LANCASHIRE AND CHESHIRE

ENTOMOLOGICAL SOCIETY.

THE COLEOPTERA

— OF —

Lancashire & Cheshire

— BY —

W. E. SHARP, F.E.S.

St. Albans:
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"If we take the organic productions of a small island, or of any very limited tract of country, such as a moderate sized country parish, we have in their relations and affinities—in the fact that they are *there* and others are *not* there—a problem which involves all the migrations of these species and their ancestral forms—all the vicissitudes of climate and all the changes of sea and land which have affected those migrations—the whole series of actions and reactions which have determined the preservation of some forms and the extinction of others —in fact the whole history of the earth inorganic and organic, throughout a large portion of geological time."

WALLACE: *Island Life.*

THE COLEOPTERA

OF THE

COUNTIES OF

LANCASHIRE AND CHESHIRE.

By W. E. SHARP, F.E.S.

INTRODUCTORY.

The subject of the following pages is the distribution of one of the principal orders of the INSECTA, the *Coleoptera*, or beetles, so far as it has been recorded throughout the two counties of Lancashire and Cheshire. This district as an area of zoological distribution is, of course, a purely arbitrary one, and as a matter of fact, although the whole of the two counties is for the sake of convenience here included, but little is recorded, or indeed known, of their Coleopterous fauna except as it occurs within a few miles of the towns of Manchester, Liverpool, Southport, Warrington, Birkenhead, and Chester. Nearly the whole of Lancashire north of the Ribble, the mountainous districts in the east of that county, and the whole of South and East Cheshire are still virtually unexplored, and probably—especially in the upland districts—maintain a fauna only very partially represented in the median and western plain.

Owing, however, to the researches of local students of the INSECTA—in Lancashire especially for over a century a numerous body—and to the copious records which they have left, it is probable that the Entomological fauna of no other part of the country outside the immediate metropolitan area has been so exhaustively recorded as that of the limited districts already referred to, and it has therefore been thought desirable to publish the results of such work, hoping that the labours of present and future students of the order may add fuller information as regards the areas in the two counties as yet so imperfectly explored.

That the publication of authentic records of the natural flora and fauna of even quite a small part of these islands, carefully made and

rigorously verified, has a value apart from its obvious use as a manual to the collector of such objects, hardly needs demonstration to the biologist; its excuse to the general reader would be the palpable fact that such flora and fauna is fast diminishing, that many species have, even within the memory of this generation, become extinct, and that, owing to the rapid changes which in this country the natural environment is undergoing, many others appear to be within measurable distance of a similar fate.

Hence the desirability of putting on record the facts of the occurrence of our plants and animals while yet they are with us, for the distribution of floras and faunas is intimately related to other problems of the deepest scientific interest, questions of the former position of land and water, and of geological and climatic changes of which indeed such present distribution is often the most enduring memorial and the most accessible evidence.

For such study no part of the terrestrial fauna presents greater facilities than do the Insects. Not only do they individually far exceed all other forms of visible animal life, but probably even specifically they outnumber all the rest of the multicellular animals put together. Between the polar circles their distribution is co-extensive with the land surface of the globe, while in complexity and variety of structure, in splendour of coloration and elaboration of ornament, and in the perfect adjustment of structure to function, they are excelled by no other portion of the animal kingdom.

Hence the class INSECTA has found many students, its subject matter being so easy of access and of preservation, and so intensely interesting in all its manifestations. Already the species known to science considerably exceed 250,000, and these probably represent but a portion of those which exist.

Insects as such boast an immense antiquity and an extraordinary persistence of ordinal and even generic form. Their geological record, although now fairly copious, is fragmentary and discontinuous, and we derive from it no glimpse of any original unifying types or common stem from which our present orders may have sprung.

Insects pretty much as we know them now seem to have existed throughout vast periods, during which higher forms of vertebrate life have been entirely altered. Indeed our phylogenetic derivation of their various orders or of the class itself is almost entirely theoretic and depends more on embryological data than on any evidence which geological remains can supply.

The majority of insects, however, fly, and the evidence afforded by creatures whose transport is so easy may readily become misleading, but of all winged insects the beetles probably use their wings the least, in fact, some of them do not possess those organs to any effective degree. They are also exceedingly numerous, both specifically and individually, some 3,300 species being known as

British, and they are perhaps more uniformly and abundantly distributed than any other order of insects.

When we turn from a consideration of insects as a class (and especially to the order *Coleoptera*), to their manifestation in these islands, particularly in the counties here treated of, we are met by the fact that inasmuch as the British Isles, with regard to their insect population, are nothing more than an extension of the palæarctic faunistic area of North-Western Europe, so the counties of Lancashire and Cheshire have no faunistic features peculiar to themselves or such as are not common to the whole North-West of England.

A few words on the distribution and probable derivation of the British insect fauna may not therefore be out of place.

Now that this fauna must be regarded as derived, and not autochthonous or in any sense developed here, is undoubted. For although there are many varietal and racial forms, and even some which might be allowed to rank as specific, especially in the orders *Coleoptera* and *Lepidoptera*, which have so far been recorded from nowhere else but these islands, yet this is very far short of proof that they exist nowhere else. Probably the length of time which has elapsed since the complete insulation of Great Britain has not been sufficient, nor the conditions of life therein sufficiently dissimilar to allow of the development of more than those initial stages of differentiation which we call varietal and which in any case in Britain are neither numerous nor important.

Assuming, then, that the present British insect fauna is derived, the mode and period of such derivation afford material for much speculation, for here geological factors become involved, factors of climate and of change of position of land and water. For it is undisputed that the present arrangement of the fauna and flora in Europe cannot extend further back than the period when the exceptional climatic conditions which attended the last glacial epoch had given place to those such as now prevail.

Previous to the glacial age, in late Pleistocene times, there may have been a fauna for anything we know to the contrary—at any rate an entomological fauna—which differed but little from that which has replaced it, but whatever diverse and even contradictory views may be held by geologists on the subject of the glacial period —its causes, intensity, and duration—it is very certain that if the antecedent fauna and flora were not in a great part of Europe entirely obliterated, they must have been very considerably modified throughout the whole of it.

In this rearrangement the British Isles took part, indeed the theory has been held that the whole of these islands required restocking from the continent after the passing of the maximum intensity of the glacial age, so complete must have been the extermination caused by that refrigeration.

This may have been and probably was too extreme a view, and recent speculation allows the possibility of the persistence throughout that time of a fauna of which we are able to-day to trace the survivals.

However that may be, it seems certain that the bulk of our insect fauna arrived here after the cessation of those rigorous climatic conditions, and at a time when Great Britain, although not perhaps in its present form, was still part of the continental area. That such a connection at such a time did exist we have geological evidence, but on the method and sequence of the insect immigration only a study of the insects themselves and their present distribution will throw any light; and it is this consideration which gives interest and value to the observation and record of the fauna of such a limited district as that which forms the subject of the present compilation.

Turning our attention then to the present characteristics of the insect inhabitants of this country, a little study makes it clear to us that they all fall into two more or less definitely separable groups. These we may call the adaptables and the non-adaptables, the Progressives and Conservatives of the insect world. Thus in every order, in every section, and almost in every genus, we find species which are common everywhere, and other species which are either generally rare or abundant only very locally—that is to say, that in nearly every group certain species have been able continually to adjust themselves to an ever-changing environment, and certain others, failing to do so, perish when their own particular environment ceases to be. Furthermore, a certain number of species in almost every order have carried this power of adaptation to environment a still further stage, and become, if not quasi-parasitical on man himself, at least dependent on such conditions as the interference of man with the natural order has brought about.

Now it is obvious that we may ask in vain either from these obscure and often unwelcome companions of mankind, or from the larger group which has simply acquiesced in and accommodated itself to such changes as human operations have effected in its original environment, for any evidence of their derivation. For so cosmopolitan have they become, so easily have they forsaken their first limits and adapted themselves to changed conditions, that all trace of their line of march, all hints as to their even proximate derivation have become obliterated.

To find such indications we must turn to the remainder—species in every order still in the majority, but a majority which is being slowly but surely turned into a minority; for as the face of nature in this country is changing and that at an ever increasing ratio, as our sandhills and waste places by the sea become golf links, as the ancient mosses are drained, the forests cut down, the moorland either laid down as pasture or covered with houses, so the feral

inhabitants, the species whose existence is bound up with their environment, pass to return no more. Hence (as we have already pointed out) the value of local lists and catalogues recording such species while yet they are there to be recorded. For their study, stable as they are in character and faithful to environment, affords the only slight evidence we possess as to the course of their migration or the story of their arrival in these islands. The occurrence of these forms is usually marked by very definite limits or by extreme discontinuity, and this discontinuity must not be taken so much as evidence of extreme antiquity of residence as of interference with environment by human operations. Such discontinuity in an island like this is the first step towards extermination, and in several cases the process has been already completed.

Other species are narrowly restricted by geological conditions acting in most cases indirectly through plants, others are attached as parasites or semi-parasites, or on some terms of mutual adaptation, to other insects, birds, or even mammals, and it is on this stability of habit, a stability which doubtless existed long before their arrival here, that we rely in our speculations as to the origin and order of such migration.

These theories must, of course, be based on the facts of present distribution, and a consideration of those facts enables us with rough approximation to detect four groups which *may* represent diverse streams of origin.

It must be understood that they bear very slight relation to phylogenetic affinities, and considering the slender stock of facts at our disposal are at best but a provisional differentiation.

We have firstly a group, small in numbers compared with the rest of our insect fauna, which occurs generally in Scotland, the West and North of Ireland, and at high altitudes in the North of England and in Wales. The species of this group form part of the present fauna of Scandinavia, and are indeed generally common to the Northern Palæarctic region. Some of these species occurring in Ireland and Scotland have not been discovered in England or Wales, but there is no species of the group found in the latter which does not also occur in Ireland or Scotland, or both. This has been called the Celtic, Glacial, or Boreal group in our fauna, and it probably represents an interglacial or even a preglacial population which contrived to survive that epoch. Its original home was possibly a large extension of Europe north-westerly, which joined Scotland with Norway, Ireland, and Greenland, in perhaps Pleistocene times. At the maximum severity of the glacial age this group no doubt ranged much further south than it does at present, and the sporadic occurrences of certain species, as amongst the aquatic *Coleoptera*, so far south as Surrey and Devonshire, are vestiges of its retrocession, the last outposts of a once universal occupation.

The second division forms the great bulk of our insects. From a maximum intensity South and East, it thins out Northerly and Westerly, many of its members being unknown in Ireland and rare in Scotland.

That this immigration proceeded across what is now the German Ocean, and arrived after the most rigorous conditions of the glacial epoch had passed, seems probable. It doubtless accompanied the bulk of our birds, mammals, and flora, and probably the British invasion was but the final stage of a general European retrogression which followed the retreating ice.

The third group of our insect fauna comprises species few in number and characterized by narrowly restricted limits of distribution. They are such as we find occurring quite in the South or South-East of England only, and they probably represent an immigration later than the larger stream from the East already mentioned, and one which seems to have been only partially successful, for several of these species appear to maintain but a precarious foothold here and suggest the inference that competition with an already established fauna was and has continued to be too severe for their general extension.

The fourth division consists of a few species of quite South-Westerly occurrence both in England and Ireland, and is difficult to completely or satisfactorily dissociate from the third group. It perhaps, however, represents a more Westerly stream of immigration, and from some former land extension which connected Kerry and Cornwall with Brittany and Portugal. We might term this the *Atlantic* group to distinguish it provisionally from the rest of the fauna, and it is perhaps more distinct in the Mollusca and certainly in the flora than—so far as we know at present—among our insects.

Such a brief recapitulation of the elements of our British entomological fauna may perhaps be desirable as a preface to the consideration of any one district, and when we turn to Lancashire and Cheshire we find as we might have expected that only the first two of these groups are represented.

We discover a considerable number of species of the first or Celtic group attached to the mountains and moorlands of the North and East, while a fair proportion of the second group is spread generally over the whole extent of the two counties.

PHYSIOGRAPHY.

In determining the faunistic constituents of any particular area, the geology of the district is hardly less important than its geographical position, and this not only from the fact that the characters of surface, elevation, and contour depend almost entirely on geologic conditions, but that these conditions also very largely determine the flora, on the nature of which a large proportion of the fauna directly depends.

The geology of the counties of Lancashire and Cheshire is well known, nor would this be the place to enter into any detailed description of it. It will be sufficient therefore to state that the Carboniferous and older Primary formations are well represented in the North and East of Lancashire and East of Cheshire, while Triassic rocks form the basis of the great median plain from the Ribble to the Southern border of Cheshire. More recent than the Trias, we only find such post-Tertiary deposits as the vast masses of Glacial sands and clays which overlie that formation, the belts of littoral sands which line the coast, and the peat mosses which occupy extensive areas in the valleys of the Mersey and Irwell, and in other places throughout the district.

Thus the natural conditions of surface of the two counties are most varied, and areas can be found in them suited to the great majority of our indigenous *Coleoptera*. Any inferiority in their representation as compared with other smaller and less favourably conditioned counties must therefore be ascribed more to the geographical position of Lancashire and Cheshire than to any lack of suitable environment.

Now, considering such natural environment rather more in detail, we find both in Lancashire and Cheshire that a high state of cultivation exists wherever the nature of the soil admits of it. Large areas, however, remain in a more or less primitive condition. In the North and East of Lancashire and East of Cheshire there are extensive regions of uncultivated hills and moorlands, and the extreme North of Lancashire includes part of the Cumbrian mountain system. Such tracts remain, and are likely to remain, for a long time to come, unaltered by the hand of man, and the same may be said of the upland bogs and the peat mosses which exist in depressions of the hills.

In the plain of South-West Lancashire and North Cheshire, however, large areas of peat mosses formerly occurred, probably filling up the beds of ancient post-glacial lakes, and these mosses which maintained a large and specialized fauna and flora are undoubtedly fast disappearing under drainage, cultivation, the spread of towns, and the operation of industries of various kinds. Thus, of the well-known Chat Moss, some three hundred acres now remain of a former extension of over 1,000; Martin Mere Moss, near Preston, within the historic period a shallow lake or lagoon, is now completely drained and cultivated; and of the formerly large mosses of Risley and Carrington in the North of Cheshire, but a few acres now remain in their primitive condition.

The coast of Lancashire, and of the Wirral peninsula—the only part of Cheshire which fronts the sea—is lined throughout the greater part of its length by a belt of drifted sands or dunes. These sands in some places, as at Formby Point, attain a width of over a mile, and their whole area must be very extensive. They have

doubtless retained their present features, if not their present position, from a period which goes back to the establishment of the Irish Sea in approximately the position it now occupies. As might have been expected, such a region maintains a fauna highly specialized and of extreme antiquity, and adds a considerable contingent to the *Coleoptera* of the district. The primitive character, however, of this sandhill zone has, like that of the southern mosses, been very much impaired of late years. The short strip of sandhills of the Cheshire coast has perhaps suffered most, and owing to the combined attacks of the extension of the towns of Wallasey and Hoylake at either end, to "summer camps," and more especially to the modern passion for turning every yard of untilled land near the sea into golf links, its proper fauna and flora have been almost obliterated. Many parts of the Lancashire coast are sharing a like fate, though at Formby Point a large area of virgin sandhills exists where the student may still find species once abundant along the whole of the coast line. This region, from where Blundellsands ends to where Southport begins, is perhaps somewhat exceptional, and there appears to be no doubt but that the total disappearance of the sandhill belt with all its flora and fauna is only a question of time. It is fortunate that owing to the exhaustive manner in which this district has been explored by local naturalists, very few of its inhabitants probably remain unrecorded.

It may in this connection be noted that the recorded occurrences of *Coleoptera* from this sandhill zone, as the following pages will show, include many species which are probably not strictly indigenous to it. That nearly all winged beetles indulge during some period of their life in wide aerial excursions, that in the upper strata of the atmosphere they are carried, more or less involuntarily, long distances by wind currents, and deposited in lands far from their native home, is now generally accepted by entomologists. Furthermore, if a sandhill-lined shore does not first arrest such migration, at any rate the nature of the surface there admits the more readily of their detection, and hence our sandhill records are probably augmented by the names of many unexpected species which most certainly were never native to these regions.

In ancient or extensive woodlands the two counties are distinctly deficient. Our only forest is that of Delamere, in the North of Cheshire, and this is really a comparatively recent reafforestation of what at the beginning of the last century was an open sandy tract, intersected by shallow meres and peat mosses.

On many of the Lancashire mosses are the remains of more ancient growths of pine and birch, to which are attached a few interesting species of *Coleoptera,* and small woods and covers for the preservation of game are common in both counties. These, however, are generally of recent planting, and owing to the absence of old timber of oak, ash, and beech, except within the enclosure

of a few private parks, the student of the Longicorn and Xylophagous beetles will discover a large deficiency in the local representation of these groups.

This deficiency has, however, been made up, and indeed more than made up, by an exotic fauna imported in the timber which is used so largely in South Lancashire as supports for the roofs of coal mines. This timber imported in the bark, comes not only from Wales and Scotland, but also very largely from Scandinavia and the Baltic. A large number of beetles is thus undoubtedly introduced among the *Longicornia* and Scolytid *Rhynchophora;* many of them have been captured on their assumption of the imago state, and some may succeed in perpetuating themselves for several generations, or even become established altogether. To dissociate such immigrants or descendants of immigrants from the genuine aborigines is quite impossible, and hence our list of species of these groups cannot be taken as representing with any degree of certainty the indigenous population of the district.

In fens and littoral or estuarine marshes, which usually maintain a special Coleopterous fauna, the counties are somewhat deficient, and the only localities of this nature which have been at all explored are the salt marshes of the Dee, which formerly extended between Shotwick and Burton in Cheshire, and those of the upper Mersey below Frodsham. A recent railway in the former and the ship canal in the latter case have altered the character of these localities, and impaired their value as collecting grounds, but they still maintain a few species not otherwise to be met with.

Adverting to more particular and circumscribed localities, the "cloughs" or narrow defiles in the hilly country north and west of Manchester, were favourite haunts of the elder generation of Manchester collectors, and among these "Staley Brushes," a valley which led down towards the town of Staleybridge from the high moorlands round the Peak, was one of the most famous. The erection, however, of reservoirs and waterworks, and the destruction of the timber which formerly clothed the sides of the valley, have now deprived the place of most of its attractions for entomologists.

A few private parks, which owing to the permanence of their surface and the larger growth of their timber formed exceptionally good collecting grounds, figure largely in our earlier records. Among these were Dunham Park, near Knutsford, in Cheshire, explored by Chappell, and Drinkwater and Trafford Parks, near Manchester, the former now closed to the public and the latter destroyed by the ship canal.

SOURCES OF OUR KNOWLEDGE OF THE LOCAL COLEOPTEROUS FAUNA.

Allusion has already been made to the fact that the entomology of the two counties of Lancashire and Cheshire, more especially that of the former, has been probably more thoroughly studied than that of any other British provincial area. This may perhaps be attributed in great measure to the industrial conditions of the Lancashire towns, for it is certainly true as a rule that the mental constitution which makes men naturalists, at any rate in the humbler ranks of life, is not to be found among those in closest association with Nature, such as agriculturalists, but in urban communities, and among men occupied in the more monotonous industries of towns; and as to-day Manchester mill-hands and Birmingham mechanics provide those self-taught students of Nature for whom we look in vain among the shepherds and ploughmen of our villages, so in the early days of the last century, when those urban industries which still distinguish South-West Lancashire had already become established and pronounced, a succession of working-men naturalists arose, which, continued almost to the present time, we may perhaps refer to as the Lancashire school. Entomology especially was a favourite study of these men, and in some cases perhaps their only recreation. Its pursuit took them into the open country on Sundays and their scanty holidays, and emulation between them as collectors added some small interest to their otherwise uneventful lives of daily toil.

It is to be regretted that few among the earlier of these students left any records of their labours, in fact many of them owed the only education they possessed to that training which Nature herself afforded. Among such the names occur of James Crowther, Edward Hobson, and Samuel Carter, of Manchester; George Crozier, of Eccleston in the Fylde; Samuel Gibson, of Hebden Bridge; and Jethro Tinker, of Staleybridge. These men were the first of the group of whom any record exists, and had died out by the middle of the last century. Gibson's collection of *Coleoptera* was for many years in the Peel Park Museum of Manchester, and that of Tinker still exists in the public museum of his native town. For the rest, oral tradition and a few references in natural history works of the period alone remain to rescue their memory from oblivion.

Among the more recent members of the group the following deserve special mention. Joseph Chappell, a mechanic in Sir J. Whitworth's engineering works in Manchester, an indefatigable field naturalist, more especially an entomologist, explored the mosses round Manchester, and for many species of *Coleoptera* his are the only local records we possess. He died in 1896, leaving a very fine collection of *Coleoptera* which is now in the private

museum of Mr. C. H. Schill, of Macclesfield. T. Morley and H. Broadhurst, both artizans of Manchester, were also energetic Coleopterists, as many notes in the "Entomologists' Monthly Magazine" and other publications of the kind during the sixth and seventh decades of the last century testify.

More generally known, perhaps, was C. H. Gregson, a plumber of Liverpool, who survived to 1899. He was more especially a Lepidopterist, but also devoted much attention to *Coleoptera,* and his *Adephaga* of Lancashire and Cheshire was probably the first local list of the kind published.

Another assiduous working-man Coleopterist was F. Kinder, of Bootle, who collected round Liverpool in the early "seventies," and to whom are due many records in the present compilation. Other students and collectors of the *Coleoptera*, belonging perhaps to a somewhat different social order, who have now passed away, but to whose labours we owe much information and many records, are the brothers Benjamin and Nathaniel Cook, of Liverpool; Frank Archer, of Crosby; Jos. Sidebotham, of Manchester; and R. S. Edleston, of the same city.

As members of the same group happily still surviving (1907) may be mentioned Mr. Reston, of Stretford, near Manchester, and Mr. Constantine, of Liverpool. The almost complete collection of British *Coleoptera* made by the former has been lately purchased by the Owens College Museum, of Manchester, where it is now deposited and will doubtless be of the greatest service to future local students of the order. That of the latter still remains in his own possession.

The veteran Coleopterist, Mr. J. Kidson Taylor—although he collected in South Lancashire many years ago and was indeed a contemporary of and intimate with many of the group just mentioned—will be more properly included among those present-day students to whose assistance the writer owes so much in the following pages, and who will be more fully particularized later on.

The same remarks also apply to Mr. J. Ray Hardy, the well-known Curator of the Entomological Department of the Owens College Museum of Manchester.

Although few of the Lancashire entomologists we have mentioned left the result of their patient investigation of the local fauna in any concrete or endurable form, there are to be found scattered through the pages of the various entomological magazines and other works of their time, short notes, records, or longer papers by nearly all of them. Of these the writer has made copious use in the compilation which follows. Within recent years, however, several publications have appeared dealing more directly and definitely with the local Coleopterous fauna, and to these more special reference must be made.

The first is by C. H. Gregson, of Liverpool (mentioned above),

and took the form of two papers on the *Adephaga* (predacious beetles of land and water) of the district, communicated to the Historic Society of Lancashire and Cheshire during 1860 and 1861, published in the Transactions of that Society and afterwards in pamphlet form. This list is, of course, very limited in scope, as it deals with only a small part of the order, and contains no records other than those made by the author himself, and as Gregson's zeal and perseverance as a collector were hardly equalled by his critical knowledge as a Coleopterist, it is not to be taken as absolutely free from error. It was, however, the first attempt at anything like a local list of the order, and was to a great extent incorporated in the very different work of Dr. Ellis, of Liverpool, which appeared some twenty years afterwards. About the same period Mr. F. Archer, of Crosby, contributed to the " Liverpool Naturalists' Scrapbook " (a MS. serial having a limited and brief circulation among Liverpool naturalists) a short paper on the *Coleoptera* of the district. So far as the writer is aware, this has never been printed, and most of its more important records are reproduced in the work of Dr. Ellis.

This list, read before the Lancashire and Cheshire Entomological Society in 1880, published in the " Naturalist," subsequently communicated to the Liverpool Biological Society (13th April, 1888), and finally published in 1889 in book form under the title of " Liverpool Coleoptera," reproduces in succinct form all the local information regarding the order at that time available. Most of its records are due to Dr. Ellis's own unfailing energy, but incorporated in the work are the observations of Messrs. Wilding, Smedley, Willoughby Gardner, and other contemporary students. The rigid circumscription of the area treated of to a fifteen mile radius from Liverpool Town Hall excludes many of the best Lancashire and Cheshire localities and deprives the work of considerable value and interest. The area thus limited was certainly very thoroughly worked, and the list has undoubtedly directed the attention of local Entomologists to the *Coleoptera*, stimulated their interest, and co-ordinated their labours.

The " Handbook " of the British Association meeting in Manchester (1886) contains a section by Mr. Cosmo Melvill, of that city, on the *Insecta* of the Manchester district, in which the *Coleoptera* are treated of as fully as the limited space at the disposal of the author will allow, and in a similar " Handbook " compiled for the Liverpool meeting of the same Association in 1896, the local entomology is dealt with by the present writer, and a sub-section devoted to *Coleoptera*. In neither case, however, is anything more attempted than a general review of the local distribution of the order, and of course detailed lists would be out of place, were they possible, in publications of the kind.

In 1903 the British Association held another Lancashire meeting, in Southport; and Dr. G. W. Chaster and Mr. Burgess Sopp,

of that town, jointly contributed to the pages of the "Handbook" a most interesting and instructive section on the *Coleoptera* of the Southport district. This has been separately reprinted, and as a scientific contribution to faunistic distribution, as well as a guide to the *Coleoptera* of that particular locality, leaves nothing to be desired.

A short paper on the *Hydradephaga* (water beetles) of Lancashire and Cheshire, contributed by the present writer to the "Naturalist," Leeds, 1892, probably completes the list of publications specially treating of the distribution of the order within the two counties.

A word in recognition of the services rendered to entomological biology by the Lancashire and Cheshire Entomological Society is here felt to be due.

This Society, inaugurated in 1877, has since its birth numbered among its members all serious students of the class *Insecta* in the Liverpool district. It has by interest in a common theme been the bond of union between men of diverse station, capacity, and endowment; by its means knowledge of a not unimportant part of biology has been increased, and intelligent appreciation of the methods of Nature stimulated, and it may be said that without the co-operation of many of its members such a work as the present would have been impossible.

Finally, the author most gratefully acknowledges the assistance, direct and indirect, afforded him by the contemporary Coleopterists whose names follow. The result of their observations has been most liberally placed at his disposal, and in the majority of cases their contributions to the records which follow are much greater than his own.

Reference in the text is made to these gentlemen by the abbreviations placed opposite their names. Responsibility for the correctness of each record is, of course, limited to its contributor.

Dr. J. Harold Bailey, Port Erin, Isle of Man (formerly of Pendleton, Manchester) - - - - - - - - - - - B.
Dr. C. R. Billups, East Grinstead, Sussex (sometime of Warrington) C.B.
Dr. G. W. Chaster, 42, Talbot Street, Southport - - - - - C.
Mr. J. F. Dutton, Brackenhurst, Helsby, Cheshire - - - - - D.
Mr. G. Dunlop, The Museum, Warrington, Lanc. (formerly of Mossley Hill, Liverpool) - - - - - - - - - - - - Dun.
Mr. J. Ray Hardy, The Manchester Museum - - - - - - R.H.
Mr. H. Locke, Oxton, Birkenhead - - - - - - - - L.
Mr. R. Newstead, Liverpool School of Tropical Medicine - - - N.
Mr. A. Reston, Stretford, near Manchester - - - - - - R.
Mr. E. J. Burgess Sopp, 104, Liverpool Road, Birkdale - - - B.S.
Mr. E. C. Stott, Swinton, Manchester (formerly of Bolton-le-Moors, Lanc.) - - - - - - - - - - - - - - S.
Mr. J. Kidson Taylor, 45, South Avenue, Buxton (sometime of Manchester) - - - - - - - - - - - - - - K.T.
Mr. J. R. le B. Tomlin, "Stoneley," Reading (formerly of Chester) T.
Mr. R. Wilding, 2, Cyprus Grove, Bootle, Lanc. - - - - - W.

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"British Naturalist" - - - - - - - - - B.N.
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The arrangement and nomenclature of the following list is mainly in conformity with that of "British Coleoptera," by Canon Fowler, published 1887—1891.

ADEPHAGA.

The first group of the COLEOPTERA, which includes the predacious beetles of land and water, is well represented in our district. That our records probably approach very closely to the number which really exists here may be due to the fact that collectors generally pay more attention to insects so large, obvious, and easily captured, and that they form so large a proportion of the British extension of the group is certainly owing to the distribution of the **Adephaga** being largely Northern and included in that "Celtic" element which is so evident in our district.

There are at present enumerated 447 British species of **Adephaga**, and of these 240 have been recorded from our two counties—167 **Geodephaga** and 73 **Hydradephaga.**

CICINDELIDÆ.

Cicindela campestris, L. Generally distributed, but local and not common. Heswall, West Kirby (B.S.); Warrington, Frodsham, Delamere (D.); Oxton Common (L.); Birkdale and Ainsdale (C.); Newchurch Common and Stretton Moss, Cheshire (Dun.); Prenton, Thurstaston, Dawpool (W.E.S.).

Cicindela hybrida, L. Common on both the Lancashire and Cheshire sandhills, but varying very much in numbers annually.

Cicindela maritima, Dej. Fowler gives Birkenhead and Wallasey as localities for this form (B.C. i. 4). Dr. Ellis says: "The variety **maritima, Dej.** has been erroneously recorded as occurring in our neighbourhood by Fowler (E.L.C. 184)." An undoubted specimen, however, of this species or variety exists in the collection of Mr. West, of Greenwich, received from E. L. Ragonot, bearing the original label 'Birkenhead,' and taken 'more than forty years ago.' Ragonot, a French entomologist, of repute as a micro-lepidopterist, resided in Birkenhead in the sixties. No modern collector seems to have met with it either on the Lancashire or Cheshire coast, and as several hundreds of **Cicindela hybrida** must have been taken there during the last thirty years, the assumption seems not unwarranted that this form has become extinct on our sandhills within a comparatively recent period.

CARABIDÆ.

Cychrus rostratus, L. Widely, but very sparingly distributed. Crosby (W.); Hoylake (B.S.); Fallowfield, Northenden, Worsley (B.); Oxton, Noctorum (L.); Southport (C.); Warrington and Delamere (D.); Grange (B.S.); Eastham (W.E.S.); Blundellsands, West Derby, Hartford (W.); Woolton and Stretton (Dun.).

Carabus catenulatus, Scop. Generally common, more especially in sandy, elevated, or heathery situations.

Carabus nemoralis, Müll. Not common and apparently less so in Cheshire than in Lancashire. Rainhill (B.S.); Withington (B.); Southport (C.); Oxton (L.); Chester (T.); Stockton Heath (Dun.).

Carabus glabratus, Payk. A specimen taken by Dr. Chaster in the Birkdale recreation grounds was almost certainly introduced, but the species undoubtedly occurs on the mountains of North Lancashire.

Carabus violaceus, L. Generally distributed, but can hardly be called common everywhere.

Carabus nitens, L. Occasional, and perhaps some years even frequent in the damp hollows of the sandhills between Crosby and Birkdale. Knowsley Park (W.E.S.). Formerly common on Chat and Risley Mosses.

Carabus granulatus, L. Occasional and not common. Hibernating at Bidston (E.L.C.); Chat Moss (B.); Parbold (C.); Delamere (D.); Prenton, in Wirral (W.E.S.).

Carabus monilis, F. Very occasional. "Recorded from Edge Lane, West Derby, Liscard, and New Brighton," by Gregson (E.L.C.); West Kirby (B.S.); Chester (T.); Oxton (L.), (W.E.S.); Stockton Heath (Dun.).

[**Carabus arvensis, F.** Almost certainly occurs on the high moorlands of Lancashire and N.E. Cheshire, although no capture appears to have been recorded.]

Notiophilus biguttatus, F. Abundant everywhere.

Notiophilus substriatus, Wat. Recorded by Chappell from Leasowe under seaweed (E.L.C.); Southport (B.), (C.); Burton Marshes (Cheshire) under tide refuse (W.E.S.).

Notiophilus aquaticus, L. Not uncommon on sandhills and heaths. Wallasey, Chester (T.); Southport (C.); Kersal Moor, Manchester (B.); Heswall, Helsby, Burton, Delamere (W.E.S.).

Notiophilus palustris, Duft. This species, like the preceding, disproves the applicability of its specific name by its preference for the driest heathery, or sandy localities. It is not uncommon, and often occurs with the foregoing. West Kirby (B.S.); Delamere (T.); Southport (C.).

Leistus spinibarbis, F. Not uncommon, more especially in woods. Hoylake (B.S.); Delamere (T.); Grange (B.S.); Storeton and Prenton (Cheshire) fir woods (W.E.S.).

Leistus fulvibarbis, Dej. Not so common as the preceding, but generally distributed. Eastham Wood (E.L.C.); Noctorum (L.); Delamere, Chester (T.); Southport, Ringley Wood, Manchester (B.); Burton (W.E.S.).

Leistus ferrugineus, L. Generally distributed and occasionally common. Hoylake, Grange, Cartmel (B.S.); Southport (C.); Noctorum (L.); Burton, Chester (T.); Delamere (B.); Heswall—on one occasion (October, 1889) in extraordinary profusion on Heswall Hill (W.E.S.).

Leistus rufescens, F. Not uncommon in damp ditches and by the margins of ponds. Hoylake (B.S.); Leasowe, Ledsham, Willaston, Cuddington (W.E.S.); Noctorum (L.); Delamere (D.); Southport (C.); Withington, Pendlebury, Ringley, near Manchester (B.).

Nebria brevicollis, F. Abundant everywhere.

Nebria gyllenhali, Sch. In upland districts or among the shingle of streams. Lostock, near Bolton, in bed of dry brook (S.); Withington, and Ringley Wood, near Manchester (B.); Appleton Dingle, near Warrington (Dun.).

Elaphrus riparius, L. Generally distributed by the margins of ponds and streams.

Elaphrus cupreus, Duft. Also generally distributed, and in similar situations to the preceding, but distinctly less common.

Loricera pilicornis, F. Generally common.

Clivina fossor, L. Generally common.

Clivina collaris, Herbst. Local and confined to the banks of rivers and shores of estuaries. Rivers Alt and Birket (E.L.C.); River Douglas, near Preston (W.); Mersey at Northenden, Irwell at Agecroft, Bollin at Hale (B.); Dee at Saltney (T.).

Dyschirius thoracicus, Rossi. Generally common on the sandhills and foreshore of both counties.

Dyschirius impunctipennis, Daws. Not uncommon along the Lancashire foreshore from Crosby to Southport.

Dyschirius nitidus, Dej. Not common. Wallasey (L.); salt marshes of the Dee (W.); Blundellsands (T.).

Dyschirius politus, Dej. Not common. Wallasey (E.L.C.); Southport (C.).

Dyschirius salinus, Schaum. Abundant in banks of gutters on Burton Marsh (W.E.S.); Ince (Cheshire) Marshes (T.); Hoylake (B.S.); Southport (C.); Crosby shore (E.L.C.).

Dyschirius globosus, Herbst. Generally common in damp localities, bottoms of ditches, among wet moss, etc.

Miscodera arctica, Payk. Taken on Longridge Fell, N. Lanc., by Father Redman (sometime of Stoneyhurst) in 1884 and 1889, and probably not uncommon on the mountains of the North.

Broscus cephalotes, L. Common on the shores of both counties.

Badister bipustulatus, F. Generally distributed, but not very common anywhere.

Chlænius nigricornis, F. " Banks of Birket, and Knowsley quarry " (E.L.C.); Ince (Cheshire) Marshes (B.S.).

Stenolophus vespertinus, Panz. At roots of grass and rushes, Southport district, not common (C.); by sweeping grass at side of ditches in the evening, Ince, Cheshire (W.E.S.).

Acupalpus dorsalis, F. " One specimen taken by Mr. Wilding at Hightown " (E.L.C.); Lostock, near Bolton (S.).

Acupalpus meridianus, L. Very local. In a sandpit at Upton, near Chester (T.), (W.E.S.).

Bradycellus cognatus, Gyll. Generally common among heather.

Bradycellus distinctus, Dej. Not rare, especially in winter at roots of grass and rushes in marshy places.

Bradycellus verbasci, Duft. Abundant.

Bradycellus harpalinus, Dej. Not uncommon with the preceding, and exceedingly difficult to distinguish from it.

Bradycellus similis, Dej. Common among heather in upland localities.

Harpalus puncticollis, Payk. Occasional and not common. Wallasey (L.); Burton shore of Dee (W.E.S.); Walton Arches, Warrington (Dun.). [It seems probable that the insects known in the British catalogues as **Harpalus rupicola,** Sturm, **Harpalus puncticollis,** Payk. and **Harpalus rufibarbis,** F. (and perhaps **Harpalus cordatus,** Duft., and **Harpalus parallelus,** Dej.) may all be considered as slightly divergent forms of one variable species, but the local form seems to be that generally known as **Harpalus puncticollis,** Payk.]

Harpalus ruficornis, F. Generally abundant.

Harpalus æneus, F. One of the commonest of our ground beetles.

Harpalus rubripes, Duft. Under stones in an old quarry at West Kirby, Grange-over-Sands (B.S.); Burton Hill, Cheshire (W.E.S.).

Harpalus latus, L. Not uncommon. West Kirby, Caldy, Grange-over-Sands (B.S.); Bidston (L.); Burton (Cheshire), (W.E.S.); Marple (B.); Wallasey (T.); Southport (C.).

Harpalus tardus, Panz. Occasional. West Kirby (B.S.); Burton (Cheshire), Heswall, Delamere (W.E.S.); Southport district (C.).

Harpalus anxius, Duft. Frequent on the coast sandhills of both counties.

Harpalus serripes, Schön. Single specimens are recorded from Wallasey sandhills both by Dr. Ellis (E.L.C.) and Mr. Dunlop.

Harpalus neglectus, Dej. Rare. Wallasey and Hightown (E.L.C.); Southport sandhills (C.).

Dichirotrichus pubescens, Payk. Generally common on marine and estuarine shores, under rubbish, etc.

Anisodactylus binotatus, F. Not common. Hightown (E.L.C.); Chat Moss, recorded by Chappell; Leyland Moss, near Preston (W.); Birkdale (C.).

Stomis pumicatus, Panz. Generally distributed but hardly common anywhere. Northenden, Carrington Moss, Chat Moss (B.); Bidston Hill (L.); Chester (T.); Southport district (C.); Lostock, near Bolton (S.); Helsby and Burton Hills (W.E.S.).

Pterostichus cupreus, L. Not uncommon, and often to be taken on the wing in the early spring. Garston (W.); Bolton (S.); Caldy (B.S.); Walton Arches, near Warrington (Dun.); Withington, near Manchester (B.); Oxton and West Kirby (W.E.S.). [The variety **Pterostichus affinis,** Sturm has not been recorded.]

Pterostichus versicolor, Sturm. Generally distributed, but not common. Bidston and West Derby (E.L.C.); Hoole Moss (W.); Lostock, near Bolton (S.); Southport (C.); Delamere (D.).

Pterostichus madidus, F. Abundant everywhere.

Pterostichus æthiops, Panz. Recorded by Father C. Redman from near Stoneyhurst (Lanc.), taken in 1890. (See "Naturalist," April, 1891).

[**Pterostichus vitreus, Dej.** Undoubtedly occurs on the mountains of North Lancashire, although I can find no record from within the borders of the county.]

Pterostichus niger, Schall. Generally abundant.

Pterostichus vulgaris, L. Generally abundant.

Pterostichus nigrita, F. Commonly distributed in damp places, and very variable.

Pterostichus minor, Gyll. Local and not common. Birkdale sandhills (C.); Hoylake (B.S.); Ince, Delamere, Ledsham (W.E.S.); Walton Arches, Warrington (Dun.).

Pterostichus picimanus, Duft. Exceedingly rare. Only one specimen is recorded from the district, taken by Mr Sopp at the margin of a pond near Rainhill.

Pterostichus vernalis, Panz. Not common. Northenden (B.); Chester (T.); Southport (C.); Birkdale sandhills (B.S.); Burton, Thornton-le-Moors (W.E.S.); Walton Arches, Warrington (Dun.).

Pterostichus strenuus, Panz. Generally abundant.

Pterostichus diligens, Sturm. Common.

Pterostichus striola, F. Common.

Amara fulva, De G. Not uncommon, principally near or on the shore. Mersey shore at Aigburth (E.L.C.); Hoylake (B.S.); Southport and Birkdale (C.); Warrington (D.); Banks of Bollin (B.); Burton shore, and under stones by roadside in Delamere Forest (W.E.S.); near Warrington (Dun.).

Amara apricaria, Sturm. Fairly common. Hilbre Island (B.S.); Southport, Delamere, Withington, Kersal Moor (B.); Birkdale (C.); Burton shore, abundant (W.E.S.).

Amara consularis, Duft. Rare. Mersey banks at Didsbury (Chappell); banks of Douglas, near Preston (W.); Eastham Wood (W.E.S.).

Amara aulica, Panz. Generally distributed, but not common. In thistle heads, Kirkdale (E.L.C.); Northenden, Worsley, Staley (Cheshire), (B.); Southport and Birkdale sandhills, not common (C.); Grange-over-Sands, Cark-in-Cartmel (B.S.); Appleton (Cheshire), (Dun.).

Amara rufocincta, Dej. Very scarce and local. Mr. Wilding has taken it at Crosby, and Hoole, near Preston, and a specimen is recorded from Lydiate (E.L.C.).

Amara livida, F. Bootle, Caldy, and Crosby (E.L.C.); Birkdale sandhills (C.).

Amara ovata, F. Generally distributed, but local and not common. Chester (T.); Hoylake (B.S.); Southport district (C.).

Amara similata, Gyll. Not at all common, the only records being from Southport by Dr. Chaster; and Warrington by Mr. Dunlop.

Amara acuminata, Payk. "West Derby" (E.L.C.); Walton Arches, Warrington (Dun.).

Amara tibialis, Payk. Common on the sandhills of both counties

Amara lunicollis, Schiödte. Recorded from Wallasey by Mr. Tomlin.

Amara familiaris, Duft. Very abundant everywhere.

Amara lucida, Duft. Generally common on all the sandhills.

Amara trivialis, Gyll. Generally abundant, one of the commonest of our Geodephaga.

Amara communis, Panz. Recorded from Chester (T.), and probably generally distributed throughout the district.

Amara plebeia, Gyll. Generally scarce. Chester (T.); Southport (C.).

Calathus cisteloides, Panz. Generally abundant.

Calathus flavipes, Fourc. Common, more especially in dry sandy localities as on the sandhills, Heswall, Burton, etc.

Calathus mollis, Marsh. Very common on all the sandhills, but restricted to that area.

Calathus melanocephalus, L. Generally abundant.

Calathus piceus, Marsh. Local and generally confined to woods. Oxton (L.); in decayed branches of trees, Dunham Park (Chappell); Black Birches, near Woolton (Dun.); Burton woods, not uncommon (W.E.S.).

Taphria nivalis, Panz. Local and not common. West Derby, Flaybrick Hill, Eastham, West Kirby (E.L.C.); Kearsley Moor (B.); Southport (C.); Burton, Ledsham, under stones in dry ditches (W.E.S.).

Pristonychus terricola, Herbst. Rather common in cellars and outhouses, and occasionally under rubbish and in the open country. Generally distributed.

Læmostenus complanatus, Dej. One specimen taken in a warehouse in Liverpool (W.E.S.).

Sphodrus leucophthalmus, L. Not common, only found in cellars. Has been recorded from Warrington (D.); West Kirby and Hoylake (B.S.); Birkenhead and Liverpool (E.L.C.).

Anchomenus angusticollis, F. Not uncommon in damp situations, and often found under bark, especially in winter. Lostock, near Bolton (S.); Moreton, Hoylake (B.S.); Irwell valley (B.); Chester (T.); Delamere Forest (W.E.S.).

Anchomenus dorsalis, Müll. Abundant throughout the district.

Anchomenus albipes, F. Very common in wet places.

Anchomenus marginatus, L. Generally common.

Anchomenus ericeti, Panz. Was formerly taken in damp places on Chat, Simonswood, and other Mosses by Chappell, Gregson, and the older collectors, and has been recorded lately from Rixton Moss near Warrington, by Mr. J. Collins, of Oxford.

Anchomenus parumpunctatus, F. Generally abundant.

Anchomenus atratus, Duft. One specimen Burton Wood, Cheshire (W.E.S.).

Anchomenus viduus, Panz. Not common, but apparently widely distributed. Willaston (W.E.S.); Wallasey (L.); Chester (T.); Birkdale (C.); Sandiway, Delamere (Dun.).

The variety **mœstus, Duft.** is perhaps not quite so rare as the type, but is by no means common. It is recorded from Chester (T.); Southport (C.); Leasowe (L.); Ledsham (W.E.S.); Hoylake (B.S.); Hightown (W.); Stockton Heath, near Warrington (Dun.).

Anchomenus micans, Nic. Our only record is of a specimen taken on Coniston Old Man by T. Blackburn (see E.M.M. i. 146).

Anchomenus fuliginosus, Panz. Generally common in marshy ground, banks of ponds, etc.

Anchomenus gracilis, Gyll. Considerably less common than the preceding, but generally distributed in marshy places. Eastham (W.); Levenshulme (B.); Delamere (T.); Warrington (D.), (Dun.); Hightown, Raby (Chesh.) (W.E.S.).

Anchomenus puellus, Dej. Bidston, West Derby (E.L.C.); Landican (Cheshire) (L.); Warrington and Delamere (D.); Raby (Cheshire), Ledsham, Burton, etc. (W.E.S.).

These three species of **Anchomenus** often occur together. They are to be found most commonly by cutting as close to the ground as possible tufts of rushes in damp situations in the winter. In such localities in

West Cheshire **Anchomenus fuliginosus** almost always occurs, and the other two species frequently.

Olisthopus rotundatus, Payk. Frequent on dry and elevated ground, more particularly among heather.

Tachys parvulus, Dej. The first British specimen of this insect was taken from the Wallasey sandhills by Mr. J. H. Smedley, of Liverpool, September, 1884. No other has since been recorded from the two counties, but the species has been taken in the New Forest, and near Plymouth, and has now an undisputed place in the British list.

Tachys bistriatus, Duft. Mr. Stott's are the only records of this species, from Lostock, near Bolton, in daffodils, and from "The Grove, Warrington."

Cillenus lateralis, Sam. Not uncommon under stones on the shores of the estuaries, more especially where the shore is muddy or clayey.

Bembidium rufescens, Guér. Generally distributed, but hardly common. Usually under bark or in moss, but abundant in crevices of the sea cliffs on Hilbre Island, where a pale quasi-immature variety occurs. This form has also been noticed in a similar habitat in sea rocks near Plymouth by Commander J. J. Walker, R.N. West Derby (E.L.C.); Red Moss, Lostock (S.); Chat Moss, banks of Irwell (B.); Chester (T.); West Kirby, Ledsham (W.E.S.); Heysham, near Lancaster (R.).

Bembidium quinquestriatum, Gyll. Very occasional. Hoole, near Preston, West Derby, and Wallasey, in moss on walls in winter (W.); Southport, rare in gardens (C.).

Bembidium obtusum, Sturm. Generally common and widely distributed.

Bembidium guttula, F. Probably the most abundant species of the genus.

Bembidium mannerheimi, Sahl. Is recorded from Stretford by Reston, and from banks of the Bollin by Blackburn (E.M.M. i. 146).

Bembidium biguttatum, F. Not uncommon on muddy banks of rivers and estuaries. Alt and Fender (E.L.C.); Douglas, near Preston (W.); Gowey and Hooton Brook (W.E.S.); Hoylake (B.S.); Chester (T.); Crossens (C.).

Bembidium riparium, Ol. This form, regarded as a variety of the preceding by some students, may possible have been neglected in mistake for **Bembidium biguttatum.** It has occurred at Hightown on the banks of the Alt in company with that species (W.E.S.); and on banks of the Douglas, near Preston (W.).

Bembidium æneum, Germ. Common on muddy shores. Banks of Fender, Aigburth (E.L.C.); Newtown, near Chester (T.); Southport (C.); Burton Marsh and banks of Alt (W.E.S.).

Bembidium clarki, Daws. Very rare. Only recorded from Birkdale sandhills in moss (C.).

Bembidium minimum, F. Locally common on muddy marine shores of estuaries. Alt and Fender (E.L.C.); Leasowe (B.S.); Southport (C.); abundant on banks of gutters on Burton Marsh (W.E.S.); Lancaster sands (R.); Cuerdley Marsh, Warrington (Dun.).

Bembidium normannum, Dej. Local and apparently rare. One specimen taken at Barnston (Chesh.) by Mr. Willoughby Gardner; Shotwick (W.); Stanlow (W.E.S.).

Bembidium lampros, Herbst. Exceedingly abundant everywhere.
One specimen of the var. **velox, Er.** is recorded by Dr. Ellis from banks of Fender (E.L.C.).

Bembidium nigricorne, Gyll. Not uncommon where it occurs, but restricted to dry and sandy heaths. Oxton, Thurstaston, Heswall, etc.

Bembidium tibiale, Duft. Confined to the shingle of the banks of inland rivers. Recorded from the Dee (T.), (W.E.S.); and Lune (R.); and probably occurs elsewhere.

Bembidium atrocæruleum, Steph. With the preceding in the shingle beds of the Dee, but very much rarer (W.E.S.); Clitheroe (S.).

Bembidium decorum, Panz. This is also a river shingle species. It has only

been recorded from the Dee and from Clitheroe, but probably inhabits the shingle of all the North Lancashire rivers.

Bembidium nitidulum, Marsh. Generally distributed, but not common. Mersey shores at Aigburth (E.L.C.); and Oglet (T.); Bolton (S.); R. Douglas, near Preston (W.); Northenden, Heaton Mersey, Ringley Wood, Pendleton (B.); Mossley Hill, near Liverpool (Dun.).

Bembidium affine, Steph. Recorded by Reston from clay cliffs, Heysham, near Lancaster; Aigburth, West Derby, and Spital (E.L.C.).

Bembidium monticola, Sturm. The only record is from banks of Lune (R.).

Bembidium stomoides, Dej. This species was first recorded by Gregson from the Ribble and the Alt in 1859. One specimen was taken at Hightown, 1892 (W.E.S.); and it is recorded from Clitheroe. It appears very rare in the southern part of the district, but doubtless occurs frequently in North Lancashire, as it is common in Cumberland and Yorkshire. Fowler records the species from Whalley and Blackburn, but without authorities. Mr. Dunlop records specimens from banks of the Bollin.

Bembidium quadriguttatum, F. Local and not very common. Chester, Delamere (T.); Southport (C.); Hightown (W.E.S.); Mossley Hill and Allerton, near Liverpool (Dun.).

Bembidium quadrimaculatum, L. Generally distributed and rather common; often found under bark.

Bembidium lunatum, Duft. Local, but not uncommon on the banks of the Lancashire rivers. Not recorded from Cheshire. Aigburth (E.L.C.); banks of Alt at Hightown, common (B.S.); Crossens (C.); Withington (B.); Stretford (R.).

Bembidium concinnum, Steph. Local, but common where it occurs. Aigburth shore of Mersey (E.L.C.); banks of Alt at Hightown (W.E.S.); Dee at Saltney (T.); Southport shore (C.); Lancaster sands (R.).

Bembidium femoratum, Sturm. Generally distributed. West Derby, Aigburth shore and Leasowe (E.L.C.), (Dun.); Burton shore of Dee (W.E.S.); Upton, near Chester (T.); Pendleton, Hale (Cheshire), Delamere, Northenden (B.); Bolton (S.).

Bembidium bruxellense, Wesm. It seems possible that the insect known under this name may be merely a melanic variety of the preceding. In our district it has only been recorded from Chat Moss by Chappell and the banks of Rivington reservoir, near Bolton (S.).

Bembidium saxatile, Gyll. Rare and very local. Heysham, near Lancaster (R.); and Mersey shore about Oglet (T.), (Dun.).

Bembidium littorale, Ol. Very abundant everywhere.

Bembidium pallidipenne, Ill. In our district exclusively a maritime species. Common and sometimes abundant on the whole of the foreshore of the two counties.

Bembidium bipunctatum, L. Very occasional and local. Lancaster sands (R.); Birkdale (C.); mouth of Alt (T.); Burton shore (W.E.S.).

Bembidium varium, Ol. Only recorded from the estuary of the Dee. Hilbre Island (E.L.C.); Burton Marsh, occasionally abundant (W.E.S.).

Bembidium obliquum, Sturm. This generally rare species has been recorded by T. Morley (E.M.M. vi. 162) from Clifton, near Manchester, but its occurrence requires confirmation.

Bembidium paludosum, Panz. Only recorded from banks of the Bollin. Dr. Bailey says: "Occurs freely on banks of Bollin near Hale in June, July and August, sparingly in May. Constantly present in exactly the same spots on the river bank from year to year. Especially numerous in hot sunshine running and flying over the sand."

Tachypus flavipes, L. Generally distributed, but not at all common. Edgehill, Kirkdale, Liverpool, Leasowe, and river Birket (E.L.C.); Moreton (B.S.); banks of Mersey, Irwell, and Bollin (B.); Chester (T.); Formby and Birkdale sandhills, at roots of *Salix repens* (C.); Museum garden, Warrington (Dun.).

Tachypus pallipes, Duft. This species is noted as from Preston (B.C.), but the authority is not quoted. Mr. Reston records it from "damp places in the sandhills near Southport."

Perileptus areolatus, Creutz. Recorded by Fowler from the Duddon sands in Furness. Here again no authority is given, but the record is probably due to Mr. Constantine, of Liverpool, who collected in that district.

Trechus discus, F. Banks of Alt, fields near Stanley Road, Liverpool (E.L.C.); banks of Ribble, Sawley, Lancashire (B.C.); Mersey and Bollin, occasional (B.).

Trechus micros, Herbst. Very occasional on river banks, etc. Mersey and Irwell (Chappell); Mersey and Bollin (B.); Warrington (Dun.); Wallasey Pool (E.L.C.); one specimen in a fungus, Chester (T.).

Trechus longicornis, Sturm. This very rare species is recorded in B.C. as having been first taken in Britain at the Duddon sands near Broughton-in-Furness, and also by the Ribble. These records are probably by some of the old Manchester collectors, and no one appears to have taken the species recently anywhere.

Trechus lapidosus, Daws. Rare and very local. Dee near Saltney (T.); and also among shingle above Shotwick (W.E.S.)

Trechus minutus, F. Very common everywhere.

Trechus obtusus, Er. There seems no reason to deny specific rank to this form, which is quite as distinct from **Trechus minutus** as several other members of the genus. It appears to be exclusively a mountain species (lowland records probably referring to some form of **Trechus minutus** and not to the true **Trechus obtusus**), and is recorded by T. Blackburn from Coniston Old Man (E.M.M. i. 146).

Trechus secalis, Payk. Very local and occasional, inhabiting the banks of rivers. Bollin (B.); Gowey, near Ince (Cheshire), (W.E.S.); Appleton (Cheshire), (Dun.).

Patrobus excavatus, Payk. Not uncommon, more especially in upland and heathery districts. Didsbury, Northenden, Marple (B.); Warrington (D.); Club Moor, West Derby, near Liverpool (E.L.C.).

Patrobus septentrionis, Dej. Coniston Old Man, T. Blackburn (E.M.M. i. 146).

Pogonus chalceus, Marsh. Common on the foreshores of both counties under tide drift, etc.

Cymindis vaporariorum, L. This insect is probably common on the moors and heather-covered hills of the North and West. Specimens have been taken on Oxton Common, now a mass of villa residences (E.L.C.); Thurstaston (W.), (T.); and Heswall Hills (W.E.S.).

Demetrias atricapillus, L. Generally abundant.

Dromius linearis, Ol. Common everywhere.

Dromius meridionalis, Dej. Not uncommon. Lostock, near Bolton (S.); Bidston (L.); Ledsham, abundant under bark of old apple trees (W.E.S.); Delamere (T.).

Dromius quadrimaculatus, L. Generally common and widely distributed under bark of various trees.

Dromius quadrinotatus, Panz. Not so common as the preceding, but widely distributed. Marple (B.); Delamere (T.); Hoylake (B.S.); Southport (C.); Ledsham, Burton, Bromborough (W.E.S.); Allerton and Mossley Hill (Dun.).

Dromius melanocephalus, Dej. Generally common.

Dromius nigriventris, Thoms. Local and not common. Bidston and Thurstaston (E.L.C.); Hoylake (B.S.); Burton (W.E.S.).

Blechrus maurus, Sturm. Dr. Ellis records this species "in abundance at the north end of Wallasey pool."

Metabletus foveola, Gyll. Local, but common where it occurs, in dry and sandy places. Flaybrick Hill, near Birkenhead (E.L.C.); Hoylake (B.S.); Wallasey (T.); Birkdale sandhills (C.); Caldy, Heswall, and Burton Hills (W.E.S.).

HALIPLIDÆ.

Brychius elevatus, Panz. Local and not common, always in running water. Bollin (B.); Black Brook, Orford, near Warrington, and Delamere (D.); Lostock, near Bolton (S.); Gowey (W.E.S.).

Haliplus obliquus, F. Not uncommon. Fender, Birket, and near Liverpool (E.L.C.); Moreton (B.S.); Winnington (T.); Birkdale (C.); Ince (Chesh.) Marshes (W.E.S.).

Haliplus confinis, Steph. Rare and local. Wavertree (E.L.C.); Southport (C.).

Haliplus flavicollis, Sturm. Not uncommon. Kirkdale (E.L.C.); Lostock, near Bolton (S.); Birkdale (B.S.); Ledsham, Ormskirk (W.E.S.).

Haliplus fulvus, F. Rather rare. The Alt at Hightown and Rock Ferry (E.L.C.); Ledsham, Ormskirk (W.E.S.).

Haliplus ruficollis, De G. The commonest species of the genus. Generally abundant.

Haliplus fluviatilis, Aubé. Not common. Lydiate, Hightown, Moreton (E.L.C.); Southport (C.); Winnington (T.).

Haliplus lineatocollis, Marsh. Generally abundant.

DYTISCIDÆ.

Noterus sparsus, Marsh. Local and not common. New Ferry, Liscard (E.L.C.); Southport (C.); Warrington (D.); Ince (Cheshire) Marshes, abundant (W.E.S.).

Laccophilus interruptus, Panz. Bolton Canal, near Clifton, Manchester (B.); Southport (C.); near Warrington (D.); Ince (Cheshire) (W.E.S.).

Laccophilus obscurus, Panz. Much commoner and more widely distributed than the preceding. Common in most ponds throughout Wirral (W.E.S.); Southport district (C.); Warrington (D.).

Hyphydrus ovatus, L. Common and widely distributed.

In the E.M.M. i. 185 there is a record of the capture of a specimen of **Hyphydrus variegatus, Aubé,** "by a young man either in Lancashire or Cheshire, probably in Delamere Forest." The specimen is recorded as having been given by its captor to "W. E. Brown, of Burton-on-Trent." That this insect was the **Hyphydrus variegatus** of Aubé seems doubtful, the more so as the reputed British specimens of this insect standing over that name in the Stephensian collection (now in the British Museum) are not **Hyphydrus variegatus,** Aubé, but a large form of **Hyphydrus ovatus,** L. See also record of a very distinct but unnamed variety of **Hyphydrus ovatus,** L., taken by the present writer (E.M.M., 2nd series, xv. 43), of which it is possible this capture may have been an example.

Cœlambus versicolor, Schall. Fairly common and generally distributed in standing water.

Cœlambus inæqualis, F. Generally abundant and in similar localities to the preceding.

Cœlambus confluens, F. Rare and very local. Only recorded from Delamere (T.); and near Warrington (D.).

Cœlambus novemlineatus, Steph. Two specimens from a shallow peaty pool in Delamere Forest (W.E.S.) is the only record.

Deronectes assimilis, Payk. Rather common in Cheshire, apparently more infrequent in Lancashire. Hoylake (B.S.); Ledsham, Burton, Hooton, Delamere (W.E.S.); Bollin river (B.); Southport (C.). A dark variety occurs not uncommonly in Delamere Forest in which the elytral markings are confluent and almost obliterated.

Deronectes depressus, F. Generally distributed, but not very common. Lostock, near Bolton (S.); Hoylake, Moreton (B.S.); Bidston (L.); Black Brook near Warrington (D.); Ledsham, Willaston (W.E.S.); Southport (C.).

Deronectes duodecimpustulatus, F. Not common. Huyton, Knowsley, Bebington (E.L.C.); Lostock, near Bolton, taken hibernating under bark

of sticks submerged in a pond (S.); River Fender, Bidston (L.); Chester Canal (T.); Ledsham (W.E.S.); Canal near Warrington, common (D.).

Hydroporus pictus, F. Not uncommon. Leasowe (B.S.); Chester (T.); Ledsham, Willaston, Burton (W.E.S.); Lostock (S.); Southport district (C.).

Hydroporus lepidus, Ol. Frequent near the coast. New Brighton, Crosby, Altcar (E.L.C.); Southport (C.); Heswall, Hoylake, Leasowe, Freshfield (W.E.S.).

Hydroporus rivalis, Gyll. Rare, confined to running water. Recorded from the Southport district by Dr. Chaster.

Hydroporus dorsalis, F. Generally common. The melanic form in which all the lighter markings are obliterated is not infrequent, especially in Delamere Forest.

Hydroporus lineatus, F. Common in ponds and ditches throughout the district.

Hydroporus tristis, Payk. Associated with sphagnum, peaty soil, or high elevations, but under such conditions not uncommon. Simonswood Moss (E.L.C.); Lindow Common and Delamere Forest (W.E.S.).

Hydroporus umbrosus, Gyll. Very local and apparently rare. The only record is by Dr. Chaster from Birkdale.

Hydroporus angustatus, Sturm. Not common. Kirkdale (E.L.C.); Ince (Cheshire), (T.); Raby, Hooton, Ledsham (W.E.S.).

Hydroporus gyllenhali, Schiödte. Rather common and generally distributed; abundant on the mosses.

Hydroporus morio, Dej. Confined to peaty or upland districts. Recorded from Simonswood Moss and Delamere (W.E.S.); and Risley Moss, near Warrington, by Mr. Collins.

Hydroporus vittula, Er. Local and nowhere common. Moreton, Wallasey (E.L.C.); Chester (T.); Ledsham, Hooton, Willaston (W.E.S.).

Hydroporus palustris, L. Abundant everywhere, probably the commonest member of the genus.

Hydroporus incognitus, Sharp. Delamere Forest in a sphagnum grown pool. This species may probably occur on most of the mosses, as it is exceedingly difficult to distinguish from the preceding, and may readily be passed over for that species.

Hydroporus erythrocephalus, L. Abundant and very widely distributed.

Hydroporus memnonius, Nic. Generally distributed but not common. Kirkdale, Crosby, West Derby (E.L.C.); Birkdale (C.); Thurstaston, Ledsham, Delamere Forest (W.E.S.).

Hydroporus obscurus, Sturm. Not uncommon in pools on the mosses and upland regions. Delamere Forest (T.); Lindow Common, near Altrincham, abundant (W.E.S.).

Hydroporus nigrita, F. Not common and very local. Kirkdale (E.L.C.); Ledsham, abundant on one occasion among submerged grass in early spring (W.E.S.).

Hydroporus discretus, Fairm. Apparently very rare; the only record being a single specimen taken near Hooton (W.E.S.).

Hydroporus pubescens, Gyll. Generally abundant.

Hydroporus planus, F. Common, but perhaps not quite so generally distributed as the preceding.

Hydroporus lituratus, F. Local, but common in sandy districts near the coast. Great Meols (B.S.); Southport (C.); Chester (T.); Thurstaston, Leasowe, Formby, Delamere (W.E.S.).

Agabus guttatus, Payk. Generally distributed in brooks throughout the district. Lostock, near Bolton (S.); Moreton (B.S.); Didsbury and Swinton, near Manchester (B.); Hooton and Shotwick Brooks (W.E.S.).

Agabus biguttatus, Ol. This species is so closely allied to the preceding that it is almost impossible to satisfactorily separate females of the two species, the best distinctive character lying in the structure of the anterior claw of the male. Hence errors of record are very probable, and the species may be more widely distributed than is supposed. It undoubtedly occurs

in most districts, quite as commonly as **Agabus guttatus,** although our only records are from the Ribble (W.) and Prestwich Clough (W.E.S.).

Agabus paludosus, F. Local and not common. Always in running water. Lostock, near Bolton (S.); Swinton, near Manchester, abundant in a small stream (B.); Southport (C.).

Agabus nebulosus, Forst. Common locally. Sometimes abundant in the shallow pools among the sandhills which gather after rain and quickly disappear. Recorded also from Hoylake and Birkdale (B.S.); Oxton Common (L.); and Bolton (Whittaker).

Agabus unguicularis, Thoms. The only records are by Dr. Bailey—a single specimen, Birch Fields, Manchester, February, 1885, and one from Delamere, April, 1898.

Agabus sturmi, Gyll. Generally common and widely distributed.

Agabus chalconotus, Panz. "Near Moreton station" (E.L.C.); River Douglas, Hoole, near Preston (W.).

Agabus bipustulatus, L. Exceedingly common everywhere. A red or reddish form occurs occasionally, apparently quite mature, and quite distinct from the mountain variety, **solieri,** which is also often reddish in colour.

Platambus maculatus, L. Not uncommon in running water. Lostock, near Bolton (S.); Moreton (B.S.); Chester (T.); Black Brook near Warrington (D.); Ince (Cheshire) and Delamere (W.E.S.).

Ilybius fuliginosus, F. Common and generally distributed.

Ilybius fenestratus, F. Local and not common. Wavertree (E.L.C.); Upton, near Chester (T.).

Ilybius ater, De G. Not very common, but generally distributed throughout the district.

Ilybius obscurus, Marsh. Occasional. Fender Brook (Wirral), (E.L.C.); Southport (C.); Delamere (D.). The variety **sexdentatus, Schiödte** has been recorded by Mr. Archer from Little Brighton.

Ilybius guttiger, Gyll. Some confusion appears to exist between this and the next species, **Ilybius ænescens,** Thoms., and the records of the former insect in our district probably apply to the latter. Leasowe (L.); Delamere Forest (D.); Oakmere in Delamere (W.E.S.).

Ilybius ænescens, Th. Not recorded except by Gregson, but no doubt occurs, although very infrequently; for localities see preceding species.

Rhantus grapii, Gyll. A single specimen is recorded as having been taken in Mosslake fields near Liverpool (a locality which no longer exists as a haunt of water beetles), and was apparently verified by Dr. Ellis (E.L.C.).

Rhantus exoletus, Forst. A dead specimen is recorded from the banks of the Alt at Hightown (E.L.C.); and it has also been taken in Delamere Forest (D.).

Rhantus bistriatus, Berg. Local and not common. Recorded by Chappell from Prestwich, near Manchester; not infrequent locally in Delamere Forest (W.E.S.).

Colymbetes fuscus, L. Common and widely distributed throughout the district.

Dytiscus punctulatus, F. Rather local and not so generally distributed as **Dytiscus marginalis,** L., the only other species of the genus which occurs. Not uncommon in ponds and ditches near the coast. Southport (C.); Wallasey and Liscard (E.L.C.); Hoylake, West Kirby, and Moreton (B.S.); Levenshulme, Manchester (B.); at electric light, Chester (T.); Delamere Forest (W.E.S.).

Dytiscus marginalis, L. Generally common.

Hydaticus seminiger, De G. Rare and very local. One specimen, Ledsham (W.E.S.); and in ditches, Flaxmere, Delamere, in autumn (D.).

Acilius sulcatus, L. Generally distributed throughout the district.

GYRINIDÆ.

Gyrinus elongatus, Aubé. Locally common. Southport (C.); Leasowe (E.L.C.); ditches between Ince and Helsby (W.E.S.), (T.).

Gyrinus bicolor, Payk. Dr. Chaster records a single specimen from Crossens, near Southport.

Gyrinus natator, Scop. Abundant everywhere. Dr. Ellis says that all the specimens he has seen from the district are referable to the form **mergus,** Ahr. In the experience of the writer, although this form is in the large majority, the type **natator, Scop.** occurs not infrequently.

Gyrinus marinus, Gyll. Not uncommon in marshes near the coast. Altcar, Liscard (E.L.C.); Ince (Cheshire) Marshes (W.E.S.); Birkdale (C.).

Gyrinus opacus, Sahl. This form is as much entitled to specific rank as many other admitted species of this very difficult genus. Very occasional, Leasowe and Ledsham (W.E.S.).

Orectochilus villosus, Müll. Under stones in clear running water. Bollin (B.); brooks near Warrington (D.); Dee and its Cheshire tributaries (W.E.S.).

CLAVICORNIA.

The group **Clavicornia** rather serves the convenience of systematists than represents any true genetic entity in nature. Within it are grouped together, under the single character of antennæ more or less clubbed or thickened at their extremity, many heterogeneous forms. These are included by Dr. Sharp in his comprehensive group of **Polymorpha.*** In most systematic text-books two families of **Clavicornia, Hydrophilidæ** and **Staphylinidæ,** under the names of **Palpicornia** and **Brachelytra** respectively, are singled out and treated—for the sake of conveniently dividing so unwieldy a group—as sections equivalent in value to **Geodephaga** or **Hydradephaga.** Thus the fact that these are systematically of no higher value than any other of the families included in **Clavicornia** may be obscured.

Below, however, is given the local "census" separately, since the total of the British species of **Staphylinidæ** alone outnumbers that of all the remainder of the group. In this family we are locally well represented, although it is probable that many more species exist, especially in the genera **Homalota, Oxypoda,** etc., than have been recorded. The **Staphylinidæ** are quite northern in their European range, and hence we find in our district several species unknown in more southern counties.

In the other families we have many deficiencies. The following are the comparative numbers:—**Hydrophilidæ** (**Palpicornia**), British species, 97; local records, 58. **Staphylinidæ** (**Brachelytra**), British species, 789; local records, 359. Remainder of **Clavicornia**, British species, 680; local records, 254.

* See Cambridge Natural History, Insects, vol. VI., part ii., p. 213.

HYDROPHILIDÆ.

Hydrocharis caraboides, L. Dr. Chaster records the capture of a single specimen at Southport which had flown on to a greenhouse at night. If this was not an accidentally introduced specimen, the species must be very rare for so conspicuous an insect to have escaped observation for so long throughout the district.

Hydrobius fuscipes, L. Very common and widely spread. Dr. Ellis says the var. **picicrus,** Sharp, "is about as common as the type in this neighbourhood," but other observers do not seem to have found this to be the case.

Philydrus testaceus, F. Not uncommon. Chester and Winnington (T.); Liverpool (formerly), Moreton (E.L.C.); Southport district (C.); Willaston, Ledsham, Sutton (W.E.S.).

Philydrus nigricans, Zett. Rare and local. One specimen each recorded from Ince (Cheshire) (T.); Birkdale and Blowick (C.).

Philydrus melanocephalus, Ol. Not so rare as the preceding, but far from common. Westminster Road, Liverpool (formerly) (E.L.C.); Birkdale (C.).

Philydrus coarctatus, Gredl. Rare. Moreton, a few specimens (E.L.C.); freely in a pond near the Bollin (B.); Delamere (T.).

Cymbiodyta ovalis, Thoms. Not uncommon, and generally distributed throughout the district.

Enochrus bicolor, Gyll. Very occasional. Alt at Hightown (E.L.C.), (Dun.); Ince (Cheshire) (T.); Hatchmere, Delamere (D.).

Anacæna globulus, Payk. Abundant everywhere.

Anacæna limbata, F. Not quite so common, perhaps, as the preceding, but generally distributed.

Anacæna bipustulata, Steph. Only recorded from Birkdale (C.).

Helochares lividus, Forst. Recorded by Mr. Tomlin from Chester as "not uncommon."

Laccobius nigriceps, Thoms. Rare and local. Southport (C.); Chester (T.). See E.M.M., 2nd series, xviii. 6, where Dr. Joy distinguishes as two species **Laccobius sinuatus, Mots.**, and **Laccobius nigriceps, Thoms.**, hitherto regarded as synonymous in this country.

Laccobius bipunctatus, F. Generally distributed. Alt at Hightown (E.L.C.); Southport (C.); Ledsham and Hooton (W.E.S.).

Laccobius alutaceus, Thoms.

Laccobius minutus, L.

Both occur not uncommonly throughout the district.

Berosus affinis, Brull. Not common. Behind Wavertree Park, Liverpool (formerly), and Kirkdale (E.L.C.); Hoylake and Leasowe (B.S.).

Limnebius truncatellus, Thoms. Frequent and widely distributed.

Limnebius nitidus, Marsh. Moreton (E.L.C.); Southport, not uncommon (C.).

Chætarthria seminulum, Payk. Very local. Wallasey sandhills (E.L.C.); Burton, Cheshire (T.); Birkdale (C.).

Helophorus tuberculatus, Gyll. This very rare species was taken in the Manchester district by Chappell and verified by Rye (see E.M.M. xi. 135). The only other British record is from Yorkshire.

Helophorus nubilus, F. Not common and occurring apparently only near the coast. Crosby and Bidston (E.L.C.); Southport (B.); Hightown (C.); Sealand, Cheshire (W.E.S.).

Helophorus intermedius, Muls. Very local. Crosby (E.L.C.); Ince, Cheshire (W.E.S.).

Helophorus aquaticus, L. Exceedingly abundant everywhere.

Helophorus æneipennis, Thoms. Generally distributed. Southport (C.); Chester (T.); Altcar and Moreton (E.L.C.); Leasowe, Ledsham, Lindow Common (W.E.S.).

Helophorus mulsanti, Rye. Fowler records this species as "taken commonly at Liverpool by Crotch," but it is otherwise unrecorded from the district.

[**Helophorus affinis, Marsh.** This species no doubt occurs and is mixed with **Helophorus brevipalpis** in collections.]

Helophorus brevipalpis, Bedel. Exceedingly abundant everywhere. This species, the preceding, and **Helophorus brevicollis,** Thoms., are so exceedingly difficult to separate, that it is impossible to define with even approximate accuracy their British distribution.

Helophorus arvernicus, Muls. Local and not common. Hightown (E.L.C.); Bollin river at Hale (B.); recorded by T. Blackburn from a pond near Ashley in Cheshire (E.M.M. i. 145).

Hydrochus angustatus, Germ. Rare and very local. Westminster Road pits, Liverpool (formerly), Leasowe, and Liscard (E.L.C.); Southport (C.).

Ochthebius margipallens, Latr. Recorded only from near Moreton by Chappell (E.L.C.). This record seems to require further confirmation, and may refer to **Ochthebius viridis, Rey,** a species lately added to the British list, which appears to represent **Ochthebius margipallens** in many collections (see E.M.M., second series, xviii. 173).

Ochthebius marinus, Payk. One specimen, Southport (C.).

Ochthebius pygmæus, F. Rather common and widely distributed. Bolton (S.); Chester (T.); Southport district, rather common (C.); Helsby and Ince, abundant (W.E.S.).

Ochthebius bicolon, Germ. Not rare but much less common than the preceding. Chester (T.); Southport district (C.).

Ochthebius rufimarginatus, Steph. Dr. Ellis records a pair from Bidston Marsh (E.L.C.); from flood refuse near Pendleton (T. Morley in E.M.M. vii. 170).

Hydræna riparia, Kug. Common and widely distributed.

Hydræna nigrita, Germ. Dr. Chaster records three specimens from a small stream in the "Fairy Glen," Appley Bridge, and the species has also been taken by Mr. Dutton in Delamere Forest.

Hydræna gracilis, Germ. Taken with the preceding in both localities. Appley Bridge (C.); and Delamere Forest (D.).

Cyclonotum orbiculare, F. Generally distributed and not uncommon.

Sphæridium scarabæoides, F. Generally abundant.

Sphæridium bipustulatum, F. Almost equally common with the foregoing. The variety **marginatum, F.** also frequently occurs.

Cercyon littoralis, Gyll. Very common on the Lancashire shore under carrion, seaweed, etc.

Cercyon hæmorrhous, Gyll. Occasional, and not common. Hough End Clough, near Manchester (B.); Southport (C.); Chester (T.); Ledsham (W.E.S.).

Cercyon hæmorrhoidalis, F. Abundant everywhere.

Cercyon obsoletus, Gyll. Recorded by Dr. Ellis as "frequent on the sandhills." Our only other record is from Chester by Mr. Tomlin.

Cercyon flavipes, F. Very abundant in most localities.

Cercyon lateralis, Marsh. Not common. Kirkdale (E.L.C.); Leasowe (B.S.); Southport (C.); Ledsham, Burton, and Wallasey (W.E.S.).

Cercyon melanocephalus, L. Very common everywhere.

Cercyon unipunctatus, L. Occasional, and sometimes locally common. Chester (T.); Pendleton and Prestwich, near Manchester (B.); Southport (B.S.); Ledsham (W.E.S.).

Cercyon quisquilius, L. Not uncommon and generally distributed. Swinton (B.); Chester (T.); Southport (C.); Birkdale (B.S.).

Cercyon nigriceps, Marsh. Very occasional. Several specimens have been taken on the wing in the streets of Liverpool, and Dr. Chaster records four from Southport.

Cercyon pygmæus, Ill. Generally distributed, but not very common. Chester (T.); Southport district (C.); Ledsham (W.E.S.).

Cercyon terminatus, Marsh. Dr. Ellis records this species from Wallasey and Litherland.

Cercyon analis, Payk. Generally distributed and common in most localities.

Cercyon lugubris, Payk. Hightown (E.L.C.); Ledsham, in moss in the winter (W.E.S.).

Cercyon granarius, Er. Dr. Chaster records one specimen from Birkdale.

Megasternum boletophagum, Marsh. Generally common in vegetable refuse, etc.

Cryptopleurum atomarium, Ol. Common in similar situations with the preceding.

STAPHYLINIDÆ.

Aleochara ruficornis, Grav. Rare and local. One specimen, Eastham Wood (E.L.C.); and one swept near Capenhurst (W.E.S.).

Aleochara fuscipes, F. Not uncommon in dung and carrion, and generally distributed.

Aleochara bipunctata, Ol. Apparently very rare; two records of single captures only exist. Formby shore (T.); and Alvanley sandpit, near Helsby (W.E.S.).

Aleochara lanuginosa, Grav. Very abundant everywhere.

Aleochara nitida, Grav. Not uncommon and generally abundant on the shore. The var **bilineata, Gyll.** in our district seems quite as common as the type form.

Aleochara obscurella, Grav. Common under seaweed, etc. on the foreshore all round the coast. Mr. Tomlin records one specimen from Chester.

Exaleochara morion, Grav. Not common and only recorded from the coast. Wallasey (E.L.C.), (T.); Birkdale (C.).

Microglossa suturalis, Mann. Birkdale in haystack refuse (C.).

Microglossa pulla, Gyll. Generally distributed throughout the district, associated with nests of *Hirundo riparia* (the Sand Martin). This species is difficult to distinguish from, and often confused with **Microglossa nidicola, Fair.**, and most records of the latter species probably refer to the former.

Oxypoda lividipennis, Mann. Common throughout the district in vegetable refuse, etc.

Oxypoda opaca, Grav. In similar situations to the preceding, and almost equally common.

Oxypoda alternans, Grav. In fungi in the autumn; not rare, and generally distributed.

Oxypoda exoleta, Er. Generally considered a rare species. One at Burton (T.); Dr. Chaster records it from Birkdale, but not common. See, however, E.M.M., 2nd series, xix. 51.

Oxypoda umbrata, Gyll. Very rare in the district. One specimen, Spital, Cheshire (E.L.C.); Birkdale (C.).

Oxypoda exigua, Er. Birkdale, generally scarce (C.); on one occasion abundant in flood refuse, Birkdale (T.).

Oxypoda longiuscula, Er. Occasional. Bidston Hill and Eastham (E.L.C.); Raby and Ledsham (W.E.S.); Hightown (C.).

Oxypoda hæmorrhoa, Sahl. Rare in the district. Birkdale in moss (C.); Ledsham in haystack refuse (W.E.S.).

[**Oxypoda waterhousei, Rye.** Dr. Chaster records this species as rare from Birkdale, but the specimens are probably **Oxypoda exoleta.**]

Ischnoglossa prolixa, Grav. Not common. Recorded from Eastham (E.L.C.); and Delamere Forest, under bark (W.E.S.).

Ocyusa incrassata, Kr. " One specimen at Eastham " (E.L.C.).

Ocyusa maura, Er. Broadbent recorded this species from near Manchester (E.M.M. viii. 289); one specimen at Ledsham (W.E.S.).

Phlœopora reptans, Grav. Generally distributed under bark.

Phlœopora corticalis, Grav. Under bark of dead pines, Hesketh Wood, near Southport (C.); Delamere (T.).

Ocalea castanea, Er. One specimen Eastham (E.L.C.); and one taken on the margin of Shotwick Brook (W.E.S.).

Chilopora longitarsis, Er. Not uncommon. Hightown shore (E.L.C.); Hoylake (W.E.S.); Mersey shore above Garston (T.); recorded also by Blackburn from the Bollin (E.M.M. i. 146).

Chilopora rubicunda, Er. There appear to be no recent captures, but the species has been recorded by Reston from Clifton, near Manchester (B.C. ii. 50); and by Blackburn from the Bollin (E.M.M. i. 146).

Myrmedonia limbata, Payk. The only species of the genus so far noted from the district. It is recorded from Crosby and Hightown (E.L.C.); Fallowfield, near Manchester (B.); and Birkdale sandhills (C.).

Astilbus canaliculatus, F. Generally distributed, but nowhere common, except perhaps on the coast sandhills.

Callicerus obscurus, Grav. Apparently very rare. One specimen is recorded from Wallasey (E.L.C.); and one from Southport (C.).

Callicerus rigidicornis, Er. Also very rarely met with. One specimen in each case has been taken at Eastham and Aigburth shore (E.L.C.); and Birkdale sandhills (C.).

Homalota. Of this large and difficult genus probably more species occur than have been recorded. The difficulty of satisfactorily determining them deters many students from paying close attention to the genus.

Homalota cambrica, Woll. Appleton, near Warrington (Dun.); Dee shore near Burton, Cheshire (W.E.S.).

Homalota insecta, Thoms. Hightown (E.L.C.); swampy meadow, among dead leaves, near Manchester (Broadbent, in E.M.M. viii. 289).

Homalota gregaria, Er. Not uncommon and widely distributed.
Homalota luridipennis, Mann. Hightown (E.L.C.); Southport and Crossens (C.).
Homalota gyllenhali, Thoms. Scarisbrick, near Southport (C.).
Homalota hygrotopora, Kr. Among shingle, Hooton Brook, Cheshire (W.E.S.).
Homalota elongatula, Grav. Spital and Moreton (E.L.C.); Southport (C.); common in shingle, Hooton and Shotwick Brooks (W.E.S.).
Homalota volans, Scriba. Common and generally distributed.
Homalota vestita, Grav. Common and generally distributed.
Homalota silvicola, Fuss. T. Morley recorded a capture at Stretford on the banks of the Mersey in flood refuse (see E.M.M. vii. 107).
Homalota vicina, Steph. Not uncommon. Simonswood, Ince (Cheshire) (E.L.C.); Southport (C.); Chester (T.); Ledsham (W.E.S.).
Homalota crassicornis, Sharp. Among dead leaves, Drinkwater Park (T. Morley, in E.M.M. vii. 107).
Homalota graminicola, Grav. Generally distributed.
Homalota halobrectha, Sharp. Waterloo and Hightown among seaweed (E.L.C.).
Homalota algæ, Hardy. Dr. Chaster records one specimen from Southport.
Homalota occulta, Er. Birkdale (C.).
Homalota fungivora, Thoms. Eastham (E.L.C.); Birkdale (C.).
Homalota æquata, Er. Under bark, Delamere Forest, not uncommon.
Homalota angustula, Gyll. Hesketh Wood, Southport (C.); Ledsham (W.E.S.); Arc Wood, Delamere (Dun.).
Homalota cæsula, Er. Behind Leasowe embankment (E.L.C.); Birkdale sandhills, scarce (C.).
Homalota circellaris, Grav. Generally abundant.
Homalota analis, Grav. Very common everywhere.
Homalota cavifrons, Sharp. Dr. Chaster records one specimen from Parbold, Lancashire.
Homalota soror, Kr. Birkdale (C.).
Homalota exilis, Er. In moss and flood refuse, Birkdale sandhills, common (C.).
Homalota parallela, Mann. Two specimens from Wallasey, April, 1883 (E.L.C.).
Homalota depressa, Gyll. One specimen, Birkdale sandhills (C.).
Homalota hepatica, Er. Recorded by Chappell from "near Manchester" (E.M.M. xii. 62).
Homalota aquatica, Thoms. Birkdale (C.); abundant on wet mud on margin of pond in Delamere Forest (W.E.S.).
Homalota euryptera, Steph. Not uncommon in fungi, Delamere and Ledsham (W.E.S.).
Homalota trinotata, Kr. Generally distributed.
Homalota triangulum, Kr. Bootle and Wallasey (E.L.C.); Birkdale (C.).
Homalota fungicola, Thoms. Very common in fungi, Delamere and Ledsham (W.E.S.); Southport (C.).
Homalota coriaria, Kr. In moss, Birkdale (C.); haystack refuse, Ledsham (W.E.S.).
Homalota sodalis, Er. Parbold (C.).
Homalota palustris, Kies. Birkdale, one specimen (C.).
Homalota sericea, Muls. Southport district (C.); Chester (T.).
Homalota atricolor, Sharp. Recorded by Dr. Ellis as "abundant at Wallasey" (E.L.C.).
Homalota nigra, Kr. Generally common.
Homalota germana, Sharp. Birkdale (C.).
Homalota canescens, Sharp. Birkdale sandhills in the spring, rare (C.).
Homalota cauta, Er. (**Homalota parva,** Brit. Cat.). Bidston and Wallasey, occasional (E.L.C.).
Homalota villosula, Kr. Recorded by Morley from Drinkwater Park (E.M.M. vii. 107); one specimen from Spital, Cheshire (E.L.C.).
Homalota setigera, Sharp. Drinkwater Park with the preceding (Morley).
Homalota lævana, Muls. "Eastham" (E.L.C.).
Homalota cinnamoptera, Thoms. "Eastham, one" (E.L.C.).

Homalota atramentaria, Gyll. Chester, and Mersey shore, near Oglet (T.); Birkdale, common (C.).
Homalota intermedia, Thoms. Recorded by Blackburn from the Bollin valley (E.M.M. i. 146).
Homalota longicornis, Grav. Generally common.
Homalota sordida, Marsh. Abundant everywhere.
Homalota aterrima, Grav. Generally common.
Homalota pygmæa, Grav. One specimen each from Wallasey (E.L.C.); and Southport (C.).
Homalota pilosiventris, Thoms. One specimen recorded from Birkdale (C.).
Homalota subsinuata, Er. Southport (C.).
Homalota orbata, Er. Eastham and Wallasey, single specimens (E.L.C.); Birkdale, two (C.).
Homalota fungi, Grav. Abundant everywhere.
var. **clientula, Er.** Mersey shore at Oglet (T.); Birkdale (C.).
Gnypeta labilis, Er. Generally common at margins of ponds, etc., on muddy ground.
Tachyusa constricta, Er. Common on banks of Bollin, near Ashley (T.), (B.), (W.E.S.).
Tachyusa scitula, Er. Very occasional with the preceding (T.), (B.).
Tachyusa flavitarsis, Sahl. Very abundant on banks of Irwell and Bollin (B.).
Falagria sulcata, Payk. Swinton, near Manchester (B.); under fir bark at Bidston (E.L.C.); Southport, common (C.); Ledsham, in garden refuse (W.E.S.).
Falagria sulcatula, Grav. Wallasey (E.L.C.); Hightown (Lanc.) (C.).
Falagria obscura, Grav. Generally distributed. Archer records the species from " nests of black ant " at Eastham, 1863 (E.L.C.).
Autalia impressa, Ol. Generally common in fungi in autumn.
Autalia rivularis, Grav. In cut grass near Southport, rare (C.); " under bark at Bromborough " (E.L.C.).
Autalia puncticollis, Sharp. One, River Bollin (T.).
Encephalus complicans, West. At roots of grass, etc., in woods in winter, Ledsham (W.E.S.).
Gyrophæna affinis, Mann. In fungi, Eastham Wood (E.L.C.); Ledsham (W.E.S.).
Gyrophæna gentilis, Er. Abundant in fungi, Eggarslack, Grange-over-Sands (B.S.).
Gyrophæna nana, Payk. Occasional in fungi. Delamere and Ledsham (W.E.S.).
Placusa pumilio, Grav. Among shingle, Shotwick Brook, Cheshire, a single specimen (W.E.S.).
Epipeda plana, Gyll. Not rare under bark. Ledsham (W.E.S.); recorded from Bootle by F. Kinder (E.L.C.).
Leptusa fumida, Er. Spital and Eastham (E.L.C.); Delamere (T.); Birkdale (C.); Chat Moss (W.E.S.).
Sipalia ruficollis, Er. In cut grass, etc. Birkdale (C.).
Bolitochara bella, Märk. One specimen in fungus, Birkdale (C.).
Bolitochara obliqua, Er. Not uncommon under bark throughout the district.
Phytosus nigriventris, Chevr. Generally distributed on the foreshore of both counties in carrion and the egg capsules of the whelk.
Phytosus balticus, Kr. With the preceding and equally common.
Diglossa submarina, Fair. Hightown, on the shore below high water mark, where the species makes burrows in the same manner as **Bledius** (T.), (B.S.).
Hygronoma dimidiata, Grav. Hatchmere, Delamere, on reeds (D.).
Oligota atomaria, Er. In moss in winter. Storeton and Bromborough (E.L.C.); Southport (C.).
Oligota punctulata, Heer. One specimen among **Oligota atomaria** (E.L.C.); Southport (C.).
Oligota pusillima, Gr. Delamere (T.); Burton (T.).

Oligota inflata, Mann. Generally common in haystack refuse, etc.
Myllæna gracilis, Matt. Recorded from Birkdale (C.).
Myllæna infuscata, Matt. Recorded from Birkdale (C.).
Myllæna brevicornis, Matt. Ringley Wood, near Manchester (B.); Birkdale (C.).
Gymnusa brevicollis, Payk. "In sphagnum, Chat Moss," recorded by T. Morley (E.M.M. vii. 107).
Gymnusa variegata, Kies. In a swampy meadow among dead leaves near Manchester, recorded by Broadbent (E.M.M. viii. 289).
Hypocyptus longicornis, Payk. Common and generally distributed in moss.
Hypocyptus læviusculus, Mann. Dr. Ellis records one specimen from Wallasey (E.L.C.).
Hypocyptus ovulum, Heer. Southport and Ainsdale sandhills, scarce (C.); Drinkwater Park, T. Morley (E.M.M. vii. 170).
Conosoma littoreum, L. One specimen, Wallasey (E.L.C.).
Conosoma pubescens, Grav. Not uncommon and widely distributed.
Conosoma lividum, Er. Equally common with the preceding and as generally distributed.
Tachyporus obtusus, L. Generally common.
Tachyporus formosus, Matt. A few specimens on Hilbre (W.E.S.).
Tachyporus solutus, Er. Southport, not uncommon (C.); Grange-over-Sands and Lindale (B.S.); Ledsham (W.E.S.).
Tachyporus chrysomelinus, L. Generally abundant.
Tachyporus pallidus, Sharp. Birkdale sandhills in early spring, rare (C.).
Tachyporus humerosus, Er. Generally common in marshy places.
Tachyporus hypnorum, F. Everywhere one of the most abundant of our beetles.
Tachyporus tersus, Er. Birkdale sandhills (C.), (B.S.).
Tachyporus pusillus, Grav. Generally common.
Tachyporus brunneus, F. Helsby (T.); banks of Fender, Bidston Marsh (E.L.C.); Southport district (C.).
Tachyporus transversalis, Grav. Delamere (T.); recorded in B.C. from Chat Moss, possibly on the authority of Chappell.
Cilea silphoides, L. In vegetable refuse not uncommon.
Tachinus flavipes, F. Crosby, one specimen (E.L.C.); "Manchester district" (B.C.).
Tachinus humeralis, Grav. In wet and decaying stumps of oaks and rotten fungus, Delamere (B.S.), (T.), (W.E.S.); in fungi, Eggarslack, Grange-over-Sands (B.S.).
Tachinus rufipes, De G. Generally common.
Tachinus subterraneus, L. In decaying vegetable refuse. Chester (T.); Northenden (B.); Meols, Cheshire (B.S.); Birkdale (C.); Ledsham (W.E.S.); Delamere (Dun.).
var. **bicolor, Grav.** Southport, one specimen (C.).
Tachinus marginellus, F. Abundant everywhere in dung.
Tachinus laticollis, Grav. Occasional with the above and perhaps often mistaken for it. Ledsham (W.E.S.).
Megacronus analis, Payk. Occasional. Oxton (L.); Delamere, Formby (T.); Birkdale (C.); Heswall (W.E.S.).
Megacronus inclinans, Grav. Very rare among dead leaves. Eastham Wood (E.L.C.), (W.E.S.); Drinkwater Park (T. Morley in E.M.M. vii. 107).
Megacronus cingulatus, Mann. Recorded from Appleton Dingle by Mr. Dunlop.
Bolitobius lunulatus, L. In moss on a wall, Eastham (E.L.C.); in fungus, Manley, Cheshire (W.E.S.).
Bolitobius trinotatus, Er. Not uncommon in fungus in autumn.
Bolitobius pygmæus, F. With the preceding and generally found more abundantly.
Mycetoporus lucidus, Er. Eastham and Walton (E.L.C.); Delamere, not common (T.), (W.E.S.).
Mycetoporus splendens, Marsh. Wallasey (E.L.C.); Southport sandhills (C.); Eastham and Thornton-le-Moors (Cheshire) (W.E.S.).

Mycetoporus lepidus, Grav. Birkdale, scarce (C.).

Mycetoporus nanus, Er. Birkdale sandhills, scarce. Hightown, frequent in spring (C.).

Mycetoporus angularis, Rey. Birkdale sandhills, scarce (C.).

Mycetoporus clavicornis, Steph. Birkdale sandhills, one specimen (C.).

Mycetoporus splendidus, Grav. The commonest species of the genus, and although not at all abundant, generally distributed.

Habrocerus capillaricornis, Grav. One specimen from the wood behind Scarisbrick Hall (Lanc.) (C.).

Heterothops binotata, Er. Wallasey and Hightown foreshore (E.L.C.), (T.), (W.E.S.); Southport and Birkdale (C.), (B.S.).

Heterothops dissimilis, Grav. Moreton, Cheshire (E.L.C.); Delamere (T.); Burton, in haystack refuse (W.E.S.); Birkdale (C.).

Quedius mesomelinus, Marsh. Generally distributed in vegetable refuse, etc.

Quedius puncticollis, Thoms. From a wasp nest taken at Ince, Cheshire (W.E.S.); Birkdale sandhills, one specimen (C.).

Quedius cruentus, Ol. Generally distributed in vegetable refuse, but not common. var. **virens, Rott.** Recorded from Birkdale by Dr. Chaster and Mr. Sopp.

Quedius cinctus, Payk. Generally distributed.

Quedius fuliginosus, Grav. Generally common and widely distributed.

Quedius tristis, Grav. Generally common and widely distributed.

Quedius molochinus, Grav. Generally common and widely distributed.

Quedius nigriceps, Kr. Eastham and Storeton Woods (E.L.C.); Delamere, one specimen (B.); Arc Wood, Delamere (Dun.).

Quedius fumatus, Steph. (peltatus, Er.). Eastham and Aigburth (E.L.C.); Delamere (W.E.S.).

Quedius umbrinus, Er. One specimen each, Aigburth (E.L.C.), and Mersey shore above Garston (T.); Coniston (T. Blackburn in E.M.M. i. 146).

Quedius obliteratus, Er. (suturalis, Brit. Cat.). Birkdale, in sheaves of cut stargrass (C.), (T.).

Quedius rufipes, Grav. Common and generally distributed.

Quedius scintillans, Grav. Birkdale and Southport, rare (C.).

Quedius attenuatus, Gyll. Recorded by T. Blackburn from Coniston (E.M.M. i. 146).

Quedius semiæneus, Steph. Kirkdale, Wallasey, and Bidston Marsh (E.L.C.); Southport district (C.); in tide drift, Burton, Cheshire (W.E.S.).

Quedius boops, Grav. Common and generally distributed.

Creophilus maxillosus, L. Generally common in carrion.

Leistotrophus murinus, L. A single specimen recorded from Stockton Heath by Mr. Dunlop, and one in the Warrington Museum from Frodsham.

Staphylinus pubescens, De G. Rather frequent on the Hoylake, Wallasey, and Birkdale sandhills; Chester (T.); Delamere Forest, rare (W.E.S.).

Staphylinus stercorarius, Ol. Very rare on the sandhills (E.L.C.), (C.); one specimen recorded by Mr. Sopp as having been taken by Mr. O. Whittaker in Lulworth Road, Birkdale; and one from Hampfell, Grange-over-Sands.

Staphylinus cæsareus, Ceder. Simonswood Moss, one (E.L.C.); shore of Coniston Lake (W.E.S.).

Ocypus olens, Müll. Generally abundant.

Ocypus brunnipes, F. Southport and Birkdale (B.), (C.); Noctorum, Cheshire (L.); Hoylake and West Kirby (B.S.); Ince and Burton (W.E.S.).

Ocypus fuscatus, Grav. West Derby, Childwall, and Wallasey (E.L.C.); Noctorum, Cheshire (L.).

Ocypus cupreus, Rossi. Generally distributed but not common.

Ocypus ater, Grav. Bromborough Pool (E.L.C.); West Kirby and Leasowe (B.S.); Birkdale (C.); foreshore, Burton salt marsh (W.E.S.).

Ocypus morio, Grav. Fairly common and widely distributed.

Philonthus splendens, F. Not generally common. "Eastham Wood, abundant in November, 1882" (E.L.C.); Chester Cop and Delamere (T.); Gathurst,

near Wigan (C.); Hoylake and Caldy (B.S.); Warrington (D.); Ledsham, not uncommon (*in stercore equino*) (W.E.S.).

Philonthus intermedius, Boisd. Wallasey (E.L.C.); Hoylake (B.S.); Warrington (D.); Heswall, Burton, Ledsham, Delamere, and Formby (W.E.S.).

Philonthus laminatus, Creutz. Not uncommon, and widely distributed.

Philonthus æneus, Rossi. Generally common.

Philonthus proximus, Kr. (**succicola, Thoms.**). Occasional. Hightown and Delamere (T.); Birkdale, rare (C.); Hampfell, Grange-over-Sands (B.S.); Hooton and Ormskirk (W.E.S.).

Philonthus carbonarius, Gyll. Not common. Leasowe and Wallasey in spring (E.L.C.); Delamere (T.), (W.E.S.); Birkdale (C.); Ledsham, and Wallasey (W.E.S.).

Philonthus decorus, Grav. Eastham Wood (E.L.C.); common in Delamere Forest (T.), (W.E.S.).

Philonthus politus, F. Generally common.

Philonthus varius, Gyll. Abundant everywhere.

Philonthus marginatus, F. Common and widely distributed.

Philonthus cephalotes, Grav. Generally common.

Philonthus umbratilis, Grav. Not common. West Derby, and Wallasey (E.L.C.); Hightown (T.); Southport (C.); Ledsham, in cut reeds (W.E.S.).

Philonthus fimetarius, Grav. Generally abundant.

Philonthus sordidus, Grav. Not so common as the preceding, but generally distributed.

Philonthus ebeninus, Er. Not at all common. Delamere (T.); Southport (C.).

Philonthus fumigatus, Er. West Derby, and Hightown (E.L.C.); Birkdale (C.); Formby shore (W.E.S.); banks of Mersey, near Warrington (D.).

Philonthus debilis, Grav. Birkdale, rare (C.).

Philonthus sanguinolentus, Grav. Wallasey sandhills (E.L.C.); Chester (T.); Appleton (Dun.); Burton, Cheshire, and Delamere (W.E.S.); Southport district (C.).

Philonthus cruentatus, Gmel. "On sallows at Crosby in spring" (E.L.C.); Noctorum (L.); West Kirby (B.S.); Southport district, common (C.).

Philonthus longicornis, Steph. (**scybalarius, Nord.**). Infrequent. Storeton, one specimen (E.L.C.); Lymm, Warrington (D.); Stockton Heath, near Warrington (Dun.).

Philonthus varians, Payk. Generally abundant

Philonthus vernalis, Grav. Wallasey and Hightown (E.L.C.); Hightown (C.), (Dun.).

Philonthus ventralis, Grav. Formby (T.); Southport district (C.); Ledsham in cut reeds, and Eastham in fungi (W.E.S.).

Philonthus discoideus, Grav. Not uncommon and widely distributed. Crosby, Liverpool (E.L.C.); Agecroft, and Hale near Manchester (B.); Southport district (C.); Ledsham (W.E.S.).

Philonthus micans, Grav. Not uncommon in damp places on the sandhills. Formby (E.L.C.); Birkdale (C.), (B.S.).

[**Philonthus nigritulus, Grav.** Specimens of a **Philonthus** occur rather commonly on the Birkdale sandhills which have been referred to this species, but it appears certain that they are nothing more than a dark-legged race of **Philonthus trossulus, Nord.**]

Philonthus trossulus, Nord. Abundant everywhere.

Philonthus puella, Nord. Occasional and not common. Dr. Ellis records one each from Bidston and Wallasey (E.L.C.); Trafford Park, Manchester (B.); Ledsham and Delamere (W.E.S.).

Cafius fucicola, Curt. One specimen under tidal refuse, Dove Point, Hoylake (B.S.).

Cafius xantholoma, Grav. Not uncommon under decaying seaweed, etc., on both the Cheshire and Lancashire shores.

Actobius signaticornis, Rey. Not uncommon in wet moss on the Birkdale sandhills (C.), (B.S.).

Actobius villosulus, Steph. A few specimens in a sandpit at Upton, near Chester (T.), (W.E.S.).

Actobius procerulus, Grav. Aigburth, one (E.L.C.); Southport shore on marshy ground (C.).

Xantholinus fulgidus, F. Recorded from Appleton, near Warrington (Dun.).

Xantholinus glabratus, Grav. Generally common.

Xantholinus punctulatus, Payk. More or less abundant everywhere.

Xantholinus ochraceus, Gyll. More or less abundant everywhere.

Xantholinus tricolor, F. One specimen taken in district (E.L.C.); Leasowe, one (W.E.S.).

Xantholinus linearis, Ol. Abundant everywhere.

Xantholinus longiventris, Heer. Abundant, especially on coast sandhills (E.L.C.); Southport and Birkdale sandhills (C.), (T.).

Leptacinus parumpunctatus, Gyll. Southport shore, scarce (C.).

Leptacinus batychrus, Gyll. Southport and Birkdale, not uncommon (C.), (B.S.).

Leptacinus linearis, Grav. Rather common and generally distributed in vegetable refuse.

Baptolinus alternans, Grav. Delamere, common (T.), (L.), (B.S.); Chat Moss, Trafford Park, Prestwich and Worsley (B.); Ledsham (W.E.S.); Grange-over-Sands (B.S.); Appleton, Warrington (Dun.).

Othius fulvipennis, F. Generally common and widely distributed.

Othius læviusculus, Steph. Birkdale sandhills, rare (C.).

Othius melanocephalus, Grav. Delamere (T.); Southport district (C.); Holker (N. Lanc.) (B.S.).

Othius myrmecophilus, Kies. Rather frequent in moss in woods. Eastham, Delamere, Burton, etc.

Lathrobium elongatum, L. Generally common.

Lathrobium fulvipenne, Grav. Abundant everywhere.

Lathrobium rufipenne, Gyll. Two specimens, Flaxmere, Delamere (D.); and one specimen at Abbot's Moss by Mr. J. Collins, of Oxford.

Lathrobium brunnipes, F. Common everywhere.

Lathrobium punctatum, Zett. This species, which until Mr. Donisthorpe's correction (E.R. xv. 180) stood in our lists as **Lathrobium atripalpe, Scriba,** is recorded from Stockton Heath, near Warrington, by Mr. Dunlop.

Lathrobium longulum, Grav. Birkdale sandhills, not common (C.). These specimens are generally of a much brighter red colour than the usual pitchy red type form.

Lathrobium quadratum, Payk. One specimen, Hightown (E.L.C.); one at Crossens, near Southport, at grass roots (C.).

Lathrobium multipunctum, Grav. Southport district, rare (C.); Hookburgh (N. Lanc.) (B.S.).

Cryptobium glaberrimum, Hbst. Birkdale sandhills, rare (C.); Hatchmere, Delamere (D.).

Stilicus rufipes, Germ. Rare and local. Chester, one (T.); Delamere (L.); Southport district (C.), (B.S.).

Stilicus affinis, Er. Not uncommon and generally distributed on banks of ponds and in damp vegetable refuse.

Stilicus orbiculatus, Payk. Southport, Chat Moss, and banks of River Bollin (B.).

Medon propinquus, Bris. One specimen in moss, Ledsham (W.E.S.).

Medon melanocephalus, F. Litherland (E.L.C.); Hooton (W.E.S.).

Medon obsoletus, Nord. Local and not common. Southport and Birkdale (C.), (B.S.); Upton, near Chester, in a sandpit (T.).

Lithocharis ochracea, Grav. Southport, in vegetable refuse (C.); Ledsham, in cut reeds (W.E.S.).

Pæderus littoralis, Grav. Not common. Newton and West Kirby, under ditch trimmings (B.S.), (L.).

Pæderus riparius, L. Very occasional. One specimen, Chester (T.); and a few at roots of grass on ditch banks near Southport (C.).

Evæsthetus ruficapillus, Lac. The only member of the genus recorded—from Burton Moss, near Ainsdale, as common in wet moss (C.).

Stenus biguttatus, L. Mersey shore at Eastham (E.L.C.); Southport foreshore, not common (C.).

Stenus bimaculatus, Gyll. Not very common, but generally distributed. Hightown and Spital (E.L.C.); Chester (T.); Southport (C.); Burton (Chesh.) and Willaston (W.E.S.).

Stenus guttula, Müll. Eastham, banks of Alt at Hightown (E.L.C.); banks of Bollin, rare (B.); Great Sutton (Cheshire), at edge of brook (W.E.S.).

Stenus juno, F. Generally common in marshy localities.

[**Stenus ater, Mann.** Dr. Chaster records the species doubtfully from the Southport district.]

Stenus speculator, Lac. Exceedingly common and universally distributed.

Stenus buphthalmus, Grav. Not uncommon in damp localities.

Stenus melanopus, Marsh. Spital and Eastham (E.L.C.).

Stenus atratulus, Er. Recorded from Southport in B.C. ii. 339, but the local observers there do not appear to have met with it.

Stenus canaliculatus, Gyll. Southport district (C.); Scarisbrick (B.S.).

Stenus pusillus, Er. A few specimens near Spital (E.L.C.); Southport district (C.).

Stenus exiguus, Er. Birkdale, rare (C.).

Stenus declaratus, Er. Common and generally distributed in haystack refuse etc.

Stenus crassus, Steph. Liscard (E.L.C.); Southport district (C.); Ledsham (W.E.S.).

Stenus brunnipes, Steph. Generally common.

Stenus impressus, Germ. Not uncommon. Chester (T.); Southport, Broughton (N. Lanc.) (B.S.); Delamere (D.); Ledsham (W.E.S.).

Stenus flavipes, Steph. Hatchmere, Delamere, common (D.).

Stenus pubescens, Steph. Wallasey and Moreton (E.L.C.); not uncommon at roots of rushes in winter, Ledsham, Raby, etc. (W.E.S.); Chester and Delamere (T.).

Stenus binotatus, Ljungh. Moreton (E.L.C.); Delamere (T.); Southport district (C.); Ledsham (W.E.S.).

Stenus pallitarsis, Steph. Not common. One at Moreton (E.L.C.); Raby and Stanlow (Chesh.) (W.E.S.); Delamere (T.).

Stenus bifoveolatus, Gyll. Recorded by T. Blackburn from Carrington Moss, Cheshire (E.M.M. i. 146); Didsbury, and Northenden (B.); Southport district (C.); Raby and Delamere in wet moss (W.E.S.).

Stenus nitidiusculus, Steph. Spital, one specimen (E.L.C.); Chester (T.); Didsbury (B.); Southport district (C.); Ledsham and Delamere (W.E.S.); Grappenhall (Dun.).

Stenus picipennis, Er. "Carrington Moss, Cheshire" (T. Blackburn in E.M.M. i. 146).

Stenus picipes, Steph. Generally common and widely distributed.

Stenus cicindeloides, Grav. Recorded as scarce in the Southport district (C.); but generally not uncommon.

Stenus similis, Herbst. One of the commonest of the genus.

Stenus tarsalis, Ljungh. Not uncommon. Hoylake and West Kirby (B.S.); Upper Alithwaite, N. Lanc. (B.S.); Helsby (D.); Raby and Hooton (W.E.S.); Heatley and banks of River Bollin (Dun.).

Stenus paganus, Er. Fairly common. Chester and Delamere (T.); Southport district (C.).

Stenus latifrons, Er. Generally common.

Stenus fornicatus, Steph. Hatchmere, Delamere, not uncommon (T.).

Oxyporus rufus, L. "Liverpool," and Delamere Forest (E.L.C.); Mossley Hill, near Liverpool (Dun.).

Bledius spectabilis, Kr. Southport shore, abundant (C.), (B.S.); one specimen, Burton Marsh, Cheshire (W.E.S.).

Bledius tricornis, Herbst. Recorded from " Manchester and Lancashire district" (B.C. ii. 366).

Bledius bicornis, Germ. Also recorded from the Manchester district, but apparently not confirmed by modern collectors there (B.C. ii. 366).

Bledius arenarius, Payk. Abundant on the foreshore of both counties where it makes shallow burrows in the sand just above high water mark.

Bledius pallipes, Grav. One, Birkdale shore (E.L.C.); in the sandy banks of River Bollin, rare (B.), (T.).

Bledius fuscipes, Rye. Not uncommon in damp hollows in the sandhills about Ainsdale and Birkdale (B.S.), (C.), (T.).

Bledius subterraneus, Er. Abundant in sandy places on banks of River Bollin (B.), (T.), (W.E.S.).

Bledius fracticornis, Payk. Bidston, Bebington, Wallasey, Hightown (E.L.C.); River Bollin, rare (B.); Southport and Birkdale, where the prevailing form is that with black elytra, only one specimen having been noticed with elytra red (C.).

Bledius longulus, Er. Birkdale sandhills, rare (C.); River Bollin (K.T. in E.M.M. v. 200).

Bledius opacus, Block. Birkdale sandhills, rather scarce (C.).

Platystethus arenarius, Fourc. Common and generally distributed.

Platystethus cornutus, Gyll. Hightown, one specimen (C.).

Oxytelus rugosus, Grav. Generally abundant.

The variety **terrestris, Lac.,** has been taken at Appleton Dingle by Mr. Dunlop.

Oxytelus insecatus, Grav. Rare. Dr. Ellis records half-a-dozen specimens " in the neighbourhood " (of Liverpool), but no one else seems to have met with it.

Oxytelus laqueatus, Marsh. Common and widely distributed.

Oxytelus sculptus, Grav. Common and widely distributed.

Oxytelus sculpturatus, Grav. Common and widely distributed.

Oxytelus inustus, Grav. Very infrequent. One specimen each is recorded from Wallasey (E.L.C.); Birkdale (C.); Ledsham (W.E.S.).

Oxytelus maritimus, Thoms. Not uncommon under seaweed, carrion, etc., along the shore of both counties.

Oxytelus nitidulus, Grav. Generally common

Oxytelus complanatus, Er. Occasional (E.L.C.); Southport district (C.).

Oxytelus speculifrons, Kr. The only record is one by T. Blackburn, who reports the capture of the species by B. Cooke at New Brighton " abt. 1860 " (E.M.M. i. 237).

Oxytelus tetracarinatus, Block. Common everywhere. In April, 1893, the writer observed this insect flying in thick and continuous swarms, which moved in the form of bands extending quite across a field, and which must have contained innumerable millions of individuals.

Haploderus cælatus, Grav. Delamere Forest (T.).

Ancyrophorus omalinus, Er. Recorded by T. Morley from Clifton, Lanc., " under stones by river side " (E.M.M. vii. 107).

Trogophlœus spinicollis, Rye. The only specimen known of this insect was taken by Mr. J. Kidson Taylor under flood refuse on the banks of the Mersey near Manchester, August 9th, 1868 (B.C. ii. 390).

Trogophlœus bilineatus, Steph. Very uncommon. Hightown and Wallasey (E.L.C.); Hightown and Delamere (T.); Birkdale (C.).

Trogophlœus rivularis, Mots. Banks of River Bollin, occasional (T.); Birkdale, rare (C.).

Trogophlœus corticinus, Grav. Manchester (B.C. ii. 389); Birkdale, moderately common (C.).

Trogophlœus halophilus, Kies. Under tidal refuse, Burton Marsh, Cheshire (W.E.S.).

Trogophlœus pusillus, Grav. Birkdale sandhills (C.).

Trogophlœus tenellus, Er. Birkdale cemetery, common in September, 1892 (T.), (B.S.); Upton sandpit, near Chester, one specimen (T.).

Thinobius brevipennis, Kies. Two specimens from flood refuse, Birkdale sandhills, May 3rd, 1902 (C.). A very interesting record for this rare fen species.

Syntomium æneum, Müll. In moss on a wall, Eastham (E.L.C.); Bescar Lane, Southport, three specimens by sweeping (C.).

Coprophilus striatulus, F. Very occasional. Fazakerley, near Liverpool, Wallasey, and Liscard (E.L.C.); Manchester and Delamere (B.); Capenhurst (W.E.S.).

Deleaster dichrous, Grav. Recorded from Withington, Cheshire, by Fowler, but the authority is not given.

var. **leachi, Curt.** Formerly taken in some abundance on the wing in a lane near the Mersey at Stretford (R.).

Anthophagus testaceus, Grav. Recorded from Southport (B.C.), but the record seems to require further confirmation.

Anthophagus alpinus, Payk. Coniston Old Man, recorded by T. Blackburn (E.M.M. i. 146).

Geodromicus nigrita, Müll. Clifton, near Manchester, "under stones by river side," recorded by T. Morley, 1870 (E.M.M. vii. 107).

Geodromicus globulicollis, Mann. Recorded by T. Blackburn from the extreme north of Lancashire (E.M.M. i. 146).

Lesteva longelytrata, Goeze. Common and generally distributed in wet moss, etc.

Lesteva sharpi, Rye. One specimen from Delamere Forest and one from Capenhurst, both in wet moss (W.E.S.).

Lesteva sicula, Er. (punctata, Brit. Cat.). Southport district (C.); Hatchmere, Delamere (D.).

Acidota cruentata, Mann. One specimen on a fir stump, Delamere Forest (T.); "haystack refuse near Manchester," W. Broadbent, 1872 (E.M.M. viii. 289).

Olophrum piceum, Gyll. Not uncommon at roots of rushes, etc., in wet places.

Lathrimæum atrocephalum, Gyll. Ledsham, Burton and Eastham (W.E.S.). No doubt occurs in Lancashire, although no one seems to have noticed it there.

Lathrimæum unicolor, Steph. Common and generally distributed.

Deliphrum tectum, Payk. Chester, not uncommon on the river bank, and Liverpool Road (T.); Rudd Heath, and Swinton, near Manchester (B.); Southport (C.); Delamere Forest in decayed fungi, not rare (W.E.S.).

Arpedium brachypterum, Gr. Coniston Old Man, recorded by T. Blackburn (E.M.M. i. 146).

Micralymma brevipenne, Gyll. Recorded by Chappell from under seaweed at Hoylake (E.L.C.).

Homalium rivulare, Payk. Abundant everywhere in vegetable refuse, etc.

Homalium rugulipenne, Rye. Under seaweed and carrion on the Lancashire shore from Crosby to Southport, especially common in winter and early spring.

Homalium lævisculum, Gyll. Recorded from Hightown by Mr. Archer (E.L.C.).

Homalium riparium, Thoms. Wallasey shore under seaweed (E.L.C.).

Homalium allardi, Fair. Haystack refuse, Drinkwater Park (W. Broadbent in E.M.M. viii. 289); in a parrot's cage in Manchester (T. Morley in E.M.M. ix. 268).

Homalium oxyacanthæ, Grav. Not common. Hightown (Lanc.) (T.); Birkdale (C.); Burton, Cheshire (W.E.S.).

Homalium excavatum, Steph. (fossulatum, Er.) Generally distributed.

Homalium cæsum, Grav. Not very common. Chester (T.); Southport district (C.); Ledsham and Hooton (W.E.S.).

Homalium pusillum, Grav. Common under pine bark in Delamere Forest (T.), (W.E.S.); also Bidston and Eastham (E.L.C.).

Homalium punctipenne, Thoms. Dr. Ellis records two from under fir bark at Storeton (E.L.C.).

Homalium rufipes, Fourc. (florale, Payk.) Wallasey and Rock Ferry (E.L.C.); Delamere and Ledsham (W.E.S.).
Homalium vile, Er. Occasional. Southport (C.); Delamere Forest (W.E.S.).
Homalium brevicorne, Er. Mr. Tomlin records this rare species from Chat Moss, April, 1896.
Homalium planum, Payk. Delamere, rare (T.).
Homalium concinnum, Marsh. Not uncommon. Bidston Marsh and Anfield Cemetery, Liverpool (E.L.C.); Chester (T.); Birkdale (C.), (B.S.); Hooton (W.E.S.); Oldham, in grain warehouses (T.).
Homalium deplanatum, Gyll. The only record is "six specimens in cut star grass, Birkdale sandhills, July, 1902" (C.).
Homalium striatum, Grav. Dr. Ellis records it as "common about Eastham and Liscard," and Dr. Chaster as rare in the Southport district.
Anthobium minutum, F. Hatchmere, Delamere (D.), (W.E.S.); banks of River Bollin by sweeping (B.).
Anthobium ophthalmicum, Payk. Eastham Wood in flowers of mountain ash, Rock Ferry (E.L.C.); Eaton Park, Chester (T.).
Anthobium torquatum, Marsh. Generally common in early spring in flowers of broom, ranunculus, etc.
Proteinus ovalis, Steph. Generally common, especially in decaying fungi in autumn.
Proteinus brachypterus, F. Birkdale (C.); Helsby (D.); Eggarslack, Grange-over-Sands (B.S.).
Proteinus macropterus, Gyll. One specimen, Birkdale (C.), October, 1899.
Megarthrus denticollis, Beck. Not uncommon. Liscard and Wallasey (E.L.C.); Delamere Forest and Ledsham (W.E.S.).
Megarthrus affinis, Müll. Very occasional. Two specimens recorded from Liscard (E.L.C.); and one from Birkdale (C.).
Megarthrus depressus, Payk. Generally common in garden refuse, etc.
Phlœobium clypeatum, Müll. Hesketh Wood, Southport (C.); Hooton and Burton in moss in winter (W.E.S.); Coniston (T. Blackburn in E.M.M. i. 146).
Pseudopsis sulcata, New. In garden refuse not uncommon, Southport (C.).

CLAMBIDÆ.

Clambus pubescens, Red. One specimen in garden refuse, Southport (C.).
Clambus armadillo, De G. In moss on a wall at Bromborough (E.L.C.).
Clambus minutus, Sturm. One by sweeping wet grass near Southport (C.).

SILPHIDÆ.

Agathidium nigripenne, Kug. Liverpool Road, Chester (T.); Agecroft, Manchester (B.); Ledsham, under bark of dead poplar (W.E.S.).
Agathidium marginatum, Sturm. Wallasey and Hightown (E.L.C.); Southport and Birkdale sandhills (C.).
Agathidium varians, Beck. One, Wallasey (E.L.C.); several in cut grass, Birkdale recreation ground (C.); Burton Marshes, several, in an old log (T.).
Agathidium rotundatum, Gyll. Recorded from Drinkwater Park by W. Broadbent (E.M.M. viii. 289).
Liodes humeralis, Kug. One specimen from Crosby (E.L.C.); Delamere Forest in boleti on dead wood not uncommon (W.E.S.), (T.); Chat Moss, Trafford Park, Ringley Wood (B.).
Liodes orbicularis, Hbst. One specimen in *Lycoperdon*, Prestwich, Lanc. (B.).
Anisotoma dubia, Kug. Occasionally common in hollows of the sandhills on both the Cheshire and Lancashire coasts; Grange-over-Sands (B.S.).
Anisotoma ovalis, Schm. Dr. Chaster records one specimen from Southport.
Anisotoma punctulata, Gyll. (litura, Steph.) One from Birkdale (C.).
Anisotoma calcarata, Er. Occasional by evening sweeping, Ledsham, etc. (W.E.S.), (T.).
Anisotoma rugosa, Steph. Very rare during autumn, by evening sweeping, Southport district (C.).

Anisotoma ciliaris, Schm. Sandhills, Waliasey, Hoylake, Southport, and Birkdale, not uncommon in autumn.

Anisotoma furva, Er. Equally common with the above in similar localities and at the same season.

Hydnobius punctatus, Sturm. Recorded by Archer as new to the British list from examples taken at Hightown, September, 1863. Birkdale sandhills, one specimen, May, 1903 (C.).

Hydnobius punctatissimus, Steph. Not uncommon by evening sweeping on all the sandhills; Grange-over-Sands (B.S.). Now regarded on the continent as a variety of **Hydnobius punctatus.**

Necrophorus humator, Goeze. Common and generally distributed.

Necrophorus ruspator, Er. Rather local and not common. Bromborough and Wallasey (E.L.C.); Birkdale sandhills (C.), (B.S.); Hoylake (B.S.); Bolton (O.W.); Mossley Hill, Delamere, and Stockton Heath (Dun.).

Necrophorus mortuorum, F. Generally rare. "Taken at Crosby by Archer" (T.); one specimen, Eastham (E.L.C.); and one, Oakmere, Delamere (W.E.S.).

Necrophorus vespillo, L. Generally common.

Necrodes littoralis, L. Rather rare. Shore of Mersey at Aigburth and Wallasey (E.L.C.); Hoylake (B.S.); Chester (T.); Birkdale (C.); Bolton (O.W.).

Silpha tristis, Ill. Very uncommon. Taken at Crosby by Mr. Archer, 1862 (E.L.C.); Hoylake, two specimens (B.S.).

Silpha quadripunctata, L. Occasional in Delamere Forest, on the trunks of trees and by beating foliage of oaks (D.), (W.E.S.), (T.).

Silpha opaca, L. Very rare. One specimen under loose peat, Birkdale (C.), and one under heather, Burton, Cheshire (W.E.S.).

Silpha rugosa, L. Generally abundant.

Silpha sinuata, F. Not uncommon, especially on the sandhills. Hoylake and West Kirby (B.S.); Birkdale (C.); Chester (T.); Ledsham (W.E.S.).

Silpha atrata, L. Crosby, one specimen (E.L.C.); Hoylake, Delamere and Grange-over-Sands (B.S.); Delamere (T.).

Choleva cisteloides, Fröh. Scarce and local. One specimen recorded from West Kirby (E.L.C.); and one from Witherslack (B.S.).

Choleva spadicea, Sturm. The only record is from Drinkwater Park by W. Broadbent (E.M.M. viii. 289).

Choleva velox, Spence. Not uncommon. "Abundant in traps at Wallasey" (E.L.C.); Southport district (C.); Eaton Park, Chester (T.); Delamere, Capenhurst, Hooton, etc. (W.E.S.); Appleton (Dun.).

Choleva anisotomoides, Spence. One specimen, Wallasey sandhills (W.E.S.).

Choleva fusca, Panz. "Wallasey, in traps" (E.L.C.); Southport district (C.).

Choleva morio, F. Not very uncommon, Crosby and Spital (E.L.C.); Raby, Hooton, Formby (W.E.S.).

Choleva grandicollis, Er. Occasional. Spital (E.L.C.); Hooton, Ledsham, etc. (W.E.S.).

Choleva nigrita, Er. Not uncommon, but much less frequent than the succeeding species, with which it is no doubt often confused. Southport district (C.); occasional throughout Wirral (W.E.S.).

Choleva tristis, Panz. The commonest species of the genus, generally abundant in carrion.

Choleva kirbyi, Spence. One specimen from Hightown (E.L.C.).

Choleva chrysomeloides, Panz. Common, especially on the sandhills of both counties.

Choleva watsoni, Spence. Generally distributed, Wallasey (E.L.C.); Chester (T.); Birkdale (B.S.); Southport district (C.); Hooton (W.E.S.).

Catops sericeus, Panz. Common (E.L.C.); Chester (T.); Southport district (C.).

Colon latum, Kr. Dr. Ellis records this generally rare species from "Eastham in moss" (E.L.C.).

SCYDMÆNIDÆ.

Scydmænus collaris, Müll. Not uncommon in moss, garden refuse, etc. Chester (T.); Delamere (D.); Southport (C.).
Scydmænus exilis, Er. "Under fir bark, Eastham" (E.L.C.); one specimen, Birkdale (C.).
Euconnus hirticollis, Ill. Dr. Ellis records two specimens from Wallasey, March, 1884 (E.L.C.).
Eumicrus tarsatus, Müll. Common in garden refuse. Southport (C.); Chester (T.); Ledsham (W.E.S.).

PSELAPHIDÆ.

Pselaphus heisei, Herbst. In moss, Hatchmere, Delamere (D.).
Tychus niger, Payk. Under bark, Bromborough (E.L.C.); Chester (T.); rare, Southport district (C.).
Bythinus puncticollis, Denny. Hatchmere, in moss (D.).
Bythinus bulbifer, Reich. Hatchmere, in moss (D.).
Rybaxis sanguinea, L. Capenhurst, Cheshire, at grass roots (W.E.S.).
Bryaxis hæmatica, Reich. Dr. Ellis records two specimens from moss on a wall, Eastham, November, 1882 (E.L.C.).
Bryaxis juncorum, Leach. Barton Moss, near Ainsdale, common (C.); Ledsham (W.E.S.).
Euplectus. The minute size of the species of this genus probably causes them to be frequently overlooked, and nearly all our records are due to the attention Dr. Chaster has paid to the group. That they occur far more widely than these records would indicate cannot be doubted.
Euplectus signatus, Reich. In garden refuse, not common, Southport (C.).
Euplectus sanguineus, Denny. Southport in refuse, common (C.).
Euplectus karsteni, Reich. In garden refuse, Southport, moderately common (C.).
Euplectus nanus, Reich. In débris of reeds, Ledsham (W.E.S.).
Euplectus piceus, Mots. Scarce under bark, Southport (C.).

TRICHOPTERYGIDÆ.

This family receives probably less attention at the hands of modern Coleopterists than any other in the order. Not only does their small size render them difficult to detect and almost impossible to set, but since the death of the Rev. A. Matthews, who was our one specialist in the group, there appears to be no one in this country who has sufficiently studied the family to be able to name its species with any certainty or any authority. The few records, therefore, which follow must not be taken as in any sense representative of the probable distribution of the group in the two counties.
Trichopteryx atomaria, De G. "Eastham and Spital, abundant" (E.L.C.).
Trichopteryx grandicollis, Mann. Spital (E.L.C.); Southport in a manure heap (C.).
Trichopteryx lata, Mots. Southport (C.); Chester (T.).
Trichopteryx fascicularis, Hbst. Edge of pond, Prenton, Cheshire (E.L.C.); Southport (C.).
Trichopteryx bovina, Mots. A few with the preceding species (E.L.C.).
Trichopteryx chevrolati, All. Southport (C.).
Nephanes titan, New. In garden refuse, Southport (C.).
Ptilium kunzei, Heer. Southport (C.).
Ptenidium punctatum, Gyll. "Bidston Moss in flood refuse" (E.L.C.); Southport shore (C.).
Ptenidium nitidum, Heer. Liscard (E.L.C.); garden refuse, Southport (C.); garden refuse, Ledsham (W.E.S.); Chester (T.).
Ptenidium evanescens, Marsh. Abundant (E.L.C.); Chester (T.); Southport district (C.).
Ptenidium formicetorum, Kr. "West Derby, common, Prenton (Cheshire), abundant" (E.L.C.).

CORYLOPHIDÆ and SPHÆRIIDÆ.

Of the members of these two families we appear to have no local records.

PHALACRIDÆ.

Phalacrus caricis, Sturm. "Taken abundantly by sweeping a species of *Carex* near Ellesmere Port in May, 1888" (E.L.C.).

Olibrus æneus, F. Not uncommon near Southport (C.), (B.S.).

Stilbus testaceus, Panz. "One specimen, Wallasey, September, 1888" (E.L.C.).

COCCINELLIDÆ.

Hippodamia variegata, Goeze. Abundant on the marram grass all round the coast.

Anisosticta 19-punctata, L. Hatchmere, Delamere, common (T.), (D.); among reeds, Ledsham and Ince (W.E.S.).

Adalia obliterata, L. Bidston (L.); Delamere on fir in spring (T.), (D.); Burton Wood, Cheshire (W.E.S.).

Adalia bipunctata, L. Abundant everywhere.

Mysia oblongoguttata, L. Generally common in fir woods throughout both counties.

Anatis ocellata, L. Much less common than the preceding, but not infrequent on pines in Delamere Forest; Birkdale (C.).

Coccinella 10-punctata, L. (variabilis, F.) Common, especially on birch and oak in Delamere Forest, and on the mosses.

Coccinella hieroglyphica, L. Both type and black form occur on all the mosses and in Delamere Forest, principally on birch.

Coccinella 11-punctata, L. Generally common and widely distributed. Mr. Tomlin has taken the confluent form (v. **brevifasciata, Weise**) at Wallasey.

Coccinella 7-punctata, L. Generally common; some years the species appears in extraordinary abundance (*e.g.* July, 1894, in Delamere), and during other seasons only an occasional specimen may be seen.

Halyzia 14-guttata, L. Alderley Edge (B.); Delamere (D.), (C.); Chester (T.); Hampfell, Grange and Lindale (B.S.); Hooton, Cheshire (W.E.S.).

Halyzia 18-guttata, L. Generally common in fir woods throughout the district. A melanic aberration occurs not infrequently in Delamere Forest, and perhaps other localities.

Halyzia 22-punctata, L. Hoylake (B.S.); Helsby (D.); Burton, Capenhurst, Ince, and Delamere (W.E.S.); Cark-in-Cartmel (B.S.).

Micraspis 16-punctata, L. Not common. Thurstaston and Bidston (E.L.C.); Capenhurst (W.E.S.).

Hyperaspis reppensis, Herbst. A single specimen from Hartford Bridge, Delamere, by Mr. Dutton, is the only record.

Scymnus redtenbacheri, Muls. One specimen recorded from the Birkdale sandhills by Dr. Chaster.

Scymnus nigrinus, Kug. "Near Manchester," Mr. Kidson Taylor (E.M.M. v. 200).

Scymnus frontalis, F. Occasional. Banks of Alt, Crosby, New Brighton (E.L.C.); Wallasey (T.); Birkdale sandhills (C.).

Scymnus suturalis, Thunb. Not uncommon among fir woods. Storeton, Bidston (Cheshire), and Simonswood (Lanc.) (E.L.C.); Delamere, rather common (T.); Puddington, Cheshire (W.E.S.).

Chilocorus similis, Ross. Generally rare, but not uncommon on fir trees in Delamere Forest.

Chilocorus bipustulatus, L. Bidston and Hightown (E.L.C.); West Kirby (B.S.); Birkdale (C.); Delamere (D.); Heswall and Delamere (W.E.S.).

Rhizobius litura, F. Generally common and widely distributed.

Coccidula rufa, Herbst. Abundant in marshy localities.

ENDOMYCHIDÆ.

Mycetæa hirta, Marsh. Frequent in cellars in Manchester (B.); Chester (T.); in cut grass, Birkdale (C.), (B.S.).

EROTYLIDÆ.

We have no records in this family.

COLYDIIDÆ.

Only three members of this family have been recorded.

Orthocerus muticus, L. Not uncommon on the bare sandhills of both counties.

Myrmecoxenus vaporariorum, Guér. Recorded by Chappell from Withington, Cheshire (E.M.M. xii. 62).

Cerylon ferrugineum, Steph. One specimen, Parbold, Lanc. (C.).

HISTERIDÆ.

Hister unicolor, L. Not common. Eastham and Wallasey (E.L.C.); Southport district (C.); Mossley Hill and Moore, near Warrington (Dun.).

Hister merdarius, Hoff. One in a sandpit, Upton, near Chester (T.). This species haunts the nests of the larger birds which build in holes in trees, buildings, etc., and the investigation of old nests of starlings, jackdaws, owls, or stockdoves, would probably render the species less rare than it appears to be at present.

Hister cadaverinus, Hoff. Generally common in carrion throughout the district.

Hister succicola, Thoms. Not uncommon in Delamere Forest at the sap of stumps of felled trees (L.), (W.E.S.).

Hister stercorarius, Hoff. This species is recorded from Liverpool district (B.C. iii. 202); few collectors, however, seem to have met with it, and our only definite record is by Dr. Chaster from Southport.

Hister purpurascens, Herbst. Occasional on the sandhills. Southport (C); Birkdale (B.S.); Wallasey (W.E.S.).

Hister carbonarius, Ill. Not uncommon. Chester (T.); Ledsham, Burton (Ches.), Delamere, in carrion (W.E.S.); Bromborough (E.L.C.).

Hister bissexstriatus, F. Apparently very rare. The only record is two from Southport (C.).

Hister bimaculatus, L. Not very common, but generally distributed. Manchester district (B.); Oxton (L.); Chester (T.); Southport (C.); Birkdale (B.S.); Wallasey (W.E.S.); Mossley Hill (Dun.).

Gnathoncus nannetensis, Mars. Birkdale sandhills, rare (C.).

Gnathoncus punctulatus, Thoms. Recorded by T. Morley from the Bollin valley and Sale (E.M.M. vii. 107). See Dr. Joy's note on these two species in E.R. xix. 133.

Saprinus nitidulus, Payk. Not uncommon, especially on the coast sandhills.

Saprinus æneus, F. Abundant on all the sandhills.

Hypocaccus quadristriatus, Hoff. This generally rare species is not uncommon on the sandhills, though by no means so abundant as the preceding.

Pachylopus maritimus, Steph. Not uncommon all round the coast of both counties.

Acritus minutus, Herbst. Southport district, common (C.).

Onthophilus striatus, F. Not uncommon. Chat Moss (B.); Wallasey (L.); Chester (T.); Birkdale (B.S.); Southport (C.); Ormskirk (W.E.S.); Sankey Bridge, near Warrington (Dun.).

MICROPEPLIDÆ.

Micropeplus porcatus, F. Generally rare. Three, Southport (C.); bank of Alt at Hightown and Crosby, one each (E.L.C.).

Micropeplus staphylinoides, Marsh. Chester, in haystack refuse (T.).

Micropeplus margaritæ, Duv. Generally distributed in haystack refuse, etc.,; the only member of the genus that can be considered at all common.

Micropeplus tesserula, Curt. Mr. R. S. Edleston recorded this species from Grange, May, 1863 (E.M.M. i. 259).

NITIDULIDÆ.

Brachypterus gravidus, Ill. Common in flowers of *Linaria vulgaris*, Southport (C.); and Helsby (D.).

Brachypterus pubescens, Er. Abundant.

Brachypterus urticæ, F. Abundant.

Cercus pedicularius, L. Banks of Fender, Wirral (L.); Hatchmere, Delamere (D.).

Cercus rufilabris, Latr. Not uncommon on marsh plants. Delamere (B.), (D.); Southport (C.); Ince (Chesh.) (W.E.S.).

Cercus bipustulatus, Payk. Recorded from "Withington, Cheshire," and from "Manchester" (B.C. iii. 223).

Carpophilus hemipterus, L. Occasional in warehouses in which dried fruits are stored, Liverpool, and most probably imported with such goods.

Epuræa decemguttata, F. Recorded from Stretford, Manchester, and from Dunham Park (R.).

Epuræa diffusa, Bris. "Cossus burrows in oak, Dunham Park" (Chappell); "flying over a woodyard, Stretford, Manchester" (R.); see B.C. iii. 228.

Epuræa æstiva, L. Abundant everywhere, especially in flowers of the whitethorn.

Epuræa melina, Er. Recorded from Bowdon (R. in E.M.M. xxi. 95).

Epuræa oblonga, Herbst. Dunham Park (Chappell, in B.C. iii. 229).

Epuræa florea, Er. One, probably at Bromborough (E.L.C.); Ince, Chesh. (T.); Chat Moss (R., in E.M.M. xxi. 96); Delamere, at sap of tree stumps (W.E.S.).

Epuræa parvula, Sturm. Recorded by Reston from the Stretford woodyard, which seems to have furnished him with other rare species of the genus (E.M.M. xxi. 97).

Epuræa obsoleta, F. At sap in stumps of felled trees, Delamere Forest (W.E.S.), (T.).

Epuræa pusilla, Herbst. With the preceding in Delamere Forest, and sometimes abundant there.

Epuræa angustula, Er. One specimen recorded from Eastham (E.L.C.); Dunham Park (Chappell); by sweeping on Chat Moss (R.).

Nitidula bipustulata, L. Generally distributed in carrion, but not very common. Aigburth and Crosby (E.L.C.); Hightown (T.); Southport (C.); Hoylake and Grange-over-Sands (B.S.); Ledsham (W.E.S.).

Omosita colon, L. Common and generally distributed among old bones, etc.

Omosita discoidea, F. Equally common with the foregoing.

Soronia punctatissima, Ill. We have only two records—one, Aigburth shore (E.L.C.); and one, Hesketh Wood, Southport (C.).

Soronia grisea, L. Occasional. Trafford Park, in rotten wood (B.); Delamere Forest (T.); Hesketh Wood, Southport (C.); in decayed plums, Ince, Cheshire (W.E.S.).

Pocadius ferrugineus, F. Delamere Forest in fungus (T.), (W.E.S.).

Pria dulcamaræ, Scop. Very occasional on *Solanum dulcamara*, Delamere Forest (W.E.S.).

Meligethes rufipes, Gyll. Generally abundant.

Meligethes æneus, F. Abundant everywhere.

Meligethes viridescens, F. Not uncommon. Wallasey, Rock Ferry (E.L.C.); Chester (T.); Southport (C.); Holker, Grange (B.S.).

Meligethes memnonius, Er. Recorded by Chappell from Chat Moss (E.M.M. xxi. 262).

Meligethes viduatus, Sturm. With above on *Galeopsis tetrahit* (E.M.M. xxi. 264).

Meligethes pedicularius, Gyll. Dr. Chaster records the capture of a single specimen from Scarisbrick, near Southport.

Meligethes ovatus, Sturm. Recorded by Chappell from Chat Moss, with **Meligethes viduatus, Sturm,** as above.

Meligethes flavipes, Sturm. Recorded by Chappell from near Lancaster, on broom (E.M.M. xxi. 267).

Meligethes picipes, Sturm. Generally common.

Meligethes symphyti, Heer. Another species recorded only by Chappell, " near Bowdon, Manchester " (E.M.M. xxii. 33).

Meligethes lugubris, Sturm. One specimen on *Thymus*, Hoylake (T.); and two on *Mentha*, Hightown (E.L.C.).

Meligethes erythropus, Gyll. Not uncommon and generally distributed.

Cryptarcha strigata, F. Dunham Park (Chappell) (E.M.M. xxii. 73); Delamere Forest (T.).

Cryptarcha imperialis, F. With the above in Dunham Park (Chappell).

Ips quadripunctata, Herbst. Delamere Forest, under bark and chips at stumps of felled oak and fir, sometimes abundant (T.), (W.E.S.).

Pityophagus ferrugineus, F. Under loose bark of fir stumps, Delamere Forest (T.), (W.E.S.).

Rhizophagus cribratus, Gyll. Decayed roots of lime trees, Withington, Cheshire (Chappell, in E.M.M. xxii. 75); Delamere Forest, rare (W.E.S.).

Rhizophagus depressus, F. Not very common. Bidston (E.L.C.); Chat Moss (B.); Chester (T.); Delamere Forest in burrows of *Myelophilus piniperda* (T.); Mossley Hill, near Liverpool (Dun.).

Rhizophagus perforatus, Er. Liverpool Road, Chester, on bones (T.); Liverpool (E.L.C.).

Rhizophagus parallelocollis, Gyll. Recorded by Dr. Chaster " on the Southport foreshore during spring, usually rare, although several specimens were taken in 1901. The insects were found crawling on the bare sand. **Atomaria fimetarii** occurred in fungi close by, and the **Rhizophagi** may have flown from these fungi. The association of the two species is mentioned by Canon Fowler." See also on the occurrence of this species in graveyards and coffins, Dr. Bailey, in E.M.M., 2nd series, xviii. 3.

Rhizophagus ferrugineus, Payk. Delamere Forest, common under bark (T.), (W.E.S.); Burton, Cheshire (W.E.S.); Upton, near Chester (T.).

Rhizophagus dispar, Payk. The most abundant member of the genus. Delamere Forest (T.), (B.S.); Eastham (E.L.C.); Manchester district (B.); Southport (C.); Grange-over-Sands (B.S.); Prestwich Clough, Ledsham, Burton (Cheshire) (W.E.S.).

Rhizophagus bipustulatus, F. Almost as common as the preceding, and generally found with it. Eastham (E.L.C.); Delamere Forest (T.); Manchester (B.); Southport (C.).

Rhizophagus politus, Hell. "Manchester and Stretford" (R. in E.M.M. xxii. 78).

Rhizophagus cœruleipennis, Sahl. A specimen of this exceedingly rare species (only otherwise recorded from Matlock, Woking, and Devonshire) was taken many years ago by Mr. Kidson Taylor from a log at Crosby.

TROGOSITIDÆ.

Tenebrioides mauritanicus, L. Not uncommon in mills, granaries, and bakers' shops, and occasionally under matting, etc. on the Crosby foreshore.

MONOTOMIDÆ.

Monotoma picipes, Hbst. Not uncommon in haystack refuse and widely distributed.

Monotoma quadricollis, Aubé. Scarce in garden refuse, Southport (C.).

Monotoma rufa, Redt. Southport, occasionally in abundance (C.).

Monotoma longicollis, Gyll. In garden refuse, Birkdale, rare (C.); Ledsham (W.E.S.)

LATHRIDIIDÆ.

Lathridius lardarius, De G. Generally common.
Lathridius bergrothi, Reit. Abundant on a pair of old boots in a cellar, Chester, 1888 (T.).
Coninomus nodifer, West. Common and generally distributed.
Enicmus minutus, L. Generally abundant and ubiquitous.
Enicmus transversus, Ol. Not uncommon. Chester (T.); Barton Moss, Ainsdale (C.); Ledsham (W.E.S.).
Cartodere ruficollis, Marsh. Birkdale, abundant in haystack refuse (C.); Chester (T.).
Corticaria pubescens, Gyll. Not uncommon. Moreton (Chesh.) in haystack refuse (E.L.C.); Hoylake (B.S.); Birkdale (C.); Ledsham (W.E.S.).
Corticaria crenulata, Gyll. "Lydiate, abundant, September, 1887" (E.L.C.); Southport district (C.).
Corticaria denticulata, Gyll. Occasional, Helsby (T.); Southport (C.), (T.).
Corticaria fulva, Com. Rather common in a cellar at "Estyn," Chester (T.).
Corticaria elongata, Gyll. Chester, Helsby, Delamere (T.); Southport (C.); Ledsham and Hooton (W.E.S.).
Corticaria fenestralis, L. One specimen in haystack refuse, Ledsham (W.E.S.).
Melanophthalma gibbosa, Hbst. Rather common and widely distributed.
Melanophthalma fuscula, Hum. Abundant.

CUCUJIDÆ.

Pediacus depressus, Hbst. Recorded by Chappell from Dunham Park in *Cossus* burrows, and by Reston from Stretford on the wing (B.C. iii. 296).
Læmophlœus pusillus, Schön. Abundant in a grain warehouse at Oldham (T.).
Læmophlœus ferrugineus, Steph. "Warehouses, North Docks, Liverpool" (E.L.C.).
Psammœchus bipunctatus, F. Hatchmere, Delamere Forest, 1888 (T.).
Silvanus surinamensis, L. Generally common in grain warehouses in Liverpool, Manchester, and other towns.
Silvanus bidentatus, F. Recorded by Chappell from Dunham Park under bark of fallen branches of oak (E.M.M. xxi. 184).

BYTURIDÆ.

Byturus tomentosus, F. Not uncommon in blossoms of bramble and wild rose, and generally distributed.

CRYPTOPHAGIDÆ.

Telmatophilus caricis, Ol. Common on rushes and marsh plants throughout the district.
Antherophagus nigricornis, F. Occasional. Eastham Wood, one specimen (E.L.C.); Delamere (T.); Bescar Lane, near Southport (C.); Hatchmere, Delamere (D.); Appleton and Moore, near Warrington (Dun.); Risley Moss, Lanc. (Collins).
Antherophagus pallens, Ol. Rare. One specimen each is recorded from Ringley Wood, Manchester (B.); Birkdale sandhills (C.); Hatchmere, Delamere (D.); Appleton and Sutton Weaver (Dun.).
Cryptophagus lycoperdi, Herbst. Common and generally distributed in *Lycoperdons*.
Cryptophagus setulosus, Sturm. From wasps' nests at Ince, Cheshire (N.); Drinkwater Park (Broadbent in E.M.M. viii. 289); Southport (C.); Oldham, in a grain warehouse (T.).
Cryptophagus pilosus, Gyll. Generally frequent in haystack refuse.
Cryptophagus ruficornis, Steph. Taken many years ago from fungus on a birch tree on Chat Moss by Chappell (B.C. iii. 317), and again more recently from the same locality (K.T.).
Cryptophagus saginatus, Sturm. "Frequent" (E.L.C.), but does not appear to have been noticed by other observers. It doubtless, however, occurs in granaries throughout the district.

Cryptophagus scanicus, L. " Occasional " (E.L.C.); Southport (C.); Delamere (T.); Ledsham, Hooton, etc., frequent in haystack refuse (W.E.S.).
var. **patruelis, Sturm.** Recorded by Dr. Chaster from Southport.
Cryptophagus dentatus, Herbst. Generally common in haystack refuse, etc.
Cryptophagus pallidus, Sturm. Chester (T.).
Cryptophagus distinguendus, Sturm. Birkdale (C.); haystack refuse near Manchester (Broadbent in E.M.M. viii. 289); one specimen from garden refuse, Ledsham (W.E.S.).
Cryptophagus acutangulus, Gyll. Frequent in a cellar, Pendleton, Manchester (B.); Southport (C.); in an office in Liverpool (B.S.).
Cryptophagus cellaris, Scop. " Common " (E.L.C.).
Cryptophagus affinis, Sturm. The most abundant species of the genus. Very common in vegetable refuse and often found on windows in houses, etc.
Cryptophagus pubescens, Sturm. One specimen, New Ferry (E.L.C.); Ince, Cheshire, in a wasps' nest, taken by Mr. R. Newstead (T.); recorded by Blackburn from a plantation near Hale, Cheshire (E.M.M. i. 145).
Cryptophagus bicolor, Sturm. " Birkdale " (C.).
Micrambe vini, Panz. Abundant everywhere on gorse in spring.
Henoticus serratus, Gyll. Mr. Kidson Taylor recorded a single specimen from under birch bark, " near Manchester " (E.M.M. vi. 1869).
Paramecosoma melanocephalum, Hbst. One from Spital (E.L.C.).
Atomaria fimetarii, Hbst. Birkdale, common in fungus (C.), (B.S.), (T.); Mossley Hill, near Liverpool (Dun.).
Atomaria fuscipes, Gyll. Spital and Wallasey (E.L.C.).
Atomaria peltata, Kr. Recorded by Dr. Joy from Southport.
Atomaria nigripennis, Payk. Frequent in a cellar, Broad Street, Pendleton (B.).
Atomaria impressa, Er. Recorded by Chappell from banks of Mersey near Northenden, under decaying *Artemisia vulgaris* (E.M.M. xii. 62).
Atomaria fuscata, Sch. Chester (T.); Southport (C.); not uncommon in haystack refuse, Ledsham, Hooton, etc. (W.E.S.).
Atomaria pusilla, Payk. Wallasey, Storeton, Eastham, Caldy (E.L.C.); Chester (T.).
Atomaria atricapilla, Steph. Generally common. Chester (T.); Southport (C.); Helsby (D.); Ledsham (W.E.S.).
Atomaria berolinensis, Kr. Bidston, Wallasey (E.L.C.); Southport (C.); Carrington Moss, Cheshire, recorded by T. Blackburn (E.M.M. i. 146); Ledsham (W.E.S.).
Atomaria basalis, Er. Not uncommon on the Mersey shore above Garston (T.).
Atomaria mesomelas, Hbst. Delamere (D.), (T.); Burton, Cheshire (T.).
Atomaria apicalis, Er. Southport (C.); Hooton, Ledsham, Delamere (W.E.S.); Allerton, near Liverpool (Dun.).
Atomaria analis, Er. Southport (C.).
Atomaria ruficornis, Marsh. Not common. Spital (E.L.C.); Chester (T.); Ledsham (W.E.S.); Southport (C.).
Ephistemus globosus, Waltl. Frequent in moss (E.L.C.); Southport district (C.).
Ephistemus gyrinoides, Marsh. Generally common in moss, haystack refuse, etc.

SCAPHIDIIDÆ.

Scaphisoma agaricinum, L. In rotten oak stumps. Delamere Forest (W.E.S.), (T.); Chester (T.); Worsley, Manchester (B.).
Scaphisoma boleti, Panz. Near Southport (C.); Delamere and Ledsham in rotten wood (W.E.S.).

MYCETOPHAGIDÆ.

Typhæa fumata, L. Generally abundant in haystack refuse, etc.
Mycetophagus piceus, F. In rotten oak, Trafford Park (B.).

DERMESTIDÆ.

Dermestes vulpinus, F. Kirkdale, in skin yards (E.L.C.); Bromborough (Dun.); not uncommon in carrion thrown up on the shores of the Mersey estuary (D.), (B.S.), (W.E.S.).

Dermestes murinus, L. With the above and more commonly in carrion on the shores of both counties. Mossley Hill and Walton Arches, Warrington (Dun.).

Dermestes lardarius, L. Common in grocers' and bakers' shops, and generally distributed.

An exotic species of this genus, **Dermestes peruvianus,** a native of South America, seems to have become provisionally established in St. John's Market, Liverpool, and occurs there more or less frequently every year.

Attagenus pellio, L. Occasional in old houses. Chester (T.); Warrington (D.); Ledsham (W.E.S.).

Anthrenus varius, F. Chester (T.), is the only record.

BYRRHIDÆ.

Syncalypta hirsuta, Sharp. Southport sandhills in early spring. Rather rare at roots of grass, etc. (C.), (B.S.).

Byrrhus pilula, L. Common in dry, sandy and heathery localities.

Byrrhus dorsalis, F. Delamere Forest, rare (T.), (D.).

Cytilus varius, F. Not uncommon. Stanley Park, Liverpool, Bidston, Wallasey, Leasowe, West Derby (E.L.C.); Formby (W.E.S.), (Dun.); Hoylake (B.S.); Birkdale (C.); Frodsham and Delamere (D.).

Simplocaria semistriata, F. Not uncommon in moss and by sweeping; generally distributed.

GEORYSSIDÆ.

Georyssus pygmæus, F. Crosby, Hightown and Birkdale (E.L.C.); Birkdale sandhills, common (C.); Wallasey and banks of Alt (T.); banks of River Bollin (B.).

PARNIDÆ.

Elmis æneus, Müll. Chester (T.); Halsall and Scarisbrick (C.); Black Brook near Warrington, Delamere Forest (D.).

Elmis volkmari, Panz. One specimen, "Dark Arches," Delamere (D.).

Limnius tuberculatus, Müll. One specimen, Spital, Cheshire (E.L.C.); common under stones in a stream near Scarisbrick (C.); Black Brook, Warrington (D.).

Parnus prolifericornis, F. Abundant in pools and drains among the sandhills. Moreton, Cheshire, Chester (T.); Hilbre Island (B.S.).

Parnus auriculatus, Panz. Birkdale sandhills, abundant (C.), (B.S.), (D.); margin of pond behind Leasowe embankment (B.S.); Chester (T.).

Parnus nitidulus, Heer. Birkdale sandhills (D.), (T.), (B.S.).

HETEROCERIDÆ.

Heterocerus marginatus, F. Banks of Alt, Hightown, Southport (C.); banks of Bollin, common (B.), (T.).

Heterocerus fusculus, Kies. Two specimens from the Birkdale sandhills (C.).

LAMELLICORNIA.

In this group we have recorded from Lancashire and Cheshire more than half the number of those generally acknowledged as British—fifty-two out of a total of eighty-five. A much larger proportion than this prevails in the Creophagous section of the group, and in the single genus **Aphodius** there have occurred thirty out of a total of thirty-nine British species. Most of these have been found on the sandhills, where a long stretch of uncultivated land, frequented by wandering herbivorous animals, and a surface soil peculiarly well adapted to the habits of the genus have afforded collectors exceptionally good

opportunities. Conversely of other genera of Southern range, or of rare or quite local occurrence, such as **Lucanus, Trox, Trichius,** and **Gnorimus,** we possess no examples, nor are such conspicuous insects likely to have been overlooked. Two members of the group, **Ægialia rufa** and **Ammœcius brevis,** seem to be almost peculiar to the Lancashire coast; and of two others, **Aphodius scrofa** and **Oxytherea stictica,** we have perhaps one and two respectively of the very few British records.

LUCANIDÆ.

Sinodendron cylindricum, L. Recorded by Mr. Archer from Childwall, near Liverpool (E.L.C.); taken in abundance from the decayed stump of a pear tree in Chester by Mr. R. Newstead.

SCARABÆIDÆ.

Copris lunaris, L. A single specimen was taken on Abbot's Moss, Delamere, by Mr. J. Collins, of Oxford, in 1906.

Onthophagus fracticornis, Payk. Not common, on the sandhills on both sides of the estuary of the Mersey. Wallasey and Blundellsands (T.).

Aphodius erraticus, L. Ledsham and Burton, Cheshire, not common (W.E.S.).

Aphodius subterraneus, L. Common on the Wallasey sandhills in summer (E.L.C.); Chester (T.).

Aphodius fossor, L. Common. Wallasey and Spital (E.L.C.); Delamere and Hoylake (B.S.); Chester (T.); Southport district (C.); Appleton, near Warrington (Dun.).

Aphodius hæmorrhoidalis, L. Frequent. Wallasey (E.L.C.); Hoylake and Birkdale (B.S.); Chester (T.); Ledsham, Burton, Delamere (W.E.S.).

Aphodius fœtens, F. Wallasey, common in July (E.L.C.); Hoylake (B.S.); near Southport (C.); Delamere Forest (W.E.S.); Mossley Hill and near Warrington (Dun.).

Aphodius fimetarius, L. Abundant everywhere.

Aphodius scybalarius, F. Wallasey, common in spring (T.), (E.L.C.); Hoylake (B.S.); Southport (C.); Formby (W.E.S.).

Aphodius ater, De G. In sheep dung. Generally common and widely distributed; the rufescent form, **terrenus, Kirby,** occurs frequently with the type.

Aphodius granarius, L. Not usually associated with dung; often in and beneath rejectamenta on the shore. Wallasey and Crosby (E.L.C.); Hoylake and Hilbre (B.S.); Southport (C.); Burton, and Shotwick, Cheshire, common in early spring (W.E.S.).

Aphodius nitidulus, F. Rare on the sandhills. Recorded from Wallasey (E.L.C.); and one specimen from Hoylake (B.S.).

Aphodius sordidus, F. Occasionally common on the Wallasey sandhills and at Hoylake, but very irregular in appearance and abundance.

Aphodius rufescens, F. Usually common at Wallasey in July (E.L.C.); Southport (C.); Delamere Forest (W.E.S.).

Aphodius lapponum, Gyll. Hampfell, Grange-over-Sands (B.S.); and undoubtedly occurs commonly on all the mountains of the North and North-West of Lancashire.

Aphodius fœtidus, F. Recorded by Chappell from Staley Brushes (E.M.M. xiv. 270).

Aphodius putridus, Sturm. Local and rare. Ledsham and Delamere in sheep's dung (W.E.S.).

Aphodius plagiatus, L. Wallasey, not uncommon. Is to be found in the sand under tide drift and rubbish on the shore, and by the side of shallow pools in the sandhills. Hightown, Lanc., under similar conditions (T.), (W.E.S.); Southport district, abundant; the red-banded form occurs with the type in the proportion of about five per cent. (C.).

Aphodius porcus, F. Generally rare. A few specimens taken by Mr. Wilding at Wallasey (E.L.C.); Burton, Cheshire (B.S.); one specimen, near Chester (T.).

Aphodius scrofa, F. One of our few British records for this exceedingly rare species is from Southport, about 1865, by Mr. Sidebotham (E.M.M. v. 100).

Aphodius pusillus, Herbst. Common on the coast sandhills (E.L.C.); on the "Cop," Chester, in April, common (T.).

Aphodius merdarius, F. Generally common and widely distributed.

Aphodius inquinatus, F. Very abundant on, and apparently restricted to, the coast sandhills of both counties.

Aphodius tessulatus, Payk. Rare and local. Four specimens, Hoylake (B.S.); one, Wallasey (T.); several on the Birkdale sandhills (T.).

Aphodius conspurcatus, L. Wallasey, in early spring (E.L.C.); Ellesmere Park, Eccles, in March and October (B.); Delamere Forest, January (T.).

Aphodius punctatosulcatus, Sturm. Generally abundant.

Aphodius prodromus, Brahm. Generally abundant.

Aphodius contaminatus, Herbst. Abundant throughout the district during the autumn, often persisting till late in November.

Aphodius obliteratus, Panz. Recorded by Dr. Ellis from Bromborough (Chesh.) in the dung of acclimatized zebus (E.L.C.); Staley Brushes, taken by White, of Droylsden; Southport district (C.).

Aphodius luridus, F. Occasional. Hale and Crosby (E.L.C.); Ledsham (W.E.S.).

Aphodius rufipes, L. Abundant everywhere. Flies commonly to light in July.

Aphodius depressus, Kug. Not common, except in Delamere Forest (T.), (W.E.S.); has also been taken on the Wallasey sandhills (E.L.C.), (Dun.); Chester (T.); and Southport (C.).

Heptaulacus villosus, Gyll. Of this very scarce and local insect a few examples have occurred in the district. Mr. B. Cooke took a specimen at Southport, 19th June, 1858 (E.M.M. v. 44), and Dr. Chaster has taken it in the same locality by evening sweeping. Two specimens are also recorded from Hoylake, May, 1896, by Mr. Sopp.

Oxyomus porcatus, F. Occasional near the coast. Crosby shore (E.L.C.); Birkdale (B.S.); in garden refuse, Southport (C.); Wallasey sandhills (L.).

Ammœcius brevis, Er. This species was first taken in Britain by Mr. Haward near Southport, May, 1859, and appears to occur in greater or less abundance every year on the sandhills in that district. Dr. Chaster, who has perhaps taken more specimens than any other collector, says: "This species lives in rabbit's dung, and excavates burrows about 1½ inches long into which it retreats in dry weather." It is a singular fact that the species does not seem to occur on the adjacent Wallasey sandhills, nor has it been observed elsewhere in Britain.

Psammobius sulcicollis, Ill. Not very uncommon on the coast sandhills. Hightown and Crosby (E.L.C.); Birkdale (B.S.); Southport and Didsbury, near Manchester (B.).

Ægialia sabuleti, Payk. An inland species not rare on the sandy banks of many of the Lancashire rivers. Dr. Bailey records it from the Bollin, Mersey, and Irwell; Edleston, from the Bollin and Birkin; and Mr. Dunlop, from Heatley, Lanc.

Ægialia arenaria, F. Exceedingly abundant on all the coast sandhills; a testaceous form apparently mature occasionally occurs which has been taken for the following species.

Ægialia rufa, F. The extraordinarily restricted area of occurrence of this beetle in Britain and the extreme irregularity of its occasional abundance make it one of the most interesting of our local insects. It occurs on the whole of the sandhills between the estuaries of the Ribble and Dee, sometimes—as in May and June of the years 1885, 1886, 1905—in abundance. During other years two or three specimens only may be met with, and in others none at all. It was first recorded as British by Mr. F. Archer (Liverpool Naturalists' Scrap Book, p. 186), who took it at Wallasey in June, 1862. Dr. Chaster and Mr. Sopp, of Birkdale, have given some attention to the economy of the species, for details of which see Handbook of the British Association Meeting, Southport, 1903.

Geotrupes typhœus, L. Local and not common. Caldy and Storeton (E.L.C.); Delamere in dung in December and January (T.), (B.S.), (W.E.S.); Heswall Hill (Dun.).

Geotrupes spiniger, Marsh. Generally abundant.

Geotrupes stercorarius, L. The commonest species of the genus; abundant everywhere.

Geotrupes sylvaticus, Panz. Not uncommon, especially in woods. Eastham and Spital (E.L.C.); Hoylake (B.S.); Frodsham (D.); Southport (C.); Delamere Forest (W.E.S.).

Hoplia philanthus, Füss. Very occasional and apparently of accidental occurrence. One specimen floating in the River Bollin at Ashley (B.); Delamere (D.); one specimen recorded by Mr. L. Greening, of Warrington, from Chat Moss; and one taken at Wallasey (B.S.).

Serica brunnea, L. Common in woods at the roots of bracken, and frequently to be seen flying round gas lamps at Mossley Hill (E.L.C.); also taken at Southport (C.); Birkdale and Grange-over-Sands (B.S.); Delamere, often found in spider's webs (W.E.S.); Allerton, near Liverpool, and Appleton, near Warrington (Dun.).

Rhizotrogus solstitialis, L. Our only records are from Chester, where it has occasionally been taken in abundance in gardens.

Melolontha vulgaris, F. Generally distributed over the district, but very irregular in appearance and never common.

Phyllopertha horticola, L. Occasionally common in the flowers of *Rosa spinosissima* at Wallasey, but usually a very scarce insect. Has been taken at Chester (T.), and in Delamere Forest (W.E.S.).

Anomala frischi, F. Common on all the sandhills of both counties during July and August.

Cetonia aurata, L. The late Rev. H. H. Higgins reported the occurrence of this species many years ago in the gardens of the Rainhill Asylum near Liverpool. This is our only record, but as the species ranges sporadically much further North and West, there is nothing improbable in its occasional appearance near Liverpool.

Oxytherea stictica, L. In the E.M.M. i. 235 appears a record of the capture of this very doubtfully indigenous species by Mr. Sidebotham, of Manchester, on the Lancashire coast (Grange) in June, 1862. He took two in cop., and Mr. Edleston, who was with him, captured another specimen. Mr. Reston also records the species from a garden at Whalley Range, near Manchester.

SERRICORNIA.

Of the first division of this group—the **Sternoxi**—out of a total of seventy-six species recognised as British, we have recorded from the two counties not more than thirty-one, none of which, with the possible exception of **Athous rhombeus, Ol.**, can be considered either rare or in any way peculiar to our district. The absence of woods of very old timber may perhaps explain this defect in some slight degree.

EUCNEMIDÆ.

Throscus dermestoides, L. Rare. Delamere Forest (T.), (W.E.S.); Rixton Moss (D.).

Throscus carinifrons, Bonv. One specimen recorded by Dr. Chaster from hawthorn at Churchtown, Southport.

Melasis buprestoides, L. Dunham Park, by Chappell (B.C. iv. 77, and E.M.M. iv. 166); Arc Wood, Delamere, in a beech log (D.).

ELATERIDÆ.

Lacon murinus, L. Not uncommon, but very irregular in appearance on the sandhills of both counties; Chester, scarce (T.).

Cryptohypnus riparius, F. Not common. Southport district (C.); Chester and Delamere (T.); Mossley Hill and Stockton Heath (Dun.).

Cryptohypnus quadripustulatus, F. Occasional, especially by evening sweeping. Maghull (Lanc.) (E.L.C.); Arpley fields, Warrington (C.B.); Ledsham and Stanlow (W.E.S.).

Cryptohypnus dermestoides, Herbst. Recorded from the Lancaster district (B.C. iv. 89), and doubtless occurs on the gravelly banks of most streams in the North of Lancashire.

The var. **4-guttatus, Lap.**, is recorded from Oglet shore, Mersey, by Mr. Dunlop.

Elater balteatus, L. Common on fir and birch on all the mosses, and among the chips and débris near the stumps of felled trees. Dr. Chaster records this species from Southport, and says it occurs in all stages of its growth under masses of peat, and far removed from any woods.

Melanotus rufipes, Herbst. Very rarely met with. We have but few records. Eastham Wood, February, 1884 (E.L.C.); and from Mossley Hill, near Liverpool, and Appleton Dingle, Warrington, by Mr. Dunlop.

Athous rhombeus, Ol. This generally rare species is recorded by Chappell from Dunham Park (B.C. iv. 99), (E.M.M. ix. 270).

Athous longicollis, Ol. Appleton, Cheshire (Dun.).

Athous niger, L. Not common. Tranmere (E.L.C.); Ringley Wood, near Manchester (B.); Delamere Forest on oak, sometimes rather frequent (T.), (W.E.S.); West Kirby (B.S.); near Warrington (Dun.).

Athous hæmorrhoidalis, F. Abundant throughout the district, more especially on oak.

Athous vittatus, F. Occasional in Delamere Forest (D.), (W.E.S.).

Limonius cylindricus, Payk. Common on the coast sandhills. Recorded also from Agecroft, near Manchester, and Knutsford (B.), but generally rare inland.

Limonius minutus, L. Rare. Birkdale (B.S.); Hooton, Cheshire (W.E.S.).

Sericosomus brunneus, L. Not uncommon on the mosses. Chat Moss (B.); Delamere and Hartford (D.); Simonswood Moss (W.E.S.); Appleton, Warrington (Dun.).

Adrastus limbatus, F. Dr. Ellis records this species as "frequent on low herbage." This hardly accords with the experience of other collectors, but the species certainly occurs, although perhaps not very commonly. It is recorded from Southport district (C.), and Burton, Cheshire (W.E.S.).

Agriotes sputator, L. Not uncommon and widely distributed.

Agriotes obscurus, L. Local, but sometimes abundant, especially during warm days in early spring in sandy localities.

Agriotes lineatus, L. Common in haystack refuse, etc., during winter; sometimes, but less frequently, taken by sweeping.

Agriotes pallidulus, Ill. Very common throughout the district, especially on oak and hazel in June.

Dolopius marginatus, L. Equally common with the above, and in the same situations.

Corymbites pectinicornis, L. Recorded from "damp meadows near the River Bollin," 1868 (K.T. in E.M.M. v. 200), but apparently has not occurred there in recent years.

Corymbites cupreus, F. Frodsham and Helsby Hills (D.).

Corymbites tessellatus, L. Rare and very local; our only record is from Hatchmere, Delamere, where it has been taken by Mr. Dutton and Dr. Billups.

Corymbites quercus, Gyll. Knutsford, Ringley Wood, and Agecroft (B.); Sutton Weaver and Grappenhall (Dun.).

var. **ochropterus, Steph.** With the above at Agecroft and Ringley Wood, but less common (B.); Frodsham (D.); Burscough (Lanc.) (C.).

Corymbites holosericeus, F. Dr. Billups records the species on one occasion (June, 1899) from Pettypool, Delamere.

Corymbites æneus, L. Probably occurs commonly in the North of Lancashire and East of Cheshire. Otherwise rare. Burton, Cheshire (W.E.S.); Frodsham and Delamere (D.); Latchford (Dun.).

Corymbites impressus, F. Frodsham and Delamere, very rare (D.).
Campylus linearis, L. Frequent on all the mosses; common in Delamere Forest.

MALACODERMATA.

Of a total of eighty-seven species now known as British, belonging to this section, we have fifty-two recorded. The genus **Malthodes** appears to be more fully represented than might have been expected; these species are, however, very difficult to determine satisfactorily, and confirmation of some of our older records by more recent observation would seem desirable.

DASCILLIDÆ.

Helodes minuta, L. Generally distributed and not uncommon. Simonswood (E.L.C.); Thornton-in-the-Marsh, and Caldy (B.S.); Delamere, and Frodsham (D.); Southport district (C.); Stanlow, and Ledsham (W.E.S.).
Helodes marginata, F. More local than the preceding and restricted generally to the mosses. Delamere (D.); Ringley Wood and the Bollin valley, to Manchester (B.); Southport district (C.); recorded from Carrington Moss, Cheshire, by T. Blackburn (E.M.M. i. 146).
Microcara livida, F. Generally common and widespread.
Cyphon coarctatus, Payk. Rock Ferry, Spital (E.L.C.).
Cyphon nitidulus, Thoms. Common throughout the district.
It is almost impossible satisfactorily to separate these two species, if indeed they are really distinct; and the above records may apply to either.
Cyphon variabilis, Thunb. Generally common, especially in damp places.
Cyphon padi, L. Abundant on fir trees in Delamere and on the mosses.
Cyphon pallidulus, Boh. Generally common.
Scirtes hemisphæricus, L. Local but abundant where it occurs. Hatchmere, Delamere (D.), (T.); Burton Marsh (W.E.S.).

LAMPYRIDÆ.

Lampyris noctiluca, L. Occasional and local. Delamere (D.); railway banks near Hooton, and Ledsham (W.E.S.); Bromborough (Dun.); Grange-over-Sands (B.S.).

TELEPHORIDÆ.

Podabrus alpinus, Payk. Rather common on fir trees. Delamere Forest (T.), (D.), (W.E.S.); Bollin valley (B.).
Ancistronycha abdominalis, F. Our only records are from the moors about Bolton (S.), (O.W.); but the species doubtless occurs on all the upland moors of North and East Lancashire.
Telephorus fuscus, L. Not common. Dr. Ellis calls it "occasional" (E.L.C.); and our only recent record is from Sutton, Cheshire (W.E.S.).
Telephorus rusticus, Fall. Not uncommon and generally distributed.
Telephorus lividus, L. Generally abundant.
Telephorus pellucidus, F. Occasional, more especially on the mosses, but not common, West Derby (E.L.C.); Bollin valley (B.); Delamere and Chat Moss (W.E.S.).
Telephorus nigricans, Müll. Generally distributed. Delamere (T.); Bollin valley (B.); Caldy (B.S.); Southport (C.); Hooton and Ledsham (W.E.S.).
var. **discoideus, Steph.** Rarer than the type form. Bollin valley (B.); Delamere (W.E.S.).
Telephorus lituratus, Fall. Fairly common and widely distributed.
Telephorus darwinianus, Sharp. This species, which hitherto had been taken only on Scotch estuarine shores, was discovered on the Southport and Birkdale shores by Dr. Chaster and Mr. Sopp. This, up to the present, appears to be the only English record.
Telephorus bicolor, F. Generally abundant.

Telephorus hæmorrhoidalis, F. Local, and not common. Denhall, near Parkgate (E.L.C.); Ringley Wood (B.); Ledsham and Delamere (W.E.S.); Moore, near Warrington (Dun.).

Telephorus paludosus, Fall. Local in woods on the mosses. Ringley Wood and Mere Clough (B.); Helsby (D.); Delamere (D.), (W.E.S.); Appleton and Moore, near Warrington (Dun.).

Telephorus flavilabris, Fall. Common on long grass in hayfields and by roadsides.

Telephorus thoracicus, Gyll. Dr. Ellis records this species as "abundant on banks of Alt at Hightown" (E.L.C.); but the occurrence seems to have been exceptional, and no other collector has taken it either there or elsewhere in the district.

Rhagonycha unicolor, Curt. One specimen, Ringley Wood (B.).

Rhagonycha fuscicornis, Ol. Not very uncommon. Tranmere (E.L.C.); Southport district (C.); Ledsham (W.E.S.).

Rhagonycha fulva, Scop. Generally common.

Rhagonycha testacea, L. Common in Ringley Wood, and Agecroft (B.); Hatchmere and Pettypool, Delamere (D.).

Rhagonycha limbata, Thoms. More common than the above (of which some authors consider it a variety), and generally distributed.

Rhagonycha pallida, F. Occasional. Chester (T.); Bollin valley (B.); Oxton and Delamere (W.E.S.); Moore and Appleton (Dun.).

Malthinus punctatus, Fourc. Generally common throughout the district.

Malthinus fasciatus, Ol. Not common. Our only record is from Delamere Forest (W.E.S.).

Malthinus frontalis, Marsh. Occasional. Delamere Forest (W.E.S.); Chester (T.).

Malthodes marginatus, Latr. Not uncommon. Eastham Wood (E.L.C.); Delamere Forest (B.S.); Chester (T.); Southport (C.); Appleton (Dun.).

Malthodes dispar, Germ. Rare or perhaps often overlooked. Is recorded from Delamere Forest (W.E.S.); Bollin vailey (B.); Whalley Range and Stretford (B.C. iv. 150).

Malthodes mysticus, Kies. Recorded from Glossop, Cheshire, and Clifton, near Manchester (B.C. iv. 149), but no authority is given, and as this is one of the most difficult species in the genus to satisfactorily differentiate, the record probably requires confirmation.

Malthodes flavoguttatus, Kies. A similar comment applies to the record of "Cheshire" (ibid.).

Malthodes pellucidus, Kies. This is also recorded from "near Manchester," but without authority.

Malthodes misellus, Kies. Recorded from Clifton, near Manchester, "by sweeping under oaks" (T. Morley in E.M.M. vii. 107).

[**Malthodes nigellus, Kies.** Fowler (B.C. iv. 153) quotes Mr. Blatch as recording this species from "Church Stretton, Cheshire"; Church Stretton, however, is in Shropshire, not Cheshire.]

Malthodes atomus, Thoms. "Barton Moss on sallows," T. Morley (E.M.M. vii. 107).

MELYRIDÆ.

Malachius bipustulatus, L. Not uncommon during some summers, but very irregular in appearance. Bromborough (E.L.C.); Sutton and Ledsham (W.E.S.); Wilmslow (B.); Delamere (T.).

Anthocomus fasciatus, L. Recorded from Hale and banks of Bollin (B.C. iv. 159). This is probably one of Chappell's records, but Dr. Bailey, who has done much collecting in that locality, does not appear to have met with the species.

Dasytes ærosus, Kies. Delamere Forest appears to be our only locality for this species, where it is occasionally swept off birch.

Dasytes flavipes, F. Helsby, June, 1899 (D.).

Haplocnemus impressus, Marsh. Recorded by Edleston in the burrows of *Hylurgus piniperda*, near Bowdon, December, 1867 (E.M.M. iv. 166).

Haplocnemus nigricornis, F. "Near Manchester," Chappell (E.M.M. xi. 15).

CLERIDÆ.

Thanasimus formicarius, L. One specimen taken at Mossley Hill by Mr. Dunlop, October, 1902.

Necrobia ruficollis, F. Generally distributed. Not uncommon in shops and warehouses in towns, among old bones, hides, greaves, etc.

Necrobia violacea, L. Not so common as the preceding. Has occurred occasionally in dead birds, etc., on the shore.

Necrobia rufipes, De G. Generally common in similar situations to **Necrobia ruficollis.**

LYMEXYLONIDÆ.

Lymexylon navale, L. Taken in some numbers by Chappell in Dunham Park (E.M.M. ix. 158); in a timber yard at Stretford, Manchester (R.).

Hylecœtus dermestoides, L. This species is recorded by Reston from Stretford, probably from the same timber yard which yielded **Lymexylon,** but as we have no evidence as to the origin of the timber stored there, neither record alone can be accepted as establishing them as natives of Lancashire.

PTINOIDEA.

There are about fifty-six species of this section recognised as British, and of these we have recorded from our district twenty-nine—just about half—the deficiency being principally those species which frequent old and decaying timber.

PTINIDÆ.

All the members of this family, if we except **Hedobia,** have had their economy materially modified by contact with the operations of mankind. In grain and other subjects of commerce they accompany civilization, and are hardly found except in association with human settlements. They have thus become to a certain extent cosmopolitan, and can be considered as native now to no particular country. The members of the group are being continually, though perhaps only temporarily increased, and their appearance in any particular locality depends more on the accidents and complexity of its commerce than on any natural terrestrial conditions. The following have been noticed :—

Ptinus fur, L. Wallasey (E.L.C.); Chester (T.); Ledsham (W.E.S.).

Ptinus sexpunctatus, Panz. Tranmere (E.L.C.).

Ptinus tectus, Boield. Winnington, Oldham, Liverpool (T.).

Niptus hololeucus, Fald. Common in most houses.

Niptus crenatus, F. Manchester (E.M.M. viii. 289).

Trigonogenius globulum, Sol. Found in abundance in a grain warehouse in Oldham by Mr. Tomlin, who added the species to the British list. Discovered also in seed shops in Hoylake and Liverpool (B.S.).

Mezium affine, Boield. Manchester (B.C. iv. 184).

ANOBIIDÆ.

Dryophilus pusillus, Gyll. Helsby, beaten in abundance from spruce firs (B.).

Priobium castaneum, F. Very occasional. Eastham Wood in a dead tree (E.L.C.); Chester, in old hedges (T.); Ledsham (W.E.S.).

Anobium domesticum, Fourc. Generally common in the wood of old houses.

Anobium fulvicorne, Sturm. Not common. Only one specimen is recorded from Delamere (W.E.S.).

Anobium paniceum, L. Common in druggists', bakers', and grocers' shops, and apparently quite indifferent as to the nature of its pabulum.

Xestobium tessellatum, F. " Dunham Park, Manchester " (B.C. iv. 191).

Ernobius mollis, L. Delamere Forest, beaten from Scotch fir (D.), (W.E.S.).

Ptilinus pectinicornis, L. Not common. Stockton Heath (C.B.); Southport (C.).

Ochina hederæ, Müll. Very common in ivy, more especially the half-dead stems which generally clothe the oaks throughout Wirral, and probably common in similar situations elsewhere.

Cœnocara bovistæ, Hoff. Blackpool is given as a locality, in B.C. iv. 197, but the authority is not specified.

Anitys rubens, Hoff. Trafford Park in rotten oak, two specimens (B.).

Dorcatoma chrysomelina, Sturm. Trafford Park (probably with the above, as the two species are often found associated) (B.); Barton, Cheshire (Chappell?); Stretford (R.).

BOSTRICHIDÆ.

Rhizopertha pusilla, F. Liverpool warehouses (E.L.C.); Oldham in a grain warehouse (T.).

LYCTIDÆ.

Lyctus canaliculatus, F. Abundant on one occasion (June, 1897) on a new oak paling in Delamere Forest (W.E.S.).

CISSIDÆ.

Cis boleti, Scop. Generally common in boleti.

Cis villosulus, Marsh. "Dunham Park, Manchester, and Stretford" (B.C. iv. 209); also recorded by Mr. F. Archer from near Childwall (E.L.C.).

Cis festivus, Panz. "Near Manchester," Chappell (E.M.M. xi. 15).

Cis alni, Gyll. "Dunham Park on decayed oak" (B.C. iv. 208).

Cis vestitus, Mell. First recorded as British by E. C. Rye on an example taken by T. Morley near Manchester (E.M.M. vi. 5); Dunham Park (Chappell in E.M.M. xii. 62).

Cis fuscatus, Mell. "Dunham Park" (B.C. iv. 211).

Ennearthron cornutum, Gyll. "Dunham Park" (B.C. iv. 214).

Octotemnus glabriculus, Gyll. Very common in boleti on old stumps, etc.

LONGICORNIA.

No section of the **Coleoptera** presents the compiler of local records with greater difficulties than does that of the **Longicornia.** This is due neither to the circumstances of their observation and collection, for few beetles are more conspicuous, nor to their identification, for this is easier than in any other group, but to the uncertainty which attends the origin or genesis of the majority of the species. The larval life of the Longicorn group of beetles is generally a long one, and is in most cases passed in the interior of sound timber. Now timber is not only very largely imported from abroad into this country, but is also very commonly transported from one part of the country to another. This is especially the case with regard to the county of Lancashire. Enormous quantities of foreign timber—grown in all regions of the earth—enter the ports of Liverpool and Manchester each year, and with it come involuntarily many Longicorn beetle larvæ, to emerge among unfamiliar scenes in the timber yards, quays, and railway sidings, of our busy county, and to confuse and delude by their unexpected appearance the astonished chronicler of the native fauna. Nor is this all; in South Lancashire more especially a vast amount of timber is used as pit-props, that is, as underground supports for the passages and galleries in coal mines. This rough timber, imported in the bark, is stacked in heaps about the collieries, the occluded **Coleoptera** are allowed opportunity for maturity and emergence, and thus in the improbable vicinity of our coal-pits are often taken many Longicorn beetles whose real home may be the shores of the Baltic or the North of Scotland. Some of these immigrants even attain a second generation. Such a case on record (see E.M.M. xvi. 93) is that of a North American Longicorn (**Neoclytus erythrocephalus**), found in the interior of an ash tree near St. Helens, where it had evidently been bred. The district naturally is not one suited to a varied native Longicorn fauna, owing to the scarcity of old timber or large tracts of woodland. The list which follows, therefore, is but a short one, for none have been included about whose genesis any suspicion of doubt could hang, and it would not have been possible, even if

it were not beyond the scope of the present list, to record all the occurrences of exotic species taken within the two counties. Out of about fifty-three species in the British list, we have records of only seventeen.

PRIONIDÆ.

Prionus coriarius, L. Recorded from Dunham Park, probably by Chappell (B.C. iv. 219). As this species is far from rare at Llangollen, there is no reason why it should not occur generally in Cheshire.

CERAMBYCIDÆ.

Aromia moschata, L. Not rare on old willows, especially near the coast. Wallasey and Birkdale (B.S.); Southport (C.); Morley Common, Warrington (C.B.).

Callidium violaceum, L. One taken on a railway bank at Walton Arches, Warrington, by Mr. E. Kirk (Dun.); one specimen also exists in the local collection of the Warrington Museum taken by Mr. J. Collins in 1902.

[**Callidium sanguineum, L.** A number of this species was bred by Mr. Wm. Mounfield, of Warrington, from a log of oak, the origin of which appears to have been somewhere in the Austrian dominions.]

Clytus arietis, L. Not uncommon during some summers, but very irregular in appearance. Chester (T.); Grange-over-Sands (B.S.); Ledsham, Hooton and Delamere (W.E.S.).

Clytus mysticus, L. Occurs regularly about one spot in an old hawthorn hedge near Chester, where also have been taken one or two specimens of the var. **hieroglyphicus, Hbst.**; also recorded from Dunham Park (B.C. iv. 226).

Rhagium inquisitor, F. Eastham, Storeton, Bidston (E.L.C.); common under bark at Agecroft, Manchester (B.); Delamere, one specimen (D.).

Rhagium bifasciatum, F. Generally common in decayed pine stumps.

Pachyta cerambyciformis, Sch. Recorded by T. Blackburn as "taken flying over flowers, Bollin valley, Cheshire" (E.M.M. i. 145).

Strangalia quadrifasciata, L. Pettypool Wood, Delamere, in dead birch stumps, and on flowers of *Angelica* (D.).

Strangalia armata, Herbst. Occasional and by no means common. Raby Mere, Cheshire (E.L.C.); Burton Wood and Rixton Moss (C.B.); Pooltown, and Ellesmere Port, Cheshire (W.E.S.).

Grammoptera ruficornis, F. Generally common in the flowers of whitethorn.

LAMIIDÆ.

Leiopus nebulosus, L. Eastham Wood, two (E.L.C.); common in Delamere Forest (D.), (T.), (W.E.S.).

Pogonochærus bidentatus, Thoms. Very occasional. One or two specimens, Chester (T.); one from Newton, near Hoylake (B.S.).

Pogonochærus dentatus, Fourc. "A single specimen, Eastham Wood" (E.L.C.); Bowdon, near Manchester (B.C. iv. 247).

Saperda scalaris, L. Appears to have been often taken by the older Manchester collectors in the "Cloughs," near Manchester, and Chappell definitely records it from Agecroft and Mere Clough. No specimens have, however, been taken in either county for many years past.

Stenostola ferrea, Sch. Recorded from Dunham Park on limes by Chappell (B.C. iv. 254).

PHYTOPHAGA.

The **Phytophaga** are a group of **Coleoptera** generally of Southern range. Few are included in that "Celtic" element in our fauna, of which we have so many representatives in the **Carabidæ** and **Staphylinidæ**. Hence our two counties possess but a small proportion of those known as British, and out of a total of 255, only 107 are enumerated in our list. Insects so conspicuous and easily captured are not often overlooked, and it seems probable that this proportion is fairly approximate to the true distribution of the species.

BRUCHIDÆ.

This family, like the **Ptinidæ,** is to a great extent cosmopolitan. The species occur in grain, peas, beans, etc., and are carried with such material of commerce all over the country. A few species occur in a natural state, none of which, however, have been taken in our district, but the majority are to be found rather in the granaries and mills of our large towns than in the open country, and often occur as a destructive pest in Liverpool and Manchester.

Bruchus pisi, L. Common among stored peas, Liverpool, Manchester, Southport, etc.

Bruchus rufimanus, Boh. In beans, Manchester and Liverpool.

Bruchus villosus, F. In a warehouse in Liverpool, and probably in shops and stores in other towns.

CHRYSOMELIDÆ.

Donacia crassipes, F. Once in profusion on the yellow water lily, Appleton (C.B.).

Donacia sparganii, Ahr. Bolton Canal at Clifton, Lanc. (B.); Frodsham Marsh, and canal at Moore, Cheshire (C.B.).

Donacia versicolora, Brahm. Liscard, Cheshire (E.L.C.); Clifton, Lanc. (B.); Frodsham Marsh, Norton, and Moore, near Warrington (D.); Hampfell, Grange-over-Sands (B.S.); Southport (C.); Ledsham and Dawpool, near Heswall (W.E.S.).

Donacia dentipes, F. Hale, Lanc. (Blackburn in E.M.M. i 145); Hatchmere, Delamere (D.), (B.S.), (T.); Ledsham, not uncommon (W.E.S.).

Donacia limbata, Panz. One specimen, Moreton, Cheshire (E.L.C.); Frodsham Marsh (D.); Hatchmere, Delamere (B.S.), (W.E.S.).

Donacia bicolora, Zsch. One specimen, near Crosby (E.L.C.); Hale, Lanc. (Blackburn in E.M.M. i. 145).

Donacia obscura, Gyll. Recorded by Chappell from Castle Mill, Bollin valley (B.C. iv. 273), but the capture has not been repeated by any other observer.

Donacia thalassina, Germ. Very common at Hatchmere, Delamere (D.), (B.S.), (W.E.S.).

Donacia simplex, F. Clifton, Lanc. (B.); Frodsham Marsh (D.); Ledsham (W.E.S.).

Donacia vulgaris, Zsch. Frodsham Marsh, common (D.); Ince Blundell, Lanc. (C.); Ledsham (B.S.); Hale, Lanc. (Blackburn in E.M.M. i. 145).

Donacia clavipes, F. Banks of Weaver above Frodsham, Frodsham Marsh, and Hatchmere, Delamere (C.B.).

Donacia cinerea, Herbst. Hatchmere, Delamere (D.), (B.S.), (W.E.S.).

Donacia sericea, L. Frodsham Marsh (D.); Hale, Lanc. (Blackburn in E.M.M. i. 145).

Donacia discolor, Panz. On flowers of *Potentilla comarum*, Flaxmere, Delamere (C.B.), (D.), (B.S.), (W.E.S.).

Donacia braccata, Scop. Frodsham Marsh (D.); banks of Weaver above Frodsham (C.B.); Chester (T.).

Donacia affinis, Kunze. Hatchmere, Delamere, not common (D.), (B.S.), (W.E.S.).

Zeugophora subspinosa, F. Common on poplars and aspens round Formby (E.L.C.); on white poplar, Hooton and Ormskirk (W.E.S.).

Lema lichenis, Voet. Common and generally distributed throughout the district.

Lema melanopa, L. Frequent, although not so common as the foregoing. Silverdale, Lanc. (T.); Southport (C.); Birkdale (B.S.); Ledsham, Sutton, and Hooton (W.E.S.).

Cryptocephalus aureolus, Suffr. Very scarce and irregular in appearance. On flowers of hawkweed and dandelion, Wallasey (E.L.C.); ditto, one specimen (W.E.S.).

Cryptocephalus biguttatus, Scop. Mr. Chappell records eight specimens of this very rare species off *Eriophorum polystachyum* on Chat Moss, August, 1865 (E.M.M. ii. 85).

Cryptocephalus fulvus, Goeze. Dr. Chaster records this species as common on the foreshore at Southport; Ince, Cheshire, one specimen (W.E.S.).

Cryptocephalus labiatus, L. Common on birch on all the mosses.

Timarcha tenebricosa, F. Occasionally in exceeding abundance in Delamere Forest, and always to be met with there more or less commonly; Ince, Cheshire, one specimen (W.E.S.).

Chrysomela staphylea, L. Rather common and widely distributed throughout the district.

Chrysomela polita, L. Not so common as the preceding, but generally to be taken where wild mint is found.

Chrysomela orichalcia, Müll. "Manchester district" (B.C. iv. 305), but does not appear to have been taken there of recent years. The dark variety, **hobsoni, Steph.**—so named by Stephens after Hobson, a Manchester entomologist—was first taken near Manchester, probably with the type form.

Chrysomela hæmoptera, L. Recorded from Leasowe Marsh (E.L.C.).

Chrysomela goettingensis, L. A few specimens were taken at Burton Point, Cheshire, about 1880, by Mr. Willoughby Gardner and Mr. Billington; none have been taken there since or in any other locality.

Chrysomela hyperici, Forst. Recorded from "Manchester and Liverpool districts" (B.C. iv. 308).

Melasoma populi, L. One specimen, Weaver Valley, near Frodsham, June, 1893 (D.).

Phytodecta olivacea, Forst. Occurs commonly on broom on Frodsham Hill and probably elsewhere; the three colour varieties—**flavicans, F., litura, F.,** and **nigricans, Weise**—are found commonly associated with the type at any rate at Helsby.

Gastroidea viridula, De G. Occasionally in profusion locally, but irregular in appearance and distribution. Bidston Marsh and Moreton (E.L.C.); Agecroft (B.); Hoylake (B.S.); Walton, near Warrington, on *Polygonum aviculare* (C.B.); Upper Alithwaite, Grange-over-Sands, on the same plant (B.S.); Walton Arches, Warrington (Dun.).

Gastroidea polygoni, L. Rather common and generally distributed.

Phaedon tumidulus, Germ. Fairly common. Chester (T.); Southport district (C.); Birkdale and Hoylake (B.S.).

Phaedon armoraciæ, L. About equally common with the last. Southport district (C.); Hoylake, Birkdale, and Grange-over-Sands (B.S.); Hooton, and Ince, Cheshire (W.E.S.).

Phaedon cochleariæ, F. The least common of the three species our district possesses, but still not rare. Bidston Marsh in moss, on bridges over River Fender (E.L.C.); Southport (C.); Delamere and Grange-over-Sands (B.S.); Ledsham and Hatchmere, Delamere (W.E.S.).

Phyllodecta vulgatissima, L. Scarisbrick, near Southport, two specimens (C.).

Phyllodecta cavifrons, Thoms. Under bark, Bromborough, in winter (E.L.C.); in a similar situation near Hatchmere, Delamere, in January (B.S.), (T.).

Phyllodecta vitellinæ, L. Very common on poplars and aspens throughout the district; common in crevices of the bark of such trees during the winter.

Hydrothassa aucta, F. Cark-in-Cartmel, Lanc. (B.S.).

Hydrothassa marginella, L. Rather common and widely distributed in marshy places. Liscard (E.L.C.); Leasowe, Hoylake (B.S.); Sutton (Cheshire), Delamere, Thornton-le-Moors (W.E.S.).

Prasocuris junci, Brahm. Not rare. Bidston Marsh (E.L.C.); Chat Moss (T.); Southport (C.); Helsby Marsh (D.); Birkdale and Hoylake (B.S.); Ince, Cheshire (W.E.S.).

Prasocuris phellandrii, L. Common and generally distributed in marshy places throughout the district.

Phyllobrotica quadrimaculata, L. Not common, and only recorded from Delamere by Mr. Dutton and Mr. Billups.

Luperus rufipes, Scop. Common on birches in Delamere Forest and on all the mosses.

Luperus flavipes, L. On oak and birch in Delamere Forest, with the preceding species, but by no means so common (B.S.), (W.E.S.).

Lochmæa capreæ, L. Local and far from common. On birch, Pettypool, Delamere (C.B.), (T.); Ainsdale (C.).

Lochmæa suturalis, Thoms. Very common on ling and heather throughout the district.

Lochmæa cratægi, Forst. Fairly common in Delamere Forest (T.).

Galerucella nymphææ, L. Local, but common where it occurs. Hatchmere, Delamere (D.), (B.S.); abundant in hibernation at roots of rushes at pond side, Ledsham, February, 1895 (W.E.S.).

Galerucella calmariensis, L. Lydiate, near Liverpool, on willow herb (E.L.C.); Southport district (C.).

Galerucella tenella, L. Hatchmere, Delamere, in profusion during most summers (D.), (B.S.), (W.E.S.), (T.).

Adimonia tanaceti, L. Very casual and confined to the coast sandhills of Cheshire. New Brighton sandhills by Mr. Archer (E.L.C.); one, Hoylake, October, 1896; two, West Kirby dunes, September, 1897; two picked up at base of cliff on Dee-side shore after September westerly gale, 1899 (B.S.); Mr. Sopp adds, "I am of opinion that all these may have been brought down the Dee or been blown across from the Flintshire mountains" (the species feeds, not on *Tanacetum*, at any rate in North Wales where it is common on the mountains, but on wild thyme, which there grows abundantly), "during the strong winds so often experienced in the autumn on the coast of West Cheshire."

Sermyla halensis, L. Very common on *Galium verum* on all the coast sandhills, and also occurs in Delamere Forest.

Longitarsus. Hardly any genus of **Coleoptera** stands in greater need of revision than does this, and it will probably be found ultimately that our British list will require considerable reduction, many of our accepted names being merely synonyms. The genus is not a favourite one with collectors, and our local records do not extend much beyond species which are abundant throughout the country, and includes none of doubtful validity.

Longitarsus luridus, Scop. (brunneus, Duft.) Abundant everywhere.

Longitarsus suturellus, Duft. Southport district (C.); Chester, Ince, and Eastham (T.).

var. **fuscicollis, Steph.** "Common at Aigburth and Spital" (E.L.C.). "This form always occurs with the type" (T.).

Longitarsus atricillus, L. Grange-over-Sands, Lindale and Silverdale (B.S.); Ince (T.).

Longitarsus melanocephalus, All. Southport district (C.); Chester (T.); Grange and Alithwaite (B.S.); Ledsham, common (W.E.S.).

Longitarsus pusillus, Gyll. Southport district (C.); Chester (T.); Silverdale (B.S.).

Longitarsus jacobææ, Wat. Common on *Senecio jacobæa* and widely distributed.

Longitarsus ochroleucus, Marsh. Dr. Ellis records one specimen each from Spital and Hightown.

Longitarsus gracilis, Kuts. Rare and apparently very local. Burton Marsh on *Senecio jacobæa* (W.E.S.).

Longitarsus lævis, Duft. Common on Chrysanthemums in a garden, Ledsham (W.E.S.); Southport district (C.).

[**Haltica ericeti, All.** This species has been constantly recorded from heather in various districts; but the records are probably erroneous and referable to **Haltica oleracea, L. (pusilla,** Brit Colls.). The genuine **Haltica ericeti, All.** is a Scotch species and sufficiently different from the insect which occurs so plentifully on heather all over the country. This genus again is most confused and difficult for its size—as represented in Britain. Probably **Haltica tamaricis, Schr.,** and **Haltica pusilla, Duft.,** v. **montana, Foud.** will have to be deleted from the British catalogues.]

Haltica oleracea, L. [**helianthemi, All.—pusilla,** Brit. Colls., (**All.**?)] This is the common **Haltica** of the district, and occurring as it does on several food plants, gives colour to the supposition that it is more than one species.

Haltica palustris, Weise. This species is often confused with **Haltica pusilla, Duft.,** which is probably not a British species at all. It occurs not uncommonly in marshy places in Delamere Forest (D.), (T.), also at Sutton, Cheshire (W.E.S.).

Phyllotreta atra, Payk. Birkdale (C.) is our only record.

Phyllotreta vittula, Redt. Chester (T.); Grange (B.S.).

Phyllotreta undulata, Kuts. Common—for growers of turnips far too much so—and widely distributed.

Phyllotreta nemorum, L. A similar remark applies to this species, but it is distinctly less abundant than the preceding.

Phyllotreta sinuata, Steph. Dr. Ellis records this species from Leasowe and Bromborough (E.L.C.).

Phyllotreta exclamationis, Thunb. Leasowe, haystack refuse (E.L.C.); Birkdale (C.); Ince, Cheshire (W.E.S.).

Aphthona lutescens, Gyll. Barton Moss, Ainsdale (C.).

Aphthona nonstriata, Goeze. Common on the yellow Iris. Hoylake, Moreton, and Delamere (B.S.); Southport (C.); Chester (T.).

Aphthona virescens, Foud. Mr. Tomlin records a series of this insect taken by a lady at Silverdale, N. Lanc.

Batophila rubi, Payk. Mr. Tomlin records one specimen from Delamere Forest, our sole record.

Sphæroderma testaceum, F. Generally common on thistles.

Sphæroderma cardui, Gyll. Almost equally common with the former species; recorded from Hoylake (B.S.); Southport (C.) Silverdale (B.S.); Ledsham and Shotwick (W.E.S.).

Apteropeda orbiculata, Marsh. Not common. "Once on Bidston Hill" (E.L.C.); damp meadows, Bollin valley in spring (Kidson Taylor in E.M.M. v. 200).

Apteropeda globosa, Ill. One specimen, Holker Park, Lanc. (B.S.); Bollin valley (Chappell, B.C. iv. 375).

Mantura rustica, L. Generally distributed but not common. Occasional at Wallasey and Crosby (E.L.C.); Birkdale (B.S.); Southport district (C.); Stanlow, Shotwick, and Hooton (W.E.S.).

Mantura chrysanthemi, Koch. This generally rare species is not uncommon, although very local in our district. It is quoted as from Chat Moss by Reston and Chappell (B.C. iv. 378). Abundant on *Rumex acetosella* near Southport (C.), (B.S.); Hatchmere, Delamere, a single specimen (T.); Chester (T.).

Crepidodera transversa, Marsh. Generally common on thistles throughout the district.

Crepidodera ferruginea, Scop. Equally common with the preceding.

Crepidodera ventralis, Ill. Captured at Silverdale, Lanc. by Miss Standen (T.).

Crepidodera helxines, L. On willows and sallows, rare. Hatchmere, Delamere (D.); Churchtown, Southport (C.).

Crepidodera chloris, Foud. One specimen near Southport (C.).

Crepidodera aurata, Marsh. Common and generally distributed on sallows and willows.

Crepidodera smaragdina, Foud. The insect known to British collectors under this name appears to be merely a pale-legged colour variety of **Crepidodera aurata.** It occurs with that insect, and has been taken at Ledsham and other places.

Hippuriphila modeeri, L. Not uncommon in marshy places and widely distributed. Crosby and Wallasey (E.L.C.); Hoylake (B.S.); Bollin valley and Ringley Wood (B.); Southport and Birkdale (C.).

Chætocnema hortensis, Fourc. Two near Southport (C.); Chester (T.).

Plectroscelis concinna, Marsh. Common and generally distributed throughout the district.

Psylliodes chrysocephala, L. Occasional. Crosby (E.L.C.); Hoylake (B.S.); Birkdale (C.).

Psylliodes napi, Koch. Southport district (C.), (B.S.); Mossley Hill and Stockton Heath (Dun.).

Psylliodes cuprea, Koch. Wallasey and Lydiate, near Liverpool (E.L.C.); one specimen near Caldy (B.S.); Southport and Birkdale (C.).

Psylliodes affinis, Payk. Common on *Solanum dulcamara* almost wherever that plant occurs.

Psylliodes marcida, Ill. Very local and confined to the coast. Wallasey, abundant at roots of *Brassica monensis* (T.), (B.S.); common in washed-up cabbages along the Lancashire shore, north of Liverpool (B.S.), (T.).

Psylliodes picina, Marsh. Not common. Formby and Hightown (E.L.C.); Southport district (C.); Capenhurst (W.E.S.).

Cassida fastuosa, Schall. Recorded from Manchester by Chappell (B.C. iv. 398).

Cassida vibex, F. "Hightown, September, 1862, Archer" (E.L.C.).

Cassida sanguinolenta, F. Wallasey and Aigburth (E.L.C.); a specimen was taken by Dr. Norman Joy at Birkdale in 1898.

Cassida flaveola, Thunb. "Southport by B. Cooke" (E.L.C.); Southport (C); Hatchmere, Delamere (D.); Hooton on *Epilobium hirsutum* (W.E.S.).

Cassida viridis, F. Rather common on thistles throughout the district.

Cassida equestris, F. Aigburth shore of Mersey (Dun.).

HETEROMERA.

Of this enormous but somewhat artificial group, of which some 15,000 species are known to science, not more than about 125 appear to inhabit the British Isles. Of these some 51 have been recorded from our two counties. The economy of the various families differs much. Of the **Tenebrionidæ** we have perhaps a majority of the British species, but in other families—wood-feeders and flower-frequenters—we are very defective, and in some have no representatives at all.

TENEBRIONIDÆ.

Blaps mortisaga, L. Dr. Ellis records the capture of a specimen in Liverpool (whither it may easily have been imported). The insect was brought to Mr. Gregson, and finally came into the possession of Dr. Ellis.

Blaps mucronata, Latr. Common in most of the cellars of our large towns.

Heliopathes gibbus, F. Very abundant on all the coast sandhills during the spring.

Hopatrum sabulosum, Gyll. Reported from "Liverpool district" (B.C. v. 9). Our only record is one by Mr. Archer many years ago from New Brighton, and the occurrence of the species on our coast requires further evidence before it can be regarded as indisputable.

Microzoum tibiale, F. Very common on all the coast sandhills

Phaleria cadaverina, F. Occasional on the foreshore of both counties in the early spring beneath tidal refuse, etc.

Scaphidema metallicum, F. Very rare; has only been taken on old damp wood at Chester (T.).

Tenebrio molitor, L. Abundant in mills and bakeries throughout the district. Flies to light and to white surfaces not uncommonly, and is often found in the most unexpected places in houses.

Tenebrio obscurus, F. Also common in mills and bakehouses, but perhaps not so abundant as the last.

Alphitobius diaperinus, Panz. Not uncommon in flour mills, bakehouses, etc.

Alphitobius piceus, Ol. Commoner perhaps than the above, and in similar situations.

Both the above species are cosmopolitan; they occur sometimes in profusion in copra from the islands of the Pacific and other produce discharged on the quays of Liverpool and Birkenhead.

Gnathocerus cornutus, F. Generally common in grain warehouses, flour mills, and bakers' shops throughout the district.

Tribolium ferrugineum, F. Almost equally abundant with the last, and occurs probably in all our large towns.

Tribolium confusum, Duv. With the preceding, but by no means so common, and has only been recorded from Warrington and Oldham (T.).

Palorus melinus, Herbst. Dr. Ellis records the species as " taken freely by Mr. Kinder " (in Liverpool). Probably this refers to captures made on the north quays, and perhaps of imported specimens.

Latheticus oryzæ, Wat. In flour and rice mills in Liverpool.

Helops pallidus, Curtis. Occurs at the roots of the " star grass " which grows so freely on the sandhills. New Brighton, September, 1858, by Mr. Benjamin Cooke (E.L.C.); Hoylake (B.S.); and on two occasions at Wallasey at sugar, by Mr. W. A. Tyerman. Has also been taken by Prof. T. Hudson Beare on the sandhills at Formby.

Helops striatus, Fourc. Very common under stones among heather, and under loose bark, etc., in fir woods.

LAGRIIDÆ.

Lagria hirta, L. Not uncommon on all the sandhills, but almost confined to that region in our district.

Cistela murina, L. Restricted like the preceding to the coast sandhills, but very erratic in appearance there; sometimes very common in the flowers of *Rosa spinosissima.*

MELANDRYIDÆ.

Tetratoma desmaresti, Lat. Recorded from Dunham Park by Chappell (B.C. v. 34).

Tetratoma ancora, F. Recorded by the same authority from Agecroft (B.C. v. 34).

Orchesia micans, Panz. Not common. Bred in numbers from a hard woody boletus, Chester (T.); Ledsham (W.E.S.).

Conopalpus testaceus, Ol. Dunham Park (teste Chappell ?) (B.C. v. 39).

Melandrya caraboides, L. Not common. Crosby, June, 1862, by F. Archer (E.L.C.); Pettypool, Delamere (D.); " Norbury, Agecroft and Dunham Park " (B.C. v. 41).

Abdera quadrifasciata, Steph. Recorded by Edleston from felled beech in Dunham Park, December, 1867.

Phlœotrya rufipes, Gyll. Bred from decayed birch from Simonswood Moss by Mr. G. A. Harker, of Liverpool (E.L.C.); Dunham Park (Edleston).

PYTHIDÆ.

Salpingus castaneus, Panz. Not rare on fir trees on the mosses. Simonswood (W.E.S.); Delamere (D.), (W.E.S.), (T.).

Salpingus æratus, Muls. One specimen captured in Eastgate Street, Chester (T.); one beaten from hawthorn near Ainsdale (C.).

Salpingus ater, Payk. Delamere from fir on one occasion (W.E.S.). This insect seems to be nothing more than a melanic form of the preceding, and at best should rank only as a variety.

Lissodema cursor, Gyll. This very rare species has been taken in a timber yard at Stretford, near Manchester (R.); and there is a record (B.C. v. 54) by Mr. Chappell from Wilmslow (Cheshire) of a capture by Mr. Broadhurst, of Manchester. Neither of these records, however, is sufficient to prove that the species is really indigenous to our district.

Rhinosimus ruficollis, L. Not uncommon. Agecroft (B.); Delamere Forest (D.), (T.), (W.E.S.); Hooton, Cheshire (W.E.S.); Allerton, near Liverpool (Dun.).

Rhinosimus viridipennis, Steph. West Derby and Aigburth (E.L.C.); Southport district (C.); Dawpool, Cheshire (W.E.S.).

Rhinosimus planirostris, F. Abundant under bark of various trees throughout the district.

OEDEMERIDÆ.

Oncomera femorata, F. Taken at light when "sugaring" for moths by Mr. F. Orde, at Silverdale (E.M.M. vii. 182).

Nacerdes melanura, Schmidt. Occasional in warehouses, saw-pits, etc., in Liverpool, and has been taken on the shores of the Mersey at Aigburth and Bromborough Pool (E.L.C.).

PYROCHROIDÆ.

Pyrochroa serraticornis, Scop. Very occasional in the vicinity of old willows. Is recorded from Wallasey (E.L.C.) and Chester (T.).

MORDELLIDÆ.

Mordellistena brunnea, F. A single specimen beaten from a hawthorn hedge, Ledsham (W.E.S.). The capture is interesting as being the sole example of any species of the genus taken in our district, and in view of Canon Fowler's note, that no single species of either this genus or **Mordella** has been recorded from further north than the Midland Counties (B.C. v. 73).

Anaspis frontalis, L. Common on whitethorn bloom and other flowers.

Anaspis rufilabris, Gyll. Rare or very much overlooked. Scarisbrick, near Southport, one specimen (C.); "Dunham Park, Manchester" (B.C. v. 77); Delamere Forest (W.E.S.).

Anaspis ruficollis, F. Very abundant on whitethorn blossom.

Anaspis subtestacea, Steph. Dr. Chaster records this species from Ince Blundell, and Southport; but as Mr. Champion has pointed out (see E.M.M., 2nd series, ix. 102), two species are confused in British collections under this name, viz., **Anaspis latipalpis, Schilsky,** and **Anaspis subtestacea, Steph.** It becomes, therefore, doubtful to which species this record should be referred.

Anaspis maculata, Fourc. Generally abundant, especially on the blossom of the whitethorn.

RHIPIDOPHORIDÆ.

Metœcus paradoxus, L. Not uncommon in the nests of *Vespa vulgaris*. It has been taken by Mr. Newstead at Ince (Cheshire), and by Mr. G. Dunlop at Mossley Hill and various places in Cheshire.

ANTHICIDÆ.

Notoxus monoceros, L. Generally common in damp hollows in the sandhills of both counties.

Anthicus humilis, Germ. In tide drift on the Dee shore between Parkgate and Burton Point, not uncommon (W.E.S.).

Anthicus floralis, L. Generally common in haystack and vegetable refuse.

Anthicus bimaculatus, Ill. This species was added to the British list on the occurrence of a few specimens to Mr. Chappell, near Southport, in 1859. Since then it has occasionally been taken, generally in carrion, both on the Cheshire and Lancashire shores, but it was not till Dr. Chaster in 1903 discovered its nocturnal habits that the species has been taken in any considerable numbers. In that year and in 1904 it was abundant after dusk on the Southport and Birkdale sandhills. Its only occurrence elsewhere in Britain than on the coast of our two counties has been, I believe, to Mr. Tomlin, on the sandhills of Glamorgan.

XYLOPHILIDÆ.

Xylophilus oculatus, Gyll. Recorded by Chappell from Cheshire (Dunham Park?) (E.M.M. xiv. 270).

MELOIDÆ.

Meloë proscarabæus, L. Uncertain in appearance, but sometimes common, and generally distributed. Mr. Sopp says of the species: "Very common at

Hoylake locally, but not occurring in abundance in the same place during any two consecutive years, usually appearing in great abundance in an entirely new place each year."

Meloë violaceus, Marsh. Canon Fowler notes the species as from "Cheshire" without locality (B.C. v. 96). Our definite records are a single specimen from Bidston Hill (E.L.C.), and one from Bromborough (Dun.).

RHYNCHOPHORA.

Of the **Rhynchophora** (which alone of our major groups possesses sufficient homogeneity to have secured for itself a popular name—the weevils) about 515 species are known as British, and of these some 236—not quite half—have been recorded from our district. The **Rhynchophora,** being like the **Phytophaga** exclusively vegetable feeders, are conditioned as to their distribution very much by the flora. This again depends to a great extent on geologic data; and we are thus deficient in very many species, not perhaps so much from circumstances of climate, or of latitude, as because our district is wanting in formations, such as the Cretaceous, which support a peculiar flora, and with it a number of **Coleoptera** inseparably connected with that flora.

PLATYRRHINIDÆ.

Brachytarsus fasciatus, Först. Rare and very local. Delamere Forest (N.); Warrington (D.).

Brachytarsus varius, F. Local, but in Delamere Forest much more common than the previous species. It occurs in winter in the lichen which covers the lower part of the trunks of oaks (N.), (T.), (B.S.), (D.), (W.E.S.).

Choragus sheppardi, Kirby. Recorded by Chappell as from "near Manchester" (E.M.M. xi. 15); Fowler adds "Dunham Park," and the reference is probably to the same occurrence (B.C. v. 114).

RHINOMACERIDÆ.

Rhinomacer attelaboides, F. Recorded by Mr. A. Newstead on one occasion from Delamere Forest.

CURCULIONIDÆ.

Attelabus curculionoides, L. Very common in Delamere Forest on both oaks and Spanish chestnuts; not recorded from elsewhere in our district.

Rhynchites æneovirens, Marsh. Very occasional in Delamere Forest (T.), (W.E.S.).

Rhynchites minutus, Herbst. Not uncommon and generally distributed; appears to be attached to no particular plant

Rhynchites nanus, Payk. Common on birch, especially in Delamere Forest, and on the mosses.

Rhynchites uncinatus, Thoms. Southport and Birkdale sandhills, very common (C.).

Deporaüs megacephalus, Germ. One specimen beaten from birch, Delamere Forest (W.E.S.).

Deporaüs betulæ, L. Abundant on birch on all the mosses.

Apion ulicis, Först. Abundant everywhere on furze.

Apion miniatum, Germ. Not uncommon on *Rumex*. Altcar, Wallasey, Grange-over-Sands, Alithwaite, and Cark-in-Cartmel (B.S.); Dawpool and Hightown (W.E.S.); Mossley Hill, near Liverpool (Dun.).

Apion hæmatodes, Kirby. Occasional and not very common. Hoylake (B.S.); Southport district (C.); Delamere Forest and Hilbre Island (W.E.S.); Mossley Hill and Aigburth (Dun.).

Apion rubens, Steph. Rare. Has been recorded from Lydiate, near Liverpool (E.L.C.); and Southport, one (C.).

Apion pallipes, Kirby. Not common. Bowdon, near Manchester (B.C. v. 144); Ledsham (W.E.S.).

Apion rufirostre, F. On mallows, near Parkgate (W.E.S.).

Apion viciæ, Payk. Not uncommon. Bidston and Spital (E.L.C.); Southport district (C.); Helsby (D.), (T.); Silverdale (B.S.); Shotwick and Parkgate (W.E.S.).

Apion dissimile, Germ. Common on *Trifolium arvense*, September to November, Southport and Birkdale (T.), (C.), (B.S.); under similar conditions, Holker and Grange-over-Sands (B.S.).

Apion apricans, Herbst. Abundant everywhere in the district.

Apion trifolii, L. Helsby, by Mr. Dutton, forms our only record.

Apion dichroum, Bedel. Generally common.

Apion nigritarse, Kirby. Very common everywhere.

Apion confluens, Kirby. Southport foreshore, on *Matricaria* (C.), (T.).

Apion hookeri, Kirby. Recorded by Mr. Dutton as local near Helsby.

Apion æneum, F. Common on mallows at Parkgate (W.E.S.); Southport (C.).

Apion onopordi, Kirby. Not common. Willaston, Cheshire (E.L.C.); Southport (C.); Helsby (D.); Burton, Cheshire (W.E.S.).

Apion carduorum, Kirby. Generally common.

Apion atomarium, Kirby. Not uncommon on wild thyme at Hoylake (B.S.), (T.).

Apion minimum, Herbst. On sallows, Ledsham (W.E.S.).

Apion virens, Herbst. Generally common.

Apion pisi, F. Common everywhere.

Apion æthiops, Herbst. Not common, Southport district (C.); Helsby (D.), (T.).

Apion ebeninum, Kirby. Very occasional. Wallasey, three (E.L.C.); Helsby (D.), (T.).

Apion striatum, Kirby. Rather common and widely distributed on gorse.

Apion immune, Kirby. Bidston (E.L.C.); Delamere (W.E.S.).

Apion ononis, Kirby. Rather common wherever *Ononis arvensis* is found.

Apion spencei, Kirby. Rather common and widely distributed.

Apion ervi, Kirby. Generally common.

Apion gyllenhali, Kirby. Our only record is from Helsby, where it has been taken commonly by Mr. Tomlin and Mr. Dutton on *Vicia cracca*.

Apion unicolor, Kirby. Not uncommon. Spital (E.L.C.); Southport (C.); Helsby (D.); Ledsham (W.E.S.).

Apion scutellare, Kirby. Bidston (E.L.C.); Delamere (T.); Ledsham and Burton (W.E.S.).

Apion loti, Kirby. Not uncommon. Southport (C.); Grange-over-Sands (B.S.); Burton, Cheshire (W.E.S.); Helsby (T.).

Apion pubescens, Kirby. Very occasional. Willaston, Cheshire (E.L.C.); Southport foreshore (C.).

Apion marchicum, Herbst. Southport (C.); Hoylake (B.S.); Bidston (E.L.C.); Chester (T.).

Apion violaceum, Kirby. Generally abundant.

Apion humile, Germ. Generally abundant.

Otiorrhynchus atroapterus, De G. Very occasional at Freshfield (B.S.), (W.E.S.).

Otiorrhynchus scabrosus, Marsh. Generally distributed and sometimes locally common. Wallasey and Aigburth (E.L.C.); Chester (T.); Hoylake (B.S.); Southport and Birkdale (B.), (C.).

Otiorrhynchus ligneus, Ol. Not uncommon and widely distributed. Leasowe, Wallasey, and Bidston (E.L.C.); Chester (T.); Helsby (D.), (T.); West Kirby and Hoylake (B.S.); Capenhurst and Delamere (W.E.S.).

Otiorrhynchus picipes, F. Generally abundant.

Otiorrhynchus maurus, Gyll. Recorded by Chappell from Staley Brushes (E.M.M. ix. 270).

Otiorrhynchus sulcatus, F. Generally distributed and often common. Occasionally becomes a pest, attacking Delphiniums and Chrysanthemums in gardens.

Otiorrhynchus rugifrons, Gyll. Not common. Southport and Agecroft (B.); Kent Bank, Lancashire (B.S.); Hilbre Island at roots of *Silene* (W.E.S.).

Otiorrhynchus ovatus, L. Common on the coast sandhills and occasionally elsewhere. Chester (T.); Helsby (T.), (D.); Caldy (Cheshire) (Dun.).

Otiorrhynchus muscorum, Bris. This species is so closely allied to the preceding that some of our records probably refer to that species. It has, however, been taken at Wallasey by Mr. Tomlin, and doubtless occurs, although perhaps but rarely.

Trachyphlœus aristatus, Gyll. Taken rarely on the foreshore at Southport by Dr. Chaster, Mr. Sopp, and Mr. Tomlin.

Cænopsis waltoni, Schön. Occasional in moss in Delamere Forest in winter (W.E.S.), (T.).

Strophosomus coryli, F. Common everywhere.

Strophosomus capitatus, De G. Alderley Edge, near Manchester (B.).

Strophosomus faber, Herbst. Dunham Park (B.C. v. 191); Hatchmere, Delamere (D.).

Strophosomus retusus, Marsh. Hatchmere, Delamere (D.); Mouldsworth (W.E.S.).

Strophosomus lateralis, Payk. Very common and generally distributed on heath and ling.

Exomias araneiformis, Sch. Chester, not uncommon (T.).

Brachysomus echinatus, Bons. Very occasional. Aigburth, one specimen (E.L.C.); Hatchmere, Delamere (D.).

Sciaphilus muricatus, F. Not very uncommon. Delamere (T.); Helsby (D.); Southport (C.); Ledsham (W.E.S.).

Tropiphorus carinatus, Müll. Chorlton in the valley of the Bollin (K.T. in E.M.M. v. 200).

Tropiphorus tomentosus, Marsh. Anfield, Liverpool, on wall of cemetery (E.L.C.); Northenden, Agecroft and Bollin valley, rare (B.); Frodsham (D.); Heswall, Cheshire (W.).

Liophlœus nubilus, F. Not uncommon and generally distributed. Bollin valley and Ringley Wood, near Manchester (B.); Chester (T.); Frodsham (D.); Shotwick, Cheshire (W.E.S.).

Polydrusus tereticollis, De G. Moore, Appleton, and Delamere Forest (Dun.).

Polydrusus pterygomalis, Boh. Very occasional. Chester (T.); Bollin valley, sparingly (B.).

Polydrusus cervinus, L. Common on sallows and aspens throughout the district.

Polydrusus confluens, Steph. Bidston (E.L.C.); Caldy Heath (B.S.); Hatchmere, Delamere (D.).

Phyllobius oblongus, L. Generally abundant on oak, hazel, sallow, etc.

Phyllobius calcaratus, F. Delamere Forest on oak, but local and not common (D.), (B.S.), (W.E.S.); Southport (C.).

Phyllobius urticæ, De G. Generally common on nettles.

Phyllobius pyri, L. Common on oak, nearly everywhere.

Phyllobius argentatus, L. Abundant everywhere.

Phyllobius maculicornis, Germ. Local and not common. Chester (T.); Bollin valley (B.); Delamere Forest (B.), (D.).

Phyllobius pomonæ, Ol. Common, especially on the coast sandhills.

Phyllobius viridiæris, Laich. Generally abundant.

Philopedon geminatus, F. Exceedingly abundant on the bare sand of the coast sandhills in spring. Very occasional elsewhere. Delamere, Bollin valley, and Kersal (B.).

Atactogenus exaratus, Marsh. Recorded from Helsby by Mr. Dutton, but not noticed elsewhere.

Barynotus obscurus, F. Not uncommon. Helsby and Chester (T.); Hoylake (B.S.); Southport (C.); Hightown, Wallasey and Moore, near Warrington (Dun.).

Barynotus schönherri, Zett. Local and not common. Overton, Frodsham (D.); Bollin valley (K.T. in E.M.M. v. 200).

Alophus triguttatus, F. Not very common. Moore, near Warrington (Dun.); Heswall and Leasowe (E.L.C.); Hoylake (B.S.); Chester (T.); Helsby

(D.); occasionally frequent on dusty roads in early spring about Ledsham (W.E.S.).

Sitones griseus, F. Common in spring on all the coast sandhills.

Sitones cambricus, Steph. Very occasional. Birkdale shore and sandhills (C.); at grass roots by side of pond, Capenhurst (W.E.S.).

Sitones regensteinensis, Herbst. Exceedingly abundant on gorse and broom.

Sitones tibialis, Herbst. Almost equally abundant with the last mentioned on the same plants.

Sitones hispidulus, F. Common and generally distributed.

Sitones humeralis, Steph. Rare; our only record is from Crossens, near Southport, by Dr. Chaster.

Sitones flavescens, Marsh. Occasional. Southport (C.); Grange-over-Sands (B.S.); Hoylake (W.E.S.); Mossley Hill (Dun.).

Sitones puncticollis, Steph. Common and generally distributed.

Sitones suturalis, Steph. Not common. Chester (T.); Helsby, on *Vicia cracca* (T.); Southport (C.).

Sitones lineatus, L. Abundant everywhere.

Sitones sulcifrons, Thunb. Generally common and widely distributed.

Gronops lunatus, F. Rare. Our only record is two specimens from the Southport foreshore by Dr. Chaster.

Hypera punctata, F. Occasional and nowhere common. Coast sandhills (E.L.C.); Hoylake, "during some years not rare" (B.S.); Frodsham and Helsby (D.); Ledsham and Hooton (W.E.S.).

Hypera rumicis, L. Hatchmere, Delamere, single specimens (D.); Southport, not uncommon on *Rumex* (C.).

Hypera pollux, F. Quoted in B.C. as from Heysham, near Lancaster (probably a record of Mr. Reston's).

Hypera polygoni, L. Fairly common and widely distributed. Wallasey, Aigburth, and Formby (E.L.C.); Great Meols, Freshfield, and Birkdale (B.S.); Southport and Delamere (B.); Mossley Hill (Dun.); Warrington (D.); Chester (T.); Ledsham and Willaston (W.E.S.).

Hypera suspiciosa, Herbst. Single specimens in May, Hoylake (B.S.); Helsby (D.), (T.); "Southport district, scarce; the specimens all belong to a remarkably elongate and narrow variety very unlike the type" (C.). This elongate form occurs elsewhere, and has represented **Hypera elongata** in some British collections.

Hypera variabilis, Herbst. Rather common; often abundant on the coast sandhills.

Hypera murina, F. Recorded in B.C. v. 235 as from Crosby, near Liverpool. This is a record of Chappell's, and may refer merely to large specimens of **Hypera variabilis.**

Hypera plantaginis, De G. Not very common. Coast sandhills (E.L.C.); Chester (T.); Southport (C.); Helsby (D.), (T.).

Hypera trilineata, Marsh. Occasional. Wallasey, two (E.L.C.); Hoylake and Great Meols, on the sandhills (B.S.); Southport (C.); Helsby (D.); Ledsham, not very rare in stack refuse in winter (W.E.S.).

Hypera nigrirostris, F. Common and generally distributed.

var. **ononinis, Stevens.** A yellow-brown form of the type occurs not uncommonly and indiscriminately with the ordinary green insect. If, however, the varietal name be only applied to such as feed on *Ononis*, it occurs not uncommonly on that plant at Parkgate, Shotwick and elsewhere.

Cleonus sulcirostris, L. Rather frequent on thistles on all the sandhills between Crosby and Southport.

Liosoma ovatulum, Clair. Common and generally distributed. The variety **collaris, Rye** has been taken at Alithwaite and Cark-in-Cartmel, in N. Lancashire, by Mr. Sopp—one specimen in each locality.

Pissodes notatus, F. Very local. "Chat Moss, May and June, by beating Scotch firs" (B.) (see E.M.M., 2nd series, ix. 32); Rixton Moss, near Warrington, three specimens from Scotch fir in July (C.B.).

Curculio abietis, L. Common on fir trees. Chat Moss, Delamere, Bidston, Storeton, etc.

Orchestes quercus, L. Common on oak and generally distributed.

Orchestes scutellaris, Gyll. Recorded by Morley from Timperley, near Manchester (E.M.M. vii. 107); one specimen at Hatchmere, Delamere, June 28th, 1897 (D.).

Orchestes alni, L. Recorded from Moore, near Warrington, by Mr. Dunlop.

Orchestes ilicis, F. Very occasional on oak, Delamere Forest (T.), (W.E.S.).

Orchestes avellanæ, Don. Delamere, rare on hazel, and occasionally under lichen on tree trunks in winter (T.), (W.E.S.); Ledsham, one specimen (W.E.S.).

Orchestes fagi, L. Very local but sometimes abundant on beech in Delamere Forest (W.E.S.); Allerton, near Liverpool, and Moore, near Warrington (Dun.).

Orchestes rusci, Herbst. Not uncommon on birch on the mosses and in Delamere Forest.

Orchestes stigma, Germ. Simonswood Moss, one specimen (E.L.C.); common on birch, Chat Moss (B.).

Orchestes salicis, L. Frequent on willows and sallows and generally distributed.

Orchestes saliceti, Payk. Two specimens, Birkdale, June, 1898 (C.).

Rhamphus flavicornis, Clair. Not rare. On sallows in spring on the coast sandhills (E.L.C.); Chat Moss and Trafford Park on birch (B.); Delamere on birch (T.); Appleton (D.); Southport (C.); Formby Point (W.E.S.).

Orthochætes setiger, Beck. Only recorded as rare in the Birkdale sandhills (C.).

Grypidius equiseti, F. Not uncommon. Wallasey sandhills in spring (E.L.C.), (T.); Hoylake " Cars " (B.S.); Ringley Wood, Manchester (B.); Southport and Birkdale (C.); Helsby (D); Kent's Bank (B.S.); Pensby and Sutton, Cheshire (W.E.S.); Moore, Warrington (Dun.).

Erirrhinus scirpi, F. " Lancaster " (B.C. v. 269); one specimen from sallows near Southport, July 5th, 1902 (C.).

Erirrhinus bimaculatus, F. Occasional in flood refuse of River Alt at Hightown (E.L.C.), (Dun.); Southport shore under tidal refuse (C.); Blundellsands (T.); Warrington on *Polygonum* (D.).

Erirrhinus acridulus, L. Common in flood refuse and among plants by water's edge.

Thryogenes nereis, Payk. Abundant on *Scirpus* at Hatchmere, Delamere, Frodsham Marsh, and Helsby, but not recorded from elsewhere.

Dorytomus vorax, F. Local and not common. Chester (T.); Weaver Valley, Frodsham (D.); occasionally beaten from poplars and sometimes common in crevices of the bark of those trees in winter at Ledsham and Hooton (W.E.S.).

Dorytomus maculatus, Marsh. Rather common on sallows throughout the district.

Dorytomus pectoralis, Gyll. Not uncommon on sallows. Worsley, near Manchester (B.); Thornton-le-Moors (B.S.); Southport (C.); Ledsham, Hooton and Delamere (W.E.S.).

Tanysphyrus lemnæ, F. Common throughout the district on *Lemna* in ditches and ponds.

Bagous alismatis, Marsh. Not uncommon on *Alisma plantago*. Leasowe (E.L.C.); Clifton, near Manchester (B.); Frodsham Marsh and Helsby (D.); Hoylake (B.S.); Sutton (W.E.S.); canal near Warrington (Dun.).

Bagous tempestivus, Herbst. Our only record is from Leasowe, where it has been taken on floating chips in the dykes behind the embankment (B.S.), (W.E.S.).

Bagous limosus, Gyll. Birkdale, May, 1900, six specimens shaken from water weeds (C.).

Anoplus plantaris, Naez. Not uncommon, Southport district (C.); Delamere (D.), (T.); Ledsham on *Sisymbrium*, Delamere and Chat Moss on birch (W.E.S.).

Tychius squamulatus, Gyll. A single specimen, Birkdale sandhills, June 2nd, 1902 (C.).

Miccotrogus picirostris, F. Southport district, not common.

[**Sibinia pellucens, Scop.** Fowler (B.C. v. 303) quotes a record of this species by Mr. Edleston at Knutsford. The species is not admitted as British in our latest (1904) list, and the record seems to require confirmation.]

Gymnetron beccabungæ, L. Rare and local. Hatchmere, Delamere (D.); Bollin valley (K.T. in E.M.M. v. 200).

var. **veronicæ, Germ.** Bollin valley (loc. cit.).

Gymnetron pascuorum, Gyll. Helsby, not uncommon (D.); several specimens near Willaston, Cheshire (W.E.S.).

Gymnetron antirrhini, Payk. In profusion on *Linaria vulgaris* at Helsby (D.), (T.).

Gymnetron collinus, Gyll. Very rare on *Linaria vulgaris*, near Southport (C.), (B.S.).

Gymnetron linariæ, Panz. Also on *Linaria vulgaris*, near Southport, local but less rare than the last species (C.), (B.S.); also at Birkdale (B.S.).

Mecinus pyraster, Herbst. Not uncommon. Chester and Delamere (T.); Southport (C.); Helsby (D.); Ledsham, Burton (Cheshire), and Hooton (W.E.S.).

Mecinus circulatus, Marsh. Restricted apparently to the sandhills and not common there. Wallasey (E.L.C.), (T.), (W.E.S.).

Anthonomus ulmi, De G. Widely distributed, but not at all common. Wavertree, one (E.L.C.); Marple and Bollin valley (B.); Delamere (D); Scarisbrick and Hoole (C.); Ledsham (W.E.S.).

Anthonomus rosinæ, Des Gozis. A single specimen beaten from a hedge at Capenhurst, Cheshire (W.E.S.); also near Southport on poplar and willow (C.).

Anthonomus pedicularius, L. Rather common on hawthorn and occasionally sallow. Delamere (T.), (D.); Cark-in-Cartmel (B.S.); Ledsham and Hooton (W.E.S.).

Anthonomus pomorum, L. Not uncommon on apple trees. Bromborough (E.L.C.); Alvanley, near Helsby (D.); Chester (T.); rather common in crevices of bark of apple trees in winter, Ledsham (W.E.S.).

Anthonomus rubi, Herbst. Common and generally distributed.

Nanophyes lythri, F. Not uncommon on its food plant wherever that occurs. Spital and Lydiate (E.L.C.); Hatchmere, Delamere (C.B.); Southport district (C.); Birkdale (B.S.).

Cionus scrophulariæ, L. Frequent both on *Scrophulariæ* and *Verbascum thapsus*. Bollin valley (B.); Warrington (D.); Chester (T.); Southport district (C.); Ledsham, Hooton, and Burton (W.E.S.).

Cionus blattariæ, F. Not common. Dr. Billups records it from near Chester on *Scrophularia*, and it has occurred on *Verbascum thapsus* near Burton (Cheshire) (W.E.S.); Speke, Heatley, and Moore (Dun.).

Cionus pulchellus, Herbst. Not very common. Ringley Wood, near Manchester, on *Scrophularia* (B.); Halton, near Runcorn (D.); Burton (Cheshire) on *Verbascum* (W.E.S.).

Orobitis cyaneus, L. Occasional on *Viola* on the coast sandhills (E.L.C.); Southport sandhills, scarce (C.).

Cryptorrhynchus lapathi, L. Scarce and local. Occurs in old poplars and willows at Formby (T.), (B.S.); a single specimen at Orford, near Warrington (C.B.); recorded from Southport and Blackpool (B.C. v. 329).

Acalles ptinoides, Marsh. Heswall Heath, August, 1887 (W.E.S.); it probably occurs elsewhere on heather, being very easily overlooked.

Cœliodes quercus, F. Not uncommon on oak in Delamere Forest (T.), (D.), (W.E.S.); Grange-over-Sands (B.S.); Ledsham, a single specimen (W.E.S.).

Cœliodes rubicundus, Herbst. Not uncommon, but local. Chat Moss on birch (B.); Delamere Forest rather frequent on oak (T.), (D.), (W.E.S.); Southport district (C); Witherslack and Grange-over-Sands (B.S.).

Cœliodes cardui, Herbst. Very local on the sandhills at Southport (B.), (C.); and one specimen recorded from Wallasey (E.L.C.).

Cœliodes quadrimaculatus, L. Very abundant everywhere on nettles.

Cœliodes geranii, Payk. " Manchester district, general but rare " (B.C. v. 339), but does not appear to have been met with by modern collectors.

Poophagus sisymbrii, F. On water plants in pits at Moreton, Cheshire (E.L.C.); Delamere Forest (D.), (W.E.S.); Moore, near Warrington (Dun.).

Ceuthorrhynchus assimilis, Payk. Common everywhere on *Cruciferæ*.

Ceuthorrhynchus cochleariæ, Gyll. Not common. Aigburth shore, May, 1883 (E.L.C.); Hatchmere, Delamere (D.).

Ceuthorrhynchus ericæ, Gyll. Generally common on heather.

Ceuthorrhynchus erysimi, F. Frequent and generally distributed on *Sisymbrium* and other *Cruciferæ*.

Ceuthorrhynchus contractus, Marsh. Generally common.

Ceuthorrhynchus cyanipennis, Germ. Capenhurst and Ledsham, not common (W.E.S.); " Heysham, Lancaster and Stretford, near Manchester " (B.C. v. 348).

Ceuthorrhynchus quadridens, Panz. Not uncommon. Wallasey, one (E.L.C.); Hoylake (B.S.); Agecroft and Bollin valley (B); Southport district (C.); Helsby, Ledsham and Hooton (W.E.S.); Chester (T.).

Ceuthorrhynchus pollinarius, Forst. Exceedingly abundant everywhere on nettles.

Ceuthorrhynchus viduatus, Gyll. Recorded by Chappell from Fallowfield, near Manchester, and by Reston from Heysham (B.C. v. 352).

Ceuthorrhynchus pleurostigma, Marsh. Not uncommon and widely distributed, principally on *Brassica*.

Ceuthorrhynchus punctiger, Gyll. Recorded by Dr. Chaster as scarce on Southport foreshore in summer, and by T. Morley from Chat Moss (E.M.M. vii. 107).

Ceuthorrhynchus marginatus, Payk. A single specimen, Hoylake, May, 1897 (W.E.S.); " Manchester district, general but not common " (B.C. v. 355).

Ceuthorrhynchus rugulosus, Herbst. Not uncommon, associated with *Matricaria* and *Chamomilla*.

Ceuthorrhynchus melanostictus, Marsh. Fowler quotes Mabberley (Mobberley ?), Cheshire—perhaps a record of Chappell's—(B.C. v. 357), and Dr. Chaster records one specimen rather doubtfully from Southport.

Ceuthorrhynchus asperifoliarum, Gyll. Very occasional on the sandhills. Recorded by B. Cooke from Southport, May, 1858 (E.L.C.); and Birkdale (C.).

Ceuthorrhynchus arcuatus, Herbst. Recorded from Chat Moss (R.); and near Manchester by Hardy, Taylor, and Sidebotham (B.C. v. 357).

Ceuthorrhynchus euphorbiæ, Bris. One " near Southport, July 12th, 1902 " (C.).

Ceuthorrhynchus litura, F. Generally common on thistles.

Ceuthorrhynchidius floralis, Payk. Abundant everywhere.

Ceuthorrhynchidius pyrrhorhynchus, Marsh. Not very uncommon on *Sisymbrium officinale*, Leasowe (E.L.C.); Great Meols (B.S.); Southport (C.); Bidston Marsh (W.E.S.).

Ceuthorrhynchidius melanarius, Steph. Manchester district, general (B.C. v. 363); swept off grass by side of pond, Ledsham, in some numbers (W.E.S.).

Ceuthorrhynchidius terminatus, Herbst. Chat Moss, one specimen off birch (W.E.S.).

Ceuthorrhynchidius troglodytes, F. Frequent throughout the district.

Ceuthorrhynchidius dawsoni, Bris. Single specimens of this unexpected species are recorded from the Southport foreshore by Dr. Chaster and Mr. Sopp.

Amalus scortillum, Herbst. Southport foreshore in great profusion, June, 1903, scarce in 1904 (C.), (B.S.).

Rhinoncus pericarpius, L. Rather common and generally distributed.

Rhinoncus gramineus, F. Local and not generally common. Southport district (C.), (B.S.); Helsby (D.).

Rhinoncus perpendicularis, Reich. Not uncommon. Southport district (C.); Helsby and Warrington (D.); Upper Alithwaite and Grange-over-Sands (B.S.).

Rhinoncus castor, F. Generally distributed but nowhere very common. Crosby and Hightown (E.L.C.); Pettypool, Delamere (D.); Hatchmere (D.), (T.); Southport district (C.); Mossley Hill and Caldy (Dun.); Little Sutton (W.E.S.).

Eubrychius velatus, Beck. A single specimen recorded by Dr. Ellis as taken at Wallasey (E.L.C.).

Litodactylus leucogaster, Marsh. Generally distributed, but not very common. Hatchmere, Delamere (D.); Southport (C.); Capenhurst and Willaston (W.E.S.).

Phytobius comari, Herbst. Not uncommon but local. Hale (E.M.M. v. 200); Hatchmere, Delamere (D.); Hooton (W.E.S.).

Phytobius quadrituberculatus, F. About equally common with the last. Wallasey (B.S.); Hatchmere, Delamere (D.); Southport (C.); Hooton (W.E.S.); Hightown sandhills (E.L.C.).

Phytobius quadrinodosus, Gyll. Recorded by Chappell as occurring on floating chips in pools behind the embankment at Leasowe. There has, however, been considerable confusion as regards this species, and in British collections it is often represented by **Rhinoncus denticollis, Gyll.** Chappell's specimens, however, can hardly have been this insect, which is found on dry, chalky hillsides in the south, but may perhaps have been **Phytobius muricatus, Bris.**, as that species occurs in marshy places in Cumberland, and was confused with **Phytobius quadrinodosus, Gyll.**, until Mr. Champion pointed out the distinction between them (E.M.M., 2nd series, x. 143).

Limnobaris T-album, L., and **Limnobaris pilistriata, Steph.** Here again we have two species long confounded under the name of the former in British collections, and separated by Mr. Champion (E.M.M., 2nd series, xvi. 224). **Limnobaris T-album, L.**, appears to have the more northerly range, and our local records probably refer to that species. Hatchmere, Delamere, common (B.S.), (D.), (W.E.S.); Southport foreshore (C.).

Baris picicornis, Marsh. One specimen swept by pond side, Ledsham (W.E.S.).

Balaninus venosus, Grav. Recorded by Dr. Ellis as frequent on oaks in Eastham Wood (E.L.C.); no other collector seems to have met with it.

Balaninus villosus, Herbst. Rixton Moss, near Warrington (D.); very occasional in Delamere Forest on oak (T.), (D.), (W.E.S.).

Balaninus salicivorus, Payk. Rather common and generally distributed.

Balaninus pyrrhoceras, Marsh. Rare. Delamere (D.), (T.); Southport (C.).

Calandra granaria, L. Common in grain warehouses everywhere.

Calandra oryzæ, L. Almost equally common with the above, but more especially affecting rice mills and stores.

Caulotrypis æneopiceus, Boh. One from the Birkdale sandhills, June 30th, 1902 (C.).

Rhyncolus gracilis, Rosen. Fifty specimens—larvæ, pupæ, and imagines—were recorded by Chappell from a piece of timber which had been a portion of a manger, found on a dung-heap at Greenheys, Manchester, March, 1889 ("Young Naturalist," vol. x. 182).

Magdalis armigera, Fourc. Scarce and local. One specimen, Delamere Forest (D.), and one, Ledsham (W.E.S.).

Magdalis cerasi, L. Only recorded from Delamere (D.), (T.).

SCOLYTIDÆ.

The remarks already made on the **Longicornia**, as to the possibly extraneous origin of some of the insects recorded from our district, apply with equal force to the present group. Such a doubt, however, hardly extends to records of species found in standing timber or in stumps *in situ*, far from towns or depôts of foreign timber, and of such we have a considerable number.

Scolytus intricatus, Ratz. Not uncommon in oak in Delamere Forest (W.E.S.), (T.). Chappell records the species from Dunham Park.

Scolytus rugulosus, Ratz. In plum trees at Ince (Cheshire), where is was taken by Mr. Newstead, who bred the *imagines* in considerable numbers.

Hylastes ater, Payk. Common in fir in Delamere Forest (B.S.), (T.), (W.E.S.); recorded by Archer from Rock Ferry, May, 1862 (E.L.C.).

Hylastes opacus, Er. Rare in firs, Delamere Forest (W.E.S.), (T.).

Hylastes palliatus, Gyll. The commonest species of the genus. Delamere (T.), (W.E.S.); Caldy (B.S.); Chat Moss (B.).

Hylastinus obscurus, Marsh. One or two specimens beaten from furze, Ledsham (W.E.S.).

Hylesinus crenatus, F. Generally but sparingly distributed. Knotty Ash, near Liverpool (E.L.C.); Swinton Park, near Manchester (B.); Hatchmere, Delamere, and Sutton Weaver (D.).

Hylesinus oleiperda, F. One specimen swept from grass under ash trees, Ark Wood, Delamere (W.E.S.).

Hylesinus fraxini, Panz. Our only record is from Daresbury, near Warrington (Dun.).

Hylesinus vittatus, F. Very occasional. In an elm rail, Puddington (Cheshire), and in elder, near Chester (W.E.S.).

Myelophilus piniperda, L. Abundant in stumps of felled pines, Delamere Forest, and Chat Moss.

Cissophagus hederæ, Schm. Recorded by Chappell from Dunham Park (B.C. v. 421).

Phlœophthorus rhododactylus, Marsh. Not uncommon in half-dead furze branches. Bidston (E.L.C.); Burton and Capenhurst (W.E.S.).

Cryphalus binodulus, Ratz. One specimen, Wallasey (E.L.C.); recorded by Reston from Drinkwater Park (B.C. v. 431).

Dryocætes villosus, F. Not uncommon in oak bark. Spital (E.L.C.); Ringley Wood, Manchester (B); Prestwich Clough and Delamere (W.E.S.).

Dryocætes alni, Georg. This species was first taken in Britain by T. Morley, of Manchester, in beech trees near Prestwich, February, 1866; recorded also from Drinkwater Park (R.); and by Chappell from Agecroft and Wilmslow (B.C. v. 438); taken also in some numbers under alder bark in Hesketh Wood near Southport, by Dr. Chaster and Mr. Sopp in 1903 and 1904.

Tomicus sexdentatus, Börn. Recorded from Dukinfield, Cheshire, by Chappell (B.C. v. 441).

Tomicus typographus, L. Recorded by Chappell from Hyde, Cheshire (ibid).

Tomicus acuminatus, Gyll. Also by Chappell from Dukinfield (ibid).

Tomicus laricis, F. Hightown sandhills (E.L.C.); Dukinfield (Chappell).

Tomicus nigritus, Gyll. Another record of Chappell's from the prolific locality of Dukinfield.

[**Tomicus fuscus, Marsh.** T. Morley took a few specimens in a decayed beech bough lying on the ground near Prestwich, which were referred by E. C. Rye to this species (E.M.M. iv. 187).]

To all the above records of this genus the note on the family probably applies.

Pityogenes bidentatus, Herbst. Very common in the smaller branches and twigs of Scotch fir in Delamere and on the mosses.

Trypodendron domesticum, L. Not uncommon in dead oak, Delamere Forest (T.), (W.E.S.); Agecroft (B.) (E.M.M., 2nd series, ix. 30)

SUMMARY.

The following table gives the numerical relation in the various groups between the whole of the British Coleopterous fauna so far discovered and recorded, and that of the two counties of Lancashire and Cheshire.

		British species.	Local species.
Adephaga	Geodephaga	316 ...	167
	Hydradephaga	131 ...	73
Clavicornia	Palpicornia	97 ...	58
	Brachelytra	789 ...	359
	Clavicornia	680 ...	254
Lamellicornia		85 ...	52
Serricornia	Sternoxi	76 ...	31
	Malacodermata	87 ...	52
	Ptinoidea	56 ...	29
Longicornia		53 ...	17
Phytophaga		255 ...	107
Heteromera		125 ...	51
Rhynchophora		515 ...	236
		3265 ...	1486

About 45 per cent.

It may be interesting to add the number of species recorded in other local lists recently published.

The whole of Ireland	1630
The County of Norfolk	1728
The County of Suffolk	1763
The County of Kent	2350
The County of Surrey	2346