NOTES ON HIPPOBOSCIDEA

6.—A PRELIMINARY ACCOUNT OF THE SPECIES KNOWN FROM CHILE

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In the *Revista Chilena de Historia Natural* for 1904 (vol. VIII, Pp. 149-153), the late Dr. E. C. Reed gave an interesting account of the Pupipara of Chile, in which he recorded two species of Hippoboscidae. More recently, in the same *Revista* for 1931 (vol. XXXV, Pp. 102-103), Dr. Edw. P. Reed added one more species to the list. Having received some of these flies from Dr. Edw. P. Reed, I have compiled the following account, in which I am able to list eight Chilean species. A few of the names, however, may be in need of correction. In order to induce further additions, I include a key to the South American genera and some general notes for the guidance of local entomologists.

South American Genera of Hippoboscidae

1. Wings absent or non-functional (either reduced to a basal stump or very narrow.. 2
   Wings functional, broad and of normal shape..... 4
2. Without even traces of wings and without halteres. Claws seemingly bidentate. Ocelli absent..... *Melophagus.*
   Wings represented by basal stumps or very narrow. Halteres present..... 3
3. Wings represented by basal stumps (remnants of the complete wings of freshly hatched flies). Claws seemingly bidentate. Ocelli present.. .. .. *Lipoptena.*
   Wings long, very narrow and pointed. Claws seemingly tridentate. Ocelli absent..... ..... *Crataerina.*
4. A closed anal cell; three cross-veins present in the wing..... 5
   Anal cell open; the posterior basal cross-vein (Cu_2) absent..... 10
5. Third longitudinal vein (R4+5) confluent with the costa over its apical portion. Ocelli present. Claws seemingly bidentate..... .... *Ornithoica.*
   Third longitudinal vein not confluent and ending in the costa at a distinct angle. Claws seemingly tridentate..... 6

6. Ocelli absent 7
Ocelli present 8
7. Anterior basal cross-vein (m-cu or M_3) about midway between the anterior cross-vein (r-m) and the posterior basal cross-vein (Cu_2). A conspicuous twoheaded pleurotergal process on each side of the scutellum .... *Stilbometopa.*
Anterior basal cross-vein placed close to the anterior cross-vein. Pleurotergal process on each side of scutellum small and inconspicuous ..... *Pseudornithomyia*
8. Antennal processes small, narrow, without outer rim, divergent and curved downward ..... *Ornithomyia.*
Antennal processes broad, leaf-like 9
9. Antennal processes straight, blunt at tips, more than twice as long as broad and two-thirds the length of the head, placed parallel to each other ..... *Ornithopertha.*
Antennal processes concave, with pointed tips, not over one-half the length of the head ..... *Ornithoctona.*
10. Only three distinct lontitudinal veins behind the costa, and one long, oblique cross-vein. (Wing eventually breaking off near base). Ocelli present. Claws seemingly bidentate ..... *Lipoptena.*
With five or six distinct longitudinal veins. (Wing persistent). Claws seemingly tridentate 11
11. Posterior basal cell at least partly closed; two cross-veins present in the wing 12
Posterior basal cell open; wing with only one cross-vein (the anterior cross-vein, r-m). Ocelli absent. .. 13
12. Scutellum with straight hind margin and square lateral angles. Ocelli absent ..... *Pseudolynchia.*
Scutellum convex or truncate behind, with broadly rounded lateral angles. Ocelli very small or vestigial .. *Microlynchia.*
13. Face about evenly divided by the ptilinal suture, the long lower portion (fronto-clypeus) touching the long vertical plate (postvertex) ..... *Olfersia.*
Lower portion of face (fronto-clypeus; below the ptilinal suture) much shorter than the upper portion; vertical plate (postvertex) also short; the two separated by a long mediovertex ..... *Lynchia.*

I divide the family Hippoboscidae into six subfamilies: 1) Alloboscinae (one genus, on lemurs, in Madagascar); 2) Hippoboscinae (one genus in the Old World); 3) Melophaginae (cosmopolitan, with three genera); 4) Ornithomyinae (cosmopolitan, with thirteen genera); 5) Ornithoicinae (cosmopolitan, with one genus); 6) Ortholfersiinae (one genus, on kangaroos, in Australia and Tasmania).

In the following discussion, the species definitely known to occur in Chile are numbered consecutively.

Subfamily Melophaginae

1. *Melophagus ovinus* (Linnaeus). This common parasite of domestic sheep has been carried from its Old World home

over the entire Earth. E. C. Reed (1904, *loc cit.* p. 151) records it from Chile under the erroneous name *Melophagus ovis*. It is also known from Colombia, Ecuador, Perú and Bolivia. *Melophagus ovinus bolivianus* Bau (1930), Stettin. Ent. Ent. Zeitg., XCI, pt. 2, p. 176), from Oruro, Bolivia, differs in no way from typical *M. ovinus*, as shown by two epecimens sent by Bau to Prof. G. F. Ferris.

Lipoptena comprises four American species. One of these, *L. mazamae* Rondani, is a common parasite of various species or races of Deer (*Odocoileus*) and Brocket (*Mazama*) throughout Central and South America. I have seen it from Bolivia and Paraguay, and it is known also from Chaco de Santiago del Estero, Argentina.

Subfamily Ornithomyiinae

2. *Ornithomyia paricella* Speiser, 1905, Zeitschr. Syst. Hym. Dipt., V., p. 349; new name for *Ornithomyia chilensis* E. C. Reed, 1904, Rev. Chilena Hist. Nat., VIII, p. 152 (not of Guérin, 1835; nor of Macquart, 1843). E. C. Reed described the species from Concepción, where it was found on *Diuca grisea* (Lesson). Speiser saw three specimens sent from Concepción by P. Herbst; one was taken on *Diuca grisea*, the other on *Muscisaxicola macloviana* Garnot. In his recent paper, Dr. Edw. P. Reed gives the following host list in Chile: *Diuca grisea* (Lesson), *Agriornis livida* (Kittlitz), *Turdus magellanicus* King, *Glaucidium nanum* (King) and *Mimus thenca* (Molina). He cites no definite localities, but two specimens, which he kindly sent me, came from the vicinity of Valparaíso. As pointed out by Speiser, *O. paricella* is a close relative of *O. anchineuria*, with which it agrees in size and in the details of the wing venation. It is distinguished by its general dark, blackish body color and more smoky wings, by the rather wide frons (fully twice as wide as an eye), by the long and abundant pilosity, and by the scutellum bearing a row of from four to six preapical bristles.

3. *Ornithomyia anchineuria* Speiser, 1905, Zeitschr. Syst. Hym. Dipt., V. p. 348; new name for *Ornithomyia pallida* Say, 1823, Journ. Ac. Nat. Sci. Philadelphia, III, p. 103 (not of Latreille, 1812). This common North American species also occurs in Chile, as shown by a specimen sent by Dr. Edw. P. Reed, who found it on *Turdus falklandicus* Quoy and Gaimard, near Valparaíso. It differs from *O. paricella* in the much paler general color and wings, the narrower frons (only slightly over one and one-half times as wide as an eye), the much sparser pilosity, and the scutellum bearing a row

of only two to four preapical bristles. In general appearance it resembles *Ornithoica confluenta*, from which it is readily differentiated by the wing venation and the claws.

Falcoz (1930, Encyclop. Entom., B., Diptera, V. for 1929, p. 32) reports with a query from Chile a specimen supposedly of *Ornithomyia avicularia* (Linnaeus), the common bird parasite of Europe. This record is almost certainly erroneous, and must refer to one or the other of the foregoing two species.

4. *Ornithoctona erythrocephala* (Leach). A widely distributed American parasite of different birds, extending from Canadá to Argentina. Falcoz (1930, *loc. cit.*, p. 39) lists under this name a specimen, at the Paris Museum, from Valparaíso (collected by d'Orbigny). The identification is open to doubt, since Falcoz unites as one species *O. erythrocephala* (Leach), *O. bellardiana* (Rondani) and *O. haitiensis* (Bigot), which, although closely allied, are in my opinion three distinct species, separable on structural characters. In any case, since *O. erythrocephala* and its near relatives are among the larger species of the genus, reaching 7.5 to 9 mm. in total length, with a wing length of 9 to 10 mm., the Valparaíso fly could hardly have been the *Ornithomyia chilensis* described by Guérin and Macquart and listed below.

5. *Ornithoctona chilensis* (Guérin) (Syn: *Ornithomyia chilensis* Guérin, 1835, Iconogr. Règne Animal, Insectes, Atlas, Pl. CIV, fig. 5; 1844, Ibidem, Text., p. 556 (as *O. chilensis*); Macquart, 1843, Mém. Soc. Sci. Lille, (1842), p. 437; 1843, Dipt. Exot., II, pt. 3, p. 280). Guérin's description is very brief: «Tête et corselet d'un jaune fauve, lisses et luisants, Abdomen d'un jaune d'ocre, très-velu. Ailes transparentes. á nervures noires près de la côte et jaunes ensuite. Pattes testacées, avec le bord supérieur des quatre cuisses antérieures et des six jambes brun. Tarses jaunâtres, á extrémité des articles brune et á crochets noirs. L. 5½ mill.—Hab. le Chili». The figure seems to indicate a species of *Orbithoctona* and Speiser (1905, Zeitschr. Syst. Hym. Dipt., V. p. 348), regards *O. chilensis* Guérin as indentical with *Ornithoctona fusciventris* (Wiedemann). Since Wiedemann's *fusciventris* was described from North America, it will be safer to await the rediscovery of *O. chilensis* Guérin in Chile before settling its identity. Macquart's *Ornithomyia chilensis*, although described as a new species, appears to have been based upon a specimen of Guérin's species. His description reads: «Picea. Pedibus flavidis. Long. 2.1. (two lines = 4½ mm.). D'un noir de poix. Pieds jaunâtres. Du Chili. Communiqué par M. Guérin, et provenant du voyage de «*La Coquille*». Since the French Expedition of

La Coquille visited the Bay of Talcahuano and Concepción, *O. chilensis* should be looked for in that vicinity.

6. *Olfersia bisulcata* Macquart, 1847, Mém. Soc. Sci. Lille, (1846), p. 111, Pl. V. fig. 12; 1847, Dipt. Exot., Suppl. II, p. 95, Pl. VI, fig. 12. (Syn: *Olfersia vulturis* van der Wulp, 1903). This was originally described without host from Chile and Macquart's type is in Bigot's collection, now the property of Mr. J. E. Collin. From detailed information recently received from Mr. Collin, *O. bisulcata* is the common Central and South American species described by van der Wulp as *O. vulturis*. The usual hosts of this fly are the South American Vultures, *Catharista urubu* (Vieillot), *Gypagus papa* (Linnaeus) and *Cathartes aura* (Linnaeus); but there are also records from Turkey Buzzard, smaller Hawks and Condor.

7. *Olfersia fossulata* Macquart. I have received for study, from the París Museum, a specimen of this species labelled «Santiago, Chile (Porter)». It is the fly erroneously referred by Falcoz (1930, *loc. cit.*, p. 47) to *Olfersia diomedeae* Coquillett. *O. fossulata* is quite common along the coast of Peru, especially on the guano islands, where its main hosts are the Guanay, *Phalacrocorax bougainvillei* (Lesson), the Gull, *Larus belcheri* Bigors, the White Gannet, *Sula variegata* (Tschudi), and the Pelican, *Pelecanus thagus* Molina.

Undoubtedly other species of *Olfersia* will be found in Chile.

Crataerina contains peculiar parasites of swifts and swallows, especially of the Old World. *Crataerina seguyi* Falcoz (1930, *loc. cit.*, p. 53, fig. 8), was recently described from Arequipa, Perú. I have seen it from Bogotá, Colombia, and from Tunuyan (Mendoza), Argentina. It undoubtedly occurs in Chile also.

Stilbometopa is strictly an American genus. One of the four species is fairly common on wild pigeons in Brazil and British Guiana.

Pseudornithomyia contains only one species, known thus far from Brazil only, where it was found on a wild pigeon, *Leptoptila* (or *Peristera*) *rufaxilla* (Richard and Bernard), and on swallows («andorinhas»).

Ornithopertha is known from various kinds of birds in Central America and Venezuela.

Pseudolynchia maura (Bigot), better known as *Lynchia maura* (Bigot), is the common bird-fly of domestic pigeons, now almost cosmopolitan and certain to occur at least in northern Chile. I regard *Olfersia lividicolor* Bigot as a synonym of *P. maura*. A second species, *Pseudolynchia brunnea* (Latrei-

lle), should be looked for in Chile on night-hawks, since I have seen it from Argentina.

Microlynchia pusilla (Speiser) has been reported from several states in Brazil, being found perhaps most often on wild and domestic pigeons. It is much smaller than *P. maura*.

Lynchia (Syn: *Ornithoponus* and *Icosta*) contains about a dozen American species, some being common parasites of wading birds, others preferring birds of prey. Two at least *L. palustris* (Lutz, Neiva and da Costa Lima) and *L. nigra* (Perty), should be found in Chile.

Subfamily Ornithoicinae

8. *Ornithoica confluenta* (Say) (Syn.: *Ornithoica promiscua* Ferris and Cole). This common North American species, which is found on many different birds, was taken by Dr. Edw. P. Reed (*loc. cit.*) in Chile, probably in the vicinity of Valparaíso. The host was not mentioned by him and I have seen no Chilean specimens. Since the identification was confirmed by Dr. J. M. Aldrich, the accuracy of the record cannot be questioned. I have called attention above to the superficial resemblance of this fly to *Ornithomyia anchineuria*. In South America, *O. confluenta* has also been reported from Panamá, Jamaica, Cuba and Brazil.