

## EXPLANATION OF THE PLATES.

## PLATE III.

Pupæ of *Simulium*.

- Fig. 1. Respiratory filaments of the pupa of *Simulium aureosimile*, sp. n.  
 Fig. 2. Respiratory filaments and upper portion of the pupa of *Simulium unicornutum*, sp. n.  
 Fig. 3. *Simulium cervicornutum*, sp. n.  
 Fig. 4. *Simulium damnosum*, Theobald.  
 Fig. 5. *Simulium gilvipes*, sp. n.  
 Fig. 6. *Simulium medusæformis*, sp. n.

## PLATE IV.

Genitalia of *Simulium*.

- Fig. 1. *Simulium gilvipes*, sp. n.  
 Fig. 2. *Simulium medusæformis*, sp. n.  
 Fig. 3. *Simulium cervicornutum*, sp. n.  
 Fig. 4. *Simulium aureosimile*, sp. n.  
 Fig. 5. *Simulium damnosum*, Theobald.

V.—*British Oligocene Ants.* By HORACE ST. J. K.  
 DONISTHORPE, F.Z.S., F.E.S.

[Plate V.]

IN my book on British ants (1915) I pointed out that two wing-impressions from the Lower Purbecks of Durdlestone Bay, considered by Westwood to belong to ants, and described by him in 1854 as *Formicium brodiei* and *Myrmicium heeri*, had been shown by Handlirsch to belong to saw-flies. I also stated that the remains of three genera—*Myrmica*, *Formica*, and *Camponotus*—were found in the Bembridge Limestone. The latter statement was made on the strength of a short note by P. B. Brodie on Tertiary fossil ants (1875) and a list of genera given in a paper by Dr. Henry Woodward (1879) on the authority of Mr. Frederick Smith of the British Museum.

At the time I was not aware that there were in the British Museum large collections of insects made by Brodie and E. J. A'Court Smith from the Oligocene of the Isle of Wight. At the request of the officers of the Geological Department I have since overhauled this collection, as well as a number of British fossil insects belonging to Mr. R. W. Hooley from the same source, and have arranged the specimens, as far as I am able, into their different families. Of the numbers

attached to individual specimens, those following an "I" or "In" are register-numbers of the Geological Department of the British Museum. These numbers are all in one series, but the letter "I," being subject to misapprehension, was recently changed to "In." It so happens that all the specimens of the Brodie Collection (purchased in 1898) are denoted by numbers following "I," and that those of A'Court Smith Collection (though purchased in 1883) were registered later under numbers following "In." Specimens from Mr. Hooley's collection bear numbers following "H." The numbers in brackets, with or without a letter, are those of my working list.

A large proportion of these insects belong to the Formicidae, and I find that the so-called *Formica* and *Camponotus* are really species of *Oecophylla*. There are no specimens of *Myrmica*, but one ant, which has "*Myrmica*" written in pencil on the matrix, belongs to a new genus. Several specimens of a large wing marked "Wing of *Syrex*" are really the wings of a large species of *Oecophylla* described by Cockerell as *O. megarche*. For, on December 11th, 1915 (after the publication of my 'British Ants'), Professor Cockerell published a paper on "British Fossil Insects," and in it he described eight species of ants from the Oligocene of the Isle of Wight, based on duplicate material rejected from Brodie's Collection, and now preserved in the United States National Museum as part of the Lacoe Collection.

The locality in the Isle of Wight is Gurnet or Gurnard Bay (both spellings appear in the maps), which lies a little to the west of Cowes in the north of the island.

This deposit has been placed both in the Bembridge series = Middle Oligocene, and in the Osborne series, which is Lower Oligocene, as also are the deposits of Aix and the Baltic amber. Cockerell thinks, however, that the Gurnet Bay fossils indicate a more decidedly temperate climate, and consequently an age a little later than that of the Baltic amber. He suggests that there was, perhaps, a mud-spring, with heated waters, into which the insects fell, possibly overcome by gaseous emanations. The waters were not themselves poisonous, as fragments of rock carry also multitudes of a species of Phyllopod Crustacean, the *Branchiopodites* described by Woodward (1879). Very many of the blocks I have examined exhibit these crustaceans, and some are marked in pencil "Branchiopode." Cockerell's contention with regard to the mud-spring is supported by the fact that nearly all the ants I have examined are winged, and were probably overcome by the vapours during their marriage flights.

The ants described by Cockerell are as follows:—

*Ponera hypolitha*, represented by the middle of a fore wing and one hind wing.

*Dolichoderus britannicus*, from a thorax with fore and hind wing; petiole and part of gaster; also a lateral section of a body.

— *anglicus*, from the middle of a fore wing.

— *ovigerus*, from the middle of a fore wing and part of body.

*Leptothorax gurnetensis*, from a nearly complete fore wing; also part of a larger one, described as a variety.

*Oecophylla atavina*, from part of body, fore and hind wing.

— *perdita*, from a complete fore wing; another varying somewhat; also a small head and bit of thorax, and part of a fore wing, described as a male.

— *megarche*, from a large fore wing, not quite complete; a hind wing; and head with large mandibles.

It is certainly unfortunate that Cockerell should have restricted his studies to a few relatively inferior specimens of these ants when such magnificent collections were available; but, of course, he could only make the best of such material as he had before him. His descriptions are based chiefly on measurements of the wings, their cells, and their veins, as these are almost all he had to go by. Now, as is well known, the wings of ants vary considerably, not only in the same species [Adolph (1880) examined a large number of male and female *Acanthomyops* (*Chthonolasius*) *umbratus*, Nyl., taken by him during a marriage flight, and found that over 80 per cent. of the specimens varied in the neurulation of their wings], but even in the same individual—the cells and veins of the wings on one side of the insect not agreeing with those on the other. In *Oecophylla*, of which Cockerell had only five specimens, I have examined and measured over two hundred and forty-five specimens, and found them to differ in small measurements spreading over a large range. It would, of course, be absurd to give a separate name to each specimen that varied a little from the others; and it is almost impossible to decide where to draw the line or even which insects belong to Cockerell's species.

The specimens examined by me appear to belong to the following subfamilies:—

PONERINAE: 4 genera and 4 species.

DOLICHODERINAE: 1 genus and 4 species.

CAMPONOTINAE: 3 genera and 6 species.

It will thus be seen that I have been unable to detect any species belonging to the other two subfamilies—Dorylinae and Myrmicinae. As no species of the former subfamily occur in the Baltic amber, their absence is not surprising here; but that no species of the latter are present is very curious.

There are also some thirteen specimens of whose genera I am doubtful (some being only fragments), but in any case they do not belong with certainty to the two subfamilies just mentioned. These are numbered:—I. 8676, I. 8683, I. 8723, I. 8759, I. 9520, I. 9624, I. 9695, I. 10129, I. 10209, I. 10211; In. 17074; H. 127, and H. 334. Of these doubtful species I sent drawings of the six most distinct specimens to my friend Prof. Wheeler, and he has very kindly returned them to me with suggestions as follows:—(a. 18) I. 9695 *Catantopus*?, ♀; I. 10211 *Dolichoderus*? (*Hypoclinea*?), ♀; I. 10209 *Liometopum*?, ♀; In. 17074 *Liometopum*?, ♀; H. 127 *Liometopum*?, ♀; H. 334 *Camponotus*?, ♂.

I do not propose to describe or figure these specimens, for the excellent reasons given by Wheeler. He writes (*in litt.*, 10th Dec., 1919):—"In the case of the Florissant fossils I shall not bother to describe or figure any specimens which are not quite clear. I pursued this course with the Baltic amber ants, of which I saw many that were indecipherable. If one actually refers obscure fossils to a particular genus without a query, they are dragged through the literature, and often produce great confusion later by giving the impression that certain genera were present in certain formations."

### Subfamily Ponerinae, Le Peletier.

#### Tribe Ectatommini, Emery.

#### Genus SYNTAPHUS, nov.

(σύνταφος, buried in the same grave.)

*Diagnosis.* An Ectatommine with a spine on the epinotum.  
*Genotype.* *S. wheeleri*.

#### *Syntaphus wheeleri*, sp. n.

There are three pieces of rock which carry this species; two of them [I. 8744, I. 9936] exhibit the same specimen bisected by the splitting of the block, and show the head, thorax, and gaster, two legs, part of both antennæ, and a trace of the wings. On the third block [I. 9325] only the head, thorax, and half of the fore wing are present (Pl. V. fig. 2). The head is pointed at the posterior corners and the

epinotum is spined. Part of the integument remains on the head and thorax in all three bits of rock, and the puncturation is coarse and rugose as in *Rhytidoponera*, *Stictoponera*, et al. The neuration of the wing is not very distinct, but a discoidal and second cubital cell are present. The junction between the thorax and gaster is not clear.

Long 5 mm.; head and thorax together 2.5 mm.; discoidal cell, which touches the second cubital cell, .5 mm.; first cubital on discoidal .3 mm.; second cubital at apex .2 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (a. 12), I. 8744 (Pl. V. fig. 1), and its counterpart (a. 13), I. 9936; paratype, (a. 11), I. 9325 (Pl. V. fig. 2). All in Brit. Mus.

Named after my friend Professor W. M. Wheeler, in recognition of his splendid work on the ants of the Baltic amber (1914).

#### Tribe PONERINI, Forel.

#### Genus EUPONERA, Forel.

#### Subgenus MESOPONERA, Emery.

#### *Euponera (Mesoponera) crawleyi*, sp. n.

Head, thorax, scale, gaster, one antenna, and traces of several legs present.

The head is triangular but indistinct in detail, the jaws and eyes not being indicated. The antenna is thickened towards the apex. The scale is high and narrower at the apex. The segments of the gaster fairly distinct, the first segment not strongly constricted.

Long 4 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, I. 8675, in Brit. Mus. (Pl. V. fig. 3).

I have placed this specimen in *Mesoponera* with considerable hesitation. It shows the lateral view and resembles specimens of this genus when seen in profile. I have named the species after my friend Mr. W. C. Crawley, in recognition of kind suggestions made by him concerning these difficult fossil ants.

*Mesoponera* is widely distributed, occurring in Africa, India, Australia, New Zealand, and America.

#### Genus PONERA, Latreille.

#### *Ponera minuta*, sp. n.

This small ant appears to me to be a *Ponera*. The head is raised in front, one fore and one hind wing are present;

but the neuration is quite indistinguishable. The pedicel is also indistinct. Traces of two legs are present.

Long 2 mm. ; fore wing, long 2 mm. ; hind wing, long 1·2 mm. ; head, long ·5 mm. ; thorax ·8 mm. ; gaster ·7 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (D. 1), I. 9734 in Brit. Mus. (Pl. V. fig. 4).

The *Ponera atavia* of the Baltic amber is said to be so similar to the recent *Ponera coarctata*, which occurs in Britain, that it is almost impossible to distinguish the two by any satisfactory characters. It is a larger insect than *P. minuta*, and measures about 3·6 mm. in length.

### Genus EEMPLASTUS, nov.

(ἐμπλαστός, imprinted.)

*Diagnosis.* A Ponerine with eyes small and close to the base of the mandibles, mandibles without teeth.

Genotype. *E. emeryi*.

#### *Emplastus emeryi*, sp. n.

This specimen shows the head, which is distinctly outlined, part of the thorax, part of one front wing, and traces of two legs.

The species comes near to *Myopias*, Roger, but the mandibles, which in that genus possess two small teeth, appear to be quite without teeth. The eyes are small and are placed close to the base of the mandibles. Head 2 mm. long and 2·3 mm. broad ; transverso-medialis to basal corner of discoidal cell ·7 mm., discoidal cell, which touches the second cubital, 1 mm. long ; second cubital cell, long 1·2 mm. ; first cubital cell on discoidal ·8 mm. ; basalis on first cubital ·3 mm. ; second cubital cell at apex ·6 mm.

Oligocene at Gurnet Bay (*Hooley*).

Holotype, (a. 30), H. 129, in coll. Hooley (Pl. V. fig. 5).

Named in honour of Professor C. Emery, in recognition of his valuable work on the ants of the Sicilian amber (1891), and also for kindly pointing out to me the position of this and some other species of these fossil ants, from sketches I sent to him.

Only two species of *Myopias* are known ; they occur in Ceylon and New Guinea respectively, and both are very rare.

Subfamily *DOLICHODERINAE*, Forel.Tribe *DOLICHODERINI*, Emery.Genus *DOLICHODERUS*, Lund.

The genus *Dolichoderus* is very widely distributed now, and occurs in Europe but not in Britain. Only one genus and species of the subfamily Dolichoderinae—*Tapinoma erraticum*, Latr.—is found in Britain to-day.

From the Baltic amber Wheeler mentions nine species of *Dolichoderus*, described from over five hundred and eighty specimens. Cockerell based three species on four specimens that he had before him from the Gurnet Bay deposit. The wings of the latter species differ as follows:—In *D. britannicus* the base of the radial cell is vertical and level with the end of the second cubital cell, the latter touching both the radial and the discoidal cells. In *D. anglicus* the second cubital cell is petiolate above, not reaching the radial, and also failing to reach the discoidal cell; I have not found any specimens of this species among my material. In *D. ovigerus* the base of the radial cell is vertical and practically level with the end of the second cubital cell; the latter touches the radial cell, but fails to reach the discoidal cell.

*Dolichoderus britannicus*, Cockerell (1915, p. 483).

There are fifteen specimens which I refer to this species, some being perfect wings, others complete bodies with parts of wings, and some only fragments of wings. One dealated female [(a. 22), I. 8695], which is very like Cockerell's figure of a lateral section, may be a small specimen of this species. In one large specimen [(a. 4), I. 10142] showing the lateral aspect, the outline and segments of the body are very clear, but only half the fore wing is present. One wing [(a. 23), H. 279] appears to be a variety, for, though it agrees in all other respects, the base of the radial cell is not level with the end of the second cubital cell, but comes before it. The measurements of the specimens are as follows:—Length 4.5–7 mm.; fore wing, long 6–6.5 mm.; transverso-medialis to basal corner of discoidal cell .5–.7 mm.; basalis on first cubital .3–.5 mm.; discoidal cell, long .6–.8 mm.; second cubital cell, long .7–1.5 mm.; radial cell, long 1.7–2 mm.; first cubital cell on discoidal .5–.7 mm.; second cubital, width at apex .3–.6 mm.

Oligocene at Gurnet Bay (*Brodie, A'Court Smith, and Hooley*).

Other specimens than those already mentioned are:—  
I. 8751, I. 9185, I. 10257, I. 10282, I. 10345, In. 17311,  
In. 17315, H. 114, H. 117, H. 262, H. 440, H. 497.

*Dolichoderus ovigerus*, Cockerell (1915, p. 484).

I consider the under-mentioned seven specimens to belong to this species. The range of measurements is as follows:—  
Length 4·5–6 mm.; fore wing, long 4·7–7 mm.; transverso-medialis to basal corner of discoidal cell, long ·5–·7 mm.; basalis on first cubital cell ·3 mm.; discoidal cell, long ·6–·7 mm.; second cubital cell, long ·7–1 mm.; radial cell, long 1·2–1·8 mm.; first cubital cell on discoidal ·5–·6 mm.; second cubital cell at apex ·5–·6 mm.; base of second cubital to apical corner of discoidal ·3–·5 mm.

Oligocene at Gurnet Bay (*Brodie, A' Court Smith, and Hooley*).

I. 8861, I. 9198, I. 9347, I. 9354, I. 10348, In. 17274, H. 374.

*Dolichoderus vectensis*, sp. n.

The holotype shows outline of head, thorax, pedicel, and gaster, and one leg complete; trace of one fore wing showing discoidal cell; and a bit of one antenna.

Head pointed behind; epinotum with a spine; petiole large and pointed above; gaster with segments very distinct. Long 5–6 mm.; discoidal cell ·5 mm. long; first cubital on discoidal ·3 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (a. 14), I. 9198, in Brit. Mus. (Pl. V. fig. 6).

*Dolichoderus gurnetensis*, sp. n.

In the unique specimen the head is separated from the body, but lies near it, and parts of a fore and hind wing are present. The thorax, scale, and gaster, two perfect legs, and parts of others can be seen.

The scale is large and high, the second cubital cell long, and the discoidal cell, which touches it, oblong. The base of the radial cell is slanting, not forming a straight line with the apex of the second cubital cell. The insect measures (with head) 5·5 mm. long; discoidal cell, long ·7 mm.; second cubital cell, long 1 mm.; first cubital on discoidal ·5 mm.; basalis on first cubital ·3 mm.; second cubital cell at apex ·5 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (a. 17), I. 9755, in Brit. Mus. (Pl. V. fig. 7).



Subfamily *CAMPONOTINÆ*, Forel.Tribe *FORMICINI*, Forel.Genus *LEUCOTAPHUS*, nov.

(λευκός, white, τάφος, tomb.)

*Diagnosis.* A Formicine with small head, very small discoidal cell, and long cubital cell. The wings are similar to those of *Formica* and *Acanthomyops*, but the discoidal cell is much smaller in proportion and the cubitus and radius veins join each other at the apex of the cubital cell—not a little before it, as is usually the case with *Formica* and the subgenera *Donisthorpea*, *Chthonolasius*, etc., of *Acanthomyops*.

Genotype. *Leptothorax gurnetensis*, Cockerell (1915).

*Leucotaphus gurnetensis* (Cockerell).

Syn. *Leptothorax gurnetensis*, Cockerell, 1915, p. 485, pl. lxx. figs. 4, 5.

Cockerell had before him only a not quite complete fore wing and part of another (which he considered a variety); and, as he himself writes, "This seems to be a *Leptothorax*, but I have only the wings to judge from." Unfortunately the fragments described by Cockerell will have to be the holotypes of this species and variety. Many of the specimens in the large series I have studied are nearly complete. Most of the winged specimens present the lateral aspect, others the dorsal, with the wings expanded. The wings are generally complete and the neuration very distinct. The species is, of course, a Camponotine, and not a Myrmicine, there being only a single joint to the pedicel, which bears a scale, as in *Formica*, *Acanthomyops*, etc.

*L. gurnetensis* closely resembles *Formica primitiva*, Heer (1850), from the Oeningen beds; but, apart from the generic distinction, it is much smaller.

I have seen some eight workers, nearly all of them being on the same piece of rock as winged specimens. The head is small, the scale distinct, and some parts of the legs are present, but the general outline is not very clear. The length is 2–2·7 mm. (Pl. V. fig. 8 b).

There is also what I consider to be the cocoon on the same block as a winged ant of this species [(b. 71), I. 9343 (Pl. V. fig. 8 a)]. It measures 3 mm. in length and is shaped as in *Acanthomyops*. Wheeler found cocoons with *Formica* and *Acanthomyops* in the Baltic amber.

The variation in measurements of these ants is as follows:—Length 2·5–3·5 mm.; fore wing, long 2·8–3·7 mm.; hind

wing, long 1.5-2.5 mm.; upper end of transverso-medialis to lower end of basalis 1.5-2.5 mm.; lower side of discoidal cell .2-.3 mm.; cubital cell, long .7-1 mm.

There are several larger specimens which may be the females of this species, this sex being, on that view, larger than the male, as in some of the subgenera of *Acanthomyops*; some are deilated, others winged. One specimen [(b. 106), I. 10097] is very perfect, showing well the segments of the thorax and gaster. It possesses the small head and discoidal cell of the smaller specimens, as well as a similar wing-neuration. Its measurements are:—Long 4.5 mm.; fore wing 4 mm.; hind wing 3 mm.; transverso-medialis to basalis .6 mm.; discoidal cell, lower side .3 mm.; cubital cell, long 1.1 mm.

A few specimens possess a larger discoidal cell, and agree with Cockerell's var. *a*; in specimen (b. 64), I. 9082, a female 4.5 mm. in length, the lower side of the discoidal cell is .7 mm. long.

Oligocene at Gurnet Bay (*Brodie, A'Court Smith, and Hooley*).

Plesiotype, (b. 72), I. 9756 (Pl. V. fig. 8).

Ergatotype, (b. 56), I. 9744. Other workers, (b. 101), I. 10248; (b. 104), I. 9688; (b. 107), In. 17250; (b. 108), I. 8722; (b. 109), I. 9483; (b. 116), H. 168; (b. 117), H. 450.

Cockerell's var. *a* is represented by: (b. 7), I. 81026; (b. 15), In. 17202; (b. 11), In. 17298.

Other specimens:—

I.: 7286, 8539, 8677, 8678, 8681, 8684, 8698, 8719, 8724, 8728, 8735, 8736, 8737, 8740, 8759, 8764, 8765, 8889, 8927, 8972 (b. 105, b. 113), 8994, 8999, 9013, 9037, 9039, 9142, 9163, 9168, 9184, 9218, 9231, 9242, 9246, 9250, 9266, 9275, 9281, 9285, 9295, 9299, 9332, 9351, 9353, 9356, 9369, 9386, 9406, 9511, 9526, 9578, 9584, 9593, 9632, 9653, 9667, 9677, 9718, 9723, 9746, 9751, 9762, 9763, 9774, 9778, 9796 (Pl. V., fig. 9), 9823, 9847, 9869, 9889, 9900, 9908, 9918, 9930, 9958, 9996, 10005, 10006, 10018, 10040, 10.03, 10120, 10123, 10127, 10185, 10215, 10256, 10258, 10265, 10341.

In.: 17066, 17084, 17106, 17175, 17181, 17203, 17213, 17227, 17250, 17281, 17318, 19602.

H.: 139, 189, 377.

*Leucotaphus cockerelli*, sp. n.

Two large specimens agree in structure and neuration with

the genotype. They possess the small head, small discoidal cell, long cubital cell, etc., but are considerably larger, and it is, perhaps, best to treat them as a distinct species. One [I. 9028] is a dealated female, 5.5 mm. long; the other [I. 8517] is winged, and is 6 mm. long; fore wing 6 mm.; hind wing 3.5 mm. Although the neuration of the wing is clear enough to show its correspondence with that of *L. gurnetensis*, it is too indistinct for exact measurement.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (b. 115), I. 8517 (Pl. V. fig. 10).

Paratype, (b. 64), I. 9028.

### Tribe OECOPHYLLINI, Forel.

#### Genus OECOPHYLLA, F. Smith.

This genus occurs at the present day in Africa, India (with Ceylon etc.), Australia, and New Guinea. These ants are famous on account of their interesting habit of employing their larvæ to sew together the leaves and other materials of which their nests are constructed.

Wheeler (1914), in his most important work on the ants of the Baltic amber, mentions two species—*O. brisckei*, Mayr, of which he had examined thirty-six workers and two males (which he describes), and *O. brevinodis*, newly described from a single worker. Emery (1891) described the worker of another species—*O. sicula*—from the Sicilian amber, and Cockerell based three more species on five specimens from the Isle of Wight deposit.

#### *Oecophylla megarche*, Cockerell (1915, p. 486).

Of the large series of *Oecophylla* I have seen from the Gurnet Bay locality, forty-two specimens appear to belong to this species.

Cockerell gives the length of the fore wing as 20.5 mm.; but his specimen, which unfortunately has to be the holotype, is not complete. In the complete wings before me (some nine specimens) the length varies from 22 to 24.5 mm., the other measurements of the cells and veins varying in proportion. The upper section of the basalis is longer than that of the lower, and the two sections are in a straight line. The length of the hind wing described by Cockerell is 16 mm.; that of three hind wings which I have examined is 18 mm. It may be worth while to mention that the length of the fore wing in the modern *Oecophylla smaragdina* is about 16 mm. and that of the hind wing 10 mm.

Cockerell describes the head of a female with long massive jaws and part of the body. I have seen three deälated females: one specimen [I. 8702] exhibits the head with massive jaws, outline of thorax, petiole and gaster, and part of the femora of all six legs. A number of eggs are visible within the gaster. Its measurements are as follows:—Length 12·5 mm.; petiole 1·2 mm.; gaster, long 3·5 mm., broad 3 mm.; head, long 3 mm., broad 2·5 mm. The second specimen [I. 8711] possesses the left intermediate leg complete. It measures:—Length 12·7 mm.; head, long 3 mm., broad 2·6 mm.; petiole 1·5 mm.; gaster, long 3·5 mm., broad 4 mm. The third specimen [I. 9335] consists only of a thorax, petiole, and part of the gaster with some of the segments visible, and a bit of one femur. A specimen of part of a winged female [In. 17313] shows the head with large jaws and eyes, thorax with scutellum fairly distinct, and traces of three wings, the petiole, and the two anterior legs. The head is 3 mm. long and 2·7 mm. broad.

Oligocene at Gurnet Bay (*Brodie, A' Court Smith, Hooley*).

Plesiotype (wing) (no. 63), I. 8882 (Pl. V. fig. 11); plesiotype (deälated ♀) (no. 6), I. 8702 (Pl. V. fig. 12). Other specimens:—

I.: 8335, 8705, 8708, 8711, 8797, 8806, 9151, 9548, 9655, 10368, 10386.

In.: 17085, 17115, 17233, 17241, 17243, 17273, 17313, 17342, 17416, 17418, 17419, 17420.

H.: 27 a, 85, 97, 98, 99, 100, 102, 103, 111, 113, 167, 327, 370, 392, 420, 483.

On one fragment of rock [(68), I. 9613], bearing remains of *Oecophylla* wings, are several specimens of what appear to be workers. These are indistinct, but show the outline of a head, thorax, petiole and gaster, and some legs, which may well belong to *Oecophylla*. These ants are small, being only 3·5 mm. in length (the smallest worker of *O. smaragdina* in my collection measures 4 mm.), and I am quite unable to decide to which of Cockerell's other species they should be referred. I should say they were too small for *O. megarche*.

I have been quite unable to satisfy myself to which of Cockerell's other species the rest of the two hundred and forty-five specimens of *Oecophylla* belong. They are all smaller than specimens of *O. megarche*. A chart of the measurements shows that they vary in every possible way—in size, size of wings, and all other measurements. Nor does it appear to me that any good purpose would be served by creating a number of new species, which would probably embrace or overlap Cockerell's *O. atavina* and *O. perdita*.

## Tribe CAMPONOTINI, Forel.

## Genus CAMPONOTUS, Mayr.

## Subgenus COLOBOPSIS, Mayr.

*Camponotus (Colobopsis) brodiei*, sp. n.

One specimen appears to me to be a soldier of *Colobopsis*, on account of the square anterior truncation of its head. The head, thorax, scale, and gaster, three legs, and a part of one antenna are present.

Length 4.5 mm.; head, long 1.7 mm.; breadth in middle of head 1.3 mm., at apex .7 mm.

Oligocene at Gurnet Bay (*Brodie*).

Holotype, (D. 2), I. 9551, on same block as an *Oecophylla*; in Brit. Mus. (Pl. V. fig. 13).

Wheeler (1914) described a new genus *Dryomyrmex*, with two species, from the Baltic amber. At first he regarded them as belonging to the subgenus *Colobopsis* of *Camponotus*, but he found that the different structure of the antennæ and frontal carinæ placed them near *Aphomyrmex*. Such characters as these are unfortunately not visible in specimens imbedded in rock. He points out that the structure of the head etc. shows that the ants lived in cavities of twigs, in oak-galls, or in abandoned insect-galleries in solid wood, like the species of *Colobopsis*.

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## EXPLANATION OF PLATE V.

The figures are drawn by Miss O. F. Tassart, with guidance from the author's sketches and under his direction.

The magnification given is linear and is only approximate.

Fig. 1. <i>Syntaphus wheeleri</i> , sp. n., holotype.	I. 8744.	× 7·7.
Fig. 2. Ditto, paratype.	I. 9325.	× 7·7.
Fig. 3. <i>Euponera (Mesoponera) crawleyi</i> , sp. n., holotype.	I. 8675.	× 7·3.
Fig. 4. <i>Ponera minuta</i> , sp. n., holotype.	I. 9734.	× 5·4.
Fig. 5. <i>Emplastus emeryi</i> , sp. n., holotype.	H. 129.	× 4·2.
Fig. 6. <i>Dolichoderus vectensis</i> , sp. n., holotype.	I. 9198.	× 5·1.
Fig. 7. <i>Dolichoderus gurnetensis</i> , sp. n., holotype.	I. 9755.	× 7.
Fig. 8. <i>Leucotaphus gurnetensis</i> (Cockerell).	I. 9756.	× 7·3.
Fig. 8a. Ditto, cocoon.	I. 9343.	× 2·8.
Fig. 8b. Ditto, worker.	I. 9744.	× 4·5.
Fig. 9. Ditto.	I. 9796.	× 7·3.
Fig. 10. <i>Leucotaphus cockerelli</i> , sp. n.	I. 8517.	× 5·3.
Fig. 11. <i>Oecophylla megarche</i> , Cockerell, wing.	I. 8882.	× 2·7.
Fig. 12. Ditto, deãlated female.	I. 8702.	× 4.
Fig. 13. <i>Camponotus (Colobopsis) brodiei</i> , sp. n., holotype.	I. 9551.	× 6.

VI.—On a Collection of Mammals from the Dinka Country, Bahr-el-Djebel. By MARTIN A. C. HINTON and P. S. KERSHAW.

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IN 1918 and 1919 Major J. Stevenson Hamilton made a collection of mammals from the banks of the Bahr-el-Djebel, northwards from Lado. He presented his specimens to the Wellcome Research Laboratory at Khartoum, and they have now been sent to the British Museum for determination. The collection is one of considerable interest, and it materially increases our knowledge of the fauna of this region.

1. *Eidolon helvum*, Kerr.

♂. 181 (immature). Duk.  
Dinka name "Alik."

2. *Nycteris hispida*, Schreb.

♂. 79, 83, 84, 85, 86, 87, 88, 89; ♀. 80, 81, 82. Kongor, 60 miles north of Bor.

♂. 95, 96, 97. Duk Fagwil, Dinka Country.

♂. 157, 158. Duk Fadiat.

