

Oberea oculata, taken at Wicken Fen. Mr. Redgeley sent for exhibition a specimen of the Dragonfly *Æschna cyanea* which had been taken in the Borough on July 18th.

August 12th, 1897.—Mr. R. ADKIN, F.E.S., President, in the Chair.

Mr. McArthur exhibited a fine bred series of *Toxocampa craccæ* from North Devon. Mr. Edwards, young larvæ of *Callimorpha Hera*, which he had just received from the French Alps, where the imagines absolutely swarmed. Mr. J. N. Smith, on behalf of Mr. Fitzgerald, a remarkably smoky variety of *Melanippe montanata*, one of a pair taken at the same time and place. Mr. Tolhurst, the curious telescopic larvæ of *Eristalis tenax* from a tank of foul water in his garden. Mr. West, of Greenwich, specimens of the Hemipteron, *Atractotomus mali*, which he had taken on whitethorn at Lewisham. Mr. Ficklin, larvæ of *Dianthæcia nana* from the Land's End. Mr. South, two bred specimens of *Peronea permutana* from Eastbourne, which differed very considerably from the Wallasey type. Mr. Adkin, a small brood of *Abraxas grossulariata*, which exhibited none of the peculiarities of the female which deposited the ova.

August 26th, 1897.—The President in the Chair.

Mr. Tutt exhibited the egg of *Polyommatus Corydon*, which had never been previously described, and remarked on its beautiful reticulated appearance; a living *Mantis* from Aix-les-Bains, which had fed ravenously on cockroaches; a *Tipula* with beautifully marked wings; and specimens of an Orthopteron which was abundant and active on the wing about 9 a.m. near Susa, and remarked on its protective colouration: on behalf of Mr. Tuck, of Bury St. Edmunds, he also exhibited a nest of *Vespa rufa*, which had been attacked by the larvæ of *Aphomia sociella*, and which was about a foot deep in a bank; part of the nest of *Bombus lapidarius*, attacked by the same species, and which had been taken from a rat's hole in a pigstye; and further, a nest of *Bombus Latreillellus* similarly attacked, taken from a mouse's hole in a pasture: they were all taken during the few previous days. Mr. Adkin, series of *Bryophila muralis (glandifera)* and *B. perla* from Poole, with series from Eastbourne for comparison. Mr. McArthur, specimens of *Larentia salicata* from North Devon, small and dark compared with those from other localities; a second brood specimen of *Smerinthus populi*; and a series of good varieties of *A. grossulariata* bred this year.—HY. J. TURNER, *Hon. Secretary*.

ON A COLLECTION OF COCCIDÆ, PRINCIPALLY FROM CHINA AND JAPAN.

BY W. M. MASKELL.

During the year 1896 Mr. A. Koebele, so well known as an enthusiastic helper of fruit growers in their warfare against insect pests, made a journey through the Far East with a view to collecting *Coccidæ* and other injurious insects. The modern facilities for traffic and easy communication have greatly increased the spread of these pests, and Mr. Koebele's principal object appears to have been to obtain, as far

as possible, a knowledge of their parasitic enemies, so that these might be utilized as checks if haply they could be introduced in sufficient numbers with their hosts. The collection of Coccids which he obtained was forwarded to Washington, where Dr L. O. Howard has been for some time engaged in the systematic study of insect parasites. It was necessary to ascertain as accurately as possible the generic and specific positions of the Coccids collected, and with this view specimens of each were forwarded to me for identification. On the whole, more than a hundred parcels were sent to me, some of them containing large numbers of specimens, and I have been able to identify the majority of these, completing the work by about the end of June in this year. In some cases, on account of injury from mould or other fungus, or from destruction by insect parasites, I found it impossible to make sure of the specific characters; but the great majority were in a condition to give sufficient clearness, and the list which I here give shows the result.

There are only about thirty insects in the collection which I can consider as new species, or new varieties of known species. In these cases I am giving here a brief general account, in order that Dr. Howard (to whom I have already sent their names) may, if he possesses their parasites, employ these names without the necessity of referring to them as "MS.," a thing which is always to be avoided if possible.

Each parcel of specimens sent by Mr. Koebele (with a few exceptions) was marked with a number; and in this list I have noted each, with the attached letter K. The numbers were not consecutive, and I suppose represent their position in Mr. Koebele's general insect collection. In nearly every case the food-plant is also given, with the locality. A few of these insects have been mentioned by me in my paper of 1896, lately published in vol. xxix of the Transactions of the New Zealand Institute.

LIST OF SPECIES.

ASPIDIOTUS aurantii, Maskell (K. 1124, 1364 (?), 1506): on *Citrus*, *Ficus*, *Palm*, a "spiny shrub," and two unnamed plants, Hong Kong, Formosa. I am not absolutely sure about No. 1364.

Aspid. camelliae, Boisduval (*A. rapax*, Comstock), (K. 1551): on *Cercis siliquastrum*, Amoy.

Aspid. cydoniae, Comstock (K. 1116, 1547): on *Casuarina*, Sandwich Islands, and on *Hibiscus*, Hong Kong.

Aspid. cydoniae, Comstock, var. *tecta*, var. nov. (K. 1561): on "*Ohia*," Sandwich Islands. A variety in which the insect agrees with the type, but the puparium is flatter and is subcortical, with a covering of bark-cells.

Aspid. dictyospermi, Morgan (K. 1528): on *Erythrina indica*, Hong Kong. A slight variation from the type, but the differences are unimportant.

Aspid. destructor, Signoret (K. 1304) : on *Pandanus*, Formosa.

Aspid. ficus, Riley (K. 1514) : on *Machilus Thunbergii* and *Quercus cuspidata*, Japan ; on (?), Formosa.

Aspid. implicatus, sp. nov. (K. 1498) : on *Campanula* (?), Formosa, the plant-name is indistinct. Very minute ; puparium white, circular, convex ; pellicles inconspicuous ; entangled amongst the hairs of the plant. The spinnerets variable ; in some specimens wanting, in others only five, in three groups.

Aspid. longispina, Morgan (K. no number) : on "Kukui," Sandwich Islands.

Aspid. secretus, Cockerell, var. *lobulata*, var. nov. (K. 1513) : on *Bambusa*, Japan. In this variety there is a small lobe on each side of the terminal median lobe.

AONIDIA elæagnus, sp. nov. (K. no number) : on *Elæagnus macrophylla*, Japan. The puparium is very small, reddish-brown, very slightly convex ; pellicle yellow. The abdomen ends in very irregular projections, something like those of *A. corniger*, Green, but less conspicuous.

DIASPIS amygdali, Tryon (K. 1127, 1220, 1221, 1410) : on *Rhus* and *Burdock*, Hong Kong ; on *Orixa japonica*, Japan ; on *Oleander*, Amoy ; on *Loranthus*, Ceylon. The pellicles in many of these specimens are very dark red, and I am inclined to make them var. *rubra* ; others are more like a form which Mr. Green originally named *geranii*, afterwards merged in the type.

Diasp. rosæ (Sandberg), Signoret (K. 1265, 1477, 1480, 1502, 1524, 1537, 1540) : on *Elæagnus macrophylla* and *Trachelospermum jasminioide*, Japan ; on *Ailanthus glandulosus*, Swatow ; on *Cycas* and *Cinnamomum*, Hong Kong ; on *Myrtus*, China ; and on *Actinodaphne*, Hong Kong.

Diasp. rosæ, Sandberg, var. *spinosa*, var. nov. (K. 1545) : on *Smilax*, Japan. Differs from type in the browner colour of the adult female and in the more numerous spines on the abdomen. The pellicles are yellow. I do not at present think that this is the same as *Diasp. fagrææ*, Green, an insect in Ceylon.

PARLATORIA proteus, Curtis (K. 509, 1130, 1514, and two without a number) : on *Citrus*, Canton ; on *Myrtus*, Macao ; on *Citrus* and *Camellia*, Formosa ; on *Camellia* and *Machilus*, Japan.

Parl. proteus, Curtis, var. *virescens*, Maskell, 1896 (K. 1255, 1272, 1429) : on *Rose*, Japan ; on "liliaceous plant," Formosa ; on *Pyrus sinensis*, Hong Kong.

Parl. sinensis, sp. nov. (K. 1571) : on *Orange*, Hong Kong. Puparia completely encrusting the twigs and massed together. Abdomen of female exhibiting the generic fimbriated hairs, but these are very much less numerous than in any reported species.

Parl. zizyphi, Lucas (K. no number) : on *Citrus* and *Psidium*, Formosa.

MYTILASPIS citricola, Packard (K. 1202, 1535, 1548) : on *Taxus cuspidata* and probably on *Quercus*, Japan ; on an unnamed plant (*Citrus* ?), Amoy.

Mytil. pallida, Green (K. 1516) : on *Willow*, Japan. Probably a var. of *M. citricola*.

Mytil. Crawii, Cockerell (K. 1515) : on *Quercus*, Japan.

Mytil. Crawii, Cockerell, var. *canaliculata*, Maskell, 1896 (K. 1229) : on *Quercus*, Japan. A form differing only very slightly from *M. Crawii* is on *Machilus Thunbergii*, Japan (K. 1514).

Mytil. flava, Targioni-Tozzetti, var. *hawaiiensis*, Maskell (K. 1133) : on *Pyrus sinensis*, Amoy.

Mytil. Gloverii, Packard (K. 1530) ; on (?), Hong Kong.

Mytil. pomorum, Bouché (K. 1490, 1499, 1533) : on *Ailanthus glandulosus* and *Stillingia sebifera*, Hong Kong. I believe this identification to be correct, but have not yet definitely fixed it.

CHIONASPIS brasiliensis, Signoret (K. 1407) : on *Thea*, Formosa. In my paper of 1896 I agree with Mr. Newstead's proposal to attach this as a variety to *C. aspidistræ*.

Chion. eugeniæ, Maskell (K. 1389) : on *Palm*, Hong Kong.

Chion. eugeniæ, Maskell, varieties (K. 1227, 1406, 1517, 1544, 1549) : differing slightly from the type ; 1517 is a small form, 1496 and 1549 have larger lobes ; on grass, Hong Kong ; on *Quercus acuta* and *Celtis occidentalis*, Japan ; and on *Myrtus*, Amoy.

Chion. graminis, Green (K. 1470) : on *Bambusa tessellata*, Japan.

Chion. prunicola, Maskell (K. 1484) : on *Eugenia*, Japan.

Chion. vitis, Green (K. 1414) : on *Machilus velutinus*, Japan.

NOTE.—Pending the publication of Mr. Green's Part II of his book on the *Coccidæ* of Ceylon, the foregoing identifications of his species of *Chionaspis* are more or less uncertain, but are probably correct.

ISCHNASPIS filiformis, Douglas (K. 1482) : on *Palm*, South Australia.

POLIASPIS pini, sp. nov. (K. 1494) : on *Pinus densiflora*, Japan. Puparium white, narrow ; abdominal lobes very small.

FIORINIA bambusæ, sp. nov. (K. 1534) : on *Bambusa Fortunei*, Hong Kong. Second pellicle exceedingly elongated and narrow, thin and translucent, with an irregularly serrated margin, and small lobes. Adult female very elongated, with two terminal lobes.

Fior. camelliæ, Comstock (K. no number) : on *Citrus* and *Psidium*, Formosa.

Fior. camelliæ, Comstock, var. *minor*, Maskell, 1896 (K. 1431) : on *Ficus*, Amoy, and *Camellia*, Formosa.

Fior. nephelii, sp. nov. (K. 1417) : on *Nephelium longana*, China, Queensland, Formosa. Insects inhabiting minute pits in the leaf. Puparia very small, brownish, the pellicles yellow. Adult completely enclosed by the second pellicle, and very difficult to extract. Second pellicle terminating with a median depression, the sides of which are minutely serratulate. Adult female ending in a deeper depression without serrated sides. Larva with many longish marginal spines.

Fior. pinicola, sp. nov. (K. 1529) : on *Pinus sinensis*, Hong Kong, and *Cupressus juniperinus*, Formosa. Puparium yellowish-white, elongated ; second pellicle with margin of abdomen wavy, having a few spines, and ending with a median depression. Adult with a similar terminal depression, and a few spines and oval pores. Larva without marginal spines.

Fior. signata, sp. nov. (K. 1495) : on *Bambusa tessellata*, Japan. Puparium broadly pyriform, transversely striated. Second pellicle broadly elliptical, abdomen ending with irregular striations and spines. Adult female ending with very inconspicuous lobes and serrations, and also with some spines.

Fior. tenuis, sp. nov. (K. 1510) : on *Bambusa*, Japan. Puparia usually massed

close to junction of a leaf with its stalk ; very small, whitish. Second pellicle very thin, hard and brittle, almost enclosing the adult. Adult extremely small, yellow, ending with a very irregular spiniferous margin and almost obsolete lobes. The larva bears some short conical spines on the cephalic margin, like spikes.

CERONEMA japonicum, sp. nov. (K. 1476, 1478) : on *Ilex crenata*, Japan. The general characters are Lecanid, but the conical spinnerets which produce the characteristic curling white waxy secretion are not submarginal (as in the type species *C. banksiæ* in Australia), but are arranged longitudinally on the median dorsal region ; consequently the secretion curls outwards towards the margin instead of inwards as in *C. banksiæ*.

LECANIUM coffeæ, Walker (K. 1224) : on *Gardenia florida*, Formosa.

Lec. ficus, sp. nov. (K. 1349) : on *Ficus*, Swatow. Adult female yellowish-brown or brown, elliptical, rather convex. Antennæ of eight joints. Epidermis with some oval spots. This form is allied to *L. anthurii*, Boisduval, and to *L. minimum*, Newstead, but differs sufficiently. As regards *L. terminaliæ*, Cockerell, I find no mention of the antennæ.

Lec. geometricum, Green (K. 1434) : on *Laurus canariensis*, Hong Kong.

Lec. globulosum, sp. nov. (K. 1541) : on *Stillingia sebifera*, Hong Kong. Adult female sub-globular, brownish-yellow or yellow. Antennæ short, of seven joints ; feet slender and short. The distinctly Lecanid characters of the larva separate this from *Kermes*.

Lec. hesperidum, Linn. (K. 1560) : on *Carica papaya*, and on "*Ohia*," Sandwich Islands.

Lec. longulum, Douglas (K. 1506) : on *Ficus*, Swatow.

Lec. notatum, sp. nov. (K. 1475, 1478) : on *Thea*, on *Ilex crenata*, and on *Pittosporum*, Japan. Adult female brown, elliptical, flattish, with a dorsal longitudinal carina. Antennæ with eight joints. On the dorsal carina there are two longitudinal rows of small irregularly polygonal cells, quite different from the conical spinnerets of *Ceronema japonicum*. Male yellow, with rather long terminal spike.

Lec. oleæ, Bernard (K. 163) : on *Vine*, Hong Kong.

PULVINARIA psidii, Maskell (K. 1277, 1373, 1504, 1507, and two without a number) : on *Citrus*, Hong Kong and Formosa ; on *Citrus*, *Pittosporum*, and *Eurya japonica*, Japan.

PROSOPOPHORA quercûs, Cockerell (K. 1281) : on *Quercus cuspidata* and *Quercus salicifolia*, Japan.

PLANCHONIA delicata, Green (K. 1495) : on *Bambusa tessellata*, Japan.

Planch., sp. indetermin. (K. 1558) : on *Quercus*, Japan.

ERIOCOCCUS exiguus, sp. nov. (K. 1525), on ?, Hong Kong and Formosa. Extremely minute : sacs yellowish or whitish, entangled in the hairs of the plant, and very loosely felted.

Erioc. graminis, sp. nov. (K. 1523, 1546) : on *Grass*, Hong Kong. Sacs pure white, elliptical, felted. Adult female dull greenish-brown ; antennæ with six joints, feet normal. Dorsum bearing a good many slender and shortish spines. Allied to *E. pallidus*, Maskell.

DACTYLOPIUS, sp. indetermin. (K. 1592): on *Grass*, Japan. All antennæ and feet being broken off, the species cannot be fixed.

Dact. ceriferus, Newstead (K. 1553): on *Psidium*, Hong Kong.

Dact. cocotis, Maskell (K. 1562): on *Hibiscus*, Hong Kong. There is a slight variation in the antennal formula which may perhaps at a future time separate this.

Dact. graminis, Maskell (K. 1501): on *Grass*, Hong Kong. This determination is subject to future revision.

SPHÆROCOCCUS (?), sp. indetermin. (K. 1492): on *Populus tremula*, var. *villosa*, Japan. Insect semiglobular, intense dull black in colour, so extremely hard as to resist prolonged boiling; on turning it over only a hard black flat plate is visible, without organs, but the atrophied feet can be made out. On the dorsal region are six small pits. The earlier stages were not sent, and the genus is for the present left uncertain.

Sphær., sp. indetermin. (K. 1515): only two specimens, clearly of this genus, with small test of yellow wax; on *Quercus*, Japan.

Sphær. graminis, sp. nov. (K. 1520): on *Grass*, Hong Kong. Insects covered by sacs of white cotton (similar to that of *Eriococcus*). Adult female dark brown, globular, losing feet and antennæ. Abdomen ending in a small depression. Epidermis covered with numerous circular spinnerets.

Sphær. parvus, sp. nov. (K. 1521): on *Cherry*, Japan. Insects covered by very loose cotton almost forming distinct sacs. Antennæ and feet wanting. Epidermis with a few scattered spinneret orifices.

Sphær. tokionis, Cockerell (K. 1259): on *Bambusa*, Japan.

ICERYA *seychellarum*, Westwood (K. no number): on *Citrus*, Formosa.

TACHARDIA *decurella*, Maskell (K. 1532, 1539): on *Gardenia florida*, Hong Kong.

In addition to the foregoing, the collection included the following insects, not *Coccidæ*:—

Family PSYLLIDÆ; genus TRIOZA. Pupæ only of a species of this genus, in small pits on leaves of *Camphor*, Japan. The number on the parcel is indistinct.

Family ALEURODIDÆ; genus ALEURODES (K. 1130): on "climbing plant," Japan. Very minute black pupæ of this genus, with white fringe.

In my paper of 1896 (Trans. N. Z. Inst., vol. xxix) I reported the following species from Mr. Koebele's collection:—

Aspidiotus Rossi.

Asp. ficus.

Asp. destructor.

Asp. setiger, sp. nov.

Diaspis amygdali.

Parlatoria proteus,

var. *virescens*, var. nov.

Parl. zizyphi.

Mytilaspis Crawii,

var. *canaliculata*, var. nov.

Chionaspis theæ.

Chion. eugeniæ.

Fiorinia camelliæ, var. *minor*, var. nov.

Ceroplastes rubens, var. *minor*, var. nov.

Eriochiton cajani.

Mallophora sinensis, sp. n.

Dactylopius ceriferus.

Monophlebus Burmeisteri.

Wellington, New Zealand:

July 20th, 1897.



Maskell, William Miles. 1897. "On a collection of Coccidae, principally from China and Japan." *The Entomologist's monthly magazine* 33, 239–244.

<https://doi.org/10.5962/bhl.part.18316>.

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