scape is inserted nearer to the apex of the rostrum, whereas in the variety it is inserted near the middle.

SMICRONYX, Schönherr.

In the Ent. Mo. Mag. for June 1910, 132-135, Mr. James Edwards discusses the genus *Smicronyx* ; he says we have three species which may be distinguished as follows :

I. Claws unequal ; the inner one on the front tarsi, and the outer one on the middle and hind tarsi the smaller S. CÆCUS, *Reich.*

II. Claws equal.
i. Length of the elytra visually twice as great as their width at the base ; thorax without any appearance of tuberculation S. JUNGERMANNLE, *Reich.*
ii. Length of the elytra visually one and a half times as great as their width at the base ; thorax apparently tuberculate S. REICHI, *Gyll.*



The *S. pygmaeus* (*Pissodes* ?) of Curtis appears originally to have been a synonym of *S. cæcus* and not of *S. reichi*, Gyll., as given in the last European Catalogue. *S. cicur*, Gyll., is synonymous with

S. jungermanniæ, Reich. The *S. pygmaeus* of British collections must be referred to the latter insects.

There has been and still is considerable confusion in collections as regards this genus, but Mr. Edwards has certainly unravelled several of the difficulties regarding our species; we therefore give some of his remarks on them:

S. cæcus, Reich. "This species may be recognised in any condition by its unequal claws. I have seen no specimen in which the scaling of the elytra was complete, but several had more or less extensive patches of undisturbed scales, from which it is evident that the normal condition is for each interstice to have a row of distant fine hair-scales down the middle, and an irregular double series of elongate-oval white scales; the latter are twice as long as wide, truncate at the apex, and separated from each other in a lateral direction by a space equal to the width of one scale."

Specimens of this insect have been described from Kent and Folkestone.

S. jungermanniæ, Reich. "In form this species resembles the foregoing so closely that denuded examples are only to be separated by their equal claws. In fresh specimens the elytra are densely covered with broad, subcontiguous, pale brown scales, with a sprinkling of irregular patches of white ones, and each interstice has a row of distant decumbent hair-scales down the middle. The appressed scales are not more than one and a half times as long as wide."

S. reichi, Gyll. "This is easily distinguished from our other two species by its larger size, and the greater bulk and width of the body behind the thorax, as well as by the peculiar sculpture of the latter. The character of the scaling of the elytra does not differ appreciably from that of *S. jungermanniæ*."

This latter species Mr. Edwards identifies with my var. *championis*, and records specimens from Caterham and Folkestone. I agree with most of what he says on our British species, but *S. jungermanniæ* appears to me to be smaller and narrower than *S. cæcus*, and I think that more specimens of *S. reichi* must be examined before the var. *championis* is discarded.

TYCHIUS, Germar.

Mr. James Edwards has worked out the British species of the genus *Tychius*, concerning which there has been considerable confusion, and has published a valuable paper in the Ent. Mo. Mag. xlv. (2 Ser. xxi. 1910, 80-83), in which he adds to the British list a species not included in the latest British catalogues or in this work (v. 296-297), viz., *T. hematopus*, Gyll. (= *junceus*, Boh., nec Brit. Cat.).

Mr. Edwards distinguishes the species as follows:

- I. Elytra with the suture and two large spots on each, one at the shoulder and

- one behind the middle, covered with white scales T. QUINQUEPUNCTATUS, *L.*
- II. Elytra without a white humeral spot.
- i. Elytra with some of the interstices, other than the first, paler than the rest.
1. Sides of thorax with a pale stripe.
- A. Greatest width of the thorax rather more than half that of the elytra T. VENUSTUS, *F.*
- B. Greatest width of the thorax subequal to that of the elytra T. SCHNEIDERI, *Herbst.*
2. Sides of thorax without a pale stripe.
- A. Upper side brownish-grey, the paler colour of the alternate interstices, especially the 5th and 7th, very conspicuous; sutural stripe yellowish-white by reason that the oblong pure white scales are confined to the inner half of the first interstice, the outer half being covered with yellowish linear ones similar to those on the other interstices; base of elytra distinctly wider than base of thorax, shoulders somewhat irregular T. POLYLINEATUS, *Germ.*
- B. Upper side blue-grey (plumbeous), the paler colour of the alternate interstices inconspicuous; sutural stripe very white by reason that the oblong pure white scales occupy the whole width of the first interstice; base of elytra but little wider than base of thorax, shoulders rounded off T. LINEATULUS, *Steph.*
- ii. Elytra with the suture sometimes whitish, but without any other pale stripe.
1. Elytra with a crust of broad scales which practically, if not absolutely, obscure the course of the striæ; hind femora with a distinct sharp tooth T. SQUAMULATUS, *Gyll.*
(? *flavicollis*, *Steph.*)
2. Elytra clothed with elongate scales; hind femora simple.
- A. Antennæ entirely pale.
- a. Punctures of the elytral striæ

with extremely fine hair-like scales about half as wide as those on the interstices, the course of the striæ, therefore, more evident. Elytra apparently twice as long as wide, parallel-sided in the basal half. Femora usually dark.

a*. Rostrum strongly subulate, especially in the lateral aspect. Male with a distinct sharp tooth near the basal third of the inner edge of the front tibiæ

T. MELILOTI, *Steph.*

b*. Rostrum not evidently subulate. Male with the anterior tibiæ bisinuate on the inner edge, but without a tooth . . .

T. TOMENTOSUS, *Herbst.*

b. The scales arising from the punctures in the elytral striæ not evidently different from the remainder, the course of the striæ, therefore, barely indicated. Elytra appearing less than twice as long as wide.

a*. Scales of the elytral interstices elongate, but nearly twice as wide as in *T. junceus*, Reiche, the surface, therefore, more closely covered. Male with the anterior femora simple, the anterior tibiæ curved, and their inner edge bisinuate. Female with the greatest width of the thorax distinctly less than that of the elytra. L. 2-2½ mm.

T. HÆMATOPUS, *Gyll.*

b*. Scales of the elytral interstices finer and more hair-like than in *T. hæmatopus*, the surface, therefore, less closely covered. Male with the anterior femora furnished with a fringe of hair-like scales on the underside from the base nearly to the apex, anterior tibiæ strongly curved, the inner edge excavate in the apical two-thirds. Female with the greatest width of the trans-

versely sub-orbicular thorax very nearly equal to that of the elytra

- B. Antennæ blackish, with the scape and one or two joints of the funiculus pale. Femora black. Anterior tibiæ in the male with a distinct tooth near the middle of the inner edge.
- a. Tibiæ rust-red, black at the base. Rostrum entirely black. In size, form, and general appearance extremely like *Miccotrogus picirostris*
- b. Tibiæ entirely rust-red. About half the bulk of medium-sized specimens of *M. picirostris*
- T. JUNCEUS, *Reiche*.
- T. TIBIALIS, *Boh.*
- T. PUSILLUS, *Germ.*
(*pygmæus*, *Bris.*)

T. hæmatopus, Gyll. (*Ins. Suec.* 3, 409). Closely allied to *T. junceus*, *Reich.* (*nec Boh.*), but a little larger, narrower in proportion to its length and more sharply pointed at either end: it may be known by having the scales of the elytral interstices elongate, but much wider than in *T. junceus*, so that the surface appears more closely covered; it can also be distinguished by the male and female characters, as given in the above table. L. 2-2½ mm.

Hastings (Bennett); Tilgate Forest, Shepherd's Well, Sandown and Luccombe, Isle of Wight (Donisthorpe). Mr. Edwards believes that it will prove to be common in South-Eastern England.

T. polylineatus, *Germ.* This species, which I only included as doubtful in brackets (*Vol. v. p. 299*), must be fully admitted to our lists, six or seven specimens having recently been taken by Mr. Hereward Dolman at Ditchling, *Sussex*; it is very distinct from *T. lineatulus* both in shape and colour. I have felt some doubt as to whether it is really *Germar's* insect or a new species, but the determination is probably correct.

There has been great confusion with regard to the synonymy of the species of this genus, and the question cannot yet be said to be settled; several of the species are very much alike, but this may be easily determined by the use of a compound microscope, the shape of the scales being one of the best characteristics in the species that most closely resemble one another.

MIARUS, Stephens.

M. micros, *Germ.* (*Mag. iv. 309*). In *Brit. Col. v. 306*, I have expressed a doubt as to *M. micros* being indigenous: it appears, however, to be quite evident that we do possess the insect known on the Continent as that species. It has been taken at Caterham and

Mickleham (Champion); Shiere (most probably this was the locality) (Capron); Box Hill (W. West) on *Echium vulgare*; and Mickleham (Billings). It appears, however, to be doubtful whether we have not two or more species under the name *micros*. Mr. E. A. Butler, who captured two of the uncertain examples at Tintagel, Cornwall, goes fully into the question (Ent. Mo. Mag. xlv. (2 Ser. xx.) 1909, 99), but the matter is by no means settled; the Tintagel specimens have the pubescence raised, whereas in the true *M. micros* it is depressed; the specimens referred to (Brit. Col. v. 307) as taken by Wollaston at Whitsand Bay, one of which is in the Cambridge Museum, appear to be different from either Champion's or Butler's.

Mr. Butler gives the following table for separating the species: it differs from mine (*L.c.* p. 306) in that no account is taken of the character of the single or double rows of pubescence between the striae, which appears not to be always a constant character.

- A. Posterior femora toothed.
 - i. Form short and broad; pubescence coarse and raised M. GRAMINIS, *Gyll.*
 - ii. Form narrower and more elongate; pubescence less coarse M. PLANTARUM, *Germ.*
- B. Posterior femora not toothed.
 - i. Size larger; pubescence very short; last segment of male deeply excavate, and with a strong tooth on each side M. CAMPANULÆ, *L.*
 - ii. Size smaller; pubescence longer; last ventral segment of male simple M. MICROS, *Germ.*

ANTHONOMUS, Germar.

A. rufus, Schön. (Gen. Curc. iii. p. 347). Des Loges (Ann. Soc. Ent. Fr. viii. 1894, p. 436). This species belongs to the *ulmi-pedicularius* group, which has caused much trouble both to authors and collectors, and which can hardly yet be regarded as finally settled. From *A. ulmi*, De G., and *A. chevrolati*, Desb., it may be known by its comparatively simple anterior tibiae; in the last-named species these are very deeply sinuate on their interior margin towards the base: from *A. pedicularius*, L., it is easily separated by the fact that the posterior tibiae are without teeth. The variety *A. rosinae*, Des Gozis, apart from other differences, is a much smaller insect. L. 3-3 $\frac{3}{4}$ mm.

Introduced as British by Mr. Donisthorpe (Ent. Record, 1900, p. 159). Fairlight, near Hastings, on blackthorn (Bennett); also taken in the same locality some years afterwards, hibernating under the bark of old ivy, by Mr. Bennett, and Professor Beare (*v. Ent. Record*, xii. 159).

There has been considerable confusion with regard to this genus, and one or two points still want further working out.

A. rosinae, Des Gozis, is only a small variety of *A. ulmi*, Desbr., for which the name of *A. inversus*, Bedel, has now been substituted.

A. comari, Crotch, which is the same as *A. brunneipennis*, Curt., is a small variety of *A. rubi*, Herbst.

A. conspersus, Desbr., is regarded in the Catalogue of Heyden, Reitter, and Weise (1906) as a variety of *A. pedicularius*, L. I have before (Brit. Col. v. 318) said that it might prove to be a variety of one of the allied species, and this turns out to be correct; it is a dark form.

Mr. E. A. Newbery is of opinion that *A. britannus*, Desbr., which is apparently synonymous with *A. pubescens*, Payk., must be regarded as a good species. He writes to me that he has seen two out of the three specimens taken (*vide* Brit. Col. v. 320) and it is impossible to take them for any species but *A. pedicularius*; the extremely small tooth on the front femora, the short red rostrum, and other characters seem, however, sufficient to give specific value to the insect.

CIONUS, Clairville.

C. longicollis, Ch. Brisout (Grenier. Cat. Col. de France, p. 114, 1863). Closely allied to *C. thapsus*, Fabr., but more elongate, with the rostrum thicker, and the thorax longer, with the sides less oblique: the sutural spots on the elytra are also larger. The general form, moreover, is larger and more robust, with stouter legs and rostrum, the latter as in *C. thapsi* being roughened and pubescent nearly to the apex in both sexes; the latter character separates both species from *C. hortulanus*, which has the apical portion of the rostrum smooth and shining in the female (*v. G. C. Champion, Ent. Mo. Mag. xxx. (2 Ser. v.) 1894, 100.* L. 4-5 mm.

Portsmouth Hill, Portsea (Moncreaff), on *Verbascum thapsus*; Harewood Forest (Tomlin).

CEUTHORRHYNCHUS, Duval.

C. timidus, Weise (Deutsch. Ent. Zeit. 1883, p. 325). Mr. Champion (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 2) says that Continental authorities are unable to recognise *C. chalybeus* with any certainty, but as Germar expressly states that the femora are "unarmed" it is evident that the species known under this name in British collections has been incorrectly identified. Our insect is, in fact, the *C. timidus* of Weise, originally described from Eastern Europe, but not known to be much more widely distributed. Mr. Champion has taken it in abundance on *Sisymbrium officinale* at Plumstead, Dartford, and elsewhere, and it has a wide range in Britain, reaching as far as the Moray district of Scotland.

The description of *C. chalybeus* in a former volume (Brit. Col. v. 348) must now be applied to *C. timidus*.

C. moguntiacus, Schultze (Deutsch. Ent. Zeit. 1895, p. 420). This is the insect alluded to by me (Brit. Col. v. 349) as *C. viridipennis*, Bris., and as recorded by Mr. Champion from Whitstable and from

Caterham (on *Mercurialis perennis*): it has also been recorded from Hammersmith and Llangollen; Wytham Park (Walker). Mr. Champion has recently (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 2) identified it with *C. moguntiacus*, Schultze. It appears to be closely allied to *C. timidus*, Weise, but it is smaller, narrower, and less shining than that species, and has the head and thorax a little less coarsely and more densely punctured, and (when the insect is in fresh condition) more pubescent. The two insects, however, may eventually prove to be only forms of one species. *C. moguntiacus* is common on Crucifereæ in various parts of Germany, especially on *Diplotaxis tenuifolia*. Mr. Champion has specimens from Mickleham and Guildford, as well as from the localities above mentioned.

C. parvulus, Bris. (L'Abeille, v. p. 441). A small species which superficially bears a very strong resemblance to small *C. floralis*, Payk., from which it may be known by its average smaller size, somewhat narrower form, longer antennæ, 7-jointed funiculus, and the broader, whiter, and more conspicuous scales of the interstices of the elytra; the thorax, also, is longer proportionately; colour black; form somewhat elongate-oval; head rugose, eyes not prominent, rostrum rather long, antennæ long inserted in front of middle; thorax about as long as broad, constricted before apex, very coarsely sculptured, together with the head furnished with scattered coarse hairs; elytra with the shoulders scarcely marked, about as broad at base as thorax, with a conspicuous band of white scales at the suture, and coarse scales on the interstices; antennæ and legs dark. L. $1\frac{1}{2}$ mm.

Taken in numbers by Mr. Philip de la Garde, in June 1908, on *Lepidium heterophyllum*, Benth. (= *L. smithii*, Hooker), near Braunton, Devon, and introduced as British by Mr. Newbery (Ent. Mo. Mag. xlv. (2 Ser. xix.) 1908, 195). I am much indebted to Mr. de la Garde for a small series of this interesting addition to our lists; it is probably common in many localities in the south, but has most likely been passed over as *C. floralis*. From *C. suturalis* (which may, with reason, however, be erased from our catalogues), it is easily known by the fact that the light sutural band of scales is not continued on the thorax as it is in the last-named species.

C. querceti, Gyll. (Ins. Suec. iii. p. 149; Thoms. Skand. Col. vii. p. 170). Short ovate, slightly convex, with greyish pubescence, upper side somewhat dull, with the base of the suture and the underside covered with thick white scales; antennæ, anterior margin of thorax, legs, and apex of elytra clear red; thorax strongly and rather closely punctured, with the apical margin broadly emarginate; elytra slightly truncate at apex. Male with the posterior tibiæ armed with a hooked tooth; last ventral segment with an impressed fovea in the centre. Length about 2 mm.

Horning Fen, Norfolk: two specimens in Mr. E. Saunders' collection taken about thirty years ago by the late Mr. J. A. Brewer, and others taken more recently in the same locality by Mr. Edwards and

Mr. Elliman. Mr. Elliman's examples (four in number) were taken upon a solitary cruciferous plant, probably *Raphanus raphanistrum*. It has recently been found in large numbers at Horning Ferry.

C. querceti is closely allied to *Ceuthorrhynchus* (*Ceuthorrhynchidius*) *terminatus*, Herbst., which occurs in many dry localities under *Daucus*, but it may easily be distinguished by its smaller size, the 7-jointed funiculus, the unarmed femora, and the fact that the patch of white scales on the elytra is narrower. In fresh individuals the elytra have narrow patches of white scales on the surface, and the thorax has the sides and a narrow space along the middle also clothed with white scales. The rufous patch at apex is variable, and sometimes extends over a great part of the elytra (v. G. C. Champion, Ent. Mo. Mag. xxxv. (2 Ser. x.) 1899, 142). The species has been recorded on the Continent from Sweden, Russia, Germany, and Switzerland, but has not yet been found in France.

CEUTHORRHYNCHIDIUS, Duval.

C. nigroterminatus, Woll., is not a synonym of *C. mixtus*; it is distinct and not even a European, but a Madeiran insect. *C. crotchii* is synonymous with *C. nigroterminatus*, and is not a variety of *C. quercicolor*, Payk., as has been considered to be the case.

C. barnevillei, Gren. (Bull. Soc. Ent. Franc. 1866, 65). This name must be substituted for *C. chevrolati*, Bris., the latter being, as Mr. Champion points out, a "*nomen nudum*."

It is worthy of note that in the European Catalogue of Heyden, Reitter, and Weise (1906) only five British species are placed under *Ceuthorrhynchidius*, viz., *horridus*, Panz., *troglydytes*, F., *barnevillei*, Gren., *rufulus*, Duft (= *frontalis*, Bris.), and *dawsoni*, Bris.: all the rest appear under *Ceuthorrhynchus* except *C. ericæ*, Gyll., which is placed with the single other European species, *C. ferrugatus*, Gyll., under the genus *Micrelus*, Thomson.

The number of joints in the funiculus is not now considered as a generic character, and rightly so, for it has given rise to several anomalies (e.g. the separation of *Ceuthorrhynchus marginatus*, Payk. and *Ceuthorrhynchidius distinctus*, Bris. which are apparently one species (v. Brit. Col. v. p. 364)), and has caused much confusion. The species of *Ceuthorrhynchidius* proper have, indeed, the funiculus 6-jointed, but their tarsal claws are dentate on the inner side of the base, and the interstices of the elytra are furnished with a more or less distinct row of upright bristles, which gives them a facies quite distinct from the other species which are now included under the genus *Ceuthorrhynchus*.

Poophagus nasturtii, Germ., is now referred by all recent Continental authorities to the genus *Ceuthorrhynchus*. *P. sisymbrii*, F., is retained with three other European species under *Poophagus*, Schönherr, in the last European Catalogue (1906).

PHYTOBIUS, Schmidt.

P. muricatus, Ch. Bris. (Gren. Cat. Col. de France, p. 187). Mr. Champion (Ent. Mo. Mag. xxxv. (2 Ser. x.) 1899, 143) says that this is probably the insect doing duty in our British collections for *P. quadrinodosus*, Gyll., whereas the name *quadrinodosus* should be applied to the species known to us as *P. denticollis*, Gyll. The latter has been included under *Rhinoncus* by Bedel, myself, and others, but wrongly, as it has the funiculus of the antennæ 6- (not 7-) jointed. *P. muricatus* has the elytra much broader than in *P. quadrinodosus*, the thorax with the sides more oblique, the elytra much broader in proportion to the thorax, with the shoulders much more prominent and the third to the ninth interstices muricate; in *P. quadrinodosus* the shoulders are rounded off, and the base of the elytra is almost as broad as the base of the thorax, and the fifth to the seventh interstices only are muricate.

The synonymy of the two species will therefore stand as follows, both being included under the genus *Phytobius*:

- P. muricatus*, Ch. Bris. (1867).
granatus, Thoms. (1865) (*nec* Gyll. 1836).
quadrinodosus, Sharp and Fowler.
P. quadrinodosus, Gyll. (1813).
denticollis, Gyll. (1837).

LIMNOBARIS, Bedel.

L. pilistriata, Steph. (Ill. Brit. iv. p. 10). Mr. Champion points out (Ent. Mo. Mag. xli. (2 Ser. xvi.) 1905, 224) that J. Sahlberg (Acta. Soc. pro Fauna et Flora Fennica xix. 3, pp. 22, 23 (1900)) separates *Baris T.-album* into two species, *B. T.-album*, L., and *B. martulus*, Sahlb. The *B. T.-album* of Sahlberg appears to be the *B. pilistriata* of Stephens, and, as the Linnean description applies better to *B. T.-album* than to *B. pilistriata*, Stephens's name must stand, if the two forms are to be regarded as separate. I feel considerable doubt as to their distinctness, as Stephens himself (Manual, p. 216) subsequently treated his insect as a "fine form" of *B. T.-album*.

The following synonymy and distinctive characters are given by Champion (*l.c.*):

- I. Larger and more elongate, the elytral interstices irregularly uniseriate-punctate, especially towards the suture, the punctures each bearing a rather long, coarse, decumbent, whitish hair

B. PILISTRATA, Steph.
 (= *T.-ALBUM*, Sahlb. *nec* Linn.)

II. Smaller and more glabrous above, the prothorax a little more transverse, the elytral interstices regularly uniseriate-punctate, the punctures each bearing a short, fine, decumbent, whitish hair . . .

B. T.-ALBUM, L.

(= ATRIPLICIS, Steph.,
martulus, Sahlb.)

B. pilistriata has been taken in various southern localities, Sheppey, Faversham, Arundel, Woking, Wicken, &c. According to Bedel, both forms are sometimes found together in France, but in Algeria only *B. pilistriata* occurs. All the Irish records for *B. T.-album* appear to refer to *B. pilistriata* (Halbert), Irish Nat. 1910, p. 33.

SCOLYTIDÆ.

HYPOTHENEMUS, Westwood.

This genus, formed by Westwood to include the very small Scolytid beetle, *Hypothenus eruditus*, was described and figured by him as having a three-jointed funiculus to the antennæ. Mr. W. J. H. Blandford, who has recorded the beetle from Central America, published in 1904 that there are four joints in the funiculus. Mr. E. A. Newbery thus describes the antennæ as viewed from the upper side (Ent. Mo. Mag. xlv. (2 Ser. xxi.), 1910, 83): "First joint (scape) elongate. Funiculus with four joints, of which the first is cup-shaped, broadest at the apex and rather broader than the scape, very little longer than broad: the three following joints very minute, two rather transverse, three and four increasing in width and decreasing in length, the fourth being a flat plate adpressed to the club. The club is large, flattened, and 4-jointed, with the sutures curved on the upper side, but nearly straight beneath.

Mr. O. E. Janson has found the insect in the "Brazil nut" of commerce, and in the cover of a book from Java. Dr. Sharp has bred it from the cover of a book from Singapore. The insect is exotic, and ought not to be included in our lists.

PITYOGENES, Bedel.

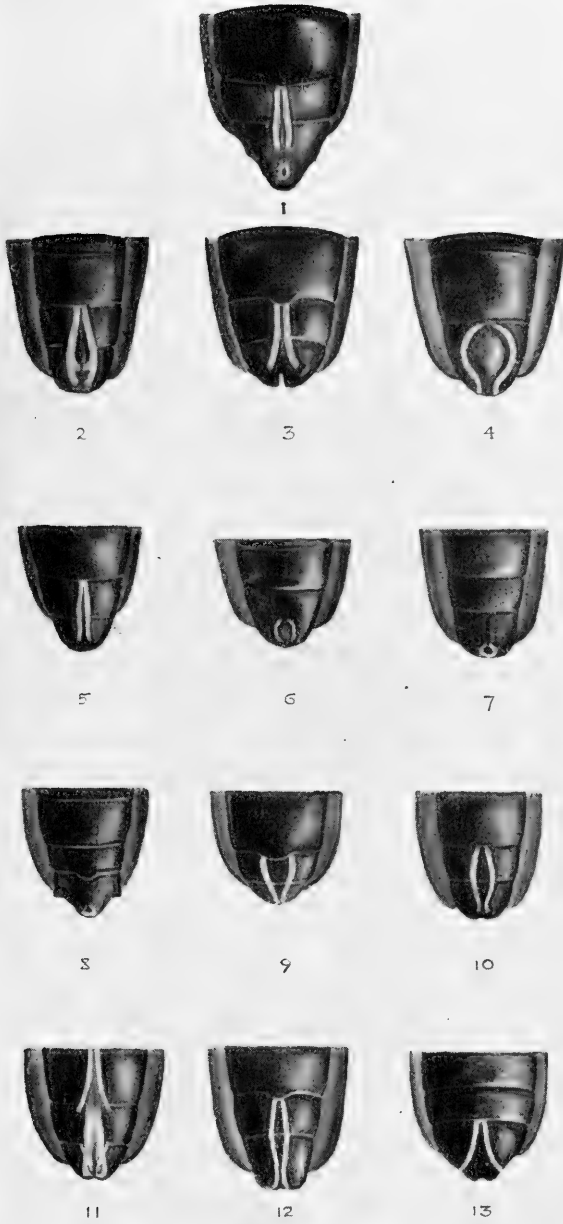
P. trepanatus, Noerdl. (Stett. Ent. Zeit., 1848, 239); *elongatus*, Löwendal (Tom. Danm. 1889, 61). Closely allied to *P. chalcographus*, L., and resembling that species in having three teeth of about the same size on each side of the apical impression of the elytra, placed at an equal distance apart. It is, however, a larger insect, and the elytra are longer in proportion to the thorax, and are much more distinctly punctured, the punctures being arranged in well-marked regular rows

to the apex. From *P. bidentatus*, which it equals in size, it may be distinguished by the characters of the apex of the elytra, and by having the thorax much more diffusely and less strongly punctured behind. L. 2-2 $\frac{1}{8}$ mm.

Blair Athol, Perthshire. One specimen swept from beneath fir trees, September 3, 1909, by Dr. Joy (Ent. Mo. Mag. xlv. (2 Ser. xx.), 1909, 269).

SUPT. PLATE A

- FIG. 1. Male appendages of *Anaspis hudsoni*, Donisthorpe.
,, 2. ,, ,, ,, *Anaspis frontalis*, L.
,, 3. ,, ,, ,, *Anaspis septentrionalis*, Champion.
,, 4. ,, ,, ,, *Anaspis garneysi*, Fowler.
,, 5. ,, ,, ,, *Anaspis rufilabris*, Gyll.
,, 6. ,, ,, ,, *Anaspis pulicaria*, Costa.
,, 7. ,, ,, ,, *Anaspis melanostoma*, Costa.
,, 8. ,, ,, ,, *Anaspis geoffroyi*, Müll.
,, 9. ,, ,, ,, *Anaspis ruficollis*, F.
,, 10. ,, ,, ,, *Anaspis costæ*, Emery.
,, 11. ,, ,, ,, *Anaspis subtestacea*, Steph.
,, 12. ,, ,, ,, *Anaspis masculata*, Fourc.
,, 13. ,, ,, ,, *Anaspis latipalpis*, Schil.



ADDITIONAL LOCALITIES, NOTES, ETC.

CICINDELIDÆ.

Cicindelidæ. Herr Bouwman and Herr Adlerz have shown that *Methoca ichneumonoides*, Latr., is parasitic on the larva of *Cicindela campestris*, and *sylvatica* (Tijd. vor. Entom., 1909, p. 284). It is most probably also parasitic on *C. germanica*, as I have taken it at Blackgang Chine, on the ground where the beetle is abundant.

(In the Trans. Ent. Soc. Lond., 1907, pp. 7-75, and First Supplement l.c. 1911, pp. 452-496, will be found two very useful papers, by Mr. Claude Morley, on the Hymenopterous Parasites of Coleoptera.)

The var. *funeris* of *C. campestris* was taken by Dr. Chapman at Glen Finnart (see Ent. Mo. Mag., 1867, p. 251).

Cicindela sylvatica, L. Oxshott (Donisthorpe); Manton Common, Lincolnshire (Dawson).

Cicindela maritima, Dej. Carnarvon Bay and Harlech (W. E. Sharp).

Cicindela germanica, L. Swanage (E. A. Waterhouse); Ryde, I. of W. (Rudd, 1837); Lyme Regis (Walker, 1834, and still found there); Seaton (de la Garde).

CARABIDÆ.

Cychrus rostratus, L. Scotland, not uncommon in the Highlands (Beare); Isle of Eigg (Donisthorpe). I have found both the larva and the perfect insect feeding on snails.

According to Mr. Bagnall it seems as if it is only the female sex of this beetle that stridulates (see Ent. Rec., 1906, p. 73). (Mr. C. J. Gahan has written a very interesting paper on the Stridulating Organs in Coleoptera, in the Trans. Ent. Soc. Lond. for 1900, pp. 433-452.)

Carabus intricatus, L. Recaptured by Mr. Keys near Plymouth, May 28, 1898.

Dr. Leach discovered the first specimen that was taken in Britain in a little wood on the banks of the Tavey, opposite the Virtuous Lady Copper Mine.

Carabus nemoralis, Müll. A black specimen taken by Mr. Keys, Dartmoor, 1903.

- Carabus glabratus*, Pk. Harter Fell and Scafell, Cumberland; Stornoway (McArthur); Ireland, local, Donegal, Antrim, Down, Sligo, Dublin, Wicklow, Waterford, Cork, and Kerry.
- Carabus violaceus*, L. Ireland, very rare, Donegal, Antrim, and Cork, Carrantuohill, Kerry (Bouskell).
- Carabus violaceus*, v. *exasperatus*, Duft. Barmouth district (P. H. Jackson).
- Carabus clathratus*, L. One close to Bungay, Mr. Garneys, Senr. (Garneys), Belton Bog and Burgh Marshes (Paget); Scotland, I. of Tiree, not uncommon (Donisthorpe); Ireland, widely distributed.
- Carabus auratus*, L. Recorded by Rev. T. Wood from the Haldon Hills, Exmouth.
- Carabus nitens*, L. Southport district (Chaster and Sopp).
- Carabus granulatus*, L. Totally black specimens without any tinge of metallic colouring, Rossbeigh, co. Kerry (Bouskell and Donisthorpe); a black var. was taken by L. R. Crawshay on Dartmoor.
- Carabus monilis*, F. Ireland, rare, Fermanagh, Dublin, and Wicklow.
- Carabus monilis*, v. *consitus*, Pz. New Brompton (Walker); Huntingfield (Chitty); Wicken Fen (Jaffery).
- Carabus arvensis*, F. Bury district, Suffolk (Tuck); Ireland, local, and not common, Derry, Down, Armagh, Galway, Dublin, Wicklow, and Clare.
- Calosoma inquisitor*, L. High Beech, Epping (Dollman); Burton-on-Trent (Harris, 1865); Burnt Wood, Staffordshire (Chappell, 1865); Barmouth district (P. H. Jackson). Mr. Jennings recorded two blue aberrations from the New Forest (Ent. Rec. 1902, p. 99).
- Calosoma sycophanta*, L. Epping (Smith); Battle (Bennett); New Forest (Miss Chawner and J. J. Walker); Weymouth (Forsyth); Suffolk, Norfolk, and Penzance (Rudd); Ely Cathedral (Crabbe); Carlisle (Heysham).
- Notiophilus quadripunctatus*, Dej. Shirley (Donisthorpe); Godalming (Pollack); Yarmouth (Thouless); Cromer (Edwards); Cumberland (Britten).
- Notiophilus rufipes*, Curt. Epping Forest (Nicholson); Enfield (Pool); Cobham Park (Walker); New Forest (Gorham, &c.); Bagley Wood (Holland); Devonshire (de la Garde); Herefordshire (Tomlin); Leighton Buzzard (Crawshay); Bracknell, Berks (Chitty).
- Leistus spinibarbis*, F. Scotland, Paisley (Dunsmore and Eden); Ireland, rare; Antrim, Rossbeigh, co. Kerry (Bouskell).
- Leistus montanus*, Steph. Fairly abundant under stones on Skiddaw summit in August 1909 (Walsh); summit of Cader Idris (Fowler); Ireland, rare Mayo, Galway, and Kerry.
- Nebria complanata*, L. Ireland, locally abundant on the south-east coast between the counties of Wicklow and Waterford.
- Nebria livida*, F. Suffolk, Dunwich (Garneys); Lowestoft (Brewer).
- Pelophila borealis*, Payk. A paper on the larva and life history of this beetle will be found in the Trans. Ent. Soc. Lond., 1898, pp. 133-140, by the Rev. W. F. Johnson and Prof. G. H. Carpenter.

- Blethisa multipunctata*, L. Hendon (Bennett); Cropstone and Thornton Reservoirs, Leicestershire (Bouskell); Suffolk; Norfolk; Scotland, I. of Tiree (Donisthorpe); Ireland, rare, Donegal, Derry, Antrim, Armagh, Fermanagh, Monaghan, Sligo, Roscommon, Clare, Waterford, and Kerry.
- Elaphrus uliginosus*, Fabr. River Yar, near Freshwater, I. of W. (Joy); Lymington Salterns (Beare, Bouskell, and Donisthorpe); Holme Fen (O. E. Janson); Belton, Suffolk (Paget); Bog of Arthog (Donisthorpe); Bovey, Devon (de la Garde); Ireland, Glengariff (Yerbury), Cloghane (Joy).
- Clivina collaris*, Herbst. Ireland, very rare, Donegal and Antrim.
- Dyschirius obscurus*, Gyll. Ireland, common on the sandy shores of Lough Neagh. Rediscovered by the Rev. W. F. Johnson in 1894. There are specimens in the Bates collection, taken by Syme in Scotland.
- Dyschirius impunctipennis*, Daws. Devonshire; Theddlethorpe, Lincs (Thornley); Ireland, Donegal, Antrim, and Sligo; Rossbeigh, co. Kerry (Donisthorpe).
- Dyschirius politus*, Dej. Oxshott and Tubney (Donisthorpe); Shotover (Hamm); Wokingham (Joy); Ditchling (Dollman); Baron Wood, Cumberland (Britten); Market Bosworth (Wollaston); Ireland, Donegal, Derry, Antrim, Sligo, Louth, and Dublin.
- Dyschirius nitidus*, Dej. Burgh Marshes, Cumberland (Day); near Harlech (P. H. Jackson).
- Dyschirius augustatus*, Ahr. Littlestone, Kent, 1906 (G. Nicholson); Nethy Bridge (Bishop and Sharp).
- Dyschirius aeneus*, Dej. Chiddingfold, Surrey (Donisthorpe); Burgh Marshes, Cumberland (Day); Scotland, common at Kincardine-on-Forth (Evans); Ireland, local, Derry, Down, Galway, Dublin, and Kerry.
- Miscodera arctica*, Payk. Wan Fell and Lazonby Fell (Britten).
- Panageus crux-major*, L. Isle of Wight, Totland (Butler), Newport (Morey); Rye (Bennett); Holme Fen (Donisthorpe and Janson); Horning Fen (Witham); Bungay (Carness); Eastoft, Yorks (Crawshay); Ashton, near Oundle (Palin); Ireland, Finlough, Clare (Neale).
- Panageus quadripustulatus*, Stm. Charing (Chitty); Chipstead (Bedwell); Rotherfield Peppard (Fowler); Oxford (Holland); Tattingstone, Suffolk (Harwood); Theddlethorpe, Lincs (Thornley); Plymouth (Keys); Dartmouth (Donisthorpe).
- Badister unipustulatus*, Bon. Sandown, I. of W. (Beare); Cowley, Oxford (Shipp); Lincolnshire; Rye (Bennett); Cambridge (Dollman); Eastoft (Crawshay); Ireland, Waterford (Neale).
- Badister sodalis*, Duft. Barr, S. Ayrshire (DalGLISH).
- Badister peltatus*, Panz. Cornwall and Scilly (Joy); Rye (Bennett); Pulborough (Nicholson); Brandon (Thouless).
- Licinus silphoides*, F. Enfield (Pool); Blackgang, I. of W. (Donisthorpe).
- Licinus depressus*, Payk. Charing (Chitty); Brighton (Nicholson); Eastbourne (Donisthorpe); Chipping Campden, Glos (G. A. Crawshay); Norfolk; Suffolk; Dovedale, Stafford (Bailey); Wychwood Forest (Holland).

- Callistus lunatus*, F. Walderslade Bottom, Kent (Walker); Chipstead, Surrey (Bedwell); Streatley, Berks. (Tomlin).
- Chlænius holosericeus*, F. Ireland, near Athy, Kildare (Haliday); Sheen River, near Kenmare, Kerry (Halbert, 1898).
- Oodes helopioides*, F. Sandown, I. of W. (Champion); Rye (Bennett); Suffolk; Norfolk.
- Stenolophus skrimshiranus*, Steph. Rye (Bennett); Fakenham (Skrimshire); Cambridge (Dollman).
- Stenolophus vespertinus*, Panz. Sandown, I. of W. (Donisthorpe and Taylor); Scilly (Joy); Cropstone Reservoir, Leicestershire (Bouskell); Southport district (Chaster and Sopp); Ince, Cheshire (W. E. Sharp); Ireland, Clare, Limerick, Waterford, and Kerry.
- Acupalpus brunnipes*, Sturm. Hartley Wintney Heath, Hants (G. Nicholson).
- Acupalpus dorsalis*, F. Ireland, Armagh, Waterford, and Cork; Caragh Lake, Kerry (Donisthorpe).
- Acupalpus flavicollis*, Sturm. Common at Barton-on-Sea (Selous).
- Acupalpus exiguus*, v. *luridus*, Dej. Ireland, Louth, Carlow, Waterford, Cork, and Kerry. The type does not appear to occur in Ireland. *Note*.—The type occurs commonly in company with the variety, Wimbledon Common (Beare and Donisthorpe).
- Bradycellus placidus*, Gyll. Oxford district, not rare; Horning (Thouless); Ireland, Antrim and Armagh.
- Bradycellus cognatus*, Gyll. Norwich (Edwards); Scunthorpe, Lincs. (W. E. Sharp); Ireland, Antrim, Armagh, Mayo, Wicklow, and Kerry.
- Bradycellus distinctus*, Dej. Abundant near Scarborough (Hey); Ireland, not common, but widely distributed.
- Bradycellus harpalinus*, Dej. Ireland, widely distributed.
- Bradycellus collaris*, Payk. Mousehold Heath, Norfolk (Edwards); Ireland, Antrim and Donegal, Carrantuohill, Kerry (Donisthorpe).
- Bradycellus similis*, Dej. Ireland, widely distributed.
- Harpalus sabulicola*, Panz. Ferndale, Dorset (Sopp); Wicken Fen (Donisthorpe); Bungay and Halesworth, Suffolk.
- Harpalus obscurus*, F. Abbotsbury, Dorset (Donisthorpe); Colchester (Harwood); Oxford (Walker); Cambridge (Dollman).
- Harpalus rotundicollis*, Fairm. Humber Bank, east of Hull (Stainforth).
- Harpalus punctatulus*, Duft. Suffolk; Saltwood, Kent, and Wicken Fen (Donisthorpe); Cothill, Oxford (H. Champion).
- Harpalus cordatus*, Duft. Camber Sand Hills (Bennett).
- Harpalus rufibarbis*, F. Ireland, common.
- Harpalus parallelus*, Dej. Oxford district (Walker); Gravesend (Nicholson); Lakenham, Norfolk (Thouless).
- Harpalus ruficornis*, F. Recorded as destructive to strawberries, by McLachlan (Ent. Mo. Mag., 1897, pp. 171 and 212), and also by J. Porter at Holderness, Yorks.
- Harpalus puncticollis*, Payk. Frequently occurs on flowers of wild carrot,

- taken under these circumstances at Shaftesbury, Dorset (G. R. Crawshay), Sandown, I. of W. (J. Taylor), Purley Downs (Donisthorpe), &c.
- Harpalus consentaneus*, Dej. Taken inland, at Tubney, near Oxford (Donisthorpe), Suffolk, Oulton Broad (Bedwell), Foxhall (Morley).
- Harpalus tenebrosus*, Dej. Farnham (Lewcock); Broadstairs (Donisthorpe); Wrentham, Suffolk (Curtis).
- Harpalus discoideus*, F. A black ♂ was taken by Jennings at Brandon in April 1903. Woking; Sandown, I. of W. (J. Taylor); Leighton Buzzard, (Crawshay); Oxford (Holland); Foxhall, Suffolk (Morley).
- Harpalus cupreus*, Dej. Bembridge, I. of W. (Ellis); Alverstone, I. of W., a specimen with red legs and antennæ (J. Taylor); in October 1908, it was found in numbers at Sandown, by Pool, Taylor, Beare, Mitford, and Donisthorpe.
- Harpalus latus*, v. *metallescens*, Rye. Box Hill (W. E. Sharp).
- Harpalus melancholicus*, Dej. St. Helens, I. of W. (Holland); Chesil Beach (Donisthorpe); Yarmouth (Edwards); Ireland, Cork (Dawson).
- Harpalus servus*, Duft. Camber Sand Hills (Bennett); Felixstowe (Walker); Kessingland (Bedwell).
- Harpalus anxiosus*, Duft. Liverpool Bay, common (Chaster and Sopp); Ireland, Meath and Dublin. Inland records: Weybridge (Donisthorpe); Tubney, near Oxford (Holland); Lakenheath, Suffolk (Morley).
- Harpalus serripes*, Schön. Rye (Bennett); Harleston (Fox); Cromer (Elliman). Inland record: Dartford Heath (Harwood).
- Harpalus ignavus*, Duft. Lundy Island; Suffolk; Norfolk.
- Harpalus honestus*, Duft. Box Hill (West); Streatley (Holland); Foxhall (Morley).
- Harpalus neglectus*, Dej. Studland (Donisthorpe); Birkdale and Hightown (Chaster and Sopp); The Morva, Conway (W. E. Sharp); Ireland, Rathlin Island (Hardy).
- Harpalus picipennis*, Duft. Inland records: Hendon (Newbury); Brandon, and Lakenheath Warren, Suffolk (Morley).
- Dichirotrichus obsoletus*, Dej. Ireland, Queenstown, Cork.
- Scybalicus oblongiusculus*, Dej. A couple of specimens at Lulworth (Dale); west coast of the Isle of Purbeck, under stones on beach at foot of cliff (Banks and Cambridge); Ringstead (Cambridge).
- Anisodactylus binotatus*, F. Ireland, Galway, Louth, Cork, and Kerry.
- Anisodactylus binotatus*, v. *spuraticornis*, Dej. Ireland, Armagh and Roscommon, Glencar, Kerry (Donisthorpe).
- Anisodactylus nemorivagus*, v. *atricornis*, Steph. King's Mere, Wellington College (Fowler); Cromer (Nicholson).
- Anisodactylus pæciloïdes*, Steph. Epping (Doubleday, 1836); Browndown, near Portsmouth (Donisthorpe); Queenborough (Walker).
- Zabrus gibbus*, F. Millbrook (Donisthorpe); Norwich (Wigham).
- Pterostichus dimidiatus*, Ol. Chobham (Chitty); Oxford (Hope, 1819);

- Fritton Heath (Paget); Mousehold Heath (Edwards). Quite black specimens, New Forest (Donisthorpe); Sandown, Isle of Wight (Taylor).
- Pterostichus versicolor*, Sturm. Infested by intestinal worms of the genus *Gordius* (Donisthorpe); Irish Nat., 1903, p. 60.
- Pterostichus lepidus*, F. Tubney, near Oxford (Holland); Eden Valley, Cumberland (Britten); Scotland, Highlands, very large specimens, Nethy Bridge, &c. (Col. Yerbury and others); Ireland, Donegal.
- Pterostichus madidus*, F. Recorded by Hardy as at times a vegetable feeder (Ent. Mo. Mag., 1869, p. 162).
- Pterostichus aethiops*, Panz. Devonshire, Dartmoor (Keys); Dulverton (de la Garde).
- Pterostichus oblongo-punctatus*, F. New Forest, and Porlock (Donisthorpe); Great Doward, Herefordshire (Tomlin); Market Bosworth, Leicestershire (Bouskell); Cader Idris, N. Wales (W. E. Sharp).
- Pterostichus vitreus*, Dej. Snaefell, Isle of Man (Tomlin).
- Pterostichus gracilis*, Dej. Gravesend (G. Nicholson); Iwade, near Queenborough, and Islip, near Oxford (Walker); Cambridge (Dollman); Herringstone, near Dorchester, in plenty (Beare and Donisthorpe, where the latter took a specimen with three tarsi to the right anterior leg); Ireland, Cavan and Waterford, not Armagh.
- Pterostichus picimanus*, Duft. Ireland, Dublin.
- Pterostichus striola*, F. Scotland, Isle of Rum (Grieve).
- Amara consularis*, Duft. Shaldon, Devonshire (Champion); Sandown, I. of W. (Ellis); Moortown, Lincolnshire (Wallace).
- Amara convexiuscula*, Marsh. Inland records: Edmonton (Pool); Ipswich (Elliman); Ealing (Dollman).
- Amara patricia*, Duft. North Devon; Tubney, Oxford (Holland); Wan Fell, Cumberland (Britten).
- Amara infima*, Duft. Woking and Frensham Common (Champion); Leighton Buzzard (Crawshay).
- Amara rufocincta*, Dej. Huntingfield (Chitty); Camber Sand Hills (Bennett); Yarmouth (Thouless); Crosby (Chaster and Sopp); Preston (Wilding); Inverness-shire (Black); Ireland, Dublin and Kerry.
- Amara fusca*, Dej. Preston (Wilding).
- Amara ovata*, F. Ireland, "frequent."
- Amara similata*, Gyll. Scotland, Orchardton (Douglas).
- Amara nitida*, Sturm. Knowle, Warwickshire (Blatch).
- Amara lunicollis*, Schiödte. Sandown, I. of W. (Champion); Lundy Island (Joy and Tomlin).
- Amara curta*, Dej. Eston, Cleveland, Yorks (M. L. Thompson).
- Amara spreta*, Dej. Sandown, I. of W. (Donisthorpe).
- Amara lucida*, Duft. Cumberland; Ipswich and Bramford (Morley); Ireland, rare, Donegal, Down, Armagh, and Dublin.
- Amara strenua*, Zimm. Isle of Sheppey and Iwade (Walker).
- Anchomenus augusticollis*, F. Ireland, locally common. Mr. Piffard records

- that a specimen he took in the New Forest discharged a dense white vapour (Ent. Rec., 1902, p. 340).
- Anchomenus livens*, Gyll. Blean Woods (Chitty); Battle and Guestling (Bennett); Ditchling, and Ruislip Reservoir (Dollman); Oxford (Shipp); Wicken Fen and Ryde, I. of W. (Donisthorpe); Bradfield (Joy).
- Anchomenus sexpunctatus*, L. Norfolk (J. Brown); King's Mere, Wellington College (Fowler).
- Anchomenus gracilipes*, Duft. Corton, Suffolk (Bedwell); Yarmouth (Redman).
- Anchomenus atratus*, Duft. Ireland, rare, Donegal and Derry, Louth, Wexford, Cork, and Kerry.
- Anchomenus micans*, Nic. Ireland, Lough Neagh (Buckle).
- Anchomenus viduus*, Panz. Herringstone, Dorset (Beare and Donisthorpe); Lundy Island (Joy); Bog of Arthog (Donisthorpe); Norfolk; Eastoft, Yorks (Crawshay); Ireland, widely distributed. A quite black specimen of the type taken in Kerry (Donisthorpe). The variety *mæstus* is of more frequent occurrence than the type in Ireland.
- Anchomenus versutus*, Gyll. King's Weir, Oxford (Holland); Woking (G. Nicholson); Herringstone, Dorset (Donisthorpe); Ryehill Reservoir, near Wakefield (Carter); Ireland, near Killaloe (Stevens).
- Anchomenus scitulus*, Dej. Rediscovered by Mr. Hereward Dollman, near Kew, in 1909.
- Anchomenus thoreyi*, Dej. Scilly (Joy); Dagenham, Essex (Beare and Donisthorpe); Suffolk; Weybourne, Norfolk; Cherwell Banks, Oxford (Shipp); Irbydale, Lincolnshire (Wallace); Bog of Arthog, N. Wales (Donisthorpe); Ireland, Armagh (W. E. Sharp).
- Anchomenus puellus*, Dej. Suffolk; Norfolk; Oxford; Lincolnshire; N. Wales; Ireland, rare, Derry, Armagh, Cork, and Waterford.
- Anchomenus quadripunctatus*, De G. Woking, in numbers under pine bark and fallen pine needles, August 1900 (Champion).
- Tachys parvulus*, Dej. Horsell, one specimen flying, 1902 (Champion); New Forest, not uncommon in Sphagnum, 1904 (Donisthorpe); Gerrans Bay, Cornwall, common at base of cliffs, 1897 (Champion); Plymouth (Keys).
- Tachys scutellaris*, Germ. Bembridge, I. of W. (Beare and Donisthorpe).
- Lymnæum nigropiceum*, Marsh. Felixstowe (Morley); Weymouth (Beare); Devonshire (de la Garde); Pet (Bennett); Camber (Dollman); Southsea (Donisthorpe).
- Cillenus lateralis*, Sam. Saltfleet, Lincolnshire (Thornley); Barmouth (Donisthorpe); Ireland, locally distributed on the coast. Mr. Holiday recorded that it preys upon sand-hoppers.
- Bembidium rufescens*, Guér. A very pale form occurs commonly on Hiltree (a rocky island at the mouth of the Dee), whereon are no trees; its habits have there become littoral and it hides in crevices of the sea cliffs quite on the shore (W. E. Sharp).
- Bembidium quinquestriatum*, Gyll. Enfield (Pool); Darenth Wood (Donisthorpe); Bradfield (Joy); Suffolk; Norfolk; Oxford (Shipp); Cumberland

- (Routledge); Ireland, Donegal and Derry, Antrim, Armagh, and Fermanagh, not common; Balrath, co. Meath, common in old wall (G. Nicholson).
- Bembidium fumigatum*, Duft. Dagenham (Beare); Camber (Bennett); Ranworth, Norfolk.
- Bembidium clarki*, Daws. Otmoor, Oxford (Shipp); Ruislip Reservoir (Dollman); St. Faith's Common, Norfolk (Edwards); Grimsby (Wallace); Holme Lacy, Herefordshire (Tomlin); Southport (Chaster); Ireland Antrim, Armagh, and Monaghan.
- Bembidium doris*, Panz. Ireland, widely distributed; Bovey Tracey (Keys).
- Bembidium sturmi*, Panz. Luccombe, I. of W. (Champion).
- Bembidium normannum*, Dej. Ireland, Mayo, Waterford, and Dublin.
- Bembidium gilvipes*, Sturm. Tiverton, Devon (de la Garde); Ireland, Queens-town, Cork (Walker).
- Bembidium nigricorne*, Gyll. Cumrew Fell (Day); Blanchland (Bagnall); Ireland, Sheen River, near Kenmare, co. Kerry (Bouskell).
- Bembidium decorum*, Panz. Common in the New Forest (Donisthorpe).
- Bembidium nitidulum*, Marsh. Cumberland (Day); Ireland, Donegal, Antrim, and Dublin.
- Bembidium affine*, Steph. Tilgate Forest (Donisthorpe); Oxford district (Walker); Cromer (Beare); Cumberland; Scotland, Glasgow (Solomon, 1860), Giffnoch (Dalglish), Paisley (Dunsmore); Ireland, Donegal, Antrim, Armagh, Louth, Dublin, Wicklow, and Kerry.
- Bembidium monticola*, Sturm. Devonshire, Christow (de la Garde); Plymouth district (Keys); Ireland, Donegal, Dublin, and Limerick.
- Bembidium stomoides*, Dej. Mousehold Heath, Norfolk (Edwards); Cussop Dingle, Herefordshire (Tomlin); Bank of Trent, Torksey, Lincolnshire (Thornley); Derwent Valley, Durham (Bagnall); near Liverpool (W. E. Sharp).
- Bembidium quadriguttatum*, F. Ireland, Antrim and Galway.
- Bembidium quadripustulatum*, Gyll. Sittingbourne (de la Garde); Pulborough (Nicholson); Deal (Bedwell, Tomlin), Ditchling (Dollman).
- Bembidium lunatum*, Duft. London district, Barking Reach, Plumstead, and not uncommon at Rainham (Lewcock); Mesopotamia, Oxford (Shipp); Scotland, Forres (Chitty).
- Bembidium testaceum*, Duft. Devon, River Teign (Keys); Llandaff, S. Wales (Tomlin); Mousehold Heath, Norfolk (Edwards); Cumberland; near Glasgow, locally common (Anderson-Fergusson and Adie Daglish).
- Bembidium saxatile*, Gyll. Shaldon, Devonshire (Champion).
- Bembidium bruxellense*, Wesm. Scunthorpe, Lincs. (Corbett).
- Bembidium saxatile*, v. *vectensis*, Fow. All along southern coasts (Dawson, p. 186); Barton-on-Sea (Selous); Folkestone, Teignmouth, &c. (Champion).
- Bembidium anglicanum*, Sharp. Swanage (E. A. Waterhouse); Blackgang Chine, I. of W. (Donisthorpe); Norfolk, Gimmingham (Butler), Cromer (Elliman); Ireland, taken in numbers on the Dodder Banks, Dublin (Halbert).
- Bembidium pallidipenne*, Ill. Deal (Walker); Brook, I. of W., and I. of Tiree, common (Donisthorpe).
- Bembidium punctulatum*, Drap. Chingford Ferry (Jennings); Plymouth district (Keys); N. Wales;

- Bembidium flammulatum*, Clairv. Bovey Tracey (de la Garde); Ireland, Antrim, Down, Armagh, Kildare, and Kerry.
- Bembidium varium*, Ol. Skinburyness Marsh, Estuary of the Eden, Cumberland (Day).
- Bembidium obliquum*, Sturm. Hanwell (W. E. Sharp); Chobham (Champion); Wokingham, Berks. (Collins); Kings Mere, Wellington College, in great abundance (Tomlin and Fowler); Cropstone Reservoir, Leicestershire (F. Bates).
- Bembidium palludosum*, Panz. Lynwode, Lincolnshire (Wallace).
- Tachypus pallipes*, Duft. Aldburgh, Suffolk (Hope); Lyme Regis (Chitty); Candleston, Glamorgan (Tomlin); Ireland, Coolmore, co. Donegal (Langham).
- Perileptus areolatus*, Creutz. Tavy Valley, Devonshire (Keys); Shropshire (Bailey); Ireland, Sheen River, near Kenmare, co. Kerry (Bouskell and Donisthorpe).
- Aëpus marinus*, Ström. Lymington Salterns (Bouskell and Donisthorpe); Ireland, Donegal, Galway, Louth, and Cork.
- Aëpus robinii*, Laboulb. Lymington Salterns (Bouskell and Donisthorpe); Ireland, Cork and Kerry.
- Trechus discus*, F. Banks of Eden, Cumberland (Britten); Ireland, Ahascragh, co. Galway (Halbert).
- Trechus micros*, Herbst. In mole's nest, Lowestoft, Suffolk (Bedwell); Oxford district; in mole's nest, Burwell Fen, and Alphington, Devon (Nicholson); Denton, Norfolk (Cruttwell); Ireland, Derry and Armagh.
- Trechus lapidosus*, Daws. Ilfracombe (Bennett); Burton Point, Cheshire (W. E. Sharp); Ireland, rare, Donegal, Down, Louth, and Wicklow, Rossbeigh, co. Kerry, not uncommon (Bouskell and Donisthorpe).
- Trechus rubens*, F. Chiddingfold, Surrey (Donisthorpe); Thorne, Yorks (Miss Darley); Devonshire, Meavy Valley (Keys); Ireland, rare, Donegal, Down, Cork, and Kerry.
- Trechus minutus*, F. In Ireland the type form is by no means common, being largely replaced by the variety *T. obtusus*, Er., especially in mountain districts.
- Trechus rivularis*, Gyll. Wicken Fen (Chitty and Donisthorpe).
- Patrobis excavatus*, Payk. Ireland, rare, Donegal, Antrim, and Kerry, not Dublin. Infested by intestinal worms of the genus *Gordius*, at Braemar (Donisthorpe).
- Patrobis assimilis*, Chaud. Snaefell, Isle of Man (Tomlin); Ireland, common on hills, and widely distributed.
- Pogonus luridipennis*, Germ. Bembridge, I. of W. (Ellis); Aldeburgh (Garneys); Grimsby (Thornley); Humberstone and Saltfleet (Carter and Burchnall).
- Pogonus chalceus*, Marsh. Common on Humber shore, east of Hull (Stainforth).
- Pogonus littoralis*, Duft. Southwold (Thouless); Ireland, Louth, Meath, and Dublin.

- Cymindis vaporariorum*, L. Blanchland Moors, Durham (Bagnall); Ireland Mayo.
- Odacantha melanura*, Payk. Bradfield, Berkshire (Joy).
- Lebia cyanocephala*, L. New Forest (Bouskell).
- Lebia chlorocephala*, Hoff. Oxford district, not rare (Walker); Pamber Forest (Donisthorpe); Newbury (Harwood); Bucks (W. E. Sharp); Norfolk; Torksey (Pegler); Llandaff, S. Wales (Tomlin); Ireland, very rare, Donegal, Wicklow, and Wexford.
- Lebia chlorocephala*, Hoff., v. *chrysocephala*, Mots. Mickleham (Donisthorpe); West Malvern (Tomlin).
- Lebia crux-minor*, L. A specimen was taken by Mr. F. H. Day in a meadow near Carlisle, April 15, 1899. Mr. C. J. C. Pool took a specimen near Portsmouth in 1910.
- Aëtophorus imperialis*, Germ. Kent; Frinton (Walker), Cliffe Marshes (G. Nicholson).
- Demetrias atricapillus*, L. Ireland Louth, Meath, Dublin, Wicklow, Wexford, Waterford, and Cork.
- Dromius angustatus*, Brullé. Nethy Bridge (Sharp and Bishop); Rannoch (Donisthorpe).
- Dromius meridionalis*, Dej. Scotland, Arran (Evans).
- Dromius quadrinotatus*, Panz. Ireland, widely distributed.
- Dromius quadrisignatus*, Dej. Bournemouth and S. Devon (Joy); Maddingley (G. Nicholson); Norfolk, under bark of ash (Edwards).
- Dromius nigriventris*, Thoms. Lundy Island (Joy).
- Dromius sigma*, Rossi. Epping (G. R. Waterhouse, 1836); Oulton Broad (Bedwell); Beccles (Cruftwell).
- Dromius longiceps*, Dej. Brandon (Chitty).
- Dromius vectensis*, Rye. Budleigh Salterton (Donisthorpe); Hastings district (Bennett).
- Lionychus quadrillum*, Duft. Felixstowe (Morley). Mr. Keys takes a race at Slapton Ley without any spots at all.
- Polystichus vittatus*, Brullé. Weymouth (Forsyth); Southwold (Hewitson); Cley, Norfolk (Leach).
- Drypta dentata*, Rossi. Barton-on-Sea (Selous).
- Brachinus crepitans*, L. Suffolk (Morley); Barrowden, Rutland, in numbers (Barrow); Christow, Devonshire (de la Garde).
- Mr. Frank Balfour Browne has written some most excellent and instructive papers on the Water Beetles, on which he is a great authority. See two papers on the Aquatic Coleoptera of the Norfolk Broads (Trans. Norfolk and Norwich Nat. Soc., 1905 and 1906) and of the Solway district (Ann. Scot. Nat. Hist., 1909), &c.
- Haliphus mucronatus*, Steph. Sherringham (Joy); Deal (Bedwell); Burwell Fen (Nicholson).
- Haliphus variegatus*, Sturm. Ireland, Finlough, co. Clare (Halbert).

- Haliphus cinereus*, Aubé. Wimbleton Common (Beare); Ipswich (Morley); Cothill, Oxford (Walker).
- Haliphus striatus*, Sharp. Baudsey, Suffolk (Morley).
- Cnemidotus impressus*, F. Sandown, I. of W. (Donisthorpe); Norfolk Broads (Balfour Browne); Suffolk; Spalding, Lincs (W. E. Sharp).
- Pelobius tardus*, Herbst. Richmond Park (Beare); New Forest (Donisthorpe); Suffolk; Norfolk Broads (Balfour Browne); Wayrant Ponds, near Withernsea (Baker); Aylesby, Lincs. (Wallace); Ireland, rare, Wicklow, Clare, and Cork.
- Noterus clavicornis*, De G. Oulton Broad (Bedwell); Ireland, Antrim, Fermanagh, Westmeath, and Waterford.
- Noterus sparsus*, Marsh. Wicken Fen (Donisthorpe); Norfolk Broads (Balfour Browne); Croxby, Lincolnshire (Bullock); Southport district (Chaster and Sopp); Ireland, common.
- Hydrovatus clypealis*, Sharp. New Forest (Sharp); Sandown, I. of W. (Ellis); Worle, near Weston (Beare and Donisthorpe).
- Bidessus unistriatus*, Schr. Camber, abundant (Bennett); Bournemouth (Jackson).
- Bidessus minutissimus*, Germ. River Teign, Devon (de la Garde); Scotland, Wigtownshire and Kirkcudbrightshire (Balfour Browne); Ireland, Dublin, Cork, and Kerry.
- Bidessus geminus*, F. Richmond Park (Donisthorpe); Brandon (Edwards); Newbury (Harwood); Sandown, I. of W. (H. Champion); Ham Green, Herefordshire (Tomlin).
- Hyphydrus ovatus*, L. Ireland, locally common. Mr. W. E. Sharp describes a variety with dark bands on the elytra from Lowestoft.
- Cealambus versicolor*, Schall. The Irish records refer to *C. quinquelineatus*, Zett., which is widely distributed.
- Cealambus decoratus*; Gyll. Hanwell (Kemp); Bramford; Suffolk (Morley); Lincolnshire.
- Cealambus novemlineatus*, Steph. King's Mere, Wellington College, late autumn, in numbers (Fowler and Tomlin); Delamere Forest (W. E. Sharp); Ireland, rare, Donegal, Antrim, and Armagh.
- Cealambus impressopunctatus*, Schall. Richmond Park (Donisthorpe); Hanwell (W. E. Sharp); Suffolk; Oxford (Cleeve, 1822); Greatham (Gardner); Ireland, Donegal, Down, and Armagh.
- Deronectes latus*, Steph. New Forest (Sharp).
- Deronectes assimilis*, Payk. Ireland, frequent.
- Hydroporus granularis*, L. Hanwell (W. E. Sharp); Suffolk; Norfolk Broads (Balfour Browne); Yarnton, Oxford (Walker); Scotland, Maxwelltown Loch, Dumfries (Lennon); Ireland, Lagan Canal, near Moira.
- Hydroporus septentrionalis*, Gyll. Devonshire, Dartmoor (Keys), Buckfastleigh, Christow, and South Brent (de la Garde); Ireland, Donegal, Antrim, Derry, Armagh, Wicklow, and Cork.

- Hydroporus davisii*, Curt. Bungay (Garneys); Harleston (Fox); Hardwick Brook, Herefordshire (Tomlin); Snowdon; Cumberland; Ireland, Donegal and Dublin.
- Hydroporus halensis*, F. Maddingley, Cambs (G. Nicholson); Norfolk, Brundall and Stalham (Edwards); Palling (Balfour Browne); Ulceby, Lincs (Wallace).
- Hydroporus dorsalis*, F. Mull of Cantire (Hamlet Clarke); Ireland, Lagan Canal (Buckle); Gilnakirk, co. Down (Patterson); Tonabrochy, co. Galway (Halbert); Armagh (Balfour Browne and Johnson).
- Hydroporus scalesianus*, Steph. Ant and Bure districts, Norfolk Broads (Balfour Browne).
- Hydroporus neglectus*, Schaum. Woking (Champion); Oxshott (Donisthorpe); Burnham Beeches (W. E. Sharp); Norfolk Broads (Balfour Browne); Stratton Strawless (Edwards).
- Hydroporus tristis*, Payk. Claygate (Bedwell); Oxshott (Donisthorpe); Woking (Walker); Suffolk (Morley); Norfolk Broads (Balfour Browne); Ireland, rare, Donegal, Derry, Mayo, and Kerry; Lough Bray, Dublin (Donisthorpe).
- Hydroporus umbrosus*, Gyll. Oxshott (Donisthorpe); Bexley Decoy, Suffolk (Morley); Birkdale (Chaster and Sopp); Ireland, Donegal, Antrim, Down, Armagh, Louth, Westmeath, and Limerick.
- Hydroporus angustatus*, Sturm. Ireland, rare, Donegal, Antrim, and Armagh.
- Hydroporus morio*, Dej. Delamere and Merionethshire (W. E. Sharp); Ireland, rare, Donegal and Armagh.
- Hydroporus incognitus*, Sharp. Richmond Park (Donisthorpe); Ipswich (Morley); Norfolk Broads (Balfour Browne); Delamere Forest (W. E. Sharp); Cumberland; Ireland, widely distributed. A paper on the specific characters of this beetle will be found in the Ent. Record for 1907, p. 77, by Mr. F. Balfour Browne.
- Hydroporus ruffrons*, Duft. Barham (Kirby); Lundy Island; Cumberland; Ireland, doubtful.
- Hydroporus longicornis*, Sharp. Ireland, Mount Kippure, Dublin (Kemp).
- Hydroporus longulus*, Muls. Wicken Fen (Donisthorpe); Lundy Island (Joy and Tomlin); Yorkshire; Ireland, a single specimen taken at Downhill, co. Derry, by Mr. J. N. Milne, and named "*celatus* var." by Dr. Sharp.
- Hydroporus melanarius*, Sturm. Oxshott (Bedwell); Crowborough (W. E. Sharp); Dorset (Chitty); Norfolk Broads (Balfour Browne); Snowdon (Sopp and Tomlin); Clogham (Joy).
- Hydroporus obscurus*, Sturm. Norfolk (Edwards); Linwood, Lincs (Wallace); Bovey Tracey, Devon (de la Garde); Ireland, widely distributed in highland districts.
- Hydroporus discretus*, Fairm. New Forest (Sharp); Cumberland (Britten); Lincolnshire (Wallace); Suffolk (Morley); Bradfield and Lundy Island (Joy); near Oxford (Walker); Bude, N. Cornwall (de la Garde); Ireland, widely distributed, especially in the north.
- Hydroporus lituratus*, F. Ireland, widely distributed.
- Hydroporus marginatus*, Duft. Bradfield (Joy); Kintbury (Harwood);

- Winchelsea (Esam); Shropshire (Bailey); Brandon (Edwards); Ramsbury and Chilbolton (Lloyd); South Brent (de la Garde); Tubney (Walker).
- Hydroporus ferrugineus*, Steph. Hastings (Bennett); Plymouth district (Keys); Seaton, Devon (Champion); Horning (Edwards); Hart, Durham (Gardner); Cumberland (Britten).
- Hydroporus obsoletus*, Aubé. South Brent, Devon (Keys); Cumberland (Britten); Ireland, Derry and Down (Buckle).
- Hydroporus oblongus*, Steph. Brandon (Edwards); Norfolk Broads (Balfour Browne); Ireland, Balrath, co. Meath (Nicholson).
- Agabus biguttatus*, Ol. Herefordshire (Tomlin); Gibside, Durham (Bagnall); Ireland, rare, Armagh (Johnson).
- Agabus brunneus*, F. Rediscovered by Dr. Sharp in the New Forest, near Brockenhurst, in 1909.
- Agabus congener*, Payk. Cwm Idwal, N. Wales (W. E. Sharp).
- Agabus conspersus*, Marsh. Ireland, Kinsale and Youghal, co. Cork (Balfour Browne).
- Agabus uliginosus*, L. Herringstone, near Dorchester (Donisthorpe); Horning and Yarmouth (Edwards); Cumberland.
- Agabus affinis*, Payk. Oxshott (Donisthorpe); Princetown, Devon (Keys); Cumberland (Day); Scotland, Renfrewshire (Young); Kirkcudbrightshire and Dumbartonshire (Balfour Browne); Cobinshaw, near Edinburgh (Beare); Pentlands and Clackmannanshire (Evans). The distinctions between *Agabus affinis*, Payk., and *unguicularis*, Th., are well shown by Mr. Balfour Browne in the Ent. Record for 1906, p. 273.
- Agabus unguicularis*, Thoms. Bixley, Suffolk (Morley); Warwickshire (Ellis); Cheshire (W. E. Sharp); Durham (Wingate); Carlisle (Day).
- Agabus femoralis*, Payk. Oxshott (Donisthorpe); Newbury (Harwood); Bramford (Morley); Hickling Broad (Balfour Browne); Marston, Oxford (Holland); Ireland, River Suck, near Mount Talbot, Roscommon (Halbert); Bovey Tracey, Devon (Keys).
- Agabus arcticus*, Payk. Ireland, near summit of Kippure, co. Wicklow (Farren); above Lough Bray, co. Dublin (Kemp).
- Platambus maculatus*, L. Ireland, Kilkenny (Neale).
- Ilybius subcaneus*, Er. Suffolk, Beccles (Piffard); Norfolk, Brandon (Edwards); Wretham Heath (Edwards and Thouless); St. Faith's (Thouless); Holton-le-Moor, Lincs (Bullock).
- Ilybius ater*, De G. Ireland, not common, Donegal, Armagh, and Wexford.
- Ilybius obscurus*, Marsh. Sandown, I. of W. (Donisthorpe); Exminster, Devon (de la Garde); Ireland, Fermanagh and Dublin.
- Ilybius guttiger*, Gyll. Norfolk Broads (Balfour Browne); Ireland, Dublin, a single specimen at Kingstown (Hogan), River Dodder at Oldtown (Lewcock).
- Ilybius ænescens*, Th. Dartmoor (Keys).
- Copelatus agilis*, F. Suffolk (Morley); Norfolk (Edwards); Ireland, very rare, Wexford and Cork.

- Rhantus exoletus*, Forst. Bury district (Tuck); Wicken Fen (Donisthorpe); Tubney, Oxford (Holland); Ireland, widely distributed.
- Rhantus pulverosus*, Steph. Lymington Salterns (Donisthorpe); Suffolk; Norfolk; Tubney, Oxford (Holland).
- Rhantus notatus*, Berg. Ireland, Derry, Armagh, Fermanagh, and Tipperary.
- Rhantus bistriatus*, Berg. Ireland, Donegal, Derry, Wicklow, and Wexford.
- Rhantus adspersus*, F. Norfolk (Stephens); recently rediscovered in Norfolk, in the Hickling district, by Mr. F. Balfour Browne.
- Mr. E. J. Burgess Sopp writes a very interesting account of the life-history of *Dytiscus punctulatus*, F. (Proceed. Lanc. and Ches. Ent. Soc., 1905, pp. 50-57).
- Dytiscus marginalis*, L. Mr. Donovan has recorded that he captured a specimen of this beetle swimming in the sea at Glandore.
- Dytiscus circumflexus*, F. Richmond Park and Penge (Donisthorpe); Chattenden (Walker); Isle of Sheppey (Chitty); Bawdsey (Morley); Felixstowe (Ellis); Norfolk.
- Dytiscus circumcinctus*, Ahr. Suffolk (Morley); Norfolk Broads (Balfour Browne); Ireland, Armagh (Johnson). The form of ♀ of this species with smooth elytra is not uncommon at Wicken Fen (Donisthorpe).
- Dytiscus lapponicus*, Gyll. Isle of Rum (Grieve); Isle of Eigg (Balfour Browne).
- Dytiscus dimidiatus*, Berg. Not uncommon at Wicken Fen, 1899 (Bouskell and Donisthorpe); in plenty, Askham Bog, August 1906 (Balfour Browne and Beare).
- Hydaticus transversalis*, Berg. Barnley Broad, Suffolk (Bedwell).
- Hydaticus seminiger*, De G. Hanwell (W. E. Sharp); Oxshott (Kemp); Shortlands (Donisthorpe); Kennet Valley (Joy); Delamere Forest and Leadsham, Cheshire (W. E. Sharp).
- Acilius sulcatus*, L. Ireland, widely distributed. The variety *scoticus*, Curtis, Carrickfergus (Walker); Cumberland (Britten).
- Acilius fasciatus*, De G. Doneaster, locally common (Corbett); Ireland, rare, Armagh (Johnson).
- Graphoderes cinereus*, L., This fine species was rediscovered in Britain by Mr. F. Balfour Browne in 1904, in the Ant district of the Norfolk Broads.
- Gyrinus minutus*, F. Hickling Broad and Horning (Edwards); Cumberland. Mr. F. Bouskell bred several species of parasites from pupæ of *Gyrinus natator* found on reeds at Cropstone Reservoir, in Leicestershire. The Rev. J. Hellins and others have also bred species of Ichneumonidæ from the cocoons of this beetle.
- Gyrinus urinator*, Ill. Bodelstreet, near Battle (Bennett); New Forest (Rendel); Bude, N. Cornwall (de la Garde); Ireland, Kerry.
- Gyrinus elongatus*, Aubé. Lymington Salterns (Beare, Donisthorpe, and E. A. Waterhouse); Cumberland; Ireland, widely distributed.
- Gyrinus bicolor*, Payk. Deal (Donisthorpe); Norfolk Broads (Balfour Browne); Crossens, Southport district (Chaster and Sopp); Ireland, rare, Sligo, Roscommon, Cork, and Kerry.

- Gyrinus colymbus*, Er. Ranworth and Hickling Broad (Edwards); Sutton Broad (Balfour Browne); Ugboro' Beacon, Devon (de la Garde).
- Gyrinus opacus*, Sahl. Staines (Donisthorpe); Warwickshire (Ellis); Oxford district (Walker); Ireland, widely distributed.
- Gyrinus suffriani*, Scriba. Leamlands, Lincs (Morley).
- Orectochilus villosus*, Müller. Near Newbury (Harwood); New Forest (Donisthorpe); Bayswater Brook, Oxford (Walker); Ireland, widely distributed. This insect is generally nocturnal in its habits, but I have taken it swimming about in a stream in the day-time in the New Forest. The pupation of this beetle has been observed under bark, and in fresh-water shells (*see* Ent. Mag., 1837, p. 254, and the Irish List, 1902, p. 607).
- Hydrophilus piceus*, L. Elytra and thoracic plates common in the peat of Hatfield Moor, Doncaster district; probably extinct (Corbett). For an account of the copulation of this beetle *see* the Ent. Record, 1900, p. 291 (Donisthorpe).
- Hydrocharis caraboides*, L. Hanwell (W. E. Sharp); Norfolk; Birkdale (Chaster and Sopp).
- Hydrobius picicrus*, Sharp. Oxshott (Donisthorpe); Little Blakenham, Suffolk (Morley); Norfolk (Edwards); Oxford district (Walker).
- Hydrobius chalconatus*, Steph. Barnes Common (E. C. Rye); Woking and Sheppey (Walker); Tottenham and Southsea (Donisthorpe); Little Blakenham (Morley); Burgh-on-Sands (Britten).
- Hydrobius oblongus*, Herbst. Bawdsey, Suffolk (Morley); Muckfleet district, Norfolk Broads (Balfour Browne); Spalding, Lincs (W. E. Sharp); Ireland, Lakes of Killarney (Dr. Leach).
- Philhydrus testaceus*, F. Ireland, Armagh, Roscommon, and Wexford.
- Philhydrus nigricans*, Zett. Suffolk; Norfolk; Oxford; Ireland, Armagh, Tipperary, and Kerry.
- Philhydrus minutus*, F. Suffolk; Norfolk; Herefordshire; Ireland, Kerry.
- Cymbiodyta ovalis*, Th. Ireland, Ballyphephene Bog, co. Cork (Balfour Browne).
- Enochrus bicolor*, Gyll. Suffolk; Norfolk; Lincolnshire; Herefordshire; Ireland, rare, Down and Dublin.
- Paracymus nigroæneus*, Sahl. Ireland, rare, Galway and Kerry.
- Anacæna globulus*, Payk., and *limbata*, F. Ireland, widely distributed.
- Anacæna bipustulata*, Steph. Sandown, I. of W. (J. Taylor); Humberstone, Lincs (Bullock); Norfolk (Balfour Browne); Herefordshire (Tomlin); Bottisham Fen (Nicholson).
- Helochaeres punctatus*, Sharp. Lundy Island (Joy); Ireland, Inchigala, co. Cork (Balfour Browne).
- Laccobius alutaceus*, Thoms., *minutus*, L., and *bipunctatus*, F. Ireland, widely distributed.

- Berosus spinosus*, Stev. Bexhill (Donisthorpe); Bawdsey (Elliot); Felixstowe (Morley); Scotland, Caerlaverock salt marshes (Lennon).
- Berosus luridus*, L. Suffolk; Norfolk; Oxford; Cleethorpes (Wallace); Ireland, Roscommon.
- Limnebius papposus*, Muls. Laceby and Humberstone, Lincs (Wallace); Ireland, Donegal, Armagh, and Dublin.
- Limnebius nitidus*, Marsh. Oxford district; Southport district; Ireland, Antrim, Armagh, Louth, and Dublin.
- Limnebius picinus*, Marsh. Norfolk Broads (Balfour Browne).
- Chaetarthria seminulum*, Herbst. Ireland, frequent.
- Spercheus emarginatus*, Schall. Burwell Fen (Professor Babbington); Askham Bog (Preston, 1834).
- Helophorus tuberculatus*, Gyll. Scotland, Kelton (Lennon); near Coatbridge (G. R. Brown).
- Helophorus rugosus*, Ol. Ireland, Donegal, Derry, Antrim, and Louth.
- Helophorus intermedius*, Muls. Felixstowe and Bawdsey (Morley); Norfolk (Edwards); Ireland, Derry, not common.
- Helophorus dorsalis*, Marsh. Sevenoaks (Donisthorpe); Cookfield, Sussex (Chitty); Bungay (Garneys); Norfolk (Edwards); Lincolnshire; Wytham Park (Walker); Ireland, Down and Dublin.
- Helophorus mulsanti*, Rye. Sheerness (Donisthorpe); Yarnnton (Holland); Suffolk; Norfolk; Teignmouth (de la Garde); New Holland, Lincs (Wallace); Solway Marshes (Day); Ireland, Dublin, one specimen (Halbert, 1895).
- Helophorus affinis*, Marsh. Ireland, Youghal, co. Cork (Balfour Browne).
- Helophorus arvernicus*, Muls. Amberley Marsh, Sussex (W. E. Sharp); King's Weir (Walker); River Tavy, Devonshire (Donisthorpe); Woolhope, Herefordshire (Tomlin); Cumberland (Britten); Scotland, Nethy Bridge (Bishop and Sharp); Ireland, Derry.
- Helophorus nanus*, Sturm. Bury district (Tuck); Marston, Oxford (Walker); Lincolnshire (Wallace).
- Hydrochus brevis*, Herbst. Norfolk Broads (Balfour Browne); Thurstonfield Lough and Rockcliffe, Cumberland (Day); Ireland, near Belfast (Buckle).
- Hydrochus elongatus*, Schall. Ireland, Down, Armagh, Limerick, and Waterford.
- Hydrochus carinatus*, Germ. Brandon (Edwards); Irby, Lincs (Wallace).
- Hydrochus angustatus*, Germ. Burgh Marsh (Day); Yorkshire; Ireland, Waterford.
- Henicocerus exculptus*, Germ. Thames, near Marlow (W. E. Sharp); Kennet Valley, Berks (Joy); Bradgate Park, Leicestershire (Bouskell); Woolhope, Herefordshire (Tomlin); Plymouth district (Keys); Ireland, Derry, Down, Dublin, and Kerry.
- Ochthebius exaratus*, Muls. In plenty in pool on cliffs, Sandown, I. of W. (Donisthorpe).

- Ochthebius margipallens*, Latr. Bembridge, I. of W. (Ellis); Suffolk; Norfolk Broads; Ireland, Kenmare, co. Kerry (Halbert).
- Ochthebius marinus*, Payk. Ireland, Down, Dublin, and Waterford.
- Ochthebius pygmaeus*, F. Ireland, Armagh, Sligo, Galway, and Kerry.
- Ochthebius bicolon*, Germ. Ireland, widely distributed.
- Ochthebius auriculatus*, Rey. Wells and Cley, Norfolk (Joy); Yarmouth, I. of W. (Donistorpe); Cumberland; N. Lincolnshire (Thornley); Scotland, Kelton, Dumfries (Balfour Browne); Ireland, Meath and Dublin.
- Ochthebius nanus*, Steph. Bembridge, I. of W. (Ellis).
- Ochthebius punctatus*, Steph. Felixstowe and Aldeburgh (Morley); Teignmouth (de la Garde); Ireland, Sligo, Louth, and Kerry.
- Hydræna testacea*, Curt. Near Aldermaston, Berks (Fowler and Tomlin); Ipswich (Morley); Norfolk Broads; River Dart, Devon (de la Garde); Ireland, River Nore, Kilkenny (Halbert).
- Hydræna palustris*, Er. Norfolk Broads (Balfour Browne).
- Hydræna nigrita*, Germ. Water Eaton (Collins); S. Wales (Chitty); Herefordshire (Tomlin); Appley Bridge (Southport List); Ireland, Antrim and Armagh.
- Hydræna longior*, Rey. New Forest (Sharp); Devon (de la Garde); Ireland, Armagh, Roscommon, Tipperary, and Waterford.
- Hydræna gracilis*, Germ. Herefordshire (Tomlin); Devonshire, Plymouth district (Keys); Buckfastleigh (de la Garde); S. Wales (Chitty).
- Hydræna atricapilla*, Wat. Herefordshire (Tomlin); Brent, Devonshire (Keys); S. Wales (Chitty); Eden River, Cumberland (Britten); Ireland, Derry, Armagh, and Cork.
- Hydræna pygmaea*, Wat. S. Wales (Chitty); Cusop Dingle, Herefordshire (Tomlin); Christow, Devon (de la Garde).
- Hydræna pulchella*, Germ. Bodelstreet, near Battle (Bennett); Holme Lacy, Herefordshire (Tomlin); Ireland, Derry, Antrim, Down, Kilkenny, and Armagh.
- Cyclonotum orbiculare*, F. Ireland, widely distributed.
- Cercyon depressus*, Steph. Suffolk; Hunstanton (Thornley); Scotland, Barossie (Dalglish); Ireland, common.
- Cercyon hæmorrhous*, Gyll. Ireland, not common, Donegal, Antrim, and Armagh.
- Cercyon obsoletus*, Gyll. Southwold (Morley); Tubney (Holland); Ireland, not common, Donegal, Antrim, and Armagh.
- Cercyon marinus*, Thoms. (*aquaticus*, var. β Muls.). Waxham, Norfolk; Ireland, Antrim, Armagh, and Wexford.
- Cercyon nigriceps*, Marsh. Ireland, Fermanagh; Ditchling, Shirley, Hanwell (Dollman).
- Cercyon terminatus*, Marsh. Suffolk (Morley); Summertown (Walker); Ditchling (Dollman); Norwich district (Edwards); Lundy Island (Joy); Lincolnshire; Cumberland; Ireland, not common, Donegal, Armagh, Sligo, and Dublin.
- Cercyon lugubris*, Payk. Ireland, Armagh.

- Cercyon minutus*, Muls. Mathon and West Malvern (Tomlin); Brandon (Morley); Cumberland; Ireland, Shane's Castle, near Antrim (Buckle).
- Homœusa acuminata*, Maerk. Farnborough, with *Formica fusca* (Wollaston); in a mixed nest of *Lasius flavus* and *niger*, Mickleham (Donisthorpe); Doddington, Kent, with *Formica fusca* and *Lasius niger* (Chitty and Donisthorpe); with *L. fuliginosus*, Guestling (Bennett); with *F. fusca*, Chesham (Elliman); with *F. fusca*, Chipstead and Coulsdon (Bedwell).
- Aleochara ruficornis*, Grav. With *Lasius fuliginosus*, Wellington College (Donisthorpe); Redstone, Surrey (Linnell); Colchester (Harwood); Ledsham, Cheshire (W. E. Sharp); Snowdon (Sopp); Cumberland (Routledge).
- Aleochara brevipennis*, Grav. Herringstone, near Dorchester (Donisthorpe); Cropstone Reservoir, Leicestershire (Bouskell); Bungay (Garneys); Yarnton (Walker); Orton, Cumberland (Day); Norfolk; Ireland, common in the south and west.
- Aleochara tristis*, Grav. Oxford (Walker); Ireland, Carlingford, Louth (Johnson).
- Aleochara fumata*, Grav. Near Wytham Park (Walker); Durdar, Cumberland (Day); Braunton, Devon (de la Garde).
- Aleochara cuniculorum*, Kraatz. Freshwater, I. of W. (Donisthorpe); Cobham Park and Oxford district (Walker); Ditchling (Dollman); Bradgate Park, Leicestershire (F. Bates); Lundy Island (Joy); Corton Cliffs (Bedwell); Cumberland (Britten); Spen Banks, Durham, in badger's "earth" (Bagnall); Ireland, Wexford. Occurs in rabbit burrows.
- Aleochara maculata*, Bris. Oxford and Berkshire (Walker).
- Aleochara lygœa*, Kr. Chatham (Walker); Bradgate Park (F. Bates); Silloth (Day).
- Aleochara villosa*, Mann. Arminghall, Norfolk (Edwards); Cumberland (Britten).
- Aleochara moesta*, Grav. Mayo, Ireland.
- Aleochara mycetophaga*, Kr. Shirley and Isle of Sheppey (Donisthorpe).
- Aleochara mœrens*, Gyll. Wimbledon Common, New Forest, and Aviemore (Donisthorpe); Great Salkeld (Britten); Bovey, Devon (de la Garde).
- Aleochara nitida*, v. *bilineata*, Gyll. Ireland, rare, Donegal and Louth.
- Aleochara morion*, Grav. Irby, Grimsby (Wallace).
- Aleochara spadicea*, Er. Berkshire and Devonshire, in moles' nests (Joy); Scotland, Leadburn, Peeblesshire, first Scotch record, W. Evans. This species is widely distributed in moles' nests.
- Aleochara spadicea*, v. *procera*, Er. Forres (Chitty); Hartlepool (Gardner).
- Aleochara grisea*, Kr. Ireland, local, but widely distributed.
- Aleochara algarum*, Fauv., and *obscura*, Er. Ireland, widely distributed.
- Microglossa suturalis*, Mann. Birkdale (Chaster and Sopp); Great Salkeld (Britten).
- Microglossa marginalis*, Gyll. In birds' nests in trees, Bradfield, Berks (Joy); Woolton Hill, Hants (Donisthorpe); Huntingfield, Kent (Chitty); Pulborough (G. Nicholson); Water Eaton (Collins); Colchester (Harwood); Martlesham, Suffolk (Morley).

- Microglossa pulla*, Gyll. In ants' nests: Oxshott with *Lasius fuliginosus*, common, Weybridge with *F. rufa* (Donisthorpe); Wellington College, with *Lasius fuliginosus* (Joy); in birds' nests, Richmond Park (Donisthorpe); Bradfield, &c. (Joy); on carrion, Crowcombe, Somerset (Nicholson), Chiddingfold, &c.; Ireland, Mote Park, Roscommon (Halbert).
- Microglossa nidicola*, Fairm. Suffolk; Norfolk; Lincolnshire; Ireland, Donegal and Waterford.
- Microglossa gentilis*, Maerk. Hampstead (F. Smith); Oxshott, with *Lasius fuliginosus* (Donisthorpe); Bradfield, in birds' nests (Joy); with *L. fuliginosus*, Colchester (Harwood); Brent Knoll, Somerset (Rye); in bird's nest, Ferry Hinksey, with *Lasius fuliginosus*, Tubney (Walker).
- Oxyptoda spectabilis*, Maerk. Dorking and Porlock (Donisthorpe); Wytham, in mole's nest (Collins); Wigmore Wood, Kent (Walker); Ditchling, Sussex, and in mole's nest, Harrow (Dollman); Ashstead, in mole's nest (Nicholson); Bucks (W. E. Sharp); in wasps' nest, Great Salkeld (Britten).
- Oxyptoda longipes*, Muls. Widely distributed in moles' nests; in flood refuse, Forres (Chitty).
- Oxyptoda lividipennis*, Mann. Ireland, Donegal.
- Oxyptoda vittata*, Maerk. Ireland, Antrim.
- Oxyptoda exoleta*, Er. Streatley, in rabbit burrows, in numbers (Joy); Tubney (Collins); Birkdale, not uncommon (Chaster and Sopp); Fownhope, Herefordshire, and Porthkerry, S. Wales (Tomlin).
- Oxyptoda islandica*, Kr. (*edinensis*, Sharp). Nethy Bridge, Inverness-shire (Donisthorpe); Dalwhinnie (Joy).
- Oxyptoda lentula*, Er. Oxford district; Grimsby (Wallace); Ireland, near Belfast.
- Oxyptoda pectita*, Sharp. Nethy Bridge, Inverness-shire (Donisthorpe).
- Oxyptoda nigrina*, Wat. Ireland, Down.
- Oxyptoda exigua*, Er. Birkdale (Chaster and Sopp); with *Myrmica rubra*, Wass Fell, Cumberland (Britten).
- Oxyptoda mutata*, Sharp. Redhill and Burford Bridge (Linnell).
- Oxyptoda formiceticola*, Maerk. With *Formica rufa*, Wellington College, Berks (Joy); Kent, Bleane Woods (Donisthorpe), Wigmore Woods (Walker); Tubney (Collins); Norfolk (Edwards); Northumberland and Durham (Bagnall); Cumberland (Day).
- Oxyptoda recondita*, Kr. Wellington College, with *Formica sanguinea* (Donisthorpe), *Formica rufa* (Joy); Bleane Woods, with *F. rufa* (Donisthorpe); Haldon, Teignmouth, in old post (de la Garde).
- Oxyptoda hæmorrhœa*, Mann. With *F. rufa*, Tubney (Collins); with *Formica exsecta*, Bournemouth (Donisthorpe); Birkdale (Chaster and Sopp); Northumberland and Durham, with *F. rufa* (Bagnall); Ireland, Donegal and Wexford.
- Oxyptoda waterhousei*, Rye. Birkdale (Chaster and Sopp); Ireland, Dublin.
- Oxyptoda soror*, Thoms. Snowdon, common in moss (Beare and Donisthorpe).
- Oxyptoda brachyptera*, Steph. Bradfield (Joy); Llanbedr (Attlee); Fishbourne, I. of W. (Donisthorpe); Ireland, Donegal.
- Oxyptoda tarda*, Sharp. Near Great Salkeld, Cumberland (Britten).

Oxyopoda misella, Kr. Brandon (Tomlin).

Thiasophila angulata, Er. With *F. rufa*, Cumberland (Day); in rabbit burrow, Tubney (Collins); Northumberland and Durham (Bagnall).

Thiasophila inquilina, Maerk. With *Lasius fuliginosus*, Wellington College (Joy); near Oxford (Hamm); Weston-super-Mare (Crotch).

Ichnoglossa prolixa, Grav. Meavy Valley, Devonshire (Keys); Southport (Chaster and Sopp); Ireland, rare, Galway and Dublin.

Ocyusa incrassata, Kr. Oxshott, Weybridge, and Tilgate Forest (Donisthorpe); Newbury (Harwood); Oulton Broad (Bedwell); Hen Wood, Oxford (Walker); Cumberland (Day); Ireland, widely distributed.

Ocyusa hibernica, Rye. Snowdon (Sopp and Tomlin).

Ocyusa maura, Er. Cumberland (Day).

Ocyusa picina, Aubé. Newbury (Harwood); Suffolk (Morley).

Phlaeopora corticalis, Grav. Oxford (Champion); Southport (Chaster and Sopp).

Phlaeopora corticalis, v. *transita*, Muls. Sutton Park, Warwickshire (Blatch).

Ocalea castanea, Er. Ireland, Donegal, Antrim, and Wexford.

Ocalea latipennis, Sharp. Chiddingfold, Surrey (Donisthorpe); Inverness (Chitty); Ireland, Armagh (Johnson).

Ilyobates nigricollis, Payk. Newbury, in numbers (Harwood); South Brent, Devonshire (de la Garde); Barham (Stephens); Chippenham Fen (Donisthorpe); Burwell Fen, in mole's nest (Nicholson); Ireland, Antrim, Armagh, and Roscommon.

Ilyobates propinquus, Aubé. Rye (Donisthorpe); Bradfield (Joy); Suffolk (Morley); Market Bosworth, Leicestershire (F. Bouskell); Oxford district (Walker); Ditchling (Dollman).

Ilyobates forticornis, Lac. Banks of Gipping, Suffolk (Morley); River Kennet (Joy); Sandown, I. of W. (Nicholson).

Ilyobates glabriventris, Rye. Tring, by sweeping (Elliman).

Calodera nigrita, Mann. Woking (Champion); Gumley (Matthews); Yarnton (Walker); Norfolk, rather common in marshes (Edwards); Ireland, rare, Armagh (Johnson).

Calodera riparia, Er. Yarnton, near Oxford (Walker); Gumley (Matthews); Cumberland; Dartmoor (Keys).

Calodera aethiops, Grav. Yarnton, near Oxford (Walker); Gravesend (Nicholson); Ireland, very rare, Armagh (Johnson).

Calodera rubens, Er. Gumley (Matthews).

Calodera protensa, Mann. Yarnton, Oxford (Walker).

Calodera umbrosa, Er. Ipswich and Foxall (Morley); Great Salkeld, Cumberland (Britten); Oxford (Walker); King's Quay, I. of W. (Donisthorpe).

Chilopora rubicunda, Er. Perthshire (Joy).

Dinarda maerkeli, Kies. With *Formica rufa*. Ewhurst (Butler); Oxshott, Weybridge, and Parkhurst Forest, I. of W. (Donisthorpe); Wellington College (Joy); Tubney (Collins); Kent, Bleane Woods (Chitty), Wigmore

Wood (Walker); Symond's Yat (Tomlin); Devonshire (Keys); Keswick, Cumberland (Britten); Corbridge, Northumberland (Bagnall); Scotland, Killiecrankie (Hislop).

Dinarda dentata, Grav. Only with *Formica sanguinea*. Weybridge (F. Smith); Woking (Donisthorpe); Wellington College (Joy). The records from Scotland, and Exeter if taken with *F. rufa*, refer to *maerkeli*, Kies. The Plymouth and Weston-super-Mare records are *pygmaea*, Wasm., the host being *Formica fusca*, v. *fuscourufibarbis*.

Atemeles emarginatus, Grav. Is not found with *F. rufa*. Woking with *Myrmica sulcinodis*, Weybridge, and Porlock with *F. fusca* (Donisthorpe); Bradfield and Harewood Forest with *F. fusca* (Joy); Guestling and New Forest with *Myrmica scabrinodis*; Bournemouth with *Myrmica levinodis* (Donisthorpe); Lundy Island (Joy and Tomlin); Loggerheads and Glyndyfridivg with *F. fusca* (Tomlin); Suffolk with *Myrmica ruginodis* (Morley); Norwich (Wigham); Chorley Wood, Herts, with *Myrmica* (Nicholson); Luccombe, I. of W., sweeping (Butler); Oxford district (Hamm).

Atemeles paradoxus, Grav. Is not found with *F. fusca*. Whitsand Bay with *Formica fusca* v. *fuscourufibarbis* (Keys).

Myrmedonia haworthi, Steph. Headley Lane, Mickleham (W. E. Sharp); Colchester (Harwood).

Myrmedonia collaris, Payk. Wicken Fen, not uncommon with *Myrmica levinodis*, the larva also being found (Donisthorpe); Oulton Broad (Bedwell); Beceles (Piffard); Newbury, in numbers (Harwood); Oxford district (Walker); Saddington, Leicestershire (Matthews); Ireland, rare, Donegal, Armagh, Fermanagh, Monaghan, Sligo, and Galway.

Myrmedonia limbata, Payk. Lundy Island (Joy and Tomlin); Market Rasen, Lincs (Wallace); Ireland, Waterford.

Myrmedonia humeralis, Grav. With *Lasius fuliginosus* in plenty, Oxshott and Tilgate Forest (Donisthorpe); Wellington College (Joy); Chopwell, Durham, and Corbridge, Northumberland, with *Formica rufa* (Bagnall).

Myrmedonia cognata, Maerk. With *Lasius fuliginosus*. Wellington College (Joy); Hampstead (Janson); Darenth Wood (Donisthorpe); Brockenhurst (G. R. Waterhouse).

Myrmedonia lugens, Grav. With *Lasius fuliginosus*. Oxshott, Walton-on-Thames, and Chiddingfold (Donisthorpe); Wellington College (Joy); Cothill (Collins); Colchester (Harwood); Sydenham and Brockenhurst (G. R. Waterhouse).

Myrmedonia laticollis, Maerk. With *Lasius fuliginosus*. Cothill (Collins); Colchester (Harwood); Tostock (Tuck); Brockenhurst (Waterhouse); Plymouth (Reading).

Myrmedonia funesta, Grav. With *L. fuliginosus*. Cambridge (Crotch); Colchester (Harwood); Cothill, near Oxford (Collins); Chiddingfold, Surrey, and Ninham, I. of W. (Donisthorpe).

Drusilla canaliculata, F. This species kills and eats ants. Scotland, Inverness-shire (Black).

- Callicerus obscurus*, Grav. Ireland, Donegal, Derry, Roscommon, Clare, and Waterford.
- Callicerus rigidicornis*, Er. Bradfield and Wellington College (Joy and Fowler); New Forest and Sherwood Forest (Donisthorpe); Tubney (Holland); Birkdale sandhills (Chaster and Sopp); Cumberland (Day).
- Thamiaræa hospita*, Maerk. Cobham Park and Oxford (Walker); Ryde, I. of W. (Donisthorpe); Bradfield (Joy); Ireland, Lucan Demesne, co. Dublin (Halbert).
- Notothecta flavipes*, Grav. Keswick, Cumberland (Britten); Northumberland and Durham (Bagnall).
- Notothecta confusa*, Maerk. With *L. fuliginosus*. Oxshott and Pyrford (Donisthorpe); Wellington College (Joy); Birkdale sandhills (Chaster); Brockenhurst (G. R. Waterhouse); Weston-super-Mare and Cambridge (Crotch); near Oxford (Hamm).
- Notothecta anceps*, Er. With *Formica exsecta*, Bournemouth (Donisthorpe); with *F. rufa*, Keswick, Cumberland (Britten); Corbridge-on-Tyne (Bagnall).
- Alianta incana*, Er. Wales, Bog of Arthog (Donisthorpe); Ireland, Armagh and Fermanagh. Mr. Selous records finding this beetle in company with a Lepidopterous larva in the tunnels of the latter in the stems of *Typha* at Barton-on-Sea.
- Homalota currax*, Kr. South Brent, Devonshire (de la Garde); Ireland, Donegal, Antrim, and Dublin.
- Homalota languida*, Er. Luccombe, I. of W. (Champion); Yarnton (Walker); Ireland, co. Carlow (Halbert).
- Homalota insecta*, Thoms. Banks of Brent, Hanwell (Donisthorpe); Barham (Kirby); Norfolk (Edwards); Ireland, Armagh (Johnson).
- Homalota pavens*, Er. Ireland, Dublin.
- Homalota eichoffi*, Scriba. Wellington College (Joy). The record "Walton-on-Thames (Champion)" refers to *H. languida*.
- Homalota cambrica*, Woll. Plymouth district (Keys); Cumberland (Britten); Ireland, Donegal.
- Homalota planifrons*, Wat. Felixstowe (Morley).
- Homalota fragilis*, Kr. Christow, Devon (de la Garde); Winlaton Mill, Durham (Bagnall); Ireland, Donegal and Dublin.
- Homalota longula*, Heer. Cumberland (Britten); Winlaton Mill, Durham (Bagnall).
- Homalota subtileissima*, Kr. Banks of Eden, Cumberland (Britten); Winlaton Mill, Durham (Bagnall).
- Homalota luteipes*, Er. Christow and Slapton Lea, Devonshire (de la Garde); Isle of Man (Tomlin); Ireland, Armagh and West Meath.
- Homalota fallax*, Kr. Norfolk (Edwards).
- Homalota luridipennis*, Mann. Ireland, Antrim, Down, Dublin, and Kerry.
- Homalota gyllenhali*, Thoms. Teignmouth (de la Garde); Cumberland; Ireland, Armagh and Roscommon.

- Homalota hygrotopora*, Kr. Hanwell and Chiddingfold (Donisthorpe); Buckfastleigh, Devonshire (de la Garde); Norfolk; Grimsby (Wallace); Ireland, Donegal and Armagh.
- Homalota volans*, Scriba. Ireland, common.
- Homalota clavipes*, Shp. Dalwhinnie (Joy).
- Homalota nitidula*, Kr. Yarnton, near Oxford (Collins); Ireland, Donegal, not co. Down.
- Homalota alpestris*, Heer. North Wales, Snowdon (Beare and Donisthorpe); Cwmidwal (W. E. Sharp); River Petteiril, Cumberland (Day).
- Homalota oblongiuscula*, Sharp. Chiddingfold, Surrey (Donisthorpe); Tubney (Walker); Cumberland; Ireland, Armagh (Johnson).
- Homalota silvicola*, Fuss. Dawlish (de la Garde); Braemar (Donisthorpe).
- Homalota pagana*, Er. Great Blakenham, Suffolk (Morley); Norfolk (Edwards); Wytham Park (Walker); Ireland, Armagh (Johnson).
- Homalota algæ*, Hardy. Ireland, Derry and Mayo.
- Homalota occulta*, Er. Richmond Park, in rabbit burrows (Beare and Donisthorpe); Great Blakenham, Suffolk (Kirby); Birkdale (Chaster and Sopp); Teignmouth (de la Garde); Ireland, Donegal, "species near *occulta*"?
- Homalota princeps*, Sharp. Cremyll, Plymouth district (Keys).
- Homalota fungivora*, Thoms. Ireland, Galway.
- Homalota picipes*, Th. Shane's Castle, Lough Neagh, Ireland (Buckle).
- Homalota monticola*, Thoms. Snowdon (Donisthorpe); Ireland, Dublin (Halbert).
- Homalota subglabra*, Sharp. Bradfield (Joy); Tilgate (Champion).
- Homalota angustula*, Gyll. Southport (Chaster and Sopp); Cumberland (Britten).
- Homalota pilicornis*, Thoms. Bradfield (Joy); Durham (Bagnall); Cumberland (Day).
- Homalota debilis*, Er. Ireland, Armagh.
- Homalota fallaciosa*, Shp. Yarnton, near Oxford (Collins).
- Homalota cæsula*, Er. Tubney, near Oxford (Walker); Suffolk (Morley); Thetford, Norfolk (Edwards); Woolacombe (Champion).
- Homalota elegantula*, Bris. South Brent, Devon (Keys); Bradfield (Joy); Ireland, Armagh and Galway.
- Homalota splendens*, Kr. Woking and Oxford (Champion); Charing (Chitty).
- Homalota cuspidata*, Er. Mr. Bagnall records it from Gibside, Durham, preying on *Anoura muscorum*; Cumberland (Britten); Corbridge (Northumberland (Bagnall).
- Homalota eremita*, Rye. Chobham, Surrey (Champion); Epping Forest (Nicholson); Snowdon (Sopp and Tomlin); Snaefell, I. of Man (Tomlin); Pennines, Cumberland (Britten); Ireland, Donegal, Armagh, and Wicklow.
- Homalota gemina*, Er. Ireland, Portmore Lough (Halbert).
- Homalota vilis*, Er. Bradfield (Joy); Suffolk (Morley).
- Homalota laticeps*, Thoms. Oxford (Chitty).
- Homalota cavifrons*, Sharp. Parbold, Southport district (Chaster and Sopp); Pennines, Cumberland (Britten); St. Kilda (Joy).

- Homalota vicina*, Steph. In the E. M. M. for 1900, p. 134, Mr. Keys describes bituberculate males of this species.
- Homalota soror*, Kr. Ipswich (Morley); Colby, I. of Man (Tomlin); Cumberland (Day).
- Homalota exilis*, Er. Oxford (Walker); Norfolk, local (Edwards); Birkdale sandhills, common (Chaster and Sopp); Cumberland (Day); Winlaton Mill, Durham (Bagnall); Ireland, Galway, Carlow, and Kerry.
- Homalota palleola*, Er. Bradfield (Joy).
- Homalota pallens*, Redt. Banks of Eden, Cumberland (Britten); Winlaton Mill, Durham (Bagnall).
- Homalota parallela*, Mannh. In nests of *Formica rufa*. Cumberland, Keswick (Britten); Northumberland and Durham (Bagnall); Nethy Bridge (Donisthorpe).
- Homalota hepatica*, Er. Pamber Forest (Donisthorpe); Oxford (Chitty); Cumberland (Britten); Ireland, Donegal.
- Homalota aquatica*, Thoms. Devonshire, Buckfastleigh (de la Garde); Ireland, Armagh and Galway, Balrath, co. Meath (Donisthorpe).
- Homalota cœnicollis*, Sharp. Sandown, I. of W. (J. Taylor).
- Homalota valida*, Kr. Is not found in Ireland. Dalwhinnie (Joy).
- Homalota euryptera*, Steph. In cossus burrows, Bentley Woods, Suffolk (Morley); Oxford (Donisthorpe); in the burrows of *Cryptorhynchus lapathi*, Barrow-on-Soar, Leicestershire (Bouskell and Donisthorpe); Ireland, Armagh, Galway, and Clare.
- Homalota xanthopus*, Thoms. Ireland, Antrim.
- Homalota triangulum*, Kr. Ireland, Armagh (W. E. Sharp).
- Homalota ignobilis*, Sharp. Bury district, Suffolk (Tuck); Norfolk (Edwards).
- Homalota boletobia*, Th. Tubney (Collins); Cumberland (Day); Sandown, I. of W. (Donisthorpe).
- Homalota liturata*, Steph. Lees Court, Kent (Chitty); Tostock (Tuck).
- Homalota coriaria*, Kr. In fungus, Sandown, I. of W. (Donisthorpe); Bradfield, in squirrels' nests (Joy); Bury district (Tuck); Norfolk (Edwards); in birds' nests, Great Salkeld (Britten); Ireland, Clare.
- Homalota sodalis*, Er. With *F. rufa*. Weybridge (Donisthorpe); Ireland, Derry, in nest of *Bombus terrestris* (Buckle); Westmeath, in fungi.
- Homalota humeralis*, Kr. Newbury (Harwood); Forres (Chitty).
- Homalota clancula*, Er. Chesham (Elliman); Yarnton (Walker).
- Homalota ravilla*, Er. Ireland, Clare.
- Homalota palustris*, Kies. Ireland, Waterford.
- Homalota corvina*, Thoms. Ireland, Donegal, Armagh, and Wicklow.
- Homalota puberula*, Sharp. Wytham Park and Tubney (Walker); Chesham (Elliman); Charing (Chitty).
- Homalota atomaria*, Kr. Norfolk (Dossetor); Wytham Park (Walker).
- Homalota perixigua*, Sharp. Norfolk (Dossetor).
- Homalota scapularis*, Sahlb. Newbury (Harwood); Ditchling (Dollman); Oxford district (Walker); Huntingfield (Chitty).
- Homalota dilaticornis*, Kr. Near Oxford (Walker); in truffles from Salisbury and at Bradfield (Joy).

- Homalota testaceipes*, Heer. In old wasps' nests, Bradfield (Joy); in fungus, Sandown, I. of W. (Donisthorpe); Oxford district (Walker).
- Homalota oblita*, Er. Tostock (Tuck); Tubney (Collins); Gelt Woods, Cumberland (Day).
- Homalota autumnalis*, Er. Edenhall, Cumberland (Britten); Christow, Devon (de la Garde).
- Homalota mortuorum*, Thoms. Cumberland (Britten); Dawlish (de la Garde).
- Homalota atricolor*, Sharp. Ireland, Donegal, Armagh, Dublin, Carlow, and Wexford.
- Homalota inquinata*, Er. Sandown, I. of W. (Donisthorpe); Suffolk (Stephens); Norfolk, local (Edwards); Scotland, Moray (Chitty).
- Homalota germana*, Sharp. Ireland, Donegal and Clare.
- Homalota villosula*, Kr. Oxford district (Walker); Ireland, Galway and Dublin.
- Homalota cinnamoptera*, Thoms. Devonshire, Buckfastleigh (de la Garde).
- Homalota marcida*, Er. Tubney; Ireland, rare, Armagh.
- Homalota intermedia*, Thoms. Suffolk (Morley); Norfolk, rare (Edwards).
- Homalota consanguinea*, Epp. Tring (Elliman); in nest of *L. umbratus*, Wellington College (Donisthorpe).
- Homalota pygmæa*, Grav. Oxford district (Walker); Ireland, Armagh and Dublin.
- Homalota pilosiventris*, Thoms. Birkdale (Chaster); Ireland, Armagh and Carlow.
- Homalota subsinuata*, Er. Southport district, common (Chaster and Sopp).
- Homalota montivagans*, Woll. Ireland, Donegal.
- Homalota orbata*, Er. Bentley Woods, Suffolk (Morley); Cumberland; Ireland, Kerry.
- Ischnopoda cærulea*, Sahlb. Porlock (Donisthorpe); River Meavy, Devonshire (Keys); Great Salkeld, Cumberland (Britten); Scotland, Garve, Ross-shire (Joy).
- Tachyusa constricta*, Er. Chiddingfold (Donisthorpe); Fownhope, Herefordshire (Tomlin); Cumberland; Ireland, Derry.
- Tachyusa scitula*, Er. Lucombe, I. of W. (Champion); Tewkesbury (Donisthorpe); Gimingham, Norfolk (Butler); Scotland, River Spey (Chitty).
- Tachyusa flavitarsis*, Sahlb. Ireland, Derry.
- Tachyusa umbratica*, Er. Chiddingfold (Donisthorpe); Norfolk, Waxham (Champion).
- Tachyusa atra*, Grav. Suffolk (Morley); Norfolk, not common (Edwards); Mordiford, Herefordshire (Tomlin); Barmouth, N. Wales (Donisthorpe); Cumberland (Day); Ireland, Donegal, Derry, Antrim, Down, Armagh, Fermanagh, and Galway.
- Tachyusa concolor*, Er. Richmond Park (Beare); Hanwell (Donisthorpe); Bradfield (Joy); Bredon, Worcestershire (Blatch); Woking (Champion).
- Myrmecopora uvida*, Er. Ireland, Wicklow (Carpenter).
- Myrmecopora sulcata*, Kies. Ireland, Mayo and Kerry.

- Falagria sulcatula*, Grav. Oxford (Walker); Market Bosworth, Leicestershire (Donisthorpe); Barron Wood, Cumberland (Britten); Nocton, Lincs (E. A. Waterhouse).
- Falagria thoracica*, Curt. Suffolk, Kirkley (Saunders), in nest of *Bombus terrestris*, Bury (Tuck); Cothill (Collins); Coulsdon (Bedwell); Blackgang, I. of W. (Donisthorpe); Lundy Island (Joy); Sandown and Luccombe (Taylor); Ditchling (Dollman); Scotland, Orchardton (Douglas); Ireland, Derry, Antrim, Queen's County, and Cork. Often in rabbit burrows.
- Falagria obscura*, Grav. Ireland, common.
- Encephalus complicans*, Westw. Lundy Island (Joy); Snowdon (Sopp and Tomlin); Doncaster (Corbett). In the E. M. M. for 1901, p. 151, Mr. Morley writes a note on the curious manner in which the abdomen of this insect is carried in life.
- Gyrophæna pulchella*, Heer. New Forest (Dr. Sharp); Hartlepool (Gardener); Scotland, Forres (Chitty); Buchanan Castle (Fergusson).
- Gyrophæna affinis*, Mann. Ireland, Galway (Halbert).
- Gyrophæna poweri*, Crotch. Epping Forest (Nicholson); Gumley, Leicestershire (Matthews).
- Gyrophæna gentilis*, Er. Ireland, Ballycastle, co. Antrim (Chaster).
- Gyrophæna nana*, Payk. Sherwood Forest (Donisthorpe); Suffolk (Morley).
- Gyrophæna minima*, Er. Ireland, Antrim and Sligo.
- Gyrophæna lævipennis*, Kr. Ireland, widely distributed.
- Gyrophæna lucidula*, Er. In damp sticks, Yarnton (Walker).
- Gyrophæna manca*, Er. Streatley, Berks (Joy); Whitham Park (Walker); Cumberland.
- Gyrophæna strictula*, Er. Chiddingfold and Leighton Buzzard (Donisthorpe); Bucks (W. E. Sharp); Gumley, Leicestershire (Matthews); Hartlepool (Gardener); Cothill, Oxford (Walker).
- Agaricochara lævipennis*, Kr. Norfolk, rare (Dossetor).
- Placusa pumilio*, Grav. Besselsleigh, near Oxford (Walker); Market Bosworth, Leicestershire (Donisthorpe).
- Placusa complanata*, Er. Great Salkeld, Cumberland, common in burrows of *Myelophilus piniperda*, under fir bark (Britten).
- Placusa denticulata*, Shp. Streatley, Berks (Joy); New Forest (Dr. Sharp).
- Placusa infima*, Er. Cromer (Elliman).
- Epipeda plana*, Gyll. In the burrows of *Scolytus destructor*, Cumberland (Britten).
- Silusa rubiginosa*, Er. Godstow, Oxford (Walker); Richmond Park (Chitty); Ealing (Dollman).
- Actocharis readingii*, Sharp. Mr. Keys takes it in plenty near Plymouth.
- Euryusa laticollis*, Heer. Ilfracombe (Henderson); Windsor (Chitty).
- Leptusa analis*, Gyll. Kent, Lee's Court (Chitty); Devonshire, Bickleigh and Mary Tavy (Keys); Gumley, Leicestershire (Matthews); Teesdale (Bagnall); Ireland, Antrim (Chaster).

- Sipalia testacea*, Bris. Plymouth, not uncommon (Keys).
- Bolitochara lucida*, Grav. Bury, Suffolk (Tuck); Oxford district (Walker); Kearnsey and Ouston Wood, Leicestershire (Donisthorpe); Cumberland.
- Bolitochara lunulata*, Payk. Cumberland (Day); Scotland, Nethy Bridge (Donisthorpe).
- Bolitochara bella*, Maerk. Birkdale (Chaster and Sopp).
- Bolitochara obliqua*, Er. Ireland, Donegal, Antrim, Down, Armagh, and Fermanagh.
- Phytosus spinifer*, Curt. Dawlish, Devonshire (de la Garde); Waxham, Norfolk (Champion); Ireland, Meath.
- Phytosus balticus*, Kr. Cloghane (Joy); Waxham, Norfolk (Champion); Ireland, Donegal, Longford, and Meath.
- Phytosus nigriventris*, Chevr. Christchurch (Gorham); Poole Harbour (Tomlin); Chesil Beach (Forsyth); Whitsand Bay (Keys); Flintshire (Tomlin); Hoylake, frequent in spring and autumn in empty egg-capsules of *Buccinum undatum*, the common whelk (Sopp); Ireland, Dublin (Kemp).
- Diglotta mersa*, Hal. Milbrook, Plymouth (Keys); Barmouth, N. Wales (Donisthorpe); Southport district, not uncommon (Chaster and Sopp); Ireland, Down, Waterford, and Kerry.
- Diglotta submarina*, Fairm. Camber, near Rye (Bennett); Isle of Sheppey (Champion); Weymouth (Walker); Altcar (Tomlin); Sillioth, Cumberland (Day); Dawlish Warren, Devonshire (de la Garde).
- Hygronoma dimidiata*, Grav. Hanwell (Donisthorpe); Oxford district (Walker); Suffolk (Morley); Cumberland (Day); Ireland, Armagh (Johnson).
- Oligota inflata*, Mann. Ireland, Donegal, Derry, Down, and Kerry.
- Oligota parva*, Kr. Enfield (Pool); Sydenham (Donisthorpe); Southport (Chaster).
- Oligota atomaria*, Er. Great Salkeld, Cumberland (Britten).
- Oligota punctulata*, Heer. Lundy Island (Joy); Ireland, Dublin, Wexford, and Kerry.
- Oligota granaria*, Er. In some numbers in company with *Mycetæa hirta*, *Atomaria nigripennis*, and *Cryptophagi* in a granary, High Holborn (Donisthorpe); cellar in Shoe Lane (Rye); Redhill (Linnell); Plymouth (Keys); Reading (Joy); Cothill and Headington (Walker).
- Oligota flavicornis*, Lac. Winlaton-on-Tyne (Bagnall).
- Myllæna dubia*, Grav. Ireland, Donegal and Armagh.
- Myllæna intermedia*, Er. Ireland, Armagh and Clare.
- Myllæna minuta*, Grav. Richmond Park (Donisthorpe); Birkdale; Ireland, Armagh, Sligo, and Clare.
- Myllæna kraatzii*, Sharp. Yarnton (Walker); Chiddingfold (Donisthorpe); Ireland, Roundstone, co. Galway (Chaster).
- Myllæna gracilis*, Matth. Birkdale (Chaster and Sopp).
- Myllæna infuscata*, Matth. Isle of Wight (Donisthorpe); Oxford district (Collins); Isle of Man (Tomlin); Cumberland.

- Mylæna brevicornis*, Matth. Ireland, Donegal, Derry, Antrim, Armagh, and Kerry.
- Gymnusa brevicollis*, Payk. Isle of Man (Tomlin); Ireland, Derry and Armagh.
- Gymnusa variegata*, Kies. Carrog, N. Wales (Beare and Donisthorpe); Ireland, Holywood, co. Down (Haliday).
- Deinopsis erosa*, Matth. Richmond Park and Chiddingfold (Donisthorpe); Oxford (Walker); Cambridge (Dollman); Pulborough (G. Nicholson); Norfolk, scarce (Edwards). Described (and figured) by Matthews, from Weston (Ent. Mag., 1838, p. 193); Dawlish (de la Garde).
- Hypocyptus læviusculus*, Mannh. Dalwhinnie and Lundy Island (Joy); Isle of Wight (Donisthorpe); Ireland, Antrim, Carlow, and Cork.
- Hypocyptus ovulum*, Heer. Bradfield (Joy); Gumley, Leicestershire (Matthews); Ainsdale (Chaster and Sopp); Ireland, Donegal, Armagh, and Dublin.
- Hypocyptus seminulum*, Er. Cobham Park, abundant (Walker); near Sandwich (E. A. Waterhouse); Suffolk (Morley); Norfolk, scarce (Edwards); Cumberland; Ireland, Donegal, Armagh, and Dublin.
- Hypocyptus punctum*, Mots. Wytham Park (Collins); New Forest (Donisthorpe); Cumberland (Day).
- Hypocyptus apicalis*, Bris. Great Salkeld, Cumberland (Britten); Gibside, Durham, and Ryde, I. of W. (Donisthorpe).
- Hypocyptus discoideus*, Er. Redhill (Linnell); Sutton Broad (Beare and Donisthorpe).
- Conosoma immaculatum*, Steph. Suffolk, rare (Morley); Norfolk, not common (Edwards); Camelford, N. Cornwall (Butler); Ireland, Shane's Castle (Buckle).
- Conosoma pedicularium*, Grav. Yarnton (Walker); South Hylton, Durham (Bagnall); Ireland, Shane's Castle district, Lough Neagh (Halbert).
- Conosoma bipunctatum*, Gr. In rotten wood of beech, Epping Forest (W. E. Sharp); Broxbourne (Nicholson).
- Tachyporus obtusus*, v. *nitidicollis*, Steph. Stoke Edith, Herefordshire, and Isle of Man (Tomlin).
- Tachyporus formosus*, Matth. Ditchling (Dollman); Bradfield, Berks, and Lundy Island (Joy); Knowle, Warwickshire (Ellis); Ipswich (Morley); Rossbeigh, co. Kerry (Donisthorpe); Scotland, Ayr (Fergusson), Lag, Arran (W. Evans).
- Tachyporus solutus*, Er. Cumberland; Lundy Island (Wollaston); Isle of Man (Tomlin).
- Tachyporus pallidus*, Sharp. Kibworth, Leicestershire (Miss M. E. Whitton); Cumberland; West Malvern (Tomlin); Ireland, Roscommon and Waterford.
- Tachyporus humerosus*, Er. Ireland, Donegal, Derry, Antrim, Fermanagh, Cavan, Dublin, and Kerry.
- Tachyporus tersus*, Er. New Forest (Chitty); Derwent Valley (Bagnall); Richmond Park, not uncommon (Dollman); Ireland, widely distributed.

- Tachyporus transversalis*, Grav. Black Pond, Esher, in plenty (Beare and Donisthorpe); Sheen Common (Dollman); Norfolk, scarce (Edwards); Yarnton (Walker). It is not found in Ireland.
- Lamprinus saginatus*, Grav. With *Formica sanguinea*, Weybridge (Donisthorpe); with *Lasius flavus*, Charing, Kent (Chitty); Lundy Island (Joy and Tomlin); with *Formica fusca*, New Forest, and *Myrmica ruginodis*, near Oxford (Walker); Bradfield (Joy); Scotland, Nethy Bridge (Beare), Forres (W. E. Sharp); Ireland, Armagh and Dublin.
- Cilea silphoides*, L. Ireland, Armagh and Fermanagh.
- Tachinus rufipennis*, Gyll. Dartmoor (Keys); Cumberland (Day).
- Tachinus flavipes*, F. Redstone, Surrey (Linnell); Cusop Dingle, Herefordshire (Tomlin); Grimsby (Wallace).
- Tachinus proximus*, Kr. Cumberland (Britten and Day).
- Tachinus pallipes*, Grav. Bardon Hill, Leicestershire (F. Bates); New Forest (Donisthorpe); Niton, I. of W. (Mitford); Ireland, Donegal and Derry.
- Tachinus scapularis*, Steph. Keswick, Cumberland (Britten); Weybridge (Donisthorpe); Reading (Tomlin); Oxford (Walker).
- Tachinus bipustulatus*, F. Richmond Park, Enfield, and Ryde, I. of W. (Donisthorpe); New Forest (Walker); Woking (Champion); Ealing (Dollman).
- Tachinus laticollis*, Grav. Ireland, widely distributed.
- Tachinus collaris*, Grav. Norfolk, not uncommon (Edwards).
- Tachinus elongatus*, Gyll. Boar's Hill, Oxford (Holland); N. Wales, Snowdon (Sopp and Tomlin), Carrog (Donisthorpe); Cumberland; Ireland, Donegal and Wicklow.
- Megacronus cingulatus*, Mann. Wimbleton Common, Braunton Burrows, and Cobinshaw, near Edinburgh, in plenty (Beare); Woking (Champion); Cobham Park and Wytham Park (Walker); Newbury (Harwood); Colborne, I. of W. (Pool); Bradgate Park, Leicestershire (Donisthorpe); Cumberland (Britten); Grimsby (Wallace); Ireland, Donegal, Fermanagh, Roscommon, and Cork.
- Megacronus analis*, F. Ireland, not uncommon.
- Megacronus inclinans*, Grav. Wimbleton Common and Pulborough (G. Nicholson); Shere (Bedwell); Epping Forest (Dollman); Cobham Park (Walker); Hen Wood, Oxford (Holland); New Forest (Donisthorpe); Suffolk (Morley); Gibside, Durham (Bagnall); Snowdon (P. H. Jackson).
- Bryoporus cernuus*, Gr. Bardon Hill, Leicestershire (F. Bouskell).
- Bryoporus rugipennis*, Pard. Fionn Bheinn, N.B. (Joy).
- Bolitobius exoletus*, Er. Ireland, widely distributed.
- Mycetoporus lucidus*, Er. Wood Eaton (Walker); Bucks (W. E. Sharp); Snowdon; Cumberland; Gibside (Bagnall); Ireland, Armagh (Johnson).
- Mycetoporus splendens*, Marsh. Ireland, Clare and Cork.
- Mycetoporus punctus*, Gyll. Richmond Park (Dollman); Newbury (Harwood); Bradfield (Joy); Oxford district (Walker); Snowdon (Sopp and Tomlin); Cumberland; Winlaton (Bagnall).

- Mycetoporus lepidus*, Grav. Ireland, Donegal and Clare.
- Mycetoporus longulus*, Mann. Donegal, Coolmore, Armagh, Clare, and Kerry.
- Mycetoporus nanus*, Er. Birkdale and Crosby (Southport List); Ireland, Donegal, Derry, and Armagh.
- Mycetoporus monticola*, Fow. Ben Wyvis, Ross-shire (Joy); Ben-na-Buird, Aberdeenshire (Donisthorpe).
- Mycetoporus angularis*, Rey. Sandown, I. of W. (Taylor); Dawlish (de la Garde); Southport (Chaster); Ireland, Antrim, Down, Wicklow, and Clare.
- Mycetoporus clavicornis*, Steph. Parkhurst Forest and Luccombe Chine, I. of W. (Donisthorpe); Waxham, Norfolk (Champion); Birkdale (Chaster and Sopp); Ireland, Donegal and Galway.
- Mycetoporus clavicornis*, v. *forticornis*, Fauv. Warwickshire (Blatch and Ellis); Tubney (Donisthorpe); New Forest (Dollman).
- Mycetoporus splendidus*, Grav. Freshney Bog, Lincs (Wallace); Axwell Park, Durham (Bagnall); Ireland, widely distributed.
- Mycetoporus longicornis*, Kr. Ledbury and West Malvern (Tomlin); Wood Eaton (Walker); Wicken Fen (Donisthorpe); Bradfield (Joy).
- Habrocerus capillaricornis*, Grav. Sandown, I. of W. (Donisthorpe and Taylor); Bentley Woods, Suffolk (Morley); Newbury (Harwood); Plymouth (Keys); Cumberland; Alford, Lincs (Wallace); Southport district (Chaster); Ireland, Donegal.
- Trichophya pilicornis*, Gyll. Bradfield (Joy); Chobham Common (Donisthorpe).
- Euryporus picipes*, Payk. Herefordshire (Tomlin); Hambleton, Bucks, and Crowborough, Sussex (W. E. Sharp); Yarnton (Holland); Cumberland; Rannoch (Nicholson); Nethy Bridge (Beare); Garve, Ross-shire (Joy).
- Heterothops binotata*, Er. Ipswich district (Morley); Whitley (Bagnall); Ireland, Donegal, Down, Louth, and Dublin; Rossbeigh, co. Kerry (Donisthorpe).
- Heterothops prævia*, Er. Bradfield (Joy); Teignmouth (de la Garde); Lundy Island (Joy and Tomlin); Snowdon (Donisthorpe); Norfolk, rare (Edwards); Great Salkeld, Cumberland (Britten).
- Heterothops dissimilis*, Grav. Ireland, Donegal and Waterford.
- Velleius dilatatus*, F. Suffolk (Henslow); Bury district (Tuck); Cokethorpe Park (Stone, Ent. Week. Intell., Nov. 3, 1860); a ♂, one of twelve specimens taken in traps near hornets' nests in the New Forest by Mr. H. Donisthorpe in 1901, measures 32 mm. in length.
- Quedius longicornis*, Kr. Bradfield, in moles' nests (Joy); very widely distributed in moles' nests; Llanberis (Bedwell); Sandown, I. of W. (J. Taylor); Ireland, Mount Talbot, co. Roscommon (Hon. R. E. Dillon).
- Quedius microps*, Grav. Epping (Pool); Bradfield (Joy); Oxford (Walker); Tewkesbury (Donisthorpe); Stoke Edith Park, Herefordshire (Dr. Wood); Gibside, Durham (Bagnall).

- Quedius ventralis*, Ar. Enfield (Pool); Ealing (Dollman); Bradfield (Joy); Tewkesbury and Freshwater, I. of W. (Donisthorpe); Chilswell Farm, near Oxford (M. Jacoby).
- Quedius fulgidus*, F. Ditchling, common in cow-sheds (Dollman); Ireland, Down, Armagh, Mayo, Louth, and Kerry.
- Quedius puncticollis*, Thoms. Sevenoaks (Donisthorpe); Oxford (Walker); Bradfield, in wasps' nests (Joy); Bury district, in wasps' nests (Tuck); Ince, Cheshire, in wasp's nest (Newstead); Birkdale (Chaster); Cumberland; Ireland, frequent.
- Quedius brevicornis*, Thoms. Enfield, in bird's nest (Pool); Bradfield, &c., in birds' nests (Joy); Bury district, in nest of *Vespa germanica* (Tuck); Oxford district (Walker).
- Quedius xanthopus*, Er. Porlock (Blatch); Crowcombe (Nicholson).
- Quedius scitus*, Grav. Coddendam, Suffolk (Fox); Tewkesbury, in old poplar in company with *Q. microps*, *Abræus*, and *Plegaderus*, &c. (Donisthorpe); Grantchester (Dollman); Fen Ditton, Cambridge (Nicholson); Oxford (Walker); Edenhall, Cumberland (Britten).
- Quedius brevis*, Er. With *Formica rufa*. Weybridge (Donisthorpe); Walthamstow (Butler); Tubney (Collins); Colchester (Harwood); Chopwell, Durham, and Corbridge-on-Tyne (Bagnall); with *Lasius fuliginosus*, Oxshott, in plenty (Donisthorpe); Wellington College (Joy); in bees' nests, Tostock (Tuck); Ireland, in *F. rufa* nest, Caragh Lake, co. Kerry (Bouskell).
- Quedius fuliginosus*, Grav. Ireland, common.
- Quedius tristis*, Grav. Is common in Scotland, Arthur's Seat, and North Queensferry, &c. (Beare); Orchardton, common (Douglas).
- Quedius picipes*, Mann. Ireland, widely distributed.
- Quedius nigriceps*, Kr. Balrath, co. Meath, Ireland (G. Nicholson).
- Quedius fumatus*, Steph. Ireland, Antrim, Armagh, Fermanagh, Wicklow, Cork, and Kerry.
- Quedius maurorufus*, Grav. Ireland, Donegal, Antrim, Armagh, Fermanagh, Sligo, and Dublin.
- Quedius umbrinus*, Er. Chiddingfold, Surrey (Donisthorpe); Crowcombe, Somerset (G. Nicholson); Snowdon (Sopp and Tomlin); Grimsby (Wallace); Ireland, Antrim, Fermanagh, Galway, and Dublin.
- Quedius suturalis*, Kies. Gravesend (Donisthorpe); Gibside (Bagnall).
- Quedius scintillans*, Grav. Oulton Broad (Bedwell); Birkdale and Southport (Chaster and Sopp); Ireland, Donegal and Derry, in carrion (Buckle); Armagh (Johnson).
- Quedius auricomus*, Kies. Cusop Dingle, Herefordshire (Tomlin); Plymouth district (Keys); Gelt Woods, Cumberland (Donisthorpe); Ireland, Fermanagh and Sligo.
- Quedius rufipes*, Grav. Isle of Mull (Tomlin); Ireland, widely distributed.
- Quedius attenuatus*, Gyll. Ireland, common.
- Quedius semicænus*, Steph. Isle of Mull (Tomlin); Ireland, common.
- Quedionuchus lævigatus*, Gyll. Bury district, Suffolk (Tuck); Gibside, Durham, under beech bark (Bagnall).

- Creophilus macillosus*, L., v. *ciliaris*, Steph. Ashtead, Surrey (Donisthorpe); Whitsand Bay (Keys); Winlton-on-Tyne (Bagnall); Ireland, common.
- Emus hirtus*, L. Redruth, near Lizard Point, autumn, 1881 (Jenkin); Sittingbourne, May 30, 1896 (Carr); sixteen specimens taken by Dr. Cameron in the Sheerness district in 1909.
- Leistotrophus nebulosus*, F. Ireland, rare, Antrim, Down, Armagh, Fermanagh, and Roscommon. The under-side of the elytra in *Leistotrophus* is of a beautiful peacock blue.
- Leistotrophus murinus*, L. Ireland, local, Donegal, Antrim, Down, Armagh, Wexford, Cork, and Kerry.
- Staphylinus pubescens*, De G. New Forest (Donisthorpe); Bagley Wood (Holland); Norfolk, scarce (Edwards); Isle of Man (Tomlin); Ireland, common.
- Staphylinus fulvipes*, Scop. Pamber Forest (Donisthorpe); Buckfastleigh, Devonshire (de la Garde); Chippenham Fen (Gorham); Holme Fen (Janson); Sherwood Forest (Blatch); Scotland, Rannoch (Theodore Wood).
- Staphylinus stercorarius*, Ol. In nests of *Lasius flavus*, Blackgang and Sandown, I. of W., with *Myrmica scabrinodis*, Forth Bridge (Donisthorpe); in nest of *Myrmica ruginodis*, Rannoch (Walker).
- Staphylinus latebricola*, Grav. Chattenden and Wigmore Wood (Walker); Mickleham (W. E. Sharp); Ferry Hinksey (Holland); Barham, Suffolk (Curtis); Scotland, Rannoch (Nicholson).
- Staphylinus erythropterus*, L. Aldeburgh, Suffolk (Garneys); Norfolk, rare, Horning (Edwards); Snowdon (Sopp); Cumberland.
- Ocypus similis*, F. Shirley, Surrey, Pevensey, Sussex, and Buddon Wood, Leicestershire (Donisthorpe); Suffolk, Bentley Woods (Morley); Bury district (Tuck); Doncaster (Corbett); Cumberland; Ireland, near Belfast.
- Ocypus cyaneus*, Payk. Godalming, Surrey (Pollock); Suffolk, Bury St. Edmunds (Norgate); Norfolk, Mousehold Heath and Lakenham (Edwards), Drayton (Thouless); Scotland, Nairn (Yerbury), Grantown-on-Spey (Bishop).
- Ocypus fuscatus*, Grav. Wicken Fen (Donisthorpe); Christ Church Meadow, Oxford (F. Holme); Cumberland; Winlton-on-Tyne (Bagnall).
- Ocypus pedator*, Grav. Cuxton Downs (Walker); Isle of Wight, Freshwater (Champion), Sandown (Donisthorpe); Swanage (Rye); St. Margaret's Bay (Bedwell); Norfolk, very rare (Paget).
- Ocypus ater*, Grav. Inland records: Penge (Donisthorpe); Oxford (Walker); Winlton (Bagnall). Yarmouth, I. of W., common (Donisthorpe); Lundy Island (Joy).
- Ocypus compressus*, Marsh. Isle of Wight, Sandown (Beare), Blackgang (Donisthorpe); Lundy Island (Wollaston); Epping Forest (Nicholson); Leighton Buzzard (Crawshay); Grimsby (A. Smith); Ireland, local, but widely distributed.
- Philonthus splendens*, F. Donegal, Antrim, Armagh, Fermanagh, Limerick, Cork, and Kerry,

- Philonthus intermedius*, Boisd. Lundy Island (Wollaston); Cumberland; Ireland, frequent.
- Philonthus proximus*, Kr. Donegal, Antrim, Down, Armagh, Fermanagh, Mayo, Galway, Dublin, and Kerry.
- Philonthus addendus*, Sharp. Doncaster (Corbett); Herefordshire (Tomlin); near Oxford (Walker); Ireland, Donegal, Down, Armagh, Fermanagh, Cavan, Dublin, Wicklow, Carlow, Wexford, Waterford, Kerry, and Meath.
- Philonthus carbonarius*, Gyll. South Brent, Devonshire (de la Garde); Grimsby (Wallace); Cumberland; Ireland, Donegal, Antrim, Armagh, Fermanagh, Cavan, and Dublin.
- Philonthus scutatus*, Er. Ireland, Ballycastle, co. Antrim (Tomlin).
- Philonthus decorus*, Grav. Ireland, common.
- Philonthus lucens*, Er. Chobham (Champion); Redhill Common (Linnell); Sandown, I. of W. (Taylor); Alverstone, I. of W. (Ellis); Berkshire (Joy); Oxford district (Holland); Bentley Woods (Morley); Oulton Broad (Bedwell); Kirby Bedon (Edwards); Leidr Valley, N. Wales (W. E. Sharp); Scotland, Nethy Bridge (Donisthorpe); Ireland, Donegal, Armagh, Fermanagh, and Cavan.
- Philonthus lepidus*, Grav. Bury district (Tuck); Ireland, Sligo (Johnson).
- Philonthus albipes*, Grav. Lundy Island (Joy and Tomlin); Cusop Dingle, Herefordshire; Oxford district (Donisthorpe); Pulborough (Nicholson); Grimsby (Wallace); Ireland, Donegal, Fermanagh, Louth, Dublin, Waterford, and Meath.
- Philonthus umbratilis*, Grav. Pulborough (G. Nicholson); Bucks (W. E. Sharp); Bentley Woods, Suffolk (Morley); East Rudham, Norfolk (Wood); South Brent, Devonshire (de la Garde); Ireland, Donegal, Antrim, Armagh, Fermanagh, Dublin, Clare, Kerry, and Meath.
- Philonthus cephalotes*, Grav. Lundy Island (Joy); Grimsby (Wallace); Ireland, widely distributed.
- Philonthus nigriventris*, Th. Bardon Hill and Bradgate Park, Leicestershire (F. Bates); South Brent, Devon (de la Garde).
- Philonthus fuscus*, Grav. In birds' nests. Epping Forest (Donisthorpe and Pool); Chatham and Cobham Park (Walker); Huntingfield (Chitty); Bradfield, &c. (Joy); Woolton Hill (Donisthorpe); Osterley, Middlesex (W. E. Sharp); Wytham (Collins); Pulborough (G. Nicholson); Coulsdon (Bedwell); Ditchling (Dollman).
- Philonthus ebeninus*, Grav. Ireland, common.
- Philonthus ebeninus*, v. *corruscus*, Gr. Bradfield (Joy); Llandaff and Ledbury (Tomlin); Sandown, I. of W. (Taylor); Ditchling (Dollman).
- Philonthus corvinus*, Er. Penrith, Cumberland (Day); Ireland, Monaghan (Johnson).
- Philonthus fumigatus*, Er. Lymington Salterns (Donisthorpe); Bucks (W. E. Sharp).
- Philonthus debilis*, Grav. Ireland, Fermanagh and Dublin.
- Philonthus sanguinolentus*, Grav. Ireland, common.
- Philonthus cruentatus*, Gmel. Ireland, Donegal, Antrim, Louth, and Waterford.

- Philonthus longicornis*, Steph. Ireland, Donegal, Fermanagh, Meath, and Dublin.
- Philonthus agilis*, Grav. Pulborough, Fen Ditton, &c. (G. Nicholson); Lundy Island (Joy).
- Philonthus vernalis*, Grav. Cothill (Collins); Weybridge (Donisthorpe); Lundy Island (Joy and Tomlin); Southwold (Morley); Cumberland; Ireland, Donegal and Kerry.
- Philonthus ventralis*, Grav. Chiddingfold (Donisthorpe); Suffolk (Morley); Alington and Pulborough (G. Nicholson); Southport district (Chaster and Sopp); Ireland, Donegal, Armagh, Fermanagh, and Wexford.
- Philonthus quisquiliarius*, Gyll. Very common on the banks of the reservoirs in Leicestershire, Cropstone, Thornton, &c. (Bouskell); Suffolk, Felixstowe (Morley); Norfolk (Edwards); Scotland, Loch Leven, abundant (Beare); Ireland, common in the north and west.
- Philonthus splendidulus*, Gray. Ireland, Kerry.
- Philonthus thernmarum*, Aubé. Summertown (Walker); Snowdon (Sopp and Tomlin); Yelverton (Keys); Ireland, Down.
- Philonthus nigrita*, Nord. Oulton Broad (Bedwell); Norfolk, Ringland (Edwards); Snowdon; Cumberland; Mull (Tomlin); Ireland, widely distributed.
- Philonthus fumarius*, Grav. Ireland, Armagh, Fermanagh, Cavan, and Galway.
- Philonthus micans*, Grav. Suffolk, Brandon (Morley); Norfolk, common in marshes (Edwards); Birkdale (Chaster and Sopp); Barmouth (Donisthorpe); Ireland, Donegal, Armagh, Fermanagh, Galway, Dublin, and Wicklow.
- Philonthus astutus*, Er. Plymouth (Keys).
- Philonthus nigritulus*, Grav. Oxford district; Gumley, Leicestershire (Matthews); Southport, not uncommon (Chaster and Sopp); Ireland, not uncommon (Johnson and Halbert).
- Philonthus fulvipes*, F. Suffolk (Morley); Glyn Ceiriog (Tomlin); Denbighshire and Carnarvonshire (W. E. Sharp).
- Philonthus puella*, Nord. Reigate (Linnell); Oxford district (Collins); Abergwessin and Llanbedr (Attle); Yelverton (Keys); Ledbury, Hereford (Tomlin).
- Philonthus pullus*. Candleston, Glamorgan (Tomlin).
- Cafus cicatricosus*, Er. Ryde, I. of W. (Ford).
- Cafus fucicola*, Curtis. Ireland, locally common.
- Cafus sericeus*, Holme. Ireland, Strangford Lough, Down.
- Actobius cinerascens*, Grav. Cumberland; Ireland, Donegal and Armagh.
- Actobius signaticornis*, Rey. Oxford (Walker); Newbury (Harwood); Rye (Bennett); Christow (de la Garde); River Cadder, Cumberland (Day).
- Actobius villosulus*, Steph. Chiddingfold (Donisthorpe); Luccombe, I. of W. (Champion); Suffolk, Sproughton and Ipswich (Morley).
- Actobius procerulus*, Grav. Newbury (Harwood); Tubney (Holland); Ipswich and Little Blakenham (Morley); Tewkesbury (Donisthorpe);

- Southport, not uncommon (Chaster and Sopp); Cumberland; Ireland, Down and Cork.
- Xantholinus fulgidus*, F. Enfield (Pool); Shirley (Donisthorpe); Ipswich (Morley); Norfolk, sparingly (Edwards); Ireland, Dublin.
- Xantholinus ochraceus*, Gyll. Ireland, frequent.
- Xantholinus atratus*, Heer. With *Formica rufa*. Wigmore Wood, Kent (Walker); Lord's Wood, Southampton (Donisthorpe), and by sweeping at Abingdon; Tubney (Collins); Symond's Yat (Tomlin).
- Xantholinus glaber*, Nord. Enfield (Pool); Cobham Park (Walker); Huntingfield (Chitty); Grantchester (Dollman).
- Xantholinus tricolor*, F. Wallingford, Berks (Donisthorpe); Tubney, near Oxford (Walker); Cambridge and Gravesend, in mole's nest (Nicholson); Suffolk, uncommon (Morley); Cromer (Wood); Gumley, Market Bosworth, &c., Leicestershire; Devereux Pools, Herefordshire (Dr. Wood); Ireland, not common, but widely distributed.
- Xantholinus distans*, Kr. Kelton, near Dumfries (Donisthorpe); Thurso, Caithness (Thornley).
- Nudobius lentus*, Er. Peebles (Black).
- Leptacinus parumpunctatus*, Gyll. Bury district (Tuck); Southport (Chaster and Sopp); Oxford district (Walker); Ditchling (Dollman); Grimsby (Wallace).
- Leptacinus linearis*, Grav. Ireland, widely distributed.
- Leptacinus formicelorum*, Maerk. With *Formica rufa*. Oxshott and Weybridge (Donisthorpe); Wigmore Wood (Walker); Colchester (Harwood); Wellington College (Joy); Tubney (Collins); Bentley Woods (Morley); Cumberland; Northumberland and Durham (Bagnall).
- Baptolinus alternans*, Grav. Donegal, Antrim, Armagh, Fermanagh, Cork, and Kerry.
- Othious læviusculus*, Steph. Ireland, Donegal, Antrim, Meath, Westmeath, and Kerry.
- Othious myrmecophilus*, Kies. With *Formica exsecta*, Bournemouth, with *Formica sanguinea*, Nethy Bridge (Donisthorpe).
- Lathrobium rufipenne*, Gyll. All Blatch's records of this species refer to *L. lævipenne*, Heer. Delamere Forest (Dutton); near Brigg, Lincolnshire (J. Coe).
- Lathrobium angustatum*, Lac. Oxfordshire, Wytham Park (Collins); Dorset, Upwey (Donisthorpe), Isle of Portland (Forsyth), Chapman's Pool (Jackson); Cornwall (Keys); Devonshire (de la Garde).
- Lathrobium longulum*, Grav. Suffolk, rare (Morley); Oulton Broad (Bedwell); Birkdale, not common (Chaster and Sopp); Ireland, Armagh, Fermanagh, Galway, and King's County.
- Lathrobium foveolum*, Steph. Oxford district (Collins); Durham, Winlaton (Bagnall); Wicken Fen (Donisthorpe); Ireland, Dunmore, co. Waterford (Walker).

Lathrobium punctatum, Zett. Pennines, Cumberland (Day); Upper Teesdale, Yorks (Thompson); not uncommon near Edinburgh (Beare); Wigtonshire (Gordon); Dalwhinnie (Joy).

The synonymy of *Lathrobium fovulum* and *punctatum* is as follows:

- L. fovulum*, Steph.
- punctatum*, Brit. Cat., Er., Fowler, nec Zett.
- L. punctatum*, Zett.
- atripalpe*, Brit. Cat., Fowler, nec Scriba.

See (Donisthorpe) Ent. Rec., 1903, p. 180.

Lathrobium filiforme, Grav. Ruislip Reservoir (Dollman); Wicken Fen and Herringstone, Dorset (Beare and Donisthorpe); Burwell Fen (Nicholson); near Oxford (Walker); Gumley, Leicestershire (Matthews); Grimsby (Wallace); Ireland, Fermanagh and Clare.

Lathrobium quadratum, Payk. Herringstone, Dorset (Beare and Donisthorpe); Christow, Devon (de la Garde); Herefordshire (Tomlin); Waxham, Norfolk (Champion); Ireland, widely distributed.

Lathrobium terminatum, v. *immaculatum*, Fowler, is the common form in Ireland, the type being rare. Not uncommon in a bog near Great Salkeld, Cumberland; the type does not occur (Britten). An immaculate form taken at Carrog, N. Wales (Donisthorpe), with apical joints of the palpi black, is, according to Mons. Fauvel, an exact transition between the true *atripalpe*, Scriba, and *quadratum*, Payk.

Lathrobium terminatum, v. *atripalpe*, Scriba. Snowdonian mountains (W. E. Sharp); Scotland, not uncommon; Nethy Bridge (Donisthorpe), &c.

Lathrobium pallidum, Nord. Cromer (Elliman); Water Eaton, near Oxford (Walker); River Rother, Sussex (Joy).

Lathrobium multipunctatum, Grav. Ireland, widely distributed.

Lathrobium angusticolle, Lac. Cardiff (Tomlin).

Achenium depressum, Grav. Chiddingfold, Surrey (Donisthorpe); Suffolk, Felixstowe (Walker), Trimley Marshes (Morley); Oxford (Walker).

Achenium humile, Nic. Whitstable (Chitty); Oxford (Walker); Trimley Marshes (Morley); Salthouse (Edwards); near Grimsby (Wallace).

Cryptobium glaberrimum, Herbst. Birkdale (Chaster and Sopp); Cumberland (Day); Durham (Bagnall).

Stilicus fragilis, Grav. Shirley, in faggot stacks, in plenty, one specimen with black thorax (Donisthorpe); Woking (Champion); Wicken Fen (Donisthorpe and Nicholson); Sandown, I. of W. (Taylor).

Stilicus orbiculatus, Payk. N. Cornwall (Butler); Freshney Bog, Lincs (Wallace).

Stilicus similis, Er. Devonshire (de la Garde); Alphington (Nicholson); Ireland, Dublin (Farren).

Stilicus subtilis, Er. Ditchling (Dollman); Knighton, Leicester (Headley); Roughton, near Cromer (Beare); Llandaff, S. Wales (Tomlin); Pulborough and Welford (Nicholson).

Stilicus affinis, Er. Scotland, Peebles district, in profusion (Black).

- Stiliculus geniculatus*, Er. Dorking (Nicholson); Suffolk, Barnby (Bedwell).
- Scopæus erichsoni*, Kol. Whitstable (Chitty).
- Scopæus sulcicollis*, Steph. Cumnor, near Oxford (Collins); Bradfield (Joy); Cromer (Elliman); Plymouth (Keys); Gumley, Leicestershire (Matthews); Cumberland (Day); Porthkerry, S. Wales (Tomlin).
- Medon castaneus*, Grav. Richmond Park (Beare); Redhill (Brewer); Foxhall Plateau, Suffolk (Morley); Sandown, I. of W. (Taylor); in moles' nests, Guildford, Woking, Mickleham, Oxford, &c.
- Medon dilutus*, Er. New Forest (Walker); Tubney Wood, near Oxford (Collins).
- Medon piceus*, Kr. Bookham, Surrey (Chitty).
- Medon fuscus*, Mann. Sandown, I. of W. (Donisthorpe); in moles' nests, Coulsdon (Bedwell).
- Medon ripicola*, Kr. Hastings district (Bennett); Bembridge, I. of W. (Ellis); Plymouth, not uncommon (Keys); Isle of Man (Tomlin); Kew (Nicholson).
- Medon apicalis*, Kr. Newbury (Harwood); Water Eaton, near Oxford (Walker); Gumley, Leicestershire (Matthews).
- Medon propinquus*, Bris. Ireland, common.
- Medon melanocephalus*, F. Ireland, not Belfast.
- Medon bicolor*, Ol. With *Lasius flavus*, Sandown, I. of W., and Eastbourne (Donisthorpe); Scilly (Joy).
- Medon obsoletus*, Nord. Reigate (Linnell); Wood Eaton (Walker); Birkdale sandhills, abundant (Chaster and Sopp); Cumberland (Britten); Durham (Bagnall); Ireland, Dublin.
- Sunius filiformis*, Latr. Hastings district (Bennett); Studland (Donisthorpe); Whitsand Bay (Keys); Dawlish (de la Garde); St. Issey, Cornwall (Donisthorpe); Gumley (Matthews).
- Sunius intermedius*, Er. Oddington (Walker); Weymouth (Forsyth).
- Sunius diversus*, Aubé. Ranworth, Norfolk (Edwards); Oxford district (Walker).
- Pæderus littoralis*, Grav. Ireland, Roscommon.
- Pæderus riparius*, L. Southport district, generally distributed (Chaster and Sopp); Ireland, rare, Down, Wicklow, Wexford, Waterford, and Kerry.
- Pæderus fuscipes*, Curt. Ireland, locally common.
- Pæderus caligatus*, Er. Studland (Donisthorpe); Ireland, Wexford (Johnson).
- Evæsthetus scaber*, Thoms. Aldham, Suffolk (Spence); Norfolk (Denny); Market Bosworth, Leicestershire (Donisthorpe); Llandaff, S. Wales (Tomlin); Grimby (Wallace); Ireland, Kenmare, co. Kerry (Halbert).
- Evæsthetus ruficapillus*, Lac. Barton Moss (Chaster and Sopp); Bog of Arthog, N. Wales (Donisthorpe); Cumberland; Ireland, Armagh (Donisthorpe).
- Evæsthetus leviusculus*, Mannh. Cumberland; Ireland, Galway (Halbert).
- Dianous cærulescens*, Gyll. Ireland, Antrim, Down, Armagh, Dublin, and Cork; Rossbeigh, co. Kerry (Bouskell and Donisthorpe).

- Stenus bipunctatus*, Er. Ipswich (Morley); Kerne Bridge, Herefordshire (Tomlin); Cambridge (Dollman). The Irish record is doubtful.
- Stenus guttula*, Müll. Kew (Dollman); Ireland, not uncommon.
- Stenus bimaculatus*, Gyll. Antrim, Armagh, Cavan, Limerick, Waterford, and Kerry.
- Stenus asphaltinus*, Er. Cobham and New Forest (Champion).
- Stenus ater*, Mann. Cothill, near Oxford (Walker); Gumley, Leicestershire (Matthews); Southport district, not uncommon; Ireland, Fermanagh.
- Stenus longitarsis*, Thoms. Woking and Yarnton (Walker); Burford Bridge (Power); Trowse, Norfolk (Edwards).
- Stenus guynemeri*, Duv. Lundy Island (Joy and Tomlin); Snowdon (Sopp); Gelt Woods, Cumberland (Donisthorpe); Gibside and Egglestone, Durham (Bagnall); Ireland, Sligo.
- Stenus lustrator*, Er. Chobham, Surrey, and Waxham, Norfolk (Champion); Ireland, summit of Slievemore (Halbert).
- Stenus melanopus*, Marsh. Ireland, Antrim and Galway.
- Stenus incrassatus*, Er. Richmond Park (Donisthorpe); Camber (Bennett); Norfolk, Waxham (Champion); East Rudham (Wood); Boston, Lincs (E. C. Rye); Stoke Edith Park, Herefordshire (Tomlin); Ditchling (Dollman); Ireland, Sligo (Johnson); Shane's Castle, Lough Neagh (Halbert).
- Stenus melanarius*, Steph. Black Pond, Esher (Beare and Donisthorpe); Bungay (Garneys); Holme Lacy and Stoke Edith, Herefordshire (Tomlin); Bovey Tracey (Keys); Ireland, Derry.
- Stenus morio*, Grav. Redhill (Linnell); Battle (Donisthorpe); Leith Hill (E. A. Butler); Suffolk (Morley).
- Stenus atratulus*, Er. Reigate (Linnell); Gimmingham, Norfolk (Butler); Suffolk (Morley); Ilfracombe (Chitty); Yarnton (Walker); Braunton (de la Garde).
- Stenus canaliculatus*, Gyll. Norfolk, East Rudham (Wood); Hornsea Mere (Stainforth); Ireland, Donegal, Derry, Armagh, and Dublin.
- Stenus nitens*, Steph. Ireland, Armagh only.
- Stenus pusillus*, Er. Ireland, Donegal, Antrim, and Kerry.
- Stenus exiguus*, Er. Birkdale (Chaster); Wicken Fen (Donisthorpe); Ireland, Antrim.
- Stenus fuscipes*, Grav. Oxford district; Cumberland; Ireland, Down, Galway, and Kerry.
- Stenus circularis*, Gr. Snodland (Donisthorpe); Ledbury, Herefordshire (Tomlin); Oxford district (Walker); Kennet Valley (Joy).
- Stenus vafellus*, Er. Reigate (Linnell); Oulton Broad (Morley); Oxford district (Holland).
- Stenus declaratus*, Er. Ireland, common.
- Stenus crassus*, Steph. Ireland, Donegal, Derry, Antrim, and Kerry.
- Stenus crassus*, v. *littoralis*, Th. Ireland, Dublin, Lough Neagh, and Foyle district.
- Stenus opticus*, Gr. Plymouth (Keys).
- Stenus carbonarius*, Gyll. Ireland, Lough Neagh, Cavan, and Limerick.
- Stenus argus*, Gr. Wolvercote, near Oxford (Keys); abundant in a marsh near Penrith, Cumberland (Britten).

- Stenus nigritulus*, Gyll. Ireland, Shane's Castle, Lough Neagh (Halbert).
Stenus palustris, Er. Hornsea Mere (Stainforth).
Stenus fuscicornis, Er. Ditchling (Dollman).
Stenus arosus, Er. Cumberland (Britten).
Stenus erichsoni, Rye. Norfolk, Aylsham (Wood); Ireland, Galway.
Stenus flavipes, Steph. Ireland, locally common.
Stenus pubescens, Steph. Ireland, common.
Stenus binotatus, Ljungh. Sandown, I. of W. (Donisthorpe); near Hull (Stainforth); Ireland, widely distributed.
Stenus canescens, Rosh. Colchester (Harwood); Sandown, I. of W. (Champion).
Stenus pallitarsis, Steph. Ireland, common.
Stenus niveus, Fauv. Chobham (Champion); Sutton Broad, Norfolk, and Worle, Somerset (Donisthorpe); Cumberland, common (Britten).
Stenus picipennis, Er. North Cove, Yorks (Stainforth); Irby, Lincs (Wallace); Cumberland (Day); Ireland, Dublin.
Stenus foveicollis, Kr. Colwall, Herefordshire, and Glemsford, Suffolk (Tomlin); Helvellyn and Cross Fell, Cumberland (Britten).
Stenus kiesewetteri, Rosh. Surrey, Gomshall (E. A. Butler), Sunningdale (Donisthorpe); Berks, Greenham Common (Harwood).
Stenus cicindeloides, Grav. Cumberland; Ireland, Antrim, Armagh, Dublin, Kilkenny, Waterford, and Kerry.
Stenus solutus, Er. Maldon, Essex (Nicholson); Hanwell (Dollman); Kennet Valley, Berks (Joy); Whitstable and Brandon (Chitty); Sandown, I. of W. (Beare); Otmoor, Oxford district (Holland); Alford, Lincs (C. O. Waterhouse).
Stenus latifrons, Er. Sandown, I. of W. (Donisthorpe); Cumberland (Day); Ireland, Antrim and Westmeath.
Stenus fornicatus, Steph. Richmond Park (Beare); Epping Forest (Nicholson); Heytesbury Farm, I. of W. (Morley); Ditchling (Dollman); New Forest (Chitty); Barnby Broad (Morley); Delamere (Tomlin); Ireland, Donegal (Johnson).
Oxyporus rufus, L. Enfield (Pool); Oxshott, abundant (Donisthorpe); Bradfield (Joy); Wicken Fen (Beare); Herefordshire (Tomlin); Oxford district (Collins); Lincolnshire (Wallace); Scotland, Orchardton (Douglass).
Bledius taurus, Germ. Ipswich (Morley); N. Wales (Tomlin). The rare black form was taken by Dr. Joy, a ♂ at Wells in 1904, and a ♀ by Mr. Donisthorpe in the same locality in 1909.
Bledius spectabilis, Kr. Point of Air (Tomlin); Ireland, local, but widely distributed.
Bledius tricornis, Herbst. Yarmouth, I. of W. (Donisthorpe). The Irish record refers to the preceding species.
Bledius unicornis, Germ. Point of Air (Tomlin); Scilly (Joy).
Bledius bicornis, Germ. Rye (Bennett); Wells Marshes (Joy); Isle of Wight, Luccombe Chine (Ellis), Sandown (Champion), Bembridge (Donisthorpe).
Bledius arenarius, Payk. Corton, Suffolk (E. A. Butler); Ireland, common.
Bledius pallipes, Grav. Ireland, Ardara, co. Donegal (Johnson).

- Bledius fuscipes*, Rye. Studland (Donisthorpe); Braunton (de la Garde); Gimmingham, Norfolk (E. A. Butler); Ireland, Donegal, Derry, and Sligo.
- Bledius subterraneus*, Er. Ireland, Derry, Antrim, and Armagh.
- Bledius longulus*, Er. Gimmingham (E. A. Butler); Birkdale (Chaster and Sopp); Barmouth (Donisthorpe); Ireland, Donegal, Derry, Sligo, and Mayo.
- Bledius fracticornis*, Payk. Red form only, Huntsham Pool, Herefordshire (Tomlin); black form only, Braunton, Devon (de la Garde); Rye (Bennett); Norwich (Edwards); Scunthorpe, Lincs (W. E. Sharp); Cumberland; Kew (Dollman); Ireland, Armagh and Dublin.
- Bledius femoralis*, Gyll. Richmond Park, Tilgate Forest, and New Forest (Donisthorpe); Mickleham, Woking, Chobham, and Guildford (Champion); Wokingham (Fowler and Joy).
- Bledius opacus*, Block. Deal, common (Donisthorpe); Ditchling, common (Dollman); Braunton (de la Garde); Birkdale, rare (Chaster and Sopp); Cumberland (Day); Ireland, Donegal, Armagh, Longford, and Dublin.
- Bledius crassicollis*, Lac. Rye, Sussex (Bennett); Corton, Suffolk (E. A. Butler).
- Bledius erraticus*, Er. Ireland, Donegal, Derry, and Sligo.
- Platystethus cornutus*, Gyll. Hightown (Southport List); Scunthorpe, Lincs (W. E. Sharp); Ireland, Cork.
- Platystethus capito*, Heer. Guildford, and Sandown, I. of W. (Champion); Ditchling (Donisthorpe); Oxford district (Walker); Sudbury, Suffolk (Morley); Gumley (Matthews); Ireland, Sligo (Johnson).
- Platystethus nitens*, Sahlb. Marston (Walker); Ditchling (Donisthorpe); Tring (Elliman); Gumley (Matthews); West Malvern (Tomlin).
- Oxytellus rugosus*, Grav. Ireland, common.
- Oxytellus insecatus*, Grav. Bedford Park and Ditchling (Dollman); Rye, in seed potatoes (Donisthorpe); Suffolk; Whitstable; under stones, Oxford district (Walker); in nest of *L. niger*, Gravesend (Nicholson).
- Oxytellus fulvipes*, Er. Sherwood Forest (Taylor).
- Oxytellus piceus*, L. Gumley (Matthews); Scilly Isles (Joy).
- Oxytellus inustus*, Grav. Birkdale; Ireland, Roscommon and Louth.
- Oxytellus maritimus*, Thoms. Ireland, Donegal, Mayo, Galway, Meath, and Dublin.
- Oxytellus maritimus*, v. *perrisi*, Fauv. Is the form with testaceous elytra. Mr. Keys takes it at Whitsand Bay. Ireland, plentifully in Galway.
- Oxytellus complanatus*, Er. Ireland, Donegal, Armagh, and Dublin.
- Oxytellus clypeonitens*, Pand. Ditchling and Bedford Park (Dollman); Bradfield, in nest of wood-mouse (Joy); Woking, and Luccombe, I. of W. (Champion); Teignmouth and Dawlish (de la Garde); Chiddingfold (Nicholson).
- Oxytellus fairmairei*, Pand. Chesham, Bucks (Elliman); Dawlish (de la Garde); Bradgate Park, Leicestershire (F. Bates); Linwood, Lincs (Wallace). Records from moles' nests (Oxford district (Walker), Guildford (H. Champion), &c. &c.) probably refer to *O. saulcyi*.

- Haploderus cælatus*, Grav. Ireland, widely distributed.
- Ancyrophorus ovalinus*, Er. Snowdon (Sopp); Christow, Devon (de la Garde); Gumley (Matthews).
- Ancyrophorus aureus*, Fauv. Southern records: Chiddingfold, Surrey, abundant (Donisthorpe); Isle of Wight, 1873 (Wollaston); S. Wales (Chitty); Gumley (Matthews); Porlock (Blatch); Plymouth (Keys); N. Wales, Glyn Ceiriog and Glyndyfrdwy (Tomlin); Ireland, Derry, Antrim, Fermanagh, Kilkenny, and Tipperary. This species appears to be a habitual denizen of caves in Ireland, in company with species of *Collembola*, on which it preys.
- Trogophlæus arcuatus*, Steph. Kew (Nicholson); Wherstead, Suffolk (Morley); Plymouth district (Keys); S. Wales (Chitty); Ireland, Sligo and Wexford.
- Trogophlæus rivularis*, Mots. Suffolk (Morley); Birkdale sandhills, rare (Chaster and Sopp); Cumberland (Day); Winlaton-on-Tyne (Bagnall); Kew and Cambridge (Dollman); Ireland, Donegal, Antrim, and Armagh.
- Trogophlæus elongatulus*, Er. Ireland, Antrim, Armagh, Dublin, and Carlow.
- Trogophlæus fuliginosus*, Grav. Oxford district (Walker); Tewkesbury (Donisthorpe); Grimsby (Wallace); Cumberland (Day); Ireland, Derry, Down, and Kilkenny.
- Trogophlæus foveolatus*, Sahlb. Gravesend (G. Nicholson).
- Trogophlæus corticinus*, Grav. Ireland, common.
- Trogophlæus halophilus*, Kies. Shanklin and Sandown, I. of W. (Ford); Hastings (Bennett); Bentley Woods, Suffolk (Morley); Solway Firth, Cumberland (Day).
- Trogophlæus tenellus*, Er. London, flying near Regent's Park (Donisthorpe); Birkdale Cemetery, in abundance (Tomlin); Ireland, Dublin.
- Trogophlæus subtilis*, Er. Winlaton Mill, Durham (Donisthorpe).
- Thinobius linearis*, Kr. Cowley Marsh, near Oxford, the prey of a Dipteron (Hamm); Cumberland, banks of the Eden, abundant, associated with *Homalota subtilissima* and *pallens* (Britten); Ireland, Donegal.
- Thinobius longipennis*, Kr. Cumberland, Great Salkeld (Britten); Durham, Winlaton Mill (Bagnall); Ireland, Donegal.
- Thinobius brevipennis*, Kies. Southport district (Chaster); Braunton Burrows, abundant (de la Garde).
- Syntomium æneum*, Müll. Cumberland; Ireland, Antrim, Armagh, Wicklow, and Cork.
- Coprophilus striatulus*, F. Ireland, Down and Fermanagh.
- Acrognathus mandibularis*, Gyll. Abundant at Woking, flying in the evening (Champion).
- Composchilus palpalis*, Er. Woking (Champion); Tring, in plenty (forty-two specimens on one occasion by evening sweeping), and Chesham (Elliman).
- Deleaster dichrous*, Grav. Ealing and Bedford Park (Dollman); Hendon, in the runs of the water-vole (Newbery); Reigate and Burford (Linnell); Woking (Champion) Seaton (Mitford).

- Anthophagus alpinus*, Payk. Helvellyn, Cumberland (Britten); Ireland, summit of Slieve Donard.
- Geodromicus globulicollis*, Man. Freely on Cross Fell, Cumberland (Britten).
- Geodromicus nigrita*, Müll. Cusop Dingle, Herefordshire (Tomlin).
- Lesteva sharpi*, Rye. Cusop Dingle, Herefordshire (Tomlin); Tindale Tarn, Cumberland (Day); Ireland, Wicklow and Kerry.
- Lesteva pubescens*, Man. Wherstead, Suffolk (Morley); Gibside, Durham (Bagnall); Ireland, Donegal, Derry, Antrim, Armagh, and Kerry.
- Lesteva punctata*, Er. Wimbledon Common (Beare and Donisthorpe); Cusop Dingle, Herefordshire (Tomlin); Gumley (Matthews); Leicester Frith (Wooley); Oulton Broad (W. E. Sharp); N. Cornwall (Butler); Mull (Tomlin); Ireland, Donegal, Mayo, and Galway.
- Acidota crenata*, F. Studland (Donisthorpe); Gumley (Matthews); Norwich (Edwards); Ireland, rare, Donegal, Antrim, Down, Fermanagh, and Sligo.
- Acidota cruentata*, Mannh. Coulsdon (Bedwell); Delamere (Tomlin); Wytham Park, Oxford (Donisthorpe); Gumley (Matthews); Great Salkeld (Britten).
- Olophrum fuscum*, Grav. Eden Valley, Cumberland (Day); Ireland, Carlow; Scotland, Highlands, Nethy Bridge, Inverness-shire (Beare and Donisthorpe), Ben Wyvis, Ross-shire (Joy).
- Olophrum consimile*, Gyll. Ben Wyvis, Ross-shire (Joy).
- Deliphrum tectum*, Payk. Cusop Dingle, Hereford (Tomlin); Wytham Park (Walker); Delamere Forest, not rare (W. E. Sharp); Ireland, Down and Queen's County.
- Deliphrum crenatum*, Gr. Helensburgh, September 1908 (Chaster); Pitlochry, Perthshire (Joy).
- Arpedium brachypterum*, Grav. Cumberland; Snaefell, Isle of Man (Tomlin); Ireland, Donegal and Mayo.
- Micralymma brevipenne*, Gyll. Hastings (Bennett); Anthorn, Cumberland (Day); Ireland, locally common.
- Philorhinum sordidum*, Steph. Ditchling (Dollman); Cumnor, near Oxford (Walker); East Rudham, Norfolk (Wood); Snowdon (Donisthorpe); Grimsby (Wallace); Ireland, common.
- Coryphium angusticolle*, Steph. Reigate and Dorking (Linnell); Shirley (Donisthorpe); Ipswich (Morley); Bagley Wood (Walker); Braunton, Devonshire (de la Garde); Hanwell (Dollman); Ireland, Derry and Down.
- Homalium rugulipenne*, Rye. Point of Air (Tomlin); Ireland, Dublin (Kemp).
- Homalium læviusculum*, Gyll. Ireland, locally abundant.
- Homalium septentrionis*, Thoms. Guildford (Champion); Bradfield (Joy); Sittingbourne district (Chitty); West Malling, Kent, Woodhay, Hants, and Market Bosworth, Leicestershire (Donisthorpe); Crowcombe, Somerset (Nicholson); Knowle, Warwickshire (Blatch); Wytham Park (Walker); Cumberland, common in dead rabbits (Britten). Occurs on carrion, dead hedgehogs, birds, &c., in woods.

- Homalium riparium*, Thoms. Ireland, common.
- Homalium allardi*, Fairm. In manure heap, Yarnton (Walker); in bone heap, Queenborough (Donisthorpe); Lundy Island, and North Uist, Outer Hebrides, in rock-dove's nest (Joy); Cumberland (Day); Buckfastleigh, Devon (de la Garde); Ireland, Donegal, Armagh, and Dublin.
- Homalium exiguum*, Gyll. Suffolk, Bury district (Tuck); S. Wales (Chitty); Oxford district (Walker); Tavy Valley, Devon (Keys).
- Homalium brevicolle*, Thoms. Nethy Bridge (Donisthorpe).
- Homalium oxycanthæ*, Grav. Suffolk (Morley); Hightown and Birkdale (Chaster and Sopp); Ireland, Armagh and Clare.
- Homalium pusillum*, Grav. Ireland, Donegal, Derry, Armagh, and Galway.
- Homalium punctipenne*, Thoms. Ireland, Antrim, Armagh, Roscommon, and Carlow.
- Homalium rufipes*, Foure. Ireland, Donegal, Derry, Antrim, and Armagh.
- Homalium rufipes*, v. *nigrum*, Gr. New Forest (Walker).
- Homalium salicis*, Gyll. Redhill (Linnell); Little Blakenham and Bramford Marshes (Morley); Wood Eaton (Walker).
- Homalium vile*, Er. Ireland, Antrim.
- Homalium brevicorne*, Er. Gumley, 1862 (Matthews); Knowle and Solihul (Blatch); Ireland, Dublin.
- Homalium gracilicorne*, Fairm. Bradfield (Joy); Great Salkeld, Cumberland (Britten); Ryde, I. of W., and Gibside, Durham (Donisthorpe); Marvel Cope, I. of W. (Morey). Mr. Piffard has recorded that *Homalium gracilicorne* and *brevicorne* are to be found in the lichen on branches of oak recently blown down.
- Homalium iopterum*, Steph. Ireland, Roscommon.
- Homalium planum*, Payk. Gibside, Durham (Bagnall).
- Homalium pineti*, Th. Teesdale, Durham (Bagnall).
- Homalium deplanatum*, Gyll. Oxford (Walker); Southport (Chaster); Ireland, Armagh.
- Homalium testaceum*, Er. Blean Woods (Chitty); Ipswich (Morley); Gumley (Matthews).
- Homalium striatum*, Grav. Enfield (Pool); Barham (Kirby); Lundy Island (Joy); Cleethorpes (Wallace); Ireland, Antrim.
- Hapalaræa pygmæa*, Gyll. Enfield (Pool); Epping Forest (Dollman); Bradfield (Joy); Oxford (Walker); Tostock (Morley); Bury district (Tuck); Gumley (Matthews); Cumberland (Day); Winlaton Mill, Durham (Bagnall); Scotland, Peebles district (Black); Ireland, Belfast (Templeton).
- Acrulia inflata*, Gyll. Yorkshire; Gibside, and Winlaton-on-Tyne, in burrows of *Trypodendron domesticum* (Bagnall); Scotland, Garve, Ross-shire (Joy); Netley Bridge, not uncommon (Bishop and Sharp).
- Eusphalerum primulæ*, Steph. Chiddingfold (Donisthorpe); Huntingfield (Chitty); Bodlestreet, near Battle (Bennett); Wytham Park, Oxford (Walker); Suffolk (Kirby); South Brent and St. German's (Keys); Ireland, Down.

- Anthobium minutum*, F. Ireland, common.
Anthobium torquatum, Marsh. Not recorded in the Irish List.
Anthobium sorbi, Gyll. Gumley (Matthews). Coryton, Devon.
Proteinus ovalis, Steph. Ireland, widely distributed.
Proteinus brachypterus, F. Ireland, Antrim.
Proteinus macropterus, Gyll. Water Eaton (Collins); Wytham Park (Walker); Birkdale (Chaster and Sopp).
Proteinus atomarius, Er. Bury district (Tuck); Foxhall (Morley); Oxford (Walker); Gumley (Matthews).
Megarthus denticollis, Beck. Foxhall, Suffolk (Morley); Thorpe, Norfolk (Edwards); Ireland, Donegal, Derry, Antrim, Tyrone, Armagh, and Dublin.
Megarthus sinuato-collis, Lac. Ireland, Antrim, Armagh, Fermanagh, and Wexford.
Megarthus hemipterus, Ill. Gumley (Matthews); Ireland, rare, Armagh (Johnson).
Phlæobium clypeatum, Müll. Winlaton-on-Tyne and Warkworth (Bagnall).
Phlæocharis subtilissima, Mann. Richmond Park (Donisthorpe); N. Devon (Chitty); Wellington College (Joy); Yarm, Yorkshire (Rudd); Cumberland (Day); Ireland, Valentia Island (Miss M. J. Delap).
Pseudopsis sulcata, Newm. Newbury (Harwood); Knowle, Warwickshire (Blatch); Bournemouth (W. C. Jackson); Southport (Chaster); Llandaff, S. Wales (Tomlin); Gibside (Bagnall). The genus and species were described by Newman from a specimen taken by F. Walker in the Isle of Wight in 1834, which appears to be the only record from the island. Ireland, Down, Wicklow, and Lough Neagh; Scotland, Torduff, Colinton (W. Evans).
Prognatha quadricornis, Lac. Richmond Park (Donisthorpe); Enfield (Pool); Bradfield (Joy); Oxford district; Leicestershire (Bouskell); Ireland, Carlow (Halbert).

LEPTINIDÆ

- Leptinus testaceus*, Müll. Near Mickleham (Rye); Huntingfield, in the runs of field-mice (Chitty); South Brent, Devonshire (de la Garde); Oxford district (Walker); Gibside, Durham (Bagnall); in rabbit burrows, Epping Forest (G. Nicholson); on *Mus sylvaticus*, Trefriw, Carnarvonshire (Ellison); Ireland, in nest of *Bombus terrestris*, Derry (Buckle), on a field-mouse, Kenmare (Yerbury).

CLAMBIDÆ

- Clambus pubescens*, Redt. Lundy Island (Joy); Enslow Bridge (Collins); Southport (Chaster); Cumberland (Day).
Clambus armadillo, De G. Cumnor (Collins); Southport; Ireland, Donegal, Armagh, and Carlow.

Clambus minutus, Stm. N. Cornwall (Butler); Oxford (Walker).

SILPHIDÆ

- Agathidium seminulum*, L. Cothill (Collins); Cumberland (Day).
Agathidium badium, N. Rannoeb (Donisthorpe and Nicholson).
Agathidium nigripenne, Kug. Enfield (Pool); Streatley, Berks (Joy); Wytham Park, Oxford (Walker); Cumberland; Ireland, Armagh (Johnson).
Agathidium lævigatum, Er. Lundy Island (Joy and Tomlin); Ireland, Donegal, Derry, Antrim, Armagh, Monaghan, and Limerick.
Agathidium marginatum, Stm. Whitstable (Chitty); Bexhill and Dorking (Donisthorpe); Tubney (Tomlin); Suffolk (Morley); Southport (Chaster).
Agathidium confusum, Bris. Guildford (Champion).
Agathidium varians, Beck. Richmond Park (Donisthorpe); Bagley Wood (Walker); Tostock (Tuck); Herefordshire (Tomlin); Ireland, Antrim.
Agathidium convexum, Shp. Oxford district, frequent (Walker); Cumberland; Ireland, Antrim.
Agathidium rotundatum, Gyll. West Wickham and New Forest (Donisthorpe); Tubney (Walker); Bentley Woods, Suffolk (Morley); Cumberland; Herefordshire (Tomlin); Ireland, Antrim, Armagh, and Fermanagh.
Agathidium nigrinum, Sturm. Oxford district, frequent (Walker); Bentley Woods, Suffolk (Morley); Gelt Woods, Cumberland (Donisthorpe).
Agathidium rhinoceros, Sharp. Nethy Bridge (Beare); Braemar (Donisthorpe); Spey district (Chitty).
Amphicyllis globus, F. Bishop's Wood, Hampstead, and Pamber Forest (Donisthorpe); Oxford (Walker); Cromer (Elliman); Ireland, Kilkenny (Halbert).
Liodes humeralis, Kug. Barmouth (Donisthorpe); Ireland, Westmeath, Wicklow, and Kerry. Mr. Bagnall found the elytra and other remains of this beetle in plenty in the cast of a bat in the Derwent Valley. Eskdale, Cumberland (Fowler).
Liodes orbicularis, Herbst. Isle of Wight (Wollaston); Woodhay, Hants (Donisthorpe); Ringland, Norfolk (Edwards); Wytham Park (Walker); Sherwood Forest (Taylor). Often taken by evening sweeping.
Cyrtusa minuta, Ahr. Chattenden, Kent (Donisthorpe); Candleston, Glamorgan (Tomlin).
Cyrtusa pauxilla, Schmidt. Coulsdon (Bedwell); Isle of Wight, Sandown (Champion), Chale Chine, Ryde, and Niton (Donisthorpe); Postwick Grove, Norfolk (Edwards); Wytham Park, Oxford (Walker); Ditchling (Dollman).
Anisotoma cinnamomea, Panz. Near Oxford, in plenty (Walker); Bradfield (Joy). This species requires confirmation as Irish.
Anisotoma anglica, Rye. Cobham Park (Walker); Wellington College (Joy); Wytham Park (Collins); Chipstead (Bedwell).
Anisotoma lucens, Fair. Woodhay, Hants, not uncommon, August 1906 (Donisthorpe); Shiere (Capron); Delamere Forest (W. E. Sharp); Doncaster (Corbett); Wellington College (Joy, Tomlin and Fowler).

- Anisotoma picea*, Ill. Southport, April 1901 (Chaster); Forres (Chitty); Dalwhinnie (Joy and Tomlin).
- Anisotoma dubia*, Kug. Isle of Wight, Luccombe (Champion), Chale Chine (Donisthorpe); Tubney (Walker); Aldeburgh (Cruttwell); Norfolk; Tewkesbury; Winlaton Mill (Bagnall); Eskdale, Cumberland (Fowler); Ireland, widely distributed.
- Anisotoma obesa*, Schm. Dalwhinnie (Joy).
- Anisotoma badia*, Sturm. Newbury (Harwood); Mousehold Heath (Edwards); Oxford district (Walker).
- Anisotoma similata*, Rye. Chale and Blackgang, I. of W. (Donisthorpe); Scarborough (Lawson).
- Anisotoma ovalis*, Schmidt. Wytham Park (Walker); Wicken Fen (Donisthorpe); Newbury (Harwood); Southport (Chaster); Carnarvonshire (W. E. Sharp); Cumberland (Day); Ireland, widely distributed.
- Anisotoma brunnea*, Stm. Chale, I. of W. (Donisthorpe); Woking (Champion); Tubney (Walker); Chipstead (Bedwell).
- Anisotoma punctulata*, Gyll. Newbury (Harwood); Oxford district; Ireland, Donegal.
- Anisotoma curvipes*, Schmidt. Cuxton, Kent (Walker).
- Anisotoma nigrita*, Schmidt. Woodhay (Donisthorpe); Tubney (Walker); Ireland, doubtful; Wellington College (Fowler and Tomlin).
- Anisotoma curta*, Fair. Tubney (Walker); Hesleden (Gardner).
- Anisotoma lunicollis*, Rye. Woking (Champion); Isle of Sheppey (Walker); Huntingfield (Donisthorpe).
- Anisotoma triepkei*, Schmidt. Wellington College (Joy); Tubney, near Oxford (Donisthorpe and Walker); Great Salkeld (Britten); Brandon (W. E. Sharp); Forres (Chitty).
- Anisotoma rugosa*, Steph. Cobham Park and Oxford (Walker); Streatley, Berks (Harwood); Mousehold Heath, Norfolk (Griffin); Southport (Chaster); Bradfield (Joy); Coulsdon, Surrey (W. E. Sharp).
- Anisotoma parvula*, Sahlb. Bradfield (Joy); Newbury (Harwood); Wytham Park (Walker); Ireland, Armagh and Kilkenny.
- Anisotoma ciliaris*, Schmidt. Southport and Birkdale sandhills, common (Chaster).
- Anisotoma furva*, Er. Skegness (Morse); Southport, abundant (Chaster); Cleethorpes (Donisthorpe).
- Agaricophagus cephalotes*, Schmidt. Chipstead (Bedwell); Hastings district (Bennett); Newbury (Harwood); Bury district (Tuck); Ringland, Norfolk (Edwards); Wytham Park, Oxford district (Donisthorpe); Bromyard, Herefordshire (Tomlin); Wellington College (Fowler and Tomlin).
- Hydnobius punctatissimus*, Steph. Chipstead (Bedwell); Queensdown Warren, and Wytham Park, Oxford (Walker); Ditchling (Dollman); Brandon, Suffolk (Morley); Weybourne, Norfolk (Edwards); Birkdale and Southport sandhills, common (Chaster); Cumberland (Day); Cleethorpes (Donisthorpe).

- Hydnobius punctatus*, Sturm. Darland Hill (Walker); Snowdon (Sopp and Tomlin); Tubney (Donisthorpe).
- Hydnobius strigosus*, Schmidt. Chipstead (Bedwell); Woking (Champion); Bradfield (Joy); Huntingfield (Chitty); Oxford district (Walker); Ditchling (Dollman).
- Triarthron maerkeli*, Schmidt. Wellington College (Fowler, Joy and Tomlin); Wokingham (E. A. Waterhouse); Woodhay (Donisthorpe); Tubney (Walker); Bardon Hill, Leicestershire (Bouskell); Cumberland (Day and Britten).
- Necrophorus vestigator*, Hersch. Ferndale, Dorset (Sopp); Oxford (Walker); Suffolk; Lundy Island (Wollaston); Birtley, Durham (Robson). The Rev. G. A. Crawshay has reared this species from the egg laid in confinement.
- Necrophorus ruspator*, v. *microcephalus*, Thoms. Weymouth (Donisthorpe).
- Necrophorus interruptus*, Steph. Ditchling (Dollman); Isle of Wight, not uncommon, Niton (Mitford), Sandown (Taylor), Blackgang, Chale, and Ryde, in dead rabbits, &c. (Donisthorpe); Enslow Bridge, nr. Oxford (Hamm).
- Necrophorus interruptus*, v. *gallicus*, Duv. Cookfield, Sussex (Chitty).
- Silpha tristis*, Ill. Wicken Fen (Donisthorpe); Tubney (Walker); Suffolk; Norfolk; Lundy Island (Wollaston); Grimsby (Wallace); Ireland, Dublin, Limerick, and Waterford.
- Silpha nigrita*, Creutz. Cadr Idris (W. E. Sharp); near Two Bridges, Dartmoor Forest, in abundance (Chant, 1833). Mr. Keys has taken it sparingly on Dartmoor. In the flower-heads of dandelion, Cumberland (Britten); Winlaton Mill, Durham (Bagnall); Ireland, Donegal and Antrim. The type of this beetle is the red form *S. tyrolensis*, and it is much more common in the Highlands. Infested with large intestinal worm, Braemar (Donisthorpe).
- Silpha quadripunctata*, L. Bordwood Copse, I. of W. (Taylor); Chattenden; Bagley Wood (Hope); Bentley Woods, Suffolk (Morley); Norfolk (Burrell); Doncaster (Corbett); Ireland, Down, Carlow, Clare, and Waterford.
- Silpha obscura*, L. Wicken (Nicholson).
- Silpha reticulata*, F. Norfolk (Burrell).
- Silpha opaca*, L. Lundy Island (Joy and Tomlin). Curtis records its capture by the Rev. I. Burrell in flowers of the mountain ash in Norfolk. Earlishilton, Leicestershire (Donisthorpe); Ireland, common.
- Silpha thoracica*, L. Not recorded from Ireland.
- Silpha sinuata*, F. Requires confirmation as an Irish species.
- Silpha dispar*, Herbst. Bungay, Suffolk (Garneys); Ripon, Yorkshire (E. A. Waterhouse); Ireland, widely distributed.
- Silpha laevigata*, F. This species feeds on snails, as pointed out by Westwood, and recently by H. J. Thouless. I have seen it up grass stems devouring small snails at Camber.
- Silpha atrata*, L. Is not found in Ireland.
- Silpha subrotundata*, Steph. Is confined to Ireland and the Isle of Man. I have found it infested by an intestinal worm of the genus *Gordius*.

- Choleva angustata*, F. Wimbledon Common, common; Crowcombe and Broxbourne (Nicholson). Often in moles' nests. Ireland, very rare, Kerry.
- Choleva cisteloides*, Fröhl. Ireland, Donegal, Armagh, and Kerry.
- Choleva intermedia*, Kraatz. Glemsford, Suffolk (Tomlin); Oxford (Walker); in rabbit's burrow, Cumberland (Britten); Scotland, Garve, Ross-shire (Joy).
- Choleva spadicea*, Sturm. Wimbledon Common (Nicholson); Niton, I. of W. (Pool); Buckfastleigh and Tiverton, Devonshire (de la Garde); Bucks (W. E. Sharp); Buddon Wood, Leicestershire (Donisthorpe); Gibside, Durham (Bagnall).
- Choleva agilis*, Ill. Gravesend, in mole's nest (Nicholson); Ireland, widely distributed.
- Choleva velox*, Spence. Ireland, rare, Antrim, Armagh, and Fermanagh.
- Choleva wilkini*, Spence. Ireland, Armagh and Wicklow.
- Choleva nigricans*, Spence. Ireland, Antrim.
- Choleva longula*, Kell. Gumley (Matthews); Bromyard, Herefordshire (Tomlin); Ireland, Rossbeigh, co. Kerry (Bouskell).
- Choleva coracina*, Kell. Richmond Park (Donisthorpe); Brooke, Norfolk (Edwards); Plymouth district (Keys); Hen Wood, Oxford (Walker).
- Choleva kirbyi*, Spence. Not recorded from Ireland.
- Choleva chrysomeloides*, Panz. Ireland, Donegal and Antrim.
- Choleva fumata*, Spence. Ireland, Galway.
- Choleva watsoni*, Spence. Ireland, widely distributed.
- Choleva colonoides*, Kraatz. Cobham Park and Bagley Wood (Walker); in birds' nests, Bradfield, &c. (Joy); Richmond Park and Woodhay (Donisthorpe); Epping Forest (Pool); Huntingfield (Chitty).
- Catops varicornis*, Rosen. Luccombe, April 1897 (Beare); Streatley, Berks (Walker).
- Colon viennense*, Herbst. Rochester district and Witham Park (Walker); Newbury (Harwood).
- Colon serripes*, Sahlb. Cobham Park and Ogly Bog (Walker); Woking (Champion); Chippenham Fen (Donisthorpe); Bradfield (Joy); Barton-on-Sea (Selous); Bradgate Park, Leicestershire (F. Bates); Nocton, Lincolnshire (E. A. Waterhouse); Newton Moss, Cumberland (Britten); Ireland, Donegal, Down, and Armagh.
- Colon puncticolle*, Kr. Gumley (Matthews).
- Colon angulare*, Er. Weybridge (Donisthorpe); Bradfield (Joy); Ireland, Donegal.
- Colon microps*, Czwal. Cobham (Champion).
- Colon dentipes*, Sahlb. Hastings district (Bennett); Tubney (Walker); Cumberland; Ireland, Down.
- Colon Zebei*, Kr. Bradfield, Berks (Joy); Witham Park, Oxford (Walker); Ely, Glamorganshire (Tomlin).
- Colon barneville*, Kr. Bradfield (Joy).
- Colon brunneum*, Latr. Ireland, widely distributed.
- Colon appendiculatum*, Sahlb. Cumberland; Ireland, Down.

Colon calcaratum, Er. Ireland, Down.

Colon denticulatum, Kr. Bradfield (Joy).

Colon latum, Kr. Chiddingfold (Donisthorpe); Cothill (Collins); Huntingfield (Chitty); Gibside, Durham (Bagnall); Gumley, Leicestershire (Matthews).

Dr. Joy writes some interesting notes on the habits of species of *Colon* in the E. M. M., 1908, p. 38, 1910, p. 25.

Bathyscia wollastoni, Janson. On decayed potato, Newport, I. of W. (Jeffery); Ireland, Dromantine, co. Down (Johnson).

Sphærites glabratus, F. Great Salkeld, Cumberland (Britten).

SCYDMÆNIDÆ

Neuraphes elongatulus, Müll. Camelford, N. Cornwall (Butler); co. Durham (Bagnall); Ireland, Armagh (Johnson).

Neuraphes angulatus, Müll. Suffolk; Norfolk; Bournemouth, in nests of *Formica exsecta* (Donisthorpe); Devonshire (de la Garde); Tubney (Walker); Cumberland (Day); Durham (Bagnall); Ireland, Armagh.

Neuraphes rubicundus, Muls. In birds' and moles' nests, Bradfield (Joy); Suffolk, Glemsford (Waterhouse), banks of Gipping (Morley); Cumberland (Britten); Strood, Kent (Walker); Yarnton, in mole's nest (Collins); in sedge refuse, Wicken Fen (Donisthorpe and Nicholson); Gibside, Durham (Bagnall).

Neuraphes carinatus, Muls. Cumberland (Britten); Ditchling (Dollman).

Neuraphes sparshalli, Denny. Cobham Park (Walker); Charing (Chitty); Bentley Woods, Suffolk (Morley); Beddingfield, Suffolk (Garneys); Cumberland (Day); Camelford, N. Cornwall (Butler); Coddington, Herefordshire (Tomlin).

Neuraphes sparshalli, v. *minutus*, Chaud. Near Sandwich (E. A. Waterhouse); Gibside, Durham (Bagnall); Cumberland (Britten).

Neuraphes longicollis, Mots. Cobham Park and Marston (Walker); Branton, Devon (de la Garde); Bradfield (Joy); Earley, Reading (Fowler).

Scydmænus scutellaris, Müll. Ireland, Dublin, in a nest of *Lasius niger* (Halbert).

Scydmænus pusillus, Müll. Gravesend and Aldeburgh (Nicholson); Tilgate Forest, with *L. fuliginosus* (Donisthorpe); Suffolk, Belton and Fritton (Paget); Portland, with ants (Bedwell).

Scydmænus poweri, Fowler. Bradfield (Joy); Perranporth, Cornwall (Tomlin).

Scydmænus exilis, Er. Gibside and Winlaton, Durham (Bagnall); Eastham, near Liverpool (Dr. Ellis); Ireland, Cork.

Euconnus denticornis, Müll. Alverstone, I. of W. (Ellis); Beddingfield, Suffolk (Garneys); Oxford district (Walker).

Euconnus hirticollis, Ill. Kennet Valley, Berks (Joy); Yarnton, Oxford (Walker); Lowestoft (Bedwell); Scotland, Aberfoyle (Evans); Ireland, Armagh, Monaghan, and King's County.

- Euconnus fimetarius*, Chaud. In goose's nest, in numbers, Ditchling (Dollman); Summertown, Oxford (Walker); Ireland, Dublin.
- Euconnus nanus*, Schaum. Bradfield (Joy).
- Eumicrus tarsatus*, Müll. Ireland, Down, Armagh, Dublin, Wicklow, Limerick, and Waterford.
- Eumicrus rufus*, Müll. Shirley, in numbers (Donisthorpe); Enfield (Pool); Guildford (Champion).
- Euthia scydmoenoides*, Steph. Botley, near Oxford (Walker); Wicken Fen (Beare and Donisthorpe).
- Euthia plicata*, Gyll. Harrow (W. E. Sharp); Bradfield (Joy); Repton (Garneys); Cobham Park and Bleane Woods (Walker); Ireland, Down (Haliday).
- Euthia schaumii*, Kies. Little Blakenham, Suffolk (Morley); Deal (Donisthorpe); Oxford district (Walker); Plymouth (Keys).
- Claviger testaceus*, Preyss. First taken in England by Professor Westwood, near Oxford; with *Lasius alienus*, Blackgang, I. of W. (Donisthorpe); North Wales, with *Lasius flavus* (Tomlin); *L. flavus*, Dartmouth (Donisthorpe).

PSELAPHIDÆ

- Pselaphus dresdensis*, Herbst. Wisley Pond, Surrey (Bryant); Kennet Valley, Berks (Joy); Yarnton, Oxford (Collins); Horsford Heath, Norfolk (Edwards); Cumberland (Day); Ireland, Armagh (Johnson).
- Tychus niger*, Payk. Southport, rare (Chaster and Sopp); Cumberland, not uncommon (Britten); Ireland, Donegal, Dublin, Wexford, and Limerick; Scotland, Paisley (M. Young), Ayr (Fergusson).
- Bythinus glabratus*, Rye. Two specimens in decaying potatoes, St. Peter's (Wood); Mr. Arthur J. Chitty has taken it in numbers, in company with *Ponera contracta*, at Charing; with the same ant at Mickleham (Bennett) and Box Hill (Bedwell and Donisthorpe).
- Bythinus puncticollis*, Denny. Ireland, widely distributed.
- Bythinus validus*, Aubé. Cumberland (Britten); Gibside, Durham, and Alnwick, Northumberland (Bagnall); Ireland, Donegal.
- Bythinus curtisi*, Leach. Bretby Wood, Repton (Garney).
- Bythinus securiger*, Reich. In moles' nests, Bradfield (Joy); Oulton Broad (Bedwell); Devonshire (de la Garde); South Wales (Chitty); Cumberland (Day).
- Bythinus burrelli*, Denny. Bradfield, in moles' nests (Joy); Bagley Wood (Holland); Bucks (W. E. Sharp); Durham, Axwell Park (Bagnall).
- Batrissus venustus*, Reich. In nest of *Lasius fuliginosus*, Tilgate Forest (Donisthorpe), Cothill (Collins); Cumberland (Day).
- Rybaxis sanguinea*, L. Saddington Reservoir, Leicestershire (Bouskell); Belton, Suffolk (Paget); Hornsea Mere (Stainforth); Ireland, Wicklow.
- Bryaxis waterhousei*, Rye. Lymington Salterns (Bouskell); Ireland, Portmarnock, Dublin (Halbert).

- Bryaxis fossulata*, Reich. Ireland, Antrim, Cavan, Wicklow, and Wexford.
Bryaxis helferi, Schmidt. Ireland, Donegal and Kerry; Scotland, Kincardine-on-Forth (W. Evans).
Bryaxis hæmatica, Reich. Kew (Dollman); Ireland, Limerick and Cork.
Bryaxis juncorum, Leach. Ireland, widely distributed.
Bryaxis impressa, Panz. Norfolk, Horning (Edwards); Congham (Wood); Christow, Devonshire (de la Garde).
Trichonyx maerkelii, Aubé. With *Lasius flavus*, Ditchling (Dollman); Aspal Wood, Suffolk (Garneys); Chesil Beach (Beare and Donisthorpe); Portland (Cambridge); with *L. flavus* and *Formica fusca*, Chesham (Elliman); in mole's nest, Coulsdon (Bedwell); Cumnor, near Oxford (Collins); Tiverton, Devon (de la Garde).
Trichonyx sulcicollis, Reich. Southfields (F. Waterhouse); New Forest and Cobham Park (Walker); Chesham (Elliman). Mons. Bedell records it with *Ponera contracta* near Paris.
Trimium brevicorne, Reich. Chiddingfold, Surrey, in moss (Donisthorpe); Cobham Park, Kent (Walker).
Bibloporus bicolor, Denny. New Forest (Donisthorpe); Oxford (Walker); Gibside, Durham (Bagnall); Cumberland (Day).
Euplectus kunzei, Aubé. Bradfield (Joy); Gumley (Matthews); Gibside, Durham (Bagnall).
Euplectus punctatus, Muls. Bradfield (Joy); Wytham Park (Walker); Derwent Valley (Bagnall).
Euplectus duponti, Aubé. Bradfield (Joy).
Euplectus brunneus, Aubé. Under bark with *Myrmica* at Wytham (Collins).
Euplectus karsteni, Reich. Wolvercote (Walker); Southport, common; Ireland, Wicklow.
Euplectus signatus, Reich. Southport, common; Winlaton, Durham (Bagnall).
Euplectus nanus, Reich. Bradfield (Joy); Barham (Kirby).
Euplectus sanguineus, Denny. Cumberland; Derwent Valley (Bagnall); Ireland, Dublin.
Euplectus piceus, Mots. Richmond Park (Donisthorpe); Wrangaton, Devon (Keys); Wytham Park (Collins); Tubney (Walker); Southport (Chaster); Derwent Valley, Durham (Bagnall); Cumberland; Scotland, Comrie, Perthshire (Evans); Isle of Arran (Bagnall).
Euplectus ambiguus, Reich. Oxford district (Walker); Wicken Fen (Donisthorpe); Lundy Island (Joy and Tomlin); Cumberland; Ireland, Armagh.
Euplectus minutissimus, Aubé. Oxford (Walker); Great Salkeld, Cumberland (Britten); Winlaton Mill, Durham (Bagnall).

TRICHOPTERYGIDÆ

- Pteryx suturalis*, Heer. Gibside, Durham (Bagnall).
Actinopteryx fucicola, All. Fishbourne, I. of W. (Donisthorpe); Sandown, I. of W. (Champion).

- Ptinella britannica*, Matth. In moles' nests, Bradfield (Joy), Burwell Fen (Donisthorpe).
- Ptinella testacea*, Heer. Enfield (Donisthorpe); Gibside (Bagnall).
- Ptinella denticollis*, Fairm. Bradfield (Joy).
- Ptinella aptera*, Guér. Richmond Park (Donisthorpe); Cumberland (Britten).
- Trichopteryx cantiana*, Matt. Gumley (Matthews); Gibside (Bagnall).
- Trichopteryx brevipennis*, Er. Ireland, Armagh.
- Trichopteryx bovina*, Mots. Winlaton, Durham (Bagnall).
- Trichopteryx chevrolatii*, All. Ireland, rare (Haliday).
- Trichopteryx variolosa*, Muls. Bradfield (Joy); Offehurch (Chitty).
- Trichopteryx Montandonii*, All. In nest of *F. rufa*, Parkhurst Forest, I. of W. (Donisthorpe).
- Smicrus filicornis*, Matth. Bradfield (Joy).
- Microptilium pulchellum*, All. Bradfield, in tufts from edge of a pond (Joy).
- Nephanes titan*, Newm. Southport (Chaster); abundant at Axwell Park, Durham (Bagnall).
- Ptilium spencei*, All. Ireland, rare (Haliday).
- Ptilium rugulosum*, All. Common in hedge-clippings, Bradfield (Joy).
- Ptilium myrmecophilum*, All. With *Formica rufa*. Oxshott (Donisthorpe); Bradfield (Joy); Symond's Yat (Tomlin); Corbridge-on-Tyne, Northumberland, and Chopwell Woods, Durham (Bagnall).
- Ptilium foveolatum*, All. Ireland, rare, Down (Haliday).
- Actidium coarctatum*, Hal. Fishbourne, I. of W. (Donisthorpe).
- Euryptilium saxonicum*, Gyll. New Forest (Joy).
- Nossidium pilosellum*, Marsh. Bradfield (Joy); Ireland, very rare (Haliday).
- Ptenidium punctatum*, Gyll. Suffolk; Cumberland; Ireland, Donegal and Derry. Inland records: Hendon, in manure-heap (E. A. Butler); Esher and Chobham (Champion).
- Ptenidium fuscicorne*, Er. Flete, Devon (Keys); Axwell Park, Durham
- Ptenidium lavigatum*, Gyll. Hadleigh, Suffolk (Morley); Gibside, Durham (Bagnall).
- Ptenidium atomaroides*, Mots. Birds' nests, St. Kilda (Joy).
- Ptenidium kraatzii*, Matth. With *Formica rufa*, not *F. fusca*. Mr. Edwards records it from Dunston Common, Norfolk.
- Ptenidium formicetorum*, Kr. In nests of *Formica rufa*, Weybridge, Southampton, and Buddon Wood (Donisthorpe); Winlaton, Durham (Bagnall).
- Ptenidium gressneri*, Er. Bradfield, abundant (Joy).

CORYLOPHIDÆ

- Orthoperus kluki*, Wank. Norfolk (Edwards); Oulton Broad (Donisthorpe); Water Eaton (Walker); Exminster (de la Garde).

- Orthoperus brunniipes*, Gyll. Enfield (Pool); Addington (Wood); Gumley (Matthews); Ireland, Kanturk (Wollaston).
Orthoperus mundus, Matth. Bradfield, Berks, and Seaford, Sussex (Joy); Chippenham Fen and Witham Park, Oxford (Donisthorpe); Enfield (Pool); Nethy Bridge, Inverness-shire (Bagnall).
Orthoperus atomus, Gyll. Chiddingfold (Donisthorpe); Suffolk (Morley); Norfolk (Edwards); Cumberland (Britten); Winlaton, Durham (Bagnall); Ireland, Down, Galway, and Cork; Scotland, St. Kilda, birds' nests (Joy).
Orthoperus punctatulus, Matth. Newton More, Inverness-shire (Donisthorpe).
Orthoperus coriaceus, Rey. Woodhay, Hants (Donisthorpe).
Orthoperus atomarius, Heer. Bradfield (Joy).

- Corylophus cassidioides*, Marsh. Ireland, Down.
Corylophus sublævipennis, Duv. Scilly (Joy); Whitsand Bay (Donisthorpe).

Sericoderus lateralis, Gyll. Ireland, widely distributed.

PHALACRIDÆ

- Phalacrus substriatus*, Gyll. Bagley Wood (Holland); Ireland, Galway.
Phalacrus caricis, Sturm. Yarnton, Oxford (Walker); Theddlethorpe, Lincs (Thornley); Ireland, Armagh and Louth.
Olibrus corticalis, Pz. Abundant on *Senecio vulgaris* (common groundsel), Woking (Donisthorpe).
Olibrus æneus, F. Southport district, common; one specimen, Cumberland (Britten); Ireland, Down and Wexford.
Olibrus liquidus, Er. Spalding, Lincs (W. E. Sharp); Tubney (Donisthorpe).
Olibrus bicolor, F. Leicester (F. Bates); Ireland, common in the south-east.
Olibrus particeps, Muls. Chesham (Elliman); Pevensey (Donisthorpe); Whitsand Bay (Keys).
Olibrus affinis, Sturm. Hythe and New Forest (Newbery).
Olibrus flavicornis, Sturm. Chesham (Elliman); Dover (Newbery); Niton, I. of W. (Mitford); Sandown, I. of W. (Champion); St. Margaret's Bay (Chitty).
Olibrus millefolii, Payk. Oxford district (Walker); Shirley, Hants (Newbery); Gumley (Matthews).
Olibrus pygmæus, Sturm. "Attached to *Filago germanica*," Cromer (Elliman); Braunton (de la Garde); Doddington (Chitty); Tubney (Walker); by sweeping *Achillea millefolium*, Brandon (Morley); on *Filago*, Ditchling (Dollman).
Stilbus testaceus, Pz. South Cove, and near Hull (Stainforth).
Stilbus atomarius, L. Snodland (Champion); Stalham district (Chitty).
Stilbus oblongus, Er. Brandon and Oulton Broad (Morley); Wicken Fen (Donisthorpe); Yarnton (Walker).

COCCINELLIDÆ

- Subcoccinella vigintiquatuor-punctata*, L. Suffolk, not uncommon (Morley); Norfolk, very local, Whitwell and Booton Commons (Edwards); Baughurst, Berks, and Lundy Island (Joy); Ilfracombe (Donisthorpe); Cumberland; Freshney Bogs, Lincs (Wallace); Ireland, Antrim.
- Hippodamia 13-punctata*, L. Addington Park, Kent (Donisthorpe); Oxford, 1819 (Hope); Ireland, widely distributed.
- Anisosticta novemdecimpunctata*, L. Doncaster district (Corbett); Ireland Kenmare Wood, co. Kerry (G. H. Cuthbert).
- Adalia bipunctata*, L. Waterford is the only locality given for this species in the Irish List. Found in cop., with *Coccinella variabilis*, by J. W. Douglas at Lewisham.
- Mysia oblongo-guttata*, L. Ireland, not common, Donegal, Armagh, Galway, Dublin, and Wicklow.
- Anatis ocellata*, L. Ireland, Donegal, Armagh, Fermanagh, Dublin, and Wicklow.
- Coccinella hieroglyphica*, L. Leighton Buzzard (Crawshay); Tubney (Walker); Wicken Fen (Donisthorpe); Doncaster (Corbett); Ireland, frequent on heaths.
- Coccinella 11-punctata*, L. Common, and widely distributed throughout the kingdom.
- Coccinella 11-punctata*, var. *confluens*, Donis. Scotland, Culbin sandhills, Moray coast (Chitty); Tiree (Donisthorpe); Ireland, Machrihamish Bay, Mull of Kintyre (Walker); Renvyle, co. Galway (Cruftwell); Rossbeigh, co. Kerry (Donisthorpe).
- Coccinella 5-punctata*, L. Meavy Valley, Devonshire (Keys).
- Coccinella distincta*, Fald. In and about the nests of *Formica rufa*; Weybridge, Bleane Woods, Pamber Forest, Bexhill and Bewdley Forest (Donisthorpe); Woking (Champion).
- Halysia 12-guttata*, Pods. This is a doubtful British species. The Irish record "is probably due to some confusion in synonymy."
- Halysia 16-guttata*, L. New Forest (Donisthorpe); Suffolk, Eye district (Morley), Bungay (Garneys); Cumberland (Britten); Ireland, widely distributed.
- Halysia 18-guttata*, L. Ireland, widely distributed, but not common.
- Halysia conglobata*, L. Scotland, Aberfoyle (Evans).
- Halysia 22-punctata*, L. Ireland, common in Ulster and Leinster, rarer westward.
- Hyperaspis reppensis*, Herbst. Ditchling, Sussex (Dollman); Isle of Wight, Blackgang (Guyon), Sandown (Donisthorpe); Newbury (Harwood); Lundy Island (Joy); Doncaster; Cumberland; Ireland, Donegal and Derry.

- Scymnus pulchellus*, Herbst. Suffolk, Coddendam, in numbers off *Pinus sylvestris*, May to September (Fox); Ireland, Gortconny Bog, co. Antrim (Chaster and Tomlin).
- Scymnus redtenbacheri*, Muls. Caterham, Guildford, Chatham, and Weymouth (Walker); Hounslow (Champion); Lundy Island (Joy); Ireland, common.
- Scymnus nigrinus*, Kug. New Forest and Pamber Forest (Donisthorpe); Suffolk, Brandon (Elliott); Oxford district (Walker).
- Scymnus frontalis*, F. Birkdale sandhills (Chaster and Sopp); Great Cotes, Lincs (Wallace).
- Scymnus arcuatus*, Rossi. A specimen was recorded by Mr. T. H. Hall in 1890, as beaten off ivy near Box Hill. Mr. Pool tells us he was with Mr. Hall at the time, and that the insect was taken in Headley Lane.
- Scymnus limbatus*, Steph. Has been taken on willows at Cheshunt and under bark in Epping Forest by Mr. Pool, and at Coe Fen by Mr. Dollman, no fir-trees being anywhere near. *S. suturalis* is always found on fir. I believe *limbatus* to be a good species.
- Scymnus testaceus*, Mots. Ditchling (Dollman); Lundy Island (Joy); Scotland, East Lothian (Evans). Irish records refer to *S. redtenbacheri*.
- Scymnus hæmorrhoidalis*, Hbst. Cumberland (Britten).
- Scymnus ater*, Kug. Boxhill, Pamber Forest, and Chesham (Donisthorpe); Chilswell Hills (Holland).
- Scymnus minimus*, Rossi. Plymouth district (Keys); Gumley, Leicestershire (Matthews); Enslow Bridge, near Oxford (Walker).
- Platynaspis luteorubra*, Goeze. Huntingfield, abundant in old hedges (Chitty); Oxford (Walker); N. Cornwall (Butler).
- Chilocorus similis*, Ross. Cumberland (Britten); Lincolnshire (Wallace).
- Chilocorus bipustulatus*, L. Cumberland (Britten); Ireland, widely distributed.
- Coccidula scutellata*, Herbst. Suffolk; Cambridge (Dollman).

ENDOMYCHIDÆ

- Symbiotes latus*, Redt. Ealing (Donisthorpe and Dollman); Enfield district, not uncommon (Pool); Gorsfield, Essex (Beaumont); Bradfield (Joy); Grantchester, and Hanwell (Dollman); Wood Eaton (Walker).
- Mycetæa hirta*, Marsh. Ireland, "rare in moss"! Kerry.
- Lycoperdina bovistæ*, F. Newport, I. of W. (Jeffery); Shere (Bedwell); Weybridge (Donisthorpe); Tubney (Walker); Chesham (Elliman); Ipswich (Morley); Norfolk (Burrell); Buckfastleigh, Devon (de la Garde); Buddon Wood (F. Bates); Bardon Hill (Bouskell).

EROTYLIDÆ

- Dacne humeralis*, F. New Forest and Kearsney (Donisthorpe); Enfield (Pool); Oxford district (Walker); Newton Cliff, Lincs (Thornley); Grantchester (Dollman).

- Triplax russica*, L. Enfield (Pool); Wicken Fen (Donisthorpe); Suffolk, widely distributed; Norfolk, Harford Bridges (Beaumont).
- Triplax ænea*, Schall. Cannock Chase (Bouskell); Suffolk, Stoke-by-Nayland (Harwood); Derwent Valley, Durham (Bagnall); "certainly Irish" (Haliday).
- Cyrtotriplax bicolor*, F. Oxshott (Donisthorpe); West Wickham (W. E. Sharp); Doddington (Chitty); Suffolk, Bentley Woods (Morley), Bury district (Tuck); Llandaff, S. Wales (Tomlin).

COLYDIIDÆ

- Aglenus brunneus*, Gyll. In posts in a cellar in Shoe Lane, London (Rye); in plenty in a heap of sacks of old bones, &c., Queenborough (Chitty); in haystack, near Oxford (Holland and Collins); in cowshed, Ditchling (Dollman).
- Colydium elongatum*, F. It is not alone parasitic on *Platypus*, the latter insect being very scarce in the New Forest. *Colydium* has been taken in the burrows of *Melasis buprestoides* and *Scolytus intricatus* by Mr. Donisthorpe, and in those of *Dryocates villosus* by Mr. Bouskell.
- Oxylæmus variolosus*, Duft. Darenth Wood (West); Bradfield, Berks (Joy); Bagley Wood, Oxford (Walker).
- Orthocerus muticus*, L. Studland (Donisthorpe); Ditchling Beacon (Dollman); Tubney (Holland); Lundy Island (Wollaston); Norfolk, North Denes (Paget), Winterton sandhills (Wood); Bradgate Park, Leicestershire (F. Bates).
- Ditoma crenata*, F. Chiddingfold, in plenty (Donisthorpe); Gumley (Matthews).
- Synchita juglandis*, F. The record "near Merton, Surrey," refers to Merton Park, Thetford, Norfolk; Sherwood Forest (Beare, Donisthorpe, and Taylor).
- Cicones variegatus*, Hellw. Bradfield (Joy).
- Myrmecoxenus vaporariorum*, Guér. In manure-heap, Summertown (Walker); Hanwell (Dollman).
- Cerylon histeroides*, F. Ireland, Derry, Antrim, and Kerry.
- Cerylon fagi*, Bris. Red form, Kearsney (Donisthorpe); Bucks (W. E. Sharp); Wrangaton, Devon (Keys); Gibside, Durham (Bagnall).
- Cerylon ferrugineum*, Steph. Enfield (Pool); Ferry Hinksey (Holland); Norfolk, Stratton Strawless (Edwards); Parbold, Southport district (Chaster and Sopp); Derwent Valley, Durham (Bagnall).
- Cerylon deplanatum*, Gyll. Mr. Gorham tells us he has never taken it in the New Forest.

HISTERIDÆ

- Hister quadrimaculatus*, L. Iwade, in plenty in flood refuse (Walker); Weymouth (Donisthorpe).

- Hister unicolor*, L. Suffolk (Morley); Norfolk (Edwards); Lincolnshire (Wallace).
- *Hister merdarius*, Hoff. Isle of Sheppey (Walker); in refuse heap, Broxbourne, Herts (Jennings); in birds' nests, Enfield (Pool), Bradfield (Joy), Ditchling (Dollman); Huntingfield (Chitty); Water Eaton (Collins); Leighton Buzzard (Crawshay); Suffolk (Morley); Scotland, Merchiston, Edinburgh (W. Evans).
- *Hister stercorarius*, Hoff. Braunton sandhills (de la Garde); Birkdale sandhills (Chaster and Sopp); Cornwall, St. Issey (Lawrence Riley); Llandaff (Tomlin).
- Hister purpurascens*, Herbst. Ireland, Galway.
- ✓ *Hister marginatus*, Er. With *Lasius fuliginosus* and *Formica rufa*, Colchester (Harwood); in carrion, Leighton Buzzard (Crawshay); in moles' nests, Bradfield (Joy); Sandown, I. of W. (Taylor). Widely distributed in moles' nests.
- Hister neglectus*, Germ. Ireland, widely distributed.
- Hister bissexstriatus*, F. Leicester (F. Bates); Leighton Buzzard (Crawshay); Southport sandhills (Chaster); Cumberland (Britten); Winlaton, Durham (Bagnall).
- Hister 12-striatus*, Sch. Southport district; Cumberland; Ireland, Dublin and Kerry.
- Hister bimaculatus*, L. Ireland, Donegal, Derry, and Wicklow. —
- Paromalus parallelipedus*, Herbst. One specimen swept at Brockenhurst by Mr. O. E. Janson.
- Kissister minima*, Aubé. Bury district (Tuck); Sandown, I. of W. (Donisthorpe); Oxford (Chitty).
- Carcinops 14-striatus*, Steph. In a London bakehouse (Jennings); Oxford and Queenborough, in bone-house, &c. (Walker); Woolwich (Bedwell).
- Heterius ferrugineus*, Ol. In nest of *F. fusca*, Box Hill (Bedwell, 1909).
- Dendrophilus punctatus*, Ill. In nest of *Formica rufa*, Weybridge, in cellar in a granary, Holborn, and in bird's nest, Oxshott (Donisthorpe); Enfield (Pool); Chipstead (Bedwell); in *débris* of owl's nest, Isle of Sheppey (Walker); in bone heap (Queenborough); in birds' nests, Bradfield, &c. (Joy); Saltfleet, Lincs (L. N. U.).
- Dendrophilus pygmaeus*, L. In nests of *Formica rufa*. Oxshott and Weybridge (Donisthorpe); Walthamstow (Butler); Colchester (Harwood); Corbridge-on-Tyne (Bagnall); Swanscombe (Bedwell).
- Myrmetes piceus*, Payk. With *Formica rufa*. Oxshott and Weybridge (Donisthorpe); Walthamstow (Butler); Wellington College (Joy); Tubney (Collins); Corbridge-on-Tyne (Bagnall); Harewood Forest (Lloyd).
- Saprinus æneus*, F. Ireland, Donegal, Derry, Clare, Waterford, and Kerry.
- Saprinus immundus*, Gyll. Ireland, Rosses Point, Sligo (Johnson).

- Saprinus œneus*, F., and *immundus*, Gyll. In the E. M. M. for 1897, p. 45, Mr. G. Lewis points out very clearly the difference between these two beetles.
- Saprinus virescens*, Payk. Cobham Park and Cothill (Walker); Woking and Pamber Forest (Donisthorpe); Belstead, Suffolk (Morley); Ditchling, Sussex (Dollman); Leighton Buzzard (Crawshay); Dawlish (Keys); in nest of sand-martin, Moortown, Lincolnshire (Wallace).
- Hypocaccus quadristriatus*, Hoff. Ireland, Antrim.
- Hypocaccus metallicus*, Herbst. Lincolnshire, Mablethorpe (Pym), Trus-thorpe (Thornley).
- Hypocaccus rugifrons*, Payk. Ireland, Antrim.
- Pachylopus maritimus*, Steph. Sandown, I. of W. (Champion); Torksey, Lincs, forty miles from sea (Pegler); Ireland, widely distributed.
- Teretrius picipes*, F. In and about the borings of *Lyctus brunneus*, in oak fences, in numbers, Southfields (E. A. Waterhouse); Bungay (Garneys); Ashstead (Bedwell), in borings of *L. canaliculatus*.
- Plegaderus dissectus*, Er. Tewkesbury, in decayed wood of old poplar-tree (Donisthorpe); in elm stump, Wood Eaton (Walker).
- Abraeus globosus*, Hoff. Enfield (Pool); New Forest and Tewksbury (Donisthorpe); Oxford district; Suffolk, Brandon (Morley), Bury district (Tuck); Norfolk (Burrell). The larva of this beetle was described by Perris from a nest of *Lasius fuliginosus*.
- Abraeus granulum*, Er. Bradfield (Joy); Stoke Edith Park, Herefordshire (Tomlin).
- Halacritus punctum*, Aubé. Bembridge, I. of W. (Ellis); Gumley, Leicestershire (Matthews); Whitsand Bay (Keys).
- Acritus minutus*, Herbst. Ireland, Down, Armagh, and Dublin.
- Acritus nigricornis*, Hoff. Wytham Park (Walker).
- Onthophilus globulosus*, Ol. Coulsdon, in moles' nests (Bedwell); Tubney (Holland); Sandy, Beds (Crotch); Brandon (Morley); Mousehold Heath (Edwards); Roundham Heath (Thouless); Sandown, I. of W., in moles' nests (Taylor).

MICROPEPLIDÆ

- Micropeplus porcatus*, Payk. Ireland, Donegal, Derry, Antrim, Down, and Kerry.
- Micropeplus staphylinoides*, Marsh. Ireland, rare, Down, Armagh, Dublin, and Cork.
- Micropeplus margaritæ*, Duv. Ireland, Derry, Dublin, and Cork.
- Micropeplus tesseraula*, Curt. Ireland, Derry and Down.

NTIDULIDÆ

- Brachypterus gravidus*, Ill. Southport district (Chaster and Sopp).

- Brachypterus pubescens*, Er. Ireland, widely distributed.
- Cercus pedicularis*, L. Near Oxford (Walker); Woodhay (Donisthorpe); Great Coates, Lincs (Thornley); Ireland, widely distributed.
- Cercus bipustulatus*, Payk. Ireland, Roscommon and Westmeath.
- Cercus rufilabris*, Latr. Freshney Bogs, Lincs (Thornley); Scotland, Orchardton (Douglas); Ireland, widely distributed.
- Carpophilus hemipterus*, L. At Cossus tree, Compton, Plymouth (Keys); several in rotting branch, Bagley Wood (Shipp); Ireland, Dublin, in rotten wood (Hogan); Limerick (Bullock).
- Carpophilus sexpustulatus*, F. Under bark, near Doncaster (E. G. Bayford, March 23, 1894); under bark of elm, Sandall Beat, near Doncaster (Dr. Corbett, March 18, 1904); eight specimens off dead hoodie crow, February 1907 (Bayford and Corbett).
- Epuræa decemguttata*, F. Bradfield, Berks (Joy); Eaton, Norfolk (Edwards).
- Epuræa diffusa*, Bris. Edmonton (Jennings); Bradfield (Joy); Stoke Edith, Herefordshire (Tomlin); Chiddingfold (Donisthorpe).
- Epuræa melina*, Er. Cumberland; Devonshire; Ireland, Down and Cork.
- Epuræa silacea*, Herbst. Nethy Bridge, abundant (Bishop and Donisthorpe).
- Epuræa oblonga*, Herbst. Chobham (Champion); Cromer (Elliman); Winlinton, Durham (Bagnall); Ireland, Donegal.
- Epuræa longula*, Er. Bovey Tracey (de la Garde); Porlock (Donisthorpe); Gibside, Durham (Bagnall); Ireland, Donegal and Galway.
- Epuræa florea*, Er. Ireland, widely distributed and probably common.
- Epuræa parvula*, Sturm. Woking (Champion); Cumberland (Day); Gibside (Bagnall); Rannoch (Donisthorpe). Mr. Bagnall has shown that the pabulum of *E. parvula*, Er., is a fungus, *Daldinia concentrica* (E. M. M., 1906, p. 229).
- Epuræa obsoleta*, F. Ireland, Donegal and Down.
- Epuræa variegata*, Herbst. In fungi, Leicester district (F. Bates); Rannoch, in some numbers (Bishop).
- Epuræa angustula*, Er. In the borings of *Trypodendron domesticum*, Winlinton (Bagnall); Ireland, Donegal (Buckle).
- Omosiphora limbata*, F. Water Eaton (Walker).
- Micrurula melanocephala*, Marsh. Peppard, Henley-on-Thames (Fowler); Bagley Wood (Walker); Norton, Lincs (E. A. Waterhouse); Winlinton Mill, Durham (Bagnall); Ugboro Beacon, Devon (de la Garde).
- Nitidula quadripustulata*, F. Isle of Wight, Bembridge (Champion), Blackgang (Donisthorpe); Gumley (Matthews); Oxford district (Walker); Leighton Buzzard (Crawshay).
- Nitidula rufipes*, L. Cheshunt (Pool); Leighton Buzzard (Crawshay); Oxted, New Forest, and Blackgang, I. of W. (Donisthorpe); Guildford and Bembridge, I. of W. (Champion); Ferndale, Dorset (Sopp); Oxford (Walker); Gumley (Matthews); Torksey, Lincs (Pegler); South Brent, Devon (Keys).

- Soronia punctatissima*, Ill. Suffolk (Morley); Bradfield, Berks (Joy); Cowley (Donisthorpe); Summertown (Walker); Devonshire (de la Garde).
Soronia grisea, L. Lincolnshire, Cadney (Peacock); Spalding (W. E. Sharp).
- Amphotis marginata*, Er. In nests of *Lasius fuliginosus*. Oxshott, Walton, Weybridge, and Pyrford (Donisthorpe); Colchester (Harwood); Wellington College (Joy); Pangbourne (Wollaston); Darenth Wood and near Plymouth (Reading); Little Eaton, Derbyshire (E. Brown); Netley, Shropshire.
- Omosita depressa*, L. New Forest, in plenty (Donisthorpe); Plymouth district (Keys); Grimsby district (Wallace); Stoke Edith, Herefordshire (Tomlin).
- Thalycra sericea*, Sturm. In truffles, Epping Forest (G. Nicholson); evening sweeping, Woking (Champion); Cobham Park (Walker); Oxford, Tubney (Donisthorpe), Wytham Park (Walker); Bradfield, Berks (Joy); Woodhay, Hants (Harwood); Six Mile Bottom (Jenkinson); Bromyard, Herefordshire (Tomlin).
- Pocadius ferrugineus*, F. Ryde, I. of W. (Donisthorpe); Doncaster (Corbett); Lincolnshire; Ireland, Galway, Louth, Westmeath, Dublin, and Clare.
- Pria dulcamaræ*, Scop. Suffolk, not uncommon; Norfolk, very local; Ditchling (Dollman).
- Meligethes rufipes*, Gyll. Ireland, Down and Galway.
- Meligethes lumbaris*, Sturm. Bovey Tracey (de la Garde); Ireland, common in the south-east.
- Meligethes fulvipes*, Bris. Hunstanton (Edwards).
- Meligethes subrugosus*, Gyll. Ugboro Beacon, Devon (Keys and de la Garde); Cumberland (Day).
- Meligethes difficilis*, Heer. Scotland, Burnfoot, near Langholm (Douglass).
- Meligethes ochropus*, Stm. Yarnton (Collins).
- Meligethes viduatus*, Sturm. On *Galeopsis ludanum*, v. *canescens*, Pevensey (Donisthorpe); by sweeping *Geum rivale*, Cumberland (Britten).
- Meligethes pedicularius*, Gyll. In dandelion flowers, Aldeburgh (Morley); Ireland, Dublin.
- Meligethes bidens*, Bris. On *Teucrium Scorodonia*, Oxford district (Walker); Chesham, on *Scabiosa succisa* (Elliman); Whitlingham, Norfolk (Edwards); Cumberland (Day).
- Meligethes rotundicollis*, Bris. Buckland Hill (Bedwell).
- Meligethes umbrosus*, Sturm. Shotover (Holland); Barham, Suffolk (Morley).
- Meligethes oratus*, Sturm. Spalding, Lincs (W. E. Sharp); Ireland, Wexford.
- Meligethes symphyti*, Heer. Gumley (Matthews).
- Meligethes murinus*, Er. On *Echium*, Huntingfield (Chitty); Oxford district; near Llandudno (W. E. Sharp).
- Meligethes lugubris*, Sturm. Lundy Island (Wollaston). According to Reitter, the var. *gagathinus* is a good species. Bovey Tracey (de la Garde).
- Meligethes obscurus*, Er. Oxford district; Suffolk (Morley); Cromer (Elliman); Lundy Island (Joy); Isle of Man (Bailey); Ireland, Galway, Dublin,

- Wicklow, Wexford, Waterford, Cork, and Kerry. Dr. Bailey gives a list of the flowers frequented by this species and *M. exilis* in the Isle of Man (E. M. M., 1905, p. 21).
- Meligethes erythropus*, Gyll. Corton, Suffolk (Butler); Ireland, Donegal, Derry, Armagh, Dublin, and Wexford.
- Meligethes bidentatus*, Bris. Mr. Crotch's specimens have unfortunately been lost. Seaford (Fowler).
- Cryptarcha strigata*, F. Wytham Park (Walker); Bentley Woods, Suffolk (Morley); Cossey, Norfolk (Edwards); Bradfield, Berks (Joy).
- Cryptarcha imperialis*, F. Bentley Woods (Morley); Oulton Broad (Bedwell); Fornceett, Norfolk (Brown); Bradfield (Joy); Oxford (Walker).
- Ips quadripunctata*, Herbst. Oxford, Bagley Wood (Hamm), Witham Wood (Collins); Owston Wood, Leicestershire (Bouskell); Louth district, Lines (Goulding); Bovey Tracey, Devon (de la Garde).
- Ips quadripustulata*, L. Ireland, Tyrone.
- Pityophagus ferrugineus*, F. Besselsleigh, near Oxford (Walker); Foxhall, Suffolk (Morley); Norfolk (Stephens); Gumley (Matthews); Ireland, Galway, Meath, and Kerry.
- Rhizophagus cribratus*, Gyll. Tubney (Walker); Bury district, Suffolk (Tuck); Earlham, Norfolk (Edwards); Doncaster (Corbett); Derwent Valley, Durham (Bagnall); Scotland, Orchardton, common (Douglas), Edinburgh (Evans), Spey district (Chitty).
- Rhizophagus perforatus*, Er. Devonshire, attracted by putrid meat (de la Garde); Cumberland; Gibside, Durham (Bagnall); Ireland, Armagh and Dublin.
- Rhizophagus parallelocollis*, Er. In dead bodies—see E. M. M., 1888, p. 276 (Fowler); Bradfield, in a grave (Joy); in seed potatoes (Butler); Great Blakenham, Suffolk (Morley); Waxham, Norfolk (Champion); Buckfastleigh, Devon (de la Garde); Southport (Chaster); Ireland, Armagh (Johnson), Antrim, in numbers crawling on tombstones in Armoyn Churchyard (Chaster).
- Rhizophagus ferrugineus*, Payk. Ireland, Donegal, Galway, and Cork.
- Rhizophagus nitidulus*, F. Garve (Joy).
- Rhizophagus dispar*, Gyll. Devonshire (de la Garde); Ireland, local, but widely distributed.
- Rhizophagus bipustulatus*, F. Not recorded in the Irish List.
- Rhizophagus politus*, Hell. Bletchington, near Oxford (Hamm).
- Rhizophagus cæruleipennis*, Sahlb. (*cyanipennis*, Hardy). New Forest (Sharp); Derwent Valley (Bagnall); Durham (Hardy); Woking (Champion); Christow, Devon (de la Garde); Tiverton, Devon (Rendel).

TROGOSITIDÆ

- Thymalus limbatus*, F. Ireland, Kenmare, co. Kerry (Hardy).

MONOTOMIDÆ

- Monotoma conicicollis*, Aubé. In nests of *Formica rufa*. Oxshott and Weybridge (Donisthorpe); Walthamstow (Butler); Wigmore Wood, Kent (Walker); Tubney (Collins); Wellington College (Joy); Keswick, Cumberland (Britten); Choppwell Woods, Durham and Corbridge, Northumberland (Bagnall).
- Monotoma formicetorum*, Thoms. In nests of *F. rufa*. Oxshott and Weybridge (Donisthorpe); Wigmore Wood (Walker); Bleane Woods (Chitty); Walthamstow (Butler); Colchester (Harwood); Wellington College (Joy); Tubney (Collins); Choppwell Woods, Durham (Bagnall); Keswick, Cumberland (Britten); Ireland, Caragh Lake (Bouskell).
- Monotoma spinicollis*, Aubé. Cothill, Oxford (Walker); Market Bosworth, Leicestershire (Donisthorpe); Yorkshire; Ireland, Cork.
- Monotoma brevicollis*, Aubé. Chaldon, Surrey (Bedwell); Glemsford, Suffolk (Tomlin); Norfolk, scarce (Edwards); Scilly (Joy); Devonshire (Keys).
- Monotoma picipes*, Herbst. Ireland, Donegal, Down, Armagh, Wicklow, and Kerry.
- Monotoma quadricollis*, Aubé. Yarnton (Collins); Southport (Chaster and Sopp).
- Monotoma rufa*, Redt. Yarnton (Collins); abundant in vegetable refuse in the Southport district in 1902 (Chaster and Sopp).
- Monotoma longicollis*, Gyll. Huntingfield (Chitty); Sandown, I. of W., and Market Bosworth (Donisthorpe); Wood Eaton (Walker); Devonshire (Keys); Birkdale (Chaster and Sopp); Cumberland; Ireland, Cork.

LATHRIDIIDÆ

- Holoparamecus depressus*, Curt. Oxford (Shipp).
- Holoparamecus caularum*, Aubé. In bone-sack heap, Queenborough (Walker); in manure heap, Hendon (E. A. Butler); in haystack, Water Eaton (Walker).
- Anommatus 12-striatus*, Wesm. West Malvern (Tomlin); Wolvercote (Walker); Streatley, Berks (Joy); Gidside (Bagnall); Scotland, Edinburgh (Evans).
- Lathridius angulatus*, Humm. Taken in cop. with *Corticaria crenulata* (Donisthorpe); Tostock, Suffolk (Tuck); Trowse, Norfolk (Edwards); Wear and Derwent Valley (Bagnall); Sandown, I. of W. (Donisthorpe); Whitsand Bay (Keys).
- Coninomus constrictus*, Gyll. On pines and oak, Woking (Champion).
- Coninomus nodifer*, Westw. Ireland, widely distributed, common in the north.
- Enicmus testaceus*, Steph. Wytham Park (Walker); and *brevicornis*, Mannh. Both taken in Cumberland by Britten.
- Cartodere filiformis*, Gyll. Gumley (Matthews); two specimens taken by Mr. Britten in his house in Cumberland.
- Cartodere elongata*, Curt. Bentley Woods (Morley); Richmond Park and

- Weybridge (Donisthorpe); Oxford district (Walker); Alnwick, Durham (Bagnall).
- Cartodere filum*, Aubé. Gumley (Matthews); Ireland, Glasnevin Herbarium, Dublin.
- Cartodere ruficollis*, Marsh. Common in haystack refuse, Cumberland (Britten).
- Corticaria crenulata*, Gyll. Ireland, a single specimen, Dublin.
- Corticaria denticulata*, Gyll. Ireland, Donegal, Antrim, and Armagh.
- Corticaria serrata*, Payk. Sherwood Forest (Donisthorpe); Wytham Park (Walker); Trusthorpe, Lincs (Thornley); Ireland, Armagh.
- Corticaria umbilicata*, Beck. Scotland, Forres (Chitty); Ireland, Antrim and Kerry.
- Corticaria fulva*, Com. In corn shop, Edmonton (Pool); in a granary, Holborn, and in wine-cellar, Sydenham (Donisthorpe); in cellar, Shoe Lane (Rye); in wine-cellar, Bradfield (Joy); Norfolk (Edwards); Water Eaton (Walker); Ireland, Tipperary.
- Corticaria fenestralis*, L. Cumberland; Scotland, Nethy Bridge (Donisthorpe); Ireland, King's County.
- Melanophthalma transversalis* v. *Wollastoni*, Wat. Pevensy and Wicken Fen (Donisthorpe); Ireland, Cork.
- Melanophthalma similata*, Gyll. Occurs on the spruce fir, Bradfield (Joy); Guildford and Woking (Champion); New Forest and Nethy Bridge (Dr. Sharp); Tubney (Tomlin and Walker); Glemsford, Suffolk (Tomlin).

CUCUJIDÆ

- Pediacus dermestoides*, F. Under bark of Spanish chestnut, Bradfield (Joy); Wytham Park (Walker); Cromer (Elliman); Market Bosworth, Leicestershire (Bouskell).
- Pediacus depressus*, Herbst. Enfield (Pool); Sheerness district (Donisthorpe); Woking (Barton).
- Læmophlæus bimaculatus*, Payk. Enfield (Pool); Guildford (Champion).
- Læmophlæus duplicatus*, Waltl. Newchurch, I. of W. (Ellis); Water Eaton (Walker).
- Læmophlæus pusillus*, Schön. In granaries, Holborn and Stroud (Donisthorpe); Yorkshire; Scotland, Boniss and Edinburgh (Godfrey).
- Læmophlæus ferrugineus*, Steph. Under pine bark, Oxshott, under oak bark, Bexley, under beech bark, New Forest, and in plenty in a granary, Holborn (Donisthorpe); Suffolk, in nest of *Vespa germanica*, Bury (Tuck); Wherstead and Dodnash Wood (Morley).
- Læmophlæus ater*, Ol. Oxshott (Blandford); Chawley (Walker); Suffolk (Morley); Newbury (Harwood); Shanklin, I. of W. (Pool).
- Læmophlæus clematidis*, Er. Higham (Walker).
- Brontes planatus*, L. Carlisle (Day).
- Psammæchus bipunctatus*, F. Chesham, black form (Elliman); Suffolk, Foxhall and Sproughton (Morley); Oulton Broad (Donisthorpe); Oxford district (Walker); Yorkshire.

Hypocopus quadricollis, Reit. (*lathridioides*, Brit. Cat.). Camber, near Rye, under sheep's dung (Bennett), under dead fowl (Butler). According to Captain Sainte-Claire Deville, it is found in nests of *Formica rufa*, and under dry dung in France.

Silvanus surinamensis, L. In fungus on elm, Enfield (Pool); by beating faggots near Kingsclere, far from any houses (Donisthorpe).

Silvanus unidentatus, F. Chiddingfold, in plenty, in company with *Ditoma crenata* (Donisthorpe).

Cathartus advena, Walth. In bakehouse, Llandaff (Tomlin).

CRYPTOPHAGIDÆ

Diphylus lunatus, F. Streatley, Berks (Joy); Luccombe and Ryde, I. of W., and Porlock (Beare and Donisthorpe); Porthkerry, S. Wales (Tomlin); Oxford district (Walker).

Diplocælus fagi, Guer. Streatley, Berks (Joy).

Telmatophilus sparganii, Ahr. Winchelsea, in plenty (Bennett). The male characters of this species are discussed by Mr. Champion (E. M. M., 1897, p. 214).

Telmatophilus caricis, Ol. Lincolnshire (Thornley); Cumberland (Britten); Ireland, common.

Telmatophilus typhæ, Fall. Hastings district (Bennett); Ireland, Clare.

Telmatophilus schönherri, Gyll. Cothill (Walker); Norfolk, Arminghall pits (Edwards), Sutton Broad, in plenty (Donisthorpe).

Telmatophilus brevicollis, Aubé. Hastings district (Bennett).

Antherophagus nigricornis, F. Eskdale, Cumberland (Fowler); Blackgang, I. of W. (Donisthorpe); Buckfastleigh, Devonshire (de la Garde); Snowdon (Sopp and Tomlin); Doncaster (Corbett); Ireland, Donegal and Derry, in nests of *Bombus terrestris* (Buckle), Antrim, Queen's County, and Kerry.

Antherophagus pallens, Gyll. Isle of Wight, Sandown, in *Bombus* nest (Dollman); Chiddingfold (Donisthorpe); Bradfield (Joy); Tubney (Walker); in nests of *Bombus agrorum*, *lapidarius*, and *sylvarum*, Bury district (Tuck); Norfolk (Edwards); Birkdale sandhills (Chaster and Sopp); Lincolnshire (Wallace); Ireland, Donegal, Derry, Antrim, Down, Galway, and Meath.

Antherophagus silaceus, Herbst. Coulsdon (Bedwell); Woking (Champion); New Forest, in nest of *Bombus muscorum*, and Iden, Sussex, sweeping (Donisthorpe); Suffolk, Southwold (Saunders), Nacton (Piffard); Southport (Chaster); N. Cornwall (Butler).

Cryptophagus lycoperdi, Herbst. Gibside (Bagnall); Cumberland (Day); Ireland, Down and Dublin.

Cryptophagus schmidtii, Sturm. In a granary, Strood (Walker).

Cryptophagus setulosus, Sturm. In nests of *Bombus muscorum*, New Forest and Kingsclere (Donisthorpe); Suffolk, in wasps' nests, Bury district (Tuck), Ipswich (Morley); Lundy Island (Joy); Ireland, Derry, Antrim, Down, and Armagh.

- Cryptophagus pilosus*, Gyll. Ireland, Waterford and Donegal.
- Cryptophagus punctipennis*, Bris. Oxford district (Walker); in bees' nests, Bury district (Tuck).
- Cryptophagus ruficornis*, Steph. In *Sphaeria concentrica*, Gatton Park (Bedwell); Ryde, I. of W. (Donisthorpe); Gibside, Durham (Bagnall); Streatley (Joy); Arundel Park (W. E. Sharp); Wytham Park (Walker).
- Cryptophagus populi*, Payk. Woking (Champion); Leighton Buzzard (Crawshay); Barnby Broad (Bedwell); Tubney (Walker); Gumley (Matthews). The Rev. G. Crawshay has bred it in large numbers from a few specimens taken at Leighton, and has reared specimens of the rare form with black elytra (not hitherto recorded from Britain), and one solitary black specimen by selection.
- Cryptophagus umbratus*, Er. Bucks (W. E. Sharp); Tubney (Holland); in nest of *Bombus latreilleus*, Bury district (Tuck); Southport (Chaster and Sopp).
- Cryptophagus badius*, Sturm. West Malvern (Tomlin); Teignmouth (de la Garde); in nest of *Vespa crabro*, Bury district (Tuck); in owl's nest, Great Salkeld (Britten).
- Cryptophagus validus*, Kr. Bradfield (Joy).
- Cryptophagus cylindrus*, Kies. Chobham and Woking, Surrey (Champion).
- Cryptophagus distinguendus*, Sturm. Granary, Holborn (Donisthorpe); corn shop, Edmonton (Pool); Oxford (Holland); in nest of *Vespa vulgaris*, Bury district (Tuck); Scotland, Bishopton (Fergusson); Ireland, Derry, in nest of *Bombus*, Sligo, and Meath.
- Cryptophagus fumatus*, Gyll. Forres, N.B. (Chitty).
- Cryptophagus affinis*, Sturm. Cumberland; Ireland, Derry and Antrim.
- Cryptophagus subfumatus*, Kr. In an apple room, West Malvern, the larvæ of this and other species of the genus feeding on the mould on rotten apples (Tomlin); in muscatels, Sandown, I. of W. (Taylor).
- Cryptophagus pubescens*, Sturm. Common in wasps' nests; Chiddingfold (Donisthorpe); Bradfield (Joy); Bury district (Tuck); Great Salkeld (Britten); Ireland, Armagh and Galway.
- Cryptophagus bicolor*, Sturm. Granary, Holborn, and Kingsclere (Donisthorpe); corn shop, Edmonton (Pool); Tubney (Beare); Cumberland; Ireland, Dublin.
- Micrambe abietis*, Payk. Bradfield (Joy); Woodhay (Donisthorpe); in plenty at Sharsted Park (Chitty).
- Henoticus serratus*, Gyll. Newbury (Donisthorpe); Llanberis (Kidson Taylor); Loch Long, Arrochar (Bagnall); Darley Dale (Tomlin); Roxton Wood, Grimsby (Wallace).
- Paramecosoma melanocephalum*, Herbst. Hanwell (Donisthorpe); Oxford (Walker); Ireland, Donegal, Cavan, Armagh, Dublin, and Kerry. The Irish examples are referable to the variety with shining black elytra and infusate tibiæ. Mr. Keys has taken this form in the Walkenham Valley, Devonshire.
- Cænoscelis pallida*, Woll. Cobham Park and Tubney (Walker); Bradfield

- (Joy). As pointed out by Mr. Champion (E. M. M., 1895, p. 174), *C. pallida*, Wollaston, is the species doing duty in British collections for *C. ferruginea*, Sahlb., the latter insect being larger—2.3 mm. as against $1\frac{1}{2}$ – $1\frac{3}{8}$ mm.
- Atomaria diluta*, Er. Cumberland (Day); Ireland, Armagh (Johnson).
- Atomaria fimetarii*, Herbst. Tooting Junction, in profusion in *Coprinus comatus* (F. Cambridge); Enfield (Pool); Ashstead (Donisthorpe); Wytham Park, near Oxford (Walker); Birkdale sandhills (Chaster and Sopp); Gibside (Bagnall); West Malvern (Tomlin); Carlisle (Day).
- Atomaria fumata*, Er. Enfield (Pool); Faversham (Chitty); Ireland Antrim and Armagh.
- Atomaria nigriventris*, Steph. Ireland, Donegal, Dublin, and Cork.
- Atomaria umbrina*, Er. Bagley Wood (Walker); Ipswich (Morley); Cumberland (Day).
- Atomaria wollastoni*, Sharp. Ireland, Donegal (Buckle).
- Atomaria linearis*, Steph. Lincolnshire, Spalding (W. E. Sharp); Croxby (Bullock); Ireland, Dublin.
- Atomaria elongatula*, Er. Bradfield (Joy); Norwich (Edwards); Ireland, Armagh and Galway; Scotland, Nethy Bridge (Donisthorpe).
- Atomaria badia*, Er. Woking and Guildford (Champion); New Forest (Donisthorpe); Cumberland (Day); Corbridge, Northumberland (Bagnall).
- Atomaria fuscipes*, Gyll. In dead rooks, Market Bosworth, Leicestershire (Donisthorpe); Ireland, locally common.
- Atomaria peltata*, Kr. Ireland, Donegal.
- Atomaria nigripennis*, Payk. In a granary, in plenty, Holborn (Donisthorpe); abundant in cellar, West Malvern (Tomlin); Ireland, Armagh.
- Atomaria munda*, Er. Oxford district (Collins); Bentley Woods (Morley); Lundy Island (Joy); Cumberland; Ireland, Donegal, in nest of *Bombus terrestris*: Scotland, St. Kilda, birds' nests (Joy).
- Atomaria atra*, Herbst. Cothill (Collins); Bradfield (Joy); Cumberland (Day); Ireland, Down and Dublin.
- Atomaria berlinensis*, Kr. Oxford district (Walker); Scilly and Lundy Island (Joy); Ireland, Donegal, Antrim, Armagh, and Kerry.
- Atomaria basalis*, Er. Oulton marshes (Bedwell); Great Cotes, Lincs (Thornley); Ireland, Armagh, Louth, and Wexford.
- Atomaria rhenana*, Kr. Lancing (Chitty).
- Atomaria mesomelas*, Herbst. All-black specimen, Yarnton, Oxford (Walker); Ireland, frequent and very variable.
- Atomaria gutta*, Steph. Ireland, Lough Neagh (Halbert).
- Atomaria apicalis*, Er. Ireland, Dublin.
- Atomaria analis*, Er. Ireland, widely distributed.
- Atomaria ruficornis*, Marsh. Ireland, Dublin.
- Atomaria versicolor*, Er. Oxford district (Collins); Bradfield (Joy); Woodhay, Hants (Donisthorpe); Winlaton-on-Tyne (Bagnall).
- Ephistemus globosus*, Waltl. Snodland and Oxford district (Walker); Ipswich district (Morley); Bude, N. Cornwall (de la Garde); Axwell Park, Durham (Bagnall); Ireland, Antrim, Armagh, Carlow, Waterford, and Kerry.

SCAPHIDIIDÆ

- Scaphisoma agaricinum*, L. Ireland, Armagh, Galway, Westmeath, and Dublin.
- Scaphisoma boleti*, Pz. Lucombe, I. of W. (Beare, Donisthorpe, and Taylor); Wytham Park (Collins); Suffolk, not uncommon (Morley); Ireland, Galway and Dublin.

MYCETOPHAGIDÆ

- Triphyllus suturalis*, F. Epping Forest and Chippenham Fen (Donisthorpe); Duddington Park (Beare); Bury district (Tuck); Oxford district (Walker).
- Triphyllus punctus*, F. Broughton Wood, Lincs (L.N.U.).
- Litargus bifasciatus*, F. Woking (Champion); Enfield (Pool); Wytham Park (Walker); Streatley (Joy); S. Wales (Chitty); Cromer (Elliman); Doncaster (Corbett).
- Mycetophagus quadripustulatus*, L. Suffolk, Bury district (Tuck); Martlesham (Morley); Oakham, Rutland (Donisthorpe); Lincolnshire (Wallace); Melchbourne, Beds, and Eastoft, Yorks (Crawshay).
- Mycetophagus piceus*, F. Enfield (Pool); Oxford (Hope); Bosworth Park, Leicestershire (Bouskell and Donisthorpe); Doncaster (Corbett); Woodhall Spa, Lincs (L.N.U.).
- Mycetophagus atomarius*, F. Enfield (Pool); Bury district (Tuck); Cumberland (Britten).
- Mycetophagus populi*, F. Tubney, near Oxford (Walker); Coddendam, Suffolk (Fox).
- Mycetophagus quadriguttatus*, Müll. Enfield, in fungus in trees, and Edmonton, in corn shop (Pool); Holborn, in granary, in profusion (Donisthorpe); Strood, in granary, Cobham Park, and Cothill (Walker); Bury district (Tuck); New Forest (Champion); Scotland, Coatbridge (Brown).
- Mycetophagus multipunctatus*, Hellw. Enfield (Pool); Suffolk, Bury district (Tuck); Stoke-by-Nayland (Harwood); near Oxford (Walker); Melchbourne, Beds (Crawshay); Cannock Chase (Bouskell); Little Cotes, Lincs (Wallace); Doncaster (Corbett); Cumberland.
- Mycetophagus fulvicollis*, F. Mr. E. A. Waterhouse took a specimen occurring on a fir log in the Dall sawpit, Rannoch, in June 1870 (E. M. M., 1870, p. 80).

DERMESTIDÆ

- Dermestes vulpinus*, F. Queenborough, in bone house (Walker); Oxford; (Hope); in carrion on the Formby shore, Southport district (W. E. Sharp) Ireland, Belfast.
- Dermestes murinus*, L. Ireland, Belfast (Orr). Readily eaten by all the birds, monkeys, and lizards it was offered to at the Zoological Gardens (Donisthorpe).

- Dermestes undulatus*, Brahm. Southsea (Donisthorpe); Blakeney Point, Norfolk (Edwards); Suffolk (Morley).
- Dermestes lardarius*, L. Out-of-doors records: In dead bird in Wychwood Forest (Donisthorpe); in dead mole, Bentley Woods (Baylis); in dead hedgehog, Herringfleet (Bedwell).
- Attagenus pellio*, L. Off hawthorn blossom, Penge (Donisthorpe); Ireland, Donegal, Armagh, and Tipperary.
- Attagenus megatoma*, F. In London warehouse (Newberry).
- Megatoma undata*, Er. Penge (Donisthorpe). Dr. Joy took twenty specimens at Bradfield in a nest of an *Andrena*.
- Tiresias serra*, F. Sutton, Surrey (Donisthorpe); Marston Ferry (Walker); Suffolk, Eye district (Tyrer), Coddenham (Fox); Cumberland (Britten). Not recorded from Ireland.
- Anthrenus varius*, F. On umbels, Darenth Wood (Donisthorpe); Oxford (Holland); Suffolk, from stuffed bird, and insects, Ipswich, on umbels, Knight's Dales (Morley).
- Anthrenus musceorum*, L. Not recorded from Ireland.
- Anthrenus claviger*, Er. Lincolnshire (Thornley).
- Trinodes hirtus*, F. Suffolk, sparingly on *Pinus sylvestris* at Coddenham (Fox). Mr. Bennett has taken it recently in Richmond Park.

BYRRHIDÆ

- Syncalypta setigera*, Ill. Barton-on-Sea (Selous).
- Syncalypta hirsuta*, Sharp. Studland (Donisthorpe); Tubney, near Oxford (Walker); Southport sandhills (Chaster and Sopp).
- Byrrhus fasciatus*, F. Ireland, Derry, Down, Mayo, and Wicklow.
- Byrrhus dorsalis*, F. Ireland, widely distributed, but not common.
- Byrrhus murinus*, F. Woking (Champion); Martlesham Heath, Suffolk (Sheppard); Tubney (Holland).
- Morychus æneus*, F. Cumberland (Britten).
- Limnichus pygmæus*, Sturm. Hastings district (Bennett); Cowley Marsh (Hamm); Cromer (Elliman); Freshney Bog, Grimsby (Wallace).
- Aspidiphorus orbiculatus*, Gyll. Huntingfield (Chitty); Water Eaton (Walker); Horning (Elliman); Cannock Chase (Donisthorpe); Sherwood Forest (Kidson Taylor); Nocton, Lincs (E. A. Waterhouse); Cumberland; Ireland, Wexford and Waterford.

GEORYSSIDÆ

- Georyssus pygmæus*, F. Hastings district (Bennett); Tewkesbury (Donisthorpe); Buckfastleigh, Devon (de la Garde); Ireland, Clare and Kerry.

PARNIDÆ

- Elmis æneus*, Müll. Ireland, Antrim and Kerry.

- Elmis volkmari*, Panz. Islip, near Oxford (Walker); Bodlestreet, near Battle (Bennett); Bournemouth (Jackson); in River Wye, Herefordshire (Tomlin); Devonshire (de la Garde); Minera, Denbighshire (W. E. Sharp); Ireland, widely distributed.
- Elmis parallelopedus*, Müll. Ireland, widely distributed.
- Elmis subviolaceus*, Müll. In River Wye, Herefordshire (Tomlin); Oxford district (Walker); Knowle, near Birmingham (Blatch); Cumberland; Hatcliffe, Lincs (Bullock).
- Elmis cupreus*, Müll. In River Wye, Herefordshire (Tomlin); Oxford district (Walker); Whitwell Common, Norfolk (Edwards); Llangollen (W. E. Sharp); Cumberland.
- Elmis nitens*, Müll. Oxford district (Walker); in River Wye, Herefordshire (Tomlin).
- Limnius troglodytes*, Gyll. Colney and Horning, Norfolk (Edwards); Suffolk (Morley); in River Wye, Herefordshire (Tomlin).
- Limnius rivularis*, Rosen. Meavy Valley, Devon (Donisthorpe).
- Macronychus quadrituberculatus*, Müll. Discovered in the River Teme in Herefordshire under large stones by Mr. J. R. le B. Tomlin in September 1909.
- Potaminus substriatus*, Müll. Bodlestreet, near Battle (Bennett); Chiddingfold (Donisthorpe); South Wales (Chitty).
- Parnus nitidulus*, Heer. Braunton Burrows (Blandford, 1889); Chippenham Fen (Donisthorpe, 1897); Bridgend, Glamorgan (Tomlin, 1898); Southport, in plenty (Chaster and Sopp, 1903).
- Parnus algericus*, Lucas. Braunton, Devon (de la Garde).

HETEROCERIDÆ

- Heterocerus flexuosus*, Steph. Ireland, Down, Sligo, and Dublin.
- Heterocerus (arenarius, Kies ?)*. Ireland, Down and Dublin.
- Heterocerus obsoletus*, Curt. Hastings district (Bennett); Weymouth (Donisthorpe); Suffolk.
- Heterocerus marginatus*, F. Ireland, Donegal, Antrim, and Sligo.
- Heterocerus fuscus*, Kies. Barton-on-Sea (Selous); Chale and Blackgang Chine, I. of W. (Donisthorpe); Ipswich (Morley); Birkdale sandhills (Chaster and Sopp).
- Heterocerus britannicus*, Kuw. Ireland, Down and Cork.

LAMELLICORNIA

LUCANIDÆ

- Lucanus cervus*, L. Boston, Lincs (Billups).
- Sinodendron cylindricum*, L. Scotland, Peebles district (Black). Mr. Bignell has shown that the Bracon *Histeromerus mystacinus* is parasitic on this beetle.

SCARABÆIDÆ

- Copris lunaris*, L. Gore Court Park (Walker); Ipswich (Morley). It has been taken at Godalming by Mr. Polluck and Mr. Champion in horse-dung. Mr. E. C. Bedwell found it in large numbers there under cow-droppings in 1908.
- Onthophagus ovatus*, L. It is doubtful as Irish.
- Onthophagus fracticornis*, Payk, and *O. nuchicornis*, L. Confined to the South and West of Ireland.
- Aphodius erraticus*, L. Ireland, not common; Galway, Kildare, Wicklow, Wexford, and Cork.
- Aphodius hæmorrhoidalis*, L. It is not recorded in the Irish List.
- Aphodius fætens*, F. New Forest; Ireland, rare, but widely distributed.
- Aphodius scybalarius*, F. Woolacombe (Champion).
- Aphodius constans*, Duft. Epping Forest (Jennings); Oxford (Walker); Ferndale, Dorset (Sopp); Ireland, Donegal, Derry, and Galway.
- Aphodius granarius*, L. Ireland, Donegal and Derry.
- Aphodius nitidulus*, F. Blackgang, I. of W. (Donisthorpe); Suffolk (Morley); Leicester district (F. Bates); Ireland, not common, but widely distributed.
- Aphodius sordidus*, F. Edmonton (Jennings); New Forest (Donisthorpe); Suffolk, Aldeburgh (Crutwell), Brandon and Foxhall (Morley); Norwich (Edwards); Ireland, Derry, Antrim, Dublin, and Kerry.
- Aphodius rufescens*, F. Blackgang, I. of W. (Donisthorpe); Suffolk (Morley); Ireland, widely distributed.
- Aphodius lapponum*, Gyll. Ireland, Donegal, Antrim, Galway, Wicklow, and Kerry.
- Aphodius fætendus*, F. Wasdale Head, Cumberland (Day); Ireland, Donegal and Louth.
- Aphodius putridus*, Sturm. Newbury (Harwood); Islip (Holland); Bagley Wood (Walker); Knowle, Warwickshire (Ellis); Ledsham, Cheshire (W. E. Sharp); Ireland, Donegal, Antrim, and Sligo.
- Aphodius plagiatus*, L. Birkdale (Chaster); Braunton, Devon (de la Garde).
- Aphodius plagiatus*, v. *concolor*, Schl. Braunton, Devon, abundant (de la Garde); Bembridge, I. of W., in flood refuse, in great profusion (Beare and Donisthorpe); Birkdale (Chaster and Sopp); Ireland, Dublin, in numbers under the mud of dried-up pools (Halbert).
- Aphodius lividus*, Ol. Huntingfield, in cut grass (Chitty).
- Aphodius porcus*, F. Sandown (Taylor); Blackgang, I. of W., in October (Donisthorpe); Suffolk, Brandon (Elliot), Oulton Broad (Bedwell), Ipswich (Morley); Norfolk, not common (Edwards); Cothill (Walker); Ireland, Antrim, Galway, Meath, Dublin, and Waterford. It is an autumn species, and according to Dr. Chapman it is parasitic on and occurs in the burrows of *Geotrupes stercorarius*.
- Aphodius tristis*, Panz. Suffolk (Morley); Norwich (Edwards); Oxford district (Collins).

- Aphodius pusillus*, Herbst. Ireland, Antrim.
- Aphodius quadrimaculatus*, L. Dover, in sheep's dung (Morley); Dorrington (Chitty); Felixstowe (Fox).
- Aphodius inguinatus*, F. It is not recorded in the Irish List. Mr. E. J. Burgess Sopp records an immigration flight of this beetle in the Ent. Record for 1904, p. 151.
- Aphodius tessulatus*, Payk. Birkdale (Tomlin); Wanfell, Cumberland (Day); Scotland, on Arthur's Seat, Edinburgh, in plenty, in November (Beare). It was recorded in error from Ireland.
- Aphodius conspurcatus*, L. There is an Irish example of this species in the Dublin Museum.
- Aphodius sticticus*, Panz. Richmond Park (Donisthorpe); Doddington (Chitty); Boar's Hill, Oxford (Walker); Buckfastleigh, Devon (de la Garde); Lincolnshire, Cadney (Thornley), Beelsby (Wallace); Ireland, Cork (Walker).
- Aphodius consputus*, Er. Camber, in sheep's dung, in numbers, spring and autumn (Bennett); Doddington (Chitty); in dead rabbit, Tavy Valley, Devonshire (Keys).
- Aphodius contaminatus*, Herbst. Reigate (Beare); Hanwell (Donisthorpe); Bagley Wood. The Irish record of *A. obliteratus* refers to this species.
- Aphodius zenkeri*, Germ. In deer's dung, Richmond Park, and Weston-super-Mare (Donisthorpe); Englefield Park, Berks (Joy); Doddington, in sheep's dung (Chitty).
- Aphodius luridus*, F. Ireland, rare, Donegal, Down, Galway, and Waterford.
- Aphodius depressus*, Kug. Ireland, the black form (v. *nigripes*) is fairly common; the type form has been recorded from Ardara (Johnson), and Carrantuohill, co. Kerry (Donisthorpe). Stornoway, in numbers (Walker).
- Plagiogonus arenarius*, Ol. Tubney (Walker); Newbury (Harwood); Ditchling, in plenty in rabbits' burrows in a sand-pit (Dollman); Brandon (Chitty and Morley).
- Heptaulacus testudinarius*, F. Sheen Common (Beare). Mr. E. J. Burgess Sopp records it in numbers in the burrows of *Geotrupes mutator* at Ferndale, Dorset—probably a parallel case to *Aphodius porcus*.
- Heptaulacus villosus*, Gyll. Cobham Park, Streatley, and Oxford district (Walker); Newbury (Harwood); Birkdale and Southport sandhills (Chaster and Sopp); Llanbedr, near Harlech (H. G. Attlee); Cleethorpes (Kidson Taylor and Dr. Barrow); Scotland, N. Berwick (Jolly).
- Ammæcius brevis*, Er. Matlock and Bewdley (Blatch). Taken freely at Birkdale by Dr. Chaster and Mr. Sopp.
- Psammobius sulcicollis*, Ill. Thetford Warren (Morley); Pyle, S. Wales (Tomlin).
- Psammobius porcicollis*, Ill. Pyle, Glamorganshire (Tomlin).
- Ægialia sabuleti*, Payk. Barron's Wood, Cumberland (Britten).

- Ægialia rufa*, F. Birkdale sandhills, in numbers (Chaster and Sopp); Barmouth (P. H. Jackson).
- Odontæus mobilicornis*, F. Woking (Champion); Bournemouth (Mrs. Jackson); Shirley Warren, Southampton (Gorham); Wellington College (Elton); Tunbridge Wells (G. Lewis); Downham (Smith); King's Lynn (Attmore); Twyford, near Winchester (White); Merton, Norfolk (Hartley Durrant).
- Geotrupes typhæus*, L. Lundy Island (Wollaston); Lincolnshire (Thornley); abundant on sandy heaths, Cumberland (Britten); Scotland, Orchardton (Douglas); Isle of Arran (W. Evans); Irvine Moor, Ayrshire (Wilson).
- Geotrupes mutator*, Marsh. Lundy Island (Joy and Tomlin).
- Trox sabulosus*, L. New Forest (Donisthorpe); Tubney (Walker); Oxford (Hope).
- Trox scaber*, L. Chale Chine, I. of W. (Donisthorpe); Torksey, Lincs (Thornley); Cumberland (Day); Ireland, Dublin and Cork. In the E. M. M. for 1897, p. 206, Dr. Sharp points out the method by which beetles of the genus *Trox* stridulate.
- Hoplia philanthus*, Füss. Suffolk, Ipswich, &c. (Morley); Norfolk, very uncommon (Paget); Barmouth and Bog of Arthog (Donisthorpe); Lincolnshire (Wallace); Scotland, Dalkeith Wood, near Dumfries (Lennon).
- Homaloptia ruricola*, F. Rochester district (Walker); Ditchling (Dollman); Royston Heath, Herts (Bryant); Peppard, Henley-on-Thames (Fowler).
- Rhizotrogus solstitialis*, L. Flies in the evening. Suffolk, locally known as the "Witch" (Morley); Norfolk, very abundant (Edwards); Leicestershire, Gumley (Matthews), Saddington (F. Bouskell); Lincolnshire, Horn-castle and Elkington (Thornley); Malton, Yorks (Thompson). Mr. Donisthorpe recorded that at Shepherd's Well, where it occurred in great numbers, flying about in the evening, it was attacked by bats.
- Rhizotrogus ochraceus*, Knoch. Flies in the daytime. Streatley, Berks, not uncommon in 1904 (Joy); Padstow, Cornwall (C. J. Lamb); Tenby (Parry); North Wales, in plenty (Weaver, 1855). The fact that this species flies in the daytime was pointed out by Mr. Douglas (E. M. M., 1885, p. 256).
- Melolontha hippocastani*, F. Isle of Man (Birchall, 1876); Ireland, locally common, Meath, Wicklow, Wexford, Cork, and Kerry.
- Anomala frischi*, F. The Irish records require verification. Mr. Arrow has shown that the *A. Donovanii*, Steph., which was supposed to be a variety of the above insect, is really *A. irrorata*, Blanch., an American beetle (E. M. M., 1899, p. 269).
- Cetonia aurata*, L. Lundy Island (Wollaston); Ireland, locally common in the south and west. Shipp took cocoons of this beetle in a nest of *F. rufa* near Oxford. Professor Poulton found its larvæ in a similar situation in the New Forest. These were bred by Mr. Donisthorpe in an observation nest

of the ant, and he made a note on its myrmecophilous habits (Ent. Rec., 1904, p. 301).

Cetonia floricola, Herbst. Isle of Man (Birchall, 1876). The larvæ of this species are only found in the nests of *Formica rufa*. Mr. Donisthorpe has shown that it does not use the legs for walking, but moves along on its back by means of bristles, with the legs in the air. Mr. Hamm tells us the larva of *C. aurata* moves on its side.

Gnorimus nobilis, L. Little Ealing (Cottam); Woolwich (Bedwell); Bedford Park (Dollman); Kew Gardens, Norwich (Thouless); Mathow, Herefordshire, and Malvern (Tomlin); Loudwater, Bucks (W. E. Sharp); Peppard, Henley-on-Thames (Fowler).

Gnorimus variabilis, L. Balham (Wood); Purley Oaks (Bedwell), in some numbers in 1908. The Rev. Canon Fowler describes the larva of this beetle in the E. M. M. for 1902, p. 242.

STERNOXI

BUPRESTIDÆ

Agrilus viridis, L. The Buddon Wood and Mount Sorrel records refer to *A. laticornis*, Ill. *Agrilus viridis* was first taken in the New Forest by the Rev. H. S. Gorham, who found the beetle in a willow-tree at Ramnor. It has since been taken in numbers on sallows by Donisthorpe, Gulliver, and others. It varies very much in colour from bright green with a coppery thorax to all blue.

Agrilus biguttatus, F. Discovered in Sherwood Forest in numbers in July 1908 by Mr. Donisthorpe, in a large living oak, in the thick bark.

Agrilus laticornis, Ill. Bentley Woods, Suffolk (Morley); Isle of Wight, Haven Street Woods (Morey), Whitefield Woods (Donisthorpe).

Aphanisticus pusillus, Ol. Chipstead (Bedwell); Wytham Park (Donisthorpe); Newbury (Harwood); Bradfield (Joy); Studland (Jackson); Ipswich and Brandon (Morley).

Trachys minuta, L. Pamber Forest (Donisthorpe); Bagley Wood (Walker); Poringland, Norfolk (Wigham).

Trachys pumila, Ill. Doddington and Charing (Chitty); Cobham Park and Wytham Park (Walker); Tubney (Holland); Wychwood Forest (Donisthorpe).

Trachys troglodytes, Gyll. Cothill (H. Champion); Lenham, Kent (Chitty and Tomlin); Sproughton, twenty-six specimens in flood refuse (Morley); Lowestoft (Saunders); Ditchling (Dollman).

THROSCIDÆ

Throscus dermestoides, L. Ireland, Armagh, Dublin, Wicklow, Kilkenny, Wexford, and Clare. Very small females of this species are recorded by Champion, taken at Sherwood (A. Matthews), and by himself in the New Forest (E. M. M., 1900, p. 12).

- Throscus carinifrons*, Bonv. Newport, I. of W. (Butler); Bagley Wood and Wytham (Walker); Churchtown (Southport List).
- Throscus obtusus*, Curt. Whitstable (Chitty and Donisthorpe); Lewes (Dollman); Wytham Park (Collins). The type was taken by Professor Westwood in 1826 at Ensham, near Oxford.
- Melasis buprestoides*, L. Richmond Park (Donisthorpe); Enfield (Pool); Bagley Wood (Walker); Leicestershire (Bouskell); Yorkshire (Young).
- Microrrhagus pygmaeus*, F. Bleane Woods (Walker); Cann Wood, Plymouth (Keys).
- Lacon murinus*, L. Ireland, widely distributed on sandhills round the coast.
- Cardiophorus asellus*, Er. Bungay (Garneys); Tubney (Holland).
- Cardiophorus equiseti*, Herbst. Candeston, Glamorgan (Tomlin); Braunton Burrows and Woolacombe Sands, Devonshire (Chitty).
- Cryptohypnus pulchellus*, L. Banks of the Spey, Inverness-shire (Black).
- Cryptohypnus maritimus*, Curt. Banks of Dee, Braemar (Donisthorpe and Beare).
- Cryptohypnus quadripustulatus*, F. Cheshunt (Jennings); near Oxford (Walker); Newbury (Harwood); Leighton Buzzard (Donisthorpe); Ipswich (Morley).
- Cryptohypnus dermestoides*, Herbst. Edges of the Meavy, Devonshire (Keys); Ireland, widely distributed.
- Elater lythropterus*, Germ. Near Ashford, Kent (Chitty); Suffolk (Morley).
- Elater coccinatus*, Rye. A fine specimen was captured by Mr. C. J. C. Pool near Waltham Abbey.
- Elater sanguinolentus*, Schr. Woking (Champion); Newbury (Harwood); Wellington College (Fowler).
- Elater pomonæ*, Steph. Ireland, Glencar, co. Kerry (Bouskell and Donisthorpe).
- Elater pomorum*, Herbst. Ireland, very local, but widely distributed.
- Elater elongatulus*, F. Oxshott (Bedwell); Tubney (Collins); Bradfield (Joy); Newbury (Harwood); Scotland, Dalskairth Wood (Lennon); Wellington College (Joy and Fowler).
- Elater balteatus*, L. In stumps of Scotch firs, Oxshott (Donisthorpe); Southport, common under loose masses of peat in all its stages (Chaster and Sopp); Ireland, Antrim and Kerry, at roots of broom (Hardy); Wellington College (Fowler).
- Ischnodes sanguinolentus*, Panz. Bexley (Donisthorpe); Bradfield (Joy); Porlock (Wood); Dorchester, near Oxford (Shipp); Coddendam, Suffolk (Fox).
- Megapenthes tibialis*, Lac. Gumley (Matthews).
- Ludius ferrugineus*, L. Santon Downham, Suffolk, on sugar, September 1, 1886 (Norgate).
- Melanotus rufipes*, Herbst. Ireland, Derry, Down, Fermanagh, Wicklow, and Carlow.

- Melanotus castanipes*, Payk. Sharsted, Kent (Chitty); New Forest (Donisthorpe).
- Athous niger*, L. Common in Ireland. Mr. J. W. Douglas records the "sembling" of this beetle (E. M. M., 1896, p. 180).
- Athous hæmorrhoidalis*, F. Has caused great damage to oat crops in Galway (Irish List, 1902, p. 738). Black form recorded by Keys from Dartmoor.
- Athous rhombeus*, Ol. Richmond Park (Donisthorpe); Enfield (Pool); Cobham Park (Maling); larva, Ryde, I. of W. (Donisthorpe).
- Athous vittatus*, F. Not recorded from Ireland.
- Limoniæ cylindricus*, Payk. Tubney (Walker); Bournemouth (Donisthorpe). The Rev. G. T. Rudd gives a very interesting account of the assembling of males of this beetle on the banks of the Tees, below Yarm (Ent. Mag. iii. 1835, p. 207).
- Sericosomus brunneus*, L. Holme Fen (Donisthorpe); Lincolnshire, Broughton Woods (Thornley); Scotton Common (Peacock); Ireland, Donegal (Johnson), Roscommon (Halbert).
- Synaptus filiformis*, F. Islands on the Thames near Walton, and Sunbury (Donisthorpe and Rye); Tewkesbury (Beare and Donisthorpe).
- Adrastus pusillus*, F. Walmer (Chitty).
- Corymbites castaneus*, L. Near Shanklin (Poole); Sandown, I. of W., one dead specimen (Ellis); Dean Forest (Morse); Pateley Bridge, Yorks (Thompson).
- Corymbites pectinicornis*, L. Bagley Wood (Shipp); Ouston Wood, Leicestershire (Bouskell).
- Corymbites cupreus*, F. Leighton Buzzard and Melchbourne (Crawshay); Groby Pool, Leicestershire (Bouskell and Donisthorpe); Plymouth district (Keys); Okehampton, Devon (de la Garde and Bucknill); St. Issey, Cornwall (E. Davies). Mr. Donisthorpe records a black form of the var. *æruginosus* from Braemar.
- Corymbites tessellatus*, F. Oxford district (Walker); Freshney Bogs, Lincs (Thornley); Ireland, widely distributed.
- Corymbites quercus*, Gyll. Chiddingfold (Donisthorpe).
- Corymbites æneus*, L. Bradgate Park, Leicestershire (F. Bates, &c.); Suffolk, rare; Norfolk, Mousehold Heath, very common in 1883 (Edwards); Ireland, Cork (Hardy).
- Corymbites metallicus*, Payk. Marston, Oxfordshire (Walker); Leighton Buzzard, abundant on thistles (Crawshay); Bungay (Garneys); Foxley Wood, Norfolk (Thouless); Ayleston, Leicestershire (F. Bates); Newton Cliff, Lincs (Thornley).
- Corymbites impressus*, F. Barron Wood, Cumberland (Day); Scotland, Loch Awe (Chitty).
- Corymbites bipustulatus*, L. Isle of Wight (Morey); Tubney (Holland); Bagley Wood (Hope, 1820); Wychwood Forest (Donisthorpe); Ireland, near Waterford (Tempest).

Campylus linearis, L. Ireland, very local, Antrim, Roscommon, Clare, and Kerry.

DASCILLIDÆ

Dascillus cervinus, L. Suffolk and Norfolk, rare; Dover (Fowler); Cothill, near Oxford (Walker); Ireland, common.

Helodes marginata, F. Ireland, Donegal, Down, Fermanagh, Dublin, and Cork.

Microcara livida, v. *bohemanni*, Mannh. Spalding (W. E. Sharp); Ireland, Armagh, Sligo, Galway, Wexford, and Clare.

Cyphon punctipennis, Sharp. Cumberland; Ireland, Gortecomby Bog, co. Antrim (Dr. Chaster).

Cyphon pallidulus, Boh. Suffolk, near Southwold (Morley); Norfolk, Framlingham Pigot (Edwards); Devonshire, Buckfastleigh (de la Garde); Ireland, Glencar, co. Kerry (Bouskell and Donisthorpe).

Prionocyphon serricornis, Müll. Epping Forest (Butler and Lewcock); Cobham Park (Walker); Norwich (Thouless); New Forest and Buddon Wood, Leicestershire (Donisthorpe); Tubney (Harwood). Bred in numbers for several years from larvæ taken in a hole full of water in a tree in the New Forest (Donisthorpe, Ent. Rec., 1908, p. 108).

Hydrocyphon deflexicollis, Müll. Ireland, local, but widely distributed.

Scirtes hemisphæricus, L. Ogleby Bog, Oxford (Walker); Freshwater, I. of W. (Donisthorpe); Suffolk, not uncommon; Wicken Fen; Snowdon (Tomlin and Sopp); Doncaster district (Corbett); Ireland, Armagh, Limerick, and Waterford.

Scirtes orbicularis, Panz. Sandown, I. of W. (Champion); Pevensey (Bennett); Cliffe (Lewcock); Barnby Broad, Suffolk (Morley); Brundall, Norfolk (Edwards); Ireland, Armagh, on *Persicaria* (Johnson).

Eubria palustris, Germ. Hastings district (Bennett); South Brent, Devonshire (de la Garde); Ogleby Bog, Oxford (Walker); Whitwell Common, Norfolk (Thouless).

MALACODERMIDÆ

Eros aurora, Hbst. Rothiemurchus, Loch-an-Eilean, Doon, and Inverdrue, Inverness-shire (W. Evans).

Pyropterus affinis, Payk. Doncaster district (Corbett). Rediscovered at Killarney in July 1898 by Mr. Hardy and Dr. Chaster. Scotland, Nethy Bridge (Beare), Aviemore (Champion).

Platycis minutus, F. Cobham Park (Walker); Chesham (Elliman); Chippenham Fen (Verrall); Brandon (Norgate); Huntingfield district (Chitty).

Lampyrus noctiluca, L. This species appears to be doubtful as an Irish species, as the only two Irish records may have been introduced from

- England. In the E. M. M. for 1901, p. 226, Mr. Morley has a note on the pairing of this species. In a paper on "Mimicry in the British Coleoptera" (Trans. Ent. Soc. Lond., 1901, p. 361) Mr. Donisthorpe records that the males bury themselves in the earth during the day.
- Phosphænus hemipterus*, Geoff. The Rev. H. S. Gorham found this species in plenty (all males) in his garden at Shirley Warren, Southampton.
- Silis ruficollis*, F. Snodland (Walker); Wicken Fen (Donisthorpe); Ireland, Wexford (Halbert).
- Podabrus alpinus*, Payk. Ireland, Down, King's County, and Wicklow.
- Telephorus fuscus*, L. Lymington Salterns (Bouskell); Battle, near Hastings, and Llanbedr, near Barmouth (Donisthorpe); Suffolk, very local (Morley); Norfolk, rather local (Edwards); Scotland, Aberlady (Beare).
- Telephorus rusticus*, Fall, and *lividus*, L., are not recorded from Ireland.
- Telephorus darwinianus*, Sharp. Upnor, banks of Medway, 1857 (G. R. Waterhouse); Isle of Sheppey (Walker); Southport (Chaster); Burgh Marshes, Cumberland (Day); Ireland, Donegal, Derry, and Dublin.
- Telephorus figuratus*, Mannh. Freshney Bogs, Lincs (Thornley); Hayton Moss, Cumberland (Routledge); Ireland, widely distributed and rather common.
- Telephorus figuratus*, v. *scoticus*, Sharp. Bradfield (Joy).
- Telephorus oralis*, Germ. Norfolk; Suffolk; Wicken Fen, Weymouth, Oxford, and Brook, I. of W. (Donisthorpe); Scotland, Orchardton (Douglas). The Armagh record is not mentioned in the Irish List, but it has been taken by Mr. S. W. Kemp at Oranmore, on the Galway coast.
- Telephorus paludosus*, Fall. St. Germans and Polbathic (Keys); Delamere Forest, and near Llyn Idwal, N. Wales, in profusion, on *Myrica gale* (W. E. Sharp); Cumberland; Ireland, Donegal, Derry, Antrim, Down, Enniskillen, Wicklow, and Kerry.
- Telephorus thoracicus*, Ol. Oulton Broad, Suffolk (Bedwell); Norfolk, very local; Wicken Fen, Rye, and Deal (Donisthorpe); Brent, Devon (de la Garde); Ireland, locally common.
- Rhagonycha unicolor*, Curt. Cusop and West Malvern (Tomlin); Mickleham and Chiddingfold (Donisthorpe); Wychwood Forest (Walker); Ireland, Killarney (Hardy).
- Rhagonycha fuscicornis*, Ol. Ireland, Donegal.
- Malthinus fasciatus*, Ol. Lincolnshire, Immingham (A. Smith); Freshney Bogs (Thornley); Scotland, Orchardton (Douglas); Ireland, Louth, Kilkenny, Wexford, Waterford, and Cork.
- Malthinus frontalis*, Marsh. Tubney (Collins); Sherwood Forest (Donisthorpe); Barron Wood, Cumberland (Britten); Winlaton, Durham (Bagnall); Scotland, Dalmeny Park (Beare).
- Malthodes mysticus*, Kies. Dulwich Wood (Donisthorpe); Cumberland (Day).

- Malthodes flavoguttatus*, Kies. Ireland, Antrim, Waterford, and Kerry.
- Malthodes guttifer*, Kies. Hayton Moss, &c., Cumberland (Routledge); Devonshire (de la Garde).
- Malthodes dispar*, Kerry. Cothill (Walker); Suffolk, one specimen, banks of Gipping (Morley); Norfolk, rather common (Edwards); Ireland, Kerry.
- Malthodes fibulatus*, Kies. Wytham Park (Collins); Gibside, Durham (Donisthorpe).
- Malthodes pellucidus*, Kies. Wellington College, abundant (Tomlin and Fowler); Ireland, Antrim, Kilkenny, Waterford, and Kerry.
- Malthodes brevicollis*, Pk. (*nigellus*, Kies). Glemsford, Suffolk (Tomlin).
- Malthodes atomus*, Thoms. Luccombe, I. of W. (Dollman); Glemsford, Suffolk (Tomlin); Gumley (Matthews); Nocton, Lincs (E. A. Waterhouse); Ireland, Donegal, Antrim, Wicklow, Kilkenny, Wexford, and Clare. The ♂ is exceedingly rare; there is a specimen in the Power Collection, from Wicken Fen, and Mr. E. A. Waterhouse has taken it at Wokingham.
- Malachius æneus*, L. Near Wokingham (Fowler); Newport, I. of W. (Morey).
- Malachius bipustulatus*, L. Ireland, very local, Antrim, Dublin, Queen's County, and Kerry.
- Malachius marginellus*, Ol. Steephill Cove, I. of W. (Guyon); Snodland and Cobham Park (Walker); Huntingfield and Isle of Sheppey (Chitty); Dartford and Coulsdon (Bedwell); Lydd (Bennett); Ditchling and Wimbledon (Dollman); Rusper (Donisthorpe); Scotland, Peebles (Black).
- Axinotarsus pulicarius*, F. Rye, near Hastings (Bennett and Henderson).
- Axinotarsus ruficollis*, Ol. Charnwood Forest, Leicestershire (A. R. Wallace); Bovey Tracey, Devon (de la Garde); Newbury (Harwood); New Forest (Donisthorpe).
- Anthocomus rufus*, Herbst. Cothill (Collins); Newbury (Harwood); Suffolk.
- Anthocomus fasciatus*, L. Ireland, Wicklow (Furlong).
- Anthocomus terminatus*, Mén. Wicken Fen (Tomlin, 1892; Bouskell, Beare, and Donisthorpe, 1898); Sutton Broad, Norfolk, in plenty (Chitty and Donisthorpe, 1906).
- Dasytes flavipes*, F. Brandon, Lincs (Miss Stow).
- Dasytes ærosus*, Kies. Ireland, Dublin, Kildare, and Kerry.
- Dasytes niger*, L. Common on flowers of "pinks" in garden, Newbury (Harwood); Winchester (Donisthorpe); Radley (Walker).
- Psilothrix nobilis*, Ill. Cothill (Walker); Suffolk, Aldeburgh (Morley); Harford Bridges, Norfolk (Thouless); Lundy Island (Wollaston); Ireland, local on the coast.
- Haplocnemus impressus*, Marsh. Richmond Park (Dollman); Edmonton (Jennings); Lymington (Beare); Newbury (Harwood); Wytham Park, Oxford (Walker); Sherwood (K. Taylor).

- Phlaeophilus edwardsi*, Steph. Herefordshire (Tomlin); Upper Gatton (Bedwell); Huntingfield (Chitty); Wytham Park (Walker); Dodnash Woods, Suffolk (Morley); Cumberland (Britten); Yelverton, Devon (Keys); Scotland, Linlithgow, Forth (Murray), Raehills, Solway (Sharp), Gifford, Haddingtonshire (Evans), Nethy Bridge, Inverness-shire (Beare).
- Tillus elongatus*, L. New Forest, common; near Ashford (Chitty); Streatley (Joy); Newbury (Harwood); Oxford district (Walker); Wrotham (Bedwell); Bungay (Garneys); Tostock (Tuck); Harleston (Fox); Oakham, Rutland, and Owston Wood, Leicestershire (Donisthorpe); Ireland, Kenmare, co. Kerry (Furlong).
- Opilo mollis*, L. Melchbourne, Beds (G. A. Crawshay).
- Tarsostenus univittatus*, Rossi. Harwich (Whitaker); Millbrook, in numbers, parasitic on *Lyctus canaliculatus*, in timber-yard (Pool and Donisthorpe).
- Thanasimus formicarius*, L. Wellington College (Tomlin); Newbury (Harwood); Ferndale, Dorset (Sopp); New Forest, not uncommon; Bungay (Garneys); Summertown, Oxford (Collins); Norfolk (Burrell); Ireland, Powerscourt Deerpark, Wicklow, in a decayed holly (Furlong). In Sherwood Forest Mr. Donisthorpe found it parasitic on *Agrilus biguttatus* in oak bark. He also bred four specimens of a Dipteron (*Phora rata*), the larvæ of which came out of the body of a *T. formicarius* taken in this locality.
- Necrobia ruficollis*, F. Ireland, Kilkenny and Kerry.
- Necrobia violacea*, L. Lundy Island (Joy and Tomlin); Ireland, Belfast.
- Drilus flavescens*, Rossi. The life-history of this beetle was admirably worked out by Mr. L. Crawshay, who bred many specimens, including females (see Trans. Ent. Soc. Lond., 1903, p. 39).
- Hylecatus dermestoides*, L. Ireland, Glen Car, co. Kerry (Donisthorpe).
- Limexylon navale*, L. New Forest, first taken by Mr. Donisthorpe, and afterwards by Mr. Champion, Dr. Sharp, and others, in 1906.
- Ptinus germanus*, F. Hastings district, rather common (Bennett); Woking (Champion).
- Ptinus sexpunctatus*, Panz. Enfield (Pool); Richmond Park (Dollman); Bungay (Garneys); Oxford (Hamm); Earlsilton, Leicestershire (Donisthorpe).
- Ptinus lichenum*, Marsh. Enfield (Pool).
- Ptinus subpilosus*, Müll. At nest of *Lasius fuliginosus*, near Tubney (Walker); Sherwood Forest (Donisthorpe); Savernake Forest (W. E. Sharp); Cumberland (Britten).
- Ptinus brunneus*, Duft. Edmonton (Pool); Oxford district (Walker); Reading (Joy). Power's specimens from Birkbrook are this species.
- Ptinus testaceus*, Boield. Edmonton (Pool); Purley Downs (Donisthorpe). Power's Mickleham specimens are this species.
- Ptinus latro*, F. Kensington Mansions, South Kensington (Donisthorpe).
- Ptinus tectus*, Birel. Coatbridge, Scotland (G. A. Brown).

Niptus crenatus, F. Headington (Walker); Ditchling (Dollman); Penrith, Cumberland (Britten); Ireland, Donegal, Derry, Antrim, and Down; Scotland, Thurso, Caithness (Douglas).

Hedobia imperialis, L. Bagley Wood (Walker); Leicester, and Freshwater, I. of W. (Donisthorpe); bred from cocoons beneath bark on dead crab stumps, Cumberland (Britten); Ireland, Kenmare, co. Kerry (Hardy).

Mezium affine, Boield. Ireland, Louth. In fresh specimens the elytra are covered with fine yellow spines. I have taken it in plenty in a granary in High Holborn.

Gibbium scotias, F. Occurred in numbers in a beer cellar in Shoe Lane (Rye).

Dryophilus pusillus, Gyll. Oxford district (Walker); Woodhay, Hants (Donisthorpe); Buckfastleigh, Devonshire (de la Garde); Haye Woods, Warwickshire (Ellis); Helsby, Cheshire (Bailey); Lincolnshire (Wallace); Saltburn Wood, Yorkshire (Thompson); Petril Valley, Cumberland (Day).

Dryophilus anobioides, Chevr. Bradfield (Joy).

The Rev. W. F. Johnson records that a Bracon *Spathius exaratus* is parasitic on *Anobium domesticum*, Fourc. (E. M. M., 1901, p. 15).

Anobium denticolle, Panz. New Forest (Rye). It is not uncommon in old hawthorn trees in Richmond Park; Leicester district (H. W. Bates). Rye gives a short account of its life-history in the E. M. M. for 1897, p. 105.

Anobium fulvicorne, Sturm. Suffolk, rare (Morley).

Anobium paniceum, L. In lettuce seeds, Penrith, Cumberland (Britten); Ireland, Louth, Dublin, and Waterford. Also occurs in ginger, dead insects, vermicelli, &c. The Rev. G. A. Crawshay takes it at Melchbourne, Bedfordshire, in the country, away from houses, and Mr. Donisthorpe has beaten it off birch-trees in Sherwood Forest.

Ernobius mollis, L. Only recorded from Kerry, in Ireland.

Ernobius abietis, F. A specimen was taken in the New Forest in 1899 by C. Guliver and sent alive to Mr. F. Bates.

Ptilinus pectinicornis, L. Ireland, very local, Fermanagh.

Ptilinus costatus, L. Taken at Sandown, I. of W., from the wooden stand of a pair of scales which had been in use for many years (J. Taylor).

Ochina hederæ, Müll. Oxford district (Walker); Blackgang, I. of W. (Donisthorpe); Suffolk and Norfolk, not uncommon; Ireland, widely distributed.

Xyletinus ater, Panz. Burghill, Herefordshire (Chapman); New Forest and Chiddingfold (Donisthorpe); Huntingfield (Chitty).

Lasioderma serricorne, F. Also occurs in cigars, cigarettes, cayenne pepper, &c. Mr. C. O. Waterhouse had some ginger at the Museum, from Bombay, infested with *Lasioderma*, in which a small Clerus (*Thaneroclerus buqueti*, Lefebv.) occurred, parasitic on the *Lasioderma*.

Cænocara bovistæ, Hoff. Hastings district (Bennett); Battle (Donisthorpe); Huntingfield (Chitty); near Oxford (Walker); Sanderstead, Surrey (W. E. Sharp).

- Dorcatoma chrysomelina*, Sturm. Sherwood Forest (Taylor); New Forest (Donisthorpe).
- Dorcatoma flavicornis*, F. Cobham Park (Walker); Market Bosworth (Bouskell and Donisthorpe).
- Anitys rubens*, Hoff. Richmond Park and Hastings district (Bennett); Epping Forest (Pool).
- Bostrichus capucinus*, L. One specimen in Bishop's Wood (Edgar Smith, 1865). It occurred in numbers in 1908 in a timber yard at Millbrook, where it had been breeding for over three years.
- Lycetus canaliculatus*, F. Ireland, Kenmare, co. Kerry (Hardy).
- Lycetus brunneus*, Steph. Southfields (E. A. Waterhouse); Sydenham (Donisthorpe); Cobham Park (Walker); Harwich (Whitaker); Newport, I. of W. (Morey); Southwick, near Brighton (Dollman).
- Sphindus dubius*, Gyll. Enfield (Pool); Burnham Beeches (W. E. Sharp); Newbury (Harwood); Suffolk (Morley).
- Cis micans*, F. Wytham Park (Walker); Newbury (Harwood); Cumberland (Britten).
- Cis hispidus*, Payk. Cumberland; Ireland, Queen's County.
- Cis bidentatus*, Ol. Ireland, Armagh and Dublin.
- Cis alni*, Gyll. Melchbourne, Beds (Crawshay), bred from "Jew's ear" fungus on oak; Calbourne, I. of W. (Morley); Benacre Broad (Bedwell); Newbury (Harwood); abundant in "Jew's ear" fungus on old elders, Herefordshire Beacon (Tomlin); Bagley Wood (Walker); Nocton, Lincs (E. A. Waterhouse); Ireland, Roscommon.
- Cis nitidus*, Herbst. Ireland, rather widely distributed.
- Cis lineatocribratus*, Mell. Cumberland (Day).
- Cis pygmaeus*, Marsh. Enfield (Pool); Oxford (Collins); Sandown, I. of W. (Taylor); Harlech (Donisthorpe).
- Cis punctulatus*, Gyll. Carlisle (Day).
- Cis festivus*, Panz. Richmond Park (Donisthorpe); Suffolk (Morley); Melchbourne (Crawshay); Ireland, Carlow and Cork.
- Cis vestitus*, Mell. Ditchling (Dollman).
- Cis fuscatus*, Mell. Enfield (Pool); Oxford district (Walker); Suffolk (Morley); Scotland, Brodrick (W. Evans).
- Cis bilamellatus*, Wood. Shirley Common (Donisthorpe). Taken again by the Rev. J. Wood in 1904 in profusion at West Wickham. Mr. Champion recorded that it occurred in numbers in some *Polyporus* from the New Forest at a natural history dealer's in London.
- Rhopalodontus fronticornis*, Panz. Enfield and Epping Forest (Pool); West Malvern (Tomlin); Newbury (Harwood); Wytham (Collins); Bovey Tracey, Devon (de la Garde).
- Ennearthron affine*, Gyll. Teesdale, Durham (Bagnall).
- Ocotemnus glabriculus*, Gyll. The oviposition of this beetle is described by Dr. Chapman in the E. M. M. for 1869, p. 297.

LONGICORNIA

- Prionus coriarius*, L. Suffolk, rare; Norfolk, widely distributed; Reading (Fowler); Enfield (Pool); Sharsted (Chitty).
- Aromia moschata*, L. New Forest; Ireland, local, Galway, Cork, and Kerry.
- Asemum striatum*, L. Bookham (Rye); Chobham (Champion); Wareham and Lord's Wood, Southampton (Gorham); Bournemouth (Ellis); New Forest (Bouskell, Englehart, and others); Newbury (Harwood); Cumberland, abundant (Britten); Northumberland (Gillanders). Var. *agreste* near Reading (Barnes).
- Hylotrupes bajulus*, L. Putney (E. A. Waterhouse); Enfield (Pool); retaken at Deal in 1905 by Mr. R. S. Mitford; Cromer (Lewcock); Sandown, I. of W. (J. Taylor); Ireland, Roscommon (Hon. R. E. Dillon).
- Callidium violaceum*, L. Epping, very rare, 1836 (Doubleday); Enfield (Pool); Penge (Donisthorpe); Reading (Fowler); Oxford district (Walker); Amthill, Beds, 1838 (Lucas); Suffolk, rare (Morley); Norwich (Thouless); Leicestershire, Kirby Muxloe, in plenty (F. Bates), Gumley (Bouskell); Lincolnshire, Brandon (Miss Stowe), Grimsby (Bullock); Staffordshire; Warwickshire; Eskdale, Cumberland, its most northern record (Fowler); Ireland, Lickeen, co. Kerry (Bouskell). Mr. Donisthorpe records the Ichneumon *Ephialetes carbonarius* ovipositing in the burrows of this species in the New Forest (Ent. Rec., 1898, p. 303).
- Callidium variabile*, L. Wimbledon Common; Enfield (Pool); Suffolk, several localities; Norwich (Thouless); Sherwood Forest (Taylor); Freshwater, I. of W. (Holland).
- Callidium alni*, L. Wimbledon Common, New Forest, and Tilgate Forest (Donisthorpe); Bagley Wood (Holland); Oxford (Hope, 1819); Bungay (Garneys).
- Callidium sanguineum*, L. In a wood-yard, Edinburgh (Patterson).
- Clytus arcuatus*, L. Epping, rare (Doubleday, 1836); in old cherry-tree, Epping Forest (Waterhouse); Yarmouth (Paget). In the Entomological Magazine, 1837, Dr. Bond describes the economy of this beetle, which he took in numbers in Hainault Forest.
- Clytus arietis*, L. Ireland, very rare, Antrim and Kerry.
- Clytus mysticus*, L. Enfield (Pool); Richmond Park (Donisthorpe); New Forest; Huntingfield (Chitty); Melchbourne (Crawshay); Monk's Wood (Fowler); Oxford district (Walker).
- Gracilia minuta*, F. Seaview, I. of W. (Holland), Sandown (Donisthorpe). Hewetson recorded it in profusion in the sides of an arbour formed of hazel (Ent. Mag., v. 1838, p. 77).
- Leptidea brevipennis*, Muls. In a City warehouse (F. Newbery); Enfield (Pool); Hastings, in profusion in an old basket from Ore (Bennett); Wellington College, in nest of *Formica sanguinea* (Barnes); Evesham and

- Toddington (Doeg); Plymouth (Keys); Huddersfield (Mosley). Mr. H. Willoughby Ellis has taken both this species and *Gracilia minuta* in osiers at Lulworth Cove, grown by the fishermen for making lobster-pots.
- Cerambyx heros*, Scop. A dead specimen was dug out of an old hornbeam by Mr. E. W. Janson at Colney Hatch; Kentish Town (A. Cates); Camden Town and Wood Green (Smith); Gray's Inn Square, June 1902, in Bates Collection.
- Molorchus minor*, L. Enfield (Pool); Witley, Surrey (Newill); Royston (Butler); Newbury (Harwood); Leicestershire, Owston Wood and Market Bosworth, in numbers (Bouskell); Melchbourne and Leighton Buzzard (Crawshay); near Wokingham (Fowler).
- Molorchus umbellatarum*, L. Charnwood Forest, Leicestershire.
- Rhagium indagtor*, Gyll. Ireland, Galway and Meath.
- Toxotus meridianus*, Pz. Black specimens with red legs are not uncommon in Leicestershire, at Owston Wood, &c.; Lincolnshire, widely distributed.
- Pachyta cerambyciformis*, Schrank. Chiddingfold, in profusion (Donisthorpe).
- Pachyta sexmaculata*, L. Scotland, Nethy Bridge (Colonel Yerbury); Loch Morlich (Evans). Retaken at Aviemore by J. X. King in 1903; Nethy Bridge (Dr. Sharp and Mr. Bishop), in some numbers.
- Pachyta collaris*, L. Farnham, in plenty (Beare and Donisthorpe); Ireland, Roscommon (Hon. R. E. Dillon).
- Anoplodera sexguttata*, F. Lynmouth (Blatch); Ireland, Muckcross, co. Kerry (Hardy).
- Leptura scutellata*, F. Ireland, Clonbrack, co. Galway (Hon. R. E. Dillon).
- Leptura sanguinolenta*, L. Southampton (Beck).
- Leptura fulva*, De G. Newport, I. of W. (Morey); Ireland, Galway.
- Leptura livida*, F. Isle of Wight, Blackgang (Donisthorpe), Sandown (Champion); Norfolk, not uncommon (Edwards); Ireland, Roscommon. A specimen was taken by Rye at Swanage with three branches to one of its antennæ.
- Strangalia aurulenta*, F. Devonshire, Harpford Woods, near Sidmouth (Attlee), Looe (Wood).
- Strangalia 4-fasciata*, L. New Forest (Donisthorpe and Morley); Sevenoaks (Janson); Devonshire, Tavistock (Mitford), Dulverton (de la Garde); Market Rasen, Lincs (Willford); Leighton Buzzard (Crawshay); Suffolk and Norfolk, rare; Scotland, East Lothian (Evans). Mr. Donisthorpe records the Bracon *Helcon ruspator*, L., parasitic on this species at Cannock Chase.
- Strangalia armata*, Herbst. Ireland, widely distributed; Scotland, Orchardton, Kirkeudbrightshire (Douglas).
- Strangalia nigra*, L. Chiddingfold, not uncommon (Donisthorpe).
- Strangalia melanura*, L. There is an Irish taken specimen of this species in the Haliday collection.

Gramoptera tabacicolor, De G. Ireland, widely distributed.

Gramoptera analis, Panz. Chattenden (Walker); Colchester (Harwood); Gosbeck, Suffolk (Fox); Oxford (Hamm); Ireland, Belfast.

Gramoptera ruficornis, F. Bred from larvæ in ivy stems from Brandon (Morley); Ireland, common.

Pogonochærus fasciculatus, De G. Dr. Wallace has taken a specimen in a garden at Grimsby.

Pogonochærus bidentatus, Thoms. Yaverland, I. of W. (Taylor); Bagley Wood (Walker); Bungay (Garneys); Gimingham (Butler); New Forest (Donisthorpe); Buddon Wood (Bouskell); Lincolnshire; Ireland, Armagh and Wicklow.

Pogonochærus dentatus, Fourc. Often in ivy stems, Ditchling (Dollman); Oxford (Hamm); Upware, Cambs, sweeping under apple-trees (Donisthorpe); Scotland, Forres, Morayshire, October 1892 (Chitty); Ireland, Wexford (Halbert), Kerry (Donisthorpe).

Lamia textor, L. Fairlight, near Hastings (Geoffery); Llyn Cwmbychan, near Harlech (P. H. Jackson); Rannoch (E. A. Waterhouse).

Mesosa nubila, Ol. Bungay (Garneys).

Agapanthia lineatocollis, Dr. Headington Wick Copse (Walker). A melanic form occurs at Wicken Fen.

Saperda carcharias, L. Colchester (Harwood). It is chiefly found on poplars; at Wicken it is known as the "poplar beetle." Yorkshire; Scotland, Grantown, Strathspey (W. Evans).

Saperda scalaris, L. Mr. Kidson Taylor recorded this species from Sherwood Forest in 1869; he also bred it from pupæ taken in oak. Cumberland, Baron Wood (Day); Scotland, Rannoch, &c., not uncommon.

Saperda populnea, L. Wimbledon Common (Rye); Chiddingfold (Donisthorpe); New Forest (Morley); Suffolk, Bungay (Garneys); Bentley Woods (Morley); Norfolk, Foxley Wood (Edwards); Bagley Wood, Oxford (Holland); near Wokingham (Fowler).

Stenostola ferrea, Schrank. Melbourne, Derbyshire (O. E. Janson); on elm, Barmouth (Taylor); Yorkshire (Young); Barron Wood, Cumberland (Britten).

Phytœcia cylindrica, L. Chattenden, and Tubney, near Oxford (Walker); Huntingfield (Chitty); Dorking, Horsley, Pamber Forest, and Monk's Wood (Donisthorpe); Newbury (Harwood); Suffolk, Eye district (Tyrrer), Coddendam (Fox); Norfolk, Yarmouth (Paget), Ketteringham (Edwards), &c.

Oberea oculata, L. Is not uncommon in Wicken Fen, where it has been taken freely by Messrs. Bouskell, Donisthorpe, and others; it occurred in plenty in 1898.

PHYTOPHAGA

For the superficial sexual characters in the genus *Bruchus* see E. M. M., 1872, p. 191 (Rev. H. S. Gorham).

- Bruchus pectinicornis*, L. Highgate, and from the "chickpea," *Cicer arictinum*, from a London warehouse (O. E. Janson); Putney (E. A. Waterhouse); Malvern (Tomlin); Suffolk (Morley); Coulsdon (Bedwell).
- Bruchus cisti*, Germ. Freshwater, I. of W. (Bouskell and Donisthorpe); Suffolk, Bury district (Tuck); Kirtlington, Oxford (Walker); Ancaster, Lincs (Thornley).
- Bruchus canus*, Germ. Chattenden (Walker); Eastling Mill (Chitty).
- Bruchus pisi*, L. Putney (Donisthorpe); Oxford, in peas (Professor Poulton); Suffolk (Morley); Carlisle (Day); Ireland, Dublin.
- Bruchus affinis*, Fröl. Darenth Wood, sweeping (Donisthorpe); Suffolk (Morley).
- Bruchus atomarius*, L. Suffolk, Bentley Woods (Morley); Norfolk, East Rudham (Wood); Wicken Fen (Donisthorpe); Ireland, Down, Louth, Westmeath, Dublin, Wexford, Clare, Limerick, Cork, and Kerry.
- Bruchus rufipes*, Herbst. (♂ *luteicornis*, Ill.). Enfield, Potter's Bar, and Cheshunt (Pool); Hanwell, beating blackthorn, in plenty (W. E. Sharp and others); Guildford (Champion); Budleigh Salterton (Donisthorpe); Teignmouth (de la Garde).
- Bruchus villosus*, F. Ireland, Wexford and Kerry.
- Orsodacna cerasi*, L. Doncaster district, locally common (Corbett).
- Orsodacna lineola*, Panz. Wimbleton Park (Rye); Chiddingfold (Donisthorpe); near Ashford (Chitty); Baughurst (Joy); Marston, Oxford (Holland).
- Donacia crassipes*, F. Enfield (Pool); Staines (Donisthorpe); Oxford; Newbury (Harwood); Ranworth Dyke, Norfolk (Thouless); Loddon River, near Reading (Tate).
- Donacia dentata*, Hoppe. Enfield (Pool); Oxford (Walker); Wicken Fen (Donisthorpe); Suffolk (Morley); Norfolk, Lakenham (Edwards); Ireland, Kerry, on *Nymphaea alba* (Cuthbert).
- Donacia versicoloreae*, Brahm. Cumberland; Ireland, widely distributed.
- Donacia sparganii*, Ahr. Enfield (Pool); Oxford (Holland); Weybridge and Wicken Fen (Donisthorpe); Suffolk and Norfolk, locally common; Newbury (Harwood), Humberstone. Lincs (Wallace).
- Donacia dentipes*, F. Chiddingfold (Donisthorpe); Oulton Broad (Bedwell); Lincolnshire; Cumberland; Ireland, Down, Galway, Westmeath, and Wicklow.
- Donacia limbata*, Panz. Ireland, Louth, Wicklow, Wexford, Cork, and Kerry.
- Donacia bicolora*, Zsch. Epping Forest (C. J. C. Pool); Wicken Fen (Donisthorpe); Suffolk, rare (Morley); Norfolk, rare, Harford Bridges (Edwards), Horning (Thouless).

- Donacia obscura*, Gyll. Sutton Broad (Balfour Browne); Penrith, Cumberland (Britten); Scotland, Loch Chesney (Gordon); Ireland, Glengariff, co. Cork (Colonel Yerbury), Westmeath and Galway (Halbert); near Dublin ? in profusion (Kemp).
- Donacia thalassina*, Germ. Richmond Park (Beare); Enfield (Pool); Oxford (Walker); Oulton Broad (Bedwell); Norfolk, scarce (Edwards); Branton, Devonshire (de la Garde); Scotland, Drumshoreland (Evans); Ireland, widely distributed.
- Donacia impressa*, Payk. Deal (Donisthorpe); Oxford (Holland); Norfolk, not common (Edwards), Sutton Broad (Balfour Browne); Cumberland, Keswick (Day); near Barmouth (P. H. Jackson); Ireland, widely distributed. The forehead has a strong blunt prominence on each side.
- Donacia vulgaris*, Zsch. Black Pond, Esher (Lewcock); Suffolk and Norfolk, not common; Ireland, Antrim, Down, Westmeath, and Dublin.
- Donacia clavipes*, F. A ♂ of this species was taken in cop. with ♀ *D. obscura* at Sutton Broad by Mr. F. Balfour Browne in 1905; Theddlethorpe, Lincs (Thornley); Ireland, Roscommon and Clare.
- Donacia semicuprea*, Panz. Ireland, co. Kerry; it has not occurred in Armagh.
- Donacia cinerea*, Herbst. Enfield (Pool); Oxshott (Donisthorpe); Lowestoft (Morley); Ranworth, Norfolk (Edwards); Ireland, Lough Neagh, (Wollaston).
- Donacia discolor*, Panz. Chale Chine, I. of W. (Donisthorpe); Tostock (Morley); Whitwell Common, Norfolk (Edwards); Ireland, common.
- Donacia braccata*, Scop. Suffolk, Walberswick (Morley), Southwold (Crutwell); Norfolk, locally common; Mablethorpe, Lincs (Thornley); Murfleet, near Hull (Stainforth); Ireland, Wexford and Kerry.
- Donacia affinis*, Kunze. Enfield (Pool); Weybridge (Donisthorpe); Oxford district (Walker); Suffolk, not rare (Morley); Norfolk, Ranworth (Thouless); Hatchmere and Delamere (W. E. Sharp); Cumberland (Britten); Ireland, very rare, Donegal.
- Hæmonia curtisi*, Lac. Cuxton (Walker); Norfolk, Fakenham (Skrimshire, 1811), Cley-next-the-Sea, in numbers (Babbington, 1837).
- Hæmonia appendiculata*, Panz. Binsey, near Oxford (Dr. Jackson); Thames, near Marlow (Dollman); Ireland, Hill of Down Canal, Meath (Dr. Allman), Royal Canal, Dublin (Halbert and Kemp). Recently retaken near Oxford by Messrs. Collins and Walker. Mr. J. Collins gives some interesting notes on the early stages of this beetle and figures the larva and pupa case (E. M. M., 1911, p. 248).
- Zeugophora flavicollis*, Marsh. Wimbleton Common (E. A. Waterhouse); Epping Forest (Kemp); New Forest (Dr. Sharp); Colechester (Harwood); Suffolk (Morley). As pointed out by Mr. Champion, the posterior femora are wholly reddish yellow, and not fuscous (E. M. M., 1905, p. 224).
- Lema septentrionis*, Weise. Ireland, widely distributed.
- Lema melanopa*, L. Ireland, only recorded from Dublin.

Crioceris lili, Scop. Chattenden (Turner).

Crioceris asparagi, L. Lincolnshire.

Labidostomis tridentata, L. Bleane Woods (Walker); Pamber Forest, in numbers (Hamm). Mr. Donisthorpe has bred the young larva from the egg, and describes how the female lays in nature, the covered eggs being all fastened together (Ent. Rec., 1908, p. 108).

Clythra quadripunctata, L. Near Shanklin, I. of W. (Poole); Ireland, Caragh Lake, co. Kerry (Bouskell). The larva only occurs in nests of *Formica rufa*. Mr. Donisthorpe has worked out the complete life-history, and shows that the female lets fall the covered egg on to the *rufa* nests (Trans. Ent. Soc. Lond., 1902, pp. 11-23).

Cryptocephalus coryli, L. Streatley, Berks (Joy); Norfolk, Edgefield (Burrell); Sherwood Forest (Taylor); Leighton Buzzard (Crawshay).

Cryptocephalus sexpunctatus, L. Huntingfield (Chitty); Colchester (Harwood); Bentley Woods, Suffolk (Morley).

Cryptocephalus bipunctatus, v. *lineola*, F. Charing (Chitty); Boar's Hill, Oxford (Holland); Wychwood Forest (Donisthorpe); Bentley Woods, Suffolk (Morley); Edgefield Wood, Norfolk (Burrell); near Barmouth (P. H. Jackson); near Wokingham (Fowler).

Cryptocephalus aureolus, Suff. Nethy Bridge, Inverness-shire, July 1909 (Miss Ethel Dougall).

Cryptocephalus hypochæridis, L. Cothill, near Oxford (Walker).

Cryptocephalus ochrostoma, Har. Wychwood Forest (Chitty and Donisthorpe).

Cryptocephalus parvulus, Müll. Bentley Woods (Morley).

Cryptocephalus moræi, L. Chiddingfold, not uncommon on *Hypericum* (Donisthorpe); Ogley Bog, near Oxford (Walker); Bembridge, I. of W. (Champion); Peppard, Henley-on-Thames (Fowler).

Cryptocephalus bilineatus, L. Yarnton, near Oxford (Collins).

Cryptocephalus pusillus, F. Parkhurst Forest, I. of W. (Donisthorpe); Stow-on-the-Wold, Glos (Crawshay); Oxford district (Walker); Norfolk, not common (Edwards); Suffolk, various localities, but rare; Lincolnshire (Wallace, &c.). In this species the scutellum is always black, even when the whole of the rest of the insect is testaceous.

Cryptocephalus labiatus, L. Ireland, Killarney (Haliday).

Cryptocephalus exiguus, Schneid. Oulton Broad (Bedwell); Norfolk, Eaton Common (Edwards), Horning (Thouless), Woodbastwick (Power); Freshney Bogs, North Lincolnshire (Thornley).

Cryptocephalus frontalis, Marsh. Marston, near Oxford (Holland); Foxley Wood, Norfolk (Edwards); Sapperton, Lincs (Miss Stow).

In some notes on *Cryptocephali* in the Ent. Record, 1908, p. 208, Mr. Donisthorpe points out that all the species lay covered eggs and the larvæ live in cases and feed on lichen on trees, &c.; some often pupate in ants' nests.

Lamprosoma concolor, Sturm. Suffolk, near Bungay (Garneys); Norfolk (Stephens); Ireland, Kilkenny, Waterford, Cork, and Kerry.

- Timarcha tenebricosa*, F. Both larva and perfect insect feed on *Galium*. Cumberland; Scotland, Potterland Hill (Douglas and Lennon); Ireland, Tipperary and Waterford. *Perilitus falciger*, a Braconid, is parasitic on this species (Bignell), E. M. M., 1891, p. 169.
- Timarcha violaceonigra*, De G. Ireland, Antrim and Waterford.
- Chrysomela sanguinolenta*, L. Ireland, Cork (Cuthbert).
- Chrysomela marginalis*, Duft. Suffolk, Bury (Norgate), Newmarket (Verrall), Brandon (Elliot), Bentley Woods (Baylis); Norfolk, Hunstanton (Dixon).
- Chrysomela marginata*, L. Devil's Dyke, Brighton (Lewcock); Cleethorpes, Lincs (Wallace).
- Chrysomela banksi*, F. Kirby Beden, Norfolk (Edwards); St. Issy, Cornwall (Crawshay); Lundy Island (Wollaston).
- Chrysomela staphylea*, v. *sharpi*, Fowler. Not scarce under stones at Stornoway (Walker); Cleethorpes (Donisthorpe).
- Chrysomela orichalcia*, Müll. Sandown (Taylor), Brook and Compton Bay, I. of W. (Donisthorpe); Suffolk (Morley); Lakenham, Norfolk (Edwards); Cothill (Walker); Shotover (Hamm); Leighton Buzzard and Melchbourne (Crawshay); Ireland, Meath.
- Chrysomela orichalcia*, v. *hobsoni*, Steph. Alcester, Warwickshire (Blatch); South Hylton, Durham, under decaying hemlock leaves (Bagnall); Ditchling, at roots of common hemlock (Dollman); Leighton Buzzard (Crawshay).
- Chrysomela hæmoptera*, L. Purley Downs (Donisthorpe); Ipswich (Morley); Weybourne, Suffolk (Edwards).
- Chrysomela varians*, Schall. Widely distributed. Ireland, not uncommon in the south and west; most of the specimens are referable to the green form.
- Chrysomela gottingensis*, L. Box Hill (Jennings); Purley Downs (Donisthorpe); Oxford district (Walker); Norwich (Edwards); Devonshire; Cornwall; Isle of Wight; Shaftesbury, Dorset (Crawshay).
- Chrysomela graminis*, L. Babbington recorded it as double-brooded, occurring near Bath on *Mentha hirsuta*, June and September, feeding in the autumn on the flowers of the mint (1833). This record may have referred to the next species.
- Chrysomela menthrasti*, Suffr. Wantage (Harwood); Dean Forest (Hodgson); the Wicken Fen records most probably refer to the last species; Grantham, Lincs (T. Stow); Reading (Tomlin).
- Chrysomela fastuosa*, Scop. Suffolk, near Eye (Tyrer); Norfolk (Burrell); Barrow-on-Soar, on "white nettle" (Bouskell); Cadney, Lincs (Wallace); Ireland, Donegal, Fermanagh, Roscommon, Wexford, and Clare.
- Chrysomela cerealis*, L. It is recorded by Mr. Haliday as having been taken by Mr. Hely on Knockmeledown Hill, Tipperary, Ireland. Mr. E. J. Burgess Sopp makes some very interesting observations on the habits of this beetle in the *Naturalist's Journal*, 1902, p. 13.
- Chrysomela didymata*, Scriba. Luccombe Chine, I. of W. (J. Taylor); New Forest; Bagley Wood, &c., near Oxford (Walker); Suffolk, various localities (Morley); Norfolk, widely distributed (Edwards); Leighton Buzzard (Crawshay); Great Cotes, Lincs (Thornley).

- Chrysomela hyperici*, Forst. Sevenoaks (Donisthorpe); Lundy Island (Wollaston); Oxford district (Walker); Suffolk, Burgh (Paget), Bentley (Harwood), Foxhall (Morley); Norfolk, occurs sparingly (Edwards); Cleethorpes (Donisthorpe); Ireland, widely distributed.
- Melasoma æneum*, L. Cumberland (Day and Britten); Ireland, Kenmare, co. Kerry (Hardy). The record "Leicester" refers to Buddon Wood (Power) and Switherland Slate Quarry (Headley), in Leicestershire.
- Melasoma populi*, L. Belton Bog, Suffolk (Paget); Norfolk, Ranworth (Edwards), Horning (Thouless), Oby (Paget); Lynewode Warren, Lincs (Thornley).
- Melasoma tremulæ*, F. Bagley Wood, Oxford (Holland); Bentley Woods, Suffolk (Morley); Norfolk (Burrell).
- Phytodecta rufipes*, De G. Bagley Wood, Oxford (Holland); Chiddingfold (v. *sexpunctata*, F.) (Donisthorpe); Leighton Buzzard (Crawshay).
- Phytodecta olivacea*, Forst. Ireland, co. Kerry. The v. *nigricans*, Weise, has been taken in Cumberland by Mr. F. H. Day.
- Phytodecta pallida*, L. Guildford Downs (Champion); Llandaff (Tomlin); Cumberland; Ireland, Derry, Down, and Wicklow. Mr. Donisthorpe bred it from the larva, and shows that it fed on hazel and pupated in the earth. He bred two flies (*Meigenia floralis*) from two of the pupæ (Ent. Record, 1909, p. 208).
- Phytodecta affinis*, Suff. With regard to the record of this insect, Mr. Edwards points out that Mr. Winter and Mr. Cocking were one and the same person.
- Gastroidea viridula*, De G. Parthenogenesis in this species is proved in the E. M. M. for 1880, vol. xvii. p. 127 (Osborne).
- Plagioderia versicolora*, Laich. Kingston-on-Thames (Lewcock); very abundant in the Oxford district (Walker); Wantage (Harwood); Ireland, Kenmare Wood, co. Kerry.
- Phædon concinnus*, Steph. Humberstone, Lincolnshire (Bullock).
- Phyllodecta cavifrons*, Thoms. Broxbourne, on Lombardy poplar (Jennings); on white poplar, Sandown, I. of W. (Donisthorpe); Suffolk, Ipswich district (Morley); Norfolk, widely distributed (Edwards); Ireland, Armagh (Johnson), Caragh Lake, co. Kerry (Donisthorpe).
- Phyllodecta vitellinæ*, L., is occasionally all blue in colour.
- Hydrothassa hannoverana*, F. Little Salkeld, Cumberland (Britten).
- Aglastica alni*, L. Some specimens were taken in the streets of Deal by Messrs. Bedwell and Jennings in 1900.
- Phyllobrotica quadrimaculata*, L. Farnham (Lewcock); Bulmershe, Reading (Fowler and Holland); Wellington College (Joy); Suffolk, Bury district (Tuck); Norfolk, scarce (Edwards); Leicestershire, Buddon Wood (F. Bates); Bradgate Park (Bouskell); near Gainsboro', Lincs (Wallace); Ireland, Antrim, Cork, and Kerry.

Luperus nigrofasciatus, Goeze. Suffolk; Norfolk; Scotland, Wigtownshire (Gordon).

Luperus rufipes, Scop., and *flavipes*, L., are not recorded from Ireland.

Lochmæa capreæ, L. Ireland, Donegal, Antrim, Clare, Cork, and Kerry.

Mr. Gordon recorded that several large perch caught near Loch Gower, in Wigtownshire, were full of this beetle (Ent. Rec., 1903, p. 49).

Lochmæa suturalis, Thoms. Ireland, common.

Lochmæa cratægi, Forst. Ireland, widely distributed.

Galerucella viburni, Pk. Huntingfield (Chitty); New Forest, Whitefield Woods, I. of W.; and Chippenham Fen (Donisthorpe); Norfolk, Foxley Wood and Howe Grove (Edwards); Lincoln (Peacock); Brasley Wood, Lincs (Wallace); Ireland, Galway and Queen's County.

Galerucella nymphææ, L. Ireland, widely distributed, but not so common as *G. sagittariæ*, Gyll., or *lineola*, F.

Galerucella calmariensis, L. Ireland, widely distributed.

Galerucella tenella, L. Ireland, common.

Adimonia tanaceti, L. Mr. Sopp has found it feeding on wild thyme. Mr. Wallace Kew found the larvæ feeding in plenty on *Scabiosa succisa*, and also on *Centaurea nigra*, in Lincolnshire. He also notes the pupation (E. M. M., vol. xxiii. 1886, p. 107).

Adimonia celandica, Boh. Westward Ho! (Wood).

Sermyla halensis, L. The elytra are sometimes blue, or shot with crimson and violet. Ireland, Portsalon, co. Donegal (Somerville).

Longitarsus pulex, Schrank. Huntingfield (Chitty); Peppard (Fowler); Tring and Chesham (Elliman); Wytham Park (Walker). The Irish record refers to *L. ater*, F.

Longitarsus anchusæ, Payk. Suffolk (Morley); East Rudham, Norfolk (Wood); Leicester (F. Bates); Kibworth (Miss M. E. Whitton); Scotland, Orchardton (Douglas), Peebles (Beare).

Longitarsus ater, F. Ireland, Donegal, Derry, Antrim, and Cavan. The flax crop in co. Down suffered severely from the attack of this beetle in 1827.

Longitarsus holsaticus, L. Baughurst (Joy); Newbury (Harwood); Oxford district (Walker); Suffolk, Lakenheath and Henstead (Morley); Norfolk, Horning (Edwards); Cumberland (Britten); Lundy Island (Joy and Tomlin); Ireland, widely distributed.

Longitarsus 4-guttatus, Pont. Arundel Park, the ab. *immaculatus*, Weise, being commoner than the type (W. E. Sharp); Gumley, Leicestershire (Matthews).

Longitarsus dorsalis, F. Streatley (Joy); Newbury (Harwood); Suffolk (Morley).

Longitarsus castaneus, Duft. Yarnnton (Collins); Oulton Broad (Bedwell); Cumberland. Ireland, Balrath, co. Meath (Donisthorpe and Nicholson).

- Longitarsus agilis*, Rye. Lewes, in numbers (Dollman); Baldock (Wood); Cothill, near Oxford (Walker); Newbury (Harwood); Huntingfield (Donisthorpe); Lakenham (Morley); Seaton, Devon (Champion). It has been taken in France by Mons. Bedel.
- Longitarsus suturellus*, Duft. Ireland, Armagh.
- Longitarsus patruelis*, All. Cumberland; Ireland, Dublin.
- Longitarsus atriceps*, Kuts. Bradfield (Joy); Oxford district (Walker); Bentley Woods (Morley); Gumley (Matthew); Herefordshire (Tomlin); Ireland, Armagh (Johnson).
- Longitarsus distinguendus*, Rye. Carlisle (Day).
- Longitarsus suturalis*, Marsh. West Malvern, on *Convolvulus arvensis* (Tomlin); Ireland, Donegal, Armagh, and Galway.
- Longitarsus nasturtii*, F. Wall Hills Camp, Herefordshire (Tomlin); Tubney (Collins).
- Longitarsus piciceps*, Steph. Tubney (Walker); Bentley Woods (Morley); Cumberland (Day); Ireland, widely distributed.
- Longitarsus lycopi*, Foudr. New Forest, Cannam Heath, and Tubney, near Oxford (Donisthorpe); Gumley (Matthews).
- Longitarsus ballota*, Marsh. Yarbridge, I. of W. (Taylor); Ireland, Donegal.
- Longitarsus waterhousei*, Kuts. Gumley (Matthews); Ryde, I. of W. (Donisthorpe); Beckley, near Oxford (Holland).
- Longitarsus flavicornis*, Steph. On *Convolvulus arvensis*, Bradfield (Joy); on *Convolvulus sepium*, Lewes and Ditchling (Dollman); Sandown, I. of W. (Taylor); Newbury (Harwood); Elsfield, near Oxford (Walker); Llandaff (Tomlin); Catfield and Stalham (Donisthorpe); Ireland, Roundstone, co. Galway (Chaster).
- Longitarsus exoletus*, L. Oxford district (Walker); Braunton (de la Garde); Lundy Island (Wollaston); Ireland, Donegal, Louth, Dublin, and Kerry.
- Longitarsus pusillus*, Gyll. Ireland, widely distributed. Mr. W. E. Sharp recorded that a dark form of this species (*Thyamis collaris*, Steph.) was abundant in Buckinghamshire (E. M. M., 1906, p. 39).
- Longitarsus reichei*, All. Ogle Bog (Holland).
- Longitarsus tabidus*, F. Huntingfield (Chitty); Oxford district (Walker); Tring (Elliman); Whitsand Bay (Donisthorpe); Lundy Island (Wollaston); British Camp, Herefordshire (Tomlin).
- Longitarsus rutilus*, Ill. Halstow, Kent (Walker); Eaton, Norfolk (Edwards).
- Longitarsus ochroleucus*, Marsh. Ireland, Antrim, Louth, Galway, and Kerry.
- Longitarsus gracilis*, Kuts. Oxford district, Suffolk, Norfolk, Lundy Island (and v. *poweri*, All.), Joy; Cumberland; Ireland, Donegal, Derry, Antrim, Cavan, Armagh, and Dublin.
- Longitarsus laevis*, Duft. Ireland, Donegal, Louth, and Dublin.
- Longitarsus pellucidus*, Foudr. Newbury (Harwood); Beckley (Holland); Ireland, Donegal, Derry, Clare, Galway, and Limerick.
- Haltica lythri*, Aubé. The Irish record is doubtful.
- Haltica ericeti*, All. Cumberland; Ireland, widely distributed.

- Haltica coryli*, All. Bagley Wood (Walker); Bentley Woods, Suffolk, on hazel and poplar (Morley); Foxley Wood, Norfolk, on hazel (Edwards); Baughurst and Whitefield Woods, I. of W., on hazels (Donisthorpe).
- Haltica oleracea*, L. Ireland, widely distributed.
- Haltica palustris*, Weise. Cumberland (Day); Scotland, Aberfoyle (Edwards); Ireland, very rare, Armagh, Wexford, and Kerry.
- Haltica pusilla*, Duft. Ireland, Waterford and Kerry.
- Hermæophaga mercurialis*, F. Bagley Wood (Shipp); Oxford district (Walker); Gumley (Matthews); Ireland, Wexford (Cuthbert).
- Phyllotreta nodicornis*, Marsh. Norfolk, locally common, on cultivated mignonette in Mr. Edwards' garden; Scotland, Orchardton (Douglas); Ireland, Limerick (Furlong).
- Phyllotreta nigripes*, F. Plymstock (Keys); Gumley (Matthews); Ireland, Down, Dublin, and Waterford.
- Phyllotreta consobrina*, Curt. Ireland, Dublin; in 1898 it destroyed plantations of cabbages, turnips, and carrots there.
- Phyllotreta punctulata*, Marsh. Cumnor, Oxford (Holland); Trusthorpe, Lincs (Thornley); Ireland, Dublin.
- Phyllotreta atra*, Payk. Hartlepool (Gardner); Ireland, Galway and Wexford.
- Phyllotreta cruciferae*, Goeze., and *vittula*, Redt. Devonshire (de la Garde).
- Phyllotreta vittula*, Redt. Ireland, Shane's Castle, Lough Neagh (Halbert).
- Phyllotreta nemorum*, L. Ireland, common. Mr. Elliman records an aberration from North Wales with the tibiae almost entirely black, the var. *a* of Weise (Ins. Deutschl., vi. p. 875).
- Phyllotreta flexuosa*, Ill. Norfolk (Edwards); Cumberland (Day); Curragh, Isle of Man (Tomlin); Ireland, Wexford (Halbert); Scotland, Braemar on Cardamine (Donisthorpe).
- Phyllotreta sinuata*, Steph. Eskdale, Cumberland (Fowler), 1911, August and September, common; Suffolk and Norfolk, rare; Taly-y-Capu, near Conway (W. E. Sharp); Llandaff (Tomlin); N. Cornwall (Butler); Scotland, Luss (Dalglish).
- Phyllotreta exclamationis*, Thunb. Birkdale (Chaster and Sopp); Isle of Man (Tomlin); Marton, Lincs (Thornley); Ireland, Down, Armagh, Wicklow, Kilkenny, Cork, and Kerry. The Irish record of *P. tetrastigma* refers to this species.
- Aphona lutescens*, Gyll. Oxford; Suffolk; Norfolk; Pendine Burrows, Carmarthenshire (Butler); Ireland, widely distributed.
- Aphona nigriceps*, Redt. Sandown, I. of W. (Donisthorpe); Braunton, Devonshire (de la Garde); Enslow Bridge (Collins).
- Aphona atro-virens*, Först. Ditchling (Dollman); Alford, Lincs (Wallace); Ireland, widely distributed.
- Aphona herbigrada*, Curt. Anstey Lane, Leicester (F. Bates); Ingleton, Yorks (Chaster, who records a form of an aenous colour with elongate antennæ in ♂).

- Batophila rubi*, Payk. Ireland, Wicklow, Kilkenny, and Wexford.
- Batophila aerata*, Marsh. The Rev. T. Wood records it as injurious to raspberries in Kent.
- Apteropeda globosa*, Ill. Cobham Park (Walker); Chesham (Elliman); Tiverton, Devon (de la Garde); Cumberland (Day); Ireland, Donegal, Derry, King's County, and Waterford. The Armagh record is not given in the Irish List. Dr. Joy took a var. at Kingswear, Devon, with shining coppery thorax, dull greenish elytra, the whole surface being strongly alutaceous. According to Walker the larva feeds on *Plantago*, *Teucreum*, and *Nepeta glechoma*.
- Apteropeda splendida*, All. Near Bradfield (Joy).
- Mniophila muscorum*, Hoch. Shanklin Copse, I. of W. (Guyon); Chiddingfold (Donisthorpe); Cumberland (Day); Ireland, Antrim, Down, and Sligo.
- Podagrica fuscipes*, L. Ireland, Belfast (Haliday).
- Podagrica fuscicornis*, L. Commander Walker recorded it as a garden pest at Oxford in 1904; Gumley (Matthews); Sapperton, Lincs (Miss Stow).
- Mantura rustica*, L. Is not recorded from Ireland.
- Mantura chrysanthemi*, Koch. Lundy Island (Wollaston); Ipswich (Elliman); Brandon (Morley); abundant on *Rumex acetosella*, near Southport (Chaster); Ireland, Wicklow (Furlong).
- Mantura matthewsi*, Curt. Hartlepool (Gardner).
- Ochrosia salicariæ*, Payk. Sandown, I. of W. (Ellis); not rare on *Lysimachia nummularia*, Cobham Wood (Walker). The Irish records were in error.
- Crepidodera transversa*, Marsh. Recorded as taken in copula with *C. ferruginea* at Chat Moss (T. Morley), and in the New Forest (Donisthorpe).
- Crepidodera ferruginea*, Scop. Recorded as taken in copula with *C. rufipes* at Llangollen (T. Morley).
- Crepidodera rufipes*, L. Ireland, Armagh and Dublin.
- Crepidodera ventralis*, Ill. On *Solanum dulcamara*, St. Helens, I. of W. (Holland); Isle of Man, in plenty, and Herefordshire (Tomlin).
- Crepidodera nitidula*, L. Baughurst (Joy); Suffolk (Morley); Bagley Wood (Collins); Leighton Buzzard (Crawshay).
- Crepidodera helvines*, L. Ireland, common.
- Crepidodera chloris*, Foudr. Winchelsea, near Hastings (Donisthorpe); Oxford district (Walker); Suffolk (Morley); Thorpe, Norfolk (Edwards); Southport (Chaster and Sopp).
- Crepidodera aurata*, Marsh. Scotland, Bonhill (Dalglish); Ireland, Donegal and Antrim.
- Hippuriphila modeeri*, L. Ireland, Dublin and Limerick.
- Epitrix pubescens*, Koch. Suffolk, banks of Little Ouse (Morley); Tuddenham Fen (Donisthorpe).
- Epitrix atropæ*, Foud. Tring (Elliman); Wychwood Forest (Donisthorpe).

- Chætocnema confusa*, Boh. Tubney, near Oxford (Holland); Wellington College (Joy); Wicken Fen (Donisthorpe).
- Chætocnema hortensis*, Fourc. Southport district (Chaster and Sopp); Ireland, Donegal, Antrim, Wicklow, Wexford, and Kerry.
- Chætocnema sahlbergi*, Gyll. Poole Harbour (Chitty); Oulton Broad (Bedwell); Horning Common, Norfolk (Edwards); Gumley (Matthews); Taly-y-Capu, near Conway (W. E. Sharp); River Waver, Cumberland (Day); Ireland, Wexford (Halbert).
- Psylliodes chrysocephala*, L., v. *anglica*, F. Ryde, I. of W. (Donisthorpe).
- Psylliodes cyanoptera*, Ill. Wicken Fen (Chitty and Donisthorpe), several specimens, including a var., with dark thorax, August 1892.
- Psylliodes affinis*, Payk. Scotland, Longniddy, in plenty (Beare).
- Psylliodes marcida*, Ill. Ireland, Enniserone, co. Sligo (Johnson); Rossbeigh, co. Kerry (Donisthorpe).
- Psylliodes dulcamaræ*, Koch. Chiddingfold (Donisthorpe); Ventnor, I. of W. (Ellis); Lundy Island (Wollaston); Enslow Bridge (Collins); Suffolk (Morley); Ditchling (Dollman).
- Psylliodes chalcopera*, Ill. Isle of Wight, Freshwater (Champion), Blackgang (Donisthorpe); Lundy Island (Joy); N. Cornwall (Butler); Hartlepool (Gardner). It does not occur in Ireland.
- Psylliodes hyoscyami*, L. Oxford district (Walker); Wychwood Forest (Holland); Gumley (Matthews); Hartlepool (Gardner).
- Psylliodes picina*, Marsh. Oxford district (Walker); Weymouth (Donisthorpe); Ireland, Fermanagh and Roscommon.
- Cassida murræa*, L. Chilswell, near Oxford (Donisthorpe and Walker); Eye Park, Suffolk (Tyrer); St. Faith's Wood, Norfolk (Wigham); Miskin, S. Wales (Chitty); Backways Cove, N. Cornwall (Butler). *C. maculata*, L., is the green form of this insect.
- Cassida fastuosa*, Schall. In numbers in 1909, Boxhill (Bedwell), on *Inula conyza*; Miskin, S. Wales (Chitty).
- Cassida nebulosa*, L. Ludham (Edwards); Woodbastwick (Thouless).
- Cassida vibex*, F. Ireland, Fermanagh, Galway, and Kerry.
- Cassida sanguinolenta*, F. Sandown, I. of W. (Taylor); Ditchling, green form (Dollman); Fairlight, near Hastings, and New Forest (Donisthorpe); Headington Wick (Walker); Suffolk (Morley); Norfolk (Edwards); Barmouth (P. H. Jackson); Cleethorpes (Baker); Ireland, Borris, co. Carlow (Halbert).
- Cassida vittata*, Vill. Taken in great numbers at roots of *Arenaria maritima* at Blackgang Chine, I. of W., by Messrs. Beare and Donisthorpe, the larvae feeding on the plant.
- Cassida nobilis*, L. Bembridge, I. of W. (Ellis); Wellington College (Donisthorpe); Felixstowe (Walker); Bungay (Garneys); Norfolk, on *Typha angustifolia* (Burrell); Leighton Buzzard (Crawshay); Lincolnshire; Ireland, Down and Clare. Mr. Dollman and I found several specimens of a form with a crimson horseshoe on the back (for which I propose the name var. *dollmani*, n.v.) at the roots of *Chenopodium* at St. Helens, I. of

W., the colours exactly matching those of the plant. Scotland: a few imagos and larvæ in abundance on *Silene maritima* on the shores of Loch Long, at Coalport, Dumbartonshire, June 27, 1910 (W. Evans).
Cassida hemisphærica, Herbst. Queenstown Warren (Walker); Sandown, I. of W. (Champion); Shaftesbury, Dorset (Crawshay); Ireland, Donegal, Antrim, Wexford, and Cork.

HETEROMERA

Blaps mucronata, Latr. Ireland, common.
Blaps similis, Latr. Holborn, Bury not uncommon (Donisthorpe); Stroud (Walker); Ipswich (Baylis); Bury district (Tuck).
Blaps mortisaga, L. In bakehouse, Sandown, I. of W. (Taylor).
Blaps gigas, F. Mr. Tuck took a specimen in his cellar at Bury St. Edmunds in 1903.
Crypticus quisquilius, L. Tubney, near Oxford (Holland); Lundy Island (Joy and Tomlin).
Heliopathes gibbus, F. Ireland, Meath, Wexford, Waterford, and Cork.
Opatrum sabulosum, Gyll. Ireland, Kenmare, co. Kerry (Hardy).
Microzoum tibiale, F. Inland: Tubney (Holland), Farnham and New Forest (Donisthorpe); Braunton (de la Garde); Humberstone, Lincs (Bllock); Ireland, Rush, co. Dublin (W. E. Sharp).
Phaleria cadaverina, F. Ireland, Louth, Wicklow, and Waterford. Mr. Keys takes it at Whitsand Bay of unusually large size, with large black "saddle-back" markings on the elytra, and he has taken a nearly black form there.
Heledona agaricola, F. Enfield (Pool); Virginia Water (W. E. Sharp); Oxford (Walker); Suffolk (Kirby); Scotland, Carnsalloch Wood, Dumfries (Lennon).
Platydema dytiscoides, Rossi. Rediscovered in the New Forest in 1901 by Messrs. Donisthorpe and Gorham, who took seven specimens under bark of felled oak.
Alphitophagus bifasciatus, Say. Stroud (Walker), in a granary, in numbers. As Mr. Champion points out, Say's name has nine years' priority over Stephens' *quadripustulatus*. Hanwell (Nicholson).
Tenebrio molitor, L. Ireland, Antrim and Dublin.
Tenebrio obscurus, F. Queenborough (Walker); Oxford (Hamm); Ireland, Down and Limerick.
Alphitobius piceus, Ol. Queenborough, common in bone stack (Donisthorpe); Carlisle (Day).
Gnathocerus cornutus, F. Ipswich (Morley); Oxford (Holland); Grimsby (Wallace); Scotland, Edinburgh and North Berwick (Evans); Ireland, Belfast, in meal (Halbert).

- Tribolium ferrugineum*, F. Suffolk; Cumberland; Grimsby (Wallace); Ireland, Dublin.
- Tribolium confusum*, Duv. Edmonton (Pool); Shotover (Holland); Lowestoft (Bedwell); Penrith, Cumberland (Britten).
- Palorus ratzeburgi*, Wissm. Ireland, Ballybunion, co. Kerry, under bark on a paling (Cuthbert).
- Hypophleus bicolor*, Ol. Richmond Park (Donisthorpe); Enfield (Pool); Madingly, near Cambridge (Dollman); Sproughton, Suffolk (Morley); Tubney, near Oxford (Walker); Alnwick, Durham (Bagnall).
- Latheticus oryzæ*, Wat. In granary, Holborn (Donisthorpe); Lowestoft, in numbers (Bedwell); Penrith, Cumberland (Britten).
- Helops cæruleus*, L. Woolwich (Bedwell); Lyminster (Donisthorpe); Sandown (Taylor); Yarmouth, I. of W. (Beare); Norfolk, Lower Close (Wigham), Yarmouth (Paget); Plymouth (Keys).
- Helops pallidus*, Curtis. St. Helens, I. of W. (Donisthorpe); Felixstowe (Morley); Ireland, Antrim, Wexford, Waterford, and Cork.
- Helops striatus*, Fourc. Ireland, common.
- Cistela luperus*, Herbst. Cothill (Walker); Bentley Woods, Suffolk (Morley); Ireland, Derry.
- Cistela ceramboides*, L. New Forest (Donisthorpe); Bentley Woods, Suffolk (Morley).
- Cistela murina*, L. Is not recorded from Ireland.
- Eryx ater*, F. South Kensington, on the steps of the Museum! (Donisthorpe); Enfield (Pool); Cobham Park (Walker); New Forest (C. Guliver); Bradfield, Berks (Joy); Ipswich (Morley).
- Mycetochares bipustulata*, Ill. Richmond Park (Bennett); Epping Forest (Jennings); Sherwood Forest (Kidson-Taylor); Suffolk (Morley).
- Cteniopus sulphureus*, L. Inland records: Wicken Fen, not rare (Donisthorpe), Tubney, near Oxford (Holland); Deganwy, near Llandudno (W. E. Sharp).
- Cteniopus sulphureus*, ♂ ab. *bicolor*, F. Deal (Donisthorpe).
- Tetratoma fungorum*, F. Woking (Donisthorpe); Oulton Broad (Bedwell); Bury (Tuck); Norfolk (Edwards); Oxford district (Walker); Doncaster district (Corbett); Cumberland (Day).
- Tetratoma desmaresti*, Latr. Huntingfield (Chitty); Newbury (Harwood); Norfolk (Fox); Stoke Edith, Herefordshire (Tomlin); Melchbourne, Beds (Crawshay); Wytham Park (Collins).
- Tetratoma ancora*, F. Kingsbridge, Devon (de la Garde); Charing, Kent (Chitty); Bungay, Suffolk (Garneys); Cumberland (Day).
- Orchesia micans*, Panz. Richmond and Isle of Wight (Donisthorpe); Lancing (Rye); Suffolk; Norfolk; Oxford district (Walker); Hooton, Cheshire (W. E. Sharp); Lancashire; Ireland, Kerry.

- Clinocara tetratoma*, Thoms. Charing (Chitty); Ditchling (Dollman); Miller's Dale (Kidson-Taylor); Cumberland; Scotland, Hawthornden (Beare). F. Walker described this insect as *Ochesia minor* in 1837 from a specimen taken at New Lanark. "In the cabinet of the Entomological Club!"
- Clinocara undulata*, Kr. Cumberland (Britten); Northumberland (Bagnall); Scotland, Huntly (Lennon); Ireland, co. Kerry, Kenmare (Halbert); Glen Car (Bouskell).
- Hallomenus humeralis*, Panz. Oxshott and Sherwood (Bedwell); Putney (E. A. Waterhouse); Richmond Park (Donisthorpe); Enfield (Pool); Woking (Champion); Oxford (Hamm); Ipswich (Elliman); Lakenham, Norfolk (Edwards); Doncaster district (Corbett).
- Conopalpus testaceus*, Ol. Godshill, I. of W. (Morey); Palmer's Green (Pool); Bishop's Wood, Hampstead, and Sevenoaks (Donisthorpe); Woking (Champion); Oxford district (Walker); Melchbourne, Beds (Crawshay); Bentley Woods, Suffolk (Morley); Dunston Common, Norfolk (Edwards); Bradgate Park, Leicestershire, and v. *vigorsi*, Steph. (F. Bates); Ireland (Tardy).
- Melandrya caraboides*, L. Bagley Wood (Holland); Bungay (Garneys); Yarmouth (Paget); Ireland, Wicklow (Furlong).
- Melandrya barbata*, F. (*dubia*, Fowler). This insect has been taken recently in the New Forest; three specimens sent to Mr. F. Bates by C. Guliver, Heasler several 1901, Bedwell one 1901.
- Anisoxya fuscata*, Ill. Waltham and Edmonton (Pool); Oxford district and Cobham Park (Walker); Huntingfield (Chitty); Freshwater and Sandown, I. of W. (Donisthorpe).
- Abdera quadrifasciata*, Curt. Enfield (Pool); Market Bosworth, Leicestershire (Bouskell and Donisthorpe); Wytham Park, Oxford (Donisthorpe and Walker).
- Abdera bifasciata*, Marsh. Bleane Woods (Morley); Woking, and Sandown, I. of W. (Champion); Ditchling (Dollman); Tubney (Harwood).
- Abdera triguttata*, Gyll. Scotland, Newtonmore, Inverness-shire (Black).
- Abdera flexuosa*, Payk. Salkeld, Cumberland (Britten).
- Phlaeotrya rufipes*, Gyll. Newport, I. of W. (Morey); Ashstead (Bedwell); Coombe Wood and Richmond Park (Donisthorpe); Enfield (Pool); Meavy Valley, Devonshire (Keys); Leicestershire, Bradgate Park (F. Bates), Bosworth Park (Bouskell and Donisthorpe).
- Osphya bipunctata*, F. Chattenden Roughts (Walker); Cheltenham (Edwards); Coddendam, Suffolk (Fox); Melchbourne (Crawshay); Peterborough (Cruttwell). In the Ent. Record for 1899 Mr. Bouskell describes several variable forms of this beetle.
- Salpingus castaneus*, Panz. Ireland, widely distributed.
- Salpingus aeratus*, Muls. Freshfield, Southport List (Chaster and Sopp); Cumberland (Britten); Ireland, Antrim.

- Salpingus ater*, Payk. Blackgang, I. of W. (Donisthorpe); Delamere Forest (W. E. Sharp); Scotland, Peebles district (Black); Ireland, Dublin.
- Salpingus mutilatus*, Beck. Mickleham and Wytham Park (Walker).
- Salpingus foveolatus*, Ljungh. Cobham Park (Walker); Wheatley, Yorks (Corbett); Cumberland (Britten); Scotland, Edinburgh (Beare).
- Lissodema quadripustulata*, Marsh. Penge, and in holly-tree, New Forest (Donisthorpe); Ditchling (Dollman); Ventnor, I. of W. (Beare); Oxford district (Walker); Humberstone, Lincs (Wallace); Ireland, Killarney (Halbert).
- Lissodema cursor*, Gyll. Hunstanton (Fowler).
- Rhinosimus ruficollis*, L. Scotland, Forth district (Beare).
- Rhinosimus viridipennis*, Steph. Scotland, Hawthornden and Berwickshire (Beare); Ireland, common.
- Edemera nobilis*, Scop. Norfolk; Newton Cliff, Lincs (Thornley).
- Edemera lurida*, Marsh. Suffolk; Norfolk; Cumberland; Ireland, Kerry.
- Oncomera femorata*, F. Bungay (Garneys); Starston, Norfolk (Paul); Silverdale, near Lancaster, at sugar, 1870 (Ruspini); Colwyn, N. Wales (R. Newstead); Porthkerry, S. Wales (Tomlin); Yealmpton, Devon (Keys); Dartmouth (Donisthorpe).
- Nacerdes melanura*, Schmidt. Penge (Donisthorpe); Oxford (Walker); Ipswich, &c., Suffolk (Morley); Mousehold Heath, Norfolk (Edwards); Edlington Woods, Yorks (Young); Ireland, Donegal.
- Ischnomera sanguinicollis*, F. Burnham Beeches (T. W. Allen); West Clandon, near Guildford (Saunders).
- Pyrochroa coccinea*, L. Llandaff, S. Wales (Tomlin).
- Pyrochroa serraticornis*, Scop. Ireland, Limerick (Furlong).
- Pyrochroa pectinicornis*, L. Taken by Dr. Chapman, June 1, 1894, in an old birch stump in the Herefordshire portion of the Black Mountains.
- Scraptia fuscata*, Müll. Richmond Park (Dollman); Enfield and Epping Forest (Pool); Windsor Forest (Blandford and Chitty); New Forest (Gorham); Great Salkeld (Britten).
- The sexual characters of the *Mordellinæ* will be found in the E. M. M. for 1898, p. 128 (Champion).
- Mordella fasciata*, F. Chiddingfold (Donisthorpe); Oxford district (Walker); Newbury (Harwood); Bentley Woods, Suffolk (Morley); Ryde, I. of W., 1836 (Sir John Lighton and Rev. G. J. Rudd).
- Mordella aculeata*, L. Cobham Park and Bleane Woods (Walker); Huntingfield (Chitty); Mr. Gorham tells us the Westerham record refers to the preceding species; Llandaff, S. Wales (Tomlin).
- Mordellistena abdominalis*, F. Enfield (Pool); Battle (Donisthorpe); Huntingfield (Chitty); Newbury (Harwood); Coddendam, Suffolk (Fox); Oxford district (Walker).

- Mordellistena humeralis*, L. Mickleham and New Forest, common (Donisthorpe); Ipswich (Morley).
- Mordellistena newaldegiana*, Panz (*brunnea*, F.). Coulsdon (Bedwell); Ledsham, Cheshire (W. E. Sharp); Oxford district (Walker); Ditchling (Dollman).
- Mordellistena pumilla*. South Cove, E. Yorks (Stainforth); Doncaster district (Corbett).
- Mordellistena brevicauda*, Boh. Sevenoaks (Donisthorpe); Headington Wick (Walker).
- Mordellistena parvula*, v. *inæqualis*, Muls. Isle of Wight, Sandown (Champion), Chale and Niton (Donisthorpe); Hellesdon, Norfolk (Edwards); Ditchling (Dollman); Bovey Tracey, Devon (de la Garde).
- Anaspis garneysi*, Fowler. Enfield (Pool); Penge and Ashstead (Donisthorpe); Huntingfield (Chitty); Bagley Wood (Holland); Buckfastleigh, Devonshire (de la Garde); Savernake, Wiltshire (W. E. Sharp); Blakenham Pits, Suffolk (Morley); Saltburn Wood, Yorks (Thompson); Cumberland (Day).
- Anaspis rufilabris*, Gyll. Ireland, Donegal, Antrim, and Armagh.
- Anaspis melanostoma*, Costa. Epping Forest (Donisthorpe); Cumberland, not rare (Day).
- Anaspis geoffroyi*, Müll. Ireland, Kenmare, co. Kerry (Hardy). The four-spotted form = *A. subfasciata*, Steph.
- Anaspis costae*, Emery. Autumn species; Chiddingfold (Donisthorpe); Bentley Woods (Morley); Oxford district (Walker). This is the *A. flava*, v. *thoracica* of British collections.
- Anaspis subtestacea*, Steph. Grimsby (Wallace); Ireland, Antrim (Johnson).
- Metæcus paradoxus*, L. Chiddingfold, common in nests of *Vespa vulgaris* (Donisthorpe); New Forest, in wasps' nests (Morley); Leighton Buzzard, twenty-four in one nest, and Melchbourne (Crawshay); Suffolk, Foxhall (Morley); Bury, twenty-four in one nest, and one in a nest in a roof 30 feet from ground (Tuck); Cossey, Norfolk (Wigham); Woodhay, Hants, one evening sweeping, and common in nests (Donisthorpe); Bradfield, Berks (Joy); Alford, Lincs (J. E. Mason); Derwent Valley, Durham, sweeping (Bagnall). Mr. Donisthorpe has written a paper on all that is known of the life-history of this beetle (*see* Trans. Leicester Literary and Philosophical Soc., December 1898).
- Notoxus monoceros*, L. Spurn, Yorks (Stainforth).
- Anthicus humilis*, Germ. Trimley Marshes, Suffolk (Morley); Parkgate, Cheshire (W. E. Sharp); Ireland, Wexford.
- Anthicus angustatus*, Curt. Bigbury Bay, Devon, in profusion (Keys).
- Anthicus scoticus*, Rye. Allonby, Cumberland (Routledge); Isle of Man (Bailey); Ireland, Antrim and Louth.
- Anthicus tristis*, v. *schaumi*, Woll. Bembridge, I. of W. (Donisthorpe).
- Anthicus bimaculatus*, Ill. Deal (Chitty); Pyle, S. Wales (Tomlin); Birkdale

and Southport sandhills, not rare (Chaster and Sopp). The insect is nocturnal in habits.

Xylophilus populneus, F. Enfield (Donisthorpe); Cheshunt (Jennings); Bury district, Suffolk (Tuck); Back River, Norfolk (Edwards); Summer-town, Oxford (Walker); Wicken Fen (Dollman).

Xylophilus brevicornis, Perris. Heathfield, Sussex (Beevor). The Wandsworth record refers to *X. populneus*, F.

Xylophilus oculatus, Gyll. Newport, I. of W. (Butler); Cobham Park (Walker); New Forest (Beare and Donisthorpe); Dunston Common, Norfolk (Edwards).

Meloë proscarabeus, v. *cyaneus*, Muls. Alverstone, I. of W. (Ellis); Cumberland (Britten); Ireland, Donegal. Mr. Chitty recorded larvæ of *Meloë* on specimens of *Odynerus*, and also two forms of larvæ, a yellow and a black, at Doddington, Kent. Seven or eight *Meloë* larvæ were recorded on a specimen of *Cetonia aurata* by "Jonicus."

Meloë violaceus, Marsh. Richmond, common (Beare and Donisthorpe); Boar's Hill, Oxford (Holland); Suffolk, Eye district (Tyrer); Bentley Woods (Morley); Norfolk, Reepham (Thouless); Louth district, Lincs (Wallace-Kew); Blanchland Moors, Durham (Bagnall); Ireland, rare, Carlow and Kerry; Scotland, Loch Garimha (W. Evans). Mr. Donisthorpe found that this species was distasteful to all the insectivora he offered it to at the Zoological Gardens (Ent. Rec., 1904, p. 150).

Meloë rugosus, Marsh. Streatley (Joy).

Meloë brevicollis, Panz. Sandown, I. of W. (Goldthwait); Miller's Dale (Kidson-Taylor).

Sitaris muralis, Forst. Chobham (Robertson); not uncommon on old walls near Oxford (Hamm); in nest of *Bombus terrestris* near Gloucester (Gates).

Lytta vesicatoria, L. Wareham, Dorset (Boreham), Wimborne (Dr. Knott), Bloxworth and Morden Park (O. Pickard Cambridge); Dover (Stockwell); Shirley Warren, Southampton (Gorham); Isle of Wight, Sandown (J. Taylor), Whitwell (Bryant); retaken in the old locality near the Gog Magog Hills, Cambridgeshire, 1901 (Donisthorpe); Newmarket, in abundance (Collin and others). The old records mention that in the summer of 1836 it occurred in the utmost profusion at Colchester and other parts of Essex, Ipswich and other parts of Suffolk, and in the Isle of Wight; also taken in vast numbers by Dr. Hairley near Southampton in 1838. Ireland, a single specimen taken by Hon. R. E. Dillon on mountain ash in 1897 at Cloonca Wood, Roscommon. Lichenstein worked at the life-history of this beetle (see E. M. M. xii. p. 187, xiv. p. 118, xv. p. 116, and xvi. pp. 34 and 70).

RHYNCHOPHORA

ANTHRIBIDÆ

- Brachytarsus fasciatus*, Forst. Edmonton (Pool); Huntingfield (Chitty); Haven Street Woods, I. of W. (Morey).
Brachytarsus varius, F. Oxford district (Walker); Pamber Forest (Donisthorpe); Delamere Forest (W. E. Sharp); Sherwood (Kidson-Taylor).
Macrocephalus albinus, L. Oxted, under bark of fence (Donisthorpe); Chantenden (Cripps); Huntingfield, not rare in old hedges (Chitty).
Platyrhinus latirostris, F. Porlock (T. Wood).
Tropideres niveirostris, F. Huntingfield, in some numbers in old hedges (Chitty).
Tropideres sepicola, F. New Forest (West, 1905); a live specimen was sent to Mr. F. Bates by C. Guliver from the New Forest in 1899; Harewood Forest, Hants (Tomlin).
Choragus sheppardi, Kirby. Mickleham (Rye); Winchelsea (Donisthorpe); Ditchling (Dollman); Tubney (Collins); Ireland, Dublin.

RHINOMACERIDÆ

- Rhinomacer attelaboides*, F. Woking (Champion); Newbury (Harwood); Ipswich (Morley); Sherwood Forest (Kidson-Taylor); Delamere Forest (R. Newstead); Tubney, near Oxford (Walker).

CURCULIONIDÆ

- Apoderus coryli*, L. Chiddingfold, and Ryde, I. of W. (Donisthorpe); Bordwood Copse, I. of W. (Taylor); Bagley Wood (Holland); Suffolk; Norfolk; Leighton Buzzard (Crawshay); South Brent, Devonshire (de la Garde).
Attelabus curculionoides, L. Attacks chestnut and hornbeam as well as oak (Bloomfield and Sharp). I have seen it rolling the leaves of Spanish chestnut.
Byctiscus betuleti, F. Isle of Wight, Ryde (Guyon), Bordwood Copse (Poole); Chiddingfold (Donisthorpe); Bagley Wood (Holland); Bentley Woods, Suffolk (Morley); Foxley Wood, Norfolk (Edwards).
Byctiscus populi, L. Sidcup, in numbers, some specimens with the upper side blue (O. E. Janson); Bexley (Donisthorpe); Suffolk, Coddendam, in numbers (Fox), Bentley Woods and Barham (Morley); Norfolk, Foxley Wood (Edwards).
Rhynchites cupreus, L. Bentley Woods, Suffolk (Elliot, Baylis, &c.); Tiverton, Devon (de la Garde).
Rhynchites æquatus, L. Brandon and Bradley, Lincolnshire (Miss Stow and Dr. Wallace); Winlaton Mill, Durham (Bagnall).
Rhynchites œneovirens, Marsh. Ireland, rare, Louth and Dublin (these specimens cannot be traced), Rossbeigh, co. Kerry (Donisthorpe).

- Rhynchites minutus*, Herbst. Ireland, widely distributed.
- Rhynchites interpunctatus*, Steph. Bradfield (Joy); Oxford district (Walker); Buddon Wood, Leicestershire, on young hawthorn, in some numbers (Bouskell); Knowle (Ellis); Suffolk (Morley); Sherwood Forest (Donisthorpe); Ireland, Dublin.
- Rhynchites pauxillus*, Germ. Felixstowe (Morley).
- Rhynchites nanus*, Payk. Is not recorded in the Irish List. Scotland, Berwickshire and Raehills (Murray); Paisley (Eden); Bishopton (Dalglish).
- Rhynchites uncinatus*, Thoms. Oxford district (Walker); Sudbury (Morley); Birkdale, on *Salix repens* (Chaster and Sopp).
- Rhynchites ophthalmicus*, Steph. Ipswich (Baylis).
- Rhynchites pubescens*, F. Buddon Wood and Market Bosworth (Bates and Bouskell).
- Apion pomonæ*, F. Taken in copula with *Polydrusus undatus* near Lewes (Jenner).
- Apion cracca*, L. Ireland, rare, Westmeath, Wicklow, and Kerry. Not recorded from Dublin in the Irish List.
- Apion cerdo*, Thoms. Cumberland; Ireland, widely distributed.
- Apion subulatum*, Kirby. Cumberland; Ireland, widely distributed.
- Apion genistæ*, Kirby. Ditchling (Dollman); Newbury (Harwood); Winlaton Mill, Durham (Bagnall).
- Apion fuscirostre*, F. Woking (Champion); Wellington College (Tomlin); Bexley (Donisthorpe); abundant on *Cytiscus* near Brandon (Morley).
- Apion malvæ*, F. Suffolk, Dodnash Wood and Stoke-by-Nayland (Morley).
- Apion urticarium*, Herbst. Alfriston, Sussex (Dollman); Suffolk and Norfolk, common; Newbury (Harwood); Gumley (Matthews).
- Apion miniatum*, Germ. Ireland, common in the south-east.
- Apion cruentatum*, Walton. Oxford (Walker); Newbury (Harwood); Chesham (Elliman); Parley Heath and Welshpool (Donisthorpe); Brandon and Ipswich (Morley); Aylestone, Leicester (F. Bates); Lundy Island (Joy); Ireland, rather widely distributed.
- Apion rubens*, Steph. Tubney, near Oxford (Walker); Sandown, I. of W. (Donisthorpe); Suffolk; Norfolk; Cadney, Lincs (Thornley); Ireland, Dublin and Cork.
- Apion sanguineum*, De G. Tubney, near Oxford, not rare (Walker); Brandon (Jennings); N. Cornwall (Butler); Braunton, Devon (de la Garde).
- Apion pallipes*, Kirby. Ditchling (Dollman); Berkshire; Cumberland; Ireland, Down. The Rev. T. Wood records a specimen from Birchington with a tooth on the right posterior femur.
- Apion semivittatum*, Gyll. Deal, in profusion on *Mercurialis annua* (Donisthorpe); St. Margaret's Bay, ditto (Beare).
- Apion rufirostre*, F. Ireland, Wexford (Halbert).
- Apion vicinæ*, Payk. Ireland, common.
- Apion difforme*, Germ. Ditchling (Dollman); Oxford district and Isle of Sheppey (Walker); Culver, I. of W. (Beare); Ipswich (Morley).

- Apion dissimile*, Germ. Culver, I. of W. (Beare); Suffolk (Morley); Tubney (Holland); usually a coast species.
- Apion varipes*, Germ. Ditchling (Dollman), off *Vicia cracca*; Tubney (Walker); Iwade and Lymington (Donisthorpe); Suffolk; Norfolk; sometimes on *Mercurialis perennis* (Morley).
- Apion lævicolle*, Kirby. N. Cornwall (Butler).
- Apion schonherri*, Boh. Ditchling (Dollman); near Oxford, abundant (Walker); Bovisand (Keys).
- Apion bohemani*, Thoms. Lundy Island (Joy); Yarmouth (Edwards); Kibworth, Leicestershire (Miss M. E. Whitton); Scotland, Dalskairth (Lennon); Ireland, common near Belfast. The joints of the antennæ in this species possess spine-like hairs.
- Apion trifolii*, L. Ireland, Queenstown, co. Cork (Walker).
- Apion confluens*, Kirby. Whitsand Bay (Keys); Gumley (Matthews); Southport (Chaster and Sopp); Silloth, Cumberland (Day). The Irish record is to be deleted.
- Apion stolidum*, Germ. Ditchling (Dollman); Marston, near Oxford (Walker); Beccles (Piffard); Ireland, Meath (Halbert).
- Apion sorbi*, F. Freshwater, I. of W. (Donisthorpe); Leicester district, beating hedges (H. W. Bates); Abbeydore, Herefordshire (Tomlin).
- Apion æneum*, F. Ireland, Down, Dublin, and Wexford.
- Apion radiolus*, Kirby. Ireland, Armagh, Louth, Meath, Dublin, and Wexford.
- Apion onopordi*, Kirby. Ireland, Dublin.
- Apion lævigatum*, Kirby. Tubney, near Oxford (Donisthorpe, Holland, and Walker); Braunton, Devonshire (de la Garde); Lowestoft (Bedwell).
- Apion annulipes*, Wenck. Huntingfield (Chitty); Chesham and Tring (Elliman); Shotover (Beare).
- Apion vicinum*, Kirby. Newbury (Harwood); Oxford district (Walker).
- Apion atomarium*, Kirby. Huntingfield (Chitty); Ditchling (Dollman); Newbury (Harwood); Tring (Elliman); Stanton St. John (Holland).
- Apion astragali*, Payk. Oxford district, abundant (Holland).
- Apion punctigerum*, Payk. Ditchling (Dollman).
- Apion ebeninum*, Kirby. Huntingfield (Chitty); Ditchling (Dollman); Hastings district (Bennett); Oxford district (Walker); Newbury (Harwood); Bucks (W. E. Sharp).
- Apion filirostre*, Kirby. On *Melilotus officinalis* (Morley); Ventnor, I. of W., sweeping lucerne (Donisthorpe); Christow, Devonshire (de la Garde); Oxford district (Walker); Bucks (W. E. Sharp); Bradfield (Joy); Ditchling, Sussex, common (Dollman). Its food plant appears to be *Medicago lupulinus*.
- Apion immune*, Kirby. Lundy Island (Joy and Tomlin); Berks; Norfolk; Suffolk; Cumberland; Ireland, Armagh and Wexford.
- Apion ononis*, Kirby. Not recorded from Ireland.
- Apion spencei*, Kirby. S. Wales (Chitty); Ditchling (Dollman); Woodhay, Hants (Donisthorpe); Yarnton, Oxford (Walker); Norfolk, common.
- Apion gyllenhali*, Kirby. Ditchling, Sussex (Dollman); Yelverton (Keys); near Liverpool (Tomlin); one of the commonest species in Ireland.

- Apion unicolor*, Kirby. Chale, I. of W. (Donisthorpe); Oxford district (Walker).
- Apion meliloti*, Kirby. Chatham and Oxford (Walker); Southall and Gravesend (Donisthorpe); Ditchling (Dollman); Barton-on-Humber, Lincs (Wallace).
- Apion scutellare*, Kirby. Backways Cove, N. Cornwall (Butler); Lundy Island (Wollaston); Ditchling (Dollman); Newbury (Harwood); Norfolk; Ireland, Mayo, Wicklow, Wexford, Cork, and Kerry.
- Apion livescerum*, Gyll. Huntingfield (Chitty); Chesham (Elliman); Newbury (Harwood); Oxford district (Walker).
- Apion waltoni*, Steph. Huntingfield (Chitty); Tring (Elliman).
- Apion seniculum*, Kirby. On *Amphyliis vulneraria* (Donisthorpe); Ireland, Louth, Dublin, Kilkenny, Wexford, and Waterford. The record Armagh is to be deleted.
- Apion tenue*, Kirby. Formerly near Southport (Chaster and Sopp); Cumberland (Britten). The Irish record is to be deleted.
- Apion simile*, Kirby. Wimbledon Common (Dollman); Ken Wood, Oxford (Holland); Chippenham Fen (Gorham); Suffolk (Morley); Scotland, Orchardton (Douglas).
- Apion pubescens*, Kirby. Ventnor, I. of W. (Beare); Tubney (Walker); Southport (Chaster and Sopp).
- Apion curtisi*, Walt. Gumley (Matthews).
- Apion limonii*, Kirby. Yarmouth, I. of W. (Donisthorpe).
- Apion sedi*, Germ. Beccles (Cruttwell); N. Cornwall (Butler).
- Apion marchicum*, Herbst. N. Cornwall (Butler); Lundy Island (Wollaston); Ditchling (Dollman); Oxford district (Walker); Ipswich and Brandon, Suffolk (Morley); Waxham, Norfolk (Champion); Ireland, widely distributed.
- Apion affine*, Kirby. Boar's Hill, Oxford (Walker); Lea Valley (Jennings); Ditchling Beacon (Dollman).
- Apion hydrolaphthi*, Kirby. Silloth, Cumberland (Day); Gibside, &c., Durham (Bagnall).
- Otiorhynchus morio*, v. *ebenus*, Schön. Sutherland (Kidson-Taylor).
- Otiorhynchus atroapterus*, De G. Bury district, Suffolk (Tuck), a very remarkable record for this coast species. Ireland, common all round the coast.
- Otiorhynchus blandus*, Gyll. Isle of Man (Bailey); Ireland, locally common on the north-west and south coasts.
- Otiorhynchus maurus*, Gyll. Isle of Man (Tomlin); Ireland, Derry, Down, and Mayo.
- Otiorhynchus sulcatus*, F. Is recorded as destructive to ferns, saxifrage, cyclamens, *Dracacæ*, and peach leaves (Butler, Fowler, and Wood).
- Otiorhynchus ligustici*, L. Bradgate Park, Leicestershire (H. W. Bates); Hartlepool (Gardner).
- Otiorhynchus rugifrons*, Gyll. Miller's Dale, Derbyshire (Kidson-Taylor); Ireland, common.
- Otiorhynchus oratus*, L. Bradgate Park, Leicestershire (F. Bates).

- Otiorhynchus muscorum*, Bris. Lundy Island (Joy and Tomlin); Hellesdon, Norfolk (Edwards); Cumberland; Ireland, Donegal, Antrim, Down, Dublin, Wicklow, and Wexford.
- Peritelus griseus*, Ol. One specimen taken on Purley Downs in 1888 (Donisthorpe).
- Trachyphlœus myrmecophilus*, Seidl. Rame's Head, Cornwall (Keys); Scilly (Joy).
- Trachyphlœus aristatus*, Gyll. Tubney (Walker); Gimmingham, Norfolk (Butler); Doncaster, Yorks (Corbett); Cumberland, widely distributed (Britten).
- Trachyphlœus squamulatus*, Ol. Bradgate Park (F. Bates).
- Trachyphlœus scaber*, L. Ireland, Dublin and Cork.
- Trachyphlœus scabriculus*, L. Ireland, Louth.
- Trachyphlœus laticollis*, Boh. Porlock (Blatch); Lundy Island (Tomlin and Joy).
- Trachyphlœus spinimanus*, Germ. Suffolk (Morley).
- Trachyphlœus alternans*, Gyll. Oxford district; Newbury (Harwood); Gumley (Matthews); Scotland, Kelton, Dumfries (Lennon).
- Cathormiocerus maritimus*, Rye. Bossiney, N. Cornwall (E. A. Butler); St. Merryn (Lamb). Rediscovered at Portsmouth in 1909 (Pool); Milford-on-Sea (Walker).
- Cathormiocerus socius*, Boh. Isle of Wight, Ventnor (Beare), Whitecliff Bay (Donisthorpe). More abundant in October.
- Cænopsis fissirostris*, Walt. Newchurch, I. of W. (Guyon); Newbery (Bedwell); Bradgate Park, Leicestershire (H. W. Bates); Mousehold Heath, Norfolk (Edwards); Ireland, Kenmare, co. Kerry (Halbert).
- Cænopsis waltoni*, Schön. Sandown, I. of W. (Champion); Scilly and Lundy Island (Joy); Bentley and Herringfleet, Suffolk (Morley); Mousehold Heath, Norfolk (Edwards); Scotland, Kelton, Dumfries (Lennon); Ireland, Armagh, Wicklow, Waterford, Cork, and Kerry.
- Strophosomus capitatus*, De G. Ireland, Wexford and Waterford.
- Strophosomus fulvicornis*, Walton. New Forest (Dr. Sharp).
- Strophosomus retusus*, Marsh. Bradgate Park and Kibworth (Bates and Miss M. E. Whitton); Ireland, Down, Louth, Wexford, Cork, and Kerry.
- Strophosomus faber*, Herbst. Blackgang and Chale, I. of W. (Donisthorpe); Suffolk (Morley); Mousehold Heath, Norfolk (Edwards); Cumberland.
- Strophosomus lateralis*, Payk. Not recorded from Ireland.
- Exomias araneiformis*, Schrank. Scotland, Edinburgh (Beare), Peebles (Black), Paisley (Young), Ayr, Clyde, Barr (Fergusson), Dumcarrow Craig (Johnston); Ireland, common.
- Exomias pellucidus*, Boh. Sydenham (Donisthorpe); Bush Hill Park (Jennings).
- Omiias mollinus*, Boh. Tewkesbury (Beare and Donisthorpe).
- Brachysomus echinatus*, Bonsd. Ireland, widely distributed.

- Brachysomus hirtus*, Boh. Westerham, Kent (W. E. Sharp); Chesham (Elliman); Gumley (Matthews).
- Tropiphorus carinatus*, Müll. Gumley (Matthews).
- Tropiphorus tomentosus*, Marsh. Suffolk, Stoke-by-Nayland (Elliot); Ireland, Antrim and Meath.
- Tropiphorus obtusus*, Bonsd. Derbyshire (Kidson-Taylor); Cumberland (Britten); Scotland, Rannoch (Beare and Donisthorpe); Ireland, Derry, Armagh, Carlow, and Kilkenny, White Park Bay, co. Antrim (Tomlin).
- Barypeithes sulcifrons*, Boh. Sparham district, Norfolk (Norgate); Ireland, rather common.
- Metalites marginatus*, Steph. Rotherfield, in numbers (Fowler); Gumley (Matthews).
- Polydrusus micans*, F. Wood Eaton (Collins); Purley Downs (Donisthorpe); Suffolk; Norfolk; Miller's Dale, Derbyshire (Kidson-Taylor); Ireland, Derry, Antrim, Down, Dublin, Carlow, and Wexford.
- Polydrusus sericeus*, Schall. Harewood Forest (Joy). All the specimens in the collection of the late Mr. F. Bates are labelled "Lymington Salterns."
- Polydrusus tereticollis*, De G. Ireland, common.
- Polydrusus flavipes*, De G. Burnham Beeches (Bedwell); Whitefield Woods and St. Helens, I. of W. (Donisthorpe); Tilgate Forest (Dollman); Bagley Wood (Walker); Wood Eaton (Collins); Belton, Suffolk (Paget); Norfolk, rare (Edwards). The Irish record refers to *P. pterygonalis*.
- Polydrusus planifrons*, Gyll. The Liverpool record by Dr. Ellis was in error.
- Polydrusus chrysomela*, Ol. Isle of Sheppey (Walker); Lundy Island (Wollaston); Norfolk, Wells and Brancaster (Edwards); Humberston, Lines (Wallace); Cumberland (Day); Ireland, Dublin (Halbert).
- Polydrusus confluens*, Steph. Sandown, I. of W. (Butler); Mitcham Common (W. E. Sharp); South Brent, Devonshire (de la Garde); Whitsand Bay, Cornwall (Donisthorpe).
- Phyllobius calcaratus*, F. Chiefly on hazels. Taken *in copula* with *P. alneti* in the Gelt Woods, Cumberland (Donisthorpe). Dr. Cameron records taking *P. pyri*, L., *in cop.* with *P. pomonæ*, Ol., at Claeton.
- Phyllobius maculicornis*, Germ. Not recorded from Ireland.
- Phyllobius pomonæ*, v. *cinereipennis*, Gyll. Tubney (Walker); Blackgang, I. of W. (Donisthorpe); Dawlish, Devonshire (de la Garde); Suffolk, Welberswick (Morley), Oulton Broad (Bedwell).
- Phyllobius viridicollis*, F. Streatley, Berks (Joy); Brandon (Edwards).
- Tanymecus palliatus*, F. Chiddingfold and Pamber Forest (Donisthorpe); Wherstead, Suffolk (Morley), on *Petasites officinalis*; Oxford district, on *Centaurea scabiosa* (Walker).
- Philopeton geminatus*, F. Ireland, common. A large white form occurs on the coasts of Donegal and Antrim. Inland records: Wellington College (Joy); Sherwood Forest (Bedwell).

- Atactogenus exaratus*, Marsh. Shotover (Holland); Suffolk, rare; Norfolk, Mousehold Heath (Edwards); Brigg district, Lines (Thornley); Ireland, Wicklow. The Armagh record refers to the above species.
- Barynotus obscurus*, F. Occurs on thistles.
- Barynotus schönherri*, Zett. Tavy Valley, Devonshire (Keys); Ireland, frequent and widely distributed.
- Barynotus elevatus*, Marsh. Chiddingfold and Farnham, sweeping *Mercurialis perennis* (Donisthorpe); Oxford district (Walker); Cumberland, sweeping *Mercurialis* (Routledge); recorded as destructive to lilies-of-the-valley (Bird); Ireland, not common; Balrath, co. Meath (Donisthorpe).
- Sitones griseus*, F. Tubney, near Oxford (Holland); Ireland, widely distributed.
- Sitones cambricus*, Steph. Chattenden and Bagley Wood (Walker); Lundy Island (Joy and Tomlin).
- Sitones cambricus*, v. *cinerascens*, Fahr. Ireland, widely distributed.
- Sitones waterhousei*, Walt. Gumley (Matthews); Ireland, Wexford.
- Sitones crinitus*, Herbst. The Irish records require confirmation.
- Sitones lineellus*, Gyll. Solway sandhills, Cumberland, at roots of *Lotus corniculatus* (Day); Ireland, locally common; sweeping *Lathyrus pratensis* near Dublin (Donisthorpe); Lundy Island (Joy and Tomlin).
- Sitones humeralis*, Steph. Crossens, Southport List (Chaster and Sopp); Cumberland (Day).
- Sitones meliloti*, Walt. Southall (W. E. Sharp); Yarmouth, I. of W. (Donisthorpe); Cumnor, Oxford (Walker); Gumley (Matthews); Southport district (Chaster and Sopp); Ditchling (Dollman).
- Sitones suturalis*, Steph. Southport; Cumberland; Ireland, Donegal, Armagh, Wexford, and Cork.
- Sitones ononidis*, Sharp. Ditchling, not uncommon, but very local, on *Ononis* (Dollman); Malvern (Tomlin); Suffolk, Stoke-by-Nayland (Cottam); Ireland, Donegal, Derry, Westmeath, Wexford, and Waterford.
- Gronops lunatus*, L. Tubney, near Oxford (Walker); Bagley Wood (Holland); Southport (Chaster and Sopp).
- Limobius dissimilis*, Herbst. Streatley, Berks (Joy); Wantage (Harwood); Prestatyn, Flintshire (W. E. Sharp); Christow, Devon (de la Garde). Also occurs on *Geranium robertianum*.
- Limobius mixtus*, Boh. Donisthorpe records specimens with white scales taken on and among white pebbles on the Chesil Beach, whereas specimens taken on sand at Deal have yellow scales.
- Hypera fasciculata*, Herbst. Felixstowe (Morley); Rhyl sandhills, N. Wales (W. E. Sharp); Ireland, Donegal.
- Hypera rumicis*, L. Ireland, common.
- Hypera pollux*, F. Suffolk, Backways Cove, N. Cornwall (Butler); Scotland, Orchardton (Douglas); Ireland, Galway. The record Armagh refers to *H. rumicis*.

- Hypera alternans*, Steph. Sandown, I. of W. (Beare); Marston Ferry (Walker); Suffolk; Great Cotes, &c., Lines (Thornley); Scotland, Orchardton (Douglas). Taken *in copula* with *H. pollux* at Rye, near Hastings (Bennett), and in the Lee valley (Jennings).
- Hypera trigrina*, Boh. Deal (Syme); St. Margaret's Bay (Beare and Donisthorpe).
- Hypera elongata*, Payk. A specimen was taken by Professor T. Hudson Beare under a stone near Edinburgh in July 1899.
- Hypera suspiciosa*, Herbst. Cheshunt (Jennings); Oxford (Walker); Oulton Broad (Bedwell); Hellesdon, Norfolk (Edwards); Southport and Birkdale, specimens of an elongate and narrow form (Chaster and Sopp); not recorded from Ireland.
- Hypera variabilis*, Herbst. Ireland, common.
- Hypera murina*, F. Blackgang, I. of W. (Donisthorpe); Hastings district (Bennett); Bungay (Garneys); Ditchling (Dollman).
- Hypera meles*, F. Yarmouth and Foxley Wood, Norfolk (Edwards).
- Hypera trilineata*, Marsh. Ireland, frequent.
- Cleonus sulcirostris*, L. Oxford district, where a form occurs at Boar's Hill which is coloured like the sand there; Braunton, Devon (Champion); Ireland, co. Down.
- Cleonus nebulosus*, L. Woking and Chobham, not uncommon in sand-pits. Mr. Fleet found it in the crop of a stone curlew.
- Lixus paraplecticus*, L. Wicken Fen, abundant in 1897 and 1898, &c. (Bouskell and Donisthorpe); rediscovered by Mr. Bouskell some few years before. The insect passes its early stages in the stems of the water parsnip, *Sium latifolium*. Bungay (Garneys); Christchurch (Beck).
- Lixus algirus*, L. Rediscovered in the Fairlight district by Mr. Bennett, of Hastings, in 1892. He records finding the larvæ, pupæ, and perfect insects at the same time, and that the pupæ are armed with hooks and work their way up and down the inside of the thistle stems in which they occur, being very active. He has also found as many as three pupæ in one thistle stem.
- Larinus carlinæ*, Ol. Rye, Sussex, in profusion, 1902, and Llanbedr, N. Wales, 1906 (Donisthorpe); Weymouth (Forsyth).
- Lepyryus binotatus*, Payk. Wellington College (Bucknill).
- Liosoma oblongulum*, Boh. Chiddingfold (Donisthorpe); Ditchling (Dollman); Christow, Devon (de la Garde); Cusop Dingle, Herefordshire (Tomlin); Crowborough, Sussex (W. E. Sharp); Wytham Park (Walker); Ireland, widely distributed.
- Liosoma troglodytes*, Rye. Ireland, Clonbrock, co. Galway, one specimen (Hon. R. E. Dillon). According to Mons. Bedel, this species is a var. of *L. pyrenæum*, Bris.
- Liparus coronatus*, Goeze. Charing and Huntingfield (Chitty); Sandwich (E. A. Waterhouse); Lymington (Donisthorpe); Suffolk (Morley).

- Liparus germanus*, L. Addington Park, Kent, by sweeping *Umbelliferae* (Donisthorpe); Wrotham (Bedwell).
- Pissodes notatus*, F. Scilly (Joy); Barton-on-Sea (Selous); New Forest (Tait); Woking (Champion); Wellington, Berks (Bucknill); Ferndale, Dorset (Sopp); Parley Heath (Donisthorpe); Yaxham, Norfolk (Wollaston).
- Trachodes hispidus*, L. Cobham Park (Bennett); Rainham (Walker); Doddington (Chitty); rediscovered in Buddon Wood in plenty in 1904 by Mr. H. Holyoak, who first found it there forty years ago. The Rev. G. Crawshay has bred it in confinement from oak twigs taken at Leeds, near Maidstone.
- Orchestes scutellaris*, Gyll. Sandown, I. of W.; Ireland, Antrim and Derry.
- Orchestes scutellaris*, v. *semirufus*, Gyll. Leighton Buzzard, unaccompanied by the type (Crawshay); Oxford (Hope, 1820).
- Orchestes alni*, L. Ireland, Galway and Clare.
- Orchestes ilicis*, F. Bradley and Moortown, Lincs (Wallace); Eden Valley, Cumberland (Day); Ireland, Roscommon, Galway, Dublin, Clare, Waterford, and Cork.
- Orchestes ilicis*, v. *nigripes*, Fowler. Leighton Buzzard (Crawshay); Bentley Woods (Morley); Eden Valley, Cumberland (Day).
- Orchestes avellanæ*, Don. Bradley Wood, Lincs (Wallace); Eden Valley, Cumberland (Day); Scotland, Garve, Ross-shire, black-legged form (Joy).
- Orchestes pratensis*, Germ. Chippenham Fen (Donisthorpe); Coulsdon (Bedwell); Seaford, Sussex (Fowler).
- Orchestes iota*, F. Newbury (Harwood).
- Orchestes stigma*, Germ. Ireland, Kildare.
- Orchestes decoratus*, Germ. Tudenham Fen (Morley).
- Orchestes saliceti*, Payk. Kew (Doliman); Newbury (Harwood); Sudbury (Ransom); Barham (Kirby); Godstow, Oxford (Walker); Lincolnshire (Thornley and Wallace); Ireland, Donegal and Kilkenny.
- Orthochætes setiger*, Beek. Belton, Suffolk (Paget); Mousehold Heath and Yelverton, Norfolk (Edwards); Southport (Chaster); Cumberland (Day); Ireland, Armagh, Wicklow, and Waterford.
- Pseudostyphilus pilumnus*, Gyll. Southall, and near Gerrard's Cross (W. E. Sharp); Edmonton district (Jennings).
- Procas armillatus*, F. Dartford, Kent (Jennings); Darland Hill, Chatham (Walker); Edwinstowe (Bedwell).
- Grypidius equiseti*, F. Cheshunt (Jennings); Tubney (Holland); Addington Park, Kent, and Wigston, Leicestershire (Donisthorpe); Cumberland.
- Erirehinus scirpi*, F. Sandown, I. of W. (J. Taylor); Dagenham, Essex (Beare); Benacre Broad, Suffolk (Bedwell); Bog of Arthog, North Wales (Donisthorpe); Gibside, Durham (Bagnall); Ireland, Fermanagh, and Cavan. The Armagh record refers to *E. acridulus*.

- Eriirhinus bimaculatus*, F. Rainham (Donisthorpe); King's Weir, Oxford (Walker); Branton, Devon (de la Garde); Ireland, Wexford (Halbert).
- Eriirhinus aethiops*, F. Barrowdale, Cumberland (Britten); Scotland, Braemar, not uncommon (Donisthorpe); Ireland, Down, Fermanagh, Roscommon, and Galway.
- Thryogenes festucae*, Herbst. Oxford, Suffolk, Norfolk; Ireland, Antrim.
- Thryogenes nereis*, Payk. Scotland, Maxwelltown Loch (Lennon); Ireland, Donegal, Kilkenny, Wexford, Clare, Limerick, Waterford and Kerry.
- Thryogenes scirrhosus*, Gyll. This very distinct species has been taken in some numbers by Mr. Bennett, of Hastings, at Pevensy; Cothill, near Oxford (Walker); Daneway, Gloucestershire (Edwards).
- Dorytomus vorax*, F. Woking (Champion); Newbury (Harwood); Bagley Wood, Oxford; Suffolk; Norfolk; Oakham, and Tewkesbury (Donisthorpe).
- Dorytomus tremulae*, Payk. On white poplar, Guildford (Champion); Oxford district (Collins and Walker); Gumley (Matthews).
- Dorytomus hirtipennis*, Bedel. On sallow, King's Weir (Walker); on *Salix alba*, Thorpe, Norfolk (Edwards); Ireland, Donegal.
- Dorytomus validirostris*, Gyll. Woking (Champion). According to Mr. Morley, who has taken it in plenty at Ipswich and other places in Suffolk, it only occurs on *Populus tremula*, and not on *P. nigra*.
- Dorytomus affinis*, Payk. Gumley (Matthews).
- Dorytomus melanophthalmus*, Payk. Shortlands, Kent (Donisthorpe); Cumberland (Day); Winlaton Mill, Durham (Bagnall).
- Dorytomus melanophthalmus*, v. *agnathus*, Boh. Ferry Hinksey, Oxford (Walker); Winlaton Mill (Bagnall).
- Dorytomus pectoralis*, Gyll. Ireland, Donegal, Down, Galway, Wexford, and Kerry.
- Smicronyx cacus*, Boh. Chesil Beach (Walker).
- Smicronyx reichei*, Gyll. Chatham district (Walker).
- Smicronyx jungermanniae*, Reich. Halling Downs (Walker); Wash Common near Newbury, on the "Dodder" on Gorse (Harwood).
- Tanysphyrus lemnæ*, F. Lincolnshire (Thornley); Ireland, Antrim, Armagh, West Meath, and Wexford.
- Bagous abismatis*, Marsh. Ireland, widely distributed.
- Bagous petro*, Herbst. The only British specimens are one taken by Canon Fowler at Askham Bog and another by the Rev. W. C. Hey in the same locality; all the other records refer to *B. limosus*, Gyll.
- Bagous cylindrus*, Payk. Pevensy (Esam); Leighton Buzzard, in numbers (Ellis); Colchester (Harwood).
- Bagous nodulosus*, Gyll. Pevensy, in some numbers (Bennett); Gravesend (Nicholson).
- Bagous limosus*, Gyll. Newchurch, I. of W. (Ellis); Lundy Island (Joy and Tomlin); Bawdsey, Suffolk (Morley); Norfolk (Edwards); Birkdale (Chaster and Sopp); Carlisle (Day).
- Bagous lutulosus*, Gyll. The Irish record is to be deleted.

- Bagous claudicans*, Boh. Yarnnton (Collins); Cumberland; Ireland, Armagh.
- Bagous diglyptus*, Boh. Ipswich (Morley); Sutton Broad, Norfolk (Chitty and Donisthorpe).
- Bagous brevis*, Gyll. Sheerness (Beare); New Forest (Champion).
- Bagous lutosus*, Gyll. All the old records of this species refer to *B. glabrirostris*, Herbst., but Mr. Edwards has taken it on several occasions at Wretham Heath, Norfolk.
- Bagous glabrirostris*, Herbst. Hastings district (Bennett); Barnley Broad (Bedwell); Oulton Broad (Morley); Syston, Leicestershire (F. Bates); Isle of Man (Tomlin); Ireland, Armagh and Clare.
- Bagous nigritarsis*, Thoms. Lewes (Dollman); Luccombe, I. of W. (Champion); Ireland, Armagh.
- Anoplus roboris*, Suffr. Hastings district (Bennett); Snodland (Walker); Bentley Woods (Morley); Scotland, banks of Tromie (Bevins); Ireland, Derry and Kilkenny.
- Elleschus bipunctatus*, L. Battle (Donisthorpe); Oxford district (Walker); Norfolk, not common off broom (Edwards); Meavy Valley, Devon (Keys); Ireland, widely distributed. The Irish recorded specimens of *E. scanicus*, Payk, prove to be this species.
- Tychius quinquepunctatus*, L. Guestling, near Hastings (Bennett); Dawlish, Devonshire (de la Garde).
- Tychius squamulatus*, Gyll. Oxford district (Walker); Southport (Chaster).
- Tychius polylineatus*, Germ. Several specimens of this very rare species were taken at Ditchling, in Sussex, by Hereward Dollman, in 1909; Streatley, Berks (Walker).
- Tychius meliloti*, Steph. Southall (W. E. Sharp); Yarnnton (Collins); Streatley (Fowler and Tomlin); Barton-on-Humber, Lincs (Wallace).
- Tychius lineatulus*, Steph. Ditchling (Dollman); Lundy Island (Joy); Cothill (Collins).
- Tychius junceus*, Reich. Sandown, I. of W. (Donisthorpe); Bucks (W. E. Sharp); Claydon, Suffolk (Morley).
- Tychius tomentosus*, Herbst. Sandown, I. of W. (Donisthorpe); Christow, Devon (de la Garde); Lundy Island (Wollaston); Ireland, Kerry.
- Tychius tibialis*, Boh. Sandown, I. of W. (Donisthorpe); Dawlish, Devonshire (de la Garde); Oxford district (Walker); Yarmouth, Norfolk (Edwards).
- Tychius pygmaeus*, Bris. Sandown, I. of W. (Donisthorpe); Dawlish, Devonshire (de la Garde).
- Miccotrogus picirostris*, F. Southport, not uncommon (Chaster and Sopp); Cumberland (Day).
- Sibinia potentilla*, Germ. Sweeping, *Polygonum*, near Parley Heath (Donisthorpe); Suffolk (Morley).
- Sibinia primita*, Herbst. Chiddingfold, abundant in garden on "Golden Rod" (Donisthorpe); Culver Cliffs, I. of W. (Beare); Dawlish (de la Garde); Lundy Island (Wollaston); Oxford district (Walker); Kessingland, Suffolk (Bedwell).

- Sibinia sodalis*, Germ. Common on Thrift, Braunton and Dawlish, Devonshire (de la Garde and Keys).
- Miarus campanulæ*, L. Ireland, Galway, Clare, and Longford. *Miarus plantarum*, Germ. Near Abingdon (Walker and Fowler).
- Gymnetron villosulus*, Gyll. St. John's Pond, Cambridge, and Lewes, Sussex (Dollman); Newbury (Harwood); Marston, Oxford (Walker); Oulton Broad (Bedwell); Tostock (Tuck); in galls from *Veronica anagallis*, Brandon, Lincs (Miss Stow); Ireland, Armagh (Johnson).
- Gymnetron beccabungæ*, L. Lundy Island (Joy and Tomlin); Bungay (Garneys); Oxford district; Ireland, Armagh, Fermanagh, Westmeath, Clare, Limerick, Cork, and Kerry.
- Gymnetron melanarius*, Germ. Coulsdon (Bedwell); Tubney (Walker); Wychwood Forest (Donisthorpe); Braunton (de la Garde); Grimsby district (Wallace).
- Gymnetron rostellum*, Herbst. Teignmouth, Devonshire (de la Garde); Bentley Woods (Morley); Harford Bridges (Edwards); Ditchling (Dollman); Oxford district (Walker); Isle of Wight, Sandown (Morley), Ventnor (Guyon).
- Gymnetron pascuorum*, Gyll. Ireland, Kerry.
- Gymnetron labilis*, Herbst. Devonshire (de la Garde); Seaford (Fowler); Ireland, widely distributed.
- Gymnetron collinus*, Gyll. Brandon (Tomlin); Southport (Chaster).
- Gymnetron linariæ*, Panz. Brandon and Southport (Chaster); Cothill and Tubney (Walker).
- Mecinus circulatus*, Marsh. Andover (Harwood); Gumley (Matthews).
- Mecinus collaris*, Germ. Yarmouth, I. of W. (Donisthorpe); Ireland, near Wexford (Halbert).
- Anthonomus ulmi*, De G. Ireland, Armagh, Wexford, and Kerry.
- Anthonomus rosineæ*, De G. Tubney (Walker); New Forest and Lemington (Chitty); Tostock (Morley); Oakham, Rutland (Donisthorpe); Llandaff, S. Wales (Tomlin); Ravendale, Lincs (Wallace); Ireland, Antrim.
- Anthonomus conspersus*, Desb. Scotland, banks of Tromie (Bevins); Loch Awe (Chitty).
- Anthonomus pomorum*, L. Scotland, Orchardton and Almornes (Douglas).
- Anthonomus varians*, Payk. Gumley (Matthews).
- Anthonomus comari*, Crotch. Colwall, Herefordshire (Tomlin); Wicken and Sutton Broad (Donisthorpe); Fritton (Butler); Cumberland (Day); Lundy Island (Wollaston); Ireland, common and widely distributed.
- Nanophyes lythri*, F. N. Cornwall (Butler); Eskdale, Cumberland (Fowler).
- Nanophyes gracilis*, Redt. New Forest (Fowler), in some numbers on *Polygonum* (Donisthorpe); Woking (Champion). Mr. Champion says the food-plant is *Peplis portula*.
- Brachonyx pineti*, Payk. Middenhall, Suffolk (Perkins).

- Cionus scrophulariæ*, L. N. Cornwall (Butler); S. Devon (Fowler); Ireland, Down and Kerry.
- Cionus tuberculosus*, Scop. Kingston-on-Thames (Donisthorpe); Newbury (Harwood); Scotland, Löch Fochan, Argyllshire (Bowhill).
- Cionus thapsus*, F. On *Verbascum nigrum*, Streatley, Berks, in abundance (Harwood); Framingham Pigot, Norfolk (Edwards).
- Cionus hortulanus*, Marsh. Ireland, widely distributed.
- Cionus blattariæ*, F. There is an example of this species in Mr. Haliday's collection, marked as having been taken in Ireland.
- Cionus pulchellus*, Herbst. Lundy Island (Joy and Tomlin); Suffolk, Norfolk; Ireland, Kerry.
- Cryptorhynchus lapathi*, L. Weymouth (Forsyth); St. Issey, Cornwall (E. Davies); Gosport (Donisthorpe); Oxford district (Walker); Suffolk, Barrow-on-Soar, Leicestershire (Bouskell); Lincolnshire; Ireland, Armagh and Wexford.
- Acalles roboris*, Curt. Ireland, Kerry.
- Acalles ptinoides*, Marsh. Cumberland; Ireland, Donegal, Louth, Dublin, Wicklow, Wexford, and Cork.
- Acalles turbatus*, Boh. Enslow Bridge, Oxford (Collins); Lowestoft; Torksey, Lincs (Pegler); Ireland, Donegal, Antrim, and Dublin; not recorded from Louth in the Irish list.
- Mononychus pseudacori*, F. Only occurs in the seed-pods of *Iris fetidissimus*, not *I. pseudacorus*: Newton Abbot, S. Devon (Holdaway); Niton, I. of W., in profusion, October 1906 (Donisthorpe). There are Irish specimens in the Haliday collection. Pinney Cliff, Lyme Regis, Dorset, in numbers in July on pods of *Iris fetidissimus*, 1835 (Dale and Morris).
- Coeliodes rubicundus*, Herbst. Ireland, Donegal, Derry, Armagh, Roscommon, Galway, and King's County.
- Coeliodes cardui*, Herbst. Ireland, Down and Galway.
- Coeliodes geranii*, Payk. Oxford (Holland); Gelt Woods, Cumberland (Routledge).
- Coeliodes exiguus*, Ol. Luccombe, I. of W. (Butler); Tubney, near Oxford (Walker). The Northumberland and Durham records refer to the preceding species.
- Poophagus nasturtii*, Germ. Moretonhampstead, Devon (de la Garde); Baldock (Wood); Cothill, near Abingdon (Walker); Cumberland (Britten).
- Ceuthorhynchus setosus*, Boh. Ditchling, Sussex (Donisthorpe); Cothill, Oxford (Walker); Scotland, Orchardton (Douglas). Recorded as feeding on *Sisymbrium thalianum* by Walker and Britten.
- Ceuthorhynchus constrictus*, Marsh. Wood Eaton, Oxford (Walker); Aylestone, Leicester (H. W. Bates); Ireland, Waterford.
- Ceuthorhynchus cochleariæ*, Gyll. Ireland, Armagh, Wexford, and Kerry. Mr. P. de la Garde took a specimen at Totnes, Devonshire, with six joints to the funiculus of the antennæ (instead of seven).

- Ceuthorhynchus hirtulus*, Germ. Oxford district (Walker and Holland); Bentley Woods and Bramford, Suffolk (Morley); Slapton, Devonshire (Champion); Ireland, Donegal.
- Ceuthorhynchus pilosellus*, Gyll. Oxford district (Walker); Streatley, Berks, and Gwithian, Cornwall (Tomlin).
- Ceuthorhynchus quadridens*, Panz. Ireland, widely distributed.
- Ceuthorhynchus viduatus*, Gyll. Brading, I. of W. (Mitford); Upton-on-Severn (Tomlin); on *Stachys pallustris*, Oxford district (Walker); Horning, Norfolk (Elliman); Eskdale, Cumberland (Fowler); Scotland, Coatbridge (G. Brown); Ireland, Derry and Armagh.
- Ceuthorhynchus angulosus*, Boh. King's Lynn (Atmore); on *Plantago lanceolata*, Patrieroft (Hardy); Ireland, Derry, Antrim, Down, and Waterford.
- Ceuthorhynchus picitarsis*, Gyll. Chatham (Walker); Gumley (Matthews).
- Ceuthorhynchus alliarie*, Bris. Summertown, Oxford (Walker); Pamber Forest (Donisthorpe); Bentley Woods, Suffolk (Morley); Norfolk, scarce (Edwards); Theddlethorpe, Lincs (Thornley); British Camp, Herefordshire (Tomlin).
- Ceuthorhynchus verrucatus*, Gyll. At roots of Horned Poppy, Pevensy and Pett (Bennett).
- Ceuthorhynchus resedæ*, Marsh. Elsfeld, Oxford (Walker); Newbury (Harwood); Wychwood Forest (Donisthorpe).
- Ceuthorhynchus punctiger*, Gyll. Coulsdon (Bedwell); Cothill and Snodland (Walker); South Brent, Devon (Keys); Southport (Chaster); Ireland, Armagh, Galway, and Dublin.
- Ceuthorhynchus marginatus*, Payk. Oxford district (Walker); Newbury (Harwood); South Brent, Devonshire (de la Garde); Oulton Broad (Bedwell); Ireland, Dublin.
- Ceuthorhynchus urticæ*, Boh. By sweeping *Stachys* (Woundwort) in damp thickets at Snodland (Walker); Gumley (Matthews).
- Ceuthorhynchus rugulosus*, Herbst. Bovisand (Keys); Ireland, Donegal, Derry, Antrim, Down, Wexford, Clare, and Waterford.
- Ceuthorhynchus melanostictus*, Marsh. Sandown, I. of W. (Beare); Oxford district; Suffolk; Wicken Fen, and Addington Park, Kent (Donisthorpe); Dawlish, Devonshire (de la Garde).
- Ceuthorhynchus asperifoliarum*, Gyll. Brandon (Morley); Tuddenham Fen (Donisthorpe); Oxford district (Walker); Doncaster (Corbett).
- Ceuthorhynchus arcuatus*, Herbst. Ireland, Lough Neagh (Halbert).
- Ceuthorhynchus euphorbiæ*, Bris. Cobham Park (Walker); Sevenoaks (Donisthorpe); Tubney (Holland); Newbury (Harwood); Dawlish (de la Garde); Eskdale, Cumberland (Fowler).
- Ceuthorhynchus chrysanthemi*, Germ. Huntingfield (Chitty); Ringstead, Dorset, and Pamber Forest (Donisthorpe); Baughurst (Joy); Oxford (Walker); Suffolk (Morley); Newton Cliff (Thornley).
- Ceuthorhynchus triangulum*, Boh. Sandown, I. of W. (Donisthorpe); Mousehold Heath, Norfolk (Edwards); Ditchling, Sussex (Dollman); Dawlish and Braunton, Devon (de la Garde).

- Ceuthorhynchus trimaculatus*, F. Freshwater, I. of W. (Champion); Huntingfield (Chitty); Sevenoaks (Donisthorpe); Ditchling (Dollman); Tubney (Holland); Suffolk, rare, Lowestoft (Saunders), Ipswich (Morley); Norfolk, not common (Edwards). It is not recorded from Ireland in the Irish list.
- Ceuthorhynchidius nigrinus*, Marsh. Bentley Woods, Suffolk (Morley); Cumberland (Britten).
- Ceuthorhynchidius melanarius*, Steph. Snodland and Oxford district (Walker); Chiddingfold (Donisthorpe); Newbury (Harwood); Suffolk, Ipswich (Morley), Oulton Broad (Bedwell), &c.
- Ceuthorhynchidius posthumus*, Germ. Suffolk (Morley); Cumberland (Day).
- Ceuthorhynchidius terminatus*, Herbst. Cothill (Walker); Newbury (Harwood); Teignmouth (de la Garde); Ireland, Waterford.
- Ceuthorhynchidius horridus*, Bris. Huntingfield (Chitty); Blackgang, I. of W. (Donisthorpe); Bucks (W. E. Sharp); Tubney, near Oxford (Walker); Gumley (Matthews); Stow-on-the-Wold, Glos. (L. R. Crawshay); Lowestoft (Bedwell).
- Ceuthorhynchidius quercicola*, Payk. Water Eaton (Collins); St. Margaret's Bay (Beare); Doncaster (Corbett); Cumberland (Day); Scotland, Peebles district (Black).
- Ceuthorhynchidius mixtus*, Muls. Woking (Champion); Tubney (Walker); Royston (Butler); Porloek (Bennett); Newton Abbot (Wollaston); Wherstead, Suffolk (Morley); Bovey Tracy (de la Garde); Ireland, Laytown, co. Meath (Halbert).
- Ceuthorhynchidius chevrolati*, Bris. Hastings district (Bennett); Lydd (Donisthorpe); Wantage (Harwood); Ditchling (Dollman).
- Ceuthorhynchidius dawsoni*, Bris. Chatham (Walker); Lundy Island (Wollaston); Suffolk (Morley); Southport (Chaster and Sopp); Isle of Man (Bailey); Ireland, Dublin, Wexford, Waterford, and Kerry.
- Rhytidosomes globulus*, Herbst. It occurs on aspens, not willows; Blean Woods, Kent (Walker); Haye Woods, Warwickshire (Ellis); Darent Wood (Donisthorpe); near Oxford (Walker), on *Populus canescens*; Glemsford, Suffolk (Tomlin).
- Amalus hæmorrhous*, Herbst. Culver Cliffs, I. of W. (Beare); Oxford district, Southport (Chaster and Sopp). The Armagh record is to be deleted.
- Rhinoncus gramineus*, F. Marston, Oxford (Walker); Oulton Broad (Bedwell); Southwold (Morley); Southport, common (Chaster and Sopp).
- Rhinoncus perpendicularis*, Reich. Scotland, Orchardton (Douglas); Ireland, common.
- Rhinoncus castor*, F. Ireland, Derry, Louth, Kildare, and Wexford.
- Rhinoncus bruchoides*, Herbst. River Yar, I. of W. (Beare); Bucks (W. E. Sharp); Wicken Fen (Donisthorpe).
- Eubrychius velatus*, Beek. Devonshire (Keys); Oxford; Suffolk; Cumberland; Ireland, widely distributed.

- Litodactylus leucogaster*, Marsh. Richmond Park (Donisthorpe); Yarnton, Oxford (Walker); Oulton Broad (Bedwell); Lincolnshire; Cumberland; Ireland, Armagh and King's County.
- Phytobius comari*, Herbst. Oxford; Cumberland; Ireland, widely distributed.
- Phytobius waltoni*, Boh. New Forest, abundant on *Polygonum* (Donisthorpe).
- Phytobius canaliculatus*, Fähr. Leicestershire, Thornton (F. Bates); Gumley (Matthews); Ireland, Donegal, Armagh, Cork, and Kerry.
- Phytobius quadrinodosus*, Gyll (*denticollis*, Gyll). Battle (Bennett); Parkhurst Forest, I. of W. (Donisthorpe); Cothill (Walker).
- Phytobius muricatus*, Bris. Sutton Broad, Norfolk (Donisthorpe); Cumberland, abundant in a swamp (Britten).
- Baris laticollis*, Marsh. Gumley (Matthews).
- Baris picicornis*, Marsh. Ayleston, Leicester (H. W. Bates); Peppard, Oxon (Fowler).
- Baris lepidii*, Germ. St. Helens, I. of W. (Holland); Hastings district (Bennett); Yarnton, Oxford (Walker); Swanton Morley, Norfolk (Edwards); Gumley (Matthews); Torksey (Pegler).
- Balaninus nucum*, L. Ireland, Galway (R. E. Dillon).
- Balaninus turbatus*, Gyll. Bagley Wood (Hope); Pamber Forest (Donisthorpe); Bentley Woods, Suffolk (Morley); Dunston, Norfolk (Thouless); Leighton Buzzard (Crawshay).
- Balaninus betulae*, Steph. Bexley (E. A. Waterhouse); Bradfield (Joy); Sherwood Forest, on oak (Kidson-Taylor); Eaton, Norfolk (Edwards); Leighton Buzzard (Crawshay); Ireland, Caragh Lake, co. Kerry (Col. Yerbury).
- Balaninus rubidus*, Gyll. Bexley and Wellington College (Donisthorpe); Suffolk (Morley); Leighton Buzzard (Crawshay).
- Balaninus villosus*, F. Holy Loch (Somerville).
- Balaninus pyrrhoceras*, Marsh. Delamere Forest (Dutton); Southport (Chaster and Sopp); Cumberland, not uncommon (Britten); Scotland, Orchardton (Douglas); Ireland, Donegal, Derry, Armagh, Galway, Limerick, and Cork.
- Calandra oryzae*, L. Taken by Mr. E. J. Burgess Sopp in a pine-wood at Ferndale, Dorset, and in moss and leaves in a plantation at Snowdon.
- Pentarthrum huttoni*, Wollaston. Shoe Lane, London, in beer cellar (Rye); in cellars, Huntingfield (Chitty); Bradfield (Joy); Lundy Island (Joy and Tomlin); in living horse chestnut, Plymouth (Keys); in roots of Pampas Grass, near Exeter (Nicholson).
- Cossonus ferrugineus*, Clair. Oxford district (Holland); Bungay (Garneys); Bury St. Edmunds (Tuck); Tewkesbury, in numbers in old poplar (Beare and Donisthorpe).
- Rhopalomesites tardyi*, Curt. Hastings district in holly (Bennett); in elm and ash at Plymouth (Keys); Scotland, I. of Arran, under birch bark (Bagnall); Isle of Man, in ash and hawthorn (Bailey); sweeping under

- beech trees, Bardsea, Morecambe Bay, Lancashire (Armstrong); Ireland, widely distributed, in holly, beech, willow, poplar, alder, and mountain ash.
- Rhyncolus gracilis*, Rosen. Greenheys, Manchester (Chappell).
- Rhyncolus ater*, L. Tostock, Suffolk, on decayed tree in garden (Tuck); Hurst Wood, Guildford (Champion).
- Stereorynes truncorum*, Germ. Richmond Park, in poplar (Donisthorpe); Cobham Park (Bedwell); Tewkesbury, in poplar (Beare); Eye district, Suffolk (Tyrer).
- Caulotrypiss teneopiceus*, Boh. In granary, Holborn (Donisthorpe); Sandown, I. of W. (Champion); Ipswich (Sheppard); Scilly and Lundy Island (Joy); Ireland, Cork and Dublin, in old ash tree.
- Codiosoma spadix*, Herbst. I. of W., Sandown, in sea-breakers (Donisthorpe), Yarmouth (Butler), Ryde (Dollman); Lancing (Rye); Suffolk (Morley); Humberstone, Lincs (Bullock); Ireland, Dublin, in a piece of driftwood (Halbert).
- Magdalis phlegmatica*, Herbst. Near Carlisle (Day).
- Magdalis duplicata*, Germ. Nethy Bridge (Donisthorpe).
- Magdalis carbonaria*, L. Sherwood Forest (Kidson-Taylor).
- Magdalis armigera*, Fourc. Ireland, Dublin and Waterford.
- Magdalis pruni*, L. Cumberland (Britten); Ireland, Haliday collection.
- Magdalis cerasi*, L. Suffolk; Norfolk; Lynwode, Lincs (Peacock).
- Magdalis barbicornis*, Lat. Cheshunt and Enfield (Pool); Peppard, Oxon (Fowler); Chattendon and Sheppy (Walker); Huntingfield (Chitty); Leighton Buzzard (Crawshay); Cambridge (Jenkinson); Bradley Wood, near Grimsby (Wallace).

SCOLYTIDÆ

- Scolytus destructor*, Ol. Not recorded from Ireland.
- Scolytus pruni*, Ratz. Bedford Park (Dollman); Enfield (Pool); Ipswich (Morley); Oxford (Hamm).
- Scolytus intricatus*, Ratz. Chiddingfold (Donisthorpe); Ipswich (Morley); Marvel Copse, I. of W. (Morey); Bagley Wood (G. H. Grosvenor).
- Scolytus rugulosus*, Ratz. Reigate, in laurel (Chapman); Epping Forest and Lydd (Donisthorpe); Ipswich (Morley); Tubney (Collins).
- Scolytus multistriatus*, Marsh. Enfield (Pool); Sandown, I. of W. (Beare, Bouskell, and Donisthorpe); Barham and Tuddenham, Suffolk (Morley); Eaton, Norfolk (Thouless).
- Hylastes cunicularius*, Er. Wellington College (Tomlin); Bradfield (Joy); Gumley (Matthews); Ipswich (Morley); Bagley Wood (Grosvenor); Scotland, Innerleithen (Beare).
- Hylastes opacis*, Er. Suffolk; Norfolk; Christow, Devonshire (de la Garde); Ireland, Louth.

- Hylastes angustatus*, Herbst. Woking (Champion); Bournemouth, in some numbers in "break-waters" (Donisthorpe).
- Hylastes palliatus*, Gyll. Ireland, local, but widely distributed.
- Hylastinus obscurus*, Marsh. Fairlight, near Hastings, and New Forest (Donisthorpe); Sandown, I. of W. (Champion); Lundy Island (Joy and Tomlin); Summertown, Oxford (Walker); Charnwood Forest (F. Bates); Brandon, Lincs (Miss Stow); Backways Cove, North Cornwall (Butler); Cumberland (Day); Ireland, Donegal, Derry, Armagh, Dublin, Kildare, and Wexford.
- Hylesinus crenatus*, F. Enfield (Pool); Richmond Park and Chippenham Fen (Donisthorpe); Suffolk (Morley); Torksey (Thornley); Ireland, Toller Valley, Co. Dublin (Halbert), Tipperary (Forbes).
- Hylesinus oleiperda*, F. Chippenham Fen, and Rye, near Hastings, abundant (Donisthorpe), the insect bores into the end-shoots of the branches of ash; Oxford district (Walker); Bungay, Suffolk (Garneys); Delamere Forest (W. E. Sharp); Offchurch (Chitty); Little Cotes, Lincs (Wallace); Luccombe Common, I. of W., and Ditchling, Sussex (Dollman).
- Hylesinus vittatus*, F. Perivale Park (Dollman); Guildford (Champion); Hendon (Donisthorpe); Bury district (Tuck); Cumberland (Day); Ireland, Holiday collection.
- Myelophilus piniperda*, L. Dr. Chapman gives an account of the destructive habits of this beetle in the E. M. M. 1910, p. 260.
- Cissophagus hederæ*, Schmidt. Cobham Park and Elsfield (Walker); Fairlight, near Hastings (Bennett); Ditchling (Dollman); Sandown, I. of W. (Taylor); Leicester Frith (Wooley).
- Xylechinus pilosus*, Ratz. Is recorded from Leicestershire by the late Mr. F. Bates.
- Phlæophthorus rhododactylus*, Marsh. Hythe, and Sandown, I. of W. (Donisthorpe); Ditchling (Dollman); Cumnor, Oxford (Walker); Suffolk (Morley); Weeting, Norfolk (Edwards); North Thoresby, Lincs (Wallace); Ireland, Wicklow, Wexford, and Cork.
- Hypothenemus eruditus*, Westw. London, in old book (O. E. Janson).
- Cryphalus tilieæ*, Panz. Egglestone-in-Teesdale (Gardner); Newnham, Glos (Fowler).
- Cryphalus abietis*, Ratz. Guildford (Champion); New Forest (Walker); Royston (Butler); East Carlton, Norfolk (Edwards); Cockle Park, Northumberland (Forbes); near Edinburgh (Beare).
- Cryphalus fagi*, Nord. Guildford (Champion); Ranmore Woods, Mickleham, St. Leonard's Forest and Guestling (Bennett); Berkshire (Joy).
- Pityophthorus pubescens*, Marsh. Near Sandwich (E. A. Waterhouse); Woodhay and Parkhurst Forest, I. of W. (Donisthorpe); Tubney (Walker); Bentley Woods (Morley); Cromer (Elliman); Ireland, Galway, Wexford, Clare, and Cork.
- Xylocleptes bispinus*, Duft. Ditchling (Dollman); Ipswich (Walker); Coddenham (Fox); Oxford district (Walker); Scotland, Carnsalloch (Lennon).

- Dryocætes autographus*, Ratz. Gibside, and Westgate-in-Weardale, Durham (Bagnall); Scotland, near Edinburgh (Beare).
Dryocætes villosus, F. Cumberland (Day); Ireland, Derry (Buckle).
Dryocætes alni, Georg. Southport (Sopp); Gibside (Bagnall).
Dryocætes coryli, Perris. Coombe Wood (Donisthorpe); Chattenden (Walker); Cromer (Elliman).
Tomicus typographus, L. Scotland, Carnsalloch (Lennon).
Tomicus acuminatus, Gyll. Carlisle (Day); Sunderland, Durham (Bagnall); Beaulley Wood, Northumberland (Gillanders).
Tomicus laricis, F. Bournemouth (Donisthorpe); Boar's Hill (Holland); Gibside, Durham (Bagnall).
Pityogenes bidentatus, Herbst. Oxford district (Walker); Woodhay, Hants (Donisthorpe); Suffolk, Bungay (Garneys); Foxhall (Morley); Ireland, Armagh (Johnson).
Trypodendron domesticum, L. Bayworth, Oxon (Walker); Berkshire (Joy); Buddon Wood, Leicestershire (Bouskell); Cadney, Lincs (Peacock); Scotland, Hawthordene (Beare); Ireland, Donegal and Roscommon.
Trypodendron quercus, Eich. Porlock (Beare and Donisthorpe).
Trypodendron lineatum, Ol. Cumberland (Britten); Durham (Gillanders).
Xyleborus dispar, F. Chiddingfold (Donisthorpe); Battle (Bennett); Baughurst (Joy); Wisley, Surrey, in numbers (Chittenden).
Xyleborus dryographus, Ratz. Richmond Park and Chiddingfold (Donisthorpe); Tubney (Walker).
Xyleborus saxeseni, Ratz. Chiddingfold (Donisthorpe).
Platypus cylindrus, F. Chiddingfold, not uncommon (Donisthorpe).

ABNORMAL COLEOPTERA

- Stylops melittæ*, Payk. Wimbledon Common (Rye); Bury district (Tuck): Oxford (Hamm). A list of styloped bees and papers on the same will be found in the E. M. M. for 1892, pp. 1 and 40 (Perkins and Theobald).
Elenchus tenuicornis, Kirby. Mr. Edward Saunders bred a specimen which emerged from the larva of a Homopterous insect of the genus *Liburnia*, taken in Claygate Lane in 1892. Ireland, "Mr. Haliday took two females in sweeping some herbage near Belfast."
Halictophagus curtisii, Dale. Bury district, in *Halictus cylindricus*, 1894 (Tuck); Oxford district (Hamm).

(Owing to a mistake one or two sheets of the list of localities were worked off without the insertion of the names of the divisions or families: these will, however, be found in the index.)

THE MYRMECOPHILOUS COLEOPTERA OF GREAT BRITAIN*

THE coleopterous inhabitants of ants' nests may be roughly divided into three classes: (1) the true guests of the ants; (2) the "hostile persecuted lodgers," species which are antagonistic to, and are attacked by, the ants; and (3) the indifferently treated lodgers—those which are tolerated, or not noticed. There are also many species of beetles which have been recorded with ants, but are only chance visitors to the nests, being generally found under other circumstances.

(1) Of the first of these classes we possess four species, one *Claviger*, two species of *Atemeles*, and *Lomechusa strumosa*, although perhaps *Amphotis marginata* may be considered one, as it is fed by the ants with which it lives. I have bred it in my observation nest of *Lasius fuliginosus* and have seen it fed by its hosts. The true guests possess patches of yellow hairs on certain parts of the body, from whence the ants obtain a sweet secretion, and often have a broad, short tongue, and aborted palpi, which shows they are also fed by their hosts. It has been stated that if *Claviger* was removed from one nest to another it would be attacked and killed. This, however, I have shown to be erroneous, and all my experiments † tend to show that beetles which are only found in ants' nests are tolerated, or else are able to defend themselves for a time in any ants' nest. It was also believed that *Claviger*, which is blind, could not feed itself, but this is also incorrect, as, though it is fed by the ants, it has been proved to feed on the ants' larvæ, and on dead flies killed by the ants. I have observed that the *Clavigers* in my observation nests of *Lasius flavus* generally sat on, or among the larvæ of the ants, and that they ate the eggs, and larvæ, and dead ants, as well as insects given to the ants. They are also very fond of riding on the ants, especially on the queens. Professor Alfred Hetschko kept some alive a long time, away from ants, by feeding them on dead flies.

The life history of *Lomechusa strumosa* is of great interest.‡ It is both fed and licked by its hosts, *Formica sanguinea*. I have found, however, that it will also feed on honey and dead larvæ, given to the ants, and have even seen it bite live caterpillars. The copulation of this beetle, which is very extraordinary, has been recorded by me for the first time, I believe. The male faces the back of the female, and pushing his head under her body,

* By H. St J. K. Donisthorpe.

† Ent. Record, 1901, p. 349; 1903, p. 11; 1906, p. 288, &c.

‡ Trans. Ent. Soc. Lond., Pt. IV (Feb. 1908), pp. 415-420, with woodcuts.

he raises himself on the tips of the front legs, nearly standing on his head. He bends the body right over his back, to reach the end of the female's body, when she puts her body up to meet his. The posterior part of the male's body opens and clasps that of the female, and coition takes place. The female lays the eggs on the eggs, or very young larvæ, of the ants, and the young larva hatches almost at once. It is very like an ant larva in appearance and is fed by the ants. They also place it on their own brood, and Father Wasmann believes that the voracity of the larva produces pseudogynes among the ants. This has been admitted by Viehmeyer and Wheeler. Pseudogynes are worker ants, with some of the characters of the females, though they do little, if any, work, and are said not to bite like normal workers do. I have found pseudogynes in nests of *Formica sanguinea* in the New Forest, which, according to Wasmann's theory, proves that *Lomechusa* must occur there. He considers they are produced as follows: the numbers of worker larvæ devoured by *Lomechusa* causes a scarcity of workers in the nest. Now, as is well known, the ants produce females by feeding their larvæ on special food, and the pseudogynes are caused by the ants trying to turn larvæ they have started to rear as females, into workers, to make up for the lack of the latter. Pseudogynes only begin to appear when *Lomechusa* has been present for some years in a nest, and it is from these colonies that the beetle spreads to other nests. Pseudogynes do not occur in every nest where *Lomechusa* is found, but the beetle is said to be always present, even if it cannot be found where the former are. *Lomechusa* is kept in check at first by the ants digging up the pupa of the beetle and carrying it about, as they do their own pupæ, which causes the death of the beetle.

The species of the genus *Atemeles* are, like *Lomechusa*, true guests, being fed and licked by their hosts. When an *Atemeles* desires to be fed it not only asks an ant, by tapping with its antennæ, as does *Lomechusa*, but it further imitates the actions of its hosts by stroking the side of the head of the ant with its front foot. They are double hosted, that is to say their summer hosts are ants of the genus *Formica*, in the nests of which species their eggs are laid and their larvæ bred, so these ants may be called the larval hosts; their winter hosts are ants of the genus *Myrmica*, which may be called the beetle hosts. The beetles thus have to make a double migration, one in the early part of the year from *Myrmica* to *Formica* nests, and again in summer or autumn from *Formica* to *Myrmica*. Consequently one would expect to find *Atemeles* at large more often than other regular guests, and this is exactly what does happen. The pairing time is about May, and is the same as that of *Lomechusa*. Wasmann has demonstrated that the eggs are laid on the eggs of the ants, from which they are undistinguishable even with a lens. The young larvæ hatch very soon and devour the ants' grubs. I have seen the ants in one of my observation nests place the larva of *Atemeles emarginatus* on their own brood. Rupertsberger, in 1893, recorded that he gave a larva of *Atemeles* from a *Formica truncicola* nest, to specimens of *Formica pratensis*, and that they received it with joy and licked and caressed it. Another interesting point is that the beetles go into quarantine before they enter the other hosts' nest, after leaving the one. This covers

a period of several days, when they leave the *Myrmica* nest, as they remain hidden in and near the new *Formica* nest. When they go from *Formica* to *Myrmica* the period is much longer, as they are not found with the latter before the end of August, or beginning of September, though they have long before disappeared from the *Formica* nests. Having been bred in the latter nests, the nest aura is no doubt more pronounced in the beetles of the summer migration. They are also said to cause pseudogynes to be produced in the nests of their hosts. I have found pseudogynes in plenty in nests of *Formica rufa*, and *rufo-pratensis* at Nethy Bridge in Scotland. It is therefore certain that if the theory is correct we possess another species of *Atemeles*, most probably *A. pubicollis*, a continental species, whose hosts these ants are.

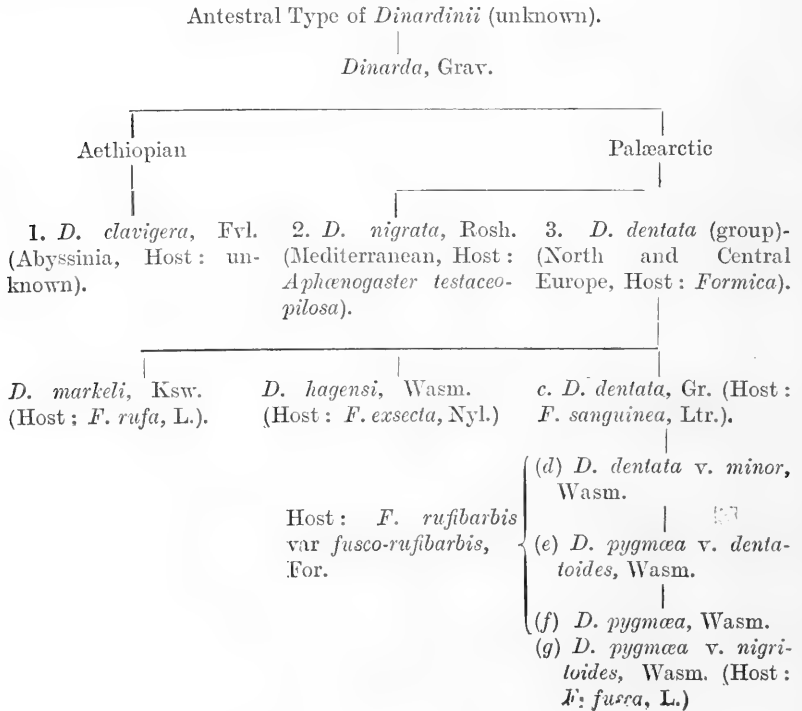
(2) In the hostile persecuted lodgers we find that, though attacked, they are able to protect themselves, even when introduced from one species of ants' nest into another. They live as beasts of prey, and murderers in the nests of the ants and their young. Their size prevents the ants from tolerating them. Such are the Myrmedonias, all of which are ant-eaters, *Quedius brevis*, *Xantholinus atratus*, &c. *Lamprinus saginatus* is another example, and is found with various ants. It hides in the nest, and steals and devours the ants' eggs. *Myrmedonia funesta*, which is found with the tree-ant *Lasius fuliginosus* is a good example of mimicry, as it is very like its host, being jet-black in colour. Wasmann has expressed his opinion that this mimicry is to deceive the ants. Here I am unable entirely to agree with him. I consider it is more to protect the beetle from outside enemies, and what I think goes far to prove this is that as the beetle when introduced into my nest of *Formica rufa* was able, when attacked, to defend itself against so fierce an ant, it would not therefore require protection by mimicry with its own host. Wasmann truly says that when disturbed it curls up and looks like a bit of earth, but that is surely its second line of defence. The insect is found in the runs and outside the true nest, where its resemblance to the ants would be of most use in the case of outside enemies. On the other hand, *Thiasophila ingwilina*, a much smaller beetle, which occurs with the same ant, and is of a rather bright red-brown when alive is nearly always, when found, in the deeper part of the nest. I have seen it make use of the same defence as *Myrmedonia* when attacked by an ant. The defence of these beetles is as follows: when the beetle meets an ant it stands still and raises the abdomen over the body, and if the ant tries to attack it, it pokes the end of the body into the ant's face. The ant starts back, and the beetle resumes its career. When I have forced an ant to take hold of a beetle, it very soon let go and often ran round and round in a circle as if mad, and sometimes one antenna would remain bent in one position for some time, as if stiff. These beetles possess a strong pungent smell, which is most noticeable when handled, and it is this vapour they give off which, I consider, protects them from the ants. I have dissected several species of *Myrmedonia* (and also *Lomechusa*, which I discovered gave off a similar smell when seized) under the microscope, and have found the glands which secrete this vapour. For some years past I have been trying to find out its chemical formula, but the difficulty in obtaining sufficient of the substance is very great. The Myrmedonias and *Drusilla canaliculata*

kill and devour ants. Mons. L. Mesmin mentions that a specimen of *Myrmedonia collaris* he put into a bottle with two ants, immediately seized one of them and killed it. I have seen *Myrmedonia cognata* attack and kill ants in captivity, biting them behind the head, and have kept most of our species alive for a long time by giving them ants to eat. In a wood, in Worcestershire, where *Myrmedonia humeralis* was abundant, I saw many ants killed by the beetles. Near one large nest of *Formica rufa* a cart-track went through the wood, and in this track the *Myrmedonia* occurred in every crack and under every dead leaf, and also many of its larvæ. Every here and there little heaps of dead ants were to be found, and these kept being added to by the *Myrmedonias* with specimens they had slain. The beetles could be seen hiding and pouncing on a solitary ant. Thousands of the ants must have been killed in this way. Messrs. Leucante and Bleuse record *Drusilla* attacking and killing ants. Commander Walker found it carrying an ant, and I have taken it at Chiddingfold with a dead *Myrmica* in its mouth. The copulation in *Myrmedonia* is the same as that of *Lomechusa*.

(3) The indifferently treated lodgers are mostly scavengers in the nests. Some are very small, such as *Ptenidium* and *Ptilium*, and the ants appear to pay no attention to them whatever, it is just as if they were invisible. The two species of *Monotoma* have a very wooden appearance, and when motionless much resemble bits of wood, or other *débris* on the ant-hill. I have seen specimens walking on the top of my nest amongst a lot of ants who never took the slightest notice of them. I have even seen them walk over the ants. *Oxygoda* and some other of the smaller "staphs" are protected on account of the quickness of their movements. The *Histeridæ* are protected by their very hard bodies, the ants not having strong enough jaws to bite them. George Lewis noted the same with the "Formicarius Histers" in Spain and Tangiers, which he generally found feeding on the larvæ of the ants. Their hosts seemed indifferent to, or unconscious of, their presence, and appeared to know that they were physically incapable of freeing their nests of these hard beetles, their jaws not being strong enough to hurt them. Two of our species, however, *Heterius ferrugineus* and *Myrmetes piceus*, are approaching the true guests, as they are often licked by the ants. I have noticed this myself with the latter. During copulation, which I have noted in May, the male of this beetle, sits far back on the dorsum of the female. I introduced specimens into a nest of *F. fusco-rufibarbis*, and had given these ants pupæ of *F. rufa* to eat. The *Myrmetes* bored into the pupæ and devoured the whole contents.

The genus *Dinarda* is generally classed in this group. Although the ants often try to attack them, and they protect themselves in the same way as I have shown the *Myrmedonias* do, they do not attack or kill the ants. They sometimes steal and devour the ants' eggs. I have seen a *Dinarda* creep underneath two ants feeding at some sugar and pilfer some of it. They also feed on the acari, which are a great pest in some nests. I kept a single *Dinarda* alive for months in a small plaster nest with a small colony of *Formica exsecta*. The ants were covered with the young of acari, and the *Dinarda* practically cleared the nest of them. This shows that though

these lodgers inhabit the nests entirely for their own advantage, they are probably of some use to their hosts also; indeed, one would imagine if this were not so, the ants would have acquired a means of ejecting them. Our four species, or races, of *Dinarda* each live with a distinct species of ant. They are probably all descended from a common ancestor of *Dinarda dentata*, which is the oldest developed species. The nests and habits of their hosts are very different, and this has no doubt played a considerable part in the evolution of the species. *Dinarda märkeli* is found with *Formica rufa*, which builds the well-known hillocks of pine-needles. *D. dentata* occurs with *F. sanguinea*, the slave-maker, which makes its nest chiefly in banks, with very little nest materials over the nest. *D. hagensi* inhabits the nest of *F. exsecta*, whose small nests, about the size of a football, are built of grass and ling. This rare ant was only supposed to occur at, and in the neighbourhood of Bournemouth. Mr. Hamm, however, has found it in Devonshire, Mr. Blatch recorded it from Bewdley in the Midlands, and I have discovered it in the Highlands of Scotland, and in the Isle of Wight. *D. pygmæa* lives with *F. fusca* v. *fusco-rufibarbis*, which chiefly nests under stones. The following extract from a table by Wasmann will show the relationships of the species in connection with their hosts:



Dinarda hagensi and *pygmaea* have undoubtedly been evolved much more recently and have not perhaps become quite fixed, as they vary somewhat in themselves.

It may be as well to reproduce here part of my translation of Wasmann's paper on the "Evolution of *Dinarda*," which appeared in the *Zoologist* for February 1908 :

"As an instance of recent species building I brought forward in 1901 the genus *Dinarda*, in the Brachyelytra (*Staphylinidæ*). It can be shown that our North and Central European two-coloured (red and black) forms of *Dinarda*, which are adapted to different species or races of the genus *Formica*, stand in different stages of species building. Two of these—*Dinarda dentata* (with *F. sanguinea*) and *D. mürkeli* (with *F. rufa*)—have already become throughout their area of distribution such constant forms that they have been hitherto not incorrectly treated as species. Two other nearly related forms, on the other hand—*D. hagensi* (with *F. exsecta*) and *D. pygmaea* (with *F. rufibarbis*, and especially with the var. *fusco-rufibarbis*)—are still considered to be in the process of adaptation to their ant-hosts ; in some parts of the area of distribution of the latter they have already become well-defined forms : in other regions they still show numerous transitions towards *D. dentata* ; finally in others, no adaptation of *Dinarda* to *F. exsecta* and *rufibarbis* has yet taken place. We have also before us in these two forms of *Dinarda*, which gradually approach in the path of variety and race-building, every stage of species building which has already been reached by *Dinarda dentata* and *mürkeli*. . . . The sooner the adaptation of *Dinarda* to *F. exsecta* and *rufibarbis* has taken place in a region, the more they are protected, through local isolation of the ants' nests in question from those of allied species of *Formica* (especially of *F. sanguinea*), and so much the further has also the differentiation of the forms of *Dinarda* in question progressed. This is most clearly shown as yet in the differentiation of *D. pygmaea* from its ancestral form *dentata*. Also as regards *D. hagensi*, some new facts have been added in the last two years, which show that its adaptation to *F. exsecta* is not yet completed, but that in different points of its area of distribution it stands at different stages in the process of species building. Donisthorpe found a number of *Dinarda* with *F. exsecta* at Bournemouth, which come nearer to the typical examples taken by Von Hagens in the Siebengebirge in 1855 than the *Dinardas* taken by me at Linz on the Rhine with the same ant in 1893-1901. Most of these English examples show, just as Von Hagens's type, no raised keeled border to the elytra, but these organs are regularly arched, in which these examples even depart from the generic diagnosis of *Dinarda* ("elytrorum margine laterali carinato"). Also the antennæ are shorter and more compact than in *D. dentata*. On the other hand, the border of the elytra in the examples from Linz is distinctly raised and keeled, and the antennæ are somewhat more slender than in *dentata*. In some of Donisthorpe's examples from England transitions between both the *hagensi* forms are noticeable in that the border of the elytra is sometimes feebly raised, and the antennæ are less compact. *Dinarda hagensi* has evolved, at different points of its area of distribution, so far as to reach different stages towards a peculiar

form; further, according to the specimens found up to the present, it has made the greatest progress in the Siebengebirge, and in the South of England, which during 'diluvial' times remained free from ice, and represents the oldest district for the adaptation of this *Dinarda* to *F. exsecta*. Should the process of differentiation which separates *D. hagensi* from *dentata* make still further progress elsewhere, then *D. hagensi* could not be included any more in the generic diagnosis of *Dinarda*, since the keeled border of the elytra of the latter has hitherto been regarded as essential. We must even define the whole group of *Dinardini* differently, since that keeled border of the elytra formed its most essential character! . . . It is perhaps better to reckon . . . our four two-coloured *Dinarda* forms as races, rather than as species in the strictest systematic sense. But, in any case, they offer races which stand at different stages in their evolution; *D. dentata* and *mürkeli*, as far as concerns their constancy, have arrived nearer to 'true species' than *D. hagensi* and *pygmæa*."

Some confusion has arisen in our literature on the subject, on account of the early captures of *Dinarda* all being recorded as *dentata*. Also the ants with which they occurred were incorrectly noted. *D. pygmæa* was first taken, with us, by Reading near Plymouth in 1857. *D. dentata* was first captured by F. Smith at Weybridge, with its proper host, *F. sanguinea*, in 1860. *D. mürkeli* was recorded by Dillwyn as *dentata* from Swansea in 1829. It has been stated not to occur farther north than Scarborough, but Hislop took it with *F. rufa* at Killiecrankie in 1860 (*Zool.* 1861, p. 7330). *D. hagensi* was first discovered in this country by me at Bournemouth with *F. exsecta* in 1905, and I have since found it with the same ant in the Isle of Wight. *Dinarda* lays the eggs in the earth, and the larvæ may often be found in some numbers in the nests. The copulation is similar to that of *Lomechusa*. I have bred three of our species in my observation nests.

Cetonia floricola, and *Clythra 4-punctata* only pass the early stages in the ants' nests. The former seeks the nests to lay her eggs in them, she bores into the hillock, and her body is too hard for the ants to injure her. I have found the larvæ in some numbers in nests of *F. rufa* at Nethy Bridge in the Highlands, and have bred the perfect insect from them in my observation nests. The larva feeds on the vegetable refuse of the nest and constructs a cocoon in which to pupate. It does not use the legs for walking. When placed on a table, or on the floor, it turns over on its back and moves rapidly along by means of the bristles on the back, the legs being held up in the air.

The latter exhibits mimicry, as it superficially resembles the lady-bird, *Coccinella distincta*, both species being found on and near the nests of *Formica rufa*. This is a case of Mullerian mimicry, as I have shown the *Clythra* to be distasteful to insectivora, and the *Coccinellidæ* are known to be so. The life history of **Clythra 4-punctata*, which I worked out in my observation nest of *Formica rufa* is briefly as follows:

When the beetle has emerged from the pupa case in the nest, it escapes with caution, "feigning death," and holding on to twigs when attacked by

* *Trans. Ent. Soc. Lond.* 1902, Part I, pp. 11-23, with Plate.

the ants. It then seeks its mate and copulation takes place. The beetles are generally to be found on birch shrubs, the young shoots and leaves of which they eat, biting the top shoots right through. The ♀ then seeks a tree or shrub above or close to a nest of *Formica rufa*, and drops the eggs on the ground beneath. The eggs are covered by a case, or capsule, which is placed around it by the ♀, and consists of her own excrement. This covering is placed in position with the posterior tarsi, the egg being held in a depression of the abdomen. The covered egg looks exactly like a small bract, and is exceedingly like the end of a birch catkin. The ants pick up the covered egg and carry it into the nest. The young larva, which hatches in about twenty-one days, uses the egg-case as a nucleus on which to build the larval case; thus very young larval cases have the egg-case still attached to their posterior end. The egg-case has a threefold *raison d'être*—to protect the egg and newly-hatched larva, to make the ants believe it is a bit of useful vegetable refuse, and to give the larva a foundation on which to start the larval case. When the larval case grows larger, the egg-case breaks off, and the larva fills up the hole thus formed with the same material as that with which it builds the rest of the case. This material consists of its own excrement mixed with earth, which it prepares with its mandibles. To enlarge the case the larva removes particles from the inside, and plasters them on to the outside. The larva feeds on vegetable refuse in the nest. When changing its skin it fastens the case to some object in the nest. When full grown it fastens the case to a piece of wood or twig, and turning completely round, changes to a pupa, facing the broader end of the case. When hatched the beetle gets out of the case at this broader end, by biting a circle round inside it, thus forming a cap, which it forces off.

Among the species which have been recorded from ants' nests, but are generally found under other circumstances, may be mentioned—*Hister marginatus*, which has been recorded by Harwood with both *Formica rufa* and *Lasius fuliginosus*, but no doubt as chance visitors, as Joy has shown it to be a regular inhabitant of moles' nests. *Prionocyphon serricornis* has been recorded from nests of *F. rufa*, but these must have been chance specimens, and it has nothing to do with ants. Its larva is semi-aquatic, and lives in holes in trees full of water. I bred a number of specimens from larvæ taken in the New Forest in a hole full of water in a felled oak. I reared them for two years in a bowl in my study. *Labidostomis tridentata* has also been recorded from ants' nests, but again I think it has no connection with ants. I have never found any trace of it, either larvæ or perfect insects, in ants' nests at Pamber Forest, where the beetle is abundant. The eggs which I have observed being laid in nature, are covered with a coating of excrementitious matter by the female and fastened together, on birch leaves, by long thin threads of excrement. The young larvæ feed on algæ on bark; they would never live in, or enter, my observation nests. Figures of these larvæ and eggs, and the larva and pupa of the last species, will be found in the *Entomologist's Record* for May 1908.

The following is a list of all the known British myrmecophilous species of beetles with their hosts. I would point out that ants' nests beetles in

nature are most constant to their true hosts, and it is only singly, and by chance, that a species is found with another kind of ant.

Homoecusa acuminata, Märk. *Formica fusca*, *Lasius fuliginosus* and *niger*.
I once took it in a mixed nest of *L. niger* and *flavus*.

Aleochara ruficornis, Gr. *Formica rufa* and *fusca* and *Lasius fuliginosus*.

Microglossa pulla, Gyll. *Lasius fuliginosus*. I once took it with *Formica rufa*. Though it also occurs in carrion, and Dr. Joy has shown it breeds in birds' nests; still it is regularly found with *L. fuliginosus*.

Microglossa gentilis, Märk. *Lasius fuliginosus*. Also occurs in birds' nests, but is frequently abundant with this ant.

Oxyptoda vittata, Märk. *Lasius fuliginosus*.

Oxyptoda formiceticola, Märk. *Formica rufa*.

Oxyptoda recondita, Kr. *Formica rufa*. I have also taken it with *F. sanguinea*.

Oxyptoda hæmorrhœa, Sahl. *Formica rufa*. I have also taken it with *F. sanguinea*, *F. exsecta*, and *Lasius fuliginosus*.

Thiasophila angulata, Er. *Formica rufa*.

Thiasophila inquilina, Märk. *Lasius fuliginosus*.

Ilyobates glabriventris, Rye. *Lasius fuliginosus*.

Dinarda mürkeli, Kies. *Formica rufa*.

Dinarda dentata, Gr. *Formica sanguinea*.

Dinarda hagensi, Wasm. *Formica exsecta*.

Dinarda pygmæa, Wasm. *Formica fusca*, v. *fusco-rufibarbis*.

Lomechusa strumosa, F. *Formica sanguinea*.

Ateleles emarginatus, Pk. Primary hosts: *Myrmica scabrinodis*, *lævinodis*, *ruginodis* and *sulcinodis*. Secondary, *Formica fusca*.

Ateleles paradoxus, Gr. Primary hosts: *Myrmica scabrinodis*, *lævinodis* and *ruginodis*. Secondary—*Formica fusca*, v. *fusco-rufibarbis*.

Myrmedonia haworthi, Steph. *Lasius fuliginosus*.

Myrmedonia collaris, Pk. These two and the following species are not so truly myrmecophilous as the other Myrmedonias. It has been taken with *Myrmica* species, and I found it in numbers with its larvæ in company with *Myrmica lævinodis*.

Myrmedonia limbata, Pk. *Lasius fuliginosus* and *flavus*, and *Formica fusca*. I have also taken it with *Formica sanguinea*, *Lasius niger* and *Myrmica* species.

Myrmedonia funesta, Gr. *Lasius fuliginosus*.

Myrmedonia humeralis, Gr. *Formica rufa*, and *Lasius fuliginosus*.

Myrmedonia cognata, Märk. *Lasius fuliginosus*.

Myrmedonia lugens, Gr. *Lasius fuliginosus*.

Myrmedonia laticollis, Märk. *Lasius fuliginosus*.

Myrmæcia plicata, Er. *Tapinoma erraticum*.

Drusilla canaliculata, F. With various ants. I have taken it with *Formica sanguinea*, *fusca* and *exsecta*, *Lasius fuliginosus*, *flavus* and *niger*, and species of *Myrmica*.

Notothecta flavipes, Gr. *Formica rufa*. I once took it in numbers with *F. exsecta*.
Notothecta confusa, Märk. *Lasius fuliginosus*.

Notothecta anceps, Er. *Formica rufa*. I have also taken it with *F. exsecta*, in some numbers.

Homalota parallela, Man. *Formica rufa*.

Lamprinus saginatus, Gr. With various species of *Myrmica*. I have taken it with *Formica sanguinea*.

Quedius brevis, Er. *Formica rufa* and *Lasius fuliginosus*.

Xantholinus atratus, Gr. *Formica rufa*.

Leptacinus formicetorum, Märk. *Formica rufa*.

Othius myrmecophilus, Kies. With various ants. I have taken it with *Formica rufa*, *sanguinea* and *exsecta*, and *Lasius fuliginosus*.

Scydmaenus godarti, Lat. *Formica rufa*.

Claviger testaceus, Preys. Principal host, *Lasius flavus*. Secondly, *L. alienus* and *niger*. *Claviger longicornis*, Müll., is found on the Continent with *Lasius umbratus*, and should occur here. Father Schmitz shows that it is taken with this ant under heavy, deeply embedded stones.*

Bythinus glabratus, Ryc. *Ponera contracta*.

Batrissus venustus, Reich. *Lasius fuliginosus*.

Trichonyx märkeli, Aub. *Lasius flavus*, *Formica fusca* and *Myrmica* species,

Ptilium myrmecophilum, All. *Formica rufa*.

Ptenidium myrmecophilum, Mots. *Formica rufa* and *Lasius fuliginosus*.

Ptenidium kraatzi, Mat. *Formica rufa*.

Coccinella distincta, Fald. *Formica rufa*.

Heterius ferrugineus, Ol. *Formica fusca* and *sanguinea*, and *Lasius flavus*.
On the Continent it is found with several other species of ants.

Dendrophilus pygmaeus, L. *Formica rufa*.

Myrmetes piceus, Pk. *Formica rufa*.

Amphotis marginata, F. *Lasius fuliginosus*.

Monotoma conicicollis, Aub. *Formica rufa*.

Monotoma formicetorum, Th. *Formica rufa*.

Cetonia floricola, Hbst. Larva and pupa with *Formica rufa*.

Clythra quadripunctata, L. Larva and pupa with *Formica rufa*.

* Since the above was written Commander Walker has found that he captured it near Oxford in 1906. (Ent. Mo. Mag., 1912, p. 100).

The following species may be enumerated which have been recorded with ants, but however, often, and probably generally occur elsewhere.

Callicerus rigidicornis, Er. With *L. fuliginosus* and *niger*, and *F. rufa*.

Homalota analis, Gr. Frequently with *Formica rufa* and also with *F. exsecta*, &c.

Homalota nitidula, Kr. *Lasius fuliginosus*.

Homalota oblongiuscula, Shp. *Lasius fuliginosus*.

Homalota exarata, Shp. *Lasius fuliginosus*.

Heterothops nigra, (= *quadripunctula*, Brit. Cat. ?) Dr. Joy has proved this species to be very abundant in moles' nests. I am not quite satisfied if specimens taken with *Formica rufa* and *Lasius fuliginosus* are the same species, they appear to me to be a little larger, the punctuation more alutaceous, and consequently not so shining.

Staphylinus stercorarius, Ol. This species has been taken on various occasions with ants, *Myrmica scabrinodis* and *ruginodis*, and *Lasius flavus*, &c.

Staphylinus latebricola, Gr. Has been recorded with *Formica rufa*.

Medon bicolor, Ol. *Lasius flavus*, &c.

Leptinus testaceus, Müll. *Lasius fuliginosus*.

Scydmaenus pusillus, Müll. *Formica rufa* and *Lasius fuliginosus*.

Euthia plicata, Gyll. *Formica rufa*.

Trichonyx sulcicollis, Reich. In old stumps often in company with ants. Bedell records it with *Ponera contracta* near Paris.

Ptenidium turgidum, Th. Often with ants.

Ptenidium gressneri, Er. *Lasius fuliginosus*.

Dendrophilus punctatus, Hbst. In birds' nests, dead animals, rotten wood, hornets' nests, cellars, &c. It, however, frequently occurs with ants, both here and abroad. *Lasius fuliginosus*, *Formica rufa*, and I have bred it from a nest of *Formica exsecta*.

Abraeus globosus, Hoff. *Lasius fuliginosus*; the larva was described by Perris from a nest of this ant.

Corticaria serrata, Pk. *Formica rufa*, *Lasius fuliginosus*, &c.

Cetonia aurata, L. Larva and pupa occasionally in the nests of *Formica rufa*.



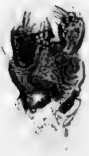
Claviger testaceus, Preys.



Lomechusa strumosa, F., fed by host
Formica sanguinea, Ltr.



Host, *Formica sanguinea*, Ltr., licking *Lomechusa strumosa*, F.



Labial palpi of *Lomechusa strumosa*, F.



Larva of *Lomechusa strumosa*, F.



Formica sanguinea, Ltr.
1. Dealted female. 2. Worker.
3. Pseudogyne caused by the presence of
Lomechusa strumosa, F.



1. *Atecles paradoxus*, Gr.
2. *Atecles emarginatus*, Pk.

SUPT. PLATE C.



Defence of *Myrmecodia funesta*, Gr., when attacked by host *Lasius fuliginosus*, Ltr.



Quedius brevis, Er.



1 2

1. *Dinarda dentata*, Gr.
2. *Dinarda hayensi*, Wasm.



Heterius ferrugineus, Ol.



Amphotis marginata, Er.



Metamorphoses of *Clythra 4-punctata*, L.

ADDENDA.

CARABIDÆ.

Ophonus, Steph. In the Ent. Mo. Mag. for August, September, and October 1912 (pp. 181-185, 207-210, and 229-232), Dr. Sharp discusses the smaller, brown or blackish species of this genus, which have always been a source of great difficulty to collectors, both in Britain and on the Continent. He points out that while the ædeagus does not present remarkably different characters, the lateral lobes being similar in all the species, yet the median lobe or body of the organ presents characters which, though slight, are extremely valuable, so that by their aid he has been enabled to discriminate the species in a satisfactory manner; and he finds that the group includes nine British species, or, if we include the brown variety of *O. azureus*, ten species. This means the addition of four species to our catalogues. They are 1, *brevicollis*, Dej.; 2, *rufibarbis*, F.; 3, *cordatus*, Duft.; 4, *rupicola*, Sturm.; 5, *rupicoloides*, sp. n.; 6, *championi*, sp. n.; 7, *parallelus*, Dej. (?); 8, *rectangulus*, Thoms; 9, *puncticollis*, Payk.; 10, *azureus*, F. v., *similis* Dej.

In *brevicollis*, *cordatus*, and *rufibarbis* the ædeagus terminates in a blunt point; in the other species it terminates by a raised margin, which, when very strongly expressed, projects a little on each side in the form of a sharp angle. Transitions occur, but in addition to this the organ presents important differences in length, calibre, curvature, torsion, the thickness of the apical portion, and the extension of the median orifice towards the tip. These characters are very constant, and are found to go with the various external characters by which the species may be discriminated without reference to the ædeagus, although the differences cannot well be tabulated.

O. brevicollis, Dej. (Sp. iv., 218). This species may be distinguished by its short broad thorax with sharply marked rectangular hind angles, by the punctuation of the thorax being very scanty on the disc, and by the fact that the punctuation of the elytra tends to become diminished, and though somewhat coarse is frequently sub-obsolete. The colour is generally fusco-piceous, with the head and thorax often lighter and almost rufescent in some cases. The length is variable (6-8 mm.). The ædeagus has a blunt short tip, the apex being minutely curved, but without an actual raised margin.

This is apparently our most abundant species, and is widely

distributed throughout the country. It is probably identical with the *O. cribellum* of Stephens.

O. rufibarbis, Fab. (Syst. El. i., 201, 168 (?). Dej. (Sp. iv., 218, 24). This is the largest form of the group, the length varying from 8 to 10 mm. The thorax is always longer than it is in *brevicollis*, and the punctuation is greater; the hind angles are rectangular and well marked, and there is no trace of a basal margin. The ædeagus is plainly larger than in *brevicollis*, and is more contorted, with a considerably broader apical margin.

The species is not common, and does not vary much either in colour or punctuation. Even in immature examples the head and thorax are not brightly rufescent. I took a good series with Dr. Sharp at Swaffham Prior, in Cambridgeshire, on the Devil's Dyke in 1892, and it occurs at Oxford, Chatham, Mickleham, etc.

O. cordatus, Duft. (Faun. Aust. II., 169). This species has the thorax much rounded at the sides in front and much narrowed behind, the sides there becoming parallel for a short distance, so that the angles are quite rectangular. There is a fine but distinct raised margin along the base. The species is easy to distinguish, except that it is occasionally confused with *O. rupicola*. The latter, however, has not got the sides behind truly parallel, and the base is not margined. The ædeagus, too, is very different, being very like that of *O. rufibarbis*, but considerably shorter. This is always a scarce insect as British: most of our examples are from Deal, but it has been taken by Mr. Champion at Mickleham and Croydon. My note on the species (Brit. Col., i., 45) must be cancelled in the face of Dr. Sharp's remarks (l.c., p. 185).

O. rupicola, Sturm. (Deutsch. Ins., iv., 105). This, Dr. Sharp says, is one of the easiest of the species to recognise on account of the comparatively elongate and flat form and the shining elytra with unusually coarse punctuation; this sculpture, however, is rather denser and finer in the female than it is in the male. The thorax is ample, but a good deal narrowed behind, and that in a somewhat variable manner, as the sides are sometimes only very slightly, sometimes distinctly, sinuate posteriorly. When the sides are most sinuate the hind angles approach nearly to being rectangular, but they are always slightly obtuse, and there is no basal margin. The colour varies, the head and thorax being sometimes rather bright red, but they are seldom as dark as the elytra. The size runs from $6\frac{1}{2}$ to $9\frac{1}{2}$ mm. The ædeagus is remarkable on account of the broad strongly margined apical portion. The species is apparently widely distributed, and sometimes occurs in numbers in the South of England. It cannot, however, be called common.

O. rupicoloides, Sharp (Ent. Mo. Mag. xlviii. (2 Ser. xxiii. 1912, 208). Dr. Sharp says that he believes that this insect is largely responsible for the confusion as to our forms, as he has found it mixed in collections with several of the other species. It is allied to *O. rupicola* through the ædeagus, but may always be distinguished by its shorter form, and

by the less coarse punctuation of the elytra, and the fact that the thorax always has the sides less convergent behind. From *O. rectangulus* (= *puncticollis* of collections) it may be known by its less elongate elytra, less densely punctured thorax, and the less distinct traces of the basal margin of the latter. *O. brevicollis*, with which it has been confused, has a broader thorax, with less punctuation, and sharply marked, almost acute, posterior angles. The length varies from $6\frac{1}{2}$ to $7\frac{1}{2}$ mm.

Probably not a great rarity in Southern England. Medway district (Chatham and the Isle of Sheppey) (Walker); Bembridge, Isle of Wight (Fowler); Guildford (Champion); Mickleham (Sharp); Weymouth (J. T. Harris).

O. championi, Sharp (Ent. Mo. Mag. xlviii. (2 Ser. xxiii.) 1912, 209). It seems a little doubtful whether this species is really distinct from *O. rupicoloides*, but Dr. Sharp thinks that the characters are sufficient to distinguish it. It has the thorax a little different in shape, more scantily punctured, rather less sinuate at the sides, with the hind angles slightly more sharply marked, though really more obtuse; the ædeagus is shorter and thicker, with a shorter and stouter apical portion. The wings are shorter, more blunt at the tips, with the narrower more obsolete than in any other species (except *O. azureus*, in which they are rudimentary). Guildford (Sharp and Champion); four specimens.

The species is very like large examples of *O. parallelus*, but differs by the less distinct basal margin of the thorax, as well as by the slightly different size and punctuation of the latter.

O. rectangulus, Thoms. (Op. Ent. 1870, 323). This is the species which we regard as common under the name of *O. puncticollis*, but Thomson in 1870 considered that *O. puncticollis* really consisted of two species, and described one of them as new, under the name of *O. rectangulus*. Dr. Sharp agrees with Thomson as to their distinctness, and says that we have both of them in this country. The thorax in *O. rectangulus* is a good deal narrower than the elytra, and slightly but quite definitely sinuate at the sides, the hind angles being nearly but not quite rectangular. The punctuation of the thorax is rather close, but a good deal more sparing on the disc, and the punctures are not very large, so that in contrast with most of the other species of the genus it might be described as finely punctured. The punctuation of the elytral interstices is always close and moderately fine, and the serial or accessory punctures on the third and fifth interstices are unusually conspicuous and numerous. The ædeagus is remarkable for the slenderness of its apical portion, which ends as a very definite raised ridge. The size varies from 7 to 9 mm., and the colour from pitchy-black to a dark rusty brown, but there is never a strong contrast between the red head and thorax and dark elytra. The thorax varies in length, sinuation of sides, definiteness of the hind angles, and the margination of the base; the insect, therefore, is difficult to distinguish

by external characters. Widely distributed, especially in the south of England.

O. puncticollis, Payk. (Faun. Suec. I. 120). Undoubtedly, Dr. Sharp says, very similar to the preceding, but easy to recognise by the thorax, which is broader in front, so that it is very nearly as broad as the elytra, strongly sinuated at the sides, and with the definite hind angles almost absolutely rectangular; the punctures on it are coarser and less numerous, and the surface is more highly polished. The ædeagus is much the same as in *O. rectangulus*, but a little thicker, the apical portion being definitely less slender; the basal margin of the thorax appears to vary much as in *O. rectangulus*.

Caterham. (W. E. Sharp); Guildford (Sharp and Champion); Down, Kent (Wollaston); Cholsey, Berks (Walker). About a dozen British examples are known, so that the insect is decidedly rare, as far as is at present known. It appears possible that it may only be an extreme form of *O. rectangulus*, as the difference in the ædeagus is only slight; but Dr. Sharp says that he attaches some importance to this slight difference, as he has examined the organ in several variations of *O. rectangulus*.

O. parallelus, Dej. (Spec. iv. 219). Allied to *O. rectangulus*, but smaller (5-7 mm.), and with the thorax shorter. It is hard to distinguish a large female of *O. parallelus* from a small female of *O. rectangulus*; but the males are distinct, the ædeagus in the former being considerably broader and shorter than in the latter. The basal margin of the thorax is generally fairly distinct, sufficiently so to prevent large specimens of *parallelus* from being mistaken for species of other groups, such as *brevicollis*, *championi*, or *rupicoloides*.

Rare; Deal; Chatham; Sheppey; Eastbourne; Southsea; Portland; Sandown, Isle of Wight; Caterham. I have a specimen labelled as from Hunstanton, Norfolk. The only other species that can be confounded with any of the above is the var. *similis* Dej. of *O. azureus*. This insect usually has a slight metallic tinge, but is sometimes without it and is then quite dark; in most cases it may be known by the very much reduced wings, the insect being quite incapable of flight. The sides of the thorax are rounded, without sinuation, and the hind angles are quite obtuse; the ædeagus is much as in *O. rupicoloides*.

Whether Coleopterists in general agree with Dr. Sharp in all his determinations or not, it must be allowed that he has made the only serious attempt that has been made to grapple with one of the most difficult groups in our coleopterous fauna.

HALIPLIDÆ.

In the Entomologist's Monthly Magazine for July, 1911, p. 153, Mr. F. Balfour Browne announces his discovery of a new British species of the *Haliphus ruficollis* group, for which he proposes the name of *nomax*, and promises to describe it in a following paper on the group,

if it should prove to be new to science. I am not aware that the paper has yet appeared. The male is at once distinguished by the form of the ædeagus, which differs from that of all the other species of the group, and it has the claws of the anterior tarsi practically equal in length, which separates it from *ruficollis*, *fulvicollis*, *wehnckeii*, and *immaculatus*. One easily seen character also distinguishes it from all the other species of the group, and that is the shape of the basal segment of the median tarsi. This has a very noticeable curve when viewed laterally, and gives the impression of a portion having been neatly taken out of the inner margin. Mr. Balfour Browne believes that the female has the interstitial spaces of the elytra finely punctured throughout, as described by Edwards in the female of *H. ruficollis*, De G.

The species is found in England, Scotland, and Ireland, in lakes and canals, and large drains of clear water.

HYDROPHILIDÆ.

Laccobius, Er. Mr. J. Edwards (Ent. Mo. Mag. xlviii. (2 Ser. xxiii.) 1912, p. 210) gives a useful table for the separation of the species of this difficult genus by the "goggles" or specula on the front of the labrum, a character first noticed by Dr. Sharp (v. p. 26): we append the table as far as it concerns the specula.

I. Specula present.

i. Specula sub-circular.

L. NIGRICEPS, *Thoms.* (*sinuatus* Fowler *nec.* Mots.).

L. PURPURASCENS, Newbery, L. YTYNENSIS, Sharp.

ii. Specula wider than long.

1. Specula about twice as wide as long.

L. SINUATUS, *Mots.* (*oblongus*, *Gorb.*). L. REGULARIS, *Rey.* (*scutellaris*, Sharp *nec.* Mots.).

2. Specula about four times as wide as long.

L. ALUTACEUS, *Thoms.*

II. Specula absent.

L. MINUTUS, L., L. BIGUTTATUS, *Germ.* (*bipunctatus*, Fowler *nec.* Fab.)

STAPHYLINIDÆ.

Homalota (Hydrossecta) muiri, Sharp. Depressed, black, with the tibiæ externally, and the tarsi, of a dirty testaceous colour, extremely thickly punctured and with thick and yet almost imperceptible pubescence; antennæ slender, with the apical joint slightly thicker; head subquadrate, thorax not transverse, slightly narrowed behind. The insect may be separated from its close allies by its blacker colour, the excessive minuteness of its dense pubescence, and the slight thickening of the outer joints of the antennæ. L. $2\frac{1}{4}$ - $2\frac{1}{2}$ mm.

First taken by Mr. Muir, and afterwards by Dr. Sharp, in shingle on the banks of one of the small rivers in the New Forest, in August 1911 (v. Ent. Mo. Mag. xlvii. (2 Series xxii.) 1911, 227).

It must be admitted that this species comes extremely close to *H. longula* and one or two other closely allied species, and its specific value may be regarded as to some degree doubtful. The external sexual differences are very slight.

H. (Atheta) liliputana, Bris. Very similar to *H. amacula*, Steph., from which it is distinguished by its smaller size, more shining thorax and elytra, and much more scattered punctuation. Black, rather shining, elytra brown, legs brownish-yellow. Head broad, antennæ rather short, the last joint nearly double as broad as long. Thorax narrower than elytra, rather strongly transverse, with the sides only slightly rounded, very finely and not thickly punctured, and very finely pubescent with fine cilia at the sides. Elytra about one-third longer than thorax, very finely and somewhat sparingly punctured, finely pubescent. Hind body shining, the first three visible segments very finely and rather sparingly punctured, the others very sparsely punctured. L. $1\frac{1}{2}$ mm.

Taken by Dr. Malcolm Cameron near Brockenhurst in small carcases, and introduced by him as British (Ent. Mo. Mag. xlvii. (2 Ser. xxii.) October 1911, p. 223).

This is a very small and obscure species; in point of size it is intermediate between *H. inquinula* and *H. mortuorum*; from the former of these it may be known by its broader and more robust build, broader and flatter head, and different sculpture, while the smaller size, much more shining head and thorax, and more finely punctured hind body will distinguish it from *H. mortuorum*.

Oligota ytenensis, Sharp (Ent. Mo. Mag. xlviii. (2 Ser. xxiii.) 1912, p. 124). Very small, narrow, and sub-linear; black, with the antennæ and legs red, the club of the former fuscous; head and thorax very shining, antennæ rather short, the club abrupt, the eighth joint considerably longer than the very short seventh joint; elytra intensely black, rather strongly punctured, wings aborted; last segments of the hind body only slightly paler than the preceding. L. $1\frac{1}{4}$ mm. (in quite fresh specimens).

In decaying sea-weed, Lymington, very rare; Dr. Sharp also has a specimen from Edinburgh, which he believes was not found in sea-weed.

Dr. Sharp says that this very distinct little species may be placed between *O. atomaria* and *O. pusillima*. It has much the appearance of *O. atomaria*, but may at once be distinguished by the small elytra, which are scarcely longer, and almost narrower, than the thorax. It is narrower and darker than *O. pusillima*, and both of these species have elongate wings, whereas in *O. ytenensis* the wing is only about the length of the elytra.

Gyrophæna bihamata, Thoms. (Ofv. Vet. Ak. Förh. 1867, 46; Skand. Col. ix. 230). Reddish-yellow, with the head greyish-black, the

disc of the thorax usually brownish, and a spot at the hind angle of the elytra and a transverse band before the apex of the hind body blackish; sometimes entirely yellow, with the head only black; antennæ with joints 5-10 transverse, dark with light base; thorax strongly transverse, rather strongly rounded, but less so than in *G. nana*, with two shallow rows of punctures on the disc, and two or three punctures on the outside of each of these; elytra longer than the thorax, very finely and sparingly punctured, more thickly at the posterior angles; in the male the penultimate dorsal segment is furnished with six small longitudinal tubercles or carinæ, and the last terminates in two long narrow processes with a considerable space between these. L. $1\frac{1}{2}$ - $1\frac{3}{4}$ mm.

Berkshire and Hampshire (Joy); near Cardiff (Tomlin); Westmorland (Day); probably widely distributed.

The females are hard to distinguish from those of *G. levipennis*, Kr., but the male characters are quite distinct from those of the latter species, in which the last ventral segment is only slightly notched.

G. convexicollis, Joy (Ent. Mo. Mag. xlviii (2 Ser. xxiii) 1912, 149. Fig 12, p. 150). Broad, pitchy black, elytra, except postero-external angles, rather obscurely yellowish; first two segments of hind body sometimes pitchy red; antennæ yellow, fuscous at apex; legs yellow. Penultimate joints of antennæ distinctly transverse; thorax strongly transverse, more convex than in any of its allies, with a more or less distinct row of punctures on each side of disc, or only one large puncture on each side near base, sides impunctate, elytra transverse; alutaceous, diffusely but distinctly and rather deeply punctured at the postero-external angles, impunctate in scutellary region; hind body alutaceous, finely and rather closely punctured; male with the penultimate dorsal segment of hind body furnished with four small round tubercles near posterior margin, the last terminating in two sharp teeth separated by a considerable interval. L. $1\frac{1}{2}$ - $1\frac{3}{4}$ mm.

Occurring in marshy places, like its nearest ally *G. lucidula*, Theale and Thatcham, Berks, three males in flood rubbish (Joy); Yarnton near Oxford, among wet dead sticks in a swamp (Walker).

Dr. Joy gives good figures of the last dorsal segments of the hind body in all the British species (l.c., p. 150), which should be consulted by all students of the genus.

Lathrobium ripicola, Czwalina (Deutsch. Ent. Zeits. 1888, 344 (boreale Muls. et Rey. Pédériens. 39)). Mr. Newbery (Ent. Mo. Mag. xlviii (2 Ser. xxiii), 1912, 125), points out that this is the insect standing in our collection as *L. boreale*, Hoch., a name which has been dropped altogether, as no insect with the male characters given by Hochhuth appears to be in existence. From *L. levipenne*, Heer, which it closely resembles, it may be known by its larger size, red coxæ, the finer and closer punctuation of the head, and especially by the male characters; in this sex the penultimate ventral segment of the hind body has a row of converging black hairs on each side, which are absent in *L. levipenne*; from *L. geminum*, Kr., and *L. elongatum*, L., it may be known by its

smaller size, red coxæ, the less black colour on the elytra (these are almost entirely red with a narrow band of black just at base), the much finer punctuation of the head, and the weaker hairs on the rows on the penultimate segment of the male; the thorax is also longer in proportion to its breadth than in these two species.

Ganglbauer mentions *L. ripicola* as rare; Newbery says it does not appear to be rare, and he has seen specimens from Surrey, Hampshire and Carlisle; these species of *Lathrobium*, however, are very much mixed in our collections, and require careful working out.

***Bledius secernendus**, Joy (Ent. Mo. Mag. xlvii (2 Ser. xxii), 1911, p. 269. (*B. secerdendus* in error). Black with the apical border and posterior angles of the elytra, broadly brownish testaceous; mandibles long and slender; first joint of antennæ pitchy, with extreme base and apex testaceous, the other joints obscurely testaceous; head and thorax dull, alutaceous, moderately strongly punctured, the latter with a deep central line, and strongly contracted at base; elytra broader than thorax, about one-third longer than broad, closely and moderately strongly punctured; hind body shining, finely alutaceous and obsoletey punctured; femora pitchy, tibiæ pitchy-testaceous, tarsi testaceous.

L. $3\frac{1}{2}$ mm.

Probably widely distributed throughout the British Islands; Dr. Joy has taken it at Tresco, Scilly Isles, and Cloghane co. Kerry.

This insect is in many of our collections as a dark form of *B. arenarius*; from this species it differs in being larger and thicker with the antennæ rather darker; the head and thorax are more strongly sculptured; the central line of the thorax is deeper and its sides are more abruptly contracted at base, the basal portion being longer and the posterior angles more prominent; the elytra, besides being much darker, are more strongly punctured; the tibiæ, moreover, are a little more dilated, with the spines longer.

B. arenarius, Payk, *var. minor*, Muls. et Rey. (Hist. Nat. Col. Fr. Oxyptiens, Oxytelins, p. 192). This is a dark form of the typical *B. arenarius*; it resembles superficially *B. secernendus*, Joy, but, apart from colour, differs in the characters mentioned as distinguishing that species, the most obvious being the much finer central line of the thorax and the less strongly punctured head. It was introduced as *Bledius arenarius*, *var. fergussoni*, by Dr. Joy (Ent. Mo. Mag. xlviii (2 Ser. xxiii), 1912, 44), on a series taken by Mr. Anderson Fergusson at Knoweside, Ayrshire, on the sandbanks of small streams on the shore, just above high water mark, in company with the type form and *B. terebrans*.

Lesteva longelytrata, *var. maura*, Er. Gen. Spec. Staph. 856. In the European catalogue of Heyden Reitter and Weise *L. longelytrata* is regarded as synonymous with sixteen other insects, all of which have

* Mons. Bondroit points out in a paper just received (Ann. Soc. Ent. Belgique lvi, 1912, p. 450) that the *secerdendus*, Joy, is identical with *B. subniger*, Schneid. Thiere Bork, 1878, p. 62.

been described as distinct by various authors: one of these is the *L. maura* of Erichson, which is a black, rather shiny insect with thick, greyish pubescence: the legs are either black or rufo-piceous.

Mr. Donisthorpe records the variety from the Isle of Eigg, Scotland. (Ent. Record. xxiv. 1912, 13).

Lesteva luctuosa, Fauvel. Faune Gallo-Rhénane iii. 103. This species appears to be most closely related to *L. pandellei*, Fauv., an insect which may very likely be found in Britain, but is more elongate; both the species have the head furnished with two deep impressions: from *L. longelytrata* it may be separated by its less parallel form and closer punctuation, and, as a rule, by its dark colour: the antennæ towards the apex, the last joint of the palpi and the legs are ferruginous; the base of the palpi and the tarsi are yellow. Superficially it is like *L. fontinalis*, but differs in the colour of the legs (the contrast between the yellow tarsi and red apex of the tibiæ and the dark legs being most striking); the elytra, moreover, are longer and the punctuation of the thorax and elytra is stronger and more regular. The thorax is a little longer and more contracted at the base, and the eyes are larger, with coarser facets.

Length, 4—4½ mm.

One specimen taken by Mr. Donisthorpe on the Isle of Eigg, Scotland, in moss in a waterfall on the high ground near Beinn Teighe on September 17, 1911, and recorded by him as new to Britain (Ent. Record. xxiii. 1911, 301). M. Fauvel speaks of the species as found very rarely under refuse and stones, half submerged on the borders of torrents in the mountains.

Planeustomus (Compsophilus) flavicollis, Fauvel. Faune Gallo-Rhénane iii. 129. Closely allied to *P. palpalis*, Er, but smaller, more slender and more depressed; the eyes are much smaller and the antennæ are shorter, with the joints more strongly transverse; the thorax in the centre with two more or less obsolete rows of somewhat widely separated punctures: elytra shorter than in *P. palpalis*, about as long as the thorax, with traces of punctured striæ at the base, and with smaller scattered punctures behind: abdomen more widened behind. Front part yellow, elytra and the antennæ, except the first two joints, ferruginous, hind body brown.

Length, 2 mm.

One specimen found by Dr. Sharp in flood rubbish at Brockenhuist, New Forest, June, 1912. (Ent. Mo. Mag. xlviii. (2nd Ser. xxiii.) 1912, 162).

This is one of the most interesting of the recent additions to the British list of Coleoptera.

PSELAPHIDÆ.

Bryaxis longicornis, Leach. Zool. Misc. iii. p. 85. Mr. Jennings (Ent. Mo. Mag. xlviii. (2 Ser. xxiii), 1912, 64) records a specimen of

this species from Roydon, West Essex, in which the elytra are entirely black; this form is alluded to by Ganglbauer as very rarely found on the continent (Col. Mitt. Europ. ii. 806), but has not apparently been named, and should be inserted in our lists as var. *nigripennis*. We probably also possess the entirely light red form, or light red with dark abdomen (*nigropygialis* Fairm.), although I have not seen a marked example of this.

Reichenbachia (*Bryaxis*) **impressa**, Panz. Faun. Germ. 89, 10, var. **unicolor**, Collin's Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, 276. This variety has been mistaken for *B. junceorum*: it has occurred in Cheshire (Dutton) and at Yarnton, Oxon; the difference from the type form is merely that of colour, the specimens differing from the type form in being uniformly reddish testaceous; it is possible, as Mr. Collins hints, that this is in part, if not entirely, due to immaturity. The variety is not noticed by Ganglbauer or in the last European catalogue.

If *Bryaxis* (Leach) (containing *B. longicornis* (*sanguinea*) and *B. gigas*) is regarded as a separate genus, as seems correct, *Reichenbachia* (Leach Zool. Journ. Lond. ii., 1826, 451) must be adopted for the other species that formerly were included under *Bryaxis*: Sauley's name, *Rybaxis*, cannot be allowed to stand.

Claviger longicornis, Müll. Germ. Mag. iii. (85). This species may be at once known from *C. testaceus* Preysl., by its decidedly larger size and broader build, and especially by the much narrower head and more elongate antennæ; these latter are relatively long and slender, with the terminal joint forming an abrupt club.

Five examples of this much sought for species were taken by Commander Walker in 1906 in quarries near the river Cherwell, some seven or eight miles north of Oxford, in nest of a small black ant; they were put away in a store box as *C. testaceus*, and only recently recognised as another species. They were taken under flat pieces of oolitic limestone of moderate size, none of them exceeding a foot square and seven or eight pounds in weight.

Mr. Donisthorpe says that the usual host of *C. longicornis* on the continent is *Lasius umbratus* Nyl, and that it is found most freely in April in nests of this ant under large and deeply embedded stones.

SILPHIDÆ.

Catops montivagus, Heer. (Faun. Col. Helv. i. 381). This insect is very closely allied to *C. tristis*, Panz., and is, in fact, regarded as synonymous with it in the European catalogue of Heyden, Reitter and Weise. It is, however, darker than *C. tristis* in colour, and may be known by its longer and narrower thorax, which is bisinuate at base, and by its longer elytra. The first five joints of the antennæ are rufotestaceous, the eighth the smallest, much narrower than the following, the last shortly ovate, scarcely longer than the preceding; the thorax has the sides slightly rounded, and is very densely sculptured and

clothed with thick yellow pubescence; elytra oblong-ovate, very closely punctured, with a distinct sutural stria on each; femora pitchy black.

Length $3\frac{1}{2}$ mm.

Nethy Bridge, Scotland, under a dead squirrel; taken on June 27, 1911, by Mr. Donisthorpe, who introduced the species as British (Ent. Record xxiv., 1912, p. 71).

Murray, in his monograph of the genus *Catops* considers *C. montivagus* to be a variety of *C. tristis*, but he also includes *C. longulus* and *C. grandicollis* as varieties of the same species, although they are now regarded as good and distinct species. Mr. Donisthorpe, in introducing the insect, thinks that it may be as well to consider it as a variety for the present. At any rate it cannot be regarded as synonymous with the type form of *C. tristis*.

Liodes stenocoryphe, Joy. Ent. Mo. Mag. xlvii. (2 Ser. xxii.), 1911, 173. The following is Dr. Joy's description of this species:—

Oblong ovate, ferruginous with head and thorax darker; head large, almost as large as in *L. triepkei*, rather closely and distinctly punctured, with four larger punctures on forehead; antennæ long, ferruginous with the club dark, the latter broad, as broad as in *L. calcarata*, but with last joint much narrower; throax a little narrower than elytra, broader at the middle, with the sides strongly contracted before and behind, base with an extremely shallow sinuation at sides in male, truncate in female, posterior angles obtuse, strongly and rather closely punctured; elytra twice as long as thorax, not much rounded at sides, striæ very strongly and closely punctured, more strongly than in *L. calcarata*, interstices finely but distinctly punctured, alternate ones with a few larger punctures; legs elongate, tibiæ narrow, tarsi long and slender.

Male. Under plate of posterior femora with a very small blunt lobe at the apex, corresponding with the lobe on the upper plate; tibiæ with a double curve, and inwards near the apex as in *L. curta*; ædeagus broad, parallel-sided, except for a slight constriction in the middle, apex evenly rounded, quite obtuse, side margins somewhat thickened.

Length $2\frac{3}{4}$ mm.

From *L. calcarata* and *L. triepkei* the species is distinguished by the practically truncate base of the thorax, smaller last joint of antennæ, and the more strongly punctured striæ of the elytra; the head is larger than in *L. calcarata* and the sides of the thorax more rounded. The ædeagus is broader and more parallel-sided, and more rounded at the apex than in any of the allied species.

A pair of this insect was taken by Mr. W. E. Sharp in 1910 at Forres, Invernesshire.

HISTERIDÆ.

Acritus minutus, Herbst. Käf. iv. (1792) 41, t. 46, fig. 4. Mr. James Edwards (Ent. Mo. Mag. xlviii. (2nd Ser. xxiii.) 1912, 186) points out that there is no evidence that this species has ever occurred

in this country. All the specimens in our collections appear to be *A. nigricornis*, Hoffm. The differences between the two species are as follows:

Pronotum without a transverse row of punctures near the base. Habitat under bark and in rotten wood (according to one author, generally with ants) *A. MINUTUS*, *Herbst.*

Pronotum with a slightly impressed sinuous row of punctures near the base. Habitat in decaying vegetable matter *A. NIGRICORNIS*, *Hoffm.*

At present no one appears to possess a British *Acritus* without a row of punctures at the base of the thorax, and living under bark or in rotten wood, but there is every reason to believe that *A. minutus* will be found, if looked for, as it is widely spread over nearly all Europe, and is not rare.

COCCINELLIDÆ.

Mysia oblongoguttata, var. ***nigroguttata***, Dollman, Ent. Record xxiv, 1912, p. 53, Plate ii. In form, sculpture and size the variety resembles the type-form, but the elytra, which are usually quite free from black markings, exhibit six well defined black spots, and the two dark longitudinal lines on the thorax that are sometimes visible in normal specimens are very strong and thick, the dark colour reaching the base and ceasing before apex: the clubs of the antennæ, the femora and the tibiæ in part are also black: the elytra are light testaceous brown with the margins somewhat lighter, with the usual light longitudinal lines and oblong spots, but each of the latter is marked with a very defined jet-black centre; the inner spot or centre of disc is very small, but distinct.

One specimen taken from *Pinus sylvestris* at Oxshott, Surrey, on July 4, 1911, by Mr. Dollman.

The dark elytral markings are interesting and I have not seen them in any specimen: I have however an example in my collection without locality, in which the whole central portion of the thorax is dark, except a small spot at base, and the tibiæ are almost entirely black.

CLERIDÆ.

Thanasimus rufipes, Brahm. Hoppe. Tschb. 1797, 136. Closely allied to *T. formicarius* L., but smaller on an average, with almost entirely red legs and antennæ; the head and thorax are much more finely and sparingly punctured; the basal red colour of the elytra is broader, and the first band of white pubescence lies entirely in this red band, and not in the black band, as is the case in *T. formicarius*.

Length $6\frac{1}{2}$ mm.

Nethy Bridge, Scotland. About half-a-score specimens taken by Professor Hudson Beare by beating the tops of felled Scotch fir trees; it will probably be found in some numbers, now that it has been recognised as a distinct species; it has been recorded from northern,

central and southern Europe. This is a very interesting addition to our fauna; we now possess both the European species of *Thanasimus* as British.

SCARABÆIDÆ.

Aphodius punctato-sulcatus, Sturm, var. **obscurus**, Schilsky, Deutsch., Ent. Zeits. 1888, p. 315. This insect is a melanic variety, in which the usual fuscous blotch on the elytra is much darkened, and so expanded as to leave only a narrow stripe near the suture, and a narrow space at base, sides and apex yellowish. The sides of the thorax also are very rarely pale; as a rule this very common species shows very little tendency to aberration.

Deal: Taken by Mr. F. B. Jennings and Mr. F. Bouskell.

HALTICÆ.

Chætocnema conducta, Muls. Bull. Mosc. 1838, ii., 180. A small species, ovate and convex, with the head and thorax greenish bronze, and the elytra testaceous with the suture, the shoulders, and the edge of the lateral margin dark; under side black, shining; the dark sutural band is somewhat variable; antennæ moderate, reddish with the apex darker; head and thorax very closely but distinctly punctured; scutellum smooth and rounded behind; elytra and thorax together forming a short oval, with regular rows of distinct punctures; interstices very finely sculptured; legs reddish testaceous, posterior femora entirely, anterior and intermediate femora partly, black.

Length $1\frac{1}{4}$ mm.

Two specimens of this very distinct and interesting species were captured by E. Charles Horrell in Forge Valley, near Scarborough, in 1911, by sweeping herbage. Mr. Horrell has searched for it again this year (1912), but without success, as he had hardly any opportunity of collecting in the locality. It will probably, however, be found in some numbers, and probably in other localities, as it occurs (for the most part in damp places on the margins of ditches and streams) in Southern France, the Alpine region of Switzerland, the Austrian Tyrol, and throughout the southern portion of Europe from Spain to the Caucasus, as well as in Algeria and Syria.

Longitarsus plantago-maritimus, Dollman. Ent. Record xxiv. 1912, 187. "Oblong ovate, strongly convex, deep black, shining; antennæ long, thickened towards apex, penultimate joints fully twice as long as broad, black with the basal joints deep red-brown; thorax moderately shining, entirely deep black, punctured closely with a coarse and somewhat confluent punctuation; winged; elytra at base wider than thorax, plainly widened behind, convex, deep black, the humeral callosity well developed and very shining, very strongly, coarsely and closely punctured; pygidium exposed, deeply punctured; legs deep brown; femora nearly black (the posterior femora quite black), interior and intermediate knees, and all the tarsi, red-brown."

Length $2\frac{1}{2}$ mm.

Gravesend, in numbers on *Plantago Maritima* (Dollman).

The species is allied to *L. niger* but is easily distinguished by its size and the coarser punctuation of the thorax.

A testaceous red variety occurs for which Mr. Dollman proposes the name *perplexus*.

As will be found stated on p. 167 of this volume the insect from Cleethorpes introduced as *L. nigerrimus* Gyll., by Dr. Joy and Mr. Tomlin is not that species. The true *L. nigerrimus* Gyll., has been taken by Dr. Sharp in the New Forest, and the name must therefore stand in our lists; it is deep shining black, of about the size of *L. holsaticus* ($1\frac{1}{2}$ mm.), with rather short and broad elytra; the thorax is finely, and the elytra comparatively strongly and distinctly punctured.

ALLECULIDÆ.

Prionychus (*Eryx*) **fairmairei**, Reiche. Ann. Soc. Ent. Franc. 1860 p. 731. (*lævis* Seidl. Faun. Balt. ii. 1891, 524). Very like *Prionychus* (*Eryx*) *ater* F., but easily distinguished by its more parallel shape, much more shining appearance, and shorter and thinner antennæ and legs; the prosternum is also different and the punctuation finer. Found under loose bark in Sherwood Forest by Mr. Donisthorpe, who introduced the species as British (Ent. Record xxiv. 1912, p. 1). The Sherwood specimens appear to be all *P. fairmairei*, while those from the New Forest are all *P. ater*.

CURCULIONIDÆ.

Strophosomus curvipes, Thoms. (Skand. Col. vii., 138; Bedel, Faune Col. Seine. vi., p. 46). This species is distinguished by the comparatively narrow thorax with much rounded sides, and by the strongly curved anterior tibiæ of the male. In the female there is a small bare raised line at the base of the thorax, which is scarcely indicated in the male. The nearest ally seems to be *S. coryli*, but in appearance the species more closely resembles *S. fulvicornis*, from which it may be known by the form of the thorax and elytra, the different setæ of the elytra, and the curved male tibiæ. Thomson in his description says that the insect is very like *S. coryli*, but is easily distinguished by the forehead not being carinate in front, with the clypeal impression less distinct, by the thorax being less strongly punctured, with the sides rounded and dilated before the middle and by the somewhat flattened elytra and the curved tibiæ. Dr. Sharp is doubtful if Thomson's and Bedel's description apply to the same insect, but if not, they must be extremely closely allied. At all events Bedel adopts Thomson's name, so that he appears to have convinced himself of their identity.

Length 2 mm.

Taken at Bournemouth in May, 1912, by Dr. Sharp and Mr. Ford (Ent. Mo. Mag. xlviii. (2 Ser. xxiii.) 1912, p. 150.)

On May 14, 1905, Mr. Donisthorpe took two specimens of a *Strophosomus* in a sandy place at Poole Heath, near Bournemouth, which he recognised as new to us. Dr. Sharp has identified them as *S. curvipes* (Ent. Mo. Mag. xlviii. (2 Ser. xxiii.) 1912, p. 197).

Dr. Sharp (l.c. p. 151) states that the synonymy of the genus is very uncertain: in the last European catalogue *fulvicornis*, Walton, is placed as a synonym of *capitatus* Deg., and *rufipes*, Steph., is given as a separate species, synonymous with *capitatus*, Bedel (*nec.* Deg.), but *rufipes* and *fulvicornis* appear to be identical. Dr. Sharp says that *S. fulvicornis* is a quite distinct species, distinguished by possessing only very minute short setæ, which mostly arise from the punctures, not from the interstices between the striæ. It is locally not uncommon in the New Forest, on stunted oaks and birches.

If the law of strict priority is to be observed the name *S. melano-grammus*, Forster (1771), must be substituted for *S. coryli*, F. (1775).

Barypeithes duplicatus, Keys. (Ent. Mo. Mag. xlvii. (2 Ser. xxvii.), 1911, 130. Plate II.) This species comes nearest to *B. pellucidus*, Boh., and resembles it in the fact that the integument is dotted with distant outstanding hairs; these are absent in *B. pyreneus*, Seidl, and *B. araneiformis*, Schr. The differences between the two species are given by Mr. Keys as follows:

Anterior and intermediate femora of male strongly, posterior moderately, thickened; thorax almost globular, elytra about twice the length of the thorax; legs comparatively thick and short; colour paler; average length 3 mm.	B. DUPLICATUS, <i>sp.n.</i>
Anterior femora of male strongly, intermediate and posterior moderately, thickened; thorax as long as broad, with sides almost semicircular, but converging in front; elytra more than twice as long as thorax; legs comparatively long and thin; colour darker; L. 3-4 mm.	B. PELLUCIDUS, <i>Boh.</i>

Mr. Keys gives excellent figures of the two species, so that they can be easily distinguished.

The species has been distributed as *B. pellucidus* by the Rev. Theodore Wood, who took it in great numbers between Broadstairs and Margate in July 1886: they were found in hollows on one small patch of sand, just above high-water mark, and were over in two or three days. Commander Walker took it in the Blean Woods, Kent, trapped in water in deep cart-wheel tracks, as well as in faggots: the species recorded by the Rev. H. S. Gorham as *B. pellucidus*, taken in great numbers in sandy ground in 1872, at Eastry, near Sandwich, must probably be referred to this species.

Orthocætes insignis, Aubé Grén. Cat. 129. This insect very closely resembles *O. setiger*, Beck., in general appearance, and is mixed with it in our collections: the antennæ, however, are darker and the general shape differs considerably, the thorax being rather longer and more parallel-sided, and the sides of the elytra sub-parallel, being only contracted for the apical third; in *O. setiger* the sides of the elytra are evenly rounded, the elytra being broadest about the middle; the thorax has a shallow longitudinal groove in the centre, and a deeper one on each side: these are absent or much fainter in *O. setiger*; the chief character, however, lies in the raised scale-like bristles of the elytra; in *O. setiger* these are erect, stronger, and very slightly curved; in *O. insignis* they are very strongly curved and almost decumbent and feebler; the difference is at once evident if the insect is examined sideways.

L. $2\frac{1}{2}$ mm.

Captain Deville, while staying with Dr. Joy, discovered this species in his collection mixed with *O. setiger*; Dr. Joy found it among my series of the insect, and it is probably in many of our collections. Cornwall (Joy); South Wales (Tomlin); Southsea (Moncreaff) (Ent. Mo. Mag. xlviii. (2 Ser. xxiii. 1912, 211). Mr. Moncreaff apparently found it on the ragwort in April, and in dead leaves at the base of this plant in autumn and winter (Brit. Col. v. 265).

Rhynchites harwoodi, Joy (Ent. Mo. Mag. xlvii. (2 Ser. xxii.) 1911, 270). In general appearance very like *R. uncinatus*, Thoms., blue, thorax with a slight greenish tinge, legs and antennæ cyaneous; rostrum rather long and slender, longer in the female than in the male; thorax longer than broad, distinctly rounded at the sides, closely but rather variably punctured; elytra much broader than thorax, widened behind middle, striæ strongly punctured, interstices very narrow and somewhat rugose; apex of anterior tibiæ simple; intermediate and posterior tibiæ in the male with a small tuft at apex.

Length 3-4 mm.

Probably not uncommon: Dr. Joy has taken it in Berkshire and Hampshire. I have specimens taken by myself at Hykeham, and at Longworth Wood, Lincoln, and examples taken at Chartley Moss, Staffordshire (on several occasions) and at Ellingham Fen by the late Mr. W. Garneys: it is probably not uncommon, and evidently widely distributed. It occurs in company with both *R. nanus* and *R. uncinatus*.

From *R. uncinatus* this species differs in having no tuft at the apex of the anterior tibiæ: the rostrum is longer, and it appears to be more slender, in both sexes: the thorax on an average is much the same in both species, but the striæ on the elytra are more strongly punctured, with the interstices narrower. From *R. nanus* it may be known by its blue colour, broader and shorter form, much longer and more slender rostrum, more rounded sides of thorax, and average larger size. There are also slight differences in the ædeagus.

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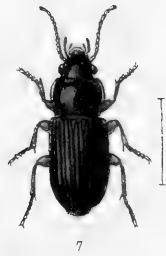
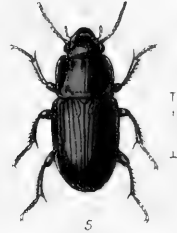
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<i>nigrocerculens, Muls.</i>	56	<i>Smicronyx, Schön.</i>	189	<i>pallidus, Newb.</i>	79
<i>obliteratus, Er.</i>	60	Sphaeridium, <i>F.</i>	36	Throscidæ	273
<i>riparius, Kell.</i>	59	<i>scarabæoides, var.</i>		Tracyphtæus, <i>Germ.</i>	185
<i>talparum, Dev.</i>	57	<i>lunatum, F.</i>	36	<i>aristatus, Gyll.</i>	185
Rabocerus, <i>Sharp</i>	177	Sphindidæ	281	<i>olivieri, Bedd.</i>	185
<i>bishopi, Sharp</i>	177	Staphylinidæ	37, 218, 235	Trechus, <i>Clairv.</i>	12
Reichenbachia <i>impressa,</i>		<i>Stenolophus, Dej.</i>	4	<i>subnotatus, Dej.</i>	12
<i>var. unicolor</i>	340	<i>plagiatus, Gorh.</i>	4	Trichius, <i>F.</i>	140
Rhinomaceridæ	301	Stenus, <i>Latr.</i>	70	Trichopterygidæ	99, 251
Rhizophagus, <i>Herbst.</i>	114	<i>formicetorum, Mann.</i>	70	Trichopteryx <i>intermedia,</i>	
<i>oblongicollis, Blatch.</i>	115	<i>ossium, var. insularis,</i>		<i>var. thomsoni, Er.</i>	102
Rhynchites, <i>Schneid.</i>	182	<i>Joy</i>	71	Trigonogenius, <i>Sol.</i>	147
<i>harwoodi, Joy.</i>	346	<i>palposus, Zett.</i>	70	<i>globulum, Sol.</i>	147
<i>ophthalmicus, Steph.</i>	182	Stephanopachys, <i>Wat.</i>	149	Triplox, <i>Payk.</i>	107
Rhynchophora	301	<i>substriatus, Payk.</i>	149	<i>bicolor, Gyll.</i>	107
Riolus, <i>Muls.</i>	136	Sternoxi	273	Trogolinus, <i>Sharp</i>	78
<i>sodalis, Er.</i>	137	Stichoglossa, <i>Fairm.</i>	44	<i>anglicanus, Sharp</i>	78
Saprinus, <i>Er.</i>	110	<i>semirufa, Er.</i>	44	Trogophlæus, <i>Mann.</i>	79
<i>immundus, Gyll.</i>	110	Strophosomus <i>curvipes,</i>		<i>subtilis, Er.</i>	79
Scaphidiidæ	133	<i>Thoms.</i>	344	Trogositidæ	261
Scaphisoma, <i>Leach</i>	133	Stylopidæ	319	Tychius, <i>Germ.</i>	190
<i>assimile, Er.</i>	133	Tachnius, <i>Grav.</i>	55	<i>hæmatopus, Gyll.</i>	192
Scarabæidæ	138, 270, 342	<i>frigidus, Er.</i>	55	<i>polylineatus, Germ.</i>	192
Scolytidæ	199, 317	Tachyporus, <i>Grav.</i>	55	Xantholinus, <i>Serv.</i>	66
Scydmænidæ	95, 249	<i>fasciatus, Nich.</i>	55	<i>cribripenis, Faw.</i>	66
Scydmænus, <i>Latr.</i>	96	Telephoridæ	144, 278	Xylophilidæ	181
<i>barnevillei, Reitter.</i>	96	Telephorus (Cantharis)	144	Xylophilus, <i>Latr.</i>	181
				<i>brevicornis, Perris.</i>	181



SUPT. PLATE I

- FIG. 1. *Carabus nitens*, *L. v. niger*, *Sem.*
,, 2. *Nebria gyllenhali*, *Sch. v. rufescens*, *Ström.*
,, 3. ,, ,, ,, ,, *balbi*, *Bon.*
,, 4. *Dyschirius obscurus*, *Gyll.*
,, 5. *Harpalus froelichi*, *Stm.*
,, 6. ,, *latus*, *L. v. erythrocephalus*, *F.*
,, 7. *Anisodactylus binotatus*, *F. v. spurcaticornis*, *Dj.*
,, 8. ,, *nemorivagus*, *Duft.*
,, 9. ,, ,, ,, *v. atricornis*, *Steph.*
,, 10. *Amara famelica*, *Zimm.*
,, 11. ,, *anthobia*, *Villa.*
,, 12. *Laemostenus complanatus*, *Dj.*
,, 13. *Anchomenus quadripunctatus*, *De G.*





SUPT. PLATE II

- FIG. 1. *Tachys parvulus*, *Dj.*
,, 2. *Bembidium iricolor*, *Bedel.*
,, 3. ,, *quadripustulatum*, *Dj.*
,, 4. ,, *virens*, *Gyll.*
,, 5. ,, *argenteolum*, *Ahr.*
,, 6. *Lebia turcica*, *F.*
,, 7. *Dromius agilis*, *F. v. bimaculatus*, *Dj.*
,, 8. ,, *angustus*, *Brullé.*
,, 9. *Hydroporus hoffgarteni*, *Schlisk.*
,, 10. *Platambus maculatus*, *L. v. immaculatus*, *Donis.*
,, 11. *Paracymus aenus*, *Germ.*
,, 12. *Laccobius oblongus*, *Gorb.*
,, 13. ,, *purpurascens*, *Newb.*





SUPT. PLATE III

- FIG. 1. *Laccobius ytenensis*, *Shp.*
,, 2. *Helophorus tuberculatus*, *Gyll.*
,, 3. ,, *rugosus*, *Ol.*
,, 4. *Hydrochus nitidicollis*, *Muls.*
,, 5. *Ochthebius lejolisi*, *Muls.*
,, 6. *Hydraena britteni*, *Joy.*
,, 7. *Sphaeridium scarabaeoides*, *L. v. lunatum*, *F.*
,, 8. *Cercyon littoralis*, *Gyll. v. binotatum*, *Steph.*
,, 9. *Aleochara discipennis*, *Muls.*
,, 10. ,, *crassiuscula*, *Sahlb.*
,, 11. ,, *maculata*, *Bris.*
,, 12. *Oxypoda longipes*, *Muls.*
,, 13. ,, *perplexa*, *Muls.*





SUPT. PLATE IV

- FIG. 1. *Oxypoda sericea*, *Heer*.
,, 2. *Ocyusa nigrata*, *Fair*.
,, 3. *Stichoglossa semirufa*, *Er*.
,, 4. *Ilyobates propinquus*, *Aub*.
,, 5. *Calodera protensa*, *Man*.
,, 6. *Dinarda hagensi*, *Wasm*.
,, 7. ,, *pygmaea*, *Wasm*.
,, 8. *Lomechusa strumosa*, *F*.
,, 9. *Homalota scotica*, *Elliman*.
,, 10. ,, *picipennis*, *Man*.
,, 11. ,, *pruinosa*, *Kr*.
,, 12. ,, *inhabilis*, *Kr*.
,, 13. ,, *clavigera*, *Scriba*.



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SUPT. PLATE V

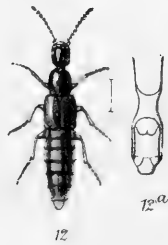
- FIG. 1. *Homalota paradoxa*, *Rey.*
,, 2. ,, *divisa v. blatchi*, *Ellis.*
,, 3. *Thiasophila inquilina*, *Märk.*
,, 4. *Tachyusa scitula*, *Er.*
,, 5. *Gyrophaena pulchella*, *Heer.*
,, 6. ,, *poweri*, *Crotch.*
,, 7. *Phytosus migriventris*, *Chev.*
,, 8. *Arena octavii*, *Fauv.*
,, 9. *Tachyporus fasciatus*, *Nicholson.*
,, 10. *Bryoporus rugipennis*, *Pand.*
,, 11. *Mycetoporus monticola*, *Fowler.*
,, 12. ,, *forticornis*, *Fauv.*
,, 13. *Quedius nigrocoeruleus*, *Muls.*





SUPT. PLATE VI

- FIG. 1. *Quedius talparum*, *Denville*.
,, 2. ,, *riparius*, *Kell*.
,, 3. ,, *kraatzii*, *Bris*.
,, 4. ,, *obliteratus*, *Er*.
,, 5. *Creophilus maxillosus v. ciliaris*, *Steph*.
,, 6. *Philonthus intermedius v. donisthorpei*, *Dollman*.
,, 7. *Gabrius trossulus*, *Nord*.
,, 7*a*. Male appendage.
,, 8. *Gabrius nigritulus*, *Gr*.
,, 8*a*. Male appendage.
,, 9. *Gabrius stipes*, *Shp*.
,, 9*a*. Male appendage.
,, 10. *Gabrius velox*, *Shp*.
,, 10*a*. Male appendage.
,, 11. *Gabrius keysianus*, *Shp*.
,, 11*a*. Male appendage.
,, 12. *Gabrius appendiculatus*, *Shp*.
,, 12*a*. Male appendage.
,, 13. *Gabrius bishopi*, *Shp*.
,, 13*a*. Male appendage.

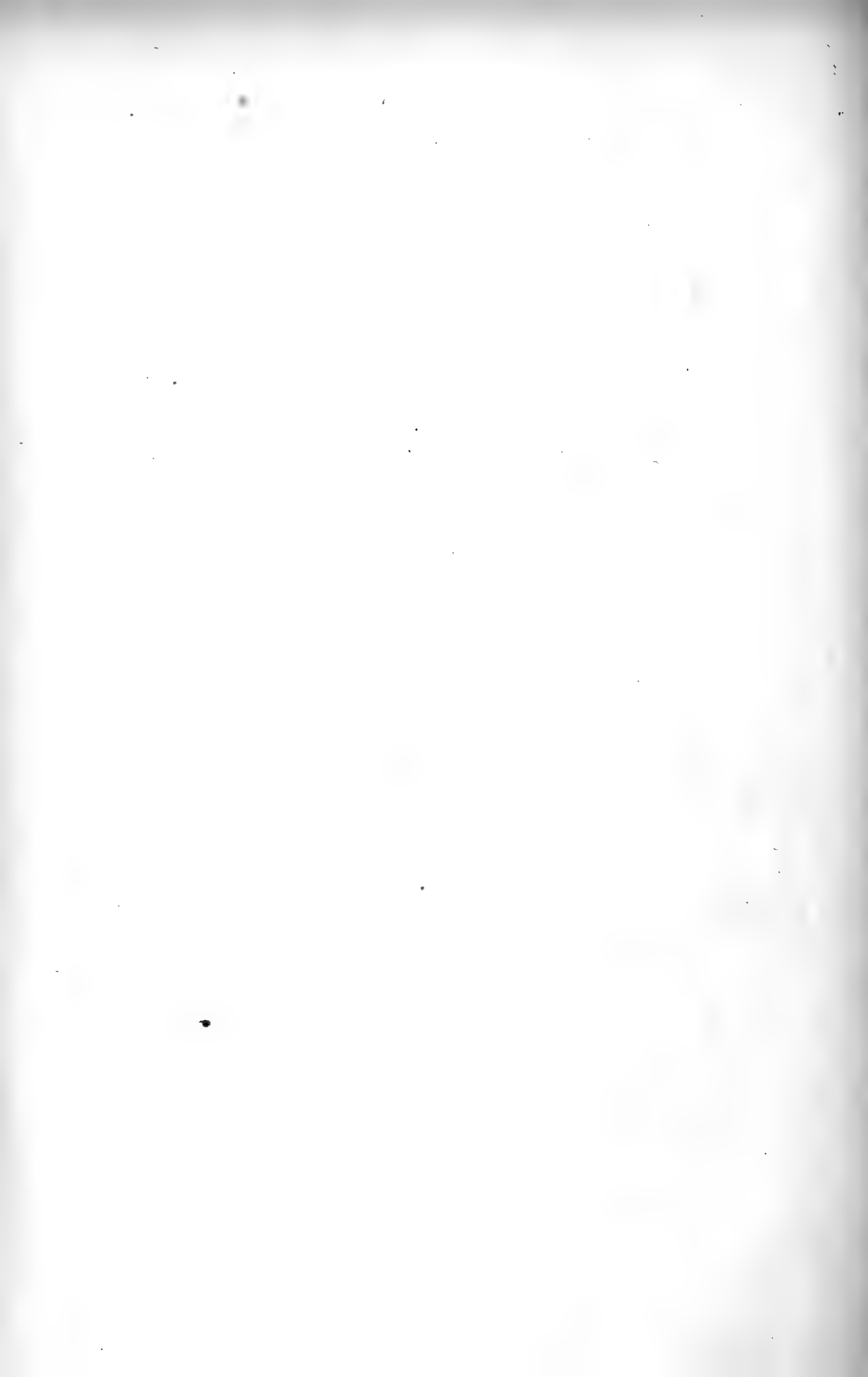




SUPT. PLATE VII

- FIG. 1. *Gabrius pennatus*, *Shp.*
,, 1a. Male appendage.
,, 2. *Actobius cinerascens*, *Gr.*
,, 3. ,, *villosulus*, *Steph.*
,, 4. *Gabrius astutus*, *Er.*
,, 5. *Xantholinus atratus*, *Er.*
,, 6. ,, *cribripennis*, *Faav.*
,, 7. *Lathrobium elongatum* v. *fraudulentum*, *Gang.*
,, 8. ,, *lævipenne*, *Hcer.*
,, 9. ,, *longipenne*, *Fair.*
,, 10. ,, *dilutum*, *Er.*
,, 11. ,, *punctatum*, *Zett.*
,, 12. ,, *fovulum*, *Steph.*
,, 13. ,, *terminatum* v. *immaculatum*, *Fowler.*





SUPT. PLATE VIII

- FIG. 1. *Lathrobium terminatum* v. *atripalpe*, *Scriba*.
.. 2. *Sunius lyonessius*, *Joy*.
.. 3. *Stenus palposus*, *Zett*.
.. 4. ,, *formicetorum*, *Mann*.
.. 5. ,, *ossium* v. *insularis*, *Joy*.
.. 6. *Bledius hinnulus*, *Er*.
.. 7. ,, *filipes*, *Shp*.
.. 8. ,, *denticollis*, *Fawc*.
.. 9. ,, *secerdendus*, *Joy*.
.. 10. *Platystethus alutaceus*, *Thoms*.
.. 11. *Oxytellus piceus*, *Er*.
.. 12. ,, *saucyi*, *Pand*.
.. 13. *Ancyrophorus omalinus*, *Er*.



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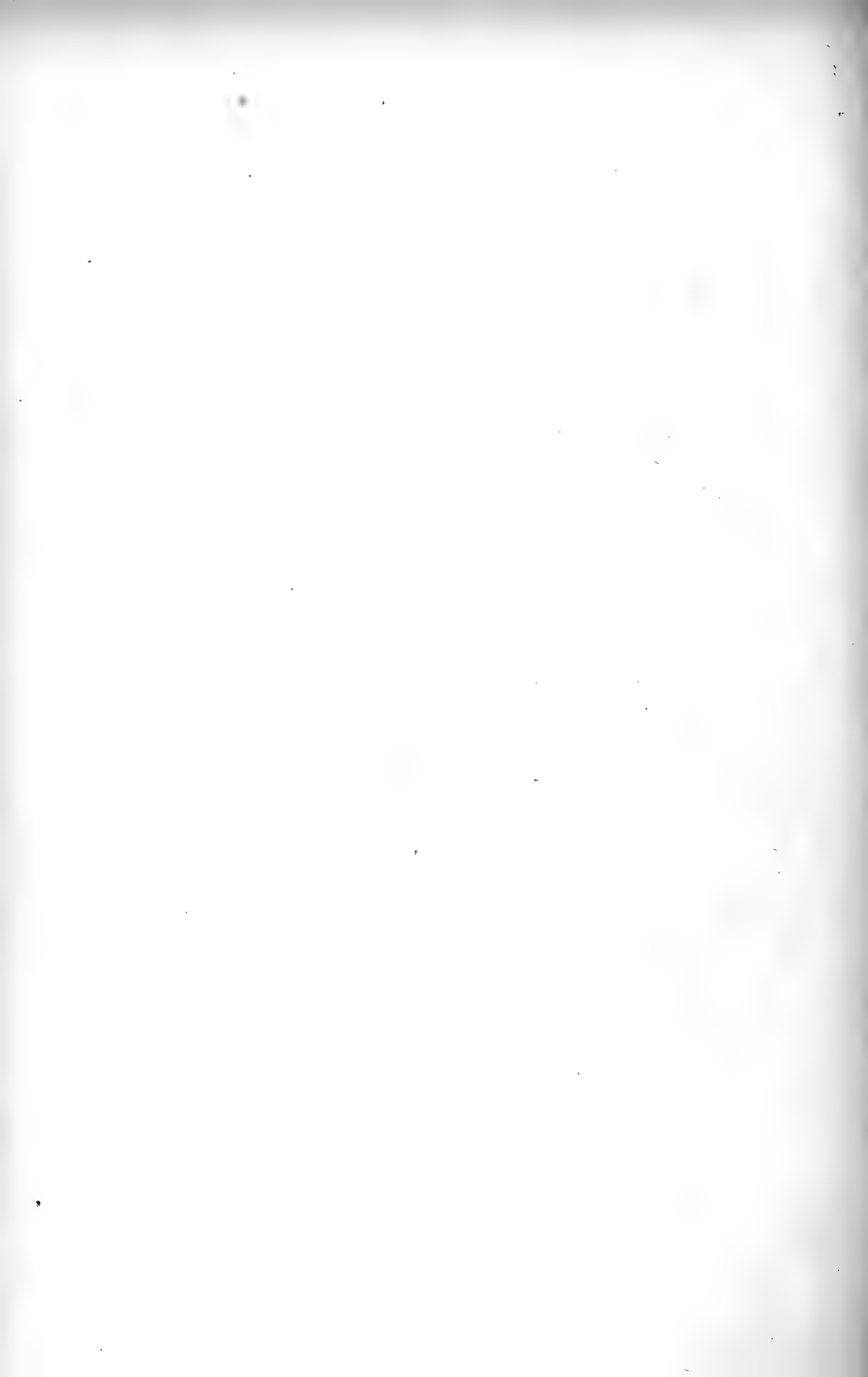
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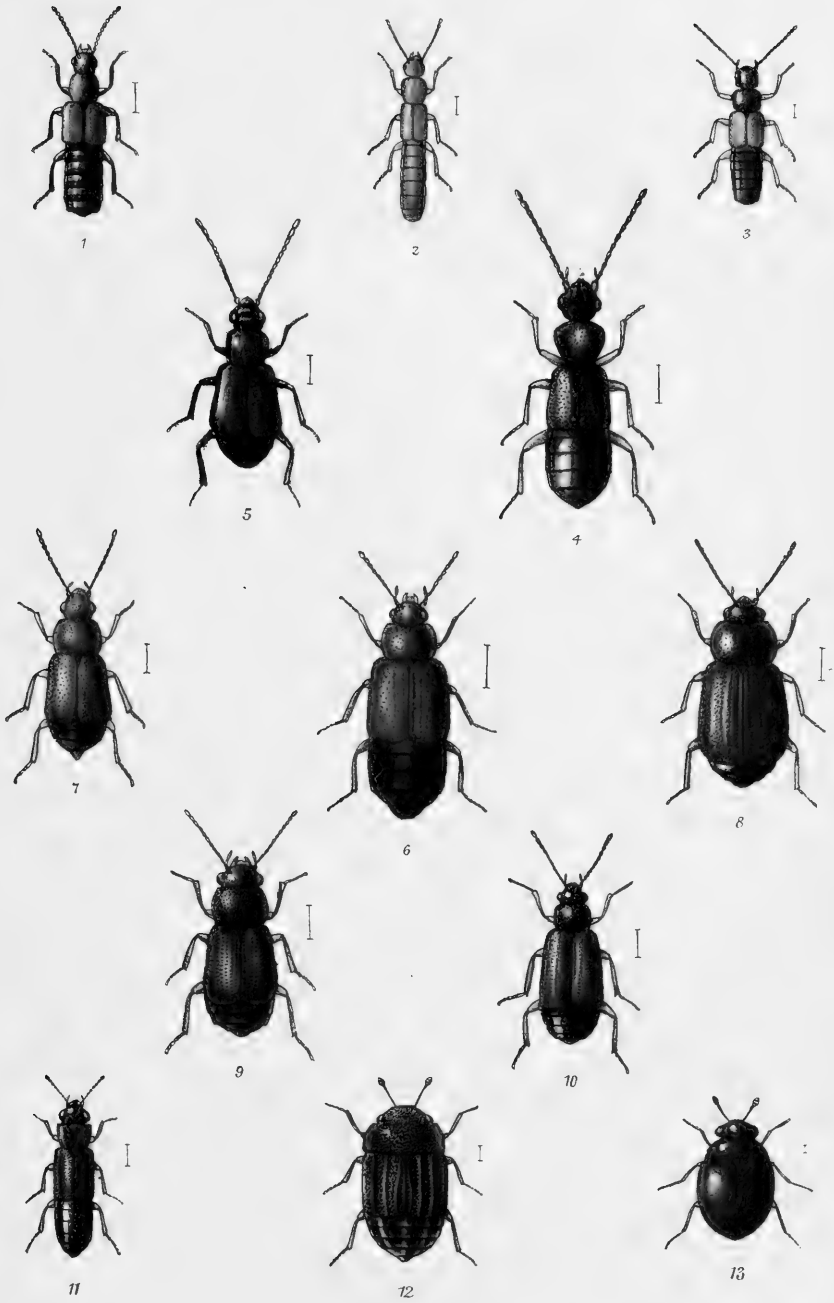


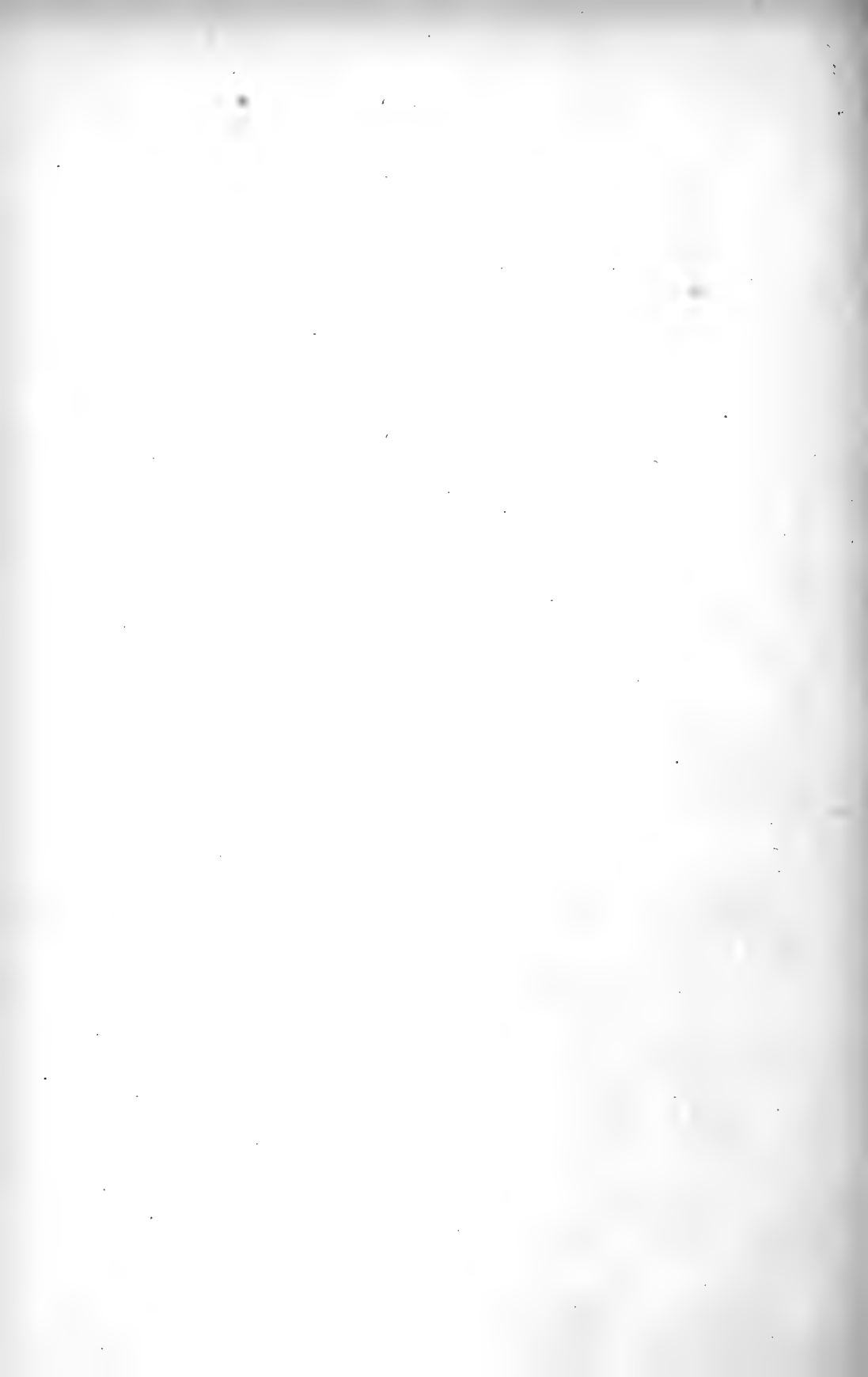
13



SUPT. PLATE IX

- FIG. 1. *Trogolinus anglicanus*, *Shp.*
,, 2. *Thinobius pallidus*, *New*
,, 3. ,, *bicolor*, *Joy.*
,, 4. *Geodromicus globulicollis*, *Man.*
,, 5. *Lesteva luctuosa*, *Flavv.*
,, 6. *Olophrum nicholsoni*, *Donis.*
,, 7. ,, *assimile*, *Pk.*
,, 8. ,, *fuscum*, *Gr.*
,, 9. ,, *consimile*, *Gyll.*
,, 10. *Orochares angustatus*, *Er.*
,, 11. *Homalium brevicolle*, *Thoms.*
,, 12. *Micropeplus ccelatus*, *Er.*
,, 13. *Clambus punctulum*, *Beck.*





SUPT. PLATE X

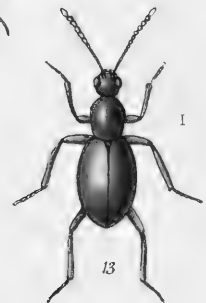
- FIG. 1. *Agathidium badium*, *Er.*
,, 2. *Liodes lucens*, *Fair.*
,, 3. ,, *anglica*, *Ege.*
,, 4. ,, *treipkei*, *Er.*
,, 5. ,, *davidiana*, *Joy.*
,, 6. ,, *lunicollis*, *Er.*
,, 7. ,, *nigrita*, *Er.* (black form).
,, 8. ,, ,, ,, (light form).
,, 9. ,, *furva*, *Er.*
,, 10. ,, *curta v. donisthorpei*, *Fleisch*
,, 11. *Catops fuliginosa*, *Er.*
,, 12. ,, *montivagus*, *Heer.*
,, 13. *Ptomaphagus sericatus*, *Chaud.*





SUPT. PLATE XI

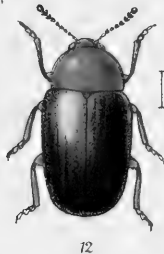
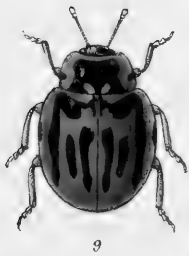
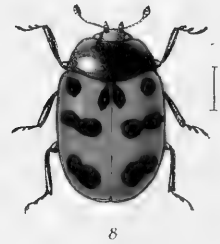
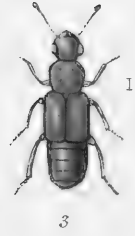
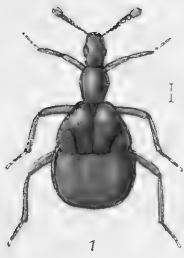
- FIG. 1. *Colon rufescens*, *Kraatz*.
,, 2. ,, *viennense*, *Hbst*.
,, 3. ,, *serripes*, *Sahlb*.
,, 4. ,, *angulare*, *Er*.
,, 5. ,, *brunneum*, *Latr.* (narrow form).
,, 6. ,, ,, ,, (broad form).
,, 7. ,, *appendiculatum*, *Sahlb.* ♂
,, 8. *Neuraphes planifrons*, *Blatch*.
,, 9. ,, *carinatus*, *Muls*.
,, 10. *Scydmaenus barnevillei*, *Reit*.
,, 11. ,, *poweri*, *Fowler*.
,, 12. *Euconnus mäklini*, *Mann*.
,, 13. *Eumicrus rufus*, *Müll*.





SUPT. PLATE XII

- FIG. 1. *Claviger longicornis*, *Muls.*
,, 2. *Trichonyx märkeli*, *Aub.*
,, 3. *Euplectus bescidicus*, *Reit.*
,, 4. ,, *tomlini*, *Joy.*
,, 5. ,, *nubigena*, *Reit.*
,, 6. *Olibrus flavicornis*, *Stm.*
,, 7. *Coccinella 10-punctata v. confluens*, *Haw.*
,, 8. ,, *11-punctata v. confluens*, *Donis.*
,, 9. *Anatis ocellata v. hebraea*, *L.*
,, 10. *Mysia oblongoguttata v. nigroguttata*, *Dollman.*
,, 11. *Scymnus limonii*, *Donis.*
,, 12. *Triplax bicolor*, *Gyll.*
,, 13. ,, *lacordairei*, *Crotch.*





SUPT. PLATE XIII

- FIG. 1. *Aulonium trisulcatum*, *Geof.*
,, 2. *Hypocaccus rugifrons*, *Pk.*
,, 3. *Carphophilus 6-pustulatus*, *F.*
,, 4. *Rhizophagus oblongocollis*, *Blatch.*
,, 5. ,, *cœruleipennis*, *Sahl.*
,, 6. *Holoparamecus caularum*, *Aub.*
,, 7. *Lathridius bergrothi*, *Reit.*
,, 8. *Corticaria crenicollis*, *Mann.*
,, 9. ,, *longicollis*, *Zett.*
,, 10. *Melanophthalma distinguenda*, *Com.*
,, 11. ,, *similata*, *Gyll.*
,, 12. *Pediacus dermestoides*, *F.*
,, 13. *Læmophloeus monilis*, *F.*



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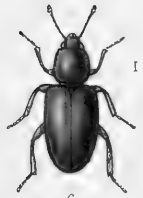
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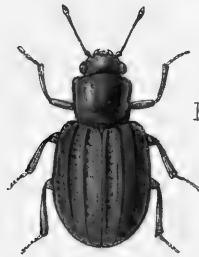
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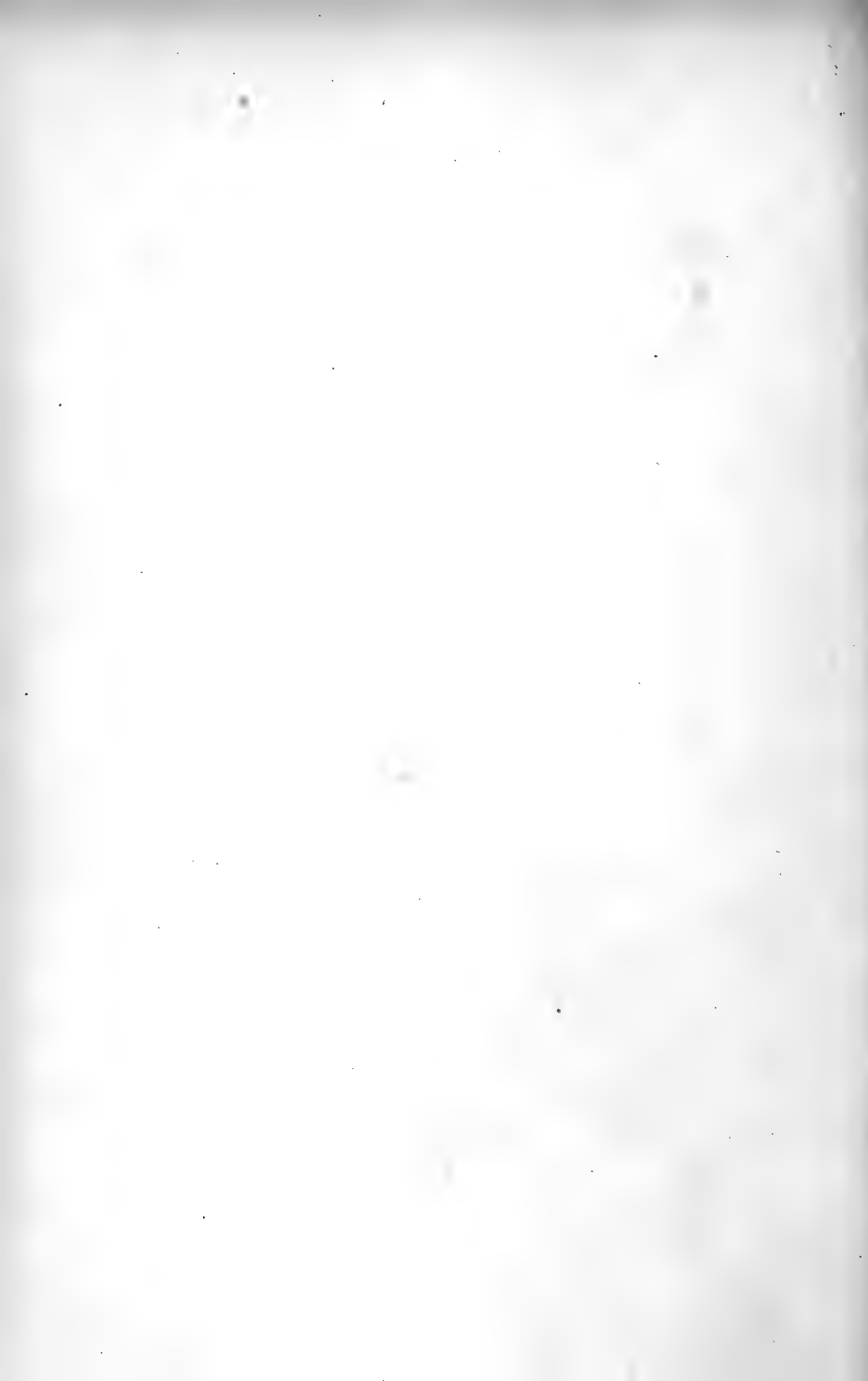
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SUPT. PLATE XIV

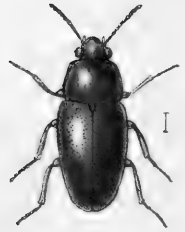
- FIG. 1. *Silvanus mercator*, *Fauv.*
,, 2. *Cryptophagus bimaculatus*, *Pz.*
,, 3. *Micrambe abietis*, *Plk.*
,, 4. *Henoticus serratus*, *Gyll.*
,, 5. *Hadrotoma nigripes*, *F.*
.. 6. *Dryops luridus*, *Er.*
,, 7. ,, *ernesti*, *Des Goz.*
,, 8. ,, *striatellus*, *Fair.*
,, 9. ,, *anglicanus*, *Edwards.*
,, 10. ,, *auriculatus*, *Geof.*
,, 11. ,, *griseus*, *Er.*
,, 12. ,, *nitidulus*, *Heer.*
,, 13. *Aphodius nemoralis*, *Er.*



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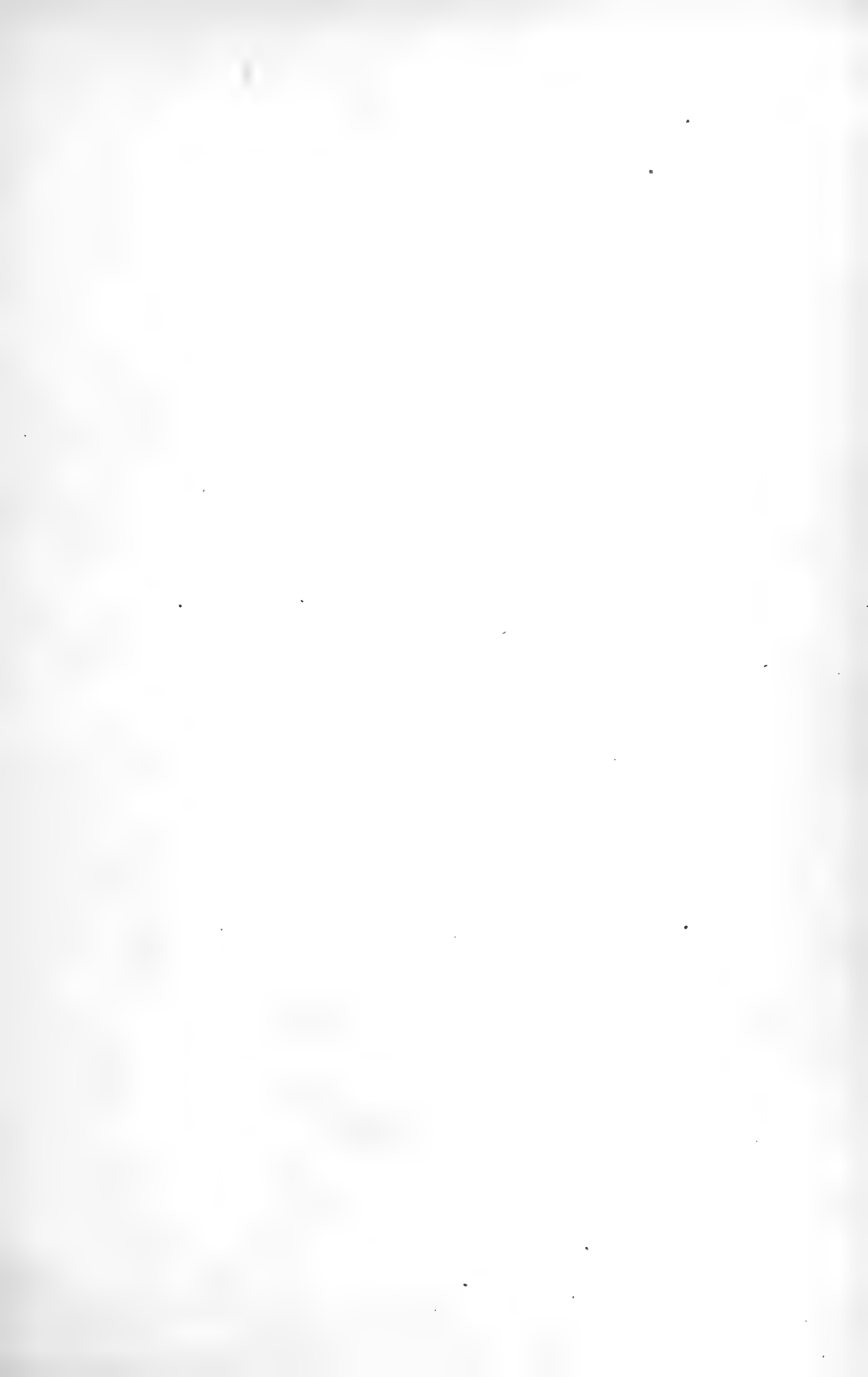


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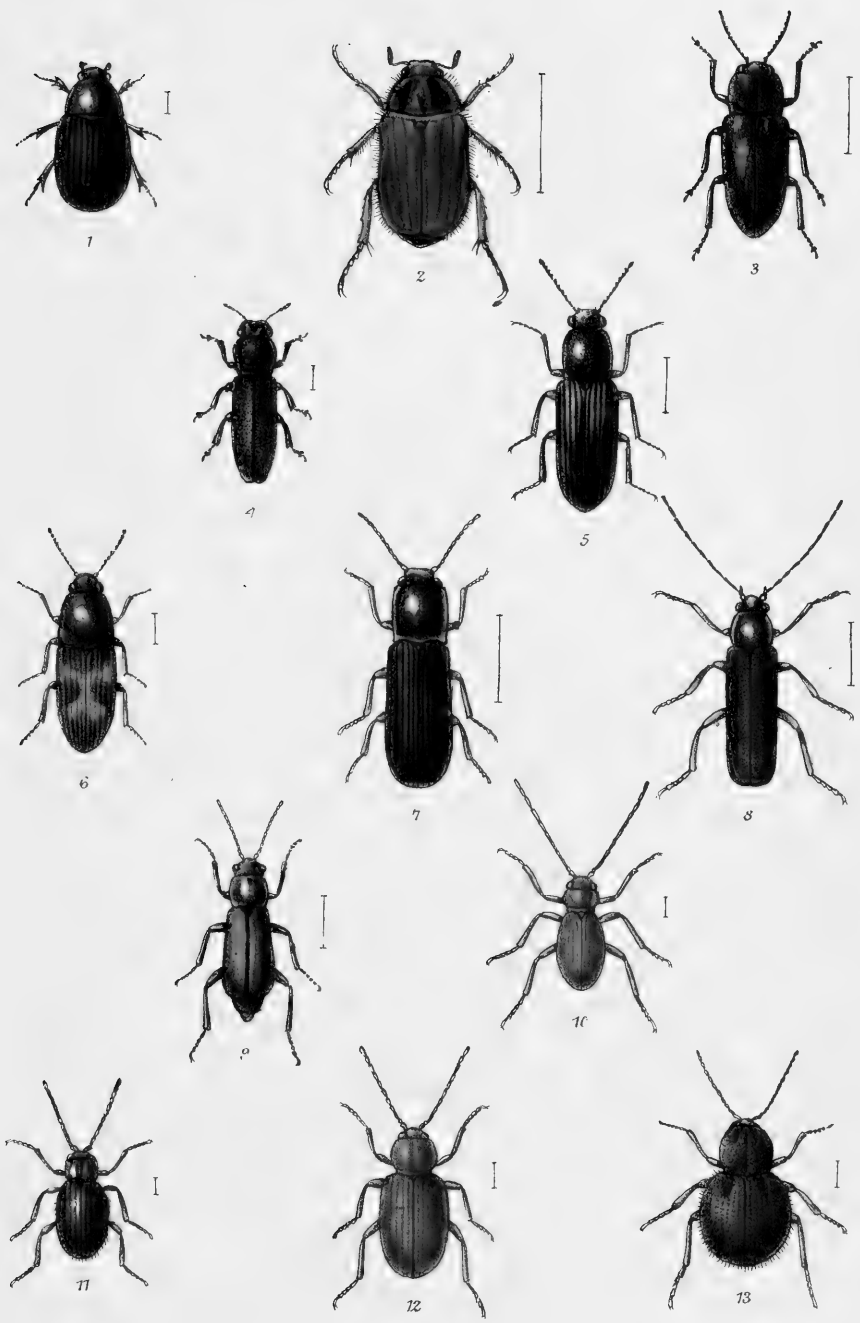
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SUPT. PLATE XV

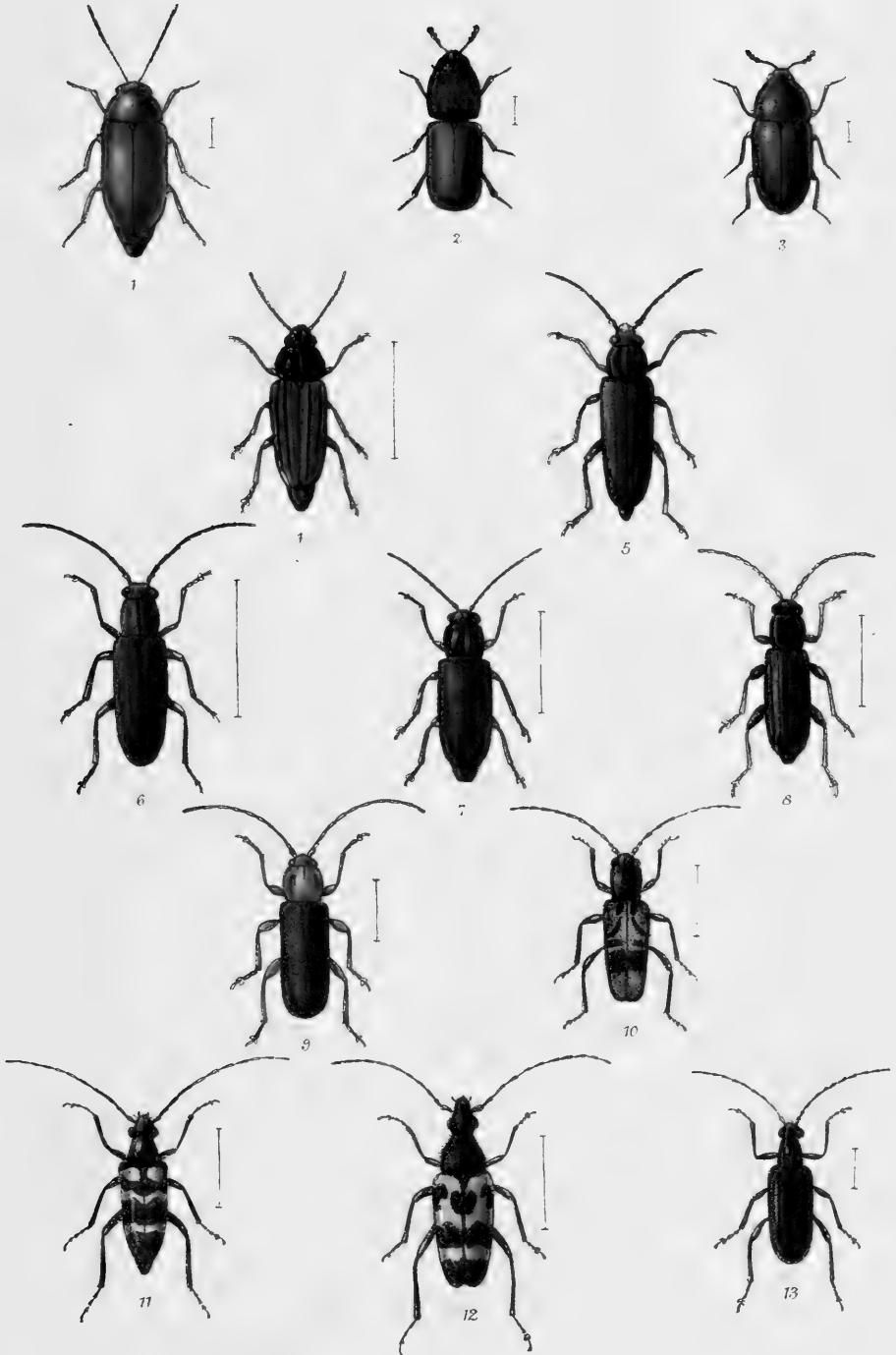
- FIG. 1. *Diastictus vulneratus*, *Gyll.*
,, 2. *Rhizotrogus ochraceus*, *Knoch.*
,, 3. *Melanophila acuminata*, *De G.*
,, 4. *Aphanisticus emarginatus*, *F.*
,, 5. *Cardiophorus erichsoni*, *de Buys.*
,, 6. *Cryptohypnus pulchellus*, *L.*
,, 7. *Athous difformis*, *Lac.* ♀
,, 8. *Cantharis figurata* v. *cruachana*, *Chitty.*
,, 9. *Malachius barneveli*, *Put.*
,, 10. *Ptinus pusillus*, *Stm.*
,, 11. ,, *testaceus*, *Boield.*
,, 12. ,, *tectus*, *Boield.*
,, 13. *Trigonogenius globulum*, *Sol.*



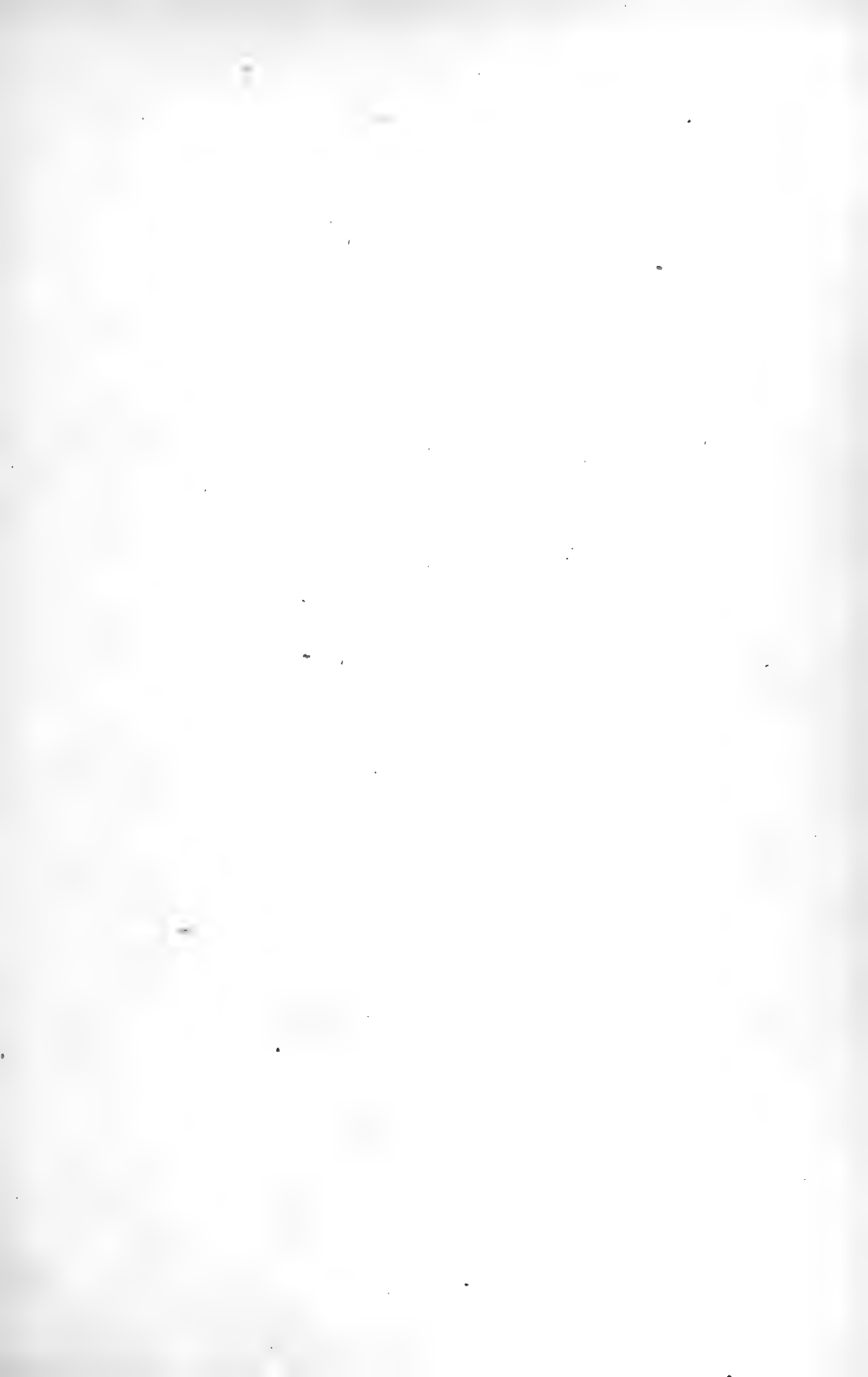


SUPT. PLATE XVI

- FIG. 1. *Ernobius abietis*, *F.*
,, 2. *Dinoderus minutus*, *F.*
,, 3. *Cis dentatus*, *Mellie.*
.. 4. *Asemum striatum* *v.* *aegestre*, *F.*
,, 5. *Criocephalus rusticus*, *L.*
,, 6. ,, *ferus*, *Kr.*
,, 7. *Tetropium gabrieli*, *Weise.*
,, 8. ,, ,, *v. crawshayi*, *Shp.*
,, 9. *Phymatodes lividus*, *Rossi.*
,, 10. *Clytus mysticus* *v.* *hieroglyphicus*, *Hbst.*
,, 11. *Pachyta* ♂ *maculata*, *L.* ♂
,, 12. ,, ,, ,, ♀
,, 13. *Gramoptera holomelina*, *Pool.*

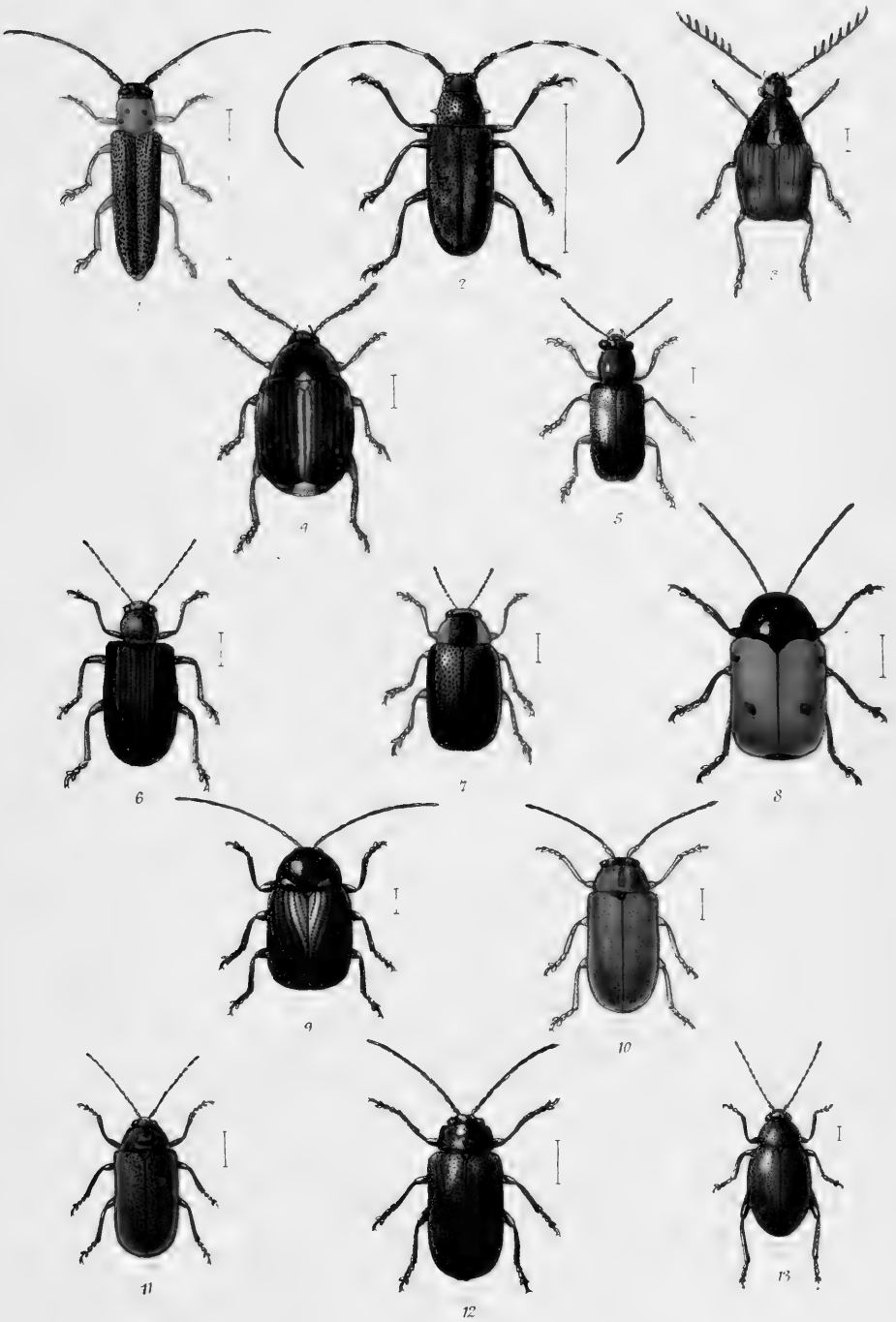






SUPT. PLATE XVII.

- FIG. 1. *Oberea oculata* v. *quadrimaculata*, *Donis*.
,, 2. *Monohamus sutor*, *L.*
,, 3. *Bruchus pectinicornis*, *L.* ♂
,, 4. ,, *affinis*, *Fröh.*
,, 5. *Orsodacna cerasi*, v. *glabrata*, *F.*
,, 6. *Lema erichsoni*, *Stff.*
,, 7. *Gynandrophthalma affinis*, *Hellw.*
,, 8. *Cryptocephalus bipunctatus*, *L.*
,, 9. ,, *pavulus* v. *barbareæ*, *Steph.*
,, 10. *Galerucella pusilla*, *Weise.*
,, 11. ,, *fergussoni*, *Fowler.*
,, 12. *Lochmaea suturalis* v. *nigrita*, *Weise.*
,, 13. *Longitarsus nigerrimus*, *Gyll.*



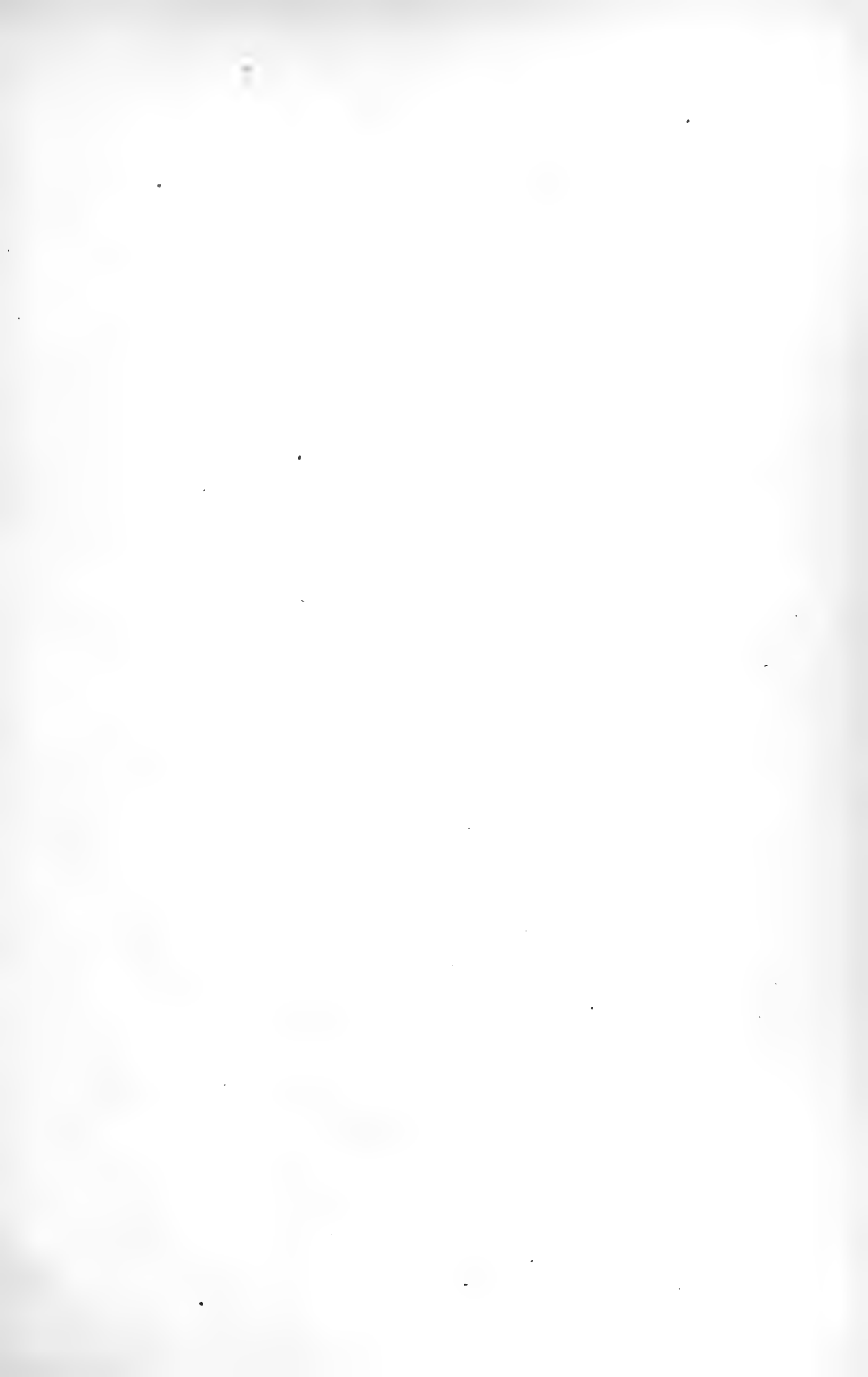


SUPT. PLATE XVIII.

- FIG. 1. *Longitarsus plantago-maritimus*, *Dollman*
,, 2. ,, ,, ,, *v. perplexus*, *Dollman*
,, 3. *Crepidodera impressa*, *F.*
,, 4. *Chætocnema confusa*, *Boh.*
,, 5. ,, *arida*, *Foudras.*
,, 6. ,, *conducta*, *Mots.*
,, 7. *Dibolia cynoglossi*, *Koch.*
,, 8. *Cassida nobilis v. dollmani*, *Donis.*
,, 9. *Pentaphylus testaceus*, *Hell.*
,, 10. *Hypophlæus linearis*, *F.*
,, 11. *Cteniopus sulphureus v. bicolor*, *F.*
,, 12. *Eryx fairmairei*, *Reich.*
,, 13. *Carida affins*, *Plk.*





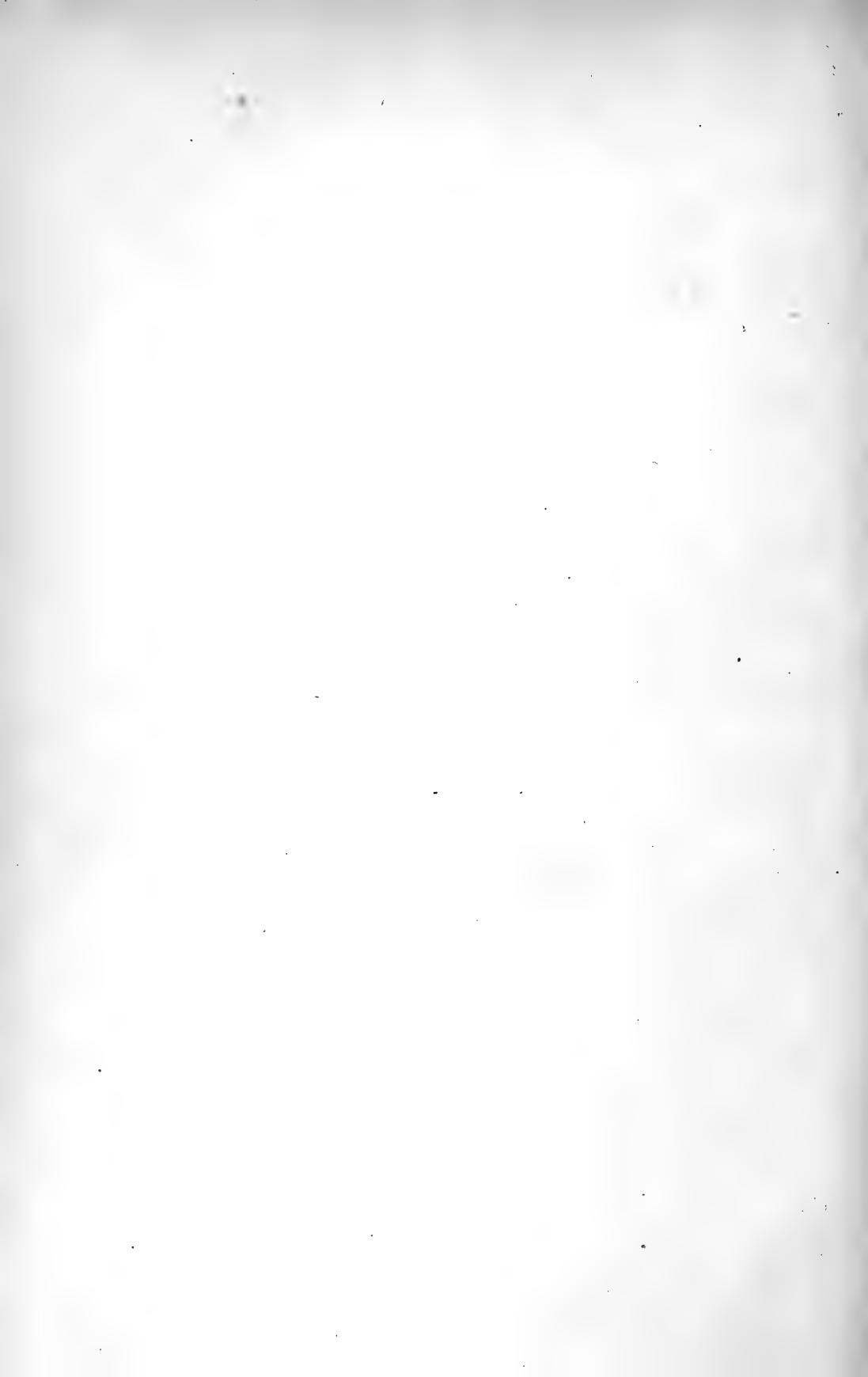


SUPT. PLATE XIX.

- FIG. 1. *Rabocerus bishopi*, *Sharp*.
,, 2. *Lissodema cursor*, *Gyll*.
,, 3. *Oedemera virescens*, *L.* ♂
,, 4. *Sitaris muralis v. flava*, *Hamm*.
,, 5. *Rhynchites harwoodi*, *Joy* ♂
,, 6. ,, ,, ,, ♀
,, 7. *Apion kiesenwetteri*, *Desb*.
,, 8. *Otiorhynchus auro-punctatus*, *Gyll*.
,, 9. *Strophosomus curvipes*, *Thoms*.
,, 10. *Barypeithes pyrenaicus*, *Seidl*.
,, 11. *Exomias duplicatus*, *Keys* ♂
,, 12. ,, ,, ,, ♀
,, 13. *Bagous diglyptus*, *Boh*.



E.C.Knight del.et.Lith.



SUPT. PLATE XX.

- FIG. 1. *Tychius polylineatus*, *Germ.*
,, 2. ,, *hæmatopus*, *Gyll*
,, 3. ,, *melliloti*, *Steph.*
,, 4. *Anoplus roboris*, *Suff.*
,, 5. *Miarus micros*, *Germ.*
,, 6. *Gymnetron linariæ*, *Pz.*
,, 7. *Anthonomus rufus*, *Sch.*
,, 8. *Cionus longicollis*, *Bris.*
,, 9. *Ceuthorhynchus syrites*, *Germ.*
,, 10. ,, *parvulus*, *Bris.*
,, 11. ,, *querceti*, *Gyll.*
,, 12. *Baris lepidii*, *Germ.*
,, 13. *Pityogenes trepanatus*, *Nörd.*









