

Bulletin of the British Museum (Natural History)

Darwin's Insects

Charles Darwin's Entomological Notes

Kenneth G. V. Smith (Editor)

Historical series Vol 14 No 1 24 September 1987

The *Bulletin of the British Museum (Natural History)*, instituted in 1949, is issued in four scientific series, Botany, Entomology, Geology (incorporating Mineralogy) and Zoology, and an Historical series.

Papers in the *Bulletin* are primarily the results of research carried out on the unique and ever-growing collections of the Museum, both by the scientific staff of the Museum and by specialists from elsewhere who make use of the Museum's resources. Many of the papers are works of reference that will remain indispensable for years to come.

Parts are published at irregular intervals as they become ready, each is complete in itself, available separately, and individually priced. Volumes contain about 300 pages and several volumes may appear within a calendar year. Subscriptions may be placed for one or more of the series on either an Annual or Per Volume basis. Prices vary according to the contents of the individual parts. Orders and enquiries should be sent to:

Publications Sales,
British Museum (Natural History),
Cromwell Road,
London SW7 5BD,
England.

World List abbreviation: *Bull. Br. Mus. nat. Hist.* (hist. Ser.)

© British Museum (Natural History), 1987

ISSN 0068-2306
ISBN 0565 09003 8

British Museum (Natural History)
Cromwell Road
London SW7 5BD

Historical series
Vol 14 No. 1 pp 1-141

Issued 24 September 1987

To Gordon R. Chancellor
with compliments,
Kenneth G. V. Smith

Darwin's Insects

Charles Darwin's Entomological Notes,
with an introduction and comments by

Kenneth G. V. Smith

Department of Entomology
British Museum (Natural History), London SW7 5BD

To
Richard Broke Freeman
(1915–1986)

*'No branch of natural science
has more fully felt the
beneficial impulse and
stimulus of Darwin's labors
than entomology'*

C. V. Riley, 1883

Contents

Synopsis	4
Introduction	5
Darwin's British Insects	7
Entomology on the <i>Beagle</i> voyage	12
Darwin's Insects in the British Museum (Natural History)	20
Darwin's Insects in the University Museum of Zoology, Cambridge	24
Darwin's Insects in the Hope Entomological Collections, University Museum, Oxford	29
Darwin's Insects in the National Museum of Ireland, Dublin	30
Darwin's Insects at Down House and elsewhere	35
Darwin's Insect Notes	39
Eponyms	106
Acknowledgements	112
Notes	113
References	115
Geographical and Name Index	125
Scientific Index	129

Synopsis

The insects collected by Charles Darwin, both on the *Beagle* voyage and in the United Kingdom, are discussed and their present location indicated. Comments are made on these specimens within the framework of Darwin's entomological notes preserved in London (*Insect Notes*) and in Cambridge (*Insects in Spirits of Wine*) published here for the first time. These comments include identification of the insects with published descriptions to date and also present new information on unrecorded material, including new records for the Galapagos Islands and South America. There is some discussion of more general topics including the possibility of insect transmitted Chagas' disease as a cause of Darwin's ill health (see *Insect Notes*, 2913, 3423). A full list of entomological eponyms formed from Darwin's name is given, along with an extensive bibliography.

Introduction

Charles Darwin's interest in entomology began in childhood. In his autobiographical notes (see Darwin, F., 1887, Vol. 1: 34) he wrote:

I must have observed insects with some little care, for when ten years old (1819) I went for three weeks to Plas Edwards on the sea coast in Wales, I was very much interested and surprised at seeing a large black and scarlet Hemipterous insect, many moths (*Zygaena*), and a *Cicindela* which are not found in Shropshire. I almost made up my mind to begin collecting all the insects which I could find dead, for on consulting my sister I concluded that it was not right to kill insects for the sake of making a collection.

Elsewhere (p. 51) in the autobiography however he says:

I was introduced to entomology by my second cousin, W. Darwin Fox, a clever and most pleasant man, who was then at Christ's College. . .

Darwin spent much of his spare time at Cambridge (1828–31) collecting beetles with William Fox, Leonard Jenyns, Albert Way and H. Thompson.¹ He would also press others into service of 'the science' as he called it so that John Herbert² recalled (Darwin, F., 1887, Vol. 1: 168):

and very soon he armed me with a bottle of alcohol, in which I had to drop any beetle which struck me as not of a common kind.

His summer vacations were given up to 'collecting beetles, to some reading, and short tours'. He visited the Reverend F.W. Hope³ who was later to establish the Chair of Entomology at Oxford with J.O. Westwood⁴ as the first Hope Professor. Hope had a high opinion of Darwin's entomological ability and in July 1829 the two men went on a collecting trip in North Wales.

Darwin's most important contact at Cambridge was Professor J.S. Henslow⁵ who not only broadened his whole approach to natural history, including entomology, but was instrumental in securing his appointment as naturalist on the *Beagle* voyage.

While entomology was not the major preoccupation of the *Beagle* voyage some of the captures and observations were important and played their part in the formulation of his later theories (in contrast to his well-known comment to Lyell in 1863 (Darwin, F., 1887, Vol. 3: 69) that 'entomologists are enough to keep the subject back for half a century'—my italics).

Darwin's contributions to entomology have been briefly assessed by Riley (1883), Poulton (1901), Carpenter (1935, 1936) and Remington & Remington (1961). Freeman (1977) provides a bibliography to Darwin's publications in book form and Barrett (1977) reprints Darwin's contributions to serial publications. Kritsky (1981) gives a brief survey of Darwin's entomological work and includes a useful index to more than 1600 text references to insects contained in Darwin's published works, though mostly in American editions.

The present work indicates the sources of information of Darwin's contributions to entomology and attempts to locate and comment upon the insect specimens collected by Charles Darwin especially during the voyage of the *Beagle*. The *Beagle* material is identified within the framework of Darwin's entomological notes preserved in the British Museum (Natural History) (*Insect Notes*), at the University of Cambridge (*Insects in Spirits of Wine*) and at Down House (the original *Notebooks*). The *Zoological Diary*, preserved in the University of Cambridge, also contains

entomological notes which are quoted where they are cited in the *Insect Notes* and not already published in the *Journal* (Darwin, C., 1845).

Information (see Notes, p. 113) is also given on entomologists and others who collected insect specimens for Darwin or were otherwise involved in his entomological work.

Darwin's British Insects

Darwin was a fanatical beetle collector and in his *Autobiography* (Darwin, F., 1887; Vol. 1: 50) he says:

But no pursuit at Cambridge was followed with nearly so much eagerness or gave me so much pleasure as collecting beetles. It was the mere passion for collecting; for I did not dissect them, and rarely compared their external characters with published descriptions, but got them named anyhow. I will give a proof of my zeal: one day, on tearing off some old bark, I saw two rare beetles, and seized one in each hand; then I saw a third and new kind, which I could not bear to lose, so that I popped the one which I held in my right hand into my mouth. Alas! it ejected some intensely acrid fluid, which burnt my tongue so that I was forced to spit the beetle out, which was lost, as was the third one.

He was always searching for new collecting methods and was very proud when his first records appeared in print and goes on to say:

I was very successful in collecting and inventing two new methods; I employed a labourer to scrape during the winter, moss off old trees and place it in a large bag, and likewise to collect the rubbish at the bottom of the barges in which reeds are brought from the fens, and thus I got some very rare species. No poet ever felt more delighted at seeing his first poem published than I did at seeing, in Stephen's 'Illustrations of British Insects', the magic words "captured by C. Darwin, Esq."

In Stephens, *Illustrations of British Entomology* (1827–45) the following records (given in quotes by Stephens) are attributed to 'C. Darwin Esq.'. There are several references to these records in the literature but they do not appear to have been listed before. Since in effect they constitute Darwin's first publication (Freeman, 1977: 19) they are listed here with Darwin's original data in large type and (where necessary) equivalent modern nomenclature and comments set below in small type.

Mandibulata vol. 2 (Appendix) (15 June 1829)

[Coleoptera] Carabidae

- p. 188. *Ocys tempestivus* Panzer 'Cambridge'

[*Trechus quadristriatus* (Schränk)]. Common in dry open country.

- p. 191. *Blethisa multipunctata* L. 'In great abundance near Cambridge in 1829'

A widely distributed but local species usually in open marshy places at the edges of ponds. It is recorded from the Cambridgeshire Fens (Donisthorpe, 1904).

[Col. Haliplidae]

- p. 191. *Haliphus elevatus* Panzer 'Near Cambridge, 1829'

[*Brychius elevatus* Panzer)]. Common (less so in the north) in running water.

[Col. Dytiscidae]

- p. 191. *Hygrotus scitulus* Spence ms., 'Near Cambridge'

[*Hydroporus lepidus* Olivier]. Widespread in any kind of clear water.

- p. 192. *Hydroporus areolatus* Duftschmid 'Cambridge'.

[*Scarodytes halensis* (Fabricius)]. South-east and Eastern England in gravel pits, marsh drains etc.

- p. 194. *Colymbetes pulverosus* Stephens 'In profusion near Cambridge'
[*Rhantus suturalis* (Macleay)]. Common in Southern Britain; usually in stagnant or slow-flowing water such as canals.
- p. 194. *Colymbetes notatus* F. 'In abundance near Cambridge'
[*Rhantus frontalis* (Marsham)]. Scattered distribution in England and Ireland; in fresh and peaty water pools.
- p. 194. *Colymbetes exoletus* Forster. 'Abundantly near Cambridge'
[*Rhantus exoletus* (Forster)]. Common in England, Scotland and Ireland.
- p. 194. *Colymbetes agilis* F. 'In profusion near Cambridge in 1829'
[Transferred by Stephens (1829 appendix p. 194) to *adpersus* F. but referable to *Rhantus bistriatus* Bergstrasser (Balfour-Browne, 1950: 237)]. Commoner in the north than in the south and a coastal species in Ireland; mainly in acid water.
- p. 194. *Colymbetes adpersus* F. 'Plentiful near Cambridge in 1829'
[May be *Rhantus aberratus* Gemminger & Van Harold but see previous entry]. The true *adpersus* F. was known as a fen species in East Anglia up to 1829, then it disappeared until one specimen was found in 1904.
- p. 195. *Hydaticus hybneri* F. 'Near Cambridge, 1829'
[*Hydaticus seminiger* (Degeer)]. Scattered distribution in England as far north as Yorkshire, mostly in fens in the east of England.
- p. 195. *Dytiscus (Leionotus) conformis* Kuntze 'Near Cambridge, not rare, 1829'
[*Dytiscus marginalis* L.]. For discussion of Kirby's genus *Leionotus* and Stephens' acceptance of it see Balfour-Browne, 1950: 266, 271 (see also *Insect Notes*, entries 1324, 1325). Common in stagnant water.

Mandibulata vol. 3 (1830)

[Col., Leioididae]

- p. 7. *Ptomaphagus anisotomoides* Spence 'Shropshire'
[*Nargus anisotomoides* (Spence)]. Found among dead leaves, moss, etc.
- p. 7. *Ptomaphagus wilkini* Spence 'Salop'
[*Nargus wilkini* (Spence)]. Found among dead leaves, moss, etc.
- p. 9. *Catops sericeus* Paykull 'Cambridge and Salop'
[*Ptomaphagus medius* Rey]. Found among dead leaves, moss and small carcasses.
- p. 14. *Choleva angustata* F. 'North Wales'
[*Choleva angustata* (Fabricius)]. Found in plant refuse generally. Fairly common, though local, among dead leaves, moss, etc.
- p. 14. *Choleva agilis* Illiger 'North Wales'
[*Choleva agilis* (Illiger)]. Fairly common among dead leaves, etc., especially in the south of England.

[Col., Silphidae]

- p. 19. *Necrophorus interruptus* Stephens 'Found with the preceeding [vestigator] but occurs much less frequently.' This record 'Rev. L. Jenyns and C. Darwin Esq.'
[*Necrophorus*]. Uncommon, southern counties of England in carcasses.

[Col., Nitidulidae]

- p. 33. *Nitidula punctatissima* Illiger 'Shropshire'
[*Soronia punctatissima* (Illiger)]. A rare species found at sap in or near larval burrows of the goat moth.
- p. 38. *Nitidula obsoleta* Illiger 'Cambridgeshire and North Wales'
[*Eपुरaea biguttata* (Thunberg)]. This genus is found at sap, under bark and in fungi.
- p. 41. *Nitidula limbata* F. 'North Wales'
[*Eपुरaea limbata* (Fabricius)]. See previous species.

[Col., Cryptophagidae]

- p. 79. *Cryptophagus typhae* Gyll. 'Cambridgeshire and North Wales'
[*Telmatophilus typhae* (Fallén)]. Beetles of this genus are found on *Typha* and other water plants.

[Col., Silvanidae]

- p. 104. *Crypta bipunctata* F. 'Near Cambridge'
[*Psammoeus bipunctatus* (Fabricius)]. Local but not uncommon in marshy places in the south on reeds and rushes and in litter beneath.

[Col., Histeridae]

- p. 154. *Hister quadristriatus* Paykull 'Barmouth' 'Rev F. W. Hope and C. Darwin, Esq.'
[*Hypocaccus rugiceps* (Duftschmid)]. Rare, in dung and carrion on sand-hills near the coast.

[Col., Geotrupidae]

- p. 182. *Geotrupes laevis* Haw. 'Barmouth and North Wales' 'Rev F. W. Hope and C. Darwin, Esq.'
[*Geotrupes vernalis* L.]. Local, though of wide distribution. Occurs in decaying fungi.

[Col., Buprestidae]

- p. 242. *Trachys pygmaea* F. 'Cambridge'
[*Trachys troglodytes* Gyllenhall]. Widespread in damp, grassy places and sphagnum bogs; can be swept from *Succisa pratensis* Moench, the larval host-plant and hibernates as an adult in *Sphagnum* moss.

[Col., Elateridae]

- p. 266. *Ctenicerus cupreus* F. Stephens says:
females generally rare; at least fifty males to one female having usually occurred; but in August, 1829, out of scores of specimens now under my inspection captured by the Rev F. W. Hope and C. Darwin, Esq., in North Wales, scarcely a single male was observed.
[*Ctenicera cuprea* (Fabricius)]. A species with a generally northern distribution.
- p. 278. *Campylus linearis* L. 'Woods near Cambridge'
[*Denticollis linearis* (L.)]. Fairly widely distributed but local; a woodland species.

Mandibulata vol. 4 (1831)

[Col., Curculionidae]

- p. 117. *Otiorynchus atroapterus* Degeer 'Barmouth' 'Rev F. W. Hope and C. Darwin, Esq.'
[*Otiorynchus atroapterus* (Degeer)]. Local in sandy places on coast among grass, etc.

[Col., Chrysomelidae]

- p. 274. *Donacia nigra* F. 'Near Cambridge'
[*Donacia braccata* Scopoli]. Local in the south and East Anglia, usually near the coast.

Haustellata vol. 2 (appendix) (1 June 1829).

[Lep., Noctuidae]

- p. 200. *Graphiphora plecta* L. 'Cambridge'
[*Ochropleura plecta* (Linnaeus)]. The flame shoulder moth. Common and generally distributed throughout England, Ireland and the mainland of Scotland.

The Stephens collection is in the British Museum (Natural History) (see Hammond, 1972) but contains no Darwin specimens and only a few have been found in Cambridge. Darwin's records were later repeated without his name appended (Stephens, 1839).

There are comments on Darwin's collecting of beetles in Cambridgeshire in *The natural history of Wicken Fen* (Gardiner & Tansley, 1923–32). In that work Omer Cooper, Perkins & Tottenham record that:

Darwin gave many records and specimens to Babington Jenyns, and Stephens, whose publication of them in his 'Illustrations' afforded him much gratification.

Of Babington they say:

amassed a remarkably fine collection, but the localities are loosely recorded; in his collection, which is preserved in the University Museum, are specimens collected by Charles Darwin.

Of Jenyns, an intimate friend of Darwin's, they say:

His collection of insects with an excellent manuscript of localities was presented to the Cambridge Philosophical Society in 1865, when he removed from the district.

They list 14 species of Carabidae collected by Darwin (*teste* Jenyns) and these are included in an assessment of the decline of certain species and the increase of others in Wicken Fen since 1834. The full list of Darwin species follows in alphabetical order of genera with modern equivalent nomenclature given in brackets where necessary: *Acupalpus luridus* Dejean (= *A. flavicollis* Sturm), *Amara lucidae* (Duft.), *A. plebeia* (Gyll.), *Auchomenus atratus* Duft. (= *Agonum nigrum* Dej.), *Bembidion adustum* Schaum. (= *B. semipunctatum* Donovan), *Chlaenius nigricornis* F., *Harpalus puncticollis* (Payk.), *H. punctatulus* (Duft.), *H. rubripes* (Duft.), *Pterostichus inaequalis* MshM (= *P. longicollis* Duft.), *P. picimanus* (Duft.) (= *P. macer* MshM), *Stenolophus teutonius* (Schränk), *S. vespertinus* Panz. (= *S. mixtus* Herbst.). They also list *Elaphrus uliginosus* F. as *teste* Stephens, though this does not appear in Stephens' *Illustrations of British Entomology*.

Another very rare carabid capture of Darwin's (though not mentioned by Omer Cooper *et al.*) is that of *Chlaenius tristis* Scheller (as *C. holosericeus* F.). Donisthorpe (1904) records that Darwin found this species near Cambridge. Lindroth (1974) says of it:

on lake-shores with clayish soil and rich vegetation; often associated with *Blethisa*.—
England: Huntingdon, Cambridge. Wales (doubtful). Ireland. Only old records, possibly extinct.

References to other captures of British beetles are made in the *Life and Letters* (Darwin, F., 1887, Vol. 1: 51) including the very local *Penagaenus cruxmajor* (L.) (Carabidae) which Darwin captured in Cambridge. Donisthorpe (1904) says it occurs sparingly at Wicken and other fens under sedge refuse and Lindroth (1974), whom I have followed for most of my comments on Carabidae, notes it as a local species in England up to Yorkshire and from Glamorgan and Ireland.

Francis Darwin (1887, Vol. 2: 140) also records how his father 'revived old knowledge of beetles' in helping his boys in their collecting. He sent a short notice to the *Entomologist's Weekly Intelligencer* 25 June 1859, recording the capture of *Licinus silphoides* [= *Licinus punctatulus* F., Carabidae], *Clytus mysticus* [= *Anaglyptus mysticus* L., Cerambycidae] and *Panagaenus 4-pustulatus* [= *P. bipustulatus* F., Carabidae]. The notice begins with the words 'We are three very young collectors having lately taken in the Parish of Down, &C.', and is signed by three of his boys, but was clearly not written by them (see Darwin, Darwin & Darwin, 1859). The species concerned are all rather local and uncommon.

On the same page of the *Life and Letters*, in a letter to W.D. Fox, 13 November 1858, Darwin mentions captures of '*Brachinus crepitans*' (Carabidae) and '*Licinus*' (Carabidae) by his third boy [Francis].

The two separate storeboxes of beetles, one at Down House (Figs 7–8) and one at Cambridge (Figs 5–6), are commented on in the appropriate sections, but it can be assumed that some of his other British beetles are scattered throughout the British collection at the Cambridge University Museum of Zoology. Some Darwin specimens 'ex coll. Jenyns' have been traced in the collection but none of those listed in Babington's notebook.

Between the years 1854 and 1861 Darwin was helped by five or six of his children in observations on the flight routes of male humble-bees (*Bombus hortorum* L., *B. pratorum* L. and *B. lycorum* L.). These were never written up for publication in England though a précis was published in Germany along with some of his shorter works by Ernst Krause (see Darwin, C., 1885-86). The original notes have since been published (in English) by Freeman (1968).

In 1980 Richard Treadwell brought into the British Museum (Natural History) a box of microscopical preparations on slides which he claimed had once belonged to Charles Darwin. The box of slides was given to Mr Treadwell by a Miss Dorothea Flower who lived with his great-aunt Mrs Emmerson. Miss Flower told Mr Treadwell that the collection had belonged to Darwin and that 'some were prepared by Charles Darwin'. The slides were mostly typical professionally prepared Victorian slides largely of insect parts, some labelled 'Stanley. Optician, Railway Approach, London Bridge'. Some slides however were obviously 'amateur' preparations. Two of mites bore handwritten labels 'Acari from a partridge' and 'Acarus vegetans'. Photocopies of the labels were sent to P.J. Gautrey and his colleagues at Cambridge who concluded that the handwriting did not match that of Darwin or Syms Covington (his assistant), or Fletcher or Norman, two schoolmasters at Downe who transcribed for Darwin.

Miss Flower died about 1970 having lived at Hurtwood Cottage, Holmbury St Mary, near Dorking since before the Second World War. The house had been owned by her father. He had been a judge and had retired to live in Holmbury just before the war and died sometime between 1940 and 1946. Before moving to Holmbury the family lived in London. I have been unable to trace any connection with Sir William Henry Flower, sometime Director of the British Museum (Natural History) and a friend of Darwin's and the precise history of these slides must remain untold though there is no reason to doubt Mr Treadwell's story.

Mention of British (and other) insects in Darwin's published writings are listed in Kritsky (1981) and his shorter contributions to the serial literature are reprinted in full by Barrett (1977).

Entomology on the *Beagle* voyage

On the *Beagle* voyage entomology took its place with the collection of other animals and plants and all were secondary to geology. Darwin was particularly interested in collecting the smaller, less known, species of insects and wrote to Henslow from Rio de Janeiro on 18 May 1832 (see Barlow, 1967: 55)

I am now collecting fresh-water & land animals: if what was told me in London is true viz that there are no small insects in the collections from the Tropics.—I tell Entomologists to look out & have their pens ready for describing.—I have taken as minute (if not more so) as in England, Hydropori, Hygroti, Hydrobii, Pselaphi, Staphylini, Curculio, Bembididous insects etc etc.—It is exceedingly interesting observing the difference of genera & species from those which I know, it is however much less than I expected.

Later he wrote again to Henslow from Valparaiso in March 1835 (see Barlow, 1967: 101):

In Zoology I have done but very little; excepting a large collection of minute Diptera & Hymenoptera from Chiloe. I took in one day, Pselaphus, Anaspis, Latridius [*sic*], Leiodes, Cercyon & Elmis & two beautiful true Carabi; I might almost have fancied myself collecting in England.

Collecting methods

Most of the collecting was almost certainly done by Darwin and his servant Syms Covington⁶ (Fig. 1) together. It was Captain FitzRoy's⁷ rule that no one went ashore alone and since Covington was in Darwin's pay he was virtually with him at all times (though rarely mentioned by name, see *Journal* (Darwin, 1845: 52)) without inconvenience to the ship's company. It is probable that some of the collections were made entirely by Syms Covington especially towards the end of the voyage, though only once is this evident from the *Insect Notes* (see entry 3528). Darwin also went ashore with other members of the ship's company, not always collecting (see Barlow, 1933) though the acting surgeon Benjamin Bynoe⁸ also made collections of plants and birds.

Sweeping with a net was probably the commonest method of collecting terrestrial insects and a special water net was employed for aquatic species (see *Insect Notes* entry 529). Larger, more robust, terrestrial insects were probably caught individually with 'fly-nippers' (see comments in *Insect Notes* entry 3). Advantage was taken of natural 'baits' especially dung, carrion, fungi, flowers and even the contents of spiders' webs (see *Insect Notes* entry 456). Many of his earlier methods of collecting such as bark stripping and moss-combing are also evident from entries in the *Insect Notes*. Specimens were also collected in pill-boxes or straight into alcohol (spirits of wine) and some of the more delicate insects such as Diptera were evidently pinned into store-boxes as is suggested in a letter to Henslow (Monte Video, 15 August 1832—see Barlow, 1967: 58):

—Also a good many small beetles in pill boxes: but it is not the best time of year for the latter.—As I have only 3/4 of a case of Diptera etc. I have not sent them.

Return and disposal of collections

During the voyage specimens were sent back to Henslow at Cambridge who had agreed to distribute the specimens to appropriate specialists. The following extract from Darwin's letters to

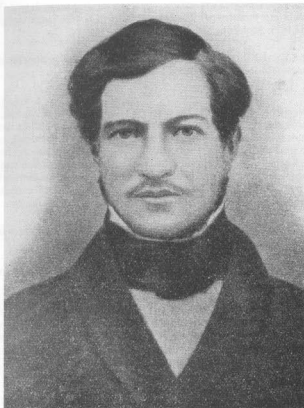


Fig. 1 Syms Covington (photograph by courtesy of Mr Brian Sirl).

Henslow (see Barlow, 1967) illustrate how this was effected and some of the considerations involved:

Rio de Janeiro, 16 June 1832 [In letter started 18 May]

I have determined not to send a box till we arrive at Monte Video—it is too great a loss of time both for carpenter and myself to pack up whilst in harbour.

Monte Video, 15 August 1832

I have sent home 4 bottles of animals in spirits I have three more, but would not send them till I had a fourth.—I shall be anxious to know how they fare—

E. Falkland Isd., March 1834

I have forgotten to mention, that for some time past and for the future, I will put a pencil cross on the pill boxes containing insects, as these alone will require being kept particularly dry, it may perhaps save you some trouble.

Valparaiso, March 1835

I shall be obliged to send away one more box; this will be the last, with which I shall trouble you. I am afraid so many boxes must have been very much in your way. I trust they may

turn out worth their storage. I will write again when this last cargo is sent. You ought to have received about a month since 2 boxes sent by H.M.S. Challenger & before that 2 casks & one jar by H.M.S. Samarang.

On his return to England Darwin was faced with the problem of getting his material identified and wrote to Henslow (Barlow, 1967: 119):

London, 30 October 1836

... I have scarcely met anyone who seems to wish to possess any of my specimens. ... I see it is quite unreasonable to hope for a minute, that any man will undertake the examination of a whole order.—It is clear the collectors so much outnumber the real naturalists, that the latter have no time to spare.—I do not even find that the collections care for receiving the unnamed specimens.—The Zoological Museum [of the Zoological Society] is nearly full & upward of a thousand specimens remain unmounted. I daresay the British Museum would receive them but I cannot feel, from all that I hear, any great respect even for the present state of that establishment.

He goes on to suggest that he stays in Cambridge where he would expect more help than in London and says:

Of the Naturalists F. Hope is out of London, Westwood I have not seen; so about my insects I know nothing.

Then, as now, competent taxonomists were too few and their work-load consequently too great to be able to cope quickly with large expedition collections. Thus, as with Captain Cook's and other famous expeditions, much of Darwin's material became dispersed among available and willing specialists. Darwin was more fortunate than most and the birds, mammals (including fossils), reptiles and fish received excellent treatment in the sumptuous *Zoology* (Darwin, 1838–43). The insects from the *Beagle* voyage have received considerable attention as the rest of this paper will show.

In the *Centenary History of the Entomological Society of London* (Neave *et al.*, 1933: 68–9) it is stated:

Hope announced his intention at the General Meeting on 5th July, 1841, to present his entire collection of British Crustacea to the Society. The next month saw the presentation by Darwin of the insects collected on the voyage of the *Beagle*, and it appears that on his return from his famous voyage, Darwin was much exercised in his mind as to the disposal of his collections. For some reason he was not anxious to present them to the National Collection at the British Museum, and portions of them were presented to this Society, and, as may be seen from the Centenary History of the Zoological Society of London, others were handed over to that body. As is well known, however, the more valuable portions of both these collections eventually reached the British Museum.

However, in the *Centenary History of the Zoological Society of London* (Mitchell, 1929: 104) it is recorded that Darwin decided against giving his specimens to the Museum of the Zoological Society.

Not all of Darwin's material reached the British Museum and some of the specimens that did were again dispersed to other specialists so that collections have been located in Cambridge, Oxford, Dublin and elsewhere. Material in the British Museum is considered first.

The localities in which insects were collected on the *Beagle* voyage are shown on the maps (Figs 2–4, 19) and an itinerary of the voyage is given here since this is not easily interpreted from the *Insect Notes*.

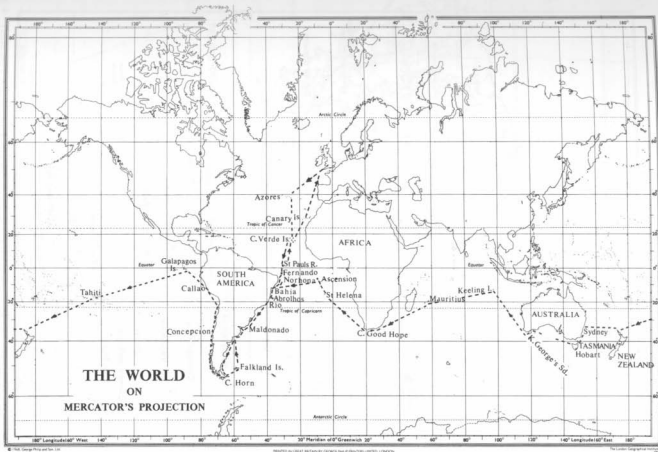


Fig. 2 Simplified route of the voyage of the *Beagle*.



Fig. 3 South America showing the localities mentioned in the *Insect Notes*.



Fig. 4 Tierra del Fuego showing localities mentioned in the *Insect Notes* and other items of Darwin interest.

Itinerary of the voyage of H.M.S. Beagle from Dec. 27, 1831 to Oct. 2, 1836
(After Barlow, 1967)

Left	Arrived	At sea	On land
Devonport, Dec. 27, 1831	Cape Verde Is., Jan. 18, 1832	21 days	21 days
C. Verde Is., Feb. 8, 1832	Bahia, Brazil, Feb. 28	20 days	19 days
Bahia, Brazil, Mar. 18	Rio de Janeiro, Apr. 5	18 days	91 days
Rio de Janeiro, Jul. 5	Monte Video, Jul. 26	21 days	24 days
Monte Video, Aug. 19	Bahia Blanca, Sept. 6	18 days	41 days
Bahia Blanca, Oct. 17	Monte Video, Nov. 2	16 days	24 days
Monte Video, Nov. 26	T. del Fuego, Dec. 16, 1832	20 days	72 days
T. del Fuego, Feb. 26, 1833	Falkland Is., Mar. 1	3 days	35 days
Falkland Is., Apr. 6	Maldonado (near Monte Video), Apr. 28	22 days	86 days
Maldonado, Jul. 23	Rio Negro, Aug. 3	11 days	122 days
Monte Video, Dec. 6	Port Desire, Dec. 23, 1833	17 days	12 days
Port Desire, Jan. 4, 1834	Port St Julien (110 miles south), Jan. 9	5 days	10 days
Port St Julien Jan. 19	Str. of Magellan (via Falkland Is.), Jan. 29	10 days	9 days
Str. of Magellan Mar. 7	Falkland Is., Mar. 10	3 days	28 days
Falkland Is., Apr. 7	Santa Cruz River, Apr. 13	6 days	29 days
Santa Cruz, May 12	Chiloe, Jun 28 (many landings in Straits)	47 days	15 days
Chiloe, Jul. 13	Valparaiso, Jul. 31	18 days	102 days
Valparaiso, Nov. 10 (Illness)	Chiloe, Nov. 21 1834	11 days	106 days
Chiloe, Feb. 4, 1835	Valdivia, Feb. 8	4 days	14 days
Valdivia, Feb. 22	Concepcion, Mar. 4 (Earthquake)	10 days	3 days
Concepcion, Mar. 7	Valparaiso, Mar. 11 (S. Jago)	4 days	117 days
Copiapó, Jul. 6	Iquiqui, Jul. 12	6 days	3 days

Left	Arrived	At sea	On land
Iquiqui, Jul. 15	Gallao, for Lima, Jul. 19	4 days	50 days
Gallao, Sept. 7	Galapagos, Sept. 16	9 days	34 days
Galapagos, Oct. 20	Tahiti, Nov. 15	26 days	11 days
Tahiti, Nov. 26	New Zealand, (Bay of Islands) Dec. 21	26 days	9 days
New Zealand, Dec. 30, 1835	Sydney, Jan. 12, 1836	13 days	18 days
Sydney, Jan. 30	Hobart, Tasmania, Feb. 2	3 days	15 days
Hobart, Feb. 17	St George's Sound, Australia, Mar. 3	14 days	11 days
St George's Sound, Mar. 14	Keeling I., Apr. 2	19 days	10 days
Keeling I., Apr. 12	Mauritius, Apr. 29	17 days	11 days
Mauritius, May 9	C. of Good Hope, May 31	22 days	18 days
C. of Good Hope, Jun. 18	St Helena, Jul. 7	19 days	7 days
St Helena, Jul. 14	Ascension, Jul. 19	5 days	4 days
Ascension, Jul. 23	Bahia, Brazil, Aug. 1	9 days	5 days
Bahia, Brazil, Aug. 6	Pernambuco, Aug. 12	6 days	5 days
Pernambuco, Aug. 17	Porto Praya, C. Verde Is., Sept. 4	18 days	16 days
Terceira, Azores, Sept. 20	Falmouth, Oct. 2, 1836	12 days	—

Paradiz (1981) treats the South American journeys in detail and gives clear maps with modern spellings and notes on the variation of place names. Some of his dates of landfall and departure differ slightly from the itinerary given above and are probably more correct.

Darwin's Insects in the British Museum (Natural History)

Although Darwin did not hold the specialists in the British Museum in high esteem this was not so of G.R. Waterhouse¹⁰ as I have recorded elsewhere (Smith 1982a). Waterhouse was Keeper of Mineralogy and Geology in the British Museum from 1851 to 1880 and curator of the Royal Entomological Society's insect collections on its foundation. It was no doubt in the latter role that Darwin entrusted many insects to him and that through him many specimens came to be in the British Museum. Lea (1926) notes, quoting G.J. Arrow, 'Darwin did not give his collection to the Museum, but allowed different individuals to take particular groups which interested them, and the unsorted mass of minute specimens was given to G.R. Waterhouse, only coming here in 1887'. The Entomological Society collections were eventually dispersed; firstly the exotic species in 1858, then the British and certain historic specimens in 1863. The Museum purchased 5628 insects in 1858 (BM accession no. 1858-60) and in 1863 (1863-44) a series of 199 insects, of various orders, collected chiefly by Darwin during the *Beagle* voyage and including the types of species described by G.R. Waterhouse, J.O. Westwood and E. Newman.

The following list of summarized entries from the Museum Accession Registers indicates the numbers of Darwin insect specimens and the source of their origin.

1837.1.-1	1 specimen of <i>Chiasognatus grantii</i>	Chiloe	Pres. by C. Darwin
2	2 specimen of <i>Chiasognatus grantii</i>	Chiloe	Pres. by C. Darwin
1842.14.-	4 species of Coleoptera [names listed]	Tierra del Fuego	Pres. by C. Darwin. Originals of Mr Waterhouse's descriptions in the Annals & Magazine of Natural History, Vol. 9, April 1842.
1845.63.-	115 Coleoptera [names all listed]	[Various <i>Beagle</i> localities]	Pres. by C. Darwin. Originally described by Mr. Waterhouse in Annals & Magazine of Zoology & Botany
	13 Diptera	Galapagos	
	2 Orthoptera	Galapagos	
	1 Libellula	Galapagos	
	1 Xylocopa	Galapagos	
	44 Hemiptera	Galapagos	
	3 Aptera	Galapagos	
1845.68.-	26 Diptera	Montevideo	Presented by Charles Darwin
	7 Hymenoptera	Montevideo	
	6 Orthoptera	Montevideo	
	10 Aptera	Montevideo	
	3 Hemiptera	Montevideo	
1845.81.-	<i>Ixodes</i>	St Paul's I	Presented by Charles Darwin Esq
	1 <i>Staphylinus</i>	St Pauls I	
	2 <i>Olfersia</i>	St Pauls I	
1845.118.-	5 beetles [names listed]	Valparaiso and Pt Desire	Pres. by C. Darwin. Originally described by Mr Waterhouse in Ann. of Nat. Hist.

1846.38.-	9 Lepidoptera 10 Lepidoptera 4 Lepidoptera 2 Lepidoptera 1 Lepidoptera 5 Lepidoptera	Pt Famine, S. America Monte Video St Iago Keeling Is Galapagos Southern part of S. America	Presented by Charles Darwin Esq from the voyage of the <i>Beagle</i>
1848.95.-	3 Cleridae 1 Entomoderes erebi Solier	1 Sydney, 1 V.D.'s land, 1 Mt Wellington Mendoza	Presented by C. Darwin Esq.
1858.60.-	5031 insects [some listed by name]	Various localities	Purchased at sale of Entomological Society
1863.44.-	9 beetles [names listed] [on page 839 the names of a further 175 beetles are listed]	[Various <i>Beagle</i> localities] [Various <i>Beagle</i> localities]	Collected by Charles Darwin on his late voyage of the <i>Beagle</i> ; described by Revd W. Hope. For the continu- ation of this entry see Folio 839 Type specimens of species described by Messrs Waterhouse, Westwood & Newman in the Annals of Nat. History, Entomologist & collected principally by C. Darwin Esq. in the voyage of the <i>Beagle</i>
1885.100.-	1 Forficula sp. 2 Forficula sp.	Rio de Janeiro Patagonia (?)	Presented by G. R. Waterhouse. Collected by C. Darwin in the Forest in June.
1885.119.-	500 insects	Various localities	Presented by G.R. Waterhouse Esq. Collected by Charles Darwin during the voyage of the <i>Beagle</i> . See Ins. Room List p. 93

Many beetles seem also to have passed, through G.R. Waterhouse, directly into the Coleoptera collections. These are not covered by numbers in the Museum Accession Register but are recorded in a volume of 'Accessions to the collection of Coleoptera 1870-1909', kept in the Coleoptera section. These entries are as follows:

1871.2	17 Elateridae	S. America	Presented by Chas Darwin. Collected by Mr Darwin. Not to be Rep. 10th/ 71
1871.7	3 Elateridae	New Zealand	do. Not to be Reported May 1st 71
1871.17	2 Systolosoma brevis Solier 11 Lebiinae 2 Tautocerastes patagonicus	Chile S. America St Cruz	Presented C. Darwin, collected C. Darwin through Mr Waterhouse. Not to be reported
1873.8.	50 Hydradephaga	Patagonia etc	Presented by C. Darwin, Esq. through G.R. Waterhouse
1875.35	29 Coleoptera [names listed] all C. Waterhouse species	Terra del Fuego, Valparaiso and Falkland Is	Presented by G.R. Waterhouse collected by Mr Charles Darwin. Described in a paper read at the Entomological Society Nov. 3rd 1875 [see Waterhouse, C.O., 1875]
1875.36	[1751 Coleoptera]	[Various localities and sources, some Darwin]	Presented by G. R. Waterhouse

1877.1	4 Coleoptera 6 Coleoptera [a list of the names of the 8 species follows]	James I. Galapagos Charles Island	Presented by C. Darwin Esq, through G. R. Waterhouse. Not Rep.
1878.43	1 Strina aurichalcea	Cape of Good Hope	Presented G. R. Waterhouse, coll. by C. Darwin, Esq. Not to be reported
1879.34	17 Coleoptera [names listed] types of F. Waterhouse	Cape of Good Hope, E. Falklands, Rio and St Helena	Presented by G. R. Waterhouse collected by C. Darwin Esq, described by F. H. Waterhouse in the Linnean Journal
1880.67	1 Moluris [Tenebrionidae]	S. Africa	Presented by Chas Darwin Esq. This is the specimen referred to in the popular account in the Naturalist Oct or Nov. [Dec., p. 76 by S. D. Bairstow]
1887.42	2000 Coleoptera	Various localities	Presented by G. R. Waterhouse Esq. Collected by Charles Darwin in the Voyage of the <i>Beagle</i>

The '1871.2' entry also includes some Coleoptera from St Helena (see *Insect Notes* entry 3730).

It is not clear what the 'not to be reported' comment means against several of these entries. Perhaps it kept the material temporarily more freely available for loan to outside specialists if it remained among unofficial accessions. Some accessions of Waterhouse types (e.g., 1875–36) contain Darwin material although there is no indication of this in the entry (see *Insect Notes* entry 2303 under *Adioristus*).

Labelling of specimens

The majority of the specimens in the BM collections have printed BM data labels indicating the country, locality and the name C. Darwin. Often the BM accession number is also given on a separate printed label though sometimes this is handwritten. Some specimens do not have printed labels and these can be difficult to find, all the labels being handwritten (by Darwin (rarely), Waterhouse and others) and sometimes folded. Labels bearing the name of the species are frequently handwritten. The distinctive labels of other museums are described under the appropriate sections.

Some specimens bear original 'Darwin' labels and numbers, which link them directly to the *Insect Notes* entries described later. These labels are as follows:

- (1) Original handwritten locality labels (by Darwin or Syms Covington but usually by others) (Figs 11, 19). Sometimes these may have a BM accession number written later or on the verso.
- (2) A label bearing a handwritten (rarely by Darwin or Syms Covington and usually by later 'curators') number between 1 and 3868 usually on white paper or occasionally on coloured paper conforming to the code range described for the printed numbers below, but the number given in full (see Figs 11, 19).
- (3) Printed numbers (Fig. 19) can usually be taken at face value if on white paper. If on red coloured paper then 1000 must be added to the number printed thereon, 2000 added for green and 3000 added for yellow (I have only seen *written* numbers on yellow paper; see *Insect Notes*, entry 2523). A clue to this numbering code is given in entry 325 in the *Insect Notes*, and it is described in Darwin's specimen catalogue in the University Library at Cambridge. In the University Museum of Zoology at Cambridge are specimens with small green labels bearing numbers but these are not Darwin's and are dealt with in the section on the Cambridge material.

Other comments on labels are given immediately before the *Insect Notes*.

There are certainly other undetected Darwin specimens scattered throughout the BM collections, especially in the unidentified accessions. While it has been relatively easy to locate material on which published descriptions are based, there has been difficulty in locating non-type material. Specimens representing published misidentifications have frequently been subsequently re-identified and moved to an unexpected place in the collection. However most groups have been scanned, and at least for the Neotropical Coleoptera it has been possible to comment on most of the entries in the *Insect Notes*.

Where specimens have not been located it has frequently been possible to interpolate the identity of some entries from published sources, especially the *Journal* (Darwin, 1845). Often the very nature of the entry in the *Insect Notes* has provided clues leading to a successful search for material in the collections.

Some specimens that were once in the collection have obviously been removed, probably for exhibition purposes on the occasion of a Darwin anniversary (see Ridewood, 1909: 23) or even in exchanges with other museums. Name labels with only pin-holes above them provide strong evidence for this (e.g. *Insect Notes* entry 5).

There is also evidence that Darwin specimens from the BM have 'found their way' into other collections, probably before the establishment of a proper loans system, but have 'returned home' in due course (see *Insect Notes* entries 2303, 2308 under *Adioristus*, Col., Curculionidae). There are also specimens in the David Sharp collection (BM 1905-313; see entry 618 under Nitidulidae).

Darwin's Insects in the University Museum of Zoology, Cambridge

In the main collection of the Zoology Museum at Cambridge are *Beagle* specimens of water beetles and water bugs as follows:—

Coleoptera, Hydrophilidae: 104 specimens representing 20 species; Gyrinidae: 21 specimens representing 7 species.

Hemiptera, Pelogonidae: 2 specimens representing 1 species (?); Corixidae: 1 specimen, unidentified.

These mostly bear a printed label as shown in the notes quoted and may have small green labels with numbers in the range 1–51, though no specimens were found with the numbers 1, 2, 9, 18, 26, 29, 32 or 41 (though the Corixid bears a white printed 41 which does not fit a Darwin entry—see entries 210, 677). Other specimens without numbers are present and probably all had numbers originally. Some specimens also carry printed numbers relating to the Darwin notebooks and *Insect Notes*. The specimens also bear A. Knisch (Hydrophilidae) or A. Zimmerman (Gyrinidae) det. labels (see entries in the main *Insect Notes*).

These specimens were formerly housed in a small box labelled as follows:

To Dr Sharp. I send the first contribution to an Entom. Library. Also Darwin's aquaticics from S. America. The tickets are no[t] intelligible to me. I have no corresponding notes.
C.C. Babington⁹

To this has been added a note by Hugh Scott:

These insects have since been named and incorporated in the general exotic collection. Though said to be from "S. America" (whence most undoubtedly are) they include certain species which can scarcely have been from that Continent: *Sternolophus solieri*, Cast., known from Afr. and Syria, and *Paranacaena* sp., a genus known (otherwise) only from Australia (both Hydrophilidae). The series included one or two Hemiptera fam. Pelogonidae. H.S. 24.4.1922

In the Cambridge Museum Register 14 November 1912 the following supplementary notes by Hugh Scott are given, dated 24 October 1922:

These were formerly kept in a small box, just as they were handed to Dr Sharp by Prof. C.C. Babington. They were sent by Darwin to Professor Babington, and passed on by him to Dr Sharp, with the label which is stuck in below. They have now (1922) been named and incorporated in the general foreign beetle collection, the old pins being kept and the following label attached

South America
Charles Darwin
Voyage of the
"Beagle"
Reg. 14.xi.1912

They will be found under families Hydrophilidae and Gyrinidae [Darwin's Dytiscidae are in Brit. Mus. They were worked out by Babington and publ in Tr. Ent. Soc. iii, 1941,

pp. 1–17, Pl. 1], also two or three bugs (Hemiptera) under (Pelagonidae and Corixidae). Re localities: Babington's note reads "from South America", and nearly all undoubtedly are South American. But the following are not from that continent: *Sternolophus solieri*, Cast. (Hydrophilidae; Africa & Syria); *Paranacaena* sp. (Hydrophilidae; genus known only from Australia); *Dineutes subspinosus*, Klug (Gyrinidae; Africa, Syria, India) and *Dineutes aereus*, Klug (Africa). These were probably got when the "Beagle" visited countries within their range.—The numbers borne by the specimens were not intelligible by Babington. In 1917 the collection was examined by G.C. Champion, who by consulting old literature was able to fix the localities of the big Gyrinid *Enhydrus sulcatus*, Wied., of *Gyrinus ovatus*, Aubé and of *Gyretes glabratus*, Régimbart; he attached the labels "Rio de Janeiro, C. Darwin" to these, but did not think the rest could be traced [see over page].

The full list is as follows:—[HYDROPHILIDAE] *Berosus* (*Enophurus*) *reticulatus*, Knisch; *Berosus* (s.str.) *sticticus*, Boh. and its aberrations *confinis*, Knisch, and *aberrans*, Knisch; *Deralthus rudis*, Sharp; *Hydrous ater*, Ol., **Hydrous* (*Dibolocoetes*) *palpalis*, Brullé; *Neohydrophilus politus*, Cast.; *Tropisternus* (*Cyphosternus*) *lateralis*, Fabr.; *Tr. nitidulus*, Brullé; *Tr.* (s.str.) *collaris*, Fabr.; *Tr. laevis*, Sturm, (= *nitens*, Cast.); *Tr. setiger*, Germar; **Sternolophus solieri*, Cast.; *Limnoxenus* sp.; *Paracymus* (s.str.) *debilis*, Sharp; *P.* (s.str.) *armatus*, Sharp; *Paranacaena* sp.; *Enochrus* (*Lumetrus*) *vulgaris*, Stein; *E.* (*L.*) *affinis*, Stein; *Hugoscottia darwini*, Knisch; *Helobata* (*Helopeltis*) *striata*, Brullé; [GYRINIDAE] **Dineutes aereus*, Klug; **Dineutes subspinosus*, Klug; **Enhydrus sulcatus*, Wied.; *Macrogyrus ellipticus*, Brullé; *Gyrinus parvus*, Say; **G. ovatus*, Aubé; **Gyretes glabratus*, Régimbart.

Two kinds of printed numbers are attached; some specimens have numbers in large type, on (discoloured) white paper; these numbers correspond to Darwin's MS. Register in Brit. Mus. (Insect Dept.), and the data have been copied (l.xi.1922) from that register and attached to the specimens. The species under which such specimens stand are marked with an asterisk on the preceding page [there are numbers in similar large type on certain of Darwin's named Dytiscidae in Brit. Mus.]. Most of the numbers used are, however, in smaller type, on greenish-blue paper, with a printed line above and to one side of them. Of these there is at present no explanation, nor is it known when and by whom they were attached. They form a sequence from 1–51. Many specimens have no number. None have Darwin's MS. locality-labels, as the Brit. Mus. specimens have; except in the case of those with the big-type numbers, therefore, the evidence that they were Darwin's rests at present on Babington's covering label, & the similar nature of the pins, &c.

The presence of 'Darwin' numbers has enabled nine species to be assigned with certainty to entries in Darwin's *Insect Notes*. The other species have been interpolated and the following entries in the *Notes* should be consulted to account fully for these Cambridge specimens: 210, 213–9, 432–3, 446–8, 554–5, 573, 875, 1305, 1314, 3528, 3635.

There is also a small storebox (Figs 5–6) containing British beetles in the Museum of Zoology. The majority are ground beetles (Carabidae) and dung beetles (Scarabaeidae, etc.). Some of the species, though perhaps not the actual specimens recorded by Stephens are represented. There is an entry in the Museum Register regarding this collection dated 30 April 1913:

Small collection of British beetles, made by Charles Darwin. The beetles were originally in a cabinet, until in the early '70s G.R. Crotch removed some or all of them into boxes, with the intention of arranging and renaming them. Only one box has been found, which was given to the Museum as Crotch left it, some of the beetles being named in Crotch's handwriting, others with printed labels. Whether the latter were Darwin's or Crotch's naming is not known. Donated by Sir Francis Darwin, F.R.S.

Crotch also gave Darwin beetles during the writing of the *Descent* where Darwin (1871: 379, footnotes 70 and 72 relating to stridulatory mechanisms in the Coleoptera) says:

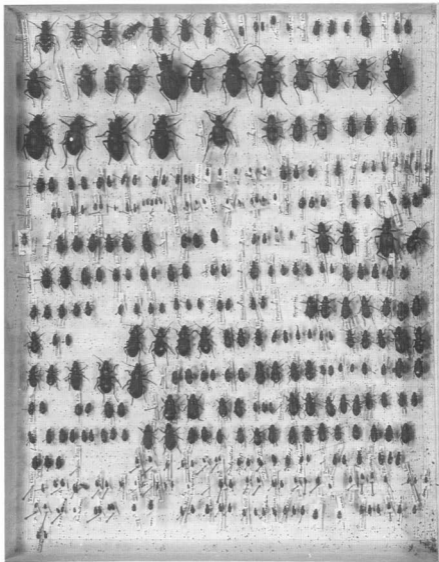


Figure 5

Figs 5-6 The store-box of British beetles at Cambridge: 5, left hand 6, right hand, sides (by courtesy of the Cambridge University Museum of Zoology).

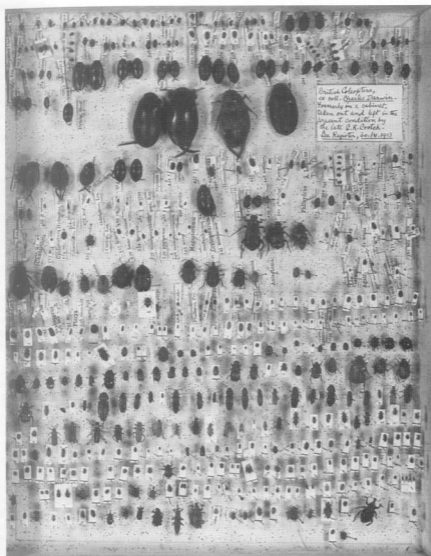


Figure 6

I am greatly indebted to Mr G.R. Crotch for having sent me numerous prepared specimens of various beetles belonging to these three families [Crioceridae, Chrysomelidae, Tenebrionidae] and others, as well as for valuable information of all kinds . . . I am also much indebted to Mr E.W. Janson for information and specimens . . . In the Carabidae I have examined *Elaphrus uliginosus* and *Blethisa multipunctata*, sent to me by Mr Crotch.

A biographical note on Crotch is given by Smart & Wager (1977). See also under Darwin's British Insects for Cambridge holdings of Darwin material.

Darwin's Insects in the Hope Entomological Collections, University Museum, Oxford

The type specimens of various species described by F.W. Hope from Darwin material are present in the British Museum (Natural History) (e.g. *Calosoma patagoniense* Hope). However some of the material sent to Hope by Waterhouse remains in Oxford and according to a letter from Darwin to Hope postmarked 22 June 1837 this consisted of insects collected at Sydney, Hobart and King George's Sound (Poulton, 1909: 202). Some of these unidentified specimens have been removed from the general collection and are now kept in separate cabinets and include some Homoptera from Sydney and Hobart and a Chalcidoid Hymenopteran from Sydney. There are some unidentified Reduviidae (Heteroptera) from Sydney remaining in the general collections. In the Darwin-Hope letter mentioned there is also reference to some Coleoptera of which the 'carabi' were to be returned but these have not been located at Oxford and are probably back in the British Museum. Some Australian Coleoptera and Homoptera were described by G.R. Waterhouse (1838, 1839) and are listed (see *Insect Notes* entry 3528 etc.) with some other insects found.

Of greater interest is the presence of some Darwin insects in the Denny collection. Following information from F.G.A.M. Smit that he had seen a Darwin flea in that collection some 25 years ago, the flea was located in the Denny slide collection and is a female *Pulex irritans* L. from Chile mounted on a slide and represents entry 2561 in Darwin's *Insect Notes*. In the general Diptera collection at Oxford there is a drawer of Diptera and Siphonaptera which has inside a label indicating that the Denny fleas were sent to Rothschild in 1915. However no Darwin fleas have been located among the Rothschild collection in the British Museum. Since Denny was a specialist on lice, I searched for that order and found six specimens in the pinned part of the Denny collection (*Insect Notes* entries 1044, 1336, 1395, 2153 and 2561, and entry 658 in the *Spirits of Wine List*). Hitherto only one Darwin louse had been found (in the BM, see *Insect Notes* entry 1044).

Other Darwin insects will no doubt be found in the Hope Collections as G.R. Waterhouse says (1839: 189) of the insects included there:

... insects were therefore returned to the friends who had been so kind as to lend them to me. I may remark that the greater proportion of them were from the collection of our liberal president, the Rev. F.W. Hope.

and later (1841: 121) under *Feronia cordicollis*:

A specimen of this species has been sent to Mr Hope with the specific name of *obsidianus* but I have not yet found it described under that name.

Poulton (1910: 16) records Diptera used in various exhibits to celebrate the hundredth anniversary of Darwin's birth but the only member of this order located at Oxford is a *Bathypogon* sp. (Asilidae) found in the Bigot Collection by Greg Daniels (see entries 3524–3526).

Audrey Z. Smith (1986), Hope Librarian and Administrator, has published a history of the Hope Entomological Collections and may locate other Darwin material, but this will probably all be Australian.

Darwin's Insects in the National Museum of Ireland, Dublin

In 1971 Dr Martin Speight drew my attention to some boxes of insects in the National Museum of Ireland, Dublin, which appeared to have been collected by Darwin on the *Beagle* voyage. Investigations proved this to be so and the material was examined and the results are incorporated in comments in the *Insect Notes*. The specimens were mostly small Diptera and Hymenoptera which Francis Walker¹¹ had sent to A.H. Haliday¹² for identification. Francis Walker had described many of Darwin's insects (see References) but the collections he sent to Haliday appear to consist of the smaller fry mostly covered by general entries in the *Insect Notes* based on general sweeping in Bahia, Brazil; Chiloe Island, Chile; Galapagos Islands; Hobart; Tasmania; King George's Sound and Sydney, Australia; New Zealand and St Helena. However there were some specimens referring to individual entries in the diaries of greater interest.

The story of the disposal of these specimens can be gleaned from correspondence from Walker to Haliday (*Haliday Correspondence*, Vol. 2) preserved in the Library of the Royal Entomological Society of London as follows:

Arnos Grove,
Southgate
8 March 1837

... Mr Darwin (grandson of the celebrated doctor Darwin) who has been travelling for the few past years through the E and W coasts of South America and the Pacific Isles and N. Holland and has made numerous interesting discoveries in geology and zoology—has lately returned to England with his collections—He has entrusted the insects to Waterhouse who will describe the Coleoptera. I was so interested in the chalcidites that I have acceded to W's request that I should describe them. He is at a loss what to do with the *Muscidae*, *Ichneum adscits* [?] *Thrips* (of which there are some *Fitans* [?] half an inch long) etc—and wishes me to offer them to you to describe in whatever Ent work you please, he would like to have an answer soon. I think you will find them very interesting and we can easily send them to you.

The next letter is dated 27 May 1837 and is written from the same address. It begins:

My Dear Haliday,
I have delayed writing to you till I could procure some of Darwin's insects to accompany my package. Waterhouse has been very busy so he requested me to pick out and mount some. Having done this I sent you a few near a fortnight ago per Belfast steamer, with the other insects that I promised, also one parcel from Mr Curtis and two from Mr Rudd [or Budd?]. Waterhouse requests that you will keep the No. attached to each lot as Darwin has MSS notes attached to some. He will I believe make an application to government to patronize the publication of his travels, if he succeeds all these specific descriptions will of course be included therein.

Later in the same letter he says:—

I do not remember any recent works on Hymenoptera or Diptera of the regions where Darwin has travelled. There may be a few in the 10th Vol of the *Encycl. Method.** and in *Fabr Syst Piezat†* which I will send to you if you have them not.

**Encyclopédie Méthodique* ... Paris & Liege, 1789–1828.

†Fabricius, J.C., *Systema Piezatorum* ... Brunsvigae, 1804.

Later in this letter Walker says he will take specimens to Liverpool in September. The correspondence shows clearly that Walker and Haliday expected to meet at the Liverpool meeting, in September, of the British Association for the Advancement of Science (of which they were both Life Members).

The next letter was written on 15 July 1837 from the same address. It begins:

My Dear Haliday

I have received your kind letter announcing the safe arrival of the insects etc. I am sorry to hear that your health has suffered and I fear that this is partly occasioned by working too closely at the minute Hymenoptera which I have inflicted upon you. I well remember to have seen a figure of *Dicera* and to have been struck with its singularity, but I did not recognize it among Darwin's insects. Of these I have a few more *Diptera* etc for you which I had set before I received your letter. Darwin still has multitudes of them, and if I can procure them for Waterhouse before I leave I will bring them in pill boxes as you advise.

Later in this letter he says:

Almost all that I have seen of Darwin's *Diptera* are as minute as those that you have. The chalcidites also are generally remarkable for their identity with the British forms. And the same may be said of the *Coleoptera* among which the species of *Scymnus* are very numerous. On a recent coral isle [St. Pauls] the only insects were bird parasites and a few *Coprophagi* such as a *Staphylinus* (*Philonthus* or *Quedius*) etc. Another isle the only species of insect was a small ant.

The next letter is written from 49 Bedford Square and is dated 19 December 1837. It includes the following:

I have told Darwin and Waterhouse about the *Diptera*, and they have looked out some more for you and will have them ready in a few days and I will send them to you before a month hence, also a parcel which Curtis tells me he has ready for you.

This letter goes on to show that the two correspondents did in fact meet in Liverpool the previous September. And also states:

I now have a lot of MSS waiting to be published in the *Ent. Mag.*, and I must send the description of Darwin's *Chalcidites* to the *Linn. Society* or elsewhere.

Later he continues:

I will write to you again when Darwin's insects are ready and will send the parcel to the Belfast steamer office directed to Mr Gordon for you.

The next letter is dated 17 February and post-marked 1838. It begins:

I have hitherto delayed replying to your letter of December last that I might obtain as many as possible of Darwin's *Diptera* etc to form part of the parcel that I have just forwarded to you.'

The letter discusses some of the insects which are in the parcel and then continues:

In the box also are all Darwin's Diptera yet unpacked. He has plenty more but they are in little boxes mixed with other insects and he is about to have them all mounted and then sorted. Those from the Galapagos are all the Diptera I have found among the insects yet mounted. The man employed unfortunately put them into water but he will know better in future. Though the Galapagos are situated under the line yet the insects found therein are very like those of the temperate climes and so it is with other little isles that are far from the mainland.

Later this letter continues:

I have placed a few of Darwin's chalcids in the box for your examination. Figures of some of them would be very interesting excepting No. 1 they all appear to belong to the family Eucharidae of which I have seen no European specimens. In the structure of the head, antennae and abdomen they much resemble Figites etc.

Later he continues:

The steamer with the box will leave London tomorrow.

And later again:

Have you determined where you will publish Darwin's insects? I have got ready enough MSS in British Chalcid to last the Ent. Mag. for a couple of years and I wish to publish Darwin's Chalcids somewhere else.

In a letter dated 29 July 1839 Walker writes:

My descriptions of Darwins Chalcides are printed and will be published immediately. I have all the specimens in my possession and I will forward them to you together with all my own collection and they will be speedily followed by the few remnants that I have left. you are quite welcome to retain mine as long as you feel inclined and what I ask of you is in plain words that you will point out my errors, supply my omissions, reunite the species that I have cut up and divide into groups the overpopulous and disordered genera. Your drawings of the genera would be most suitably accompanied by such an essay . . . I have about half a dozen more of Darwins insects for you.

The drawings referred to in this letter would be those which subsequently appeared in *The Entomologist* (see Walker, 1840–42).

Various labels in the boxes indicate that the specimens had been seen (though not studied or recorded) by several specialists over the years. In box number 546 (H.28) was a label 'There is no doubt these are some of Charles Darwin's insects collected on cruise of the *Beagle*. See Hal. diary for date of receipt of same from F. Walker. A.W. Stelfox. 1932'. Beneath this label is another 'All these certainly not European (Collin)'; this would be J.E. Collin, the Dipterist. There is also a label with printed 'Haliday' and written on 'Miscellanea (chiefly Diptera) numbered 3527, 3523, 2368, 2369'. The specimens are grouped in blocks around single labels bearing these numbers (including also 3528) which refer to Darwin's notes. In box H[aliday] 24 (542) there is a note 'seen by Prof. Westwood 1885-6' and written on the bottom of the box 'Coll by Charles Darwin when in the "*Beagle*" AWS.' This box also contains some Walker insects from Finmark. The specimens in this box are pinned in fairly orderly columns above the labels which bear written numbers and locality data.

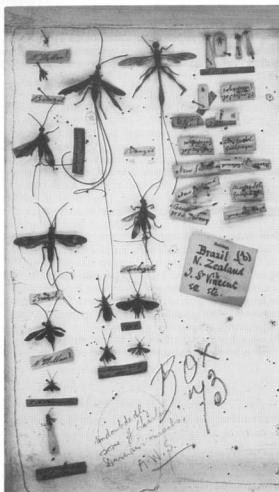


Fig. 7 The contents of 'box 73' from the Haliday collection in the National Museum of Ireland, Dublin. The specimens from St Vincent or with numbers in the sixteen hundreds are not Darwin material. The Darwin specimens include Hymenoptera of the subfamily Braconinae from Brazil and the Galapagos Islands and some Diptera (Chloropidae and Agromyzidae) from New Zealand. See *Insect Notes* 3363, 3416, 3528, 3859, and 3860.

A box numbered 555 (R.H.5) is divided inside by the pinned-in labels 'Box 73' and 'Box 69' and the former section is further labelled on the bottom of the box 'undoubtedly some of Charles Darwin's insects A.W.S.'. Also in the 73 section is a Haliday label 'Brazil (b) N. Zealand I. St. Vincent etc etc'. Of these the St Vincent specimens are not Darwin material (Fig. 7).

Box number 566 (H.68) contains Diptera, some bearing individual handwritten data labels and others either bear or stand over Darwin printed numbers. Boxes 536 (H.17) and 538 (H.20) contain parasitic Hymenoptera bearing 'Darwin' numbers 3524, 3858-3861.

All this material is included in the appropriate entries in the *Insect Notes*. In addition to the above more obvious material there may be Darwin specimens, as yet unrecognized, scattered elsewhere among the Haliday collection. General comments on the Haliday collection are given by O'Connor & Nash (1982).

Darwin's Insects at Down House and elsewhere

At Down House there is a storebox of beetles (Figs 8–9) which has been illustrated and variously reported in the literature as containing specimens from the *Beagle* voyage (e.g. Huxley & Kettlewell, 1965). However, with one exception, these insects are all British species and lack data, though some stand over printed name labels. The one non-British specimen, the largest in the box, I had taken to be a battered female of *Chiasognathus grantii* Stephens when I examined the specimen (see *Insect Notes*, entry 2110). However my colleague R.D. Pope, on seeing the photograph identified it as *Euchirus longimanus* L. (Scarabaeidae). This is certainly not a *Beagle* specimen as the species occurs in Amboina Ceram. Darwin quotes Wallace's observations on stridulation in this beetle in the *Descent* (Darwin, 1871: Vol. 1, 381) and it may be that Wallace gave him this specimen or it may have come from the entomological dealer E.W. Janson who supplied him with various horned beetles at this time (see Stecher, 1969: 113).

The British beetles in the box are mostly common species and probably represent his own collecting unless the named specimens form part of the gift of c. 160 species he received from Hope (see Darwin, F., 1887). Neither the species recorded by Stephens (1827–45) nor the species recorded so enthusiastically in the *Life and Letters* (Darwin, F., 1887) are present.

In Down House there is also a small oval box of European beetles on display. These are obviously the Scarabaeidae that Darwin studied for the chapter on sexual selection in Vol. 1 of the *Descent*, i.e. *Bubas bison* Boucomont (now in *Onthophagus*), *Oryctes grypus* Illiger (= *nasicornis* L.), *Lethrus cephalotes* Acharius and *Geotrupes stercorarius* L. Labels are present in the box but not all attached to the specimens. There is also a label for the moth *Lampronia calthella* L. (now in *Micropteryx*) recorded as eating the pollen of *Mercurialis* in *Cross & Self Fertilization* (Darwin, 1888: 421).

Other locations

Bynoe (the acting surgeon—see Notes p. 113) collected plants, birds and possibly minerals for the official naval collections at the Haslar Hospital. Gunther (1912: 5) states:

The Zoological Collection at the Haslar Hospital which contained the Fishes of the Voyage of the "Erebus" and "Terror" as well as other types was transferred to the BM in 1855. The specimens arrived without labels and were in a bad condition, and for economy's sake a solution of chloride of zinc had been used instead of alcohol.

In the BM accession books, there are several entries for insects from the Haslar Hospital (e.g. 1855–58, 60, 61, 63) in some of which lists of species are given but none appear to have any connection with the *Beagle* voyage. In Francis Walker's *List of Diptera* (1849) there is a list of donors which includes 38 entries under Haslar Hospital, but again, none appear to be connected with the *Beagle*. Lloyd & Coulter (1963, *Medicine and the Navy 1200–1900*, Vol. 5, 1815–1900, p. 75) state that Bynoe's collection of birds and insects is 'now in the British Museum' and his plants in the Royal Botanic Gardens, Kew but they give no source for this information. In the BM accessions book for 1844, item 4 (Jan) lists 1627 insects collected in 'New Holland N. & N.W. Coast and [Houtman's] Abrolhos, presented by [Haslar Hospital], collected by [J crossed out] Bynoe Esq Surgeon RN [Note B. Bynoe was surgeon in H.M.S. *Beagle*, and the types of insects described by Adam White on Stokes' Voyage of Discovery, 1846 appear to be in this collection]'. The entry is written in ink and the square brackets indicate pencil comments added later by K.G. Blair. The

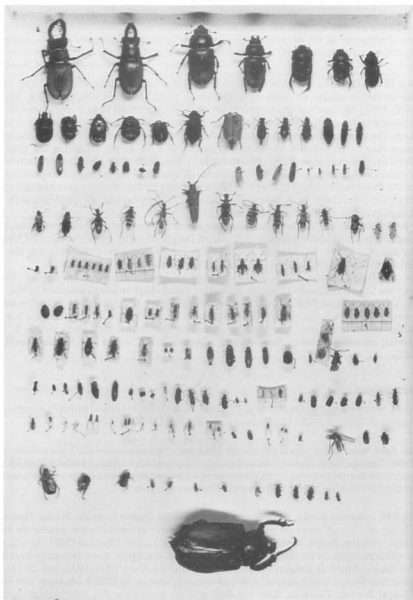


Figure 8

Figs 8–9 The store-box of British beetles at Down House, and the specimen of *Euchirus longimanus* L. (Scarabaeidae), not connected with the *Beagle* voyage: 7, left hand 8, right hand, sides (photograph by Philip Titheradge, courtesy of Down House and the Royal College of Surgeons of England).



Figure 9

Stokes referred to is John Lort Stokes (1812–43, Naval Officer, Admiral, 1877) who served on all three voyages of the *Beagle* (Darwin was only on the second) and was the author of *Discoveries in Australia* published in 1846. It was in an appendix to this work that Adam Smith described new Coleoptera and E. Doubleday new Lepidoptera from Australia. A.C. Pont has located a specimen

of *Dichaetomyia reversa* (Walker) (Diptera, Muscidae) in the BM collection bearing this accession number and the labels 'Scyomyza reversa Walk/one of Walker's series so named' and 'New Holland/J. Bynoe, R.N./B.M. 1844-4'. No Darwin specimens appear to be involved. Captain FitzRoy assisted by his servant Harry Fuller also made collections on the *Beagle* voyage but it is doubtful if these included insects.

David Stanbury has shown me a copy of a rather poor drawing of a butterfly made by Midshipman King aboard the *Beagle*. No specimen has been found to establish its identity, but R.I. Vane-Wright suggests that it could be a species of *Dione* (Nymphalidae). The drawing is located in the 'King Album of Sketches and Engravings' in the Mitchel Library, Sydney, Australia. Finally Kritsky (1981) records the presence of a staphylinid beetle in the Field Museum of Natural History in Chicago but no further information is available.

Doubtless other Darwin insect material reposes unstudied in other museums. A.F. Amsden thinks he has seen specimens in the Rippon collection in the National Museum of Wales. Certain groups of insects mentioned in the *Insect Notes* seem to be absent from the collections so far studied, such as aculeate Hymenoptera, dragonflies, some butterflies and among the beetles *Cicindela*, *Blaps* and *Meloe*. The important 'Benchuca' bug which may have been responsible for Darwin's illness (see *Insect Notes* entries 2913, 3423) has not been located. Evidence for odd specimens having been sent to individuals is cited in the *Insect Notes* (e.g. entry 3528, to G. W. Kirkaldy and W. E. Shuckard). The author would be pleased to have details of any future findings of Darwin material.

Darwin's Insect Notes

Barlow (1945: 265) describes Darwin's notebooks on his collections as follows:

Two sets of three note-books each sewn together with string form the catalogue of the specimens he sent home. One set included 1529 specimens all in spirits of wine—fishes, insects, sea-weeds, fungi, spiders, plants, corallines, reptiles, etc., each listed with a number as it was put into the bottle—and therefore in chronological order. The second set of three notebooks has *printed numbers* on the covers; they are again a mixed bag of bird, beast and plant life.

The original notebooks are preserved at Down House and have been studied.

The *Insect Notes* (Figs 11, 12) referred to throughout this paper are preserved in the Entomology Library of the British Museum (Natural History) and are entitled *Copy of Darwin's notes in reference to Insects collected by him*. There is a note by G.R. Waterhouse 'Many specimens from this collection were presented by C.O. Waterhouse. Reg. No. 85.119. Some of them bear Nos 1-4 as per label':

1. Sydney 3528
2. Van Dieman's Land
3. Bahia [not 3 of this journal]
4. King George's Sound Australia

There is a further note:

This is the original MS of the "Insect Notes" sent to Waterhouse by Darwin. It is in the hand of Syms Covington, with additions and corrections by Darwin. It is analogous to the notes on Reptiles and Amphibians in the General Library of the B.M.(N.H.) and the notes on Plants, Birds, Fish, Mammals and Shells at the Cambridge University Library. Duncan M. Porter—16 April 1981.

Porter (1983) briefly draws attention to the *Insect Notes* and Sullaway (1982) dates them as probably being written during August 1836. Porter was misled into thinking that these notes were lost because of two entries in the bulky volume of *Insect Room Lists* (in BM): page 21, 'Darwin, C. List of numbers referring to insects collected by — during voyage of *Beagle* (List missing 5.4.27). Still missing Nov. 1976' and page 93 'Darwin, C., copy of Darwin's notes in reference to Insects collected by him'. Clearly it is the list of numbers that was, and still is, missing. Probably the *Insect Notes* had been wrongly inserted in the vacant space at page 21 leaving the correct place in page 93 empty. The entry for the list of numbers is repeated in the *Insect Room Lists* (index) under B (for *Beagle*), again with the comment 'missing 5.4.27'.

In the Cambridge University Library is a short manuscript list in Darwin's hand *Insects in Spirits of Wine*. The full list of *Insects in Spirits of Wine* is illustrated (Fig. 10) and can be seen to consist largely of Acari (not insects). The insect entries from this list are given before the main *Insect Notes* with comments by the present author given in smaller type or in square brackets.

Insects in Spirits of Wine

249. Hemipterous insect covered with ova
No specimen found.

		(Xi)
Insects in Spirits of Wine		
220	Acani. from Larva of an Orthopteron insect. R. de Jacq.	
221	Do. hatched in skin of Rana	♀
230	Acanis from Phalangium	♀
253	2 species of Acani	♀
241	Isodas. adhering fast to a Broye	♀
249	Hemiptera insect covered with ora	♀
255	Orthoptera ♀	♀
275	Acani from a Populus	♀
328.	Minute Larva? Rat Island. M. Video. V account	
376	Pulex from hairy under side of Jussiaea repens (375): ac. cum sagabond Picinica. Bahia Blanca	
441	Acani from the Puma.	♀
502	Do. mount of Kater's seat. I del Fuego	
688.	Acanis. on common Surfer's heart. back yellowish hairy legs. head. & 4th behind head. Mark. S. Falkland Id.	
635	Acanis. swimming on surface of water. color. "not blood R" <small>in shell.</small>	
638.	Pediculi. very minute. ^{remains} from head of Aethia (1248)	
646	Do from Caria Chrysa. Maldonado	
658	Do from Toro Toro (1267)	
758	Common Fleas. St Fe. - La. Plata. -	
945.	Acani in ear of Caria chrysa. Port-Lesina	
1183	Do. skin of Lizard	
1185.	Pediculi V. - account Chile	

Fig. 10 The Insects in Spirits of Wine list in Darwin's holograph (by courtesy of the Syndics of Cambridge University Library).

255. Orthoptera Do.

No specimen found.

328. Minute Larva? Rat Island M. Video. V account [error for IV]

[On a separate sheet in Syms Covington's hand is the following:]

'1833 Insects June (IV) (610 or 328 [in margin])'

Copy of Darwin's notes in reference
to Insects collected by him

Many specimens from this collection were presented by

C. O. Waterhouse Reg. No. 85.119.

Some of them bear nos 1-4 as per label:—

1	Sydney 352P
2	Pandanus Lane
3	Beha (at 3 P.M.)
4	King George's Sound Australia



This is the original MS of the "Insect Notes" sent to Waterhouse by Darwin. It is in the hand of Syms Covington, with additions and corrections by Darwin. It is analogous to the notes on Reptiles and Amphibians in the General Library of the BM(NH) and the notes on Plants, Birds, Fish, Mammals, and Storks at the Cambridge University Library. Duncan M. Porter - 16 April 1981.

Fig. 11 The cover of Darwin's *Insect Notes* showing the title in Darwin's holograph, the notes by G. R. Waterhouse and Duncan M. Porter and sample Darwin labels (by courtesy of the Trustees of the British Museum (Natural History)).

- (7834) December. Insects. Archipelago of Chonos. Helaphida and small Staphylinidae, the most abundant insects.
2438. Fly. bred from the soft putrid kelp on the coast of Tres Montes. I never saw such immense numbers in clusters under side of stones.
- 2444.....2455. Insects, from under stones at an elevation of 2500 feet, bare granite mountain. "Patch Cove" North part of Tres Montes.
2444. 2446. Curious Hemipterous insects; it may be remarked these are 3 species of Cicadellid. The Elater in numbers were far most abundant; this is a good example of ^{the} Alpine Insects of ^{the} ^{past}; for I suddenly turned up ^{very many} ~~one~~ stones; Libellula 2455 from base of mountain.
2462. Carab. Freshw. Grache Island, Grache Island, forest
2463. Cicadellid. ♂♂
2474. Coroneolar from whale. Chonos Archipelago Jan. X. 1835.
2482. 2483. 2484. Coleoptera. from B. Blanca Patagonia.
- 2485. Cicadellid (black) under stones and on putrid vegetable matter; on beach in immense numbers. Chonos. Archipelago
2486. Fly. (biting my flesh). ♂
2497. Fly. on coast. Lower Harbour. ♀
2505. 2506. Coleoptera. in dense forest. ♀
2507. Cicada. ♀
2508. Carab. young. ♀
2509. Diptera. Symenoptera. Coleoptera. all the above insects, taken on borders of wood by sweeping. Lower Harbour. ♀
2520. Carabid, Centre of Chiloe, in forest, at end of water; all 3 under one log of wood.

Fig. 12 A typical page of the *Insect Notes* in Syms Covington's holograph with corrections and additions by Darwin. The paper is faintly ruled and watermarked 'J. Whatman 1834'. (By courtesy of the Trustees of the British Museum (Natural History)).

The following facts I have noticed at Monte Video and frequently in this place:— After a heavy thunder storm in a little pool in a courtyard which had only existed at most seven hours. I observed the surface strewn over with black specks: these were collected in groups, and precisely resembled pinches of gunpowder dropped in different parts on the surface of the puddle.—These specks are Insects of a dark leaden colour; the younger ones being red.—Viewed through a microscope, they were continually crawling over each other and the surface of the water; on the hand they possessed a slight jumping motion.—The numbers on each pool were immense: and every puddle possessed some of the pinches . . . What are they? and how produced in such countless myriads? We have seen their birth is effected in a short time, and their life, from the drying of the puddles can not be of a much longer duration.

My colleague Peter Lawrence concurs with me that these are Collembola and points out that one of the common names for Collembola, other than springtails, is gunpowder mites! No specimens have been found.

376. *Pulex* from hairy underside of *Tatusia* [= *Dasytus*] *pichii* [*Pichi*] (375) curious vagabond Ricinia. Bahia Blanca.

No specimen found but F.G.A.M. Smit suggests that this Armadillo flea must have been *Malaeopsylla grossiventris* (Weyenbergh) or the less common *Phthiropsylla agenoris* (Rothschild). In the *Zoology* (Darwin, 1838: pt. 2, 92–3) two species of armadillo are discussed, *Dasytus hybridus* *auctt.* and *D. minutus* *auctt.* Of entomological interest is the description of the gut contents of the latter 'Coleoptera, larvae, roots of plants and even a snake of the genus *Amphisbaena*'.

638. *Pediculi* very minute curious [inserted] from head of *Certhia* (1248)

PHTHIRAPTERA: no specimen found. See entries 450 and 451 in the *Insect Notes*. In the *Ornithological Notes* No. 1248 refers to a third species of '*Certhia*' with bluish legs and entries 1250–1256 discuss the three species at length (see Barlow, 1963).

646. Do. from *Cavia Cobuga* Maldonado

PHTHIRAPTERA: no specimen found. The host mammal is the *Aperca* (Guinea pig) described in the *Zoology* (Darwin, 1839: pt. 2, 79) as *Cavia cobaia* *Auct* (? = *C. aperca*).

658. Do. from *Toco Toco* (1267)

PHTHIRAPTERA: in the Denny collection at Oxford is a louse on a card labelled '*Ctenomys braziliensis* C. Darwin'. Darwin (*Journal*, 1845: 50; *Zoology*, 1838: pt. 2, 79) writes at some length on this rodent (the Tucutucu) which he found at Maldonado, kept several alive and preserved one in spirit from which this louse undoubtedly came.

758. Common Fleas. St Fe—La Plata

SIPHONAPTERA: no specimen found.

1185. *Pediculi* V.—account Chiloe

[Phthiraptera. A separate sheet in Syms Covington's hand '34. *Pediculus*. Chiloe. July' gives the following account:]

These disgusting vermin are very abundant in Chiloe: Several people have assured me that they are quite different from the Lice in England: They are said to be much larger and softer (hence will not crack under the nail) they infest the body even more than the head.—I should suppose they originally come from the Indians, whose race is so predominant with these Islanders.—I have little doubt this is the kind so common amongst the Patagonians of Gregory Bay; they are said to be there also very large.—An accurate examination of these specimens will at once decide the fact of identity or difference.—Mr Martial, a surgeon of an English Whaler assures me that the Lice of the Sandwich Islanders are blacker and different from these, or any lice, which he ever saw.—Several of the natives lived for months and cruized [sic] in the ship, no efforts could free their bodies from these parasites but he assures me as a certain fact, known to every one on board that their Lice if they strayed to the bodies of the English in 3 or 4 days died, and were found adhering to the linen (like *Pediculi* from Birds or quadrupeds?). So that the Sailors, who

constantly slept close to the Sandwichers never were *constantly* infested by their vermin.— If these facts were verified their interest would be great.—Man springing from one stock according his *varieties* having different species of parasites.

A version of this appears in the *Descent* (Darwin, 1871: vol. 1, 219). See also entry 2561. This appears also in the *Zoological Diary* (preserved at Cambridge) but with the final additional comment 'It leads one into many speculations' which has then been crossed out. While races of human lice have been described in the literature, not enough critical work has been done to substantiate the above comments. Work with head lice suggests some evidence of geographical and racial differentiation and first instar lice can change colour to blend with their surroundings. Many factors affect the size of a louse. Nevertheless the entry provides an insight into Darwin's thoughts on these matters.

Insect Notes

The *Insect Notes* are in Syms Covington's hand and are here set in larger type. Important (i.e. not letters in the middle of words) corrections and additions in Darwin's hand are given in **bold type** as near as possible to the place in which they occur in the *Insect Notes*. The present author's comments are set in small type beneath each entry and interpolations are given in the appropriate type size in square brackets. Lettered entries (as (a), (b), etc.) refer to comments by Covington or Darwin on the verso of the page in the notes but for convenience these are given here immediately beneath the main entry to which they refer. Headings from the top of each page of the notes are given (in italics) as they occur, including the page number, even when this splits an entry. The ditto entries are interpolated when it is not obvious to which part of the entry they appear to refer. Thus, as far as possible the actual layout of the notes is preserved. Geographical locations are indicated in full in square brackets, where this is not already clear, which should facilitate the practical use of the notes by specialists looking up a particular entry. For the same reason related entries are often cross referenced so that a specialist can quickly assess the data relating to a particular group or association in different parts of the notes. All scientific names and localities are fully indexed.

For brevity the location of Darwin material is indicated as follows:

BM = British Museum (Natural History) and where specimens have been located the year and museum accession number follows in brackets, e.g. BM (1885-119). Where locality labels are not specifically quoted it may be assumed that such labels are present. Labels with numbers linking the specimen to a specific entry in the notes are always quoted and where they are not the assignment to an entry has been interpolated and an explanation is usually given.

Cambridge = University Museum of Zoology, Cambridge.

Oxford = Hope Entomological Collections, University Museum, Oxford.

Dublin = National Museum of Ireland, Dublin.

Further details of the material in these repositories are given in the appropriate introductory sections and information on the few other repositories is cited in full in the entry concerned.

All references to Darwin material in the literature are cited by author and date (and pagination for original descriptions of genera and species) and given fully in the list of references. Repeated text references to Darwin's own works are made by a single familiar word from the title, e.g. *Journal* [of *Researches . . . during the voyage of H.M.S. Beagle . . .*] (Darwin, 1845), but for accuracy author and date are also cited to link them to the list of references. Pagination is cited when the item is not indexed in the *Journal*. A problem with Darwin's own works and in his citation of others has been which edition to cite. Clearly where Darwin's own indication is obvious this has been cited. However since some of the original works are rare or unpublished and relatively inaccessible, later, more readily available editions are included in the list of references where they are cross-referenced to the original source, or included in the annotations (e.g. *Anson*, 1748 and Darwin's *Journal*, 1845).

Where the insect order or family is not obvious from Darwin's entry this information is added in the present author's comments.

Since much of the material examined is located in collections where taxonomic research is in progress the author has been anxious to avoid unwittingly creating new combinations, new synonymy or type fixations. Therefore no indication of type status is made nor are type labels described unless this is essential to the interpolation of the particular entry. Similarly synonymy is only indicated where known to be published, at least in a catalogue.

The main purpose of the comments on the *Insect Notes* is to indicate the present location of Darwin's material and as far as possible to allocate it accurately to the entries in the *Insect Notes* and with the published work of Darwin and others. Future taxonomic work by specialists on each group can proceed from there.

At the top left hand corner of the first page of the *Insect Notes* is an entry (enclosed in a rectangular rule and in Darwin's hand 'N.B.—Letters (as (a) (b) refer to the back of the same page' and in the right hand half of the top margin the word 'copy'. Darwin's insertions to indicate page numbers appear mainly to refer to his unpublished *Zoological Diary* now preserved in the Cambridge University Library.

1832

Insects

1.

2. Taken on board. Jan. 10th. Lat. 21°2'N

This probably refers to the specimen of *Nomophila noctuella* Denis & Schiffermueller (Lepidoptera, Pyralidae) which was recorded (as *Stenopteryx hybridalis* Hübner) by Walker (1859: 812) and is a known long-distance migrant from North Africa. No specimen has been found in the BM collection but the name label indicates its one time presence. See also under entry 5 below.

3. Acrydium. Owing to prevailing winds must have come from Cape Blanca, in Africa, 370 miles, distant Jan 13th. Vide Kirby Vol. 1. Page. 224

In Darwin's *Diary* (Barlow, 1933: 22-3), entry for January 14th and 15th is the comment 'Some few birds have been hovering about the vessel and a large gay coloured cricket found an insecure resting place within reach of my fly-nippers. He must at the least have flown 370 miles from the coast of Africa'. No specimen has been found. The Kirby reference is clearly to Kirby and Spence's *Introduction to Entomology*, probably the third edition (1818) (this book was on board, see Burkhardt & Smith, 1985) which gives, on the page cited, a record of locusts flying on board a ship 200 miles from the Canary Islands. See also the *Journal* (Darwin 1845: 159).

4. Jan. 14th—10 miles at sea from St. Jago. [Cape Verde Islands]

Lost

Possibly a moth (see 5)

5. Jan. 12th Lat: 19°. insect

Three species of Lepidoptera described from St Jago and otherwise unaccounted for may refer here and possibly to entries 2 or 4. No specimens have been found in the BM but pinholes above the labels suggest that they have sometime been removed possibly for exhibition purposes: *Stenopteryx hybridalis* Hübner (Walker, 1859: 812) (= *Nomophila noctuella*, see also entry 2); *Asopia vulgaris* Guenée (Walker, 1959: 364) (= *Hedylepta indicata* F., Pyralidae); *Alata anticalis* Walker (1863: 108) (= *Etiella zinckenella* Treitschke, Pyralidae). The last two species are also recorded from the Cape Verde Islands by Viette (1958).

- 201, 202. Harpalidae Quail Island. St. Jago. [Cape Verde Islands]

No specimens found. Mateu (1964) records 58 species of Carabidae (Coleoptera) from the Cape Verde Islands.

203. Allied to *Cryptocus*. Do. [Cape Verde Islands]

COLEOPTERA, Tenebrionidae: *Oxycara cribratum* Wollaston, five specimens in the BM (1887-94, error for 1887-42); two specimens in the BM (1845-63). This species looks very like a *Crypticus* (Español & Lindberg, 1963, pl. 5). See also 204.

204. Do. These two insects are found in the greatest profusion under stones, all over St. Jago [Cape Verde Islands]

See entry 203, the habitat described fits perfectly.

205. Allied to *Trechus*. St. Jago [Cape Verde Islands]

COLEOPTERA, Carabidae: no specimen found. See entries 201, 202.

206. Bee, common, making nest in the rocks. Do. [Cape Verde Islands]

HYMENOPTERA: no specimen found.

- 208, 209. *Hygrotus* stream at St. Martin. Do. [Cape Verde Islands]

COLEOPTERA, Dytiscidae: *Hyphidrus maculatus* Babington (1842: 12) (*Hyphidrus*), two specimens in the BM (1863.44) (see Bistrom, 1982 for type designation, redescription and synonymy).

210. *Corixa*. Do. [Cape Verde Islands]

HEMIPTERA: this may refer to the specimen reported to be in Cambridge which bears an enigmatic white, printed, 41.

211. Lice from head of Gull (185) I observed they continued alive on bird many days after its death. St. Jago [Cape Verde Islands]

In Darwin's *Ornithological Notes* (see Barlow, 1963: 211) entry 185 reads "These birds were shot in the neighbourhood of Porto Praya from 16th. of Jany. to 7 of Feby. Gull". No specimens found.

212. *Blatta*. St. Domingo [Cape Verde Islands]

No specimen found. Chopard (1958) lists 10 species of Blattodea from the Cape Verde Islands.

213. 214. *Gyrinus* allied to *Dineutes* MacLeay (?) **Hab Do.** [Cape Verde Islands]

Lost

COLEOPTERA, Gyrinidae: *Dineutes aereus* Klug., one in Cambridge, St Domingo, St Jago Island, Cape Verde Is., with white printed label 214 and small green printed label 44 and Zimmerman det. label.

215. *Gyrinus* **Do. (?) Hab. Do.**

COLEOPTERA, Gyrinidae: *Dineutes subspinosus* Klug., one in Cambridge, St Domingo, St Jago Island, Cape Verde Is., with white printed label 215 and small green printed label 45 and Zimmerman det. label.

216. 217. 218. *Hydrobius* stream near St. Domingo [Cape Verde Islands]

COLEOPTERA, Hydrophilidae: *Sternolophus solieri* Castelnau, two in Cambridge, St Domingo, Cape Verde Is., with white printed label 217 and small green printed label 46 and Knisch det. label and one similarly labelled but with white printed label 218.

219. *Hydrobius* and *Gerris*. **Hab. Do.** [Cape Verde Islands]

No specimens found. The only member of the family Gerridae (Hemiptera) recorded from the Cape Verde Islands is *Limnogonus cereiventris* ssp. *leptocerus* Reuter. (see Lindberg, 1958: 127).

225. 226. 227. *Ornithomyia* (Lat.). *Feronia* (Leach)

- (a) (a) [on verso of page] **225 on, from the Booby: frequent: St. Pauls. Feb. 16th.** [St Paul's Rocks]

DIPTERA, Hippoboscidae: *Olfersia aenescens* Thompson (det. A.M. Hutson), two females in BM (1845-81), St Pauls, Atlantic Ocean. These specimens were referred to by Bequaert (1957: 438) but he confused St Paul's Rocks with St Paul Island in the Indian Ocean which led him to comment on the rather high latitude (38°40'S) for this record.

Walker (1849: 1143) recorded this as '*Ornithomyia nigra* ? *Hippobosca nigra* ? Perty' from 'St. Pauls, Brazil' (also as his *O. intertropica* from Galapagos, a synonym, see 3229). Walker probably thought St Pauls was in Brazil and did not mean to indicate that there was a second specimen from Brazil, or he would have followed his usual practice of giving each locality a suffix letter.

Darwin (1845: 10) refers to these specimens as an *Olfersia* in the *Journal*.

228. Moth. St. Pauls. Feb. 16th.

LEPIDOPTERA. This is recorded in the *Journal* (Darwin, 1845: 10) as 'a small brown moth, belonging to a genus that feeds on feathers'. None of the species described by Walker (1854–66) fits this and the specimen is presumed lost. However, in a recent study of the ecology of St Paul's Rocks (Edwards & Lubbock, 1983; Edwards, 1985) record finding larvae of a small moth amongst the booby nesting material. The species has now been described by Robinson (1983) as *Erechthias darwini* (Tineidae) subfamily Erechthiinae and since members of this subfamily lack the ability to digest keratin these authors suggest that the larvae of this moth probably feed not on feathers but on dry sea weed in the nesting material.

229. Staphylinus. Do. Bird's dung

COLEOPTERA, Staphylinidae: one '*Staphylinus*' from St Paul's Rocks is entered in the BM Accessions Register under 1845: 81, but the specimen has not been found. However there is a specimen of *Philonthus cliens* Eppelsheim (det. P.M. Hammond), St Paul's Rocks, 8.xi.1921, in guano near bird's nest G.H. Wilkins, No. 81, BM 1922–363, Shackleton-Rowett Expedition. This could be the same species as the *Quedius* mentioned in the *Journal* (Darwin, 1845: 10). If a true *Quedius* were involved Hammond is of the opinion that it is most likely to be the widespread *Q. mesomelinus* (Marshall). *Philonthus cliens* is also known from tropical Africa, Arabia and India (Edwards & Lubbock, 1983; Edwards, 1985). See also entry 708.

231. Oniscus Do.

Lost

Crustacea (woodlouse)—not an insect. See Edwards & Lubbock, (1983); Edwards, (1985).

232. 233. 234. Tics [sic; ? ticks]

Arachnida—not insects. See Edwards & Lubbock, (1983).

304. Termites. Fernando Noronha [between St Paul's Rocks and Brazilian Coast, 3°50'S, 32°25'W]

ISOPTERA: no Darwin termites have been found.

305. Part of their nest (vide Geological Notes)

ISOPTERA: no specimen found.

308. Rhynchites, seeds of the Tamarind, St. Jago, Feb. 7 [Cape Verde Islands]

COLEOPTERA, Curculionidae: the tamarind weevil is *Sitophilus linearis* (Herbst) but no specimen has been located in the BM collections. R.T. Thompson comments that it is strange that Darwin should refer to this weevil as a *Rhynchites*.

325. Numerous single Coleoptera. Hemiptera from Bahia Brazil. [Written obliquely across this entry is 'Green 2000' and 'Yellow 300' [sic, error for 3000], clearly referring to the colour coding of labels. See description of labelling of specimens in the section on the British Museum collections.]

COLEOPTERA, Anthicidae: *Acanthinus striatopunctatus* Laporte, one in the BM (1887–42), Bahia.

Buprestidae: *Callimicra darwini* Hesperheid (1980: 15).

Cerambycidae: *Megacera parvula* Newman (1840: 12), one in the BM (1863–44), Bahia.

Chrysomelidae: *Crepidodera bahiensis* Bryant (1942: 103), one in the BM (1885–119).

Coccinellidae: *Diomus brasiliensis* Brèthes (1924: 162), one in the BM (1885–119), Bahia. *Diomus genialis* Brèthes (1924: 166), one in the BM (1885–119), Bahia.

I place these here because they are 'single Coleoptera'; some may refer to 348 or 349, or 3858–3864.

1832

Insects Bahia

2.

348. 349. Numerous Coleoptera from Bahia. Part of a couple of hours collecting.

COLEOPTERA, Chrysomelidae: *Ctenispa darwini* Maulik, two in the BM (1887–42 & 1885–119), Bahia, which I place here rather than under entry 325 as there are two specimens.

Coccinellidae: *Chnoodes terminalis* Mulsant, *Hyperaspis festiva* Mulsant and *Solanophila rufiventris* Mulsant are all recorded from Darwin material by Br ethes (1925b). Also some unidentified coccinellids (BM 1887–94) [an error for 1887–42] and (1858–60) Bahia, may refer here.

351. Onthophilus perceiving the smell of human dung with singular quickness. Do.
 COLEOPTERA, Scarabaeidae: *Ganthidium ruficolle* Germar, one in the BM (1887–42), Bahia, with printed label 351. See also entry 354.
352. Elater nortelucus [sic ? noctilucus] vide p. 25
 COLEOPTERA, Elateridae: named in the *Journal* (Darwin 1845: 31) as *Pyrophorus luminosus* Illiger, 'seems the most common luminous insect' and its jumping habits are discussed with a reference to Kirby's *Entomology*, vol. ii, p. 317 (Kirby & Spence, 1818: 317). There is a very similar discussion in the *Zoological Diary* to which the page citation refers. No specimen has been found.
353. Cimex, drove its proboscis deeply into my finger. Do.
 HEMIPTERA, Coreidae: *Vilga westwoodi* (Kolenati). Dolling (1977) records a Darwin specimen, female, Bahia, Brazil, ii or iii, 1832 in the British Museum. Though at first somewhat unlikely this is the only bug I can allocate to this entry. Most plant bugs have piercing mouthparts and several genera are recorded as piercing human skin. The term '*Cimex*' was loosely applied in Darwin's day and it may well be that this is the specimen Darwin alludes to. For the true skin piercing Triatomid bugs see entries 2913 & 3423 and for other '*Cimex*' see entries 431 & 874.
354. Geotrupes. Bahia. Feb. 7.
 COLEOPTERA, Scarabaeidae: *Trichillum heydeni* Harold, one in BM (1885–119), Bahia. *Ataenius* sp., one in BM (1887–42). These and 351 are the only Scarabaeids I can find from Bahia.
355. Acarus from Do.
 Arachnida. Acari—not an insect.
356. Louse from Vespertilio (in spirits)
 There are no lice on bats. From the possible hosts it was probably a bat fly (Streblidae or Nycteribiidae) but no specimens have been found. Possible hosts are two bats described in the *Zoology* (Darwin, 1838: pt. 2, 3–5) *Phyllostoma grayi* Waterhouse (G.R.) from Pernambuco (5° north of Bahia) and *Phyllostoma perspicillatum* Geoffroy from Bahia (lat. 13°S). These two names are synonymized in modern literature under *Carollia perspicillatum*.
357. 358. Specimens from an enormous migration of Ants. vide page 28.
 HYMENOPTERA, Formicidae: no specimens found, but the entry in the *Journal* (Darwin, 1845: 35) indicates that they were 'driver ants' (subfamily Dorylinae), probably of the genus *Eciton*. The page reference is to the *Zoological Diary* from which the *Journal* account is taken. 'Spiders, Blatta and other insects' were flushed by the ants.
359. 360, 361, 362, 363, 364. A very common species of Ant; the winged ones were flying in numbers from the nest.
 HYMENOPTERA, Formicidae: no specimens found.
365. 366. Feb. Hymenopterous insects
 No specimens found.
367. Nest of Do. when large and complete is globular.
 No specimen found.
368. Curious habitation of some insect on a root in a sand bank. May Ist. Have found out it belongs to some Hymenopterous insects.
 No specimen found. This could belong to the wasp family Eumenidae. See also entries 449, 536, 537.
386. Mantis: caught at Bahia on the 17th of March a mantis and as I thought killed it, by holding for several minutes under water that was boiling, the head and thorax (to the insertion of the

wings) and anterior legs. These parts shortly were completely dead, and became dry and brittle, but eight days afterwards on the 25th the abdomen and hinder legs continued to possess a slight degree of irritability. This appears a well marked instance of the tenacity [continued]

1832 *Insects* 3.

[continued] of life among insects.

MANTODEA: no specimen found. For further Bahia entries see 3858.

387. Butterfly very common, on main island of Abrolhos March 29th

LEPIDOPTERA: no specimens found.

388. Helops Do.

COLEOPTERA, Tenebrionidae: no specimen found.

389. *Ornithomya* nearly all the birds in this island were Totipalmes; yet this insect, I think differs from those taken at St. Pauls from the bodies of a Sula. Abrolhos. March 29th.

DIPTERA, Hippoboscidae: the only record of a Hippoboscid I have been able to trace from these islands is that cited in Bequaert (1957: 43) of *Olfersia spinifera* (Leach) '3 miles off Abrolhos Is., coast of Bahia, 18° S (Albatros Exped.—Recorded by Howard, 1890)'. This species is normally associated with frigate birds. There are no birds recorded from Abrolhos by Darwin in the *Ornithological notes* (Barlow, 1963) nor in the *Zoology* (Darwin, 1841), where Darwin's only mention of the frigate bird is on Galapagos and Ascension (op. cit., pt. 3, p. 146). However in his *Diary* (Barlow, 1933: 46) he says 'Two parties landed directly after breakfast. I commenced an attack on the rocks & insects & plants: the rest began a more bloody one on the birds. Of these an enormous number were slaughtered by sticks, stones & guns; indeed there were more killed than the boats could hold'. Fitzroy (1839: 66) in his account of Abrolhos described what is without doubt a frigate bird 'A large black bird, with a pouch like that of a Pelican, but of a bright red colour, was very remarkable as it hovered, or darted among the bright verdure, and at a distance looked handsome; but when seen close it at once descended to the level of a carrion-eating cormorant or buzzard.' Darwin's reference to Totipalmes is an old group name for pelicans, cormorants and frigate birds.

Whilst studying the photographs of Darwin's insects *in situ* in Dublin I noticed a printed label 389 and pinned with it a label 'Hippobosca' suggesting that a specimen had been removed sometime but was not among those sent to me. Dr James O'Connor made a diligent search and found a Hippoboscid bearing a Haliday collection printed label which almost certainly refers here as it has proved to be *Olfersia spinifera* (det. A.M. Hutson) and was probably moved from Haliday box 566 by E.O. Mahoney, the ectoparasite specialist.

Rio de Janeiro [inserted under a line ruled across the page]

414. Coleoptera from the neighbourhood of the Rio Macae. April.

No specimen found. See entry 460.

415. Coleoptera. Rio de Janeiro. April.

Carabidae: Bembidiini subtribe Tachyina, three unidentified specimens in the BM (1887-42), Rio, one numbered 415.

Melyridae: *Astylyx lineatus* F. (Champion, 1918c) may refer here.

Scaphidiidae: *Scaphisoma elongatum* Waterhouse, F.H. (1879: 533). One in the BM (1879-34), Rio and numbered 415.

Scarabaeidae: *Aphengium sordidum* Harold. Two in the BM (1887-42), Rio, numbered 415. *Ateuchus squalidum* F. Four in the BM (1887-42 and 1885-119).

The following Scarabaeidae are referred here although unnumbered:

Canthidium trinodosum Boheman. Two in the BM (1887-42), Rio.

Onthophagus haematopus Harold. One in the BM (1887-42), Rio.

Saprosites aspericeps Harold. One in the BM (1887-42), Rio.

For other Scarabaeidae from Rio see entries 457, 458 & 568.

416. 417. Cicindela from the woods, Locégo. Do. [Rio de Janeiro]
 COLEOPTERA, Carabidae, Cicindelinae: no tiger beetles have been found. See also entries 416–7, 486, 504–5, 552, 1712, 2841, & 3420.
418. Carabidae, from Rio Frade. Do. [Rio de Janeiro]
 COLEOPTERA, Carabidae, Bembidiini: *Trichiolopha braziliensis* Waterhouse, one in the BM (1887–42), Rio, so labelled presumably refers to *braziliensis* Sahlberg (*Tachys*). There are also three unidentified Harpalinae in the BM (1887–42) that could refer here.
420. 421. Colymbetes. small puddles. Locégo. Do. [Rio de Janeiro]
 COLEOPTERA, Dytiscidae: *Colymbetes calidus* Babington (1842: 9), two in the BM, Rio [now in *Copelatus*]. *C. elegans* Babington (1842: 11), one in the BM (1863–44), Rio [now = *Copelatus posticatus* F.].
422. 423. Diptera. Rio Macãe. Do. [Rio de Janeiro]
 Tabanidae: *Chrysops varians* Wiedemann. One in Dublin with printed label 422 (det. J. E. Chainey).
424. 425. 426. Blattae under bark of rotten tree at Locégo. Do. [Rio de Janeiro]
 BLATTODEA: no specimens found. See entry 647.
427. Blaps. Emitted a musky, together with the usual disagreeable smell, stained my fingers for some days of a purplish red colour. Locégo. April. [Rio de Janeiro]
 COLEOPTERA, Tenebrionidae: no specimen found.
428. Blaps. ——— Do. [Rio de Janeiro]
 COLEOPTERA, Tenebrionidae: no specimens found.
429. Do. ——— Do. [Rio de Janeiro]
 COLEOPTERA, Tenebrionidae: no specimens found.
430. Erotylus. Locégo. ——— Do. [Rio de Janeiro]
 COLEOPTERA, Erotylidae: *Morphoides immaculatus* Lacordaire, one in the BM (1887–42).
431. Cimex. Rio de Janeiro
 HEMIPTERA: no specimen found.
432. 433. Gyrini. Campos Novos R. de Janeiro. Do.
 COLEOPTERA, Gyrinidae: *Gyrinus ovatus* Aubé, two specimens in Cambridge with above data; one has a printed white label 432 plus a small green label 50, the other has a small green label 22.
 Other Darwin gyrinids in Cambridge may refer here: *Gyrinus parvus* Say. One with green label 39; *Macrogyrus ellipticus* Brullé. Nine with green label 33.
434. Diptera. Mandetiba — Do. Do. [Rio de Janeiro]
 Stratiomyidae: *Chordonota ? inermis* Wiedemann (det. J.F. Chainey), one in Dublin labelled 'Clitellaria atrata' and numbered 434.
438. Coleoptera. Botafogo May [Rio de Janeiro]
 Carabidae, Bembidiini, subtribe Tachyina: two in the BM (1887–42), Rio, numbered 438.
 Hydrophilidae: *Enochrus atomus* d'Orchymont, one in the BM (1858–60), Rio, is numbered 438 and two others (1885–119, 1858–60) are unnumbered.
 Lampyridae: *Apisoma hesperum* L., two in the BM (1887–42 and 1858–60), one numbered 438.
 Limnichidae: *Phalacrichus atomarius* Sharp, several specimens in the BM (1885–119 and 1858–60) are numbered 438.
 See also entry 460.
439. Diptera—May—Do. Causing intolerable itching [Rio de Janeiro]
 Muscidae: *Musca domestica* L. (det. A.C. Pont). One in Dublin numbered 439.
 While the House-Fly can function as a sweat-fly in the tropics there appears to be nothing in the literature recording a reaction of this sort.

440. Lampyris. vide P 41 May [Rio de Janeiro]

COLEOPTERA, Lampyridae (Glow worms and fire flies): in the *Journal* (Darwin, 1845: 30) identified [by Waterhouse] as mostly 'Lampyris occidentalis' (= *Photuris fulvipes* Blanchard). No Darwin specimens found. The page reference is to the *Zoological Diary* where observations on the light flashes, etc. are recorded on which the *Journal* (p. 30) account is based; also mentioned in the *Descent* (Darwin, 1871: vol. 1, 345).

See also entries 438, 551.

441. Do. Do. [Rio de Janeiro]

No specimen found.

442. Females of this insect and Larva Do. [Rio de Janeiro]

No specimens found.

443. Do. luminous vide P 42 Do. [Rio de Janeiro]

No specimens found. The page reference is to the *Zoological Diary* entry, see 440.

444. Lopho (?) taken in great numbers on sand walk. [continued]

1832

Insects

4.

[continued] at night [Rio de Janeiro]

COLEOPTERA, Carabidae, Bembidiini, subtribe Tachyina: one unidentified in the BM (1887-42), Rio, with white printed label 444.

445. Coleoptera — Do. [Rio de Janeiro]

Carabidae: Harpalinae, four unidentified in the BM (1887-42), Rio, each labelled 445.

Carabidae, Bembidiini, subtribe Tachyina: fourteen unidentified in the BM (1878-43), Rio, only two numbered 445 but obviously the same series.

Curculionidae: *Endalus* sp. (det. R. T. Thompson), two in the BM (1887-42), Rio, one numbered 445.

See also entry 460.

446. Fresh water Coleoptera — Do. [Rio de Janeiro]

I place here all those Hydrophilidae in Cambridge labelled 'South America' and not otherwise accounted for (see entries 448, 1505, 3528 and 3635) and those Dytiscidae described from Rio and unplaced elsewhere.

Hydrophilidae: *Berosus sticticus* Boheman ab. *aberrans* Knisch. One in Cambridge with green number 16, a six mount with three specimens present with green number 15, one numbered green 7, one numbered green 23 and a double mount numbered green 31. *B. sticticus* ab. *confinis* Knisch. One double mount numbered green 33, an eleven mount (9 present) numbered green 25, a nine mount (6 present) numbered green 24, a six mount (3 present) numbered green 15 and a five mount (4 present) numbered green 3. *B. reticulatus* Knisch. Ten numbered 17. *Derallus rudis* Sharp. A four mount (2 present) numbered green 13; one numbered 12. *Helobata striata* Brullé. Two numbered 20. *Neohydrophilus politus* Castelnau. One numbered 49. *Paracymus debilis* Sharp. Three numbered 11. *P. armatus* Sharp. Five numbered 8, 10, 27, 28, 32. *Tropisternus collaris* F. Ten, one of which is numbered 4. *T. lateralis* F. Three without numbers. *T. setiger* Germar. Eleven, two numbered 37, 38. *T. laevis* Sturm. Five, two numbered 1, 2. *T. nitidulus* Knisch. One numbered 51.

Most of the above have the determination labels of A. Knisch, 1922 and the numbers cited are all on green labels (see introductory section on Cambridge material).

Dytiscidae: *Hydaticus havaniensis* Laporte (Babington, 1842: 11). *Hydroporus obscurus* Babington (1842: 14) is synonymous with *H. nitidus* Babington (1842: 14) and now placed in *Bidessus* (Blackwelder, 1944). *Hydroporomorpha parallela* Babington (1842: 14, 15). Two in the BM (1863-44) (= *Celina*). See Fig. 12. *Anodochilus maculatus* Babington (1842: 15, 16). One specimen without accession number. See Fig. 13. *Desmopachria nitida* Babington (1842: 16, 17). Two in the BM (1863-44). See Fig. 13.

See also entries 530, 531.

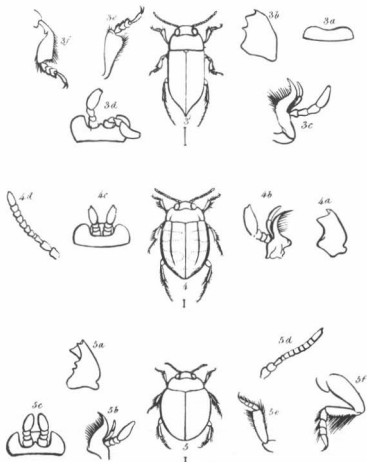


Fig. 13 Part of the plate from Babington's paper 'Dytiscidae Darwinianae' depicting new water-beetles from Rio de Janeiro: 3, *Hydroporomorpha parallela*; 4, *Anodochilus maculatus*; 5, *Desmopachria nitida* (see *Insect Notes* 446) (by courtesy of the Royal Entomological Society of London, from their *Transactions*, 1842).

447. *Hydrobius* inhabiting, **strongly brackish** lagoon, (road to Botanical Garden) R. de Janeiro Lost May.

COLEOPTERA, Hydrophilidae.

448. *Hydrophilus*, together with the last Do. Do.

COLEOPTERA, Hydrophilidae: in the *Journal Darwin* (1845: 22) says 'I also frequently encountered in the lagoon near the Botanic Garden, where the water is only a little less salt than the sea, a species of *Hydrophilus*, very similar to a water beetle common in the ditches of England.' The last comment would fit several genera of Hydrophilidae, but the '*Hydrophilus*' could refer to a specimen of *Hydrous ater* Olivier (A.G.) present in Cambridge.

See entry 1305 also for this genus and entry 446 for other freshwater beetles.

449. Ants found in (I do not know whether making) a nest like (368) found at Bahia. Ants do not make it. I found one somewhat similar, filled with half dead spiders, evidently collected by some Hymenopterous insect; It is the case; vide No 536. Rio de Janeiro. May.

The nests probably belong to wasps of the family Sphecidae but no specimens have been found (of ants or wasps). Further comment in the *Journal* (Darwin 1845: 35) includes reference to nests with dead caterpillars as well and probably involves several genera or families of wasps. See also entries 368, 536.

450. Ricinus from a pretty, but common yellow *Certhia* Do. Do.

PHTHIRAPTERA: no specimen found.

Darwin used *Certhia* loosely and Dr D.W. Snow (in litt.) is of the opinion that the host was probably the very common Bananaquit (*Coereba flaveola* L.) which has the right kind of bill and is yellow underneath. About 40 races of this species are recognized. See also entry 638 in spirits of wine list.

451. Ricinus Do. Do. (another species) Do. Do.

PHTHIRAPTERA: see entry 450.

453. Insect, colour changed by boiling water from grass green into a yellow Do. Do.
Lost

454. Do. Do. Do. Do.
Lost

456. *Lampyris*, different species from (440); shines nearly as brightly; uncommon; caught in web of small *Epeira*.

COLEOPTERA. Lampyridae: no specimen found. See White (1841) for the spider.

457. 458. *Geotrupes*; collect human dung into balls, and push it along with hind legs. Do.

COLEOPTERA, Scarabaeidae: *Gontioanthon smaragdulus* F., two in the BM (1887–42) with printed labels 457, 458.

459. *Acarus* from a *Passalus* in very moist rotten wood Do. Do.
Lost

Arachnida—not an insect

460. *Curculio* nearly covered with *Acari* liropodes Lat.^a in very moist rotten wood.
Do. Do.

COLEOPTERA, Curculionidae; the only Rio weevils which remain unassigned elsewhere are three *Beridinae*, BM (1887–42), probably representing three different genera (*teste* R. T. Thompson). However none bear mites and do not fit well here in habits and may therefore be referable to one of the general Coleoptera entries (414, 415, 438, 445, 478, etc.).

462. Hymenoptera the most common species, in great numbers Do. Do.

Chalcididae: *Smiera pielus* Walker (1838: 470), now placed in *Spilochalcis*, a genus with many species known to be gregarious parasites of Lepidoptera or Diptera.

476. 477. *Curculio* with *Acari* Do. Do.
See comments under entry 460.

478. Numerous Coleoptera Do. Do.
See comments under entry 460.

479. Beetle exceedingly numerous on sandy plain near the sea Do. Do.

COLEOPTERA, Oedomeridae: four unidentified specimens in the BM, one (1887–42), with printed number 479; the others (2, 1887–94 [error for 1887–42], 1, 1885–119) without numbers.

1832

Insects

5.

480. Beetle. Sandy plain. R. de Janeiro. May.
COLEOPTERA: see entry 479.
482. Hymenop. was conveying off a large Mygalus; they seem to **prey on & kill** large spiders. N.B. The only two Mygali, I have yet caught were in the jaws of this insect. Do. Do. No specimen found. Possibly Pompilidae; my colleague M. C. Day suggests *Pepsis* or *Entypus*.
483. Bee, the most frequent sort Do. Do.
HYMENOPTERA: no specimen found.
484. Diptera, vibrates its wings as its congeners do in England. Do. Do.
Otitidae: ?*Euxesta* sp. (det. B. H. Cogan). There are three specimens (standing together) in Dublin, one of which bears a printed number 484.
485. Diptera, runs swiftly **laterally** Do. Do.
No specimen found.
486. Cicindela, woods on Caucovado [Mt. Corcovado, Rio de Janeiro] Do. Do.
COLEOPTERA, Carabidae, Cicindelinae: no specimen found, see entry 416 note.
487. Capsida, Caucovado [Mt. Corcovado], as the Capsida was found on the larva, they most probably belong to it. The larva were curiously placed in two groups heads to heads round a stick. They adhered by the remains of a capsule and each group was thickly imbricate.
HEMIPTERA—Heteroptera: no specimen found.
488. 489. 490. Larva of Do. Do. Do. Do.
HEMIPTERA—Heteroptera: no specimen found.
491. Coleoptera Do. Do.
Tenebrionidae. *Crypticus platensis* Fairmaire, one in the BM (1885–119), 'Rio' (see also 677, 1321) and one *Crypticus* sp. (BM. 1887–42), 'Rio', may refer here.
492. Cerambyx, with Acari, by the friction of the thorax it made a most extraordinary noise Do. Do.
COLEOPTERA, Cerambycidae: no specimen found.
493. Diptera, very summit of Caucovado [Mt. Corcovado, Rio de Janeiro] Do.
Tabanidae: *Scaptia ?seminigra* Ricardo, one specimen in Dublin with the printed number 493 and a handwritten capital B. I have seen no explanation of the B (in Darwin's hand, see Fig. 19) label, which may merely be connected with initial sorting of material by Darwin.
494. Diptera. hovered over sandbank, like a Bombylius Do. Do.
Bombyliidae: *Anthrax ?reperta* Walker (det. J. E. Chainey), one in Dublin with printed number 494.
501. Diptera. This is the insect called sand fly, and notorious even in Anson's voyage, from the painful bite, which causes swelling, that lasts for many days; in centre a circular red mark is visible; the pain is half itching and half aching. Do. Do.
Simuliidae: one specimen in Dublin with printed number 501. My colleague Dr A. J. Shelley has dissected this very poor specimen and identified it as *Simulium ?pertinax* (Kollar). *S. pertinax* is the most common man-biter in that area and is considered in detail by Andretta & Andretta (1950). Simuliidae are referred to as black flies in modern parlance and the name sand fly is nowadays restricted to the biting subfamily Phlebotominae of the family Psychodidae.
Anson's (1748) 'sandfly' encountered at St Catherine's, Brazil is recorded as follows: '... at sunset, when the muscato retired they were succeeded by an infinity of sand-flies, which, though scarce discernible to the naked eye, make a mighty buzzing, and, wherever they bite, raise a small bump in the flesh which is soon attended with a painful itching, like that arising from the bite of an English harvest bug.'

The size is suggestive of a ceratopogonid midge of the genus *Culicoides* but the buzzing not—unless they were in very large numbers—perhaps he heard the last of the mosquitoes but was bitten by the first of the *Culicoides*. An American name for these tiny midges is appropriately 'no see ums'. John Boorman of the Animal Virus Research Institute suggests that Anson's midge may be *Culicoides paraensis* Goeldi which is the principal man-biting *Culicoides* in that area of Brazil, though the buzzing remains a mystery.

502. Xenos (?) Sandy Plain; sweeping; Do. Do.

COLEOPTERA, Stylopoidea (= Strepsiptera or 'stylops'): no specimen found.

503. Libellula, I observed this insect as it proceeded along the edge of a pool, strike [continued]

1832

Insects *May*

6.

[continued] the water violently with its curved tail, so as to throw some **drops** several inches on the bank; is this connected with **oviposition**.

ODONATA. Libellula was used rather indiscriminately and simply meant dragonfly in Darwin's day. The oviposition habits described suggest one of the larger Anisoptera but no specimen has been found.

504. 505. Cicindela, habits precisely the same as Cicin: hybrida Do. Do.

COLEOPTERA, Carabidae, Cicindelinae: no tiger beetles have been found; the species referred to is British.

506. 507. The larvae or female of Lampyrus v p. 42 Do.

COLEOPTERA: no specimen found. The page reference is to the *Zoological Diary*. See entries 438, 440–443, 551 for further comments.

508. Do; another species: all luminous Do.

No specimen found. See entries 438, 440–443, 551.

509. 510. 511. 512. 513. Coleoptera from the very summit of Caucovado [Mt. Corcovado]

Lost Lost Lost Lost Do. Do.

No specimen found.

514. Coleoptera habits Do. Do. Do.

No specimen found.

515. 516. Hemiptera habits Do. Do. Do.

No specimen found.

517. 518. 519. 520. Diptera habits Do. Do. Do.

Bibionidae: one numbered 517 in Dublin.

Lauxaniidae: two with printed numbers 518, 520 in Dublin.

529. Coleoptera. living in the water or caught in my **water** net. Do. Do.

Scarabaeidae: *Ataenius picinus* Harold, one in BM (1885–119), Rio, numbered 529. *Ataenius* sp., one specimen in BM labelled ex series *tenebricosa* and six more numbered 529.

530. 531. Insects New genus, habits the same as Elmis, living under stones in running water; differs remarkably from that genus in shape of body, and palpi (and in spear to sternum?) Do. Do.

COLEOPTERA, Psephenidae: *Psephenus darwini* Waterhouse, C.O. (1880: 563) one in BM, 'Rio de Janeiro', with printed number 530. Waterhouse later (1880–82, plate 26) illustrated this species in colour.

532. 533. Diptera plague the horses terribly Do.

Muscidae: *Stomoxys calcitrans* (L.) (det. A. C. Pont) (the Stable Fly), two specimens numbered 532, 533 in Dublin.

534. Hymenoptera. Pompilus (?) This family runs very quickly amongst the herbage, continually at the same time vibrating its wings. Excavates **cylindrical** holes in a trodden path. Do.
No specimen found. Could refer to Pompilidae or Sphecidae.
535. Hymenoptera caught killing spiders. v [p.] 39. Do.
No specimen found. Referred to as ? Pepsis in the *Journal* (1845: 34–5) where full observations are recorded. My colleague M. C. Day tells me that this could be a *Trypoxylon* (Sphecidae). The page reference is to the *Zoological Diary* where the observations are recorded on which the *Journal* account is based.
Some of Darwin's spiders were reported on by White (1841, 1849) and there is unidentified material both dry and in spirit in the Zoology Department at the BM.
536. Hymenoptera. I observed this insect carrying a large green caterpillar, and watched it to the cell (537): when with its mandibles, by degrees it forced the caterpillar inside. The rim of the cell is broken; this is the same as (368) found at Bahia.
No specimen found. My colleague Colin Vardy suggests a wasp of the family Eumenidae, possibly *Zeta* sp. See entries 365–8, 449, 537.
537. Cell made by the latter for its larva (May).
No specimen found.

1832 *Insects* *May.* *Rio de Janeiro* 7.

538. **Orthopterous insect** with Acari Do. Do.
No specimen found.
550. *Leiodes* from *Hymenophallus* vide [p.] 43.
COLEOPTERA, Nitidulidae: one unidentified specimen in BM (1885–119), Rio, with printed number 550 (?*Oxycnemis* det. R. W. Aldridge).
Leiodes is not a Nitidulid but is now placed in Leiodidae.
In the *Journal* Darwin (1845: 33) records that a *Strongylus* [Nitidulidae], attracted by the odour, alighted on the fungus as he carried it in his hand. In a postscript to a letter to Henslow 16 June 1832 (Barlow 1967: 57) he says:
'I found the other day a beautiful *Hymenophallus* (but I broke it to pieces in bringing it home) and with it an accompanying *Leiodes*.—almost perfect copy of the Barmouth specimen.—'
The Barmouth specimen referred to must be one of the 'Nitidula' species referred to by Stephens (1827) and discussed in the section on British insects, but is larger.
The fungi collected on the *Beagle* voyage were described by Berkeley (1839, 1842) but do not include a *Hymenophallus* so presumably there was not enough of the specimen left to warrant preservation. The page reference is to the *Zoological Diary* where Darwin says of the fungus 'resembling impudicus' [*Phallus*] with other descriptive details.
551. Beetle from the dense forest Do. Do.
Lampyridae: *Ethra maledicta* Olivier. (= *lateralis* Laporte), one in BM (1887–42) with printed number 551.
552. Cicindela from the forest Do. June.
COLEOPTERA, Carabidae: Cicindelinae: no specimen found.
553. Forficula from Do. (forceps curious). Do.
DERMAPTERA: *Sphingolabis perplexa* Kirby (1891: 529), one in BM (1885–100), Rio (now placed in *Kleter*).
554. 555: Gyrini. rapid brook in the forest; emit an odour like *G. natator* Do. Do.
COLEOPTERA, Gyrinidae: *Enhydrys sulcatus* Wiedemann, two specimens in Cambridge with this data and printed white labels 554 and 555. One has a small green printed label 48 and there are three other specimens with printed Museum labels. The species referred to in the note is British.

564. Larva of *Lampyrus*, highly luminous Do.
 COLEOPTERA, Lampyridae: no specimen found. See entries 440–443 and 506–8.
565. *Aphodius* the only species I have yet seen in Brazil Do. Do.
Lost
 COLEOPTERA, Scarabaeidae: no specimen found.
566. *Agrion* from the forest; common. Do. Do.
 ODNATA, Zygoptera: no specimen found.
567. *Frigania*. Do. Do. Do.
 TRICHOPTERA[Phryganea]: no specimen found.
568. *Geotrupes* Do. Do. Do.
 COLEOPTERA, Scarabaeidae: *Chalcocopris hesperus* Olivier, one in BM (1887–42), Rio, with printed label 568.
569. Diptera common Do Do. Do.
 Micropezidae: two specimens in Dublin with printed numbers 569.
570. Dipter[a] called sand fly, caught whilst inflicting its painful bite on the knuckle, its favourite place Do. Do.
 ?Simuliidae: no specimen found but this sounds like a *Simulium* (see entry 501).
571. *Curculio*. covered with yellow down, when first taken Do. Do.
 COLEOPTERA, Curculionidae: no specimen found but my colleague R. T. Thompson suggests this was probably a *Lixus* or allied weevil genus.
572. *Onthophilus*. Inhabits the forest in plenty and does not, I suppose, feed on dung.
 COLEOPTERA: *Onthophilus* is a Histerid but see entry 351 where a numbered Scarabaeid is referred to this genus. One of the unnumbered Scarabaeids referred to 415 may therefore refer here.
573. *Gyrinus*, brooks in the forest. Do. Do.
 COLEOPTERA, Gyrinidae: *Gyretes glabratus* Règimbart, one in Cambridge labelled with above data and with printed white label 573 (no small green label) and Zimmerman det. label.
574. Coleoptera. Do. Do.
 See entry 618.
580. Tricoptera (Stephens) allied to in Fungus in forest, the smallest beetle I have seen in the tropics. Do. Do.
 COLEOPTERA, Ptiliidae: *Trichopteryx darwini* Matthews (1889: 193), one in BM (no accession number) labelled 'In fungus in the forest Rio de Janeiro' and a printed number 580. See eponyms.
592. Bee (Social) Burrows its nest in the ground in the forest, projecting tube, with folding edges, leading to its nest. Do. Do.
 HYMENOPTERA, Apidae: no specimen found but my colleague G. R. Else suggests possibly a genus of the tribe Meliponini such as *Melipona* or *Trigona*.
593. *Lampyrus* [sic], abdominal rings shining. Do.
 COLEOPTERA, Lampyridae: no specimen found. See entries 440–443, 506–8.
594. *Curculio* (diamond) feigns death to a remarkable degree; is this to compensate for greater danger brought on by brilliancy of colours. Do. Do.
 COLEOPTERA, Curculionidae: no specimen found but my colleague R. T. Thompson has suggested that this would be an *Entimus* species, possibly *imperialis* Forster or *nobilis* Olivier. Darwin (1871: 367) briefly mentions these beetles in the *Descent* 'other species [of beetles] are ornamented with gorgeous metallic tints,—for instance, . . . the splendid diamond-beetles which are protected by an extremely hard covering.'

615. Butterfly vide 155. Do. Do.

LEPIDOPTERA: no specimen found. In the *Journal*, Darwin (1845: 33) mentions '*Papilio feronia*' as frequenting the orange groves and draws attention to Doubleday's (1845, *Proc. ent. Soc. Lond.*: 123) account of the sound producing mechanism of this butterfly—'. . . had recently examined *Peridromia Feronia*, the butterfly described by Mr C. Darwin, in his 'Tour', as making a noise during flight like the rustling of parchment, and that he had detected a small membranous sac at the base of the fore-wings, with a structure along the subcostal nervure like an Archimedean screw or diaphragm in the tracheae, especially at the dilated base of the wing.'

618. Coleoptera. Do. Do.

I regard this entry as the day to which Darwin (1845: 34) refers in a footnote in the *Journal*:

'I may mention as a common instance of one day's (June 23rd) collecting, when I was not attending particularly to the Coleoptera, that I caught sixty-eight species of that order. Among these were only two of the Carabidae, four Brachyelytra, fifteen Rhynchophora, and fourteen of the Chrysomelidae. Thirty-seven species of Arachnidae, which I brought home, will be sufficient to prove that I was not paying overmuch attention to the generally favoured order of Coleoptera.'

Anthicidae: *Acanthinus aequinoctialis* Laporte, one in BM 1887-42), Rio.

Carabidae: Bembidiini subtribe Tachyina (det. N. E. Stork): one in BM (1887-42), Rio, numbered 618.

Chrysomelidae: *Cephaloleia picta* Baly (1858: 55), one in BM (1885-119), Rio. *Diabrotica bilineata* Baly, one in BM (1885-119), Rio. *D. contigua* Baly, one in BM (1885-119), Rio. *Epitrix* spp., six in BM (3—Rio, 1855-119, one numbered 618; 2 ex Ent. Soc., Rio 1856: 86, one numbered 618).

Coccinellidae: *Diomus effusus* Brèthes (1924: 165), one in BM (1885-119), Rio, numbered 618. *Heteridiomus darwini* Brèthes (1924 gen. & sp.: 155), one in BM (1885-119), Rio. *Pullus caseyi* Brèthes (1924: 171) (subgenus of *Scymnus*), one in BM (1885-119). *P. hians* Brèthes (1924: 171), one in BM (1885-119). *Scymnus* spp., two in BM (1885-119). *Syphrea bahiensis* Bryant (1942: 107) may refer here (see also entry 3858).

Curculionidae: Leptopiinae, three species of an undetermined genus, in BM, Rio, two numbered 618.

Endomychidae: *Stenotarsus areolus* Gerstaecker, one in BM (1887-42), Rio. *Stenotarsus* sp.; one in BM (1887-42), Rio.

Languridae: two in BM (1885-119), Rio, with 618 on verso.

Leiodidae: *Adelopsis grouvellei* Jeannel (1936: 64, 66), one in BM (1885-119), Rio, numbered 618.

Nitidulidae: ?*Pallodes* sp., one in BM (1887-42), Rio, numbered 618. *Stelidota* sp., one in BM (1885-119) numbered 618 and another ex Sharp collection (1905-313) with a Darwin handwritten Rio label and numbered 618 showing that some Darwin specimens were in the Sharp collection.

Scarabaeidae: *Canthon* sp., two in the BM (1887-42), Rio, numbered 618.

Obviously not all the material has been located.

Some of the unnumbered specimens may refer to 574.

630. Coleoptera taken in Beagle between Rio de Janeiro and Monte Video Do.

Bruchidae: *Zabrotes subfasciatus* Boheman, one in BM (1858-60) with handwritten (Darwin) 'Rio' and numbered 630 on verso. This beetle is a pest of haricot beans which were probably carried on board. It occurs in central and South America and elsewhere (Aitken, 1975). It may have been on the Calavances (see 778). In the *Journal* Darwin (1845: 158-9) discusses insects at sea at some length but makes no specific reference to this and the next five entries suggesting they were all possibly 'ships fauna'.

631. Cloporta [sic—Coleoptera] Beagle Do.

No specimen found. See entry 630.

632. Meligethes. Beagle, common come from the ripe fruit of the Banana Do.

COLEOPTERA, Nitidulidae. No specimen found.

633. Acrydium. Rio de Janeiro. Do.

ORTHOPTERA: the only 'Acridium' found were described by Walker from Monte Video and may refer here if in fact they were taken on board the *Beagle* between Rio and Monte Video as the previous and following entries suggest (see entry 630).

Acrididae: *Acridium sellatum* Walker (1870: 585), one in the BM (1845–68) (= *Schistocerca gregaria* Forskål, the desert locust). *Acridium maculiferum* Walker (1870: 622), one in the BM (1845–68). *Eynisacris extranea* Walker (1870: 639), one in the BM (1845–68) (now in *Diponthus*).

It seems possible that some mislabelling has occurred and that some of these refer elsewhere; see entries 1329, 1330, 3152.

634. Lampyrus Do. Do. Do.

COLEOPTERA, Lampyridae: no specimen found. See entries 440–443, 506–508.

635. Diptera. Beagle. Do.

No specimen found, unless any of 646 refer here.

636. Lepidoptera. diurna Rio de Janeiro. Do.

No specimen found.

637. 638. Moths Do. Do.

No Darwin Lepidoptera have been described specifically from Rio but *Leucania extranea* Guenée (Walker, 1856: 93) (now *Mythimna* (*Pseudaletia*) *unipuncta* Haworth, Noctuidae) and *Calonota helymus* Boisduval (Walker, 1856: 1627) (now *Calanotos helymus* Cramer, Ctenuchidae) recorded from 'South America. C. Darwin' may refer here though no specimens have been found in the collections.

640. Colymbetes, taken on board must have at least flown 45 miles from Cape St. Mary. [Monte Video—crossed out] R. Plata [substituted by Darwin] (July).

COLEOPTERA, Dytiscidae: *Colymbetes signatus* Babington (1842: 7), one in the BM (1863–44), Monte Video, may refer here. Darwin mentions this in the *Origin* (1859) and asks 'how much further it might have flown with a favouring gale'. See also entry 862.

641. 642. 643. 644. Gnats, in same situation as last in great numbers Do. Do.

Lost Lost

DIPTERA, Tipulidae: *Limnobia reciproca* Walker (1849: 50), one in the BM (1845–68) (now *Trimicra pilipes* F.). This almost certainly refers here as Edwards (1927) recorded this species and a chironomid of the genus *Tanytarsus* in a similar situation, 32 miles from the Brazilian coast.

645. Pediculus, from a petrel called Cape-pidgeon, in the open ocean August.

Lost

PHTHIRAPTERA: the bird referred to as the cape-pidgeon is the cape petrel or pintado (*Daption capensis* L.) and is discussed by Gould in the *Zoology* (Darwin, 1841: pt. 3, 140–1).

August

M. Video R. Plata

646. Diptera, Rat Island, M. Video Do.

The following Diptera described or recorded by Walker from Monte Video probably refer here.

Anthomyiidae: *Anthomyia corelia* Walker (1849: 953–4) (= *Delia platura* Meigen).

Asilidae: *Asilus mucus* Walker (1849: 463).

Bibionidae: *Dilophus thoracicus* Guerin (Walker, 1849: 118).

Calliphoridae: *Musca lyrcæa* Walker (1849: 874) (= *Myolucilia*); *M. gamelia* Walker (1849: 878), one in the BM (1845–68) (a synonym of the previous species).

Muscidae: *Anthomyia cutilia* Walker (1849: 954) (= *Psilochaeta chalybea* Wiedemann); *A. felsina* Walker (1849: 954) (= *Neurotrixa*).

Pyrgotidae: *Chromatomyia ?distincta* Walker (1849: 806). Now referred to *Dichromyia sanguinceps* Meigen and may not belong to this family.

Sarcophagidae: *Sarcophaga tessellata* Wiedemann (Walker, 1849: 829); *S. chlorogaster* Wiedemann (Walker, 1849: 834); *S. proerna* Walker (1849: 835) (= *Sarconesia chlorogaster* Wiedemann).

Sphaeroceridae: *Borborus quinque maculatus* Walker (1849: 1130) (= *Archiborborus hirtipes* Macquart).

See also entry 671.

647. Blatta Do. Do. Do.

BLATTODEA: *Blabera brasiliana* Saussure (Walker, 1868: 2), no specimen found; *B. dubia* Serville (Walker, 1868: 9), one in the BM (1845–68).

664. Pediculus, from a Tringa (Peewit) Do.

PHTHIRAPTERA: no specimen found. The bird referred to is *Vanellus cayanus* Gray, the pied plover referred to as *Philomachus cayanus* by Gould in the *Zoology* (Darwin, 1841: pt. 3, 127), where, in Darwin's notes on behaviour, it is compared with the British peewit. Like our peewit it has a local name, 'tero-tero', derived from its cry.

665. Curculio, on sandy hillocks near the sea Do.

COLEOPTERA, Curculionidae: no specimen found.

666. Cillenum?(Leach) under stones in mud, Rat Island, water brackish August.

Lost

COLEOPTERA, Carabidae: *Cillenum[s]* is a synonym of *Bembidion*. No specimen found.

667. Agonum? allied to; elytra singularly sculptured; Habit Do. Do. Do.

Lost

COLEOPTERA, Carabidae: no specimen found.

671. Diptera. very common here Do. Do.

Sciomyzidae: *Tetanocera angulifera* Walker (1849: 1085), three in the BM (1845–68) are referred here rather than to 646, as the presence of three specimens suggests it may have been 'very common'.

672. Acarus from Cavia capybara (Linn). Do.

Arachnida, Acari—not an insect.

673. Ricinus, from Rhynchops. Do.

Lost

PHTHIRAPTERA: no specimen found. The host bird referred to is *Rhynchops niger* L., the Black Skimmer discussed in the *Zoology* (Darwin, 1841: vol. 3, 143–4) and the *Journal* (Darwin, 1845: 137).

674. Moth, common on the mount. [Green Mount, 450' high] Do.

LEPIDOPTERA, Arctiidae: *Epantheria indecisa* Walker (1855: 697), four in the BM (1846–38), S. America, one with white printed label 674.

675. Beetle, found in middle of an ants nest (accidental?) Do.

COLEOPTERA: no specimen found. Some beetles normally live in ants nests.

676. Carabidae [beetle-struck out] common under the drift matter of the tide. Do. (August)

Lost

1832 *Insects* *M. Video* *August* 9.

677. Heterom: 4: Poecilus, Dermestes, Necrobia, Haltica, Galeruca, Coccinella, Forficula, Harpales, Amarus, Pterostichus, Trechus, Peryphus, 2 Curculio, Forficula, Corixa, 2 Harpalus, Noloptes, Capsida, Colymbetes, Feronia, Pentatoma, Silpha, Hygrotus, Hister, 2 Chrysomela. The greater number found under stones and sticks. Hybernating [sic] on the Mount. [Several scientific names have one letter spelling corrections by Darwin.]

COLEOPTERA, Carabidae: *Antarctia circumfusa* Germar, three in BM (1880–43, 1863–49), one numbered 677. *Bembidion (Notaphus) embei* Solier (det. N. E. Stork), one in the BM

(1885–119) with handwritten 677. The following untraced (and probably misidentified Carabidae recorded from Monte Video are also referred here although some may refer to 678. '*Bariplus speciosus* (Klug) Dejean' (Waterhouse, G. R., 1840c). '*Bariplus rivalis* Dejean (*Molops rivalis* Germar)' (Waterhouse, G. R., 1840c). '*Feronia corinthia* Dejean (*Molops corinthia* Germar.)' (Waterhouse, G. R., 1841b). '*Feronia submetallica* Waterhouse, G. R., 1841b: 122). '*Feronia assimilis* Dejean (Waterhouse, G. R., 1841b). '*Feronia (Argutor) patagonica* Waterhouse, G. R. (1841b: 126). There are also 3 *Agonum* spp. numbered 677 in the BM (1885–119) accessions.

Chrysomelidae: *Platynocera murina* Blanchard, one in the BM (1885–119) numbered 678 (included here because this family is not mentioned under entry 678).

Coccinellidae: *Coccinella auroralis* Germar, one in the BM (1885–119), Monte Video, is referred here as this family is not mentioned under entry 678.

Curculionidae: *Listroderes apicalis* Waterhouse, G. R. (1842b: 123), one in the BM (1885–119) numbered 677. (See also entry 678).

Scarabaeidae: *Trox pilularius* Germar, six in the BM (1887–42) each with a handwritten 677.

Tenebrionidae: *Crypticus platenis* Fairmaire, one in the BM (1887–42) with a handwritten 677 (see also 491, 1321). *Epipedonota bonariensis* Waterhouse, G. R. (1842b: 119).

HEMIPTERA, Pentatomidae: *Mecocephala acuminata* Dallas (1851: 180; also Walker, 1867), one in the BM (1845–68). *Aceratodes fulvicornis* F. (Dallas, 1851; Walker, 1867), one in the BM (1845–68) (= *Edessa*).

Pelagonidae: two of this family at Cambridge, labelled S. America and with a green label printed 6 may refer here. These bugs are semi-aquatic and seem to fit better here (with *Colymbetes* and *Corixa* mentioned) than under 2444, 2446.

No Dermaptera ('Forficula') have been found for this entry.

678. (7 Lamellicorn: I). 2 Heterom: 2 Curculio. 9 Carabidae insects found Do. Do.

COLEOPTERA, Carabidae: *Bembidion (Notaphus) embei* Solier (det. N. E. Stork), three in the BM (1885–119) and a handwritten number 678. *Feronia dejeanii* Waterhouse, G. R. (1841b: 121), one in the BM (1863–44) numbered 678. *Feroniola laticollis* Sol (det. S. L. Straneo, 1950), one in the BM numbered 678. *Feronia cordicollis* Dejean (Waterhouse, G. R., 1841b), one in the BM (1863–44) numbered 678 (= *Pterostichus*). There are also two *Agonum* spp. numbered 678 in the BM (1885–119) accessions.

Curculionidae: *Listroderes apicalis* Waterhouse, G. R. (1841b: 123), two in the BM (1845–63, 1885–119) both numbered 678 (see also entry 677).

Dermestidae: *Dermestes maculatus* Degeev, two in BM (1887–94), numbered 678.

Silphidae: *Oxelytrum erythrurum* Blanchard, one in the BM (1885–119) numbered 678 (see also entry 796).

691. Harpalidae (one of) Mount Do.

COLEOPTERA, Carabidae: no specimen found.

692. Cerambyx buildings: M. Video Do.

COLEOPTERA, Cerambycidae: *Cyllene spinifera* Newman (1840 gen. & sp.: 8)—'Inhabits South America taken by Mr Darwin, in cabinet of Entomological Society'—one in the BM (1863–44), Monte Video, with printed number 692.

B. Blanca. Northern Patagonia [with a short rule inserted above].

694. Harpalidae (one of) Bahia Blanca.

COLEOPTERA, Carabidae: no specimen found.

695. Meloe: elytra with bright yellow spots, sides of abdomen red, emitted yellow fluid. from Do.

COLEOPTERA, Meloidae: no specimen found.

696. 697. 698. Trox (3 species) B. Blanca Sept.

COLEOPTERA, Scarabaeidae: *Trox brevicollis* Eschscholtz, one in the BM with C. Darwin [18]87–42 printed on a green label and no further data, but the rest of the series (non-Darwin) are from Chile.

See entry 677 for another reference to this genus.

699. 700. 701. 702. 4 species of Melasomes. Tolerably abundant, in

(a) Sand hillocks Do. Do.

(a) [from verso of page] (700) **Is the commonest insect in the place runs very actively on the sand.**—

COLEOPTERA, Chrysomelidae: no specimen found.

703. Scarabidae. All these beetles inhabit sandy hillocks near sea. This beetle seems to live on the dung of ostriches. I saw one busily employed in pushing along a large peice [sic] with its frontal horns from Do. Do. 19th.

COLEOPTERA, Scarabaeidae: *Eucranium dentifrons* Guérin, one in the BM (1887–42, as *Anomiopsis*) numbered 703. *Ataenius rubripes* Boheman, two in the BM (1887–42), B. Blanca. *Homalochilus niger* Blanchard, one in the BM (1885–119), B. Blanca. *Megathopa violacea* Blanchard, one in BM (1845–63).

The last three (unnumbered) species are also allocated here but seem rather small for the above observation (see also 1492). The 'ostrich' is the common rhea (*Rhea americana* Latham) and is written about at length both in the *Zoology* (Darwin, 1841: pt. 3, 120–3) and the *Journal* (Darwin, 1845: 43, 89).

705. 706. 707. Heteromorous insects, Sandy plains Do.

COLEOPTERA, Tenebrionidae: *Nyctelia puncticollis* Waterhouse, G. R. (1842b: 110)—'tolerably abundant on sand hillocks'—one in the BM (1845–63). *Scotobius ovalis* Guérin, two in BM (1845–63, 1885–119), former numbered 707.

See also entry 724 for other *Nyctelia*.

708. Staphylinus Do. Sept.

COLEOPTERA, Staphylinidae: no specimen found, unless the specimen recorded by Kritsky (1981) in the Field Museum, Chicago refers here. No further data is available so the Chicago specimen could also refer to 3445.

709. Insects Do. Do.

COLEOPTERA, Nitidulidae: *Neobrachypterus darwini* Jelinek (1979: 194), 21 specimens in the BM (1885–119) numbered 709. There is also an unidentified weevil (Curculionidae, Baridinae) in the BM accessions: Bahia Blanca, 709.

717. Harpalidoes [?]: I: sandy plain. Do. Do.

COLEOPTERA, Carabidae: no specimen found.

718. Meloe. hillocks. Hind legs very long, forehead angular; sides of abdomen bluish. Do. Do.

COLEOPTERA, Meloidae: no specimen found.

719. Lamellicorn (Hoplia) copulating in great numbers, sandy plain. Do. Do. 19th.

COLEOPTERA, Scarabaeidae: no specimen found.

720. Lamellicorn Do. Do.

COLEOPTERA, Scarabaeidae: no specimen found.

721. Coccinella. Do. Do.

COLEOPTERA, Coccinellidae: *Pullus piceipennis* Brèthes (1924: 170) is from Bahia, Blanca but appears to refer to 1495.

722. Coccinella (allied to) Do. Do.

COLEOPTERA, Coccinellidae: no specimen found.

1832

Insects

B. Blanca

Sept.

10.

724. Coleoptera. Heterom; Rio Negro.

Tenebrionidae: *Nyctelia rugosa* Waterhouse, G. R. (1842b: 111), recorded from Bahia Blanca, but no specimen found; see also entry 864. *N. saundersii* Waterhouse, G. R. (1842b: 111), two in the BM

(1863–44), Bahia Blanca. *N. nodosa* Waterhouse, G. R. (1842b: 115), recorded from Bahia Blanca but no specimens found. *Epipedonota bonariensis* Waterhouse, G. R. (1842b: 119), recorded from Bahia Blanca but no specimen found. *Scotobius muricatus* Guérin (= *crispatus* Germar), one in the BM (1885–119) Bahia Blanca.

See also entries 705–707.

725. Colymbetes. **B. Blanca**

COLEOPTERA, Dytiscidae: no specimen found.

726. Carabidous beetle from **the mud banks of the harbor** [sic].

Lost

COLEOPTERA, Carabidae.

752. Carabidous beetle inhabiting sand hillocks.

COLEOPTERA, Carabidae, Harpalinae: one in the BM (1887–42), Bahia Blanca and white label with printed 752.

753. *Crysmela* [sic] on a flower.

COLEOPTERA, Chrysomelidae: *Cryptostetha juanae* Bechyne (det. M. Daccordi), one in BM, Bahia Blanca. See also 766).

765. Lamellicorn from Monte Hermosa B. Blanca.

COLEOPTERA: no specimen found.

766. *Chrysmela* [sic] near the sea Do. Do.

COLEOPTERA, Chrysomelidae: see entry 753 which could refer here instead.

767. *Harpalus* Do. Do.

COLEOPTERA, Carabidae: no specimen found.

768. *Elater*. Do. Do.

COLEOPTERA, Elateridae: no specimen found.

778. *Bruchus* from the Calavances **on board**.

COLEOPTERA, Bruchidae: *Acanthoscelides objectus* Say, one in the BM (1885–119) and numbered 778. Calavances was an English common name for certain varieties of pulse (Leguminosae, *Dolichos* etc.) (Mrs M. Greiff *in litt.*) This beetle is a well-known pest of stored products and although thought to have originated in tropical S. America is now almost cosmopolitan (Aitken, 1975). See also 630.

786. *Curculio* B. Blanco [a] Sept.

COLEOPTERA, Curculionidae: no specimen found.

787. Lamellicorn Do. Do.

COLEOPTERA: no specimen found.

788. *Amara*: sandy hillocks Do. Do.

COLEOPTERA, Carabidae: no specimen found.

789. *Clavipalpes*. *Heterom*. Lat: living at roots of grass; sandy hillocks Do. Do.

COLEOPTERA: no specimen found.

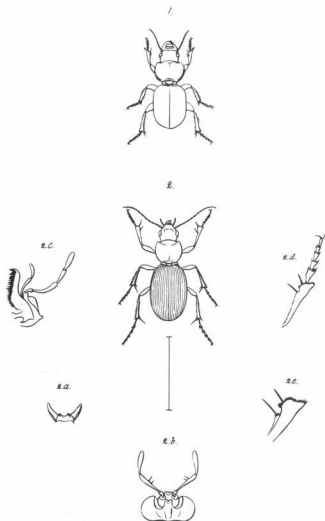
790. *Pulex* from the Armadillo (375) Do. Do.

See *Spirits of Wine* list, no. 376.

795. Carab: sand hillocks; beautiful comb of spines over the tarsi.

The following may refer here:

COLEOPTERA, Carabidae: *Odontoscelis darwini* Waterhouse, G. R. (1840a: 356), one in the BM (1863–44) (= *Cnemacanthus*). See Fig. 14. *O. striatus* Waterhouse, G. R. (1840a: 358), one in the BM (1863–44) 'on a sandy plain at Bahia Blanca' (= *Cnemacanthus*). *Cardiophthalmus stephensi* Waterhouse, G. R. (1840a: 361), one in the BM (1863–44), Bahia Blanca (= *Barypus*).



1. *Odontoscelis Darwinii*
 2. *Cardiophthalmus longitarsis*.

G. R. Waterhouse del.

J. Swainson, sc.

Fig. 14 Two Carabid beetles described by G. R. Waterhouse: *Odontoscelis darwinii* from Bahia Blanca and *Cardiophthalmus longitarsis* from Port Desire (see *Insect Notes*, 795 and 1794) (from the *Annals and Magazine of Natural History* (1840), by courtesy of Taylor & Francis Ltd.)

796. Silpha. in numbers feeding on carrion with Trox and Dermestes Do. Do.
 COLEOPTERA, Silphidae: *Oxelytrum erythrurum* Blanchard, one in the BM (1885–119), Bahia Blanca.
 See also 678.
797. Lamellicorn; I think this number has been used twice: once for a large bush, bearing very sweet flowers and no leaves Do. Do.
 COLEOPTERA, Scarabaeidae: *Pachrodema flaveola* Moser, one in the BM (1887–42), B. Blanca and printed label 797.
820. Harpalus M. Hermosa.
 COLEOPTERA, Carabidae: no specimen found.
829. Fly just killed a gnat. B. Blanca Do. [This entry is followed by a rule across the page presumably by Darwin to indicate end of Bahia Blanca entries—see inserted heading above entry 694.]
 DIPTERA: no specimen found.
839. Saperda on the trunk of the Plytocalla; (a large tree), B. Ayres.
 COLEOPTERA, Cerambycidae: no specimen found.
840. Diptera on flowers. B. Ayres.
 No specimen found.
841. Do. Do. Do.
 No specimen found.
842. Coleoptera Do. Do.
 Scarabaeidae: *Canthidium breve* Germar, two in the BM (1887–42), B. Ayres. See also entry 843 for this species.
843. Coleoptera M. Video.
 Carabidae: *Bembidion* (*Notaphus*) *embei* Solier (det. N. E. Stork), one in the BM (1885–119), Monte Video and numbered 843. See also entries 677, 678 for this species. *Feronia cordicollis* Dejean (Waterhouse, G. R. 1841b), one in the BM (1885–119), Monte Video and numbered 843. *Feroniola laticollis* Solier (det. S. L. Straneo, 1950), one in the BM numbered 843. There are also 3 *Agonum* sp. numbered 843 in the BM (1885–119) accessions.
 Scarabaeidae: *Canthidium breve* Germar, two in the BM (1887–42), Monte Video and numbered 843.
 Tenebrionidae: *Scotobius pilularius* Germar (= *miliaris* Billberg), one in the BM (1885–119) numbered 843.
848. Heterom; common under stones. Do.
 COLEOPTERA: no specimen found.
849. Nest of Bee, under stones. Contained leaden blue, slightly sweet honey; mouth closed by a sepal of a flower M. Video.
 No specimen found.
- 1832 *Insects* M. Video 11.
850. Heterom. feeding on Compositae flowers and when touched, like Meloe emitting yellow fluid. Do.
 COLEOPTERA, Melyridae: *Astylus quadrilineatus* Germar (Champion, 1918c) may refer here.
851. Heterom; habits Do. Do. Do.
 COLEOPTERA: no specimen found. See entry 850.

858. Coleoptera—The Mount.

Carabidae: *Feronia (Poecilus) depressa* Waterhouse, G. R. (1841b: 126), one in the BM (1885–119), Monte Video, numbered 858 (= *Cynthidia planodisca* Perty).

Scarabaeidae: *Ateuchus robustum* Harold, one in the BM (1887–42), M. Video and numbered 858. See also entry 1505 for this species.

860. Meloe. San Blas: Bay of Patagonia. North of R. Negro

COLEOPTERA, Meloidae: no specimen found.

861. Belostomus, in Water, Rat Island. M. Video.

HEMIPTERA, Belostomatidae: no specimen found.

862. Calosoma; flew on board when we were about 10 miles from the shore; Bay of San Blas.

COLEOPTERA, Carabidae: *Calosoma patagoniense* Hope (1838: 129), one in the BM (1863–44) and numbered 862. See also entry 2484 for this species.

In the *Journal Darwin* (1845: 158) says '... and a fine beetle (*Calosoma*) flew on board. Other instances are known of this beetle having been caught far out at sea; and this is the more remarkable as the greater number of the Carabidae seldom or never take wing'. He goes on to discuss the weather conditions and the movements of the other insects involved. See the entry cited under 870–872. See also entries 875, 1301–1303.

863. Lamellicorn. San Blas.

COLEOPTERA: no specimen found.

864. Heterom. Do.

COLEOPTERA, Tenebrionidae: *Nyctelia rugosa* Waterhouse, G. R. (1842a: 138), one in the BM (1863–44), labelled 'Bahia Blanca' and with printed number 864.

866. Moths, flying about the ship, the chrysalis probably were in the fire wood.

LEPIDOPTERA, Geometridae: *Macaria subornata* Walker (1863: 1644), one in the BM (1846–38), 'probably from Patagonia' (described from Monte Video), may refer here. See also entry 1597.

867. 868. 869. Carabidous beetle, dead in the sea; 40 miles off the Straits of Magellan.

Carabidae: *Cardiophthalmus clivinoides* Curtis, one in the BM (1863–44) 'str. of Magellan' on handwritten label. Waterhouse, G. R. (1840c: 254, footnote) says 'I find that I had accidentally overlooked a specimen of the *Cardiophthalmus clivinoides* Curtis, in Mr Darwin's collection. This specimen was "found dead in the sea, 40 miles off the Straits of Magellan"—Mr Darwin's Notes.' Curtis (1839, *Trans. Linn. Soc. Lond.* 18: 185) described the species from material collected at Port Famine by Captain King during his survey of the Straits of Magellan. *Antarctia leucoscelis* Putzeys, one in the BM (1885–119) S. America (det. Straneo 1950) with printed number 869.

870. 871. 872. Butterflies vide P. 138.

In the *Journal Darwin* (1845: 158) writes 'One evening, when we were about ten miles from the Bay of San Blas, vast numbers of butterflies in bands or flocks of countless myriads, extended as far as the eye could range. Even by the aid of a telescope it was not possible to see a space free from butterflies. The seamen cried out "it was snowing butterflies", and such in fact was the appearance. More than one species were present, but the main part belonged to a kind very similar to but not identical with, the common English *Colias edusa*. Some moths and hymenoptera accompanied the butterflies.' See also entries 1301–1303.

Williams (1930: 137) refers this butterfly to *Colias lesbia* F. (Pieridae) and says 'Fitzroy (1839) says "white" butterflies about 4 p.m. in very hot weather with cloudless sky. He also gives the exact date, which is omitted by Darwin'. The exact date referred to is December 4th 1832 and is included by Darwin in the *Zoological Diary* on which the *Journal* entry is based, but he goes on to ask 'How are we to account for these flights which others have also observed? Is it an instinct implanted in the animal to find new countries its own one being overtaken by a particularly favourable year?'

No specimen has been located. See also entries 1301–1303.

J. J. Walker (1931) suggests that Fitzroy's 'white' butterflies could be other Pieridae but no specimens have been found. *Colias lesbia* is greenish white, rather like the *helice* form of our 'British' *C. croceus* Geoffroy (= *edusa* F.).

873. *Libellula*. M. Video.

ODONATA: no specimen found.

874. *Cimex*, San Blas [coast S. of Bahia Blanca, Patagonia].

HEMIPTERA: no specimen found.

875. **C. Orientes**
south of the
mouth of
the R. Plata

Fresh water and Carabidous beetles found alive in the sea. South of Cape Corrientes, flown off the shore? I was very much surprised to see how perfectly alive and active the fresh Water beetles were (*Colymbetes*, *Hydroporus*, *Hydrobius* &c; and there were other insects which I by accident lost). This may be a very instrumental means in peopling Islands with insects; I cannot help suspecting they were washed down from the Plata; although 250 miles distant

a) from the fresh Water. I think this from the numbers of living and dead ones floating in the sea. The distance from the nearest shore was 17 miles, off Cape Corrientes; Capt. Cook, saw numerous insects blown off near St Georges Bay; and formerly in last voyage this fact was frequently noticed; [continued]

a) [from verso] **The neighbouring country is exceedingly arid & not likely to support freshwater insects.**

1832 *Insects* *Good Success Bay* *Decr 20th* 12.

[continued] it must be owing to flat country without trees, no shelter; insects once in air cannot stop.

COLEOPTERA, Carabidae: *Bembidion* sp. (det. N. E. Stork), one in the BM (1885–119). 'In sea off C. Corrientes Argentina' with handwritten 'Plata Patag 875'. There is also an *Agonum* sp. numbered 875 in the BM (1885–119) accessions.

Hydrophilidae: *Enochrus* sp., one in the BM numbered 875. There are also two *Enochrus* spp. in Cambridge which could refer here (but see also entries 1314, 1505 and 2367).

The following Dytiscidae may refer here though described from Tierra del Fuego.

Dytiscidae: *Colymbetes darwini* Babington (1842: 8), one in the BM (1863–44) (= *Rhantus signatus* F.); *C. magellanicus* Babington (1842: 10), two in the BM (1863–44) (= *Platynectes*); *Hydroporus unidecemlineatus* Babington (1842: 13), two in the BM (1863–44) (= *Necterosoma*) (see comment on this species in entry 3561).

A similar account to the above entry is given in the *Journal* (Darwin, 1845: 159) with a general discussion of insects at sea including items quoted under 862 and 867–872.

In the *Origin* Darwin (1859) says 'The occasional emigrations of insects of many kinds, associated together, which as I have witnessed, must perish by countless myriads in the sea, are still more remarkable, as they belong to families none of which are naturally social or even migrate'. See also entries 640, 1301–1303, and for similar accounts see Walker, J. J. (1931: 215).

880. *Carabus*, damp forest; **this** *Carabus* does not ascend the mountains. **Navarin Id. South T. del Fuego**

COLEOPTERA, Carabidae: *Carabus suturalis* F. (Hope, 1838) (s.g. *Ceroglossus*) may refer here. Hope mentions that 'when captured, it emitted (like all the other species of *Carabus* from Tierra del Fuego) a strong ammoniacal odour'. See also entry 2327.

881. Harpalidous I: found flying in numbers about sea coast in evening. These insects live amongst the soft yellow balls which are excrescences; **or rather fungi growing on the** *Fagus* antarcticus, and which are eaten by the Fuegians.

COLEOPTERA, Carabidae: *Abropus splendidus* Waterhouse, G. R. (1842a: genus 134, species 135). (= *Habropus carnifex* F.), one in the BM (1863–44) with blue handwritten labels. See also entries 906 and 1839. See Fig. 15.

The fungus was described by the Revd J. M. Berkeley (1842b: 37) as *Cyttaria darwini* and it is illustrated and discussed at some length in the *Journal* (Darwin, 1845: 236).

[There are two vertical ink lines drawn (by Darwin?) through this and the following two entries apparently to link the three entries.]

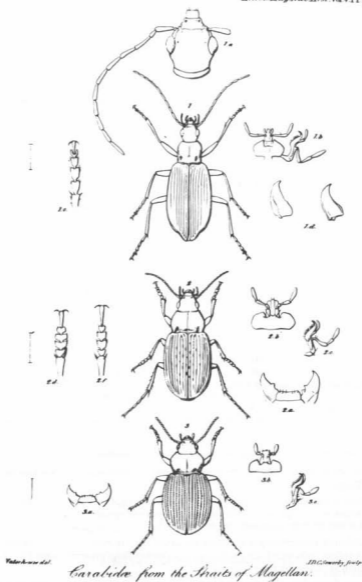


Fig. 15 Three Carabid beetles from the Straits of Magellan described by G. R. Waterhouse: 1, *Abropus splendidus*; 2, *Migadops virescens*; 3, *Migadops ovalis*. All occur in Navarin Island, both genera were new to science (see *Insect Notes* 881, 882, 906, 930) (from the *Annals and Magazine of Natural History* (1841), by courtesy of Taylor & Francis Ltd.) *Abropus splendidus* lives among the edible fungus *Cyttaria darwinii* Berkeley which grows on the Southern Beech (*Nothofagus*) and is eaten by the natives of Tierra del Fuego.

882. Harpalidous; the most abundant insect, under stones & c in the damp forest. [Navarin Island].
COLEOPTERA, Carabidae: *Migadops virescens* Waterhouse, G. R. (1842a: 136 (gen. & sp.), pl. 3, fig 2), above data given, six in the BM (1885–119, 1842–14, 1863–44), Tierra del Fuego, one with printed number 882 (= *M. laeta* Guérin). Champion (1918a) places this species in *Brachycoelus*. See Fig. 15.
883. Harpalidous **I**: the only insect which I found inhabiting the very bare Summits of the mountains. **n.b.** The woods are all more or less **elevated** above the sea.
COLEOPTERA, Carabidae: *Migadops ovalis* Waterhouse, G. R. (1842a: 139, pl. 3, fig. 3) may refer here, see fig. 15, also entries 908, 911 and 1049.
884. Lamellicorn [*Sericodes Reichii* Guer.' comment inserted by unidentified hand. See also entry 968.] common in the forest.
COLEOPTERA, Scarabaeidae: *Sericoides glacialis* F., one in the BM (1885–119), Tierra del Fuego with printed 884 and handwritten 'reichii Guer'.
906. Coleoptera; wooded hills [Navarin I.]
Carabidae: *Abropus splendidus* Waterhouse, G. R. (1842a: genus 134, species 135) (= *Habropus carnifex* F.), one in the BM (1863–44) numbered 906, see Fig. 15 and also entries 881 and 1839. *Antarctia blanda* Dejean, one in the BM (1880–43), Tierra del Fuego and numbered 906. *Antarctonomus peroni* Chaud (Champion, 1918b) (= *A. complanatus* Blanchard), two in the BM (1885–119), Tierra del Fuego, numbered 906. *Bembidiomorphum convexum* Champion (1918b: 44, 45), one in the BM (1885–119), Navarin and numbered 906, see also entries 1010, 1049 and 2449. *Trechus antarcticus* Dejean, one in the BM (1885–119) numbered 906, see also entries 1061, 1151 (Now in *Trechisebus* see Jeannel, 1927).
Scarabaeidae: *Listronyx testaceus* F. (= *Sericoides*), one in the BM (1885–119), Tierra del Fuego, numbered 906.
Staphylinidae: *Nordenskjoldella flavitarsis* Enderlein (Champion 1918b) probably refers here.
908. Coleoptera—from the very summit under stones; Katers Peak. Katers Peak abrupt cone of Greenstone 1700 feet high, in Hermit Island near Wigwam Cove not far from Cape Horn.
Carabidae: *Cascellius nitidus* Waterhouse, G. R. (1840: 255), two in the BM (1863–44), Tierra del Fuego and Navarin I. *Migadops ovalis* Waterhouse, G. R. (1842a: 139); two in the BM (1880–43), see Fig. 15, also entries 883, 911, 1049. *Trechus hornensis* Fairmaire, 12 in the BM (1885–119), numbered 908, see also entry 909.
Curculionidae: *Antarctobius lacunosus* Fairmaire (Champion, 1918b) (= *Listroderes*), three in the BM (1880–43), numbered 908, see also entry 2415. *A. rugirostris* Champion (1918b: 54), one in the BM, Hardy Peninsula, Cape Horn (= *Listroderes*). *Listroderes katerensis* Champion (1918b: 53), two in the BM (1880–43), numbered 908. *L. quadrituberculatus* Champion (1918b: 51), two in the BM (1880–43), one numbered 908.
Perimylopidae: *Hydromedion elongatum* Waterhouse, C. O. (1875: 333), three in the BM (1875–35), numbered 908.
909. Carab: very abundant. Hab. Do.
COLEOPTERA, Carabidae: *Trechus hornensis* Fairmaire, one in the BM (1885–119) with printed number 909 (= *Trechisibus*, see Jeannel, 1927). See also entries 908, 1025.
910. Carab: under stones sea beach. Wigwam Cove also in hills Navarin Island.
COLEOPTERA, Carabidae: *Migadops virescens* Waterhouse, G. R. (1842a: 136) (= *laeta* Guérin). Champion (1918a) places this species in *Brachycoelus*.
911. Carab: (same as 883?) very abundant, summit Katers Peak.
COLEOPTERA, Carabidae: *Migadops ovalis* Waterhouse, G. R. (1842a: 139, pl. 3, fig. 3) may refer here. See also entries 883, 908, 1049.
912. 913. Heterom. common very summit Katers Peak.
COLEOPTERA, Perimylopidae: *Hydromedion elongatum* Waterhouse, C. O. (1875: 333), one in the BM (1875–35), with printed 913.
Tenebrionidae: *Parahelops pubescens* Waterhouse, C. O. (1875: 334), one in the BM (1887–94 [error for 1887–42]), with printed 912.

914. *Curculio* on *Fagus antarcticus* [Tierra del Fuego].

COLEOPTERA, Curculionidae: *Lophotus longipes* Waterhouse, G. R. (1840b: 334), one in the BM (1863–44). *L. vitulus* F. (Waterhouse, G. R., 1840b), one in the BM (1863–44) (now var. *bulbifer* Kuschel) (= *Aegorhinus*).

Dr G. Kuschel, in a letter to R. T. Thompson, says *L. vitulus* is the commonest weevil on *Nothofagus* and that *L. longipes* (= *Alastoropolus strumosus* Olivier) is confined to *Nothofagus*.

923. *Ricinus*, from Albatross, Cape Horn, Jan: 1833.

PHTHIRAPTERA: no specimen found.

925. *Libellula*, Navarin Island.

ODONATA: no specimen found.

930. Harpal; Navarin Island. Jan.

COLEOPTERA, Carabidae: *Migadops darwini* Waterhouse, G. R. (1842a: 138), two in the BM (1842–14, 1863–44), Tierra del Fuego. *M. virescens* Waterhouse, G. R. (1842a: 136), one in the BM (1885–119) with printed 930. *M. nigrocaeruleus* Waterhouse, G. R. (1842a: 138), one in the BM (1863–44), Tierra del Fuego.

967. Hymenoptera, Ponsonby Sound.

No specimen found.

1833 *Insects* *Tierra del Fuego* *Jan* 13.968. *Lucanus* in rotten Beech. Ponsonby Sound. [*Dorcus femoralis* Guérin see my Catal no 520 (*D. rubripes*—Dupont) this comment added to ms by unidentified hand. See also entry 884.]

COLEOPTERA, Lucanidae: *Dorcus darwini* Hope (1841: 33; 1844: 279), one in Oxford which Hope (1844: 280) erroneously recorded from Chile though the species does occur there (see 2773) (= *Sclerognathus femoralis* Guérin). There are other non-Darwin specimens of this species in the BM from Tierra del Fuego. See also eponyms for dedication.

969. Hemipt., in great numbers under rotten bark Ponsonby Sound.

HEMIPTERA: no specimen found.

1005. Alpine Colymbetes. Hardy Peninsula. Feby.

COLEOPTERA, Dytiscidae: *Colymbetes rotundicollis* Babington (1842: 7), alpine situation in Tierra del Fuego, two in the BM (1863–44), one with a red printed 5 [= 1005] (= *Lancetes*). See also entry 1049.

1006. 1007. Heterom. Mountain H. Do. Do.

COLEOPTERA, Tenebrionidae: *Parahelops darwini* Waterhouse, C. O. (1875: 334), see also 1049, one in the BM (1875–35) with red printed 6 [= 1006]. *P. pubescens* Waterhouse, C. O. (1875: 334), one in the BM (1875–35) with red printed 7 [= 1007].

1008. Byrridae Do. Do. Do.

COLEOPTERA, Byrrhidae: *Morychastes australis* Blanchard (Champion, 1918b: 48), Champion regards two Darwin specimens in the BM as wrongly labelled Bahia and referable to Tierra del Fuego.

1009. Carab Do. Do. Do.

COLEOPTERA, Carabidae: *Cascellus aeneo-niger* Waterhouse, G. R. (1840c: 256), two in the BM (1863–44), Hardy Peninsula.

1010. Carab. Do. Do. Do.

COLEOPTERA, Carabidae: *Bembidiomorpha convexum* Champion (1981b: 44, 45), one in the BM (1885–119) with red printed 10 [= 1010]. See also entries 906, 1049, 2449.

1011. Cimex. Do. Do. Do.

HEMIPTERA: no specimen found.

1012. *Haltica*. Do. Do. Do.

COLEOPTERA, Chrysomelidae: *Docemina crassipes* Champion (1918b: 50), one in BM (1885–119) with printed red 12 [= 1012].

1021. 1022. 1023. 1024. Heteromorous insects. V. **infra (No. 1043)**.

COLEOPTERA, Perimylopidae: *Chanopterus brevipennis* Waterhouse, C. O. (1875: 332) (= *paradoxus* Boheman), two in the BM (1885–119, 1875–35) with red printed numbers 21 and 23 [= 1021 and 1023], see also 1049. *Hydromedion elongatum* Waterhouse, (1875: 333), one in the BM (1875–35) with red printed number 22 [= 1022].

1025. Alpine (Bembidiid) insect.

COLEOPTERA, Carabidae: *Bembidiomorphum convexum* Champion (1918b: 44, 45), 'Hardy Peninsula, near Cape Horn, Navarin Island, also Chile' must refer here; see also entries 906, 1010, 1049. *Trechus hornensis* Fairmaire (= *Trechisibus*, see Jeannel 1927), one in the BM (1885–119) with red printed label numbered 25 [= 1025]. See also entries 908, 909.

1043. Heterom; under stone just above high water mark.

(a) [vide 1021 crossed out? by Darwin].

a) [from verso] The habitat of these insects, was the most singular I ever observed; it was in the fissures of slate rock and in which the genus *Capulus* [Limpet] was adhering to the stone alive, and therefore of course beneath high watermark:— from the wet condition of the insects and their inactivity I do not believe they remove themselves.—There would appear to be two sorts or **they are** in different states of maturity:— from the soft state of some specimens, the larva must have undergone its metamorphosis in this site.

COLEOPTERA, Tenebrionidae: *Parahelops pubescens* Waterhouse, C. O. (1875: 334), one in the BM with red printed 43 [= 1043]. See 1006, 1007. Something is wrong here as this species is now normally associated with alpine *Nothofagus* forest though some other Tenebrionidae are known to be intertidal (e.g. *Epantius*, *Phaleria*).

1044. *Ricinus* from the Falco (1028).

PHTHIRAPTERA, Philopteridae: *Ischnocera*, 'Degeeriella group', one tube of six specimens in the BM (1863–44), Tierra del Fuego, with red printed 44 [= 1044].

In the Denny collection at Oxford are 11 specimens mounted on celluloid from Tierra del Fuego which refer here.

The 'Falco' referred to is listed under 1028 in Darwin's *Ornithological Notes* (Barlow, 1963) as 'Falco P. *Pezoporus*' and is referable to *Milvago chimango* (Viellott) the Chimango Caracara. In the *Zoology* (Darwin, 1841: pt. 3, 14) it is treated by Gould, though somewhat doubtfully, as a separate species *M. pezoporus* Meyen. In the *Journal* Darwin (1845: 54–6) writes at some length on this and related species.

1049. Coleoptera, chiefly H[ardy]. Peninsula. March.

Carabidae: *Antarctonomus peroni* Chaudoir (Champion, 1918b) (= *A. complanatus* Blanchard), one in the BM (1885–119) numbered 1049. *Bembidiomorphum convexum* Champion (1918b: 44, 45), two in the BM (1885–119), numbered 1049, see also entries 906, 1010, 1025. *Migadops ovalis* Waterhouse, G. R. (1842a: 139), one in the BM (1844–3) numbered 1049, see also entries 883, 908, 911.

Dytiscidae: *Colymbetes rotundicollis* Babington (1842: 7), two in the BM (1863–44), numbered 1049, see also 1005.

Perimylopidae: *Chanopterus brevipennis* Waterhouse, C. O. (1875: 332) (= *paradoxus* Boheman) six in the BM (1875–35), numbered 1049, see also entries 1021, 1023.

Tenebrionidae: *Parahelops darwini* Waterhouse, C. O. (1875: 334), one in the BM (1875–35), numbered 1049, see also entry 1006. *P. pubescens* Waterhouse, C. O. (1875: 334), four in the BM (1875–35, 1885–119) and numbered 1049. See also entry 1007.

1050. Harpalidae. Falkland Island. Do.

COLEOPTERA, Carabidae: *Antarctia malachitus* Dejean (now = *Metius*), one in the BM (1885–119) labelled Tierra del Fuego but with a red printed number 50 [= 1050]. Clearly some error has occurred in labelling as the MS labels also indicate Tierra del Fuego, but the species also occurs on the Falkland Islands. G. S. Robinson (1984, *Insects of the Falkland Islands*, 38 pp. BM (NH)) lists Falkland insects.

1051. Ricinus from Scolopax (1048). Do.

PHTHIRAPTERA: no specimen found.

The comments under 1048 in the *Ornithological Notes* (Barlow, 1963: 213) link this to *Scolopax (Telmetias) magellanicus* King in the *Zoology* (Darwin, 1841: pt. 3, 131) which is now referable to the Puna Snipe (*Gallinago paraguaiiae magellanica*).

1057. Moth on leaf of black currant bush, Good Success Bay T. del Fuego.

LEPIDOPTERA: no specimen found.

1060. Harpal: (Sphodrus?). Falkland Island. Was this insect imported or is it an original inhabitant. March.

COLEOPTERA, Carabidae: *Merizodus maceyi* Bates (Champion, 1918a) (= *Oopterus solidadenus* Guérin), one in the BM (1885–119), Falkland, may refer here.

1061. Harpal; abundant near coast East Falkland Island.

COLEOPTERA, Carabidae: *Trechus antarcticus* Guérin (Champion, 1918a) 'Falkland and Tierra del Fuego' in Champion's paper (= *Trechisibus*, see Jeannel, 1927), one in the BM (1885–119) with red printed 61 [= 1061]. See also entries, 906, 1151.

1071. Fly.

DIPTERA, Heleomyzidae: *Prosopantrum acquiseta* Malloch (1933: 204), two in the BM (1885–119) may refer here.

1086. Harpalidous, insect Do. Both insects are common to Tierra del Fuego.

COLEOPTERA, Carabidae: *Migadops falklandicus* Waterhouse, G. R. (1842a: 137), one in the BM (1863–44) with red printed number 86 [= 1086]. A different species of the same genus is found in Tierra del Fuego (see entries 882, 883, 910, 911).

1087. 1088. Heterom, near coast. Falkland Isld.

COLEOPTERA, Tenebrionidae: *Parahelops quadricollis* Waterhouse, C. O. (1875: 333, 335).

1137. Gonoleptes. March.

Arachnida (spider)—not an insect.

1151. Coleoptera. Do.

Carabidae: *Trechus antarcticus* Dejean (= *Trechisibus* see Jeannel, 1927), five in the BM (1885–119) numbered 1151 (see also entries 906, 1061).

Curculionidae: *Falklandius turbificatus* Enderlein (Champion, 1918a), one in the BM numbered 1151, see also entry 1912.

Staphylinidae: *Phytosus darwinii* Waterhouse, F. H. (1879: 531) (*Antarctophytosus* Champion, 1918a, now in *Halmaeus*) may refer here.

1180. Diptera. Hardy Peninsula.

No specimen found.

1181. Scarabaus. Feeding on horse dung and throwing up the sand, like Geotrupes, sand dunes Maldonado R. Plata.

COLEOPTERA, Scarabaeidae: no specimen found. See entry 1491.

1883 **Maldonado:** *Insects* *March* 14.

1182. Coleop: feeding on Lycoperdium [sic] and Fringi [sic—Fungi]

No specimen found.

1183. Notonecta.

HEMIPTERA, Notonectidae: no specimen found.

1225(a) [on verso]

(1225) *Aphodius*; one of the rare instances of finding these insects in this country, under horse dung which was however not quite fresh. Maldonado.

(1253) Coleoptera in *Lycoperdium* [*sic*] (1346). Maldonado.

(1254) *Brachinus*; emits loud and visible explosions, lives in families, beneath stones in open plains—Maldonado.

COLEOPTERA. There is an *Aphodius* 'Maldonado Point' (1887-42) in the BM accessions. Some Coleoptera numbered 1291 may refer to 1254. See also entry 1491.

1291. *Brachinus*. Explosion very loud and visible; the skin of my finger, was for many days afterwards stained brown; at the instant of explosion a sensation of warmth was felt; taste of secretion very acrid, even when diluted. June.

COLEOPTERA, Carabidae: *Brachinus maculipes* Waterhouse, G. R. (1841a: 351), one in the BM (1863-44), Maldonado. *B. nigripes* Waterhouse, G. R. (1841a: 352), two in the BM (1863-44), Maldonado. *B. platenis* Waterhouse, G. R. (1841a: 351), (= *B. vicinus* Dejean), four in the BM (1863-44), Maldonado.

1298. Hymenoptera. B. Blanca June.

No specimens found.

1299. 1300. Hymenoptera: Bay of San Blas. Do.

No specimens found.

1301. 1302. 1303. Lepidop. 1302 Coleoptera, taken 60 miles from nearest land, but much further in direction of wind, mouth of Rio Plata.

LEPIDOPTERA: no specimens found, but probably some species under 1597 refer here.

COLEOPTERA, Carabidae: *Feronia* (*Poecilus*) *guerini* Waterhouse, G. R. (1841b: 125), one in the BM (1863-44). Waterhouse repeats Darwin's comments.

1304. *Brachinus*. Maldonado.

COLEOPTERA, Carabidae. See entry 1291.

1305. Hydrous. Do.

COLEOPTERA, Hydrophilidae: *Hydrous palpalis* Brullé, one in Cambridge has a red label printed 305 [= 1305] and a small green printed 43. Alongside is a handwritten label 'Wrong no. attached. In Darwin's list 305 refers to a termites nest from Fernando Noronha'. Clearly the writer had been misled by lack of knowledge of the colour code system of labelling previously explained.

1306. Hemiptera. Do.

No specimens found.

1307. 1308. 1309. Hymenoptera. Do.

No specimens found.

1310. Coleoptera. Do.

Carabidae. *Antarctia striata* Putzeys, three in the BM (1885-119, 1880-43), two numbered 1310, see also entry 1839. *Feronia chilensis* Dejean (Waterhouse, G. R., 1841b) (= *Pterostichus*) one in the BM (1885-119), Maldonado, numbered 1310.

Chrysomelidae (Halticinae): *Distigmoptera darwini* Scherer (1964: 291), one in the BM (1887-94 error for 1887-42) numbered 1310 (see Fig. 18, also entry 1321). *Epitrix darwini* Bryant (1942: 101), one in BM (1885-119) numbered 1310. *E. uruguayica* Bryant (1942: 102) may also refer here (or 1321).

Coccinellidae: *Ceratomegilla 18-pustulatus* Mulsant, one in the BM (1885-119), numbered 1310. *Heterodionus tetraspilotus* Brèthes (see Brèthes 1925a), one in the BM (1887-94 error for 1887-42) numbered 1310. *Hyperaspis arrowi* Brèthes var. *darwini* Brèthes (see Brèthes, 1925a).

Curculionidae: *Listroderes apicalis* Waterhouse, G. R. (1842b: 123), one in the BM (1875-36), 'Maldonado Pt', standing apparently as a syntype, is in fact a specimen of *L. delaigei* and since Waterhouse did not record *apicalis* from Maldonado this may be the specimen he determined as

'*costirostris* Scho' and is also recorded from Coquimbo. *Torcus nitidulus* Hustache. Two in the BM (1885–119) 'Maldonado Plata', numbered 1310. Baridinae, two unidentified in the BM labelled Maldonado Pl., C.D., numbered 5182, 5183 (not Darwin numbers and 'D' [= Darwin] on a square label.)

Leioididae: *Adelopsis darwini* Jeannel (1936: 64, 66), one in the BM (1885–119), numbered 1310.

Melyridae: *Astylus quadrilineatus* Germar (Champion, 1918c) may refer here.

Phalacridae: *Phalacrus picipennis* Champion and *P. stratioidiscus* Champion (both 1925: 603), numbered 1310 refer here, see also 1321. In the BM there is also an unidentified species numbered 1310.

Scarabaeidae: *Ataenius opatroides* Blanchard, one in the BM (1887–42), Maldonado, numbered 1310 on verso.

Tenebrionidae: *Scotobius tristis* Guérin, one in BM (1885–119) numbered 1310. *S. muricatus* Guérin (= *crispatus* Germar) one in BM (1885–119).

1314. Fresh Water Coleoptera. **Maldonado** [Maldonado indicated by a bracket including 1314–1332].

Hydrophilidae: *Enochrus*, one in the BM (1885–119), numbered 1314. In Cambridge there are specimens of *E. affinis* Stein and *E. vulgaris* Stein which may refer here, but see also entries 875, 1505, 2367. *Hugoscoitia darwini* Knisch (1922: 90) may well refer here. The holotype and paratypes are in the BM (1922–127) ex Mus Cambridge. There are three paratypes in Cambridge. None have data labels or numbers but are attributed to South America. Other members of the genus are from Uruguay and Bolivia.

1316. Coleoptera. [Maldonado].

Carabidae: *Feronia cordicollis* Dejean. (Waterhouse, G. R., 1841) (= *Pterostichus*), one in the BM (1863–44), Maldonado, numbered 1316 (see also entries 678, 843). There is an *Agonum* sp. numbered 1316 in the BM (1885–119) accessions.

1321. 1322. 1323. Coleoptera. [Maldonado].

Anthicidae: *Acanthinus postmaculatus* Pic, one in the BM, Maldonado, numbered 1322 (det. Werner, 1940).

Carabidae: *Antarctia carnifex* Dejean, one in the BM (1880–43), Maldonado, numbered 1323. *A. antiqua* Motschulsky, one in the BM (1880–43) (= *Metius bonariensis* Putzeys, det. S. L. Straneo, 1957), Maldonado. *Baripus rivalis* Dejean (Waterhouse, G. R., 1841a), no specimen found. *Chlaenius violaceus* Waterhouse, G. R. (1841a: 353), one in the BM (1863–44), Maldonado. *C. westwoodi* Waterhouse, G. R. (1841a: 354), one in the BM (1863–44), Maldonado, large blue handwritten data label. *C. platensis* Waterhouse, G. R. (1841a: 353) (?*braziliensis* Dejean), one in the BM (1863–44), Maldonado, handwritten label. *Feroniella laticollis* Solier (det. S. L. Straneo, 1950), one in the BM, Maldonado, numbered 1323. *Feronia apicalis* Waterhouse, G. R. (1841b: 128) (= *Pterostichus*), two in the BM (1863–44), Maldonado, numbered 1323. *F. corinthia* Dejean (Waterhouse, G. R., 1841b), no specimen found. *F. chalcea* Dejean (Waterhouse, G. R., 1841b), no specimen found. *F. cordicollis* Dejean (Waterhouse, G. R., 1941b), no specimen found. *Geobius pubescens* Dejean (Waterhouse, G. R., 1841b), one in the BM (1863–44), Maldonado.

Chrysomelidae (Halticinae): *Distigmoptera darwini* Scherer (1964: 297), one in the BM (1885–119), Maldonado, numbered 1321 (see also entry 1310). *Longitarsus darwini* Bryant (1942: 105) may also refer here (or 1310).

Coccinellidae: *Heterodermus tetraspilotes* Brèthes (1924: 156), two in the BM (1885–119, 1887–42), Maldonado, numbered 1322. *Nephopullus darwini* Brèthes, one in the BM (1885–119), Maldonado, numbered 1322.

Curculionidae: *Listroderes costirostris* Schoenherr, one in the BM (1845–63), Maldonado, numbered 1323.

Dermestidae: *Dermestes maculatus* Degeer, one in BM (1885–119), numbered 1323.

Dynastidae: *Archophileurus darwini* Arrow (1937: 55) (Scarabaeidae, Dynastinae), one in the BM (1875–35), Maldonado, numbered 1323.

Dytiscidae: *Cybister biungulatus* Babington (1842: 3), Champion (1918b: 45) lists this as a synonym of *Megadytes* Brullé and points out that it was overlooked by Sharp (1882) in his important work on Dytiscidae, seven in the BM (1873–8), numbered 1323.

Lathridiidae: one, unidentified, in the BM (1885–119), Maldonado, numbered 1322.

Nitidulidae: one indet. in BM (1885–119) numbered 1321.

Phalacridae: *Phalacrus picipennis* Champion (1925: 603), numbered 1321, 1322 refer here.

Tenebrionidae: *Crypticus platensis* Fairmaire, two in the BM (1885–119, 1887–94 [error for 1887–42]), Maldonado, numbered 1321 (see also 491, 677).

1324. 1325. **Leionotus.**

COLEOPTERA, Dytiscidae: no specimens found.

This name has been used in Hymenoptera and Coleoptera but was undoubtedly familiar to Darwin as a beetle name used in the Dytiscidae by Stephens (1827–45) for some of his captures. For usage see Balfour-Browne (1950: 266, 271).

1326. 1327. 1328. **Lamellicorns.** [Maldonado].

COLEOPTERA: no specimens found.

1329. 1330. **Orthoptera.** [Maldonado].

Tettigoniidae: *Meroncidius inornatus* Walker (1870a: 453), one in the BM (1845–68), labelled Monte Video may refer here. See also entry 633.

1331. 1332. **Hemiptera.** [Maldonado].

No specimens found.

1336. **Pediculi from the Bay of St Matthes. Procellaria (1335).**

PHTHIRAPTERA: in the Denny collection at Oxford there are six lice on one card with a red printed label 336 [= 1336] and labelled 'Procellaria glacialoides det Y. Z. Eonst c.f. Patagonia C. Darwin'.

The host was 'caught on a bent pin on a string baited with fat' and is discussed in the *Ornithological Notes* (Barlow, 1963: 224) and described in the *Zoology* (Darwin, 1841: pt. 3, 140) under *Procellaria glacialoides* Smith (= *Fulmarus glacialoides*, the southern fulmar).

1379. **Forficula, near sand dunes; there is another species in the houses; they are held in extreme dread; it is curious this prejudice against a harmless insect, being so general (July).—Maldonado.**

DERMAPTERA: *Demogorgon patagonicus* Kirby (1891: 515, pl. 12, fig. 2) (= *labidura*), two in the BM (1885–100) erroneously labelled Patagonia but one specimen with a red printed label 379 [= 1379] clearly refers them here.

1380. **Coleoptera (chiefly Carabidous) under stones Guritti Island Maldonado.**

See under entry 1397.

1381. **Excrescences, containing larvae; aperture most beautifully constructed; one found in a particular [continued]**

1833 *July* *Insects* [Maldonado—crossed out] 15.

[continued] valley near M. Video. It is said, that a large fly, which bites horses is produced.

This sounds very like the work of semi-aquatic larval Tabanidae (Diptera) which are known to construct mud cylinders in which they avoid desiccation in times of drought (see Lamborn, 1929, *Proc. R. Soc. (B)* 106: 83–7; Parsons, 1971, *Entomologist's mon. Mag.* 107: 89–90). Darwin collected a specimen of *Tabanus dorsiger* Wiedemann (Walker, 1849: 180) M. Video, which attacks horses.

1394. **Phalangium. Maldonado.**

Arachnida, Opiliones—not an insect; a 'harvestman'.

1395. **Pediculi from Falco (1396).**

PHTHIRAPTERA: in the Denny collection at Oxford is one unidentified louse mounted on a card with a red label printed 395 [= 1395] and labelled 'Circus megpilus? Maldonado'. This is the *Circus megpilus* Gould of the *Zoology* (Darwin, 1841: pt. 3, 29) referable to *Circus buffoni* (Gmelin), the long-winged harrier (Dr D. W. Snow *in litt.*).

1397. Coleoptera for (1380 number destroyed).

Carabidae: *Feronia patagonica* Waterhouse, G. R. (1841b: 126), two in the BM (1863–44), one numbered 1397. *F. submetallica* Waterhouse, G. R. (1841b: 122) (= *Pterostichus lucidus* Curtis), two in the BM (1863–44, 1885–119) numbered 1397; also one specimen Valparaiso; see also entries 2209–2213, 2776, 2837. *Pterostichus* sp., one in the BM, Maldonado, numbered 1397. There are also two *Agonum* sp. numbered 1397 in the BM (1885–119) accessions.

1488. 1489. 1490. Coleoptera. Rio Colorado.

Carabidae: *Pterostichus*. One in the BM (1885–119) with a red label printed 488 [= 1488].

1491. Copris. Bahia Blanca vide p. 200 (b).

COLEOPTERA, Scarabaeidae: no specimen found. The page citation in this and entry 1492 refers to the *Zoological Diary* and a discussion of dung beetles, partly used in his long footnote on the subject in the *Journal* (Darwin, 1845: 490) and with cross-references to 1181 and 1225 and which I have spread over 2102, 3506 and 3819. The footnote however lacks the following interesting comment 'This absence of coprophagous beetles appears to me to be a very beautiful fact; as showing a connection in the creation between two animals as widely apart as Mammalia and the Insecta Coleoptera, which, when one of them is removed out of its original zone can scarcely be produced by a length of time and the most favourable circumstances'.

1492. Aphodius, flying by thousands, but not alighting on plentiful horse dung; 10 leagues north of Sierra de la Ventana vide p 200 (b).

COLEOPTERA, Scarabaeidae: no specimen found, unless any of the three last entries under 703 refer here. See comments under 1491.

1493. Hemiptera; very abundant in herbage. B. Blanco [a].

No specimen found.

1495. Coleoptera B. Blanco [a].

Coccinellidae: *Pullus piceipennis* Brèthes (1924: 170), one in the BM (1885–119), Bahia Blanca, numbered 1495. See also entry 721.

1496. Carabus. Bajada St. Fe.

COLEOPTERA, Carabidae: no specimen found.

1497. Brachinus. Gorodoña. Rio Parana.

COLEOPTERA, Carabidae: no specimen found.

1498. Heterom; St. Fe Bajada.

COLEOPTERA: no specimen found.

1500. 1501. 1502. 1503. Coleoptera. Bajada.

No specimens found.

1504. Heterom. Rozario R. Parana.

COLEOPTERA: no specimen found.

1505. Coleoptera. Bajada. [St. Fe].

Carabidae: *Bembidion* sp. (det. Dr N. E. Stork), five in the BM (1885–119), Santa Fe, two numbered 1505. *Feronia (Argutor) audouini* Waterhouse, G. R. (1841b: 128) (= *Pterostichus*), one in the BM (1863–44), St. Fe, numbered 1505. *F. brullei* Waterhouse, G. R. (1841b: 127) (= *Pterostichus*), one in the BM (1863–44), St. Fe, numbered 1505. *Pterostichus* sp., one in the BM (1885–119). There is also an *Agonum* sp. numbered 1505 in the BM (1885–119) accessions.

Hydrophilidae: *Enochrus* sp., one unidentified species in the BM, St. Fe, numbered 1505. In Cambridge there are two identified species which could refer here, but see also entries 875, 1314, 2367.

Melyridae: *Astylus quadrilineatus* Germar (Champion, 1918c) may refer here.

Scarabaeidae: *Ataenius picinus* Harold, one in the BM (1887–42), St. Fé with 1505 on verso of label; see also entry 529. *Ateuchus robustum* Harold, one in the BM (1887–42), St. Fé and numbered 1505, see also entry 858.

Scraptiidae: *Anaspella* sp. Five in the BM (1885–119), St. Fé, one numbered 1505.

1507. 1508. 1509. Onthophagi caught crawling in a ditch, Buenos Aires.

COLEOPTERA, Scarabaeidae: no specimens found.

1596. Cerambyx. Maldonado.

COLEOPTERA, Cerambycidae: no specimen found.

1597. Moth flew on board in wonderful numbers. Mouth of Rio Plata.

LEPIDOPTERA: moths located in the BM that were described from Monte Video but have no numbers are included here and probably include entries 1302 and 1598. See also entries 674 and 866.

Geometridae: *Camptogramma corticeata* Walker (1863: 1715), one in the BM (1846–38). *Ypsipetes ? improvisata* Walker (1862: 1268), two in the BM (1846–38) (= *Perizoma*).

Noctuidae: *Agrotis intacta* Walker (1857–338), one in the BM (1846–38). *Noctua (Agrotis) suffusa* Meigen (Walker, 1857: 310), no specimen found. *Plusia detrusa* Walker (1858: 919), one in the BM (1846–38).

Sphingidae: *Chaerocampa chiron* Drury (Walker, 1856: 132), no specimen found.

1598. Flew on board in considerable numbers, in Lat, of Rio Negro.

Order ? May include some of the previous entry.

1712. Cicindela (2 specimens) taken on dry mud bank, incrustated with salt, habits like *Hybrida*.

Port St Julian Jan'y 1834

COLEOPTERA Carabidae, Cicindelinae: no specimen found.

In the *Journal* Darwin (1845: 170), in an entry for 9 January 1834, says 'I found on the surface of the salt water near the head of the bay, a *Colymbetes* not quite dead, which must have lived in some not distant pool. Three other insects (a *Cicindela*, like *hybrida*, a *Cymindis*, and a *Harpalus*, which all live on muddy flats occasionally overflowed by the sea), and one other found dead on the plain, complete the list of the beetles'. *Cicindela hybrida* is a British species.

For the *Colymbetes* see entry 1715.

1713. *Truncatipennis*, under salt, loving plant just above high water **mark**.

COLEOPTERA, Carabidae: by inference from the following entry, but no specimen found. The only Carabid I have been able to trace with such a name is the African *Cycloba truncatipennis* Boheman

1714. Hab Do. (young specimen).

COLEOPTERA, Carabidae; ?Pterostichinae, one in the BM (1887–42), St Cruz and with a red printed 714 [= 1714]. See entry 1713.

1715. *Colymbetes*, nearly drowned in salt water, head of Harbour; proving **existence** of fresh water although we could find none.

COLEOPTERA, Dytiscidae: *Colymbetes angusticollis* Curtis (Babington, 1842). See quotation under entry 1712.

1834 *Jany* *Insects* *Port St Julian* 16.

1716. Diptera, very numerous, bite very badly. What animal did nature intend for them? they are out of all proportion too numerous for Guanaco and scarcely any other large animal existed here.

DIPTERA, Tabanidae: no specimen found but my colleague J. E. Chainey suggests it would probably be a *Dasybasis* sp. from these latitudes.

In the *Journal*, in an entry 9 January 1834, Darwin (1845: 170) says 'A good-sized fly (*Tabanus*) was extremely numerous and tormented us by its painful bite. The common horsefly, which was so troublesome in the shady lanes of E. England, belongs to this same genus. We here have the puzzle that so frequently occurs in the case of mosquitoes—on the blood of what animals do these insects

commonly feed? The guanaco is nearly the only warm-blooded quadruped, and it is found in quite inconsiderable numbers compared with the multitude of flies'.

The guanaco (*Lama guanaco*) is a llama of the southern plains of South America and included in the *Zoology* (Darwin, 1841: pt. 2, 26) (as *Auchenia llama* Desm.) and written on at some length in the *Journal* (Darwin, 1845: 166). Darwin does not mention horses here but see entries 2524, 2525, 2569.

1717. Heterom (found dead).

COLEOPTERA: no specimen found, but see quotation under entry 1712.

1747. Cells of Bee (1748) adhering to round stones; (on the hills) plain cylinders applied side to side.

HYMENOPTERA: no specimen found.

1748. Bee. (Nest above).

HYMENOPTERA: no specimen found.

1749. Diptera.

No specimen found, unless any of the unnumbered specimens described from Port Famine refer here (see entry 1841).

1750. Curculio, sterile plain.

COLEOPTERA, Curculionidae: no weevil found with this number in the BM, but see entry 2049.

1751. Heterom Do. Do.

COLEOPTERA, Tenebrionidae: *Nyctelia newporti* Waterhouse, G. R. (1842b: 113), one in the BM (1863–44), Patagonia. Another in the BM, Patagonia Pt. St Julian C. Darwin with a red printed 751 [= 1751] and the accession number 1881–19 of the F. Bates collection and his type no. 1313. F. Bates, brother of H. W. Bates and a specialist in Tenebrionidae, must clearly have had some of the Darwin material, including some Waterhouse types (see also entries 3201, 3561). [A page width rule follows this entry].

1760. Coleoptera. Port Desire.

Carabidae: *Cardiophthalmus longitarsis* Waterhouse, G. R. (1840a: 360) (= *Barypus*), one in the BM (1863–44), Pt Desire. *Odontoscelis curtisii* Waterhouse, G. R. (1840a: 357), Port Desire, may refer here.

Coccinellidae: *Adalia deficiens* Mulsant (Babington, 1842), one in the BM (1885–119), Pt Desire, Patagonia, numbered 1760.

Dytiscidae: *Colymbetes nigro-rematus* Babington (1842: 5). (= *Lancetes varius* F.), two Darwin specimens are in the BM without accession or other number.

Tenebrionidae: *Epipedonota lata* Waterhouse, G. R. (1842b: 119), two in the BM (1845–63, 1863–44), Pt Desire. *Megalophrys patagonica* Waterhouse, G. R. (1845b: 321 gen. et sp.), one in BM (1845–118). *Nyctelia darwini* Waterhouse, G. R. (1842b: 108), three in the BM. *N. fitzroyi* Waterhouse, G. R. (1842b: 109), one in the BM (1863–44), Port Desire. *N. plicata* Waterhouse, G. R. (1842b: 107), two in the BM (1863–44). *N. solieri* Waterhouse, G. R. (1842b: 108), 'Patagonia' may refer here, one in the BM (1863–44). *N. westwoodii* Waterhouse, G. R. (1842b: 112), one in the BM (1863–44). *Platsthes silphoides* Waterhouse, G. R. (1845b: 317, 319 gen. et sp.), three Darwin specimens in the BM, Port Desire, but no numbers. *Scotobius akidoides* (Waterhouse, G. R., 1845b: 319), one in the BM (1845–118).

1793. Heterom. Cape Negro (it is here that the features of Patagonia and Tierra del Fuego are united).

COLEOPTERA, Tenebrionidae: *Nyctelia granulata* Waterhouse, G. R. (1842b: 109), one in the BM (1863–44), Cape Negro, with a red printed label 793 [= 1793].

1794. Carab. Hab. Do.

COLEOPTERA, Carabidae: *Antarctia blanda* Dejean, one in the BM (1880–43) and a red printed label 794 [= 1794]. See also entry 906.

1839. Coleoptera under bark. Port Famine. Feb.

Carabidae: *Abropus splendidus* Waterhouse, G. R. (1842a: 134, 135 gen. et sp.). (= *Habropus carnifex* F.), one in the BM (1863–44) with Darwin's above data quoted, see also entries 881, 906. *Antarctia striata* Putzeys, one in BM (1863–49), see also entry 1310.

1841. Fly. P. Famine.

DIPTERA, Tachinidae: *Pelycops darwini* Aldrich (1934: 169), one in the BM (1885–119), Port Famine and with a red printed 841 [= 1841].

Other Diptera described from Port Famine but lacking a specific number are referred here although Darwin's entry is in the singular. See also entry 1749.

Anisopodidae: *Anisopus fuscipennis* Macquart (Edwards, 1930: 118), two in the BM (1885–119).

Tephritidae: *Trypanea nigriseta* Malloch (1933: 283), one in the BM (1863–44).

Muscidae: *Euphaonia fulvohumeralis* Malloch (1933: 340), one in the BM (1863–44).

1842. Lepidop. Cape Negro.

The following moths described from 'Port Famine' must refer here.

Lasiocampidae: *Amydona humeralis* Walker (1855: 1413) (= *Trabala*), one in the BM (1846–38).

Geometridae: *Cidaria opprestata* Walker (1863: 1731), no specimen found. *Larentia esuriata* Walker (1863: 1702), one in the BM (1846–38). *Marcodava egenaria* Walker (1863: 1745), one in the BM (1846–38).

Doubleday (1848) records three Darwin butterflies from Port Famine: Pieridae, *Pieris* (p. 9); Satyridae, *Chionabas* and *Erebia* (p. 31). My colleague R. I. Vane-Wright has located these in the BM collections as follows: *Tatochila theodice gymnodice* Staudinger (Pieridae), one female, Pt Famine (BM 1846–38) and with red label numbered 842 [= 1842]. *Argyrophorus williamsianus* Butler (1868: 159, pl. 4, fig. 1) (= *Stuardosatyrus*), one male, Pt Famine (BM 1846–38) (see Herrera & Etcheverry, 1965, *Publ. Cent. Estud. ent. Univ. Chile* 7: 74); *Tetraphlebia? plumbeola* Butler (1868: 95, pl. 2, fig. 11) (= *Cosmosatyrus leptoneurodes plumbeola*), one male, Pt Famine (BM 1846–38) (see Herrera & Howarth, 1966, *Publ. Cent. Estud. ent. Univ. Chile* 8: 78).

Vane-Wright also located another Darwin butterfly: Nymphalidae, *Argynnis cytheris* Drury, one male, Pt Famine (BM 1946–38). This is the specimen cited by Hall (1906–1919, Last notes, Book 1, microform sheet 168: 104) with the comment 'darwini is treated as a synonym and there is a specimen from Port Famine taken by Darwin himself'. *Argynnis darwini* Staudinger is included in the eponyms section and Vane-Wright tells me it represents a distinct species (now = *Issoria lathonioides* (Blanchard)).

1843. Bee P. Famine.

HYMENOPTERA: no specimen found.

1910. Sphodrus, with four indistinct orange spots (March) on elytra; under dead bird sea coast. E. Falkland Id.

COLEOPTERA, Carabidae: *Lissopterus quadrinotatus* Waterhouse, G. R. (1843: 281–2), two in the BM (1845–63), E. Falkland.

1911. Catops. under old dead calf: far in country.

COLEOPTERA, Leiodidae: *Choleva falklandicus* F. (Waterhouse, F. H., 1879: 531) (Champion (1918a) places this in *Catops*) (= *Falkocholeva eribellata* F. & G.), two in the BM (1879–34), Falkland Is. and E. Falkland.

1912. Curculio, in berry of Tea plant.

COLEOPTERA, Curculionidae: *Falklandius turbificatus* Enderlein (Champion, 1918a), three in the BM (1885–119). See also entry 1151.

1999. Fly. under dead birds, sea-beach from Falkland Islands.

DIPTERA, Helomyzidae: *Paractora trichosterna* (Thomson) (Malloch, 1933: 331), one in the BM (1885–119) with a red printed 999 [= 1999], and another (1863–44).

2002. Coleoptera, high up, St Cruz river all the Carabidous and Staphylini under stones on the beach.

Carabidae: *Bembidion* sp., seven in the BM (1885–119), St Cruz, one numbered 2002 but are obviously all the same series. *Trechisibus australis* Jeannel, subsp. *patagonicus* Jeannel: two in BM numbered 2002 (see Jeannel, 1927).

Coccinellidae: *Eriopis* sp., one in the BM (1885–119), St Cruz, numbered 2002.

Dytiscidae: *Colymbetes reticulatus* Babington (1842: 5) (= *Lancetes varius* F.), two in the BM (1873–8), St Cruz, numbered 2002.

Staphylinidae: no specimen found.

HEMIPTERA—Heteroptera, Corixidae: *Ectemnostega darwini* Hungerford (1948: 203), one in BM (1885–119) numbered 2002.

2049. Curculio lying dead by thousands on all parts of plains; interior, **both far up and on sea coast** St Cruz. April.

COLEOPTERA, Curculionidae: *Cylydrorhinus angulatus* Guérin (?) (Waterhouse, G. R., 1842b), three in the BM (1863–44, 1875–36), St Cruz, one with a green printed 49 [= 2049]. See also entry 1750 (Waterhouse included Port St Julian).

2050. 2051. 2052. Curious Heteromorous insects, [continued].

1834 April Insects St Cruz 17.

[continued] (2050 and 2051) far up the country, [*'quite original'* crossed out by Darwin] **where no white man probably every before arrived.**

COLEOPTERA, Tenebrionidae: *Cerostena punctulata* Waterhouse, G. R. (1842b: 120) (= *Psectrascelis*), one in the BM (1863–44), St Cruz). *Nyctelia guerini* Waterhouse, G. R. (1842b: 114), one in the BM (1863–44), St Cruz. *N. stephensii* Waterhouse, G. R. (1842b: 113), two in the BM (1863–44), St Cruz, *N. sulcicollis* Waterhouse, G. R. (1842b: 115) (= *Psectrascelis*), one in the BM, St Cruz and a green printed 52 [= 2052].

2053. Lamellicorn, lying dead in great numbers; interior probably feed on Guanaco dung.

COLEOPTERA, ?Scarabaeidae: no specimens found.

The guanaco (*Lama guanacoe*) is a llama of the southern plains of South America; see also entry 1716.

2054. Galeruca; a tribe very rare in such countries.

COLEOPTERA, Chrysomelidae; Galerucinae. No specimen found.

2055. Fly feeding on a Phallus.

DIPTERA: no specimen found.

The only *Phallus* (fungus) described by Berkeley (1842a) was from Maldonado.

[Darwin has ruled a line across the page to separate these entries and inserted Chiloe]

Chiloe

(a) 2102. Earth-bulls [*sic* for balls]

[on verso] (a) 2102. Geotrupes. This insect is excessively abundant, boring [*sic*] deep holes beneath every heap of horse dung (and once I saw sheeps). Curious instance of increase in number and change of habit no large quadrupid [*sic*] in Chiloe. At the depth of 2 and 3 feet. balls of earth, lined with a darker kind, (dung?) containing larva are very commonly found, in Gardens (where dung is not directly present); from what I can hear, I have little doubt that no other beetle than the Geotrupes, exists in numbers proportionate to the balls. I saw a man dig up 10 or 12 in a few minutes.

When first found they are not quite so hard as at present. The larva of many had eaten their way out and had escaped.

COLEOPTERA, Scarabaeidae: '*Phanaeus*', no specimen found. This beetle is so recorded by Darwin in the *Journal* (1845: 490) where he says 'on the opposite side of the Cordillera in Chiloe, another

species of *Phaeneus* is exceedingly abundant, and it buries the dung of the cattle in large earthen balls beneath the ground. There is reason to believe that the genus *Phanaeus*, before the introduction of cattle, acted as scavengers to man.

Darwin develops this theme in this long footnote on dung beetles in general. (See also entries 1491, 3506, 3819).

2107. 2108. *Geotrupes*.

COLEOPTERA, Scarabaeidae: *Pinotus torulosa* Eschscholtz, two in the BM (1887-42), one with a green printed 108 [= 2108]

2109. Carab. *Bemb.* in moss.

COLEOPTERA, Carabidae: *Bembidion* sp., one in the BM (1887-42), 'Valparaiso', and with a green printed 109 [= 2109].

2110. [2]111. The great curious *Lucanus*; given me by Mr R. Williams; caught when flying about in summer. The male insect is said to make a very loud clacking noise with its horns, when molested or even approached; is not very uncommon; is found abundantly in Mainland near Valdivia. In end of Jany, found 3 females, flying about during the day; when touched, stood on four hind legs, and raised their head, as in battle; very strong; caught male at Valdivia; fought most boldly, turning round to face enemy; the noise alluded to, is not very loud, and produced by friction of abdomen, when even frightened, but not touched; jaws not so strong as to produce pain to finger.

Mr Douglass, sent me 12 specimens of this fine insect and the following account: 'I found them in the crutch of an *Atenihue* tree, thirty feet above the ground, in a nest of moss. I was led to the spot by following one of them morning and evening for several days and always lost sight of it near this tree. I at last climbed up the tree and discovered them as mentioned. This is in the Island of Cancahue.'

Chiloe
(1835)

COLEOPTERA, Lucanidae: *Chiasognathus grantii* Stephens, two in the BM (1837-1, 1837-2).

Darwin collected 12 specimens which he forwarded to Cambridge (Babington 1837, Westwood 1837). Darwin (1871: vol. 1, 377, 384) writes at some length on this species in the *Descent* (chapter 10, Sexual Selection) and in correspondence with H. W. Bates (Stecher, 1969: 113) says 'I heard in Chile *Chiasognathus Grantii* squeaking loudly so I wd gladly pay £1 for a pr, if they can be bought: I brought home a dozen sp. T. but gave them all away'. A reply from Bates indicates that the dealer E. W. Janson had promised to try to obtain specimens.

1834

July

Insects

18.

2137. 2138. *Heterom.* Coleoptera. Pt St Julian.

Tenebrionidae: *Nyctelia angustata* Waterhouse, G. R. (1842b: 116) (= *N. brunripes* Latreille), one in the BM (1863-44) described from 'Patagonia' probably refers here. *N. newporti* Waterhouse, G. R. (1842b: 113), was doubtfully recorded from St Julian. See also entry 1751.

2139 Cicada, very abundant, uttering shrill cry on the plains of Patagonia. Pt Desire &c.

2152a) [on verso] a) (2152) *Pulex* from *Didelphis* (2204)

2153 (2153) *Ricinus* from a Condor.—

(2139) HEMIPTERA—Homoptera, Cicadidae: no specimen found. Darwin (1871; vol. 1, 350) makes reference to Cicada song in the *Descent* (chapter 10, Sexual Selection) as follows: 'The noise thus made could be plainly heard on board the "Beagle" when anchored at a quarter of a mile from the shore of Brazil; and Captain Hancock says it can be heard at the distance of a mile'. There is no entry for Cicada in the Brazilian section of the notes and the recollection may refer to this entry. See also entry 2507.

(2152) SIPHONAPTERA: no specimen found but F. G. A. M. Smit suggests that this opossum flea was possibly a *Polygenis* sp. Four species of *Didelphis* (opossums) are included in the *Zoology* (Darwin, 1839: pt. 2, 93-7).

- (2153) PHTHIRAPTERA: in the Denny collection at Oxford are three unidentified specimens on a card, from a condor, with green printed 153 [= 2153]. The host is the condor (*Vultur gryphus* L.) and is treated in the *Zoology* (Darwin, 1841: pt. 3, 3).
2158. Coleoptera. Onthoph: under stones not dung feeder; rolls up like armadillo.
?Histeridae: *Onthophilus*, no specimen found.
- 2209 . . . 2213. Coleoptera under stones on mountains, valley of Aconcagua.
Carabidae, tribe Agonini: one in the BM (1887–42), Valparaiso, with a green printed 210 [= 2210].
Feronia (*Poecilus*) *chaudoiri* Guérin. (Waterhouse, G. R., 1841b) (= *Pterostichus*), one in the BM (1884–119), S. America, with green printed 209 [= 2209], see also entries 3201 for this species.
2214. Serica flying about in evening great (August) numbers. 5000 feet, elevation:— on the Campana of Quillota, **which is 6200 feet.**
COLEOPTERA, Scarabaeidae: no specimens found.
2215. Dromius, under dead bark, foot of Andes.
COLEOPTERA, Carabidae: no specimen found.
2216. Harpal. Hab. Do.
COLEOPTERA, Carabidae, Harpalinae: six in the BM (1887–42), Valparaiso, may refer here. See also entry 2776.
2217. Septaira, under stones, brook valley of Canguenes, high up. [Entry struck out—not entomological].
2218. Colymbetes, rapid brook. Hab. Do.
COLEOPTERA, Dytiscidae: *Colymbetes chiliensis* Laporte (Babington, 1842) (= *Lancetes nigriceps* Erichson), two in the BM (1863–44), Valparaiso. *C. punctum* Babington (1842: 10) (= *Leuronectes gaudicaudi* Laporte), five in the BM (1863–44), Valparaiso. *C. reticulatus* Babington (1842: 5) (= *Lancetes varius* F.), one in the BM (1863–44), Valparaiso. *C. suturalis* Babington (1842: 6) (= *Rhantus signatus* F.), one in the BM (1863–44), Valparaiso.
2219. Coleoptera, flying about in evening, 4000 feet elevation, Campana of Quillota.
No specimen found. See also entry 2214.
2303. 2308. Coleoptera, Diptera &c; all the latter and most of others taken by sweeping in the month of October, Valparaiso.
COLEOPTERA, Coccinellidae: *Adalia deficiens* Mulsant (Babington, 1842). *Coccinella fulvipennis* Mulsant (Babington, 1842), one in the BM (1887–42), Valparaiso.
Curculionidae: *Adioristus angustatus*, *A. conspersus*, *A. punctulatus* and *A. simplex*, all described by Waterhouse, G. R. (1842b: 124–6) from ‘Valleys at Petorca’, may refer here. The specimens marked ‘type’ in the BM have, at first glance, no clear connection with Darwin but the accession numbers 1875–36 on some refer to types presented by Waterhouse to the Beetle section. The types of *A. punctulatus* and *A. angustatus* bear accession numbers 1908–158 and ‘formed part of Mr Bridges collection in Mr Bond’s collection sold at Stevens auction 12.xii.07 and purchased from Mr O. Janson 26.v.08’. All four species appear under the original accession number (1875–36) in the Register!
Lathridiidae: one in the BM (1885–119), Valparaiso.
Melyridae: *Astylus gayi* Guérin (Champion, 1918c) may refer here, see also entry 2773.
Tenebrionidae: *Grammicus chilensis* Waterhouse, G. R. (1845b: 324, gen. et sp.), two in the BM (1845–118, 1885–119), Valparaiso.
DIPTERA, Sarcophagidae: *Sarcophaga* sp., one in the BM (1885–119).
HEMIPTERA, Henicocephalidae, one in BM labelled Valparaiso.
HYMENOPTERA, Pteromalidae: *Asaphes aenea* Nees (Walker, 1846: 23). Also the following Chalcidoidea (Walker, 1842a: 113–116): *Asaphes vulgaris*, *Callimome eumelis*, *C. nonacris*, *Entedon bedius*, *E. flacilla*, *Eulophus rhiamus*, *Lamprotatus caecina*, *Lycrus origo*, *Pteromalus gryneus*, *Tetrastichus polybaea*, *T. scadius*, *Torymus phormio*. See also entry 2776.

2317. Hister, under dry human dung abundant. **The red spots were much brighter** [presumably Darwin means in life].
COLEOPTERA, Histeridae: No specimen found.
2318. Gonoleptes, certainly from West coast, of S. America, but I cannot find out what part, given to me.
?Arachnida, spider—not an insect.
2323. Curculio. First appears in November. Very abundant, injurious to young shoots of plums and peaches; this is time of year when many Lamellicorn beetles, first appear **Valparaiso**.
COLEOPTERA, Curculionidae: *Lophotus eschscholtzi* Schoenherr (Waterhouse, G. R., 1840*b*), no specimen found in the BM, but the species would now be placed in the genus *Aegorhinus*.
2325. Lamellicorn **Do: Flying in numbers round the young peach trees, first appeared in first week of November**.
COLEOPTERA: no specimen found, but *Brachysternus castaneus* Guérin (Scarabaeidae), listed in the BM accessions book under 1845–63, may refer here.
2326. Coleoptera, in Fungus Decemr. Archipelago of Chiloe.
No specimen found.
2327. Blue Carabus, under logs of wood in the forest. Island of Lemuy. I notice all the [continued].

1834 *Insects* *Archipelago of Chiloe* 19.

[continued] blue ones are males and coppery ones females, yet surely they are different species; do not Carabi, abound in one sex at one period. Emit a powerful acrid fluid, and smell like some of the Heteromeroous insects very disagreeable and powerful.

- COLEOPTERA, Carabidae: *Carabus darwinii* Hope (1838: 129) (subgenus *Ceroglossus*), one in the BM (1863–44) Chiloe. See section on eponyms for Hope's dedication and other comment. See also entries 2328, 2329, where it can be seen that different species were involved though it appears that Darwin collected more specimens than have survived.
2328. Carabus, far more common same Hab. and locality.
COLEOPTERA, Carabidae: *Carabus insularis* Hope (1838: 129), one (bluish-black) in the BM (1863–44) with green printed label 328 [= 2328] (s.g. *Ceroglossus*, as a variety of *C. valdiviae* Hope). See also entries 2327, 2329, 2520, 2914.
2329. Brighter variety (?) different locality.
COLEOPTERA, Carabidae: *Carabus chiloensis* Escholtz (Hope, 1838) (s.g. *Ceroglossus*, as variety of *C. valdiviae* Hope), the only specimen found in the BM (as *chiloensis* Hope) is labelled Valdivia. See entry 2520.
2330. Carab: Harpal same habitat and locality.
COLEOPTERA, Carabidae, Harpalinae: no specimen found.
2331. Heterom. rotten wood.
COLEOPTERA: no specimen found.
2332. Do. under stones near beach
COLEOPTERA: no specimen found.
2333. Carab. Harpal. very abundant.
COLEOPTERA, Carabidae, Harpalinae: no specimen found.
2338. Elmis. small stream, under stone. Various parts, east coast of Chiloe.
COLEOPTERA, Elmidae: *Elmis chiloensis* Champion (1918*b*: 48), four in the BM numbered 2338.

2367. . . . Coleoptera Diptera &c. &c. collected by sweeping the bushes and

. . . 2372 some from a Fungus. The whole country is one great forest.

COLEOPTERA, Carabidae: *Bembidion* spp., three in the BM (1887–42), Chili and numbered 2367. [Tribe Agonini det. N.E. Stork], four in the BM (1887–42), Chili and numbered 2367. Subfamily Harpalinae, four in the BM (1887–42), Chili and numbered 2367.

The following Carabidae are also included here though lacking specific numbers: *Antarctia circumfusa* Germar, one in the BM (1880–43) (det. Straneo); *Cassellius aeneo-niger* Waterhouse, G. R. (1840c: 256), two in the BM (1863–44); *Feronia* (*Pterostichus*) *bonellii* Waterhouse, G. R. (1841b: 123); *F. (Argutor) chilensis* Dejean (Waterhouse, G. R., 1841b: 129), one in the BM (1863–44); *F. nebroides* Curtis (Waterhouse, G. R., 1841b: 124); *Metius flavipes* Dejean (Straneo, 1951: 63) (= *Antarctia*), two in the BM (1885–119); *M. femoratus* Dejean (Straneo, 1951: 63) (= *Antarctia*), one in the BM (1880–43, wrong number); *M. ovalipennis* Straneo (1951: 71, 80) (= *Antarctia*), one in the BM (1880–43, wrong number), standing over an *Antarctia chilensis* Dejean label.

Cerambycidae: *Callisphyrus macropus* Newman (1840: 1), *Hephaestion macer* Newman and *H. oeretus* Newman (both 1840: 10) may refer here, all described from Chiloe. Darwin has usually made separate entries for the Cerambycidae but none fit these specimens (see entries 50, 62, 76, 81, 101, 127, 133). See Fig. 18.

Chrysomelidae: *Aulonodera darwini* Champion (1918b: 51, gen. et sp.). *Strichosa eborata* Blanchard, two in the BM (1885–119), Chiloe, one numbered 2368. *Longitarsus chiloensis* (Bryant, 1942: 104) may also refer here. *Crepidodera chiloensis* Bryant (1942: 104), one in the BM (1885–119), numbered 2368.

Coccinellidae: *Stictospilus darwini* Brèthes (1924: 153 genus, 154 species), two in the BM (1885–119), numbered 2369. *Orynipus darwini* Brèthes (1924: 158), one in the BM (1885–119) and numbered 2368.

Colydiidae: *Philothermus crabricollis* Champion (1918b: 48), four in the BM numbered 2369.

Curculionidae, Leptopiinae: three in the BM numbered 2369, 2372, plus one *Dasydema hirtella* Blanchard in BM (1885–119) Chiloe, numbered 2368. There is also one unidentified specimen (BM 1887–42) of Baridinae.

Hydrophilidae: *Enochrus* sp., one in the BM (1885–119) numbered 2367. There are also two *Enochrus* spp. in Cambridge, but see entries 875, 1314.

Languridae: one in the BM (1885–119), Chiloe and numbered 2731, certainly an error for 2371.

Lathridiidae: seven in the BM (1885–119), Chiloe, numbered 2368 (1), 2369 (2) and 2371 (4).

Passandriidae: *Catogenus decoratus* Newman (1839: 303) may refer here, one in BM (63.44) labelled 'Type' and on blue paper 'South of Chile, C. Darwin'. Described from Chiloe 'in the cabinet of Mr Melly'.

Silphidae: *Micragrytus ocelligerus* Champion (1918b: 46, gen. et sp.), two in the BM numbered 2369. *Hydnobius forticornis* Champion (1918b: 47), one in the BM numbered 2369.

Staphylinidae: *Polylobus darwini* Bernhauer (1935: 96), one in the BM (1885–119) and numbered 2371.

DIPTERA. Some 120 specimens of unidentified Diptera are present in Dublin numbered 2368, 2369, 2523 and the following families are represented.—Agromyzidae, Calliphoridae, Ceratopogonidae, Chironomidae, Chloropidae, Clusiidae, Dolichopodidae (*Sympycnum* and *Somillus*), Empididae, Ephydriidae (*Hydrellia* and *Notiphila* spp.), Lauxaniidae, Micropezidae, Muscidae, Mycetophilidae, Phoridae, ?Piophilidae, Rhagionidae, Sciariidae, Sciomyzidae, Sphaeroceridae, Stratiomyidae, Tephritidae, Tipulidae. Of these the most interesting is the Dolichopodid genus *Somillus* (= *Ionthodophrys*) (det. C. E. Dytte) which was originally described as an Acalyprate.

HEMIPTERA: there are eight unidentified Homoptera in Dublin and ten Psyllidae in the BM (1885–119) accessions.

HYMENOPTERA: the following Chalcidoidea were described by Walker (1839) on the pages indicated.

Eurytomidae. *Eurytoma philager* (81).

Lamprotatidae. *Lamprotata nages* (83), *L. eleus* (85).

Pteromalidae. *Pteromalus protheus* (87), *P. mydon* (87), *P. traulus* (88), *P. rhaeo* (88), *P. vulso* (89).

Eulopidae. *Lophocomus anaitis* (91), *Elachestus gyes* (89), *Eulophus laonome* (90), *Tetrastichus xenocles* (90).

These probably all refer here but no attempt has been made to locate them in the BM collections. Little work has been done on this difficult group from these regions since Walker's day and the labour involved in interpolating Walker's work would merit only specialist attention for revisionary purposes (see Notes on Walker).

In Dublin there are about 20 small unidentified Hymenoptera from Chiloe.

2376. Elater. from considerable height. St Pedro [San Pedro Island at the S.E. extremity of Chiloe].

COLEOPTERA, Elateridae: *Elater luteipennis* Guérin, one in the BM (1845-63), Chiloe.

2414. Lampyrus? the genus to which this insect belongs, is in number of individuals and, species the most abundant kind in Chiloe and Chonos **Archipelago**.

COLEOPTERA, Lampyridae: no specimen found.

2415. Curculio (of Tierra del Fuego?) St Andrews Cape Tres Montes.

COLEOPTERA, Curculionidae: *Antarctobius lacunosus* Fairmaire (Champion, 1918b) (= *Listroderes*). See also entry 908.

2416. Locality. Do. Carab in rotten wood, high up on hilly forest.

COLEOPTERA, Carabidae: no specimen found.

2417. Curculio, Locality and Hab. same.

COLEOPTERA, Curculionidae: no specimen found.

2418. Harpal, under log of wood Locality Do.

COLEOPTERA, Carabidae: *Antarctonomus peroni* Chaudoir (Champion, 1918b), one in the BM (1885-119), Tierra del Fuego and labelled with green 418 [= 2418]. Clearly there is a labelling error here but the species also occurs in Tierra del Fuego (see entries 906, 1049).

2419. Bee. Midship Bay Chonos.

HYMENOPTERA: no specimen found.

2420. Libellula. East coast of Chiloe.

ODONATA: No specimen found.

2424. Coleoptera. thick forest **Chonos Arch**: In the very thick (Cryptogamic [*sic* = Cryptogamic] flora) damp forest, [continued]

1834 *December* *Insects* *Archipelago of Chonos* 20.

[continued] Pselaphidae and small Staphylinidae the most abundant insects.

No specimens found, but in the *Journal* Darwin (1845: 286, footnote) records 'By sweeping with my insect-net, I procured from these situations a considerable number of minute insects, of the family Staphylinidae, and others allied to Pselaphus, and minute Hymenoptera. But the most characteristic family in number, both of individuals and species, throughout the more open parts of Chiloe and Chonos, is that of the Telephoridae'.

The comment on Telephoridae (= Cantharidae) is strange as this family is absent from Darwin's collections (though not from the Region) and notes. This may be a slip for Tenebrionidae to which most 'Heteromera' references allude.

2438. Fly. bred from the soft putrid kelp on the coast of Tres Montes. I never saw such immense numbers in clusters under side of stones.

DIPTERA: no specimen found. The true 'kelp-flies' of the family Coelopidae are not known to occur south of Mexico and this fly would probably be a *Paractora* sp. (see entry 1999) (Helcomyzidae) or a *Fucellia* sp. (Anthomyiidae).

- 2444-2455. Insects, from under stones at an elevation of 2500 feet, bare Granite mountain Patch Cove North part of Tres Montes 2444, 2446. Curious Hemipterous insects; it may be remarked there are 3 species of Curculio. The Elater in numbers were far most abundant; this

is a good example of The Alpine **Entomology of this part**; for I **sedulously** turned up **very many** stones; Libellula 2455 from base of mountain [clearly Syms Covington had been unable to interpolate Darwin's writing in the original Notebooks and had left spaces here for Darwin's insertions].

COLEOPTERA, Carabidae: *Bembidiomorphum convexum* Champion (1918b: 44, 45), one in the BM (1885–119), Tres Montes with green printed 449 [= 2449].

Curculionidae: *Antarctobius laticauda* Champion (1918b: 54), one in the BM (1885–119) with green printed label 453 [= 2453] (now placed in *Telurus* Juschel).

Tenebrionidae: *Parahelops darwini* Waterhouse, C. O. (1875: 334), one in the BM (1875: 35), 'Tierra del Fuego' but with a green printed 454 [= 2454].

HEMIPTERA. These may be the two Cambridge Pelagonidae referred to entry 677 but the above habitat hardly sounds suitable for semi-aquatic species.

2462. Carab. Trechus Yuche Island **in the forest** [a little to the N of Tres Montes].

COLEOPTERA, Carabidae: *Cascellius kingii* Curtis (Waterhouse, G. R., 1840c), no specimen found. *C. gravesii* Curtis (Waterhouse, G. R., 1841), no specimen found. *Feronia* (*Pterostichus*) *bonellii* Waterhouse, G. R. (1841b: 123), no specimen found. *F. rufipalpis* Curtis (= *Pterostichus chalybicolor* Chaudoir), one in the BM (1863–44), Yuche I.

2463. Curculio. Do. Do.

COLEOPTERA, Curculionidae: *Lophotus nodipennis* Hope (Waterhouse, G. R., 1840b), one in the BM (1863–44) probably refers here.

2474. Coronula from whale, Chonos Archipelago Jany 1835 [crossed out? by Darwin—not entomological].

2482. 2483. 2484. Coleoptera from B[ahia] Blanca Patagonia.

Carabidae: *Calosoma patagoniense* Hope (1838: 129), one in the BM (1863–44) with green printed 484 [= 2484]. See also entry 862 for this species.

2485. Acari (black) under stones and on putrid vegetable matter on beach in immense numbers.

Chonos Archipelago

Arachnida—not an insect.

2486. Fly (biting my flesh). Do.

DIPTERA: no specimen found.

2497. Fly. on coast Lowes Harbour. Do.

DIPTERA: no specimen found.

2505. 2506. Coleoptera, in dense forest. Do.

No specimens found.

2507. Cicada. Do.

HEMIPTERA-Homoptera, Cicadidae: no specimen found.

2508. Carab: young. Do.

COLEOPTERA, Carabidae: no specimen found.

2509. Diptera. Hymenoptera. Coleoptera, all the above insects, taken on borders of wood by sweeping, Lowes Harbour. Do.

DIPTERA: many of the miscellaneous unidentified flies in Dublin from Chiloe, etc. may refer here, but they lack precise data.

HYMENOPTERA: the following Chalcidoidea described from 'Isle of Chonos' by Walker (1843c: 184–5) must refer here.

Lamprotatidae: *Lamprotatus numitus*.

Pteromalidae: *Pteromalus oxynethes*.

Eulophidae: *Entedon ufens*, *Closterocerus pelor*.

See comments on Hymenoptera under entries 2367–2372.

COLEOPTERA: no specimens found.

2520. Carabus, Centre of Chiloe, in forest **at level** of water; all [what looks like small figure 3 here] under one log of wood [continued].

1835 *Jany* *Insects* [Chonos Archipelago crossed out] 21.

[continued] It is remarkable that the same variety (2329) is also a female and was equally found low down; is it distinct species?

COLEOPTERA, Carabidae: *Carabus chiloensis* Escholtz (Hope, 1838) (s.g. *Ceroglossus*), ?See entry 2329.

2521. Glow-worm. Centre of Chiloe.

COLEOPTERA, Lampyridae: ?larva, no specimen found.

2523. Insects, sweeping, Chiloe.

COLEOPTERA, Chrysomelidae: *Crepidodera chiloensis* Bryant (1942: 104), one in BM (1885–119) numbered 2523 (see also 2368).

Curculionidae. *Rhopalomerus tenuirostris* Blanchard (det. R. T. Thompson), one in the BM (1887–42) and numbered 2523.

For the Diptera, Hymenoptera and Hemiptera see comments under entry 2367. Dublin material definitely referable to this day's collecting and bearing numbers 2523 handwritten on small yellow labels are:

DIPTERA: Chloropidae, Empididae, Ephydriidae (*Notiphila*, det. B. H. Cogan). In the BM accessions there are also two unidentified Chloropidae (Diptera) numbered 2523.

HEMIPTERA—Homoptera, Aetalionidae: *Melizoderes darwini* Funkhouser (1934: 203), two in BM (1885–119) numbered 2523.

Delphacidae: *Delphacodes chiloensis* and *D. darwini* Muir (1929: 78, 79), one of each in BM (1885–119), Chiloe, the latter numbered 2523.

Psyllidae: *Notophorina* sp. (det. D. Hollis), one in BM (1885–119) labelled Chiloe and numbered 2523. There are also unidentified Hemiptera of the families Cicadellidae, Lygaeidae and Miridae in BM accessions drawers.

2524. 2525. Flies [sic] which bite both men and horses the first especially abundant; Chiloe.

DIPTERA, Tabanidae: *Tabanus (Stypommia) anachoreta* Philippi (Kröber, 1930: 140) (= *Dasybasis* s.g. *Agelanius meridiana* Rondani), one in the BM (1885–119), E. Chili, certainly belongs here as two other non-Darwin specimens are from Chiloe.

It is possible that the Tabanid-like *Pelecorhynchus darwini* Ricardo (1900: 102) (family Pelecorhynchidae) is the second fly here as there is a specimen from Chiloe (BM 1885–119) and no other Darwin material fits here. However this species is a nectar-feeder and does not bite.

See also entries 1716, 2486, 2569.

2544. 2 Beetles from, either Cacao or Sugar, on board.

COLEOPTERA: no specimen found.

2545. Insects from S. Carlos de Chiloe.

?Order, no specimens found.

2546. Meloe, common. crawling about grass and flying about, Cudico, S. of Valdivia. The Padre told me, that the Indians use this as a poison, and likewise apply it as a caustic or **Blister**.

COLEOPTERA, Meloidae: no specimen found.

2557. 2558. 2559. Insects, sweeping, in and on borders of forest. Valdivia.

HYMENOPTERA: I refer here the Chalcidoidea described by Walker (1842b) as most likely to have been collected by sweeping: *Closteroceus xenodice*, *Dicyclus lynastes*, *Inostemma quinda*, *Lamprotatus bisaltes*, *L. natta*, *L. orobia*, *Pachylarthrus sariaster*, *Platygaster paches*, *Pteromalus megareus*, *Romilius zotale*.

2561. Pediculi. vide p. 315 and Pulex. The Fleas may be compared with some I collected at St Fe.

PHTHIRAPTERA: in the Denny collection at Oxford is a card mount of four unidentified lice bearing a green printed 564 [= 2564]. See also entries 1185 in *Spirits of Wine List* (the page reference is to the *Zoological Diary* which is cited under that entry).

SIPHONAPTERA. *Pulex irritans* L., female, Chiloe Island. In the Denny collection, Oxford. The other human flea referred to is under entry 758 and other flea entries are 376, 790, 2152, 3200. However, this is the only Darwin flea found.

2569. Fly which together with (2524–2525) torments man and horse in forest of Chiloe.

DIPTERA: no specimen found, but see 1716, 2524, 2525.

2596. 2597. Heterom. Sand dunes. Concepcion.

COLEOPTERA: no specimens found.

2764 to 2772 Small insects from Concepcion. S. C.

(a) [verso] (a) **Insects of Coquimbo and Valparaiso taken in the winter, those of Concepcion in the Autumn.**

COLEOPTERA, Carabidae: *Antarctia femorata* Dejean, one in the BM (1880–43). Concepcion (= *Metius*, see Straneo, 1951: 67). *A. euryptera* Putzeys, one in BM (1885–119) (det. Straneo, 1950). *Feronia nebroides* Curtis (Waterhouse, G. R., 1841). *F. (Steropus) marginata* Waterhouse, G. R. (1841b: 124), one in the BM (= *Pterostichus blandus* Er., det. S. L. Straneo). *Metius flavipes* Dejean (Straneo, 1951: 63). Subfamily Harpalinae: four unidentified species in BM (1887–42).

Coccinellidae: *Eriopis 16-pustulata* Brèthes (1924: 149) (= *E. connexa* Germar), one in the BM (1885–119).

Lathridiidae: two unidentified species in the BM accessions (1887–42), Concepcion, numbered 2770, 2772.

Melyridae: *Astyus gayi* Guérin (Champion, 1918c) may refer here.

DIPTERA, Empididae: *Platypalpus* sp. (det. K. G. V. Smith), one in the BM (1885–119).

Ephydriidae: *Scatella vulgata* Cresson (1933: 108), one in the BM (1863–44), numbered 2770).

Pipunculidae: *Pipunculus posticus* Collin (1931: 59).

Sphaeroceridae: *Leptocera (Limosina) darwini* Richards (1931: 80), one in the BM (1885–119), labelled 2772.

HYMENOPTERA, Walker (1843a: 30–32) describes the following Chalcidoidea: *Lamprotatus alcander* (p. 30), *Gastrancistrus cephalon* (p. 30), *Pteromalus calenus* (p. 31), *Derostenus alcetas* (p. 31), *Closterocerus cercius* (p. 31), *Bellerus anaitis* (p. 32), *Tetrastichus naucles* (p. 32), *T. norax* (p. 32). See comments on Walker's Hymenoptera under entries 2367–2372.

2773. 2774. 2775. Small insects Coquimbo. S. C.

COLEOPTERA, Carabidae: *Antarctia latigastrica* Dejean, one in the BM, Coquimbo. *Feronia (Steropus) marginata* Waterhouse, G. R. (1841b: 124), one in the BM (1885–119), Coquimbo (= *Pterostichus blandus* Er. det. S. L. Straneo, 1950).

Coccinellidae: *Eriopis connexa* Germar (= *E. 16-pustulata* Brèthes), one in the BM (1885–119) (see also entry 2764).

Curculionidae: *Listroderes costirostris* Schoenherr and *L. robustus* Waterhouse, G. R. (Waterhouse, G. R., 1842b: 122). *Pentarthrum* sp., pair in BM (1885–119), Coquimbo.

Lucanidae: *Sclerognathus femoralis* Guérin, one in the BM (1887–42) (= *Dorcus darwini* Hope), see also entry 968. *Dorcus bacchus* Hope (= *Apterodorus*), one in the BM (1887–42).

Melyridae: *Astyus gayi* Guérin (Champion, 1918c), see also entry 2303.

Scarabaeidae: *Trox bullatus* Curtis, one in the BM (1885–119).

Tenebrionidae: *Psechrascelis pilipes* Guérin (Waterhouse, G. R., 1842b), 'numerous' but only one in the BM (1885–119), Coquimbo. *Scotobius gayi* Solier, one in the BM (1885–119). *S. rugosulus* Guérin is listed in the BM Accessions register under 1845–63 but has not been found.

HYMENOPTERA, the following Chalcidoidea were described by Walker (1843d): *Gastrancistrus polles*, *Lamprotatus naevolus*, *L. tubero*, *Omaloderus affine*, *O. intrepidus*, *Platygaster sylea*, *Platyterma nephele*, *Pteromalus oenoe*, *P. rhoebus*, *P. toxeus*, *P. vitula*, *Tetrastichus narcaeus*.

2776. 2836. 2837. Do. Valparaiso. Do.

I have placed here unnumbered Valparaiso specimens unlikely to have been swept (see entries 2303, 2308).

COLEOPTERA, Carabidae: *Bembidion* sp. (det. N. E. Stork), one in the BM (1885–119). *Feronia aerea* Dejean (Waterhouse, G. R., 1841*b*), one in the BM (1863–44). *F. chilensis* Dejean (Waterhouse, G. R., 1841*b*), no specimen found. *F. marginata* Waterhouse, G. R. (1841*b*: 124), five in the BM (1885–119) (= *Pterostichus blandus* Er., det. Straneo, 1950). *F. meticulosa* Dejean (Waterhouse, G. R., 1841*b*), one in the BM (1863–44). *F. nebroides* Curtis (Waterhouse, G. R., 1841*b*), no specimen found. *F. submetallica* Waterhouse, G. R. (1841*b*: 122), one in the BM (see also entry 1397). *Metius flavipes* Dejean (Straneo, 1951: 63) (= *Antarctia*), one in the BM. *M. ovalipennis* Straneo (1951: 71, 80) (= *Antarctia*), one in the BM (1885–119). *Odontoscylus substriatus* Waterhouse, G. R. (1840*a*: 359), one in the BM (= *Barypus*). *O. tentyrioides* Curtis (Waterhouse, G. R., 1840*a*). *Trechisibus femoralis* Germain and *T. politus* Brullé (Jeannel, 1927).

Tenebrionidae: *Callyntra vicina* Solier (Waterhouse, G. R. 1842*b*) (= *Epipedonota multicosta* Guérin). *Parahelops darwini* Waterhouse, C. O. (1875: 334).

2838. Lamellicorn. Island of S. Maria.

COLEOPTERA, Scarabaeidae: *Trox bullatus* Curtis, one in the BM (1887–42), Valparaiso.

2839. 2840. Insects. Copiapo.

No specimens found.

2841. Insects. Mendoza. Cicindela, Elms. The Cicindela comes from the saline mud-banks of 'Rio Estacado; the Elms and Colymbetes from the tepid and slightly mineral waters of Villa Vicencia in Cordilleras. The Cryptocephalus is Chilean insect.

COLEOPTERA, Carabidae: *Bembidion* sp. (det. N. E. Stork), one in the BM (1885–119). Mendoza Curculionidae: *Adiorthis subdenudatus* Waterhouse, G. R. (1842*b*: 126), Mendoza. These must refer here as they fit none of the other Mendoza entries for beetles, 2916, 2917.

2913. Bug mentioned by all authors, as so great a pest near Mendoza & in the Traversias; sucks very much blood, frequents houses; but this was [continued]

1835 Insects [Coquimbo—crossed out] 22.

[continued] caught in sandy ravine of cordilleras of Copiapo; called Benchuca, caught in my bed.

HEMIPTERA, Reduviidae, Triatominae: *Triatoma infestans* Klug but no specimen found. See entry 3423 for a full account of the Benchuca.

2914. 2915. Insects. Valdivia.

COLEOPTERA, Carabidae: *Cascellius aeneo-niger* Waterhouse, G. R. (1840*e*: 256). *Carabus valdiviae* Hope (1838: 128) (s.g. *Ceroglossus*, see 2329). *Feronia bonellii* Waterhouse, G. R. (1841*b*: 123) (= *Pterostichus chalybicolor* Chaudoir).

DIPTERA, Syrphidae: *Valdivia darwini* Shannon (1927: 32), one in the BM (1885–119) (= *Valdiviomyia*).

2916. Heterom. high valleys of East cordilleras and Traversia of Mendoza.

COLEOPTERA, Tenebrionidae: *Entomoderes erebi* Solier (Waterhouse, G. R., 1842*b*), one in the BM (1848–95), Mendoza. *Epipedonota affinis* Waterhouse, G. R. (1842*b*: 118) (= *E. ebenina* Lacordaire, ssp. *affinis*), no specimen found. *E. erythropus* Solier, *Nyctelia erythropus* auctt (Waterhouse, G. R., 1842*b*). *E. rugosa* Waterhouse, G. R. (1842*b*: 118), no specimen found. '*Nyctelia nodosa* Latrielle, *Zophosis nodosa* Germar' (Waterhouse, G. R., 1842*b*) also 'Maldonado (La Plata) & Bahia Blanca' but no specimens found. *N. subsulcata* Waterhouse, G. R. (1842*b*: 110), one in the BM (1863–44), Mendoza.

2917. Lamellicorn, abundant Do. Traversia.

COLEOPTERA, Dynastidae: *Oryctomorpha pictus* Waterhouse, G. R. (1842*e*: 281), one in the BM (1845–63) may refer here.

3152. Locust v. private ground P. Mendoza.
 ORTHOPTERA, Acridiidae: no specimen found. See entries 1329, 1330 for other Acridiidae.
 In the *Journal* Darwin (1845: 329) records a swarm of locusts during his passage of the Cordillera, near Luxan. He says of the insects concerned 'This species of locust closely resembles, and perhaps is identical with the famous *Gryllus migratorius* of the East'.
3195. Insect (interesting) from the country near Callao. (Peru) [the sea port of Lima].
 Order? no specimen found, unless one of those under entry 3201 refers here.
3196. 3197. Male and female *Crysmela* [sic], about Lima. 1400 feet elevation, lower limit of winter vegetation. [Peru].
 COLEOPTERA, Chrysomelidae: no specimen found.
3199. Prionus. Valparaiso (interior country).
 COLEOPTERA, Cerambycidae: *Microcleptes aranea* Newman (1840: 11, gen. et sp.), 'resembles a small brown spider', one in the BM (1863–44), Valparaiso.
3200. Pulex (I believe irritans) (Callao) [Peru].
 SIPHONAPTERA: the human flea, see entry 2561.
3201. Insects, sweeping, Callao.
 COLEOPTERA, Carabidae: *Feronia eydouxii* Guérin (Waterhouse, G. R., 1840c) *Feronia peruviana* Dejean (Waterhouse, G. R., 1841b), two in the BM (1863–44). *F. (Poecilus) unistriata* Dejean (= *Pterostichus chaudiroi* Guérin), one in the BM (1863–44), Callao (see also entry 2209 for this species).
 Dytiscidae: *Colymbetes saulcyi* 'Dufour ms in Hope Collection' (Babington, 1842: 9).
 Tenebrionidae: *Melaphorus reichei* Guérin, one in the BM (1881–19, F. Bates) labelled 'Callao, C. Darwin' is numbered 1346. This number is not a Darwin number but refers to F. Bates' collection though none of the species described by him appear to include Darwin material (except 3561). See also entry 1751 for F. Bates material.
- HYMENOPTERA, Chalcidoidea: the following were described by Walker (1843b): *Dicylus arduine*, *Entedon cleodora*, *Pachylarthrus cleodoxa*, *Pteromalus archia*.
3227. Buprestis. common between Guasco and Coquimbo.
 COLEOPTERA, Buprestidae: no specimen found.
- Galapagos Archipelago** [inserted between two short lines by Darwin]
3228. Acarus, from great black sea Guano or Lizard. Galapagos—Chatham Island. September.
 Arachnida, Acari—not an insect, see also entry 3240.
3229. Fly from Caracara Do. Do.
 DIPTERA, Hippoboscidae: *Ornithomyia intertropica* Walker (1849: 1144) (= *Icosta nigra* Perty), three in the BM (1845–63), Galapagos Is. This 'Caracara' is *Buteo galapagoensis* Gould, the Galapagos hawk treated in the *Zoology* (Darwin, 1841: pt. 3, 23).
3230. 3231. 3232. Three Coleoptera, Heterom, under stones on hill. Do. [Chatham I. = San Cristóbal].
 COLEOPTERA, Carabidae: *Feronia calathoides* Waterhouse, G. R. (1845: 21) is included here because the species is only recorded from here (Linsley & Usinger 1966: 141). Darwin's specimen is labelled 'Galapagos'.
 Tenebrionidae: *Ammophorus galapagoensis* Waterhouse, G. R. (1845a: 30, gen. et sp.) 'under stones upon a hill in Chatham I.'. *Pedonoecus pubescens* Waterhouse, G. R. (1845a: 36) 'under stones on a hill on Chatham I. Sept.'. *Stomion galapagoensis* Waterhouse, G. R. (1845a: 27 genus, 29 species), this must refer here; there is a specimen in the BM with a (white, should be yellow) printed 231 [= 3231].
 HEMIPTERA—Heteroptera, Coreidae: *Anasa obscura* Dallas (1852: 505), described from 'Galapagos C. Darwin' is recorded from San Cristóbal by Linsley & Usinger (1966) and Froeschner (1985) and may refer here although no Hemiptera are mentioned by Darwin in this entry.

For Darwin's general comments on collecting in the Galapagos Archipelago see the *Journal* (1845: 391–2).

3240. *Acarus*, same as (3228).

Arachnida, Acari—not an insect.

3241. *Acarus*, from Pudenda of common great land Tortoise.

Arachnida, Acari—not an insect.

3245. *Scolytus*, branches of dead Mimosa tree Do. [Chatham I.] (long cavities, in whole length of bough, very numerous).

COLEOPTERA, Bostriichidae: *Apate* sp. (Waterhouse, 1845a) cites Darwin's data, Chatham I. (= *Amphicerus cornutus galapaganus* Lesne) (Linsley & Usinger, 1966: 151).

3246. *Staphylinus*, under dead bird. [Chatham I.]

COLEOPTERA, Staphylinidae: *Creophilus* sp. (Waterhouse, G. R., 1845a: 24) 'under dead bird', Chatham I. Linsley & Usinger (1966: 143) record *C. villosus* Gravenhorst from Chatham I.

3363. 3364. Small insects, sweeping high up, central parts of Charles Island. [= Floreana, = Santa Maria] October (Galapagos Is).

COLEOPTERA, Anthribidae: *Ormiscus variegatus* Waterhouse, G. R. (1845a: 37, genus, sp. & var. β). Darwin's data cited.

Carabidae: *Selenophorus galapagoensis* Waterhouse, G. R. (1845a: 22), see also Waterhouse, C. O. (1877). *S. obscuricornis* Waterhouse, G. R. (1845a: 22) may refer here though recorded only from Albemarle by Linsley & Usinger (1966).

Chrysomelidae: *Haltica galapagoensis* Waterhouse, G. R. (1845a: 39), later C. O. Waterhouse (1877: 80) erected the genus *Docema* to receive this species. *Longitarsus lunatus* Waterhouse, C. O. (1877: 81).

Coccinellidae: *Scymnus galapagoensis* Waterhouse, G. R. (1845a: 39), two in the BM (1845–63), Galapagos; (1877–1) Charles I. numbered 3363 (see also entry 3366).

Curculionidae: *Otiiorhynchus cuneiformis* Waterhouse, G. R. (1845a: 38) (= *Amphideritus*).

Dytiscidae: *Copelatus galapagoensis* Waterhouse, G. R. (1845a: 23) may refer here although Linsley & Usinger (1966: 142) do not include Charles I.

Hydrophilidae: *Tropisternus lateralis* F. (Waterhouse, G. R. 1845a), see Blair (1933).

Phalacridae: *Phalacrus darwini* Waterhouse, C. O. (1877: 78), omitted by Linsley & Usinger (1966) and Linsley (1977).

Nitidulidae: *Acribis serrativentris* Waterhouse, C. O. (1877: 78, gen. et sp.) (= *Cybocephalus*), omitted by Linsley & Usinger (1966) and Linsley (1977).

Scarabaeidae: *Oryctes galapagoensis* Waterhouse, G. R. (1845: 26) may refer here.

Tenebrionidae: *Ammophorus obscurus* Waterhouse, G. R. (1845: 32) refers here (Blair, 1933). *Stomion helopoides* and *S. laevigatus* Waterhouse, G. R. (1845a: 30) may refer here.

DIPTERA: the following Diptera were not described from a specified island but Linsley & Usinger (1966) include Charles Island in their distribution.

Bombyliidae: *Anthrax primitiva* Walker (1849: 257) (= *Villa*).

Calliphoridae: *Musca ponia* Walker (1849: 881) (= *Phaenica* s.g. *Viridinsula*); *Musca phauda* Walker (1849: 896) (= *Cochliomyia macellaria* F., the secondary screw-worm fly).

Muscidae: *Anthomyia setia* Walker 1849: 956 (= *Ophyra aenescens* Wiedemann).

In Dublin there are 35 unidentified Diptera from Charles I. representing the following families: Agromyzidae, Anthomyzidae, Asteiidae, Bombyliidae, Ceratopogonidae (*Dasyhelea? paracincta* Wirth, det. R. P. Lane), Dolichopodidae (? *Chrysotus* sp., det. C. E. Dytte), Ephydriidae, Otitidae, Syrphidae.

HYMENOPTERA, Braconidae: in Dublin are unidentified specimens of *Apanteles*, *Chelonus* and *Opius*. No Braconidae are recorded from Galapagos by Linsley & Usinger (1966) or Linsley (1977).

Chalcididae: *Chalcis cabira* Walker (1838: 472), Charles I., omitted by Linsley & Usinger (1966).

Cleonyimidae: *Merostenus sadales* Walker (1839: 93, plate P, Walker 1840–1842, see fig. 16 of the present paper), omitted by Linsley & Usinger (1966).

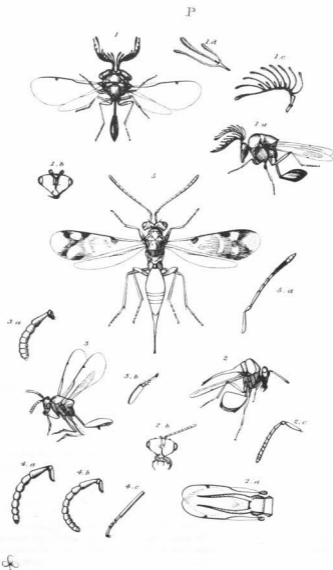
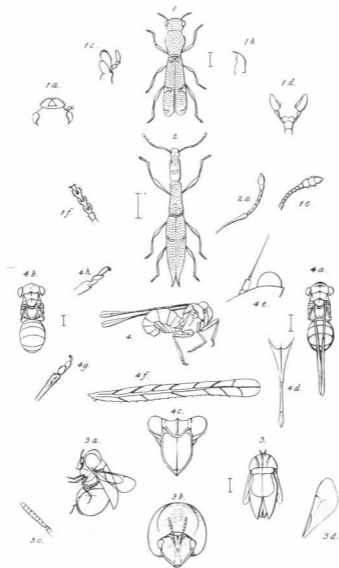


Fig. 16 Chalcidoid Hymenoptera depicted on Plate P in the first volume of the *Entomologist* (see Walker, 1840–42). This illustrated Darwin's *Beagle* captures described by Walker in his *Monographia Chalciditum* (1839): 1, *Eucharis volusus* Walker (see *Insect Notes*, 3561, King George's Sound, Australia); 2, *Thoracantha furcata* Fabricius (see 3858, Bahia, Brazil); 3, *Eucharis iello* Walker (see 3524, Hobart, Tasmania); 4, *Eucharis zalates* Walker (see 3561, King George's Sound, Australia); 5, *Merostenus sadales* Haliday (see 3363, Charles Island, Galapagos). The *Thoracantha* should be compared with the illustration and comments on that genus in Fig. 17.



G. R. Waterhouse del.

Darwin sc.

Fig. 17 Insects collected in Australia and Bahia, Brazil and described by G. R. Waterhouse: 1, *Allelidea ctenostonoides* (Coleoptera, Malachiidae, see *Insect Notes*, 3550, King George's Sound); 2, *Leptosomus acuminatus* L. (Coleoptera, Curculionidae, see 3528, Sydney); 3, *Thoracantha latreilli* (Hymenoptera, Eucharitidae, see 3858, Bahia); 4, *Alleloplasis darwini* (Hemiptera, Derbidae, see 3561, King George's Sound and Eponyms). The *Thoracantha* should be compared with the species depicted in Fig. 16. These chalcid wasps have remarkable projections from the thorax over the abdomen so that from above they bear a strong resemblance to beetles of the genus *Mordella*. (By courtesy of the Royal Entomological Society of London from their *Transactions* for 1839).

Formicidae: *Camponotus planus* Smith (1877: 83); *C. macilentus* Smith (1877: 83), each of these ants have since been divided into several subspecies (mostly by Wheeler, 1919) on the different islands of the Galapagos (Linsley & Usinger, 1966).

Pteromalidae: *Pteromalus enebulus* Walker (1838: 475), Charles I., omitted by Linsley & Usinger (1966).

Sphecidae: *Nitela darwini* Turner (1916: 345).

Thynnidae: *Agriomyia vagans* Smith (1877: 83).

HEMIPTERA—Heteroptera, Lygaeidae: *Nysius (?) marginalis* Dallas (1852: 556). Ashlock (1967: 42) erected the genus *Darwinysius* for this species.

Miridae: *Capsus darwini* Butler (1877: 89), 'a pretty and well-marked species' (= *Dagbertus*); *C. nigrutilus* Walker (1873: 112) (= *Polymerus*); *C. quadrinotatus* Walker (1873: 113) 'evidently a common species' (see Fig. 18 of the present paper); *C. spoliatus* Walker (1873: 112) (= *Dagbertus*); *Miris lineata* Butler (1877: 89) (= *Trigonotylus*).

Homoptera, Cicadellidae: *Jassus planus* Butler (1877: 91) (= *Agallia*); *J. striolaris* Butler (1877: 91) (= *Agallia*).

Fulgoridae: *Delpfax simulans* Walker (1851a: 356) (= *Ilburnia*); *D. substituta* Walker (1851a: 354) (= *Delphacodes*); *D. vicaria* Walker (1851a: 355) (= *Delphacodes*); *Issus rostrifer* Butler (1877: 90) (= *Galapagosana*); *I. varius* Walker (1851a: 355) (= *Philatis*).

Several Hemiptera occur also on James I. (see entries 3365, 3366) (see also entries 3230, 3232). ORTHOPTERA, Acrididae: *Acridium literosum* Walker and *A. melanocerum* Stål (Walker 1870: 582) may refer here.

3365. 3366. Small insects Do. Do. James Island. [= Santiago]. October.

COLEOPTERA, Carabidae: *Calosoma galapageium* Hope (1838: 130), island unspecified by Hope but see Linsley & Usinger (1966); *Feronia galapagoensis* Waterhouse, G. R. (1845a: 21) (= *Pterostichus*); *Notaphus galapagoensis* Waterhouse, G. R. (1845a: 23) (= *Bembidion*).

Coccinellidae: *Scymnus galapagoensis* Waterhouse, G. R. (1845a: 41).

Chrysomelidae: *Diabrotica limbata* Waterhouse, C. O. (1877: 81) (= *Acylymma*).

Curculionidae: *Anchonus galapagoensis* Waterhouse, G. R. (1845a: 39).

Dermestidae: *Dermestes vulpinus* Auct. (Waterhouse, G. R. 1845) (= *D. maculatus* De Geer).

Elateridae: *Physorhinus galapagoensis* Waterhouse, G. R. (1845a: 25) (= *Anchastus*) may refer here.

Melyridae: *Ablechrus flavipes* Waterhouse, C. O. (1877: 79, gen. et sp.) (also listed in error by Waterhouse on p. 81 as *A. darwini*).

Tenebrionidae: *Ammophorus bifoveatus* (Waterhouse, G. R., 1845a: 31) (= *A. bifoveatus* subsp. *bifoveatus*), there is another subspecies *barringtoni* Van Dyke on Barrington I. [= Santa Fé].

Pedonocces costatus Waterhouse, G. R. (1845a: 35, gen. et sp.). *Stomion helopoides* and *S. laevigatus* Waterhouse, G. R. (1845a: 30, gen. et sp.) may refer here.

DIPTERA, Piophilidae: *Piophila atrata* Meigen (Walker, 1849: 1065) (= *P. casei* L.), one in the BM (1845–63), 'Galapagos'; the well known 'cheese skipper' widely dispersed by commerce. This family is not recorded from Galapagos by Linsley & Usinger (1966) or Linsley (1977).

Sarcophagidae: *Sarcophaga inoa* Walker (1849: 832), 'Galapagos' is included here as Linsley & Usinger (1966) include Santiago though Lopes (1878) does not (= *Galapagomyia*). *S. violenta* Walker (1849: 826), 'Galapagos' is recorded from James I. by Lopes (1978) (= *Gigantotheca*).

Tephritidae: *Trypeta* (now *Euaesta*) *aesia* Walker (1849: 1006) 'St James's Isle, Galapagos' has not been reported since (Foote 1982), one specimen in the BM (1845–63), James Island numbered 3365.

HYMENOPTERA, Cleonymidae: *Lelaps sadates* Haliday (Walker, 1839: 93).

Eulophidae: *Cirrospilus buselus* Walker (1839: 96).

Pteromalidae: *Spalangia endius* Walker (1839: 96) (= *S. nigra* Latreille).

All of these Chalcidoid Hymenoptera are omitted by Linsley & Usinger (1966).

LEPIDOPTERA, Arctiidae: *Detiopia ornatrix* L. var. (= *Utetheisa*) (Butler, 1877), 'Albemarle' is included here as there is no provision in Darwin's *Notes* for it. Linsley & Usinger (1966) record it from Isabella [= Albemarle] and Baltra [= South Seymour].

HEMIPTERA—Heteroptera, Coreidae: *Stenocephalus insularis* Dallas (1852: 482) (= *Dicranocephalus*).

Lygaeidae: *Nysius marginalis* Dallas (1852: 556) (= *Darwinysius* Ashlock, 1967).

Miridae: *Capsus quadrinotatus* Walker (1873: 113) (= *Dagbertus*); *C. spoliatus* Walker (1873:

112) (= *Dagbertus*).

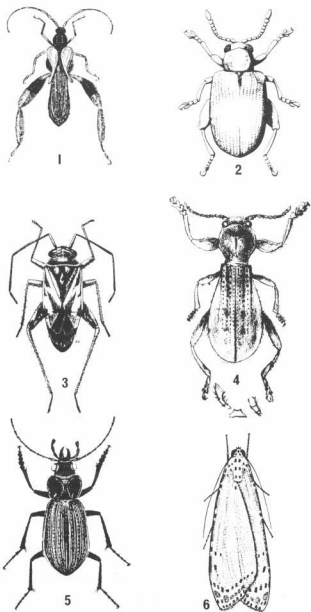


Fig. 18 1, *Callisphyris macropus* Newman (Coleoptera, Cerambycidae, Chiloe, see 2367) (from the *Entomologist*, 1841); 2, *Distigmoptera darwini* Scherer (Coleoptera, Chrysomelidae, Halticinae, Maldonado, see 1310) (by courtesy of the Museum G. Frey); 3, *Capsus quadrinotatus* (Walker) (Hemiptera, Miridae, Galapagos, see 3363) (by courtesy of the California Academy of Sciences); 4, *Cormodes darwini* Pascoe (Coleoptera, Cleridae, Lord Howe's Island) 'An insect so suggestive of Mr Darwin's theory should appropriately bear his name' (see Eponyms) (from the *Journal of Entomology*, 1862); 5, *Calosoma galapageium* Hope (Coleoptera, Carabidae, Galapagos Islands, see 3366); 6, *Uteheisa ornatrix* L. (Lepidoptera, Arctiidae, Galapagos Islands, see 3365). Last two from Hickin (1979).

Tingidae: *Monanthia cytharina* Butler (1877: 90) (= *Corythaica*).

Homoptera, Cicadellidae: *Acocephalus obliquus* Walker (1851b: 851) (= *Mesania*). *Jassus lucidus* Butler (1877: 91) (= *Bacutha*).

Fulgoridae: *Delphax simulans* Walker (1851a: 356) (= *Ilburnia*); *D. substituta* Walker (1851a: 354) (= *Delphacodes*); *D. vicaria* Walker (1851a: 355) (= *Delphacodes*), *Delphax* larva and pupa ab. (Walker, 1851a: 356); *Issus varius* Walker (1851a: 355) (= *Philatis*).

Several Hemiptera are common to Charles I. (see entries 3363, 3364). See also entries 3230, 3232.

3390. Small insects, sweeping, November, Tahiti.

No specimens found.

3393. 3394. Insects. Do. Do.

No specimens found.

3415. 3416. 3417. 3418. Insects sweeping; Bay of Islands, New Zealand, December.

COLEOPTERA, Cerambycidae: *Oemona humilis* Newman (1840: 8, gen. et sp. in 'Cabinet of the Entomological Society'); *Xylotoles lentus* Newman (1840: 12, gen. et sp. in 'Cabinet of the Entomological Society').

Chrysomelidae, Alticinae: An unidentified specimen in the BM (1887-42) Accessions, New Zealand.

Coccinellidae: *Coccinella leonina* F., one in the BM, and some unidentified specimens in accessions (1887-41).

Curculionidae: *Cyrtalia griseipila* Pascoe (Lea, 1926) probably refers here.

Lathridiidae: one in the BM (1887-42 accessions, numbered 3415).

DIPTERA. There are twelve unidentified specimens in Dublin, of the families Agromyzidae, Chloropidae and Syrphidae.

HEMIPTERA: Cixiidae: *Oliarus oppositus* (Walker) in the BM (1885-119) are two numbered 3415 and two numbered 3418 (det. C. Butcher). Some unidentified Miridae and Pentatomidae (unnumbered) are present in BM accessions.

HYMENOPTERA, Pteromalidae: *Pteromalus lelex* Walker (1839: 95).

3420. Cicindela in extraordinary numbers, in all parts of the country. Do. Do.

COLEOPTERA, Carabidae: *Cicindela*, No specimen found.

1835

Decr

Insects

23.

[Some pages are crossed out here, by Darwin?, as they were thought to have been repeated; however, only parts of pages were repeated and entries 3421-3528 were not. The double entries are not included here]

3421. 3422. Insects inhabiting rotten wood. N. Zealand.

No specimens found.

3423. Bug, caught at Iquique, Peru. Is called in the Mendoza country, Benchuca; is mentioned by many travellers, as so great a pest and bloodsucker; inhabits crevices in old walls. This specimen when caught was very thin; even when showing it a finger, would, when placed on a table immediately run at it with protruded sucker. Being allowed, sucked for 10 minutes **caused very little pain** [inserted by Darwin]; became bloated and globular & 5 or 6 times the original size; 18 days afterwards was again ready to suck; being kept 4 and $\frac{1}{2}$ months became of proper proportions, as thin as at first; I then killed it. A most bold and fearless insect.

HEMIPTERA-Heteroptera, Reduviidae (Triatominae): no specimen found, but from Peru this would be *Triatoma infestans* Klug. This bug is one of the vectors of American trypanosomiasis or Chagas' disease (after its discoverer, Carlos Chagas).

Adler (1959) first suggested that Darwin may have contracted Chagas's disease during his sojourn in Mendoza and that his persistent ill-health in later life could be attributed to this disease, though it was not clinically recognized until 1909. This was contested by a number of authors including Woodruff (1965) and others (Winslow, 1971), largely on the grounds that victims usually presented

with cardiac symptoms and did not survive to Darwin's age. Lewinsohn (1979) has recently reviewed the history of the disease and draws attention to the important rediscovery of Chagas' first patient, still alive and well in 1979 (aged 72). This patient presented with similar symptoms to Darwin and led Lewinsohn to suggest that 'Berenice is (and Darwin perhaps was) a carrier of the infection rather than the disease'.

To become infected a patient must not only be bitten by the bug but, since the infective stage of the causative protozoan (*Trypanosoma cruzi*) resides in the gut, the wound must be contaminated by its faeces. Almost invariably the bug defecates while sucking blood on the skin of its victim.

Darwin (1845: 330) records in the *Journal* observations similar to the entry in the *Insect Notes* above, but his additional comment shows that while the bug was indebted to one of the officers for the meal described above, it nevertheless establishes that Darwin too had been exposed to them on another occasion. Writing of a night spent in the village of Luxan [Argentina] he says 'At night I experienced an attack (for it deserves no less a name) of the Benchuca, a species of Reduvius, the great black bug of the Pampas. It is most disgusting to feel soft wingless insects, about an inch long, crawling over one's body. Before sucking they are quite thin but afterwards they become round and bloated with blood, and in this state are easily crushed'.

Entry 2913 also shows that on yet another occasion, this time at Copiapo in Chile, he was exposed to the attacks of the Benchuca. The chances of his contracting Chagas' disease do therefore seem rather high. In all of these localities the bug concerned would have been *Triatoma infestans* and not *Panstrongylus* (= *Conorhinus*) *megistus* (Burmeister) as suggested by Poulton (1904) when comparing W. J. Burchell's and Darwin's experiences with these bugs. Burchell's specimens were collected in Brazil where *P. megistus* is the principal bug biting man and thus the vector of Chagas' disease. There is no evidence that Burchell suffered the symptoms of Chagas' disease. Little is known of his later life but he died at the age of 80, by his own hand (Poulton 1905).

3445. *Staphylinus*; Carrion. Hobart Town. Van Dieman's Land [Tasmania]. Feby.

COLEOPTERA, Staphylinidae: no specimen found, but my colleague P. M. Hammond suggests that this might be *Creophilus erythrocephalus* F., a common carrion species frequently collected by early travellers in Tasmania. See also entry 708.

3446. *Aphodius*, Cows dung. Do.

COLEOPTERA, Scarabaeidae: no specimens found. See entry 3506.

3504. *Aphodius*, Horses, dung. Do.

COLEOPTERA, Scarabaeidae: no specimen found. See entry 3506.

3505. *Aphodius*, Cows, dung. Do.

COLEOPTERA, Scarabaeidae: no specimen found. See entry 3506.

3506. 3507. 3508. 3509. 3510. 3511. 3512. I believe includes 3 species of *Onthophagus*; 2 latter common in cows dung:—from Do.

COLEOPTERA, Scarabaeidae: no specimens found.

In the *Journal* Darwin (1845: 490, footnote), in a discussion on dung beetles seen on the voyage, says 'In Van Dieman's Land, however, I found four species of *Onthophagus*, two of *Aphodius*, and one of a third genus, very abundant under the dung of cows; yet these latter animals had been then introduced only thirty-three years. Previously to that time, the Kangaroo and some other small animals were the only quadrupeds; and their dung is of a very different quality from that of their successors introduced by man'. (See also entries 1491, 2102, 3506, 3819). Bornemissza (1983) suggests that: Darwin's four *Onthophagus* species were probably *auritus* Erichson, *fuliginosus* Erichson, *mutatus* Harold and *posticus* Erichson, all then undescribed; one of his *Aphodius* species was *pseudotasmaniae* Given; his third genus was probably *Proctamnodes* (= *Proctophanes*) *sculptus* Hope. He also verifies the accuracy of Darwin's observations. No specimens have been found.

3513. *Phalacrus*, in rotten wood; has a *Phalacrus* been taken before out of Europe? Do.

COLEOPTERA, Phalacridae: *Litochrus sydneyensis* Blackburn, 'King George's Sound'; *Phalacrus corruscans*, Panzer, 'King George's Sound'.

These are the only Australian Phalacridae collected by Darwin, both recorded by Lea (1926: 281). Although the entry here apparently alludes to Hobart Town from the 'Do' I refer them here because

of Darwin's special comment. The entries in the *Notes* are clearly out of sequence anyway as the *Beagle* visited Sydney, Tasmania, King George's Sound, in that order. In fact Phalacridae had previously been collected during the voyage in Maldonado (entries 1310, 1321-2) and Galapagos (3363-4).

3514. Larva. beneath stones, fresh water. Do.

Order (?), no specimen found.

3524. 3525. 3526. Insects by sweeping. Do.

In the following list of Coleoptera BM data are only cited where new records or misidentifications of Darwin material are involved. All are from Lea (1926) unless otherwise indicated (Lea's new species have the reference and pagination).

COLEOPTERA, Anthribidae: *Araeocerus lindensis* Blackburn; *Xynotropis micans* Blackburn.

Carabidae: *Bradycellus promptus* Erichson.

Chrysomelidae: *Ditropidus minutus* Lea; *Haltica variegata* Waterhouse, G. R. (1838: 133); *Idiocypha darwini*; *I. semibrunnea*; *I. tasmanica* Saunders (1843: 317) (all 'In Cabinet of Entomological Society'); *Monolepta ordinaria* Blackburn; *M. nigricornis* Blackburn; *Rhyparida commutabilis* Lea.

Coccinellidae: *Diomus pumilio* Weise, one in the BM; *Rhizobius alphabeticus* Lea; *R. pulcher* Blackburn; *Scymnus maestus* Lea (1926: 287); *S. vagans* Blackburn.

Curculionidae: *Elleschodes tenuistriatus* Lea; *Encosmia ventralis* Lea (1926: 282); *Epamaebus ziczac* Lea; *Epamaebus* sp., one unidentified in the BM (1885-119), numbered 3524; *Eristus blackburni* Lea, one in the BM (1885-119), numbered 3524, but not included in Lea (1926); *Misophrice submetallica* Blackburn, one in the BM (1887-42), not in Lea (1926); *Rhamphus acaciae* Lea; *R. setistriatus* Lea (1926: 285); *Storeus brachyderes* Lea; *S. metasternalis* Lea (1926: 283); *Symbothinus squalidus* Blackburn (det. Lea), one in the BM (1887-42), not in Lea (1926); *Thecia pygmaea* Pascoe, one in the BM (1885-119), my colleague R. T. Thompson informs me that this species was wrongly identified by Lea. *Tychius minutissimus* Boh.

Dermestidae: *Anthrenus ocellifer* Blackburn.

Hydrophilidae: *Octhebius macrognaethus* Lea (1926: 279).

Malacodermidae: *Hypattalus abdominalis* Erichson.

Mordellidae: One unidentified specimen in the BM Accessions.

Ptinidae: *Dryophilodes angustus* Lea (1926: 282); *D. squalidus* Lea (1926: 282).

Scaphidiidae: *Scaphisoma instabile* Lea (1926: 280).

DIPTERA, Asilidae: *Bathypogon* sp. (det. G. Daniels), Tasmania. One in the Bigot collection at Oxford.

There are about 40 mostly unidentified Diptera in Dublin representing the following families: Chamaemyiidae (*Pseudoleucopis ?fasciventris* Malloch), Chironomidae *Chironomus* sp., det.

P. S. Cranston), Chloropidae, Dolichopodidae, Empididae (*Hilarempis* sp., det. K. G. V. Smith), Phoridae, Muscidae (including *Coenosia acuticornis* Stein, det. A. C. Pont), Sciariidae and other small Nematocera and Acalyprtratae.

HEMIPTERA—Heteroptera. In Oxford are a few specimens as follows: Pentatomidae (genus near *Nezara*, *Dinocoris* sp.), Coreidae (*Amorbia* sp.), Homoptera, Psyllidae, Acizzia. Three specimens of probably the same species in the BM (1885-119), Hobart Town and numbered 3524 and 3526 and another damaged Psyllid numbered 3524 (see also entry 3561).

Spodilyaspidae: three in the BM Accessions (1885-119), Hobart Town, numbered 3524 and 3526 (one a *Glycaspis* sp. det. D. Hollis).

These Homoptera were probably swept from *Acacia* and *Eucalyptus*. In Oxford there are some unidentified specimens of Homoptera.

HYMENOPTERA: The following Chalcidoidea were described or identified in Walker (1838, 1839, 1840-1842) and are grouped in families assuming Walker's generic placements were correct.

Chalcididae: *Hockeria eracon*, *H. proxenus*, *Smiera teleute*.

Encyrtidae: *Encyrtus arsanes*, *E. cheles*, *E. lucetius*, *E. odocon*, *E. salacon*, *E. xuthus*, *E. zebina*.

Eucharitidae: *Eucharis eribotes*, *E. iello* (illustrated in *Entomologist* plate P, fig. 3, see Walker, 1840-1842)—see Fig. 16 of the present paper).

Eulophidae: *Elachestus artoeus*, *Entedon hestia*, *Eulophus itea*, *Euplectrus bicolor* Swederus, *Ophelimus sabella*, *O. ursidus* Haliday, *Tetrastichus arses*, *T. autonae*, *T. dymas*, *T. fannius*, *T. glycon*, *T. hippasus*, *T. neis*, *T. proto*, *T. valens*, *T. xenares*, *T. zaleucus*.

Eurytomidae: *Eurytoma eleuthor*, *E. pidytes*, *E. volux*, *Isosoma ravola*.

Lamprotatidae: *Lamprotatus bato*, *L. ciron*, *L. hecatoeus*, *L. thera*, *Seladerma cernus*, *S. letus*, *Semiotus merula*.

Pteromalidae: *Pteromalus baton*, *P. niphe*, *P. oceia*, *P. thestor*, *P. unca*.

Torymidae: *Megastigmus borus*, *M. drances*, *M. laminus*.

Halictidae: *Halictus repertus* Cockerell (1932: 520) in Oxford, refers here.

NEUROPTERA, Mantispidae: one unidentified specimen in Oxford.

ORTHOPTERA, Acrididae: one unidentified in Oxford.

3527. Do. Alpine; Insects Mount Wellington, elevation 3100 feet. [Tasmania].

COLEOPTERA, Coccinellidae: *Scymnus flavolaterus* Lea (1926: 287).

HYMENOPTERA, Pteromalidae: *Micromelus silanus* Walker (1843e: 46).

In Dublin there are about 40 unidentified Diptera and Hymenoptera standing over the number 3527. The Diptera include the families Agromyzidae, Dolichopodidae, Empididae, Ephydriidae (*Hydriellia* and *Notiphila*, det. B. H. Cogan), Lauxaniidae, Phoridae, Stratiomyiidae (*Actina* sp., det. J. Chainey), Tipulidae.

3528. Insects sweeping near Sydney, S. Covington.

COLEOPTERA, Buprestidae: *Cisseis puella* Kerr, *Germarica lilliputana* Thomson.

Chrysolmelidae: *Coenobius spissus* Lea, *Ditropidus inconspicuus* Lea, *D. lentulus* Charpentier, *D. striatopunctatus* Lea.

The following list of Coleoptera are all recorded in Lea (1926), unless other references are cited.

Chrysolmelidae (continued): *Haltica aenea*, *H. bicolor*, *H. crassicornis*, *H. labialis*, *H. scutellata* (all Waterhouse, G. R. 1838), *Monolepta subsuturalis* Blackburn, *M. sordidula* Blackburn.

Coccinellidae: *Novius bellus* Blackburn, *N. sanguinolentus* Mulsant, *Rhizobius debilis* Blackburn, *R. ventralis* Erichson, *Scymnus elutus* Lea, *S. notescens* Blackburn, *Serangium mysticum* Blackburn, *S. obscuripes* Lea. In the BM are also the following Darwin Coccinellidae from Sydney but, unrecorded by Lea: *Coelophora inequalis* (F.), *Diomus notescens* Blackburn, *D. pumilio* Weise, *Harmonia conformis* (Boisduval), *Rhizobius forestieri* (Mulsant) and two unidentified specimens in the Accessions.

Curculionidae: *Cydmaea cara* Lea, *C. pusilla* Pascoe, *Desiantha malevolens* Lea, *Empolis leai* Blackburn, *Leptosomus acuminatus* L., (Waterhouse, G. R., 1839) (= *Rhadinosomus*), see Fig. 17.

Hydrophilidae: *Paracymus lindii* Blackburn; *Paranacaena* sp. near *horni* Blackburn, one in Cambridge with a label suggesting that it is Australian, as are other members of the genus.

Lathridiidae: *Croticaria australis* Blackburn.

Malacodermidae: *Latus cinctus* Redtenbacher.

Scarabaeidae: *Automolus humilis* Blanchard.

DIPTERA. In Dublin there are about 70 specimens, mostly unidentified, as follows: Chironomidae (*Chironomus* sp., det. P. S. Cranston), Dolichopodidae, Empididae (*Hybos* sp., det. K. G. V. Smith), Micropezidae (*Taenioptera lasciva* F., *Cardiocephalus trilineatus* Cresson, det. B. H. Cogan), Muscidae (*Atherigona tibiseta* Malloch, *Coenosia acuticornis* Stein, det. A. C. Pont), Sciaridae, Sepsidae (*Xenosepsis sydneyensis* Malloch, *Parapalaeosepsis plebeia* Meijere, det. A. C. Pont), Stratiomyidae and other small Nematocera and Acalyptrates in poor condition.

HEMIPTERA—Heteroptera. At Oxford there are specimens of Pentatomidae (*Canthecona*, *Dimocoris*, *Elasmostethus* and a genus near *Nezara*); Lygaeidae (*Graptostethus* sp.); Reduviidae (immature); Corexidae (two *Stigara australis* (Fieber) 'sent to G. W. Kirkaldy'). Lygaeidae: *Ontiscus darwini* Hamid (1975: 42), two in BM (1885–119) numbered 3528, see also 3561.

Homoptera. *Cephalelus brunneus* (Waterhouse, G. R., 1839: 195). In the BM there are unidentified Cicadellidae (1) and Fulgoroidea (1) numbered 3528. At Oxford there are a few specimens of Cicadidae (*Melampsalta*), Flatidae (*Carthaea*), Cercopidae (*Orthoraphia*) and some unidentified genera.

HYMENOPTERA, Gasteruptionidae (= Evaniidae): *Foenus darwini* Westwood (1841: 537; 1844: 259) (= *Hyptiogaster*). In the 1844 version of this paper under *Monomachus falcator* Klug ms Westwood says 'Obs. C. Darwin, Esq. brought home a species of this genus which has for some time been in the hands of W. E. Shuckard, Esq., for description.

Halictidae: *Halictus (Evylaeus) darwiniellus* Cockerell (1932: 519). Cockerell comments on another Australian bee (*Reepenia testacea* Smith) possibly from the *Beagle* expedition via J. G.

Children's collection but the provenance is uncertain. Both bees are in Oxford and are the only Darwin bees so far located.

Chalcidoidea: Francis Walker (1838, 1839) described the following species from Sydney. These are placed in families assuming the generic placement to be correct, which knowing Walker's reputation may not be the case (see Notes to this paper).

Chalcididae: *Chalcis phya*, *Hockeria nyssa*, *H. proxenus*.

Encyrtidae: *Encyrtus pacorus*.

Eucharitidae: *Eucharis eribotes*, *E. theocles*, *E. valgius*, *E. xeniades*, *E. zalates*.

Eulophidae: *Entedon diocles*.

Eupelmidae: *Eupelmus eurozonus* Dalman.

Eurytomidae: *Eurytoma olbus*, *E. tellis*, *E. volux*, *Palmon olenus*.

Lamprotatidae: *Gastrancistrus menoetes*, *Lamprotatus damia*, *L. mycon*, *L. nicon*, *Seladerma athanis*.

Torymidae: *Callimome vibidia*.

In Dublin there are about 25 Hymenoptera from Sydney, mostly Braconinae, Opiinae and *Apanteles* (det. T. Huddleston). In Oxford there is one unidentified Chalcidid.

ORTHOPTERA, Acrididae: there are seven unidentified specimens in Oxford

Tettigonidae: there are two unidentified specimens in Oxford plus 14 other Orthoptera.

1836 *Insects* 24.

[Entries 3390–3527 repeated and crossed out]

1836 *Insects* 25.

3550. Beetle, inhabiting in numbers a large flower [Hobart town Feby—crossed out] King George's Sound [Australia] March.

COLEOPTERA, Malachiidae: *Allelidea ctenostomoides* (Waterhouse, G. R., 1839: 194). Six in the BM (1841–32). See Fig. 17.

3556. Curculio, one of the most abundant insects here [Hobart Town Feby—crossed out] King George's Sound March.

COLEOPTERA, Curculionidae: *Belus testaceus* Waterhouse (1839: 188).

Probably refers here as it appears to have been singled out for description by Waterhouse; all other weevils are included in the next entry.

3561. Small insects sweeping on coarse grass or brush wood. King George's Sound. March.

COLEOPTERA: In the following list all are recorded in Lea (1926) unless otherwise indicated (date and page given for Lea if his new species).

Clambidae: *Clambus australiae* Lea (1926: 280).

Chrysomelidae: *Haltica acuminata*, *H. aeneo-nigra*, *H. bivittata*, *H. nitida*, *H. ochracea*, *H. ovata*, *H. picea*, *H. pygmaea*, *H. subaena*, *H. substriata* (all described by G. R. Waterhouse, 1838). *Ditropidus jacobyi* Baly.

Coccinellidae: *Rhizobius occidentalis* Blackburn, *R. subhirtellus* Lea (1926: 286), *Scymnus flavifrons* Blackburn.

Curculionidae: *Atyllis latipennis* Lea. One in the BM (1885–119) labelled Swan River, W. Australia (? non-Darwin) is referred here (Lea, 1926: 284). *Calandra oryzae* L. *Cyamaea diversa* Blackburn. *Decilaus moluris* Lea. *Ethadomorpha clauda* Blackburn. *Microberosiris exilis* Lea. *Olanea* sp. *Orichora trivirgata* Pascoe. *Rhamphus perpusillus* Pascoe. *Storeus variabilis* Lea. *Thechia brevirostris* Lea (1926: 284). *T. longirostris* Lea (1926: 285).

Dascillidae: *Cyphon fenestratus* Blackburn.

Dytiscidae: *Hydroporus darwinii* Babington (1842: 13) (= *Necterosoma*); *H. unidecemlineatus* Babington, two in the BM (1863–44) are labelled Tierra del Fuego apparently in error as this species is referable to *Necterosoma*, a genus which does not occur in South America (Watts, 1978: 95).

Tenebrionidae: *Hypaulax ampliata* Bates, F. var. *parryi* Bates, F. (1874:20), two in the BM (1881–19, F. Bates acc. No.). 'Voyage of the Beagle' on blue paper. I refer these here although they are large beetles. The typical form came from Nicol Bay, Western Australia. Bates described the

two specimens of the var. on the same page and noted that they were ex coll. [F.J.S.] Parry, but the precise locality is unknown.

DIPTERA, Acroceridae: *Ogcodes darwini* Westwood (1876: 516) in Oxford may refer here.

In Dublin there are about 20 Diptera in poor condition including several Dolichopodidae.

HEMIPTERA—Heteroptera, Lygaeidae: *Ontiscus darwini* Hamid (1975: 42), two in BM (1885–119), see also 3528.

Pentatomidae: Genus near *Nezara*, one in Oxford.

Homoptera, Cicadellidae: *Cephaleus marginatus* (Waterhouse, G. R., 1839: 195, var. β , var. γ).

Delphacidae: *Haplodelphax darwini* Fennah (1965: 33), one in BM (1885–119).

Derbidae: *Alleloplasis darwini* Waterhouse, G. R. (1839:194). See eponyms for dedication. See Fig. 17.

Eurymelidae: *Anipo darwini* Evans (1942: 144), one in BM (1885–119).

Psyllidae: *Acizzia* sp., one in the BM (1885–119), a different species from 3524–5.

HYMENOPTERA: Walker (1838, 1839) described the following Chalcidoidea. See comments under previous entries 3528.

Chalcididae: *Hockeria dexius*.

Eucyrtidae: *Encyrtus lucetius*, *E. xuthus*, *E. zameis*, *Erycydnus chryscus*.

Eucharitidae: *Eucharis volusus* (Plate P) (see Fig. 16, present paper), *E. zalates* (Plate P, Walker 1840–1842) (see Fig. 16, present paper).

Eulophidae: *Euderus mestor*, *Eulophus megalarus*, *Tetrastichus lelaps*.

Eupelmidae: *Eupelmus dodone*.

Eurytomidae: *Eurytoma aretheas*, *E. pidytes*, *Isosoma oritias*.

Lamprotatidae: *Lamprotatus nelo*, *Seladerma athanis*, *Semiotus dice*, *S. theope*.

Perilampidae: *Perilampus saleius*.

Pteromalidae: *Pteromalus fabia*.

Torymidae: *Callimome daonus*, *C. osinus*.

3588. Beetle taken on board the *Beagle*, Keeling Ids.

COLEOPTERA: no specimen found.

3593. Insects sweeping: the small ant swarms in countless numbers Keeling Isd.

In the *Journal* Darwin (1845, 456, footnote) says of the Keeling fauna 'of insects I took pains to collect every kind. Exclusive of spiders, which were numerous, there were thirteen species¹. Of these one only was a beetle. A small ant swarmed by thousands under the loose dry blocks of coral, and was the only true insect which was abundant.' The superscript refers to a more informative footnote: 'The thirteen species belong to the following orders:— In the *Coleoptera* a minute Elater; *Orthoptera*, a *Gryllus* and a *Blatta*; *Hemiptera*, one species; *Homoptera*, two; *Neuroptera*, a *Chrysopa*; *Hymenoptera*, two ants; *Lepidoptera nocturna*, a *Diopaea*, and a *Pterophorus* (?); *Diptera*, two species.'

No specimens have been found. The *Deiopoia* was listed by Walker (1854: 567) as *D. pulchella* L., but Jordan (1939: 283) described this as subspecies *darwini* of *Utetheisa pulchelloides* Hampson (Arctiidae) and records two males coll. C. Darwin plus other specimens. See entry 3594 for the *Chrysopa*.

3594. Hemerobius.—(last three in April) Do. [Keeling].

NEUROPTERA, Chrysopidae: this is undoubtedly the *Chrysopa* referred to in the *Journal* (Darwin, 1845: 456, footnote) (see entry 3593). There are two specimens in the BM (1885–119), Keeling Isld, one numbered 594 [= 3594], the other bearing a label 'seems to be *Chrysopa innotata*' but they are in fact C. *ramburi* Schneider (det. P. C. Barnard).

3635. Water beetles, mountain stream Mauritius. May.

COLEOPTERA, Hydrophilidae: *Limnoxenus* sp., one in Cambridge labelled 'South America' may refer here. Other specimens (non-Darwin) in the BM are from Europe, Ghana, S. Africa, Sandwich Is. and Australia.

HEMIPTERA—Homoptera, Cicadidae: *Stagira darwini* Distant (1905: 213), one in the BM (1885–119), Mauritius, is referred here as there is no other entry.

3688. 3689. 3690. 3691. Small insects sweeping in valleys of mountains near Simons Bay. [Cape] June.

COLEOPTERA, Anthicidae: *Anthicus* (*Aulacoderus*) *atronitidus* Laferté, two in the BM (1885–119, 1887–42), numbered 3689 and 3691 (det. J. C. van Hille).

Chrysomelidae: *Aphthona bevinsi* Bryant (1942: 106), one in the BM numbered 3691.

A. capensis Bryant (1942: 106) may also refer here.

Curculionidae: *Ossomus hariolus* (Dollman in Schoenherr), one in the BM (1875: 36), Cape of Good Hope, numbered 3689 and labelled 'examined by Lacordaire' by Waterhouse and marked with a double asterisk on a separate label. Another Cape specimen is also present in the BM (1887–42) but represents a different species.

Dytiscidae: *Darwinhydrus solidus* Sharp (1882: 374, gen. et sp.), one in the BM (1885–119) numbered 3688.

Hydrophilidae: *Prosthetops capensis* Waterhouse, F. H. (1879: 533, gen. et sp.).

Nitidulidae: *Meligethes splendidulus* Reitter (det. A. M. Easton), two in the BM, one (1885–119) numbered 3691 and the other (1887–42) numbered 3690. *M. viridulus* Reitter (det. Kirejtshuk), four in the BM (1885–119).

DIPTERA, Tachinidae: *Leskia darwini* Emden (1960: 391). One in the BM (1885–119), Cape.

HEMIPTERA—Heteroptera, Lygaeidae: *Ischnodemus darwini* Slater (1964: 116), one in the BM (1885–119).

Homoptera, Cicadellidae: *Caffrolix cycloptia* (Cogan) (Theron, 1983: 150). *Kaapia darwini* Theron (1983: 147, 148), one in the BM (1885–119), numbered 3690.

Dictyopharidae: *Risius darwini* Fennah (1962: 233), one in the BM (1885–119) numbered 3689.

Tropiduchidae: *Stenoconchoptera darwini* Muir (1931: 308, gen. et sp.), one in the BM numbered 3690.

3692. Acarus, from the common land tortoise of the Cape.—June.

Arachnida, Acari—not an insect.

3693. 3694. 3695. 3696. 3697. 3698. Small Aphodii very numerous beneath dung Do.—June.

COLEOPTERA, Scarabaeidae: no specimens found.

St Helena. July.

3730. Small insects, sweeping high central land.

COLEOPTERA, Carabidae: *Calosoma helenae* Hope (1838: 130), one in the BM (1863–44) (= *Campalita chlorostictum* Dejean spp. *helenae*), see Wollaston, 1877, Basilewsky, 1972.

Elaeteridae: *Anchastus atlanticus* Candéz. Three in BM (1871.2, Coleoptera accession no.) 'St Helena', with small blue paper triangle.

Scydmaenidae: *Anthicus wollastoni* (Waterhouse, F. H., 1879: 532), Champion (1895: 75) established that this is not an Anthicid but a Scydmaenid, one in the BM (1879–34) (= *Euconnus*).

Four previously described Wollaston (1877) species of Coleoptera were also represented among Darwin's material (see Waterhouse, F. H., 1879) in the BM. These have only handwritten rectangular labels 'St Helena' with 3730 written on the verso and Coleoptera accession number 1879: 35 (error for 34):

Anthribidae: *Homoedera pygmaea*, *Notioxenus ferrugineus*.

Cryptophagidae: *Cryptophagus gracilipes* (not found)

Staphylinidae: *Oxytelus alutaceifrons*.

The Coleoptera of St Helena have been recently assessed (Basilewsky, 1972).

DIPTERA, Scathophagidae: *Scathophaga stercoraria* L., one in BM (1885–119) St Helena.

The following St Helena Diptera are in Dublin:

Chironomidae: *Chironomus* sp. (det. P. S. Cranston).

Chloropidae: *Elachiptera lyrica* Sabrosky (det. B. H. Cogan).

Mycetophilidae: *Leia* sp. (det. A. M. Hutson).

Sphaeroceridae: *Leptoecera* sp. (det. B. H. Cogan).

HYMENOPTERA, Eulophidae: *Cirrospilus nirreus* Walker (1839: 98).

Pteromalidae: *Pteromalus ipsea* Walker (1839: 97).

There are 20 specimens of unidentified Hymenoptera in Dublin as follows:

Braconidae (*Aphidius* spp.), Ichneumonidae (Campopleginae) (det. T. Huddleston).
The Diptera and Hymenoptera of St Helena are assessed in Basilewsky (1977).

3819. 3820. Very common beetle beneath dung on higher parts of St Helena. This is the most extraordinary instance yet met with by me of transported, or change of habits of stercovorous insects.

COLEOPTERA, Scarabaeidae: no specimen found, but see entries 3821, 3822.

In the *Journal* (Darwin, 1845, 490, footnote) in a lengthy footnote on dung beetles says of the St Helena insects:—'Among these insects, I was surprised to find a small *Aphodius* (nov. spec.) and an *Oryctes* both numerous under dung. When the island was discovered it certainly possessed no quadruped, excepting perhaps a mouse: it becomes therefore, a difficult point to ascertain, whether these stercovorous insects have since been imported by accident, or if aborigines, on what food they formerly subsisted.' (See also entries 1491, 2102, 3506, 3821, 3822 for other parts of this discussion).

In the *Ornithological Notes* Barlow (1963: 211) cites Darwin's use of the word 'Krotophagous' and says 'Not in *O.E.D.* In the small pocketbooks Darwin carried with him on expeditions inland, he coins the word "omni-stercovorous" for dung-eating Coleoptera; date, 4th September 1833.'

3821. 3822. *Aphodius* higher part of St Helena.

COLEOPTERA, Scarabaeidae: no specimens found but this and the previous entry could refer to *Aphodius* (*Nialus*) *pseudolividus* Balthasar or *A. granarius* (L.). Both species occur on St Helena (Wollaston 1877, Decelle 1972).

3823. 3824. 3825. 3826. 3827. 3828. 3829. Flies [*sic*] and other insects taken on the mountainous parts and far from houses in Ascension. July.

Duffy (1964) provides a faunal list of Ascension but even by using this no Darwin material has been found. See also entries 3865–3867.

3858. 3859. 3860. Small insects sweeping in forest and open places. These insects products of two whole days sweeping.—After winters rainy season. Beginning of August. Bahia. Brazil. August.

COLEOPTERA, Bruchidae: *Bruchus* with an apparently unpublished Pic name, two in the BM (1885–119, 1887–42), one numbered 3860. *Bruchus* sp., one in the BM (1858–60).

Chrysomelidae: *Syphrea bahiensis* Bryant (1942: 107) may refer here (or 325). See also 618.

Curculionidae: Baridinae, three in the BM (1887–42) plus one *Gerapus* sp. (det. G. C. Champion) in BM (1885–119), Bahia, numbered 3680 (error for 3860).

DIPTERA: In Dublin there are about 100 unidentified Diptera and 20 Hymenoptera as follows:—
Agromyzidae, Bombyliidae, Calliphoridae (including *Cochliomyia macellaria* F. and *Lucilia eximia* Wiedemann, det. J. P. Dear), Ceratopogonidae, Chironomidae (*Cricotopus*, det. P. S. Cranston), Dolichopodidae (including *Condylostylus*, det. C. E. Dyte), Drosophilidae, Ephyrididae (including *Nostima*, det. B. H. Cogan), Lauxaniidae, Mycetophilidae, Pipunculidae, Sarcophagidae (*Sarcodexia* and *Oxysarcodia*, det. J. P. Dear), Sciariidae, Sphaeroceridae, Stratiomyidae, Syrphidae (including *Ornidea obesa* F., det. K. G. V. Smith), Tachinidae, Tephritidae (*Xanthaciura*? *insecta* Loew, det. B. H. Cogan), Therevidae.

HYMENOPTERA: Braconidae (Braconinae, Opiinae, Microgasterini, including *Apanteles*, det. T. Huddleston) and Ichneumonidae (Phygadeuontinae).

Sphecidae: *Stigmus neotropicus* Kohl, one in BM (1885–119), Bahia, numbered 3860.

The following Chalcidoid Hymenoptera were described by Walker (1838, 1839) unless otherwise indicated. (See comments under entries 3528, 3561, and Notes).

Chalcididae: *Smiera punctata* F., *S. subpunctata*.

Encyrtidae: *Encyrtus epytus*.

Eucharitidae: *Eucharis furcata* F. (= *Thoracantha*), *E. rapo*, *Thoracantha latreilli* Guérin (Waterhouse, G. R., 1839, pl. xvii, fig. 3, see Fig. 17 of the present paper).

Eulophidae: *Elachestus catta*, *Entedon antander*, *E. hegelochus*, *E. thestius*, *Tetrastichus archideus*, *T. athenais*, *T. cacus*, *T. cleonica*, *T. daimachus*, *T. deilochus*, *T. februs*, *T. valerus*.

Eurytomidae: *Decatoma diphilus*, *Eurytoma euclus*, *E. menon*.

Lamprotatidae: *Lamprotatus dioxiptae*.

Pteromalidae: *Pteromalus cosis*, *P. driopides*.

Torymidae: *Callinome caburus*, *C. sulcius*.

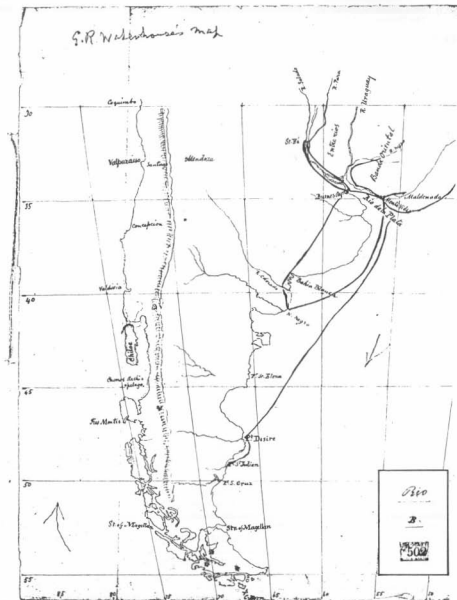


Fig. 19 G. R. Waterhouse's map inserted at the end of the *Insect Notes* and showing Darwin's route including his overland journeys in Uruguay and Argentina. The map is drawn on thin paper water-marked 'J. Whatman Turkey Mill 1840' with the route shown in red ink. In the copy reproduced here the route has been inked over in black for clarity.

Inset in panel is a 'Rio' label in Darwin's hand and a 'B' label also in his hand, probably connected with sorting of material and present on some specimens (see *Insect Notes*, 493). A Darwin Printed number is also shown. The majority of labels are in unknown hands (see text).

1836

Insects

26.

3861. 3862. 3863. 3864. Insects. Bahia. August.

See entries 3858-3860.

3865. 3866. 3867. Insects. Ascension. July.

See entries 3823-3829.

The Notes end with G. R. Waterhouse's sketch map of South America (Fig. 19).

Eponyms

All generic and specific names formed from Darwin's name and used in the Insecta are included here with indications of author and group. Where these names have been used for Darwin's specimens, only author, date and page are given and the full reference will be found in the list of references and other comments elsewhere in the text (see Index). For names *not* based on Darwin material a full reference to the journal is given here which is not repeated in the main list of references. Where the name is not in Charles Darwin's honour, e.g. based on the town (Port) of Darwin (Northern Territory, Australia) (which, incidentally should more correctly have been coined *darwinensis* not *darwini*; similarly *darwini* should have been *darwini*) etc., this is indicated. For the convenience of taxonomists in assessing the validity of any future eponyms all generic names are given first in alphabetical order (with full bibliographical data) and all specific eponyms are given in the alphabetical order of their original genera which are grouped into insect orders. Families and modern generic placings are also indicated where the latter information is already published. Some original dedications are quoted where of sufficient interest and reflect on Darwin's standing among entomologists of the day.

Considering Darwin's antipathy to the practice of taxonomists appending their names to new genera and species in perpetuity (Darwin, F., 1887: vol. 1, 364 et seq.), he would have probably been concerned at the superlative adulation of his name in the formation of so many eponyms.

Genera

Darwinella Enderlein, 1912, *Kungliga Svenska Vetenskapsakademiens Handlingar* 48(3): 14. (Coleoptera, Tenebrionidae). Erected for *D. amaroides* Enderlein 1912. Falkland Islands. Not based on Darwin material.

Darwinhydrus Sharp, 1882, *Scientific Transactions of the Royal Dublin Society* (II)2: 373. (Coleoptera, Dytiscidae). Erected for *D. solidus* Sharp 1882. South Africa.

Darwinivelia Anderson & Polhemus, 1980, *Entomologica Scandinavica* 11: 373. (Hemiptera, Mesoveliidae). Erected for *D. fosteri* Anderson & Polhemus 1980. Galapagos. Not based on Darwin material.

Darwinomyia Malloch, 1922, *Annals and Magazine of Natural History* (9) 9: 277. (Diptera, Muscidae, *Palpihracus*). Erected for *D. univittata* Malloch 1922: 278. Chile. Not based on Darwin material.

Darwinysius Ashlock (1967). (Hemiptera, Lygaeidae). Erected for *Nysius ?marginalis* Dallas 1852: 556. Galapagos Islands. 'Named after Charles Darwin, who collected the type species of the genus on the voyage of the *Beagle*.'

Species

DERMAPTERA

Diplatys darwini Bey-Bienko 1959, *Entomologicheskoe Obozrenie* 38: 591. (Diplatyidae). China. Not based on Darwin material.

ORTHOPTERA

Anaulocomera darwini Scudder 1893, *Bulletin of the Museum of Comparative Zoology Harvard* 25: 19. (Tettigoniidae). Galapagos Islands. Not based on Darwin material.

ISOPTERA

Kalotermes darwini Light 1935, *Proceedings of the California Academy of (Natural) Sciences* (4) 21: 242. (Kalotermitidae). Galapagos Islands. Not based on Darwin material.

Mastotermes darwiniensis Froggatt, 1896, *Proceedings of the Linnean Society of New South Wales* 21: 519. (Mastotermitidae). Named after the town of Darwin, Australia.

ODONATA

Diplax frequens var *darwiniana* Selys 1883 (= *Sympetrum*, Libellulidae), *Annals de la Société Entomologique de Belgique* 27: 14. Japan. Not based on Darwin material.

Tramea darwini Kirby 1889. (Libellulidae), *Transactions of the Zoological Society of London* 12: 315. Galapagos Is. Not based on Darwin material.

HEMIPTERA

Alleloplasis darwini Waterhouse (G.R.) 1839: 194 (Derbidae). King George's Sound, Australia (Fig. 16).

'Named after this gentleman who has done so much towards the advancement of science, and to whom entomology owes so much, since he has brought to this country an immense collection of insects from the various parts of the world, and particularly of the minute species which had been comparatively neglected.'

Anipjo darwini Evans (1942: 144). (Eurymelidae). King George's Sound, Australia.

Capsus darwini Butler, 1877: 89. (Miridae *Aggabertus*). Galapagos, Charles I.

Cephaloplatus darwini Distant, 1910. *Annals and Magazine of Natural History* 8(6): 473 (Pentatomidae). Named after Port Darwin, N. Australia.

Corythaica darwiniana Drake & Froeschner, 1967, *Proceedings of the Entomological Society of Washington* 69: 89. (Tingidae). Darwin Island (= Guerra, Culpepper), Galapagos.

Delphacodes darwini Muir (1929: 78). (Delphacidae). Chiloe Island, Chile.

Ectemnostega darwini Hungerford (1948: 203). (Corixidae). St Cruz, Patagonia.

Halobates darwini Herring, 1961, *Pacific Insects* 3(2-3): 278. (Corixidae). Named after Port Darwin, N. Territory, Australia.

Haplodelphax darwini Fennah (1965: 33). (Delphacidae). King George's Sound, Australia.

Ischnodemus darwini Slater (1964: 116). (Lygaeidae). Cape of Good Hope, South Africa. 'Dedicated to the memory of its collector, the immortal Charles Darwin'.

Kaapia darwini Theron (1983: 148). (Cicadellidae). Cape of Good Hope, South Africa.

Melizoderes darwini Funkhouser (1934: 203). (Aetalionidae). Chiloe Island, Chile.

Ontiscus darwini Hamid (1975: 42). (Lygaeidae). King George's Sound and Sydney, Australia.

Pantinia darwini China 1962, *Transactions of the Royal Entomological Society of London* 114(5): 151, Fig 12. (Peloriidae). Chiloe Island, Chile. Not a Darwin specimen.

Pristhesancus darwinensis Miller, 1958, *Nova Guinea* (N.S.) 9: 156. (Reduviidae). Named after the town of Darwin, Australia.

Risius darwini Fennah (1962: 233). (Dictyopharidae). Cape of Good Hope, South Africa.

Stagira darwini Distant (1905: 213). (Cicadidae). Mauritius.

Stenoconchyoptera darwini Muir (1931: 308). (Tropiduchidae). Cape of Good Hope, South Africa.

NEUROPTERA

Brachynemorus darwini Stange, 1969, *Acta Zoologica Lilloana* 25: 19. (Myrmeleontidae). Galapagos Islands. Not based on Darwin material.

Chrysopa darwini Banks, 1940. *Psyche, a Journal of Entomology*, Cambridge, Mass. 47: 135. (Chrysopidae). Named after the town of Darwin, Australia.

Macronemurus darwini Banks, 1915, *Proceedings of the Academy of Natural Sciences of Philadelphia* 96: 619. (Macronemuridae). Named after the town of Darwin, Australia.

Megalomus darwini Banks, 1924, *Zoologica. Scientific Contributions of the New York Zoological Society*, 5(717): 179. (Hemerobiidae). Galapagos Islands. Not based on Darwin material.

COLEOPTERA

Ablechrus darwini Waterhouse (C.), 1877: 81. (Melyridae, listed in error for *Ablechrus flavipes* Waterhouse (C.), 1877: 79).

Achryson galapagoense darwini Linsley and Chemsak, 1966, *Proceedings of the California Academy of Sciences* (4) 33: 213. (Cerambycidae). Galapagos Islands. Not based on Darwin material.

Adelopsis darwini Jeannel (1936: 64, 66). (Leioidae). Maldonado, Uruguay.

Agonum darwini Van Dyke 1953, *Occasional Papers of the California Academy of Sciences*, 22: 25. (Carabidae). Galapagos Islands. Not based on Darwin material.

Agriilus darwini Wollaston, 1857, *Catalogue of the Coleopterous insects of Madeira in the collection of the British Museum*. London, p. 82 (Buprestidae). Madeira. Not based on Darwin material. Wollaston says:

'I have dedicated this species to Charles Darwin Esq., M.A., V.P.R.S., whose enquiries into the obscure phenomena of geographical zoology have contributed more than those of any other man living to our knowledge, in the general questions of animal distribution'.

- Anaploclerum darwini* Lameere, 1902, *Bulletin et Annals de la Société Royale Entomologique de Belgique* **46**: 210. (Cerambycidae). Brazil. Not based on Darwin material.
- Archophiloleus darwini* Arrow, 1937: 55. (Scarabaeidae, Dynastinae). Maldonado, Uruguay.
- Atheta* (*Acronota*) *darwini* Cameron, 1943, *Annals and Magazine of Natural History* (11) **10**: 351. (Staphylinidae). Named after Port Darwin, Australia.
- Aulonodera darwini* Champion, 1918b: 51. (Halticidae). Chiloe Island, Chile.
- Callimicra darwini* Hespenseide, 1980: 15. (Buprestidae). Bahia, Brazil.
- Calosoma darwini* Van Dyke, 1953, *Occasional Papers of the California Academy of Sciences*, **22**: 10. (Carabidae). Galapagos Islands. Not based on Darwin material.
- Carabus darwini* Hope, 1838: 129. (Carabidae, s.g. *Ceroglossus*). Chiloe Island, Chile.
- 'This beautiful insect I have named in honour of my friend Charles Darwin, Esq., a zealous entomologist. His exertions in advancing the progress of Zoology in general entitle him to thanks of the scientific world.' Kraatz's (1878, *Dt. ent. Z.* **22**: 325) citation of this name probably refers to another species which has led to '*darwini* Kraatz' entries in catalogues, similarly with Gerstaecker (1858, *Linn. Ent.* **12**: 435).
- Carenum darwiniense* Macleay, 1878, *Proceedings of the Linnean Society of New South Wales* **2**: 214. (Carabidae). Named after Port Darwin, Australia.
- Chlamydopsis formicola* King var. *darwiniensis* Lea, 1918, *Record of the South Australian Museum* **1**: 85. (Histeridae). Named after the town of Darwin, Australia.
- Clivina darwini* Sloane, 1916, *Proceedings of the Linnean Society of New South Wales* **41**: 609. (Carabidae). Named after Port Darwin, Australia.
- Coelostoma darwini* Blair, 1933, *Annals and Magazine of Natural History* (10) **11**: 474. (Hydrophilidae, *Galapodaenum*). Galapagos Islands. Not based on Darwin material.
- Coenonica darwini* Cameron, 1943, *Annals and Magazine of Natural History* **11**(10): 347. (Staphylinidae). Named after the town of Darwin, Australia.
- Colymbetes darwini* Babington, 1842: 8. (Dytiscidae, (= *Rhantus signatus* F.)). Tierra del Fuego.
- Cormodes darwini* Pascoe, 1860, *Journal of Entomology*, **1**: 17. (Cleridae). Lord Howe Island. (Fig. 18).
- 'An insect so suggestive of Mr Darwin's theory should appropriately bear his name.' This dedication refers to the wingless condition of this beetle 'a condition due, as Mr Darwin tells us, in reference to other insular apterous Coleoptera, to "the action of natural selection but combined probably with disuse".'
- Ctenispa darwini* Maulik, 1930: 51. (Chrysomelidae). Bahia, Brazil.
- Diastichus darwini* Cartwright, 1970, *Proceedings of the Biological Society of Washington*, **83**: 53. (Scarabaeidae, *Platytomus*). Galapagos Islands. Not based on Darwin material.
- Distigmoptera darwini* Scherer, 1964: 297. (Chrysomelidae). Uruguay. (Fig. 17).
- Docema darwini* Mutchler, 1924, *Zoologica, Scientific Contributions of the New York Zoological Society*, **5**: 230. (Halticidae). Galapagos Islands. Not based on Darwin material.
- Dorcus darwini* Hope, 1841: 302, 1844: 279. (Lucanidae, = *Sclerognathus femoralis* Guérin). Chile.
- Hope (1844) says 'The above insect lately received from Chile. It is named in honour of Charles Darwin Esq., who has greatly contributed to our acquaintance with the entomology of Valparaiso, Chile, and other parts of the South American continent'.
- Epitrix darwini* Bryant, 1942: 101. (Chrysomelidae). Maldonado, Uruguay.
- Epuraea darwiniensis* Blackburn, 1927, *Transactions of the Royal Society of Australia* **27**: 115. (Nitidulidae). Australia. Not based on Darwin material.
- Eudicella darwiniana* Kraatz, 1840, *Deutsche Entomologische Zeitschrift* **24**(1): 170 (= *darwini* Kraatz, 1890, *antea* **34**(1): 216). (Scarabaeidae). Ashanti, Africa. Not based on Darwin material.
- Gnathaphanus darwini* Blackburn, 1888, *Proceedings of the Linnean Society of New South Wales* **13**: 808. (Carabidae). 'Northern Territory of South Australia'. Not Darwin material.
- Haptoncura darwiniensis* Blackburn, 1903, *Transactions of the Royal Society of Southern Australia* **27**: 115. (Nitidulidae). Named after the town of Darwin, Australia.
- Heterodiomus darwini* Brèthes, 1924: 155. (Coccinellidae). Rio de Janeiro, Brazil.
- Heteronyx darwini* Blackburn, 1889, *Proceedings of the Linnean Society of New South Wales*, **14**: 435. (Scarabaeidae). 'N. Territory of S. Australia'. Not based on Darwin material.
- Hugoscottia darwini* Knisch, 1922: 90. (Hydrophilidae, = *Enochrus*). South America—no further locality; see comment in introduction and *Insect Notes*, 1314.
- Hydroporus darwini* Babington, 1842: 13. (Dytiscidae, *Necterosoma*). King George's Sound, Australia.
- Hyperaspis arrowi* Brèthes var. *darwini* Brèthes 1925a: 13. (Coccinellidae). Maldonado, Uruguay.
- Idiophota darwini* Saunders, 1843: 317. (Chrysomelidae). Sydney, Australia.
- Lepidopla darwini* Blackburn, 1888, *Proceedings of the Linnean Society of New South Wales*, **13**: 850. (Scarabaeidae, Melolonthiinae). Northern Territory of South Australia. Not based on Darwin material.

- Longitarsus darwini* Bryant, 1942: 105. (Chrysomelidae). Maldonado, Uruguay.
- Medon (Hypomedon) darwini* Cameron, 1943, *Annals and Magazine of Natural History*, (11) 10: 341. (Staphylinidae). Named after the town of Darwin, Australia.
- Migadops darwini* Waterhouse, (G.R.), 1842a: 138. (Carabidae). Tierra del Fuego, Navarin Island.
- Neobrachypterus darwini* Jelinek, 1979: 194. (Nitidulidae). Bahia Blanca, Patagonia.
- Nephopallus darwini* Brèthes, 1924: 168. (Coccinellidae, *Scymnus*). Rio de Janeiro, Brazil.
- Nyctelia darwini* Waterhouse (G.R.), 1842b: 108. (Tenebrionidae). Port Desire, Patagonia.
- Odontoscelis darwini* Waterhouse (G.R.), 1840a: 356. (Carabidae, *Cnemacanthus*). Patagonia, (Fig. 13).
- Onthopagus darwini* Paulian, 1937, *Arbeiten über morphologische u. taxonomische Entomologie*, 4: 345 (now synonymized with *O. fissiceps* McCleay). (Scarabaeidae). Named after the town of Darwin, Australia.
- Orympus darwini* Brèthes, 1924: 158. (Coccinellidae). Chiloe Island, Chile.
- Oxytelus (Anotylus) darwini* Cameron, 1843, *Annals and Magazine of Natural History* (11) 10: 339. (Staphylinidae). Named after the town of Darwin, Australia.
- Oxytelus (Anotylus) darwinianus* Cameron, 1943, *Annals and Magazine of Natural History* (11) 10: 340. (Staphylinidae). Named after the town of Darwin, Australia.
- Parahelops darwini* Waterhouse (C.O.), 1875: 334. (Tenebrionidae). Tierra del Fuego and Valparaiso.
- Phalacrus darwini* Waterhouse (C.O.), 1877: 78. (Phalacridae). Galapagos, Charles Island.
- Phytosus darwini* Waterhouse (F.H.), 1879: 531. (Staphylinidae, *Halmaeus*). Falkland Islands.
- Plagithmysus darwinianus* Sharp, 1896, *Entomologist's Monthly Magazine*, 32: 271. (Cerambycidae). Hawaii. Not based on Darwin material.
- Plotopuserica darwiniana* Brenske, 1900, *Berliner Entomologische Zeitschrift*, 45: 59. (Scarabaeidae). Madagascar. Not based on Darwin material.
- Polylobus darwini* Bernhauer, 1935: 96. (Staphylinidae). Chiloe Island, Chile.
- Psephenus darwini* Waterhouse, C.O., 1880: 563 (Psephenidae). Rio de Janeiro.
- Sclerostomus darwini* sensu Burmeister is a misidentification (for *Sclerognathus bacchus* Hope) of *Dorcus darwini* Hope see above.
- Scolytogenes darwini* Eichhoff, 1878, *Mémoires de la Société Royale des Sciences de Liège* (2) 8: 497. (Scolytidae). Burma. Not based on Darwin material.
- Stictospilus darwini* Brèthes, 1924: 154. (Coccinellidae). Chile.
- Telephorus darwinianus* Sharp, 1866, *Transactions of the Entomological Society of London*, 5: 436. (Cantharidae, = *Cantharis darwiniana*). Scotland. Not based on Darwin material.
- Trechisibus darwini* Jeannel, 1927: 38. (Carabidae). Argentina. Not based on Darwin material though other Darwin records are given for other species. Dedication as follows: 'Cette espèce est dédiée à Ch. Darwin dont une partie des récoltes, faites au cours du voyage du Beagle, m'ont été communiquées par le British Museum et m'ont grandement facilité la revision du groupe difficile des *Trechisibus*.'
- Trichopteryx darwini* Matthews, 1889: 193. (Trichopterygidae). Rio de Janeiro (= *Acrotichis*, Ptiliidae). Matthews says 'I feel much pleasure in dedicating this insect to the memory of the late C. R. Darwin by whom it was found in a fungus near Rio de Janeiro'.
- DIPTERA
- Leptocera (Limosina) darwini* Richards, 1931: 80. (Sphaeroceridae). Concepcion.
- Leskia darwini*, Emden, 1960, *Proceedings of the Zoological Society of London*, 134: 391. (Tachinidae). South Africa. Not based on Darwin material.
- Nocticanace darwini* Wirth, 1969, *Proceedings of the California Academy of Sciences*, (4) 36: 585. (Canaceidae). Galapagos. Not based on Darwin material.
- Ogcodes darwini* Westwood, 1876: 516. (Acroceridae). Australia.
- Parachlus darwini* Brundin, 1966, *Kuniliga Svenska Vetenskapsakademiens Handlingar* (4) 11(1): 172. (Chironomidae). Chile. Not based on Darwin material.
- Paracleis darwini* Parent, 1933, *Annales de la Société Scientifique de Bruxelles*, 53: 184. (Dolichopodidae). Named after the town of Darwin, Australia.
- Pelecorhynchus darwini* Ricardo, 1900: 102. (Tabanidae). Chiloe.
- Pelycops darwini* Aldrich, 1934: 169. (Tachinidae). Tierra del Fuego.
- Strongyloneura darwini* Curran, 1938, *American Museum Novitates*, 985: 3. (Calliphoridae, *Isomyia*). Named after the town of Darwin, Rhodesia. Not based on Darwin material.
- Tabanus darwinensis* Taylor, 1917, *Proceedings of the Linnean Society of New South Wales*, 48: 758. (Tabanidae, = *Dasybasis clavicallosa* Ricardo). Named after the town of Darwin, Australia.
- Valdivia darwini* Shannon, 1927: 32. (Syrphidae, *Valdiviomyia*) Chile.

LEPIDOPTERA

- Agarista darwiniensis* Butler, 1884, *Annals and Magazine of Natural History* (5) **14**: 406. (Noctuidae, *Cruria*). Named after the town of Darwin, Australia.
- Aplodes rubrofrontaria* var. *darwiniata* Dyar, 1904, *Proceedings of the United States National Museum*, **27**: 903. (Geometridae, *Nemoria*). British Columbia. Not based on Darwin material.
- Argynnis darwini* Staudinger, 1899, *Lepidoptera in Ergebnisse Hamburger Megalahaensische Sammelreise Hamburg*, **4**(7) (1898): 32. (Nymphalidae, = *Issoria lathonioides* (Blanchard)). Tierra del Fuego. Not based on Darwin material.
- Coenonympha arcania* subsp. *darwiniana* Staudinger, 1871, *Catalog der Lepidopteren des Palaearctischen Faunengebietes* **2**: 32. (Satyridae). Alps. Not based on Darwin material.
- Erechthias darwini* Robinson, 1983: 304. (Tineidae). St Paul's Rocks. Not based on Darwin's material but conspecific with material he collected.
- Hypolimnas alimena darwinensis* Waterhouse (G.A.) & Lyell (G.), 1914, *The Butterflies of Australia* **60**. (Nymphalidae). Named after the town of Darwin, Australia.
- Mimacraea darwinia* Butler, 1872, *Lepidoptera Exotica* **104**, pl. 38, f. 8 (Lycaenidae). West Africa. Not based on Darwin material.
- Orthosia* ? *darwini* Staudinger, 1899, *Lepidoptera in Ergebnisse Hamburger Megalahaensische Sammelreise Hamburg* **4**(7) (1898): 74. (Noctuidae). 'Uschuaia'. Not based on Darwin material.
- Phlyctenodes darwinialis* Sauber, 1904, *Verhandlungen des Vereins für Naturwissenschaftliche Unterhaltung zu Hamburg*, **12**: 109. (Pyralidae, *Loxostege*). Central Asia. Not based on Darwin material.
- Pieris napi bryonia* (subsp. *darwiniana*) Stichel, 1910, *Berliner Entomologische Zeitschrift*, **55**: 251. (Pieridae). Europe. Not based on Darwin material.
- Utetheisa pulchelloides* subsp. *darwini* Jordan, 1939: 283. (Arctiidae). Keeling Islands.

HYMENOPTERA

- Achrysocharis darwini* Girault, 1917, *New Chalcid Flies*: 5 (privately published). (Eulophidae). Maryland. Not based on Darwin material.
- Anastatus darwini* Girault, 1915, *Memoirs of the Queensland Museum*, **4**: 24. (Eupelmidae). Queensland. Not based on Darwin material.
- Anthophora darwini* Cockerell, 1910, *Annals and Magazine of Natural History* (8) **5**: 409. (Anthophoridae). Named after the town of Darwin, Australia. Not based on Darwin material.
- Ceratina darwini* Friese, 1910, *Deutsche Entomologische Zeitschrift* **1910**: 700. (Xylocopidae). South America. Not based on Darwin material.
- Coelioxys albolineata* var. *darwiniensis* Cockerell, 1929, *American Museum Novitates*, **346**: 8. (Megachilidae). Named after the town of Darwin, Australia.
- Corynura darwini* Cockerell, 1901, *Proceedings of the Academy of Natural Sciences of Philadelphia*, **53**: 220. (Halictidae, *Rhinocorynura*). Brazil.
- Crocisca caeruleifrons* Kirby var. *darwini* Cockerell, 1905, *Annals and Magazine of Natural History* (7) **16**: 219. (Anthophoridae). Named after the town of Darwin, Australia.
- Foenus darwini* Westwood, 1841: 537; 1844: 259 (Gasteruptionidae, *Hyptiogaster*). Australia.
- Gonatocerus darwini* Girault, 1912, *Memoirs of the Queensland Museum* **1**: 131. (Trichogrammatidae). Queensland. Not based on Darwin material, but dedicated respectfully to him.
- Halictus* (*Evyllaesus*) *darwiniellus* Cockerell, 1932: 519 (Halictidae). Sydney, Australia.
- Halictus eyrei darwiniensis* Cockerell, 1929, *American Museum Novitates*, **346**: 2. (Halictidae, *Homalictus*). Named after the town of Darwin, Australia.
- Megachile darwiniana* Cockerell, 1906, *Annals and Magazine of Natural History* (7) **17**: 535. (Megachilidae). Named after the town of Darwin, Australia.
- Nitela darwini* Turner, 1916: 345. (Sphecidae). Galapagos Islands.
- Nomia darwinorum* Cockerell, 1910, *Annals and Magazine of Natural History* (8) **5**: 502. (Halictidae). Named after the town of Darwin, Australia.
- Paralaster darwinianus* Perkins, 1914, *Proceedings of the Zoological Society of London* **1914**: 617. (Eumenidae). Named after the town of Darwin, Australia.
- Pediobomyia darwini* Girault, 1913, *Memoirs of the Queensland Museum* **2**: 155. (Eulophidae). Nelson, ? Western Australia. Not based on Darwin material.
- Polynema darwini* Girault, 1913, *Memoirs of the Queensland Museum* **2**: 122. (Mymaridae). Queensland, Australia. Not based on Darwin material.
- Selitrichodes darwini* Girault, 1915, *Memoirs of the Queensland Museum* **3**: 233. (Pteromalidae). Queensland. Not based on Darwin material.

- Spheg darwinensis* Turner, 1912, *Annals and Magazine of Natural History* (8) **10**: 56. (Sphecidae). Named after the town of Darwin, Australia.
- Tetrastichus darwini* Girault, 1913, *Memoirs of the Queensland Museum* **2**: 202. (Eulophidae). Nelson, ? Western Australia. Not based on Darwin material.
- Thynnus darwinensis* Turner, 1908, *Proceedings of the Linnean Society of New South Wales* **33**(1): 206. (Thynnidae). Named after Darwin, Australia.
- Xylocopa darwini* Cockerell, 1926, *Annals and Magazine of Natural History* (9) **17**: 659. (Xylocopidae). Galapagos Islands. Not based on Darwin material.

Acknowledgements

I thank the Trustees of the British Museum (Natural History) for permission to publish the text of Darwin's *Insect Notes* and Miss Pamela Gilbert, Librarian to the Department of Entomology, for making them available for study. Collectively I thank my colleagues (acknowledged individually at appropriate places in the text) in the Department of Entomology for help in locating Darwin specimens and their tolerance of my browsing among the valuable collections in their care.

I thank Mr George Pemberton Darwin and John Murray Ltd. for permission to quote from Charles Darwin's works and to Lady Nora Barlow for permission to reproduce her itinerary of the *Beagle* voyage and to quote from her works on her grandfather.

The Syndics of Cambridge University Library are thanked for permission to reproduce the *List of Insects in Spirits of Wine*, and to quote the other MS notes on Darwin's insects; Mr P. J. Gautrey very kindly answered many enquiries on manuscript sources preserved there. Dr W. A. Foster kindly provided hospitality and help in locating Darwin specimens in the Cambridge University of Zoology and gave permission to reproduce a photograph of the box of Darwin beetles there.

I thank the Hope Professor in the University of Oxford for permission to study Darwin material preserved in the Hope Entomological Collections and Dr M. J. Scoble and Mrs A. Z. Smith for expediting its location and other information.

Dr James P. O'Connor and the National Museum of Ireland are thanked for the loan of the Darwin insects from the Haliday collection and permission to reproduce one of their photographs.

Mr Philip Titheradge, Custodian of Down House kindly provided help and hospitality when I studied Darwin's material there and supplied the photograph of Darwin's box of beetles reproduced here by courtesy of Down House and the Royal College of Surgeons of England.

Mr Brian Sirl kindly gave permission to reproduce the portrait of Syms Covington and Mrs Betty Ferguson kindly provided further information on Darwin's assistant and a copy of her booklet on him.

I thank the Registrar and Librarian of the Royal Entomological Society of London for permission to study and quote from the Walker-Haliday correspondence in their care and to reproduce early illustrations depicting Darwin insects from the Society's *Transactions*.

Mr M. I. Dawes, Director of Publishing for Taylor & Francis Ltd. kindly gave permission to reproduce the G. R. Waterhouse illustrations of Darwin's insects appearing in the *Annals and Magazine of Natural History*.

Dr Gerhard Scherer and the Museum Georg Frey, Munich kindly gave permission to use the illustration of *Distigmoptera darwini* from their journal *Entomologische Arbeiten aus dem Museum Georg Frey*.

Drs José C. M. Carvalho and W. C. Gagne, and the California Academy of Sciences are thanked for permission to use the illustration of *Capsus quadrinotatus* from their *Proceedings*.

I thank Dr N. E. Hickin and Mr Eric Classey for permission to reproduce two of Dr Hickin's scraperboard illustrations from *Animal Life of the Galapagos*.

I thank those other individuals who have kindly provided information on Darwin and his insects as follows: Mr J. Boorman, Mr Alan Brindle, Mr C. E. Dyte, Mr R. B. Freeman, Dr K. M. Harris, Dr J. Jelinek, Dr Gene Kritsky, Dr G. Kuschel, Miss Cynthia Longfield, Mrs M. Grieff, Dr Robert Nash, Dr Sydney Smith, Dr David Snow, Mr David Stanbury, Dr F. J. Sulloway, Mr Ernest Taylor, Dr J. G. Theron, and Dr J. C. Van Hille.

Finally I thank my wife for so cheerfully accepting Charles Darwin and his affairs as a normal concern of the family and for her careful and critical preparation of the typescript.

Notes

For further details of certain entries in these Notes see Freeman (1978) and for obituaries of entomologists, throughout the text, see Gilbert (1977). See also textual comments via the index.

1. William Darwin Fox (1805–80). C.D.'s second cousin. Vicar of Delamere, Cheshire (1838–73). At Christ's College, Cambridge during C.D.'s first two terms of residence. Albert Way (1805–74). Antiquary. Friend of C.D. at Cambridge where they collected beetles.
Leonard Jenyns (later Blomefield) (1800–93). Anglican priest and naturalist. Vicar of Swaffham Bulbeck, Camb. Henslow's brother-in-law. Was asked (as was Henslow) to join *Beagle* as naturalist before Darwin but declined (Winwood, 1894, *Proc. Bath nat. Hist. antiq. Fld Club* 8(1): 35–55, portrait). Wrote (1862) *Memoir of John Stevens Henslow*, with recollections by C.D. and the section on fishes in the *Zoology of the Beagle* (1840–42) (see also Darwin, F., 1903). There are some British C.D. insect specimens in his collection at Cambridge, also his notebooks.
Sir, Harry Stephen Meysey Thompson, Bart. (1809–74). Agriculturist. M.P. for Whitby 1859–65. Cambridge Friend of C.D.
2. John Maurice Herbert (1808–82). County Court judge on the Monmouth and Cardiff circuit. Close friend of C.D. at Cambridge. Collected beetles with C.D. at Barmouth, N. Wales. Gave C.D. his Coddington microscope.
3. Revd Frederick William Hope (1792–1862). Entomologist and print collector, FRS 1834, Founder of the Hope Chair of Zoology (Entomology) Oxford. In 1829 gave C.D. ca. 160 specimens of beetles from his collection in London. Collected in Barmouth with C.D. but due to illness (eczema of lips, see C.D. to Fox July 3rd, 1829) C.D. returned to Shrewsbury after two days (see Stephen's List of British captures). C.D. gave Hope beetles from the *Beagle* voyage; see C.D.'s letter to Hope about Australian insects (Poulton, 1909), and letter from Babington to C.D. in Cambridge University Library.
4. John Obadiah Westwood (1805–93). Solicitor and entomologist. First Hope Professor of Zoology (Entomology) in the University of Oxford (1861–91). Proposed to the last University Commission the permanent endowment of a lecturer to combat the 'errors of Darwinism'. Ironically C.D. had proposed Westwood for the Royal Medal of the Royal Society in 1855.
5. Revd John Stevens Henslow (1796–1861). Professor of Mineralogy at Cambridge (1822–27), then Professor of Botany (1827–61). Vicar of Hitcham, Suffolk (1837–61). FRS 1818. At Cambridge C.D. was known as 'the man who walked with Henslow'. Became strong personal friend of C.D. and looked after the collections sent back from the *Beagle*, see Jenyns, 1862, *Memoir of John Stevens Henslow* with recollections by C.D., and Barlow (1967).
6. Syms Covington (1813–61). 'Fiddler and boy to the poop cabin' on the *Beagle*. Became personal servant to C.D. on 22 May, 1833 and later secretary amanuensis until 25 February, 1839. He copied out the *Insect Notes* (and others, see Sulloway 1982, Porter 1983), much of the MS of the book on *Coral-reefs* and extracts later used in *Variation in Animals and Plants*. He also collected Australian barnacles for C.D. for use in his Cirripede monograph. In 1840 he emigrated to New South Wales but corresponded with C.D. until 1859. See De Beer (1959) and Ferguson (1971). Manuscript material on Covington, including a *Beagle* diary and drawings, is held in the archives of the Linnean Society of New South Wales at the Mitchell Library in Sydney.
7. Robert FitzRoy (1805–65), RN, hydrographer and meteorologist, in command of the *Beagle*. FRS 1851. Edited (1839) *Narrative of the Surveying Voyages of His Majesty's Ships Adventure and Beagle*. Anti-Darwin in later life. Governor General of New Zealand (1843–45). There is FitzRoy material preserved in the Michael Faraday Correspondence collection at the Institute of Electrical Engineers and his own account of the discoveries of the *Beagle* at the Royal Geographical Society (see also 1836, *J. R. geogr. Soc.* 6: 311–343).
8. Benjamin Bynoe (ca. 1804–1865). Assistant surgeon on the *Beagle* and Acting Surgeon from April 1832 when the Surgeon, Robert McCormick, returned to England. Made official collections of plants, birds and possibly insects (see section on 'other locations' of collections via Haslar Hospital). Looked after C.D. during his illness in Valparaiso.

9. Charles Cardale Babington (1808–95). Botanist. FRS 1851. Succeeded Henslow as Professor of Botany at Cambridge, 1861. He, like Darwin, was an original member of the Entomological Society of London and a keen entomologist in his early days. His collection and notebooks, including records of C.D.'s British captures are in the Cambridge University Museum of Zoology. He described C.D.'s *Beagle* Dytiscidae (1842) and there is a letter from him to C.D. in the Cambridge University Library which discusses this.
10. George Robert Waterhouse (1810–88). Mammalogist and entomologist. Keeper of Mineralogy and Geology at the British Museum (Natural History). Friend of C.D. and frequent visitor to Down House. Wrote section of *Living Mammalia* in the *Zoology of the Voyage of the Beagle*. In 1843 C.D. wrote of him 'If Waterhouse is hired he will enjoy his seven shillings a day from the British Museum as much as most men would ten times the sum!' (see *Life and Letters*, Darwin, F., 1887: vol. 1, 344). In the *Journal* Darwin (1845:30, footnote) says 'I am greatly indebted to Mr Waterhouse for his kindness in naming for me this and many other insects, and in giving me much valuable assistance.' He (G.R.W.) and two of his three Coleopterist sons (Charles Owen and Frederick Herschel) described most of C.D.'s beetles (see references). For obituary notes of these three entomologists see *Entomologist's mon. Mag.* 1888, **24**: 233–4; 1917, **15**: 67–68 and 1920, **56**: 17; others are cited in Gilbert (1977).
11. Francis Walker (1809–74). Entomologist. Assistant at the British Museum. Renowned for his prolific output of inadequate descriptions of new species (over 20,000 in all) such that an unsigned obituary [actually by J. T. Carrington] in the *Entomologist's Monthly Magazine* (1874, **11**: 140–141) began 'More than twenty years too late for his scientific reputation, and after having done an amount of injury almost inconceivable in its immensity, Francis Walker has passed from among us'. On the other hand no lesser an entomologist than Edward Newman (1874, *Entomologist*, **7**: 260–264) described him as the 'most voluminous and most industrious writer on Entomology this country has ever produced' and said of him 'I never met anyone who possessed more correct, more diversified, or more general information, or who imparted that information to others with greater readiness and kindness'.
His 'Catalogues of Insects in the British Museum Collections' will always stand as a tribute to his industry. Walker (1836) also described the Diptera from Captain P. P. King's collection made on the first surveying voyage of *Adventure* and *Beagle*.
Fortunately, many of his descriptions of Darwin's insects will endure because they were of little known groups from little worked regions and most of his types are still in the British Museum (Natural History).
For a recent balanced account of this remarkable man see Graham (1979).
12. Alexander Henry Haliday (1807–70). Entomologist and lifelong correspondent of Francis Walker. High Sheriff of Antrim 1843. Haliday described (1836) the Hymenoptera collected by Captain King's first surveying voyage on the *Adventure* and *Beagle* (see FitzRoy, 1839), John Curtis (1839, 1845) described the Coleoptera and Francis Walker (1836) the Diptera. Haliday's collections, including some C.D. specimens, are in the National Museum of Ireland (see O'Connor & Nash, 1982). See also comments under Walker (1840–1842) in References.

References

- Adler, S. 1959. Darwin's illness. *Nature, London* **4693**: 1102–1103.
- Aitken, A. D. 1975. Insect travellers. *Technical Bulletin. Ministry of Agriculture, Fisheries & Food* **31**: 1–191.
- Aldrich, J. M. 1934. Tachinidae. *Diptera of Patagonia and South Chile* **7**(1): 1–170.
- Andretta, Jr. C. & Andretta, M. A. V. 1950. Espécies Neotropicas da familia Simuliidae Schiner (Diptera, Nematocera). VI—Rediscrção do *Simulium pertinax* Kollar 1832. *Papéis Avulsos de Zoologia São Paulo* **9**(13): 193–213.
- Anon. 1969. *Historical and descriptive catalogue of the Darwin Memorial at Down House, Downe, Kent*. Downe (Down House) 30 pp.
- Anson, G. 1748. *A voyage round the World, in the years MDCCXL, I, II, III, IV*. by George Anson, Esq. . . . compiled from the papers of Lord Anson, by Richard Walter [and Benjamin Robins]. London. 417 pp. [‘Everyman’ edition, published by Dent, 1911 (384 pp.), see page 50].
- Arrow, G. J. 1937. Systematic notes on beetles of the subfamily Dynastinae, with descriptions of a few new species in the British Museum collection (Coleoptera). *Transactions of the Royal Entomological Society of London* **86**: 35–57.
- Ashlock, P. D. 1967. A generic classification of the Orsillinae of the World. *University of California Publications in Entomology* **48**: 1–82.
- Babington, C. C. [1837]. Notice of the varieties of *Chiasognathus grantii*, forwarded to Cambridge by C. Darwin Esq. *Transactions of the Entomological Society of London* **1**(3) (1836): lxxxv. [For dating of this Society's publications see Wheeler, 1912].
- [1842]. Dytiscidae Darwinianae; or descriptions of the species of Dytiscidae collected by Charles Darwin, Esq., M.A., Sec. G.S., & c., in South America and Australia during his voyage in H.M.S. Beagle. *Transactions of the Entomological Society of London* **3**(1) (1841): 1–17.
- Balfour-Browne, F. 1950. *British Water Beetles*, vol. 2. London (Ray Society). 394 pp.
- 1953. Coleoptera Hydradephaga. *Handbooks for the Identification of British Insects* **4**(3): 1–33.
- Baly, J. S. 1858. *Catalogue of Hispidiae in the Collection of the British Museum*, Part I. London. 172 pp. 9 pls.
- Barlow, N. [Ed.] 1933. *Charles Darwin's Diary of the Voyage of H.M.S. Beagle*. Cambridge (University Press). 451 pp.
- 1945. *Charles Darwin and the Voyage of the Beagle*. London (Pilot Press). 279 pp.
- 1963. Darwin's Ornithological Notes. *Bulletin of the British Museum (Natural History)*, Historical Series **2**: 203–278.
- 1967. *Darwin and Henslow. The growth of an idea. Letters 1831–1860*. London (Bentham-Mexon Trust; John Murray). 251 pp.
- Barrett, P. H. (Ed.) 1977. *The Collected Papers of Charles Darwin*. Chicago & London (University of Chicago Press) 2 vols.
- Basilewsky, P. (Ed.) 1972. Coleoptera La Faune Terrestre de L'île de Sainte-Hélène. Deuxieme Partie. *Annales Musée Royal de L'Afrique Centrale Serie in 8° Sciences Zoologiques* **192**: 1–530.
- [1977] La faune terrestre de l'île de Sainte-Hélène. Troisième partie. II.- Insects (suite et fin) *Annales Musée Royal de L'Afrique Centrale Serie in 8° Sciences Zoologiques* **215** (1976): 1–533 [Issued June 1st, 1977].
- Bates, F. 1874. Descriptions of new genera and species of Heteromera, chiefly from New Zealand and New Caledonia, together with a revision of the genus *Hypaulax* and a description of an allied new genus from Colombia [part]. *Annals and Magazine of Natural History* **4**(13): 16–24.
- Bequaert, J. C. 1957. The Hippoboscidae or louse-flies (Diptera) of mammals and birds. Part II. Taxonomy, evolution and revision of American genera and species [cont.]. *Entomologica Americana* **36**: 417–611.
- Berkeley, M. J. 1839. Notice of some fungi collected by C. Darwin, Esq., during the expedition of H.M. Ship Beagle. *Annals of Natural History; or Magazine of Zoology, Botany, and Geology* **4**: 291–293, 2 pls.
- 1842a. Notice of some fungi collected by C. Darwin, Esq. in South America and the Islands of the Pacific. *Annals and Magazine of Natural History* **9**: 443–448, 3 pls.
- 1842b. On an edible fungus from Tierra del Fuego and on an allied Chilean species. *Transactions of the Linnean Society of London* **19**: 37–43, pl. 4.

- Bernhauer, M.** 1935. Neue Staphylinidae (Col.) aus Südamerika. *Stylops* 4: 90–96.
- Bistrom, O.** 1982. A revision of the genus *Hyphydrus* Illiger (Coleoptera, Dytiscidae). *Acta zoologica Fennica* 165: 1–121.
- Blackwelder, R. E.** 1944–1957. Checklist of the Coleopterous insects of Mexico, central America, the West Indies and South America, parts 1–6. *Bulletin of the United States National Museum* 185: 1–1492.
- Blair, K. G.** 1933. Further Coleoptera from the Galapagos Archipelago. *Annals and Magazine of Natural History* (10) 11: 471–487.
- Bornemissza, G. F.** 1983. Darwin and the Tasmanian dung beetles. *Tasmanian Naturalist* 75: 2–4.
- Brèthes, J.** 1924. Sur une collection de Coccinellides (et un Phalacridae) du British Museum. *Anales del Museo Nacional de Historia Natural Bernardino Rivadavia, Buenos Aires* 33: 145–175, 195–214.
- 1925a. *Nunquam Otiosus—III. Coleoptères, principalement Coccinellides, du British Museum.* Buenos Aires 16 pp.
- 1925b. *Nunquam Otiosus—IV. I. Coccinellides du British Museum.* Buenos Aires 10 pp.
- Bryant, G. E.** 1942. New species of Chrysomelidae, Halticinae (Coleopt.), collected by Charles Darwin during the voyage of the 'Beagle', 1832–1836. *Annals and Magazine of Natural History* (11) 9: 99–107.
- Burkhardt, F. & Smith, F.** (Eds). 1985. *The Correspondence of Charles Darwin. Vol. 1. 1821–1836.* Cambridge (University Press), 702 pp.
- Butler, A. G.** 1868. *Catalogue of the diurnal Lepidoptera of the family Satyridae in the collection of the British Museum.* London (British Museum), 211 pp, 5 pls.
- 1877. Lepidoptera, Orthoptera, and Hemiptera. In Gunther, A. Account of the zoological collection made during the visit of H.M.S. 'Peterel' to the Galapagos Islands. Pt. X. *Proceedings of the Zoological Society of London* 1877: 86–91.
- Carpenter, G. D. H.** 1935. Charles Darwin and Entomology. *Report of the British Association for the Advancement of Science* 1935: 41.
- 1936. Charles Darwin and Entomology. *South-Eastern Naturalist & Antiquary* 12: 1–23.
- Champion, G. C.** 1918a. The Coleoptera of the Falkland Islands. *Annals and Magazine of Natural History* (9)1: 167–186.
- 1918b. Notes on various South American Coleoptera collected by Charles Darwin during the voyage of the 'Beagle', with descriptions of new genera and species. *Entomologist's monthly Magazine* 54: 43–55.
- 1918c. Notes on various species of the American genus *Astylyus* Cast., with descriptions of their sexual characters (Coleoptera). *Annals and Magazine of Natural History* (9)2: 337–367.
- 1924. The insects of the Galapagos Islands. *Entomologist's Monthly Magazine* 60: 259–260.
- 1925. Studies in Phalacridae (II).—Asiatic and tropical forms (Coleoptera). *Annals and Magazine of Natural History* (9)16: 601–621.
- Chopard, L.** 1958. Orthopteroidea. Résultats de l'expédition zoologique de Professeur Dr Haoken Lindberg au îles du Cap Vert durant d'hiver 1953–1954. No. 16. *Commentationes Biologicae* 17(3): 1–17.
- Christy, W.** [1837]. A selection of Entomological Notes by C. Darwin, Esq., addressed to Professor Henslow, and communicated by W. Christy Jun., Esq. *Transactions of the Entomological Society of London* 1(3): lxxxvi.
- Cockerell, T. D. A.** 1932. Bees collected by Charles Darwin on the voyage of the Beagle. *Journal of the New York Entomological Society* 40: 519–522.
- Collin, J. E.** 1931. Platypzeidae, Pipunculidae. *Diptera of Patagonia and South Chile* 6(2): 50–61.
- Cresson, E. T.** 1933. Ephydriidae. *Diptera of Patagonia and South Chile* 6(2): 85–116.
- Curtis, J.** 1839, 1845. Descriptions, & c of the insects collected by Captain P. P. King, R.N., F.R.S., in the survey of the Straits of Magellan [Coleoptera] *Transactions of the Linnean Society of London*. 18: 181–205; 19: 441–475. [for dating see Raphael, 1970].
- Dallas, W. S.** 1851–52. *List of the specimens of Hemipterous Insects in the collection of the British Museum.* London (British Museum). 2 vols.
- Darwin, C.** (Ed.). 1838–43. *The Zoology of the Voyage of H.M.S. Beagle, under the command of Captain Fitz-Roy, during the years 1832 to 1836.* Part I (4 numbers, 1838–40) *Fossil Mammalia*, by Richard Owen; Part II (4 numbers, 1838–39), *Mammalia*, by George R. Waterhouse. Part III (4 numbers, 1838–1841), *Birds*, by John Gould; Part IV (4 numbers, 1840–42), *Fish*, by Leonard Jenyns; Part V (2 numbers, 1842–43), *Reptiles [and Amphibia]*, by Thomas Bell. 3 vols. London. [Facsimile reprint published in 3 volumes by Nova Pacifica, New Zealand, 1980].
- 1845. *Journal of Researches into the Natural History and Geology of the countries visited during the voyage of H.M.S. Beagle round the world.* London (John Murray). 519 pp. [First appeared in 1839 as volume 3 of the *Narrative of the surveying voyages* etc. etc. (see Fitzroy, 1839) and separately in 1839 from the same

- sheets, hence with the same pagination. Later editions appeared under various titles including the familiar *A Naturalist's Voyage round the World*. The two main editions of 1839 and 1845 (both rare) have 615 and 519 pages respectively. Since many insect references are not included in the index of either edition, and in order to link comments made in the *Insect Notes* with the *Journal* comments, pagination is cited. The choice of edition for these citations is that of the 1845 edition as the majority of the later editions of John Murray (Darwin's publishers) have the same pagination. The differences in other printings can be established by comparing indexed entries.]
- 1859. *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. London (John Murray). 502 pp.
- 1871. *The Descent of Man and Selection in Relation to Sex*. London (John Murray). 2 Vols. [Reprinted by photoreproduction with modern assessment by J. T. Bonner & R. M. May, Princeton University Press, New Jersey, 1981].
- 1885, 1886. *Gesammelte kleinere Schriften von Charles Darwin. Ein Supplement zu seinen grösseren Werken*. E. Günther (Leipzig) (Darwinistische Schriften Nr. 17). 2 Vols.
- 1888. *The effects of cross and self fertilization in the vegetable kingdom*. 2nd edn. London (John Murray). 487 pp.
- Darwin, F.** 1887. *The Life and Letters of Charles Darwin including an autobiographical chapter*. London (John Murray). 3 vols.
- [Ed.] 1903. *A Naturalist's Calendar kept at Swaffham Bulbeck, Cambridgeshire by Leonard Blomefield (formerly Jenyns)*. Cambridge (University Press) 84 pp.
- , **Darwin, L.** & **Darwin, H.** 1859. [Records of beetles at Down] *Entomologist's Weekly Intelligencer* 6: 99.
- De Beer, G. R.** [Ed.] 1959. Some unpublished letters of Charles Darwin. *Notes and Records of the Royal Society of London* 14: 12–66.
- Decelle, J.** 1972. Fam. Scarabaeidae. La Faune Terrestre de L'île de Sainte-Hélène. Deuxième partie. *Annales Musée Royal de L'Afrique Centrale Serie in 8^e Sciences Zoologiques* 192: 115–129.
- Distant, W. L.** 1905. Rhynchotal notes.—xxxiv. *Annals and Magazine of Natural History* (7)16: 203–216.
- Dolling, W. R.** 1977. A revision of the neotropical genus *Vilga* Stål (Hemiptera: Coreidae). *Systematic Entomology* 2: 27–44.
- Donisthorpe, H. St J. K.** 1904. The Coleoptera of Cambridgeshire. In Marr, J. E. & Shipley, A. E. (Eds.) *Handbook to the Natural History of Cambridgeshire*. Cambridge (British Association for the Advancement of Science): 155–160.
- Doubleday, E.** 1848. *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*. Appendix. London (British Museum): 1–37. [For dating of British Museum Catalogues see Sherborn, C. D., 1926.]
- Duffey, E. A. G.** 1964. The terrestrial ecology of Ascension Island. *Journal of Applied Ecology* 1: 219–251.
- Edwards, A. J.** 1985. Saint Paul's Rocks: a bibliographical review of the natural history of a mid-Atlantic island. *Archives of Natural History* 12(1): 31–49.
- Edwards, A. J.** & **Lubbock, R.** 1983. The ecology of Saint Paul's Rocks (Equatorial Atlantic). *Journal of Zoology* 200: 51–69.
- Edwards, F. W.** 1927. Insects taken at sea off the Brazilian coast. *Proceedings of the Entomological Society of London* 2: 56–57.
- 1930. Bibionidae, Scatopsidae, Cecidomyiidae, Culicidae, Thaumaleidae (Orphnephilidae), Anisopididae (Ryphidae). *Diptera of Patagonia and South Chile* 2(3): 77–119.
- Emden, F. I. van.** 1960. Keys to the Ethiopian Tachinidae-Macquartinae. *Proceedings of the Zoological Society of London* 134: 313–487.
- Enderlein, G.** 1912. Die Insekten des Antarkto-Archiplatea-Gebietes (Feuerland, Falklands-Inseln, Süd-Georgien). *Kungliga svenska Vetenskapsakademiens Handlingar* 48(3): 1–170.
- Español, F.** & **Lindberg, H.** 1963. Coleópteros tenebriónidos de la Islas de Cabo Verde. *Commentationes Biologicae* 25(3): 1–51, 8 pls.
- Evans, J. W.** 1942. New leaf-hoppers (Homoptera, Jassoidea) from Western Australia. *Journal of the Royal Society of Western Australia* 27: 143–163.
- Fennah, R. G.** 1962. New Orgeriine Dictyopharidae from South Africa (Homoptera). *Annals of the Natal Museum* 15: 219–245.
- 1965. Delphacidae from Australia and New Zealand. *Bulletin of the British Museum (Natural History)* Entomology Series 17(1): 3–59.
- Ferguson, B. J.** 1971. *Syms Covington of Pambula Assistant to Charles Darwin on the voyage of H.M.S. Beagle 1831–1836*. Bega, New South Wales (Imlay District Historical Society). 17 pp.

- FitzRoy, R.** 1839. *Narrative of the Surveying Voyages of His Majesty's Ships Adventure and Beagle*. Vol. 2. London. 694 pp. [Darwin (1839) wrote volume 3 and Captain P. P. King wrote volume 1 which gave an account of the first surveying voyage. FitzRoy was editor of the whole work.]
- Foote, R. H.** 1982. The Tephritidae (Diptera) of the Galapagos archipelago. *Memoirs Entomological Society of Washington* **10**: 48–55.
- Freeman, R. B.** 1968. Charles Darwin on the routes of male humble bees. *Bulletin of the British Museum (Natural History) Historical Series* **3**: 177–189.
- 1977. *The Works of Charles Darwin: an Annotated Bibliographical Handlist*, 2nd ed. Folkestone (Dawson). 235 pp.
- 1978. *Charles Darwin. A Companion*. Folkestone (Dawson). 309 pp.
- Froeschner, R. C.** 1985. Synopsis of the Heteroptera or true bugs of the Galapagos Islands. *Smithsonian Contributions to Zoology* **407**: 1–84.
- Funkhouser, W. D.** 1934. A new Membracid collected by Charles Darwin (Hemiptera). *Entomological News* **45**: 203–204.
- Gardiner, J. S. & Tansley, A. G.** [Eds.] 1923–1932. *The Natural History of Wicken Fen*. Cambridge (Bowes & Bowes). 6 Pt. [Sections on Coleoptera are by Frank Balfour-Browne (aquatic Coleoptera) part III: 201–214; J. Omer Cooper, M. G. L. Perkins & C. E. Tottenham (Introductory and Geodephaga) part IV: 267–297; J. Omer Cooper & C. E. Tottenham (Hydradephaga, Palpicornia and Staphylinidae to Ipidae) part VI: 489–538.]
- Gilbert, P.** 1977. *A Compendium of the Biographical Literature on Deceased Entomologists*. London (British Museum (Natural History)). 455 pp.
- Gradwell, G. R.** 1967. The Entomologist 1840–? *Entomologist* **100**: 269–273.
- Graham, M. W. R. de V.** 1979. "Ambulator": Francis Walker, English Entomologist (1809–1874). *Entomologist's Gazette* **30**: 7–20.
- Gunther, A.** 1877. Account of the zoological collection made during the visit of H.M.S. 'Peterel' to the Galapagos Islands. *Proceedings of the Zoological Society of London* **1877**: 64–93. [See also entries for Butler, A. G., Smith, F. and Waterhouse, C. O.]
- 1912. *The History of the Collections Contained in the Natural History Departments of the British Museum Vol. 2, Appendix*. London (British Museum (Natural History)). 109 pp.
- Halliday, A. H.** 1836. Descriptions of Hymenoptera collected by Capt. King in the survey of the Straits of Magellan. *Transactions of the Linnean Society of London* **17**: 316–331.
- Hall, A.** 1906–19. *A monograph of the butterflies of the subfamily Nymphalinae*. Brighton (Booth Museum of Natural History). Microform edition 1983 (180 microfiches) of MS comprising 44 Vol. (10, 623 pp).
- Hamid, A.** 1975. A systematic revision of the Cyminae (Heteroptera: Lygaeidae) of the World with a discussion of the morphology, biology, phylogeny and zoogeography. *Occasional Publications of the Entomological Society of Nigeria* **14**: 1–180.
- Hammond, P. M.** 1972. On the type material of Staphylinidae (Coleoptera) described by T. Marsham and J. F. Stephens. *Entomologist's Gazette* **23**: 129–135.
- Hespenheide, H. A.** 1980. A Darwinian *Callimicra* (Coleoptera, Buprestidae). *Zoological Journal of the Linnean Society of London* **70**: 15–18.
- Hickin, N.** 1979. *Animal Life of the Galapagos*. Faringdon (Ferendune). 236 pp.
- Hope, F. W.** 1838. Descriptions of some species of Carabidae collected by Charles Darwin, Esq., in his late voyage. *Transactions of the Entomological Society of London* **2**(2): 128–131.
- 1841. [Descriptions of some nondescript Lamellicorn beetles in his collection.] *Transactions of the Entomological Society of London* **3** (Proceedings): xxxii–xxxiv. [Contains brief descriptions only but pre-dates (December 1st 1841 published separately) the fuller descriptions in Hope 1844; see Wheeler (1912) for dating of the publications of this Society. These brief descriptions were also published (possibly simultaneously?) in *Annals and Magazine of Natural History* **8**: 302–303, December 1841 issue, and include *Dorcus darwini* Hope.]
- [1844] On some nondescript Lamellicorn beetles. *Transactions of the Entomological Society of London* **3**(4): 279–283. [Names in this work must date from Hope, 1841.]
- Hungerford, H. B.** 1948. The Corixidae of the Western Hemisphere (Hemiptera) *University of Kansas Science Bulletin* **32**: 5–827.
- Huxley, J. S. & Kettlewell, H. B. D.** 1965. *Charles Darwin and his World*. London (Thames & Hudson). 144 pp.
- Jannel, R.** 1927. Monographie des Trechinae. *Abeille, Journal d'Entomologie* **33**: 1–592.
- 1936. Monographie des Catopidae (Insectes Coléoptères). *Mémoires Muséum National d'Histoire Naturelle, Paris nouvelle série* **2**(1): 433.

- Jelinek, J. 1979. A new genus of Neotropical Cateretinae (Coleoptera, Nitidulidae). *Acta Entomologica Bohemoslovaca* 76: 188–202.
- Jordan, K. 1939. On the constancy and variability of the differences between the old world species of *Utetheisa* (Lepid. Arctiidae). *Novitates Zoologicae* 41: 251–291.
- Karp, W. 1968. *Charles Darwin and The Origin of Species*. London (Cassell). 153 pp.
- Kirby, W. & Spence, W. 1818. *An Introduction to Entomology or Elements of the Natural History of Insects*. Vol. 1, 3 Edn. London. 519 pp.
- Kirby, W. F. 1891. A revision of the Forficulidae, with descriptions of new species in the British Museum. *Journal of the Linnean Society (Zoology)* 23: 502–531.
- Knisch, A. 1922. *Hugoscottia* eine neue Helocharengattung (Col., Hydrophilidae op. 12). *Entomologischer Anzeiger* 2: 89–91, 103–105.
- Kritsky, G. 1981. Charles Darwin's contribution to entomology with an index to his insect references. *Melsheimer Entomological Series* 30: 1–14.
- Lea, A. M. 1926. On some Australian Coleoptera collected by Charles Darwin during the voyage of the "Beagle". *Transactions of the Entomological Society of London* 74(2): 279–288.
- Lewisohn, R. 1979. Carlos Chagas (1879–1934): the discovery of *Trypanosoma cruzi* and of American Trypanosomiasis (footnotes to the history of Chagas' disease). *Transactions of the Royal Society of Tropical Medicine and Hygiene* 73: 513–523.
- Lindberg, H. 1958. Hemiptera Insularum Carboverdensium. Systematik, Ökologie und Verbreitung der Heteropteren und Cicadinen der Kapverdischen Inseln. *Commentationes Biologicae* 19(1–2): 1–246.
- Lindroth, C. H. 1974. Coleoptera Carabidae. *Handbooks for the Identification of British Insects* 4(2): 1–148.
- Linsley, E. G. 1977. Insects of the Galápagos (supplement). *Occasional Papers of the California Academy of Science* 125: 1–50.
- Linsley, E. G. & Usinger, R. L. 1966. Insects of the Galápagos Islands. *Proceedings of the California Academy of Sciences* 33(7): 113–196.
- Lopes, H. S. 1978. Sarcophagidae (Diptera) of Galapagos Islands. *Revista Brasileira de Biologia* 38(3): 595–611.
- Malloch, J. R. 1922. Exotic Muscaridae (Diptera). V. *Annals and Magazine of Natural History* (9)9: 271–280. — 1933. Acalyptrata (Helomyzidae, Trypetidae, Sciomyzidae, Sapromyzidae, etc.). *Diptera of Patagonia and South Chile* 6(4): 177–391. — 1934. Muscidae. *Diptera of Patagonia and South Chile* 7(2): 171–346.
- Mateu, J. 1964. Coleopteros carabidos de las Islas de Cabo Verde. *Commentationes Biologicae* 27(4): 1–15.
- Matthews, A. 1889. New genera and species of Trichopterygidae. *Annals and Magazine of Natural History* (6)3: 188–195.
- Maulik, S. 1930. New injurious Hispinae. *Bulletin of Entomological Research* 21: 45–56.
- Mitchell, P. C. 1929. *Centenary History of the Zoological Society of London*. London (Zoological Society of London). 307 pp.
- Muir, F. 1929. New and little-known South American Delphacidae (Homoptera, Fulgoroidea) in the collection of the British Museum. *Annals and Magazine of Natural History* (10)3: 75–85. — 1931. New and little-known Fulgoroidea in the British Museum (Homoptera). *Annals and Magazine of Natural History* (10)7: 297–314.
- Newman, E. 1839. Supplementary note to the synonymy of *Passandra*. *Annals of Natural History* 3: 303–305. — 1840. Entomological Notes. *Entomologist* 1: 1–16.
- Neave, S. A., Griffin, F. J., Poulton, E. B. & Hemming, A. F. 1933. *The History of the Entomological Society of London, 1833–1933*. London (Entomological Society of London). 224 pp.
- O'Connor, J. P. & Nash, R. 1982. Notes on the entomological collection of A. H. Haliday (1806–1870) in the National Museum of Ireland, with a recommendation for type designations. *Proceedings of the Royal Irish Academy* 82 B (10): 169–175.
- Parodiz, J. J. 1981. *Darwin in the New World*. Leiden (E. J. Brill). 137 pp.
- Porter, D. M. 1983. More Darwin Beagle notebooks resurface. *Archives of Natural History* 11(2): 315–316.
- Poulton, E. B. 1901. The influence of Darwin upon entomology. *Entomologist's Record and Journal of Variation* 13(2): 72–76.
- [—] 1904. [Description of exhibit of *Conorrhinus megistus* Burm. collected by W. J. Burchell] *Proceedings of the Entomological Society of London* 1904: lxxvi–lxxviii.
- 1905. William John Burchell. *Report of the British and South African Association*, 1905 3: 57–110.
- 1909. *Charles Darwin and The Origin of Species addresses, etc., in America and England in the year of the two anniversaries*. London (Longman). 302 pp.

- 1910. Report of the Hope Professor of Zoology, 1909. [Item 37 reprinted from the *Oxford University Gazette*.] *Hope Reports* 7(37): 1–45.
- Raphael, S.** 1970. The publication dates of the Transactions of the Linnean Society of London, Series 1, 1791–1875. *Biological Journal of the Linnean Society of London* 2: 61–76.
- Remington, J. E. & Remington, L.** 1961. Darwin's contribution to entomology. *Annual Review of Entomology* 6: 1–12.
- Ricardo, G.** 1900. Notes on the Pangoniinae of the family Tabanidae in the British Museum collection. *Annals and Magazine of Natural History* (7)5: 97–121.
- Richards, O. W.** 1931. Sphaeroceridae (Borboridae). *Diptera of Patagonia and South Chile* 6(3): 62–84.
- [Ridewood, W. G.]** 1909. *Memorials of Charles Darwin*. London. (British Museum (Natural History)). (Special Guide No. 4). 50 pp.
- Riley, C. V.** 1883. Darwin's work in entomology. *Proceedings of the Biological Society of Washington* 1(1882): 70–80.
- Robinson, G. S.** 1983. Darwin's moth from St Paul's Rocks: a new species of *Erechthias* (Tineidae). *Systematic Entomology* 8(3): 303–311.
- Saunders, W. W.** [1843] [Proceedings of Learned Societies. Entomological Society June 6th 1842.] Descriptions of new Australian Chrysomelidae allied to *Cryptocephalus*. *Annals and Magazine of Natural History* (1) 11: 317. [Almost certainly the first publication of this work from which the names of the new species described therein must date (April 1st 1843). Also published (possibly simultaneously) in *Proceedings of the Entomological Society of London* 1842, June 6th meeting (actually published in 1843, see Wheeler 1911). Also published in fuller form with plates, see Saunders, 1845.]
- [1845.] Descriptions of the Chrysomelidae of Australia, allied to the genus *Cryptocephalus*. *Transactions of the Entomological Society of London* 4(2): 141–154, 197–204 [see Saunders 1843 and for dating Wheeler 1912.]
- Schenkling, S.** [Ed.] 1910–[still appearing] *Coleopterorum Catalogus, auspiciis et auxilio W. Junk*. Berlin and 's-Gravenhage.
- Scherer, G.** 1964. Eine neue *Distigmoptera*, die Charles Darwin während seiner Reise auf der "Beagle" fing. *Entomologische Arbeiten aus dem Museum Georg Frey* 15: 296–301.
- Shannon, R. C.** 1927. A review of the South American two-winged flies of the family Syrphidae. *Proceedings of the United States National Museum* 70(9): 1–33.
- Sharp, D.** 1882. On aquatic carnivorous Coleoptera or Dytiscidae. *Scientific Transactions of the Royal Dublin Society* (2)2: 179–1003.
- Sherborn, C. D.** 1926. Dates of publication of early catalogues of natural history issued by the British Museum. *Annals and Magazine of Natural History* (9)17: 271–272.
- Slater, J. A.** 1964. Hemiptera (Heteroptera) Lygaeidae *South African Animal Life* 10: 15–228.
- Smart, J. & Wager, B.** 1977. George Robert Crotch, 1842–1874: a bibliography with a biographical note. *Journal of the Society for the Bibliography of Natural History* 8(3): 244–248.
- Smith, A. Z.** 1986. *A history of the Hope entomological collections in the University Museum, Oxford with lists of archives and collections*. Oxford (Clarendon Press), 172 pp.
- Smith, F.** 1877. Hymenoptera and Diptera. In Gunther, A. Account of the zoological collection made during the visit of H.M.S. 'Petrel' to the Galapagos Islands. *Proceedings of the Zoological Society of London* 1877: 82–84.
- Smith, K. G. V.** 1982a. Charles Darwin and the Royal Entomological Society of London. *Antenna* (Bulletin of the Royal Entomological Society of London) 6(2): 200–201.
- 1982b. Darwin's illness. *Biologist* 29(4): 189.
- Stecher, R. M.** [Ed.]. 1969. The Darwin–Bates letters, correspondence between two nineteenth-century travellers and naturalists. *Annals of Science* 25: 1–47; 95–125.
- Stephens, J. F.** [1827]–[1845] *Illustrations of British Entomology* London. 11 Vols.
- 1839. *A manual of British Coleoptera or beetles*. London. 443 pp.
- Straneo, S. L.** 1951. Sur la tribu des Metiini (Antarctiini auct.). *Revue Française d'Entomologie* 18(2): 56–88.
- Sullaway, F.** 1982. Darwin's conversion: the Beagle voyage and its aftermath. *Journal of the History of Biology* 15: 325–388.
- Theron, J. G.** 1983. Cicadellidae (Hemiptera) collected by Darwin at the Cape of Good Hope, South Africa, with description of a related species *Journal of the Entomological Society of South Africa* 46(1): 147–151.
- Turner, R. E.** 1916. Notes on fossorial Hymenoptera.—XXIV. On the genus *Nitela*. *Annals and Magazine of Natural History* (8)18: 343–346.

- Viette, P. 1958. Lépidoptères Tinéides (s.l.) et Pyrales [Results de l'expédition zoologique du Professeur Dr Hoken Lindberg aux îles du Cap Vert durant l'hiver 1953-54. No. 18. *Commentationes Biologicae* 17(8): 1-12.
- Walker, F. 1836. Descriptions etc., of the insects collected by Cpt. P. P. King, R. N., F. R. S., in the survey of the Straits of Magellan. Diptera. *Transactions of the Linnean Society of London* 17(3): 331-359. [See Raphael, 1970 for dating.]
- 1838. Description of some Chalcidites discovered by C. Darwin Esq. *Entomological Magazine* 5: 469-477.
- 1839. *Monographia Chalciditum*. Vol. 2. Species collected by C. Darwin, Esq. London. 100 pp. [See Walker 1840-1842].
- [—] 1840-1842. Plate P. *Entomologist* 1. [In the first volume of the *Entomologist* are 15 plates lettered A-P which illustrate species described by Walker (1839). The plates were engraved from drawings made by A. H. Haliday (see Gradwell, 1967). The legend to the plates was issued with the index to the last part of volume 1 of the *Entomologist*, presumably in December 1842. The date of issue of the plates is unknown. Only plate P depicts Darwin material.]
- 1842a. Descriptions of Chalcidites discovered by C. Darwin, Esq., near Valpariso. *Annals and Magazine of Natural History* (1)10: 113-117.
- 1842b. Descriptions of Chalcidites discovered in Valdivia by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)10: 271-274.
- 1843a. Descriptions of Chalcidites discovered near Conception in South America by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)11: 30-32.
- 1843b. Descriptions of Chalcidites found near Lima by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)11: 115-117.
- 1843c. Descriptions of Chalcidites discovered in the Isle of Chonos by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)11: 184-185.
- 1843d. Descriptions of Chalcidites discovered in Coquimbo by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)11: 185-188.
- 1843e. Descriptions of Chalcidites discovered by C. Darwin, Esq. *Annals and Magazine of Natural History* (1)12: 45-46.
- 1846. *List of the specimens of hymenopterous insects in the collection of the British Museum*. Part 1. Chalcidites. London (British Museum). 100 pp. [For dating of "BM Lists" see Sherborn, 1926.]
- 1849. *List of the specimens of dipterous insects in the collection of the British Museum* [part] 4. London (British Museum): 688-1172.
- 1851a. *List of the specimens of Homopterous insects in the collection of the British Museum*. Part 2. London (British Museum): 261-636.
- 1851b. *List of the specimens of Homopterous insects in the collection of the British Museum*. Part 3. London (British Museum): 637-907.
- 1854-66. *List of the specimens of Lepidopterous insects in the collection of the British Museum*, Pt. 2: 280-581 (1854); Pt. 3: 583-775 (1855); Pt. 6: 1259-1507 (1855); Pt. 7: 1509-1808 (1856); Pt. 8: 1-271 (1856); Pt. 9: 1-252 (1856); Pt. 10: 253-491 (1957); Pt. 12: 765-982 (1858); Pt. 17: 255-508 (1859); Pt. 24: 1021-1280 (1862); Pt. 26: 1479-1796 (1863); Pt. 27: 1-286 (1863) London (British Museum). [See also Doubleday 1848].
- 1867. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum*. Pt. 1: London (British Museum). 240 pp.
- 1868a. *Catalogue of the specimens of Blattariae in the collection of the British Museum*. London (British Museum). 239 pp.
- 1868b. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum*. Pt 3: London (British Museum): 419-599
- 1870a. *Catalogue of the specimens of Dermaptera Saltatoria in the collection of the British Museum*. Pt. 3: London (British Museum): 425-604.
- 1870b. *Catalogue of the specimens of Dermaptera Saltatoria in the collection of the British Museum* Pt. 4: London (British Museum): 605-809.
- 1871. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum* Pt. 4: London (British Museum): 1-211.
- 1872. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum*. Pt. 5: London (British Museum): 1-202.
- 1873. *Catalogue of the specimens of Heteropterous-Hemiptera in the collection of the British Museum*. Pt. 6: London (British Museum): 1-210.

- Walker, J. J.** 1931. Insects at Sea. *Entomologist's monthly Magazine* **67**: 211–232; 254–268.
- Waterhouse, C. O.** 1875. On some new genera and species of Heteromerous Coleoptera (Helopidae) from Tierra del Fuego. *Transactions of the Entomological Society of London* **1875**: 331–337.
- 1877. Coleoptera. In Gunther, A. Account of the zoological collections made during the visit of the H.M.S. 'Peterel' to the Galapagos Islands. VII. *Proceedings of the Zoological Society of London* **1877**: 77–82.
- 1880. Description of new Coleoptera belonging to the families Psephenidae and Cyphonidae. *Cistula Entomologica* **2**: 563–573.
- [Ed.] 1880–1882. *Aid to the identification of insects*. Vol. 1: London. 15 pp. 100 pls.
- Waterhouse, F. H.** 1879. Descriptions of new Coleoptera of geographical interest, collected by Charles Darwin, Esq. *Journal of the Linnean Society of London. Zoology* **14**: 530–534.
- Waterhouse, G. R.** 1838. Descriptions of some of the insects brought to this country by C. Darwin, Esq. *Transactions of the Entomological Society of London* **2**(2): 131–135.
- 1839. Descriptions of some new species of exotic insects. *Transactions of the Entomological Society of London* **2**(3): 188–196.
- 1840a. Descriptions of some new species of Carabideous insects from the collection made by C. Darwin, Esq. in the southern parts of S. America [part see 1840c] *Annals and Magazine of Natural History* **4**: (N.S.): 354–362.
- 1840b. Description of a new species of the genus *Lophotus* from the collection of Charles Darwin. *Annals and Magazine of Natural History* **5**: 329–333.
- 1840c. Carabideous insects collected by Mr Darwin during the voyage of Her Majesty's Ship Beagle [part; a continuation of 1840a but with a modified title]. *Annals and Magazine of Natural History* **6**: 254–257.
- 1841a. Carabideous insects collected by Charles Darwin, Esq. during the voyage of Her Majesty's Ship Beagle [part, a continuation of 1840c, but with title altered again]. *Annals and Magazine of Natural History* **6**: 351–355.
- 1841b. Carabideous insects collected by Charles Darwin, Esq. during the voyage of Her Majesty's Ship Beagle [part, a continuation of 1841a]. *Annals and Magazine of Natural History* **7**: 120–129.
- 1842a. Carabideous insects collected by Charles Darwin, Esq. during the voyage of Her Majesty's Ship Beagle [conclusion of 1841b]. *Annals and Magazine of Natural History* **9**: 134–139.
- 1842b. [Descriptions of numerous species of Coleopterous insects from the southern parts of South America from H. Cuming, Esq., and C. Darwin, Esq.]. *Proceedings of the Zoological Society of London* **9**: 105–126. [These descriptions were all repeated in an account of this meeting of 14 December, 1841 in *Annals and Magazine of Natural History* **10**: 131–147.]
- 1842c. Description of a new species of Lamellicorn beetle, brought from Valdivia by C. Darwin, Esq. *Entomologist* **1**: 281–283.
- 1843. Description of a new genus of Carabideous insects brought from the Falkland Islands by Charles Darwin, Esq. *Annals and Magazine of Natural History* (1) **11**: 281–283.
- 1844. Contributions to the entomology of the southern portion of South America. *Annals and Magazine of Natural History* (1) **13**: 41–55.
- 1845a. Descriptions of Coleopterous insects collected by Charles Darwin, Esq. in the Galapagos Islands. *Annals and Magazine of Natural History* (1) **16**: 19–41.
- 1845b. Descriptions of some new genera and species of Heteromerous Coleoptera. *Annals and Magazine of Natural History* (1) **16**: 317–324.
- Watts, C. H. S.** 1978. A revision of the Australian Dytiscidae (Coleoptera). *Australian Journal of Zoology* (supplementary series) **57**: 1–166.
- Westwood, J. O.** [1837] [Meeting 7 December, 1835, noting information on Darwin insects received through Babington (1837).] *Proceedings of the Entomological Society of London* **1**: lxxix.
- 1841. [Proceedings of learned Societies. Entomological Society 1 February, 1841. Contents of memoir on Evaniidae and some allied genera of Hymenopterous insects given including first published descriptions of species included in Westwood 1844.] *Annals and Magazine of Natural History* **7**: 535–536 [See Westwood 1844.]
- [1844]. On *Evania* and some allied genera of Hymenopterous insects. *Transactions of the Entomological Society of London* **3**(4) (1843): 237–278. [Contains a footnote dated July 12th 1844. Descriptions date from Westwood 1841.]
- 1876. Notae Dipterologicae. No. 3.—Description of new genera and species of the family Acroceridae. *Transactions of the Entomological Society of London* **1876** (4): 507–518.

- Wheeler, G.** [1912.] On the dates of the publications of the Entomological Society of London. *Transactions of the Entomological Society of London* **44**(4) (1911): 750–767.
- Wheeler, W. M.** 1919. The ants of the Galapagos Islands. *Proceedings of the California Academy of Sciences* (4)2: 259–310.
- White, A.** 1841. Descriptions of new or little known Arachnida. *Annals and Magazine of Natural History* **7**: 471–477.
- 1847–1849. *Nomenclature of Coleopterous insects in the collections of the British Museum* Part 2 Hydrocanthari: 1–59; Part 4 Cleridae: 1–68. London (British Museum).
- 1849. Descriptions of apparently new species of Aptera from New Zealand. *Proceedings of the Zoological Society of London* **17**: 3–6. [Includes *Attus darwini*, p. 4.]
- Williams, C. B.** 1930. *The Migration of Butterflies*. Edinburgh & London (Oliver & Boyd). 473 pp.
- Winslow, J. H.** 1971. Darwin's Victorian malady, evidence for its medically induced origin. *Memoirs of the American Philosophical Society* **88**: 1–94.
- Wollaston, T. V.** 1877. *Coleoptera Sanctae-Helenaee*. London. 256 pp.
- Woodruff, A. W.** 1965. Darwin's health in relation to his voyage to South America. *British Medical Journal* **5437**: 745–750. [Extracts reprinted in Darwin Centenary issue of *Biologist* **29**(2): 113–117 (1982) see also *ibid* **29**(4): 189.]

Geographical and Name Index

In addition to geographical place names this index includes the names of institutions, ships and the more important textual references to historic persons associated with Darwin and/or his insects.

- Albrolhos, I, 15 (map), 16 (map), 49
 Adventure H M S-ship, 114
 Albatross expedition 49
 Albemarle I (= Isabella), Galapagos 91
 Alps 110
 Andes 112
 Anson G 54, 55
 Arrow G J 20
 Ascension I, 19, 49, 103, 105
 Ashanti 108
 Azores 15 (map), 19
 Australia 15, 25, 30, 106–111
- Babington C C 10, 24, 113
 Bahía Blanca (Patagonia) 16 (map), 18, 19, 43, 61–5, 67, 73, 76, 86, 104 (map), 109
 Bahía (Brazil) 15 (map), 16 (map), 18, 30, 39, 47, 48, 53, 56, 61, 64, 92, 93, 103, 105
 Bairstow S D 22
 Bajada St Fe (Argentina) 76
 Barlow, Lady N 12
 Barmouth (N Wales) 9, 56
 Barrington I (= Santa Fè), Galapagos 94
 Bates F 78, 90, 100
 Bates H W 78, 81
 Bay of Islands (New Zealand) 96
 Bay of St Mathias 16 (map), 75
 Beagle H M S 18–19 (itinerary); 45, 58; 59, 63, 66, 77, 101 (all insects on board)
 Beagle Channel 17 (map)
 Berenice (Chagas' patient) 97
 Bigot J M F 29, collection 98
 Blomfield L. *see* Jenyns L
 Bond collection 82
 Botafogo Bay (Rio de Janeiro) 50
 Bridges collection 82
 British Association for the Advancement of Science 31
 British Columbia 110
 British Museum (Natural History) 5, 14, 20–25, 29, 35, 39, 114
 Brunswick Peninsula (Chile) 17 (map)
 Buenos Aires (Argentina) 16 (map), 65, 77, 104 (map)
 Burchell W J 97
 Butcher, C 133
 Bynoe B 12, 35, 38, 113
- Callao (Peru) 15 (map), 16 (map), 90
 Cambridge 7, 8, 9; University 5, 10, 14; Museum of Zoology 24–28, 44, 51; Philosophical Society 10
 Campana Mt (Chile) 112
 Campos Novos (Rio de Janeiro) 50
 Canary Is 15, 45
- Cancahue I (Chile) 81
 Canguenes Valley (Chile) 82
 Cape Blanca (Africa) 45
 Cape Corrientes 16 (map), 67
 Cape of Good Hope (Africa) 19, 22, 102, 107
 Cape Horn 15 (map), 17 (map), 69–71
 Cape Negro (Chile) 17, 78, 79
 Cape St Mary (Montevideo) 59
 Cape Tres Montes (Chile) 16 (map), 85, 86, 104 (map)
 Cape Verde Is 15 (map), 18, 19, 45, 46
 Caucovado *see* Corcovado
 Chagas C 96; disease 4, 96–7
 Challenger H M S 14
 Charles I (= Floreana, Galapagos) 22, 91, 92, 109
 Chatham I (= San Cristóbal, Galapagos) 90, 91
 Children J G 99–100
 Chile 21, 30, 43, 71, 106, 108, 109
 Chiloe I (Chile) 16 (map), 18, 20, 29, 30, 61, 80, 81, 83–5, 87–8, 95, 107–9
 China 106
 Chonos archipelago (Chile) 16 (map), 85–6, 104 (map)
 Christ's College (Cambridge) 5
 Clarence I (Chile) 17 (map)
 Cocos Keeling Is *see* Keeling Is
 Concepcion (Chile) 15 (map), 16 (map), 18, 88, 104 (map), 109
 Cook Captain James 14, 67
 Copiapó (Chile) 16 (map), 18, 89
 Coquimbo (Chile) 16 (map), 88, 104 (map)
 Corcovado Mt (Rio de Janeiro) 54, 55
 Cordillera of the Andes 89
 Corrientes (Cape, Argentina) 16 (map), 67
 Covington, Syms 11, 12, 22, 39, 40, 42, 44, 86, 99, 113
 Crotch G R 25, 28
 Cudico (Chile) 87
 Curtis, John 30, 31
- Darwin (Argentina) 16 (map)
 Darwin (Australia) 106–111
 Darwin F 5, 7, 10, 25
 Darwin G P 112
 Darwin H 10
 Darwin I (= Guerra, Culpepper, Galapagos) 107
 Darwin L 10
 Darwin Range (Chile) 17 (map)
 Darwin's microscope 113
 Denny H 29, 43, 75, 82, 88
 Desolation I (Chile) 17 (map)
 Devonport (England) 18
 Doubleday E 58
 Douglass Mr 81
 Down House 5, 10, 35–38
 Dublin *see* National Museum of Ireland

- Emerson Mrs 11
 Entomological Society of London (later Royal) 14, 20, 21,
 30, 52, 93, 96, 98, 114
- Falkland Is 13, 15 (map), 16 (map), 18, 21, 22, 71, 72, 79,
 106, 109
 Falmouth (England) 19
 Faraday, Michael 113
 Fernando Norhona I, 15 (map), 47, 73
 Field Museum of Natural History (Chicago) 38, 62
 FitzRoy, Captain R 12, 38, 49, 66, 113
 Flower Miss D 11
 Flower Sir W M 11
 Fox W Darwin 5, 10, 113
 Freeman R B 3, 11
 Fuegians 67
 Fuller H 38
- Galapagos Is 4, 15 (map), 18, 20, 22, 30, 32, 33, 90–92,
 94–96, 98, 106–110
 Gallao (Peru) 19
 Gautrey P J 11
 Gaud Success Bay (Tierra del Fuego) 17 (map), 67, 72
 Gorodña Río Parana (Argentina) 76
 Gould John 59, 60
 Gregory Bay (Patagonia) 43
 Green Mount (Montevideo) 60
 Guasco (Chile) 90
 Guritti I (Maldonado) 75
- Haliday A H 30–34, 49, 113
 Hardy Peninsula (Chile) 17 (map), 69, 70–72
 Haslar Hospital 35, 113
 Hawaii 109
 Henslow J S 5, 12, 14, 113
 Herbert J M 5, 113
 Hermit I (Tierra del Fuego) 17 (map), 69
 Hermosa (Mt, Bahía Blanca) 63
 Hobart Town (Tasmania) 15 (map), 18, 29, 30, 97, 100
 Hope F W 5, 9, 14, 29, 30, 35, 108, 113
 Hope Entomological Collections (Oxford) 29, 44, 112,
 113
 Horn, Cape 15 (map), 70, 71
 Hoste I (Chile) 17 (map)
- Institute of Electrical Engineers 113
 Iquique (Peru) 16 (map), 18, 19
 Ireland National Museum of 14, 30–34, 54, 114
- James I (Galapagos) 22, 94
 Janson E W 28, 35
 Janson O 82
 Japan 107
 Jenyns (later Blomefield) L 5, 10, 113
- Kater's Peak (Hermit I, Tierra del Fuego) 69
 Keeling I, 15 (map), 15, 19, 21, 101, 110
 Kew (Royal Botanic Gardens) 35
 King George's Sound (Australia) 15 (map), 29, 30, 39, 92,
 93, 98, 100, 107, 108
 King, midshipman [PG] 38
- King P P (Captain) 114
 Kirby W 45
 Kirkaldy G W 38, 99
 Krause E 11
- La Plata 43
 Lemuy I (Chiloe, Chile) 83
 Lewinsohn R 97
 Lima (Peru) 16 (map), 19, 90
 Linnean Society of New South Wales 113
 Locôgo (Rio de Janeiro) 50
 Lord Howe, I, 95, 108
 Lowes Harbour (Chonos Archipelago) 86
 Luxan (Argentina) 90, 97
 Lyell C 5
- Macaé R (Brazil) 50
 Madeira 107
 Magellan Straits of 17 (map), 18, 68, 104 (map)
 Maldonado (Uruguay) 15 (map), 16 (map), 18, 43, 72–76,
 98, 104 (map), 108, 109
 Mandetiba (Rio de Janeiro) 50
 Mauritius 15 (map), 18, 101, 107
 Melly A 84
 Mendoza (Argentina) 16 (map), 21, 89, 90, 96
 Miaconcagua (Chile) 16 (map)
 Midship Bay (Chonos Archipelago) 85
 Mitchel Library (Sydney) 38
 Monte Hermosa (Bahía Blanca) 63
 Montevideo (Uruguay) 13, 16 (map), 18, 20, 21, 40, 58–60,
 65–67, 75
 Mount Darwin (Chile) 17 (map)
 Mount (Green Mount, Montevideo) 61, 66
 Mount Wellington (Tasmania) 21, 99
- National Museum of Ireland (Dublin) 14, 30–34, 44, 49,
 114
 National Museum of Wales (Cardiff) 38
 Navarin I (Tierra del Fuego) 67–71, 109
 Negro (Cape, Chile) 17, 78, 79
 Newman E 20, 21
 New Zealand 15, 18, 21, 30, 33, 96
 Nicol Bay (W Australia) 100
- Oxford University 5, 10, 14; Hope Entomological Collec-
 tions 29, 44, 112, 113
- Parana R (Argentina) 76
 Parry F J S 101
 Patagonia 17 (map), 21, 61, 66, 67, 78, 81, 109
 Patch Cove (Tres Montes, Chile) 85
 Pernambuco (Brazil) 19
 Petorca (Chile) 16 (map), 82
 Plas Edwards (Wales) 5
 Plata R (boundary between Argentina and Uruguay) 16
 (map), 59, 72
 Ponsobny Sound (Tierra del Fuego) 17 (map) 70
 Port Desire (Deseado, Patagonia) 16 (map), 18, 20, 64, 78,
 81, 104 (map), 109
 Porter D M 39, 41

- Port Famine (Straits of Magellan) 21, 79
 Port St Julian (Patagonia) 16 (map), 18, 77, 81, 104 (map)
 Porto Praya (Cape Verde Is) 19, 46
 Poulton E B 5, 29
- Quail I (Cape Verde Is) 45
 Quillota (Chile) 16 (map), 82
- Rat I (Montevideo) 40, 59, 66
 Rhodesia 109
 Riesco I (Chile) 17 (map)
 Riley C V 3, 5
 Rio Colorado (Patagonia) 76, 104 (map)
 Rio Estacado (Mendoza, Argentina) 89
 Rio Frade (Rio de Janeiro) 50
 Rio de Janeiro (Brazil) 13, 15 (map), 16 (map), 18, 21, 22, 25, 49–59, 104 (label), 108, 109
 Rio Macaê (Rio de Janeiro) 49, 50
 Rio Negro (Argentina) 16 (map), 18, 66, 77, 104 (map)
 Rio Parana (Argentina) 76
 Rio Plata 16 (map), 59, 77, 104 (map)
 Rippon collector 38
 Royal Entomological Society of London 14, 20, 21, 30, 52, 93, 96, 98, 114
 Rozario R (Parana, Argentina) 76
- St Andrews, Cape (Tres Montes, Chile) 85
 St Catherine's (Brazil) 54
 St Cruz *see* Santa Cruz
 St Domingo (Cape Verde Is) 46
 St George's Sound (Australia) 19, 67
 St Helena 15 (map), 19, 22, 30, 102–3
 St Jago (Cape Verde Is) 21, 45–47
 St Julian (Patagonia) 16 (map), 18, 77, 104 (map)
 St Martin (Cape Verde Is) 46
 St Matthias Bay (Argentina) 16 (map), 75
 St Mary (Cape, Montevideo) 59
 St Paul's Rocks 15 (map), 20, 31, 46, 47, 49, 110
 St Pedro I (Chiloe, Chile) 85
 Samarang H M S 14
 San Blas (Bay, Patagonia) 66, 67, 73
 San Carlos de Chiloe (Ancud) (Chile) 87
 San Pedro I (Chiloe) 85
 Sandwich Islanders 43–4
 Santa Cruz R (Patagonia) 16 (map), 18, 21, 77, 80, 104 (map), 107
 Santa Fe Bajada (Argentina) 16 (map), 43, 76–78, 88, 104 (map)
 Santiago (Chile) 104 (map)
 Santa Ines I (Chile) 17 (map)
 Santa Maria I (Chile) 89
 Scott H 24
 Shackleton-Rowett Expedition 47
 Sharp D 23, 24
 Shropshire 5, 8
- Shuckard W E 38, 99
 Sierra de la Ventana (Argentina) 76
 Simon's Bay (South Africa) 102
 Smith Adam 37
 South Africa 15, 22, 106, 108 *see* Cape of Good Hope
 South America (country unspecified) 15, 16 (map), 17, 21, 24, 25, 110
 Stanley (optician) 11
 Staten Island 17 (map)
 Stephens J F 7, 9, 10, 25
 Stevens auction 82
 Stokes J L 37
 Straits of Le Maire (Tierra del Fuego) 17 (map)
 Straits of Magellan (Chile/Tierra del Fuego) 17 (map), 18, 68, 104 (map)
 Sydney (New South Wales, Australia) 15 (map), 18, 21, 29, 30, 39, 98–100, 108, 110
- Tahiti (Society Is) 15 (map), 18, 96
 Tasmania (Van Dieman's Land) 15 (map), 18, 30, 97–99
 Terceira (Azores) 19
 Thompson Sir Harry S M 5, 113
 Tierra del Fuego 16 (map), 17 (map), 18, 20, 21, 67–70, 72, 78, 108–110
 Traversaria of Mendoza 89
 Treadwell R 11
 Tres Montes (Chile) 16 (map), 85, 86, 104 (map)
- Valdivia (Chile) 16 (map), 18, 81, 87, 89, 104 (map)
 Valparaiso (Chile) 13, 16 (map), 18, 20, 21, 81–3, 88–90, 104 (map), 109
 Van Dieman's Land (= Tasmania) 15 (map), 21, 39, 97 *see* Tasmania
 Villa Vicencia (Cordilleras of Mendoza) 89
- Wales 5, 8; National Museum of 38
 Walker, Francis 30–32, 85, 113
 Waterhouse C O 39
 Waterhouse F H 22
 Waterhouse G R 20–22, 29, 31, 39, 41, 104, 107, 113
 Way A 5, 113
 Wellington (Mt, Tasmania) 21, 99
 Westwood J O 5, 14, 20, 21, 32, 113
 Whatman J 42, 104
 White A 35
 Wicken Fen 9, 10
 Wigwam Cove (Hermit I, Tierra del Fuego) 69
 Wollaston T V 107
- Yuche I (Tres Montes, Chile) 86
- Zoological Society of London 14

1881

1. The first part of the paper is devoted to a description of the general principles of the theory of evolution, and to a discussion of the evidence in support of it. It is shown that the theory is based on the fact that all organisms are descended from a common ancestor, and that the changes which have taken place in the course of time are due to the action of natural selection.

2. The second part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

3. The third part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

4. The fourth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

5. The fifth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

6. The sixth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

7. The seventh part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

8. The eighth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

9. The ninth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

10. The tenth part of the paper is devoted to a description of the evidence in support of the theory of evolution, and to a discussion of the objections which have been raised against it. It is shown that the evidence is of a very strong nature, and that the objections are of a very weak nature.

Scientific Index

In addition to taxonomic names this index includes Darwin's preliminary identifications, local common names and pabulum, to facilitate reference to this work by scholars using Darwin's published and unpublished writings. Numbers in italics indicate illustrations. Scientific names are as recorded in the literature cited, but later generic and specific names are also indexed so that specialists can locate their groups under original or modern combinations.

- Ablechrus darwini* 94, 107
flavipes 94, 107
Abropus splendidus 67, 68, 69, 79
Acacia 98
Acanthinus acquinocialis 58
postmaculatus 74
striatopunctatus 47
Acanthoscelides objectus 63
Acari 11, 39, 40, 48, 53–4, 56, 86, 90–1, 102
Acarus vegetans 11
Aceratodes fulvicornis 61
Achrysocharis darwini 110
Achryson galapagoense darwini 107
Acizzia 98, 101
Acocephalus obliquus 96
Acribis serrativentris 91
Acrididae 59, 90, 99, 100
Acridium 59
litosum 94
maculiferum 59
melanocerum 94
sellatum 59
Acroceridae 101, 109
Acrotrochis 109
Acrydium 45, 59
Actina 99
Acupalpus flavicollis 10
luridus 10
Acylymma 94
Adalia deficiens 78, 81–2
Adelopsis darwini 74, 107
grouvellei 58
Adioristis 23
angustus 82
conspersus 82
punctulatus 82
simplex 82
subdemidatus 89
Aegorhinus 70, 83
Aetalionidae 87, 107
Agallia 94
Agarista darwiniensis 110
Agelanus 87
Agonini 82
Agonom 10, 60, 61, 65, 74, 76
darwini 107
nigrum 10
Agrilus darwini 107
Agrionymia vagans 94
Agriion 57
Agromyzidae 33, 84, 91, 96, 99, 103
Agrotis intacta 77
Alastoropolus strumosus 70
Alata anticalis 45
Albatross 70
Allelidea ctenostomoides 93, 100
Alleloplasis darwini 93, 101, 107
Amara (*us*) 60, 63
lucidae 10
plebeia 10
Ammophorus barringtoni 94
bifoveatus 94
galapagoensis 90
obscurus 91
Amorbus 98
Amphicerus cornutus galapaganus 71
Amphideritus 91
Amphisbaena 43
Amydona humeralis 79
Anaglyptus mysticus 10
Anaploclerema darwini 108
Anasa obscura 90
Anaspella 77
Anaspis 12
Anastatus darwini 110
Anaulocamera darwini 106
Anchastus 94
atlanticus 102
Anchomus galapagoensis 94
Anipo darwini 101, 107
Anisopodidae 79
Anisoptera 55
Anisopus fuscipennis 79
Anodochilus maculatus 51–2
Anomiopsis 62
Anotylus 109
Antarctia antiqua 74
blanda 69, 78
carnifex 74
chilensis 84
circumfusa 60, 84
euryptera 88
femorata 88
flavipes 84, 89
latigastrica 88
leucoscelis 66
malachitus 71
ovalipennis 84, 89
striata 73, 79
Antarctobius lucanosus 69, 85
laticauda 86
rugirostris 69
Antarctononmus complanatus 69, 71
peroni 69, 71, 85

- Antarctophytosus* 72
 Anthicidae 47, 58, 73, 102
Anthicus atronitidus 102
 wollastoni 102
Anthomyia corelia 59
 cutilia 59
 felsina 59
 setia (= *Ophyra aenescens*) 91
 Anthomyiidae 59, 85
Anthophora darwini 110
 Anthophoridae 110
Anthrax primitiva 91
 reperta 54
Anthremus ocellifer 98
 Anthribidae 91, 98, 102
 Ants 48, 53, 60, 94, 101
Antyllis latipennis 100
Apanteles 91, 100, 103
Apate 91
Aperca (guinea pig) 43
Aphengium sordidum 49
Aphidius 103
Aphodii 102
Aphodius 57, 73, 76, 97, 102–3
 granarius 103
 pseudolividus 103
 pseudotasmanniae 97
Aphthona bevisi 102
 capensis 102
 Apidae 57
Apisoma hesperum 50
Aplodes rubrofrontaria var *darwiniata* 110
 Aptera 20
Apterodorus bacchus 88
 Arachnida 56 (collection), see Acari, mites, spiders, tick
Aracocerus lindensis 98
Archiborborus hirtipes 60
Archophileurus darwini 74, 108
 Arctiidae 60, 95, 101, 110
Argutor 61, 76, 84
Argynnis darwini 79, 110
Argyrophorus williamsianus 79
 Armadillo 43, 63
 Arrow poison 87
Asaphes aenea 82
 vulgaris 82
 Asilidae 59, 98
Asilus mucius 59
Asopia vulgaris 45
 Asteiidae 91
Astylus gayi 81, 82, 88
 lineatus 49
 quadrilineatus 65, 74, 76
Ataenius opatroides 74
 picinus 55, 77
 rubripes 62
 tenebricosa 55
 sp 48, 55
 Ateniuh tree 81
Ateuchus robustum 66, 77
 squalidum 49
Atherigona tibiseta 99
Atheta darwini 108
Auchenia llama 78
Auchomenus atratus 10
- nigrum* 10
Aulonodera darwini 84, 108
Automolus humilis 99
- Baclutha* 96
 Banana 58
 Bananaquit 53
 Baridinae 62, 74, 84, 103
Barisylpus clivinoideus 66
 longitarsis 64, 78
 rivalis 61, 74
 speciosus 61
 stephensi 63
 substriatus 89, see *Cardiophthalmus*
 Barnacles 113
Bathypogon 29, 98
 Bats 48
 Bees 11, 46, 54, 57, 65, 78, 79, 99, 100
Bellerus anatis 88
Belostomus 66
Belus testaceus 100
 Bembidiini 49–51, 58
Bembidiomorphum convexum 69–71, 86
Bembidion 10, 60, 67, 80, 94
 adustum 10
 embei 60, 61, 65
 semipunctatum 10
 sp 76, 79
 Bembidium 71
 Bembidion insects 12
Benchuca 38, 89, 97
 Beridinae 53
Berosus aberrans 25, 51
 confinis 25, 51
 reticulatus 25, 51
 sticticus 25, 51
 Bibionidae 55, 59
Bidessus 51
 Birds 45, 46, 49, 53, 60, 70–72, 75, 79, 81, 82, 91
Blabera brasiliana 60
 dubia 60
 Black-currant bush 72
 Blackflies 54
 Black skimmer 60
Blaps 38, 50
 Blatta 46, 48, 50, 60, 101
 Blattodea 46, 50, 60
Blethisa 7
 multipunctata 7, 28
Bombus hortorum 11
 lucorum 11
 pratorem 11
 Bombyliidae 54, 91, 103
Bombylius 54
 Booby 46
Borborus quinque maculatus 60
 Bostrichidae 91
 Brachelytra 58
Brachinus 73, 76
 crepitans 10
 maculipes 73
 nigripes 73
 platensis 73
Brachycoelus 69

- Brachynemorus darwini* 107
Brachymerus castaneus 83
 Braconidae 33, 91, 100, 103
Bradycellus promptus 98
 Bruchidae 58, 103
Bruchus 63, 103
Brychius elevatus 7
Bubas bison 35
 Buprestidae 9, 47, 90, 99, 107, 108
Buprestis 90
Buteo galapagoensis (Galapagos hawk) 90
 Butterflies 49, 58, 59, 66, 73, 79, 110
 Byrrhidae 70
- Cacao 87
Caffrolix cyclopia 102
Calanotos (*Calonota*) *helymus* 59
Calandra oryzae 100
 Calavances 58, 63
Callimicra darwini 47, 108
Callimome caburus 103
 daonus 101
 eumelis 82
 nonacris 82
 osinus 101
 sulcius 103
 vibidia 100
 Calliphoridae 59, 84, 91, 103, 109
Callisphyrus macropus 84, 95
Callyntra vicina 89
Calosoma darwini 66, 108
 galapageium 94, 95
 helenae 102
 patagoniense 29, 66, 86
Campalita chlorostictum ssp. *helenae* 102
Camponotus macilentus 94
 planus 94
 Campopleginae 103
Campotogramma corticaeta 77
Campylus linearis 9
 Canaceidae 109
 Cantharidae 85, 109
Cantharis darwiniana 109
Canthecona 99
Canthidium breve 65
 trinodosum 49
Canthon 58
 Cape petrel pigeon 59
 Capsida 54, 60
Capsus darwini 94, 107
 nigritulus 94
 quadrinotatus 94, 95, 112
 spoliatus 94
Capulus 71
 Carabi 12
 Carabidae 25, 46, 49–51, 55, 58, 60–73, 76–91, 94–6, 98, 102, 107–9
Carabus 67, 76
 chiloensis 83, 87
 darwini 83, 108
 insularis 83
 suturalis 67
 valdiviae 71, 83, 89
 Caracara (chimango) 90
- Cardiophthalmus trilineatus* 99
Cardiophthalmus see *Barijfyplus*
 clivinioides 66;
 longitarsis 64, 78
Carenium darwiniense 108
Carollia perspicillatum 48
 Carrion 12, 65, 79
Carthaea 99
Cascellius aeneo-niger 70, 84, 89
 gravesii 86
 kingii 86
 nitidas 69
 Caterpillars 53, 56
Catogenus decoratus 84
Catops
 falklandicus 79
 sericeus 8
Cavia capybara 60
 cobaia (= *aperea*) 43
Celina 51
Ceolioxys albolineata v. *darwiniensis* 110
Cephalelus brunneus 99
 marginatus 101
Cephaloleia picta 58
Cephaloplatus darwini 107
 Cerambycidae 47, 54, 61, 65, 84, 90, 95, 107–9
 Cerambyx 54, 61, 77
Ceratina darwini 110
Ceratomegilla 18-pustulatus 73
 Ceratopogonidae 55, 84, 91, 103
 Cercopidae 99
Ceroglossus 67, 83, 87, 89, 108
Cerostena punctulata 80
Certhia 43, 53
Cercyon 12
Chaeerocampa chiron 77
 Chalcididae 53, 88, 91, 98, 100, 101, 103
 Chalcid [oidea] 32, 82, 84, 86–8, 90, 103
Chalcis cabira 91
 physa 100
Chalcocopris hesperus 57
 Chamaemyiidae 98
Chanopterus brevipennis (= *paradoxus*) 71
 Cheese skipper 94
Chelonus 91
Chiasognathus grantii 20, 35, 81
Chionabax 79
 Chironomidae 84, 98–9, 102–3, 109
Chironomus 98, 99, 102
Chlaenius braziliensis 74
 holosericeus 10
 nigricornis 10
 platensis 74
 tristis 10
 violaceus 74
 westwoodi 74
Chlamydopsis formicola var. *darwinensis* 108
 Chloropidae 33, 84, 87, 96, 98, 102
Chnoodes terminalis 48
Choleva agilis 8
 angustata 8
 falklandicus 79
Chordonota inermis 50
Chromatomyia distincta 59
Chrysomela 60

- Chrysomelidae (incl Halticidae) 9, 28, 47, 58, 61, 63, 71,
 73–4, 80, 84, 87, 90–1, 94, 95, 96, 98–100, 102, 103,
 108–9
Chrysopa 101
 darwinii 107
 innotata 101
 ramburi 101
Chrysops varians 50
Chrysotus 91
 Cicada 81, 86
 Cicadellidae 87, 94, 99, 101–2, 107
 Cicadidae 86, 99, 101, 107
Cicindela 5, 38, 50, 54–6, 77, 89, 96
 Cicindelinae 50, 54, 56, 77
Cidaria opprestata 79
Cillenum/sj 60
 Cimex 48, 50, 67, 70
Circus buffoni (= *megaspilus*) 75
 Cirripedes 113
Cirrospilus buselus 94
 nirreus 102
Cisseis puella 99
 Cixiidae 96
Clambus australiae 100
 Clavipalpes 63
 Cleonymidae 91, 94
 Cleridae 21, 95, 108
Clitellaria atrata 50
Clivina darwini 108
Closterocerus cercius 88
 pelor 86
 xenodice 87
 Clusiidae 84
Clytus mysticus 10
Cnemacanthus 63, 109
 striatus 63
Coccinella 60, 62
 aucoralis 61
 fulvipennis 82
 leonina 96
 Coccinellidae 47, 58, 61–2, 73–4, 76, 78, 80, 82, 84, 88, 91,
 94, 96, 98–100, 108–9
Cochliomyia macellaria (secondary screw worm fly) 91,
 103
Coelioxys albolineata var *darwiniensis* 110
Coelophora inequalis 99
 Coelopidae 85
Coelostoma darwini 108
Coenobius spissus 99
Coenonica darwini 108
Coenonympha arcania ssp. *darwiniana* 110
Coenosia acuticornis 98, 99
Coereba flaveola 53
 Coleoptera 36, 37, 38, 45–91, 93–103, 106–109
 Coleoptera larvae, as food of armadillo 43
Colias croceus 66
 edusa 66
 lesbia 66
 Collembola 43
 Colydiidae 84
Colymbetes 50, 59, 60, 61, 63, 67, 77, 81
 adsperus 8
 angusticollis 77
 agilis 8
 calidus 50
 chiliensis 82
 darwinii 65, 108
 elegans 50
 exoletus 8
 magellanicus 67
 nigro-rematus 78
 notatus 8
 pulverosus 8
 punctum 82
 reticulatus 82
 rotundicollis 70, 71
 sandycii 90
 signatus 59
 suturalis 82
Colymbetes 77 see *Colymbetes*
 Condor (*Vultur gryphus*) 82
Condylostylus 103
Copelatus
 galapagoensis 91
 posticatus 50
Copris 76
 Coprophagi 31
 Coreidae 48, 90, 98
Corixa 46, 60, 61
 Corixidae 24–5, 80, 99, 107
Cormodes darwini 95, 108
 Coronula 86
Corymura darwini 110
Corythaica 96
 darwiniana 107
Cosmosattyrus leptoneurodes 79
 plumbeola 79
 Cows 81, 97
Creophilus erythrocephalus 97
 villosus 91
Crepidodera bahiensis 47
 chiloensis 84, 87
Cricotopus 103
 Crioceridae 28
Crocisa caeruleifrons v. *darwinii* 110
Croticaria australis 99
Cruria 110
Crypta bipunctata 9
Crypticus 45, 54
 platensis 54, 61, 75
 Cryptocephalus 89
 Cryptophagidae 102
Cryptophagus gracilipes 102
 typhae 9
Cryptostetha juanae 63
Ctenicercus cupreafus 9
Ctenispa darwini 47, 108
Ctenomys braziliensis 43
 Ctenuchidae 59
Culicoides 55
 Curculio 12, 57 (diamond), 60, 70, 78, 85, 100
 Curculionidae 9, 47, 53, 57, 58, 60–1, 69–70, 72–4, 78–80,
 82–8, 91, 93–6, 98–9, 100, 102–3
Cybister biungulatus (= *Megadytes*) 74
Cybocephalus 91
Cycloba truncatipennis 77
Cydnæa cara 99
 diversa 100
 pustilla 99
Cyllene spinifera 61

- Cyldrorhinus angulatus* 80
Cymindis 77
Cynthia planodisca 66
Cyphon fenestratus 100
Cyphosternus 25
Cyttalia griseipila 96
Cyttaria darwini 67
- Dagbertus* 94, 107
Daption capense 59
Darwinella 106
Darwinhydrus solidus 102, 106
Darwinivella fosteri 106
Darwinomyia 106
Darwinysius 94, 106
Dascillidae 100
Dasybasis 77
 clavicallosa 109
 meridiana 87
Dasydema hirtella 84
Dasyhelia paracincta 91
Dasyopus hybridus 43
 minutus 43
Decatoma diphilus 103
Decilans molaris 100
Deiopeia ornatrix 94, 95
 pulchella 101
Delia platyura 59
Delphacidae 87, 101, 107
Delphacodes 94, 96
 chiloensis 87
 darwini 87, 107
Delphax simulans 94, 96
 substituta 94, 96
 vicaria 94, 96
Demogorgon patagonicus 75
Denticollis linearis 9
Derallus rudis 25, 51
Derbidae 93, 101, 107
Dermaptera 56, 61, 75, 106
Dermites 60
 maculatus (= *vulpinus*) 61, 74, 94
Dermestidae 61, 74, 94, 98
Derostenus alcetas 88
Desiantha malevolens 99
Desmopachria nitida 51, 52
Diabrotica bilineata 58
 contigua 58
 lmbata 94
Diamond beetles (Curculio) 57
Diastichus darwini 108
Dibolocoetes 25
Dicera 31
Dichaetomyia reversa 38
Dichromyia sanguinceps 59
Dicranocephalus 94
Dietyopharidae 102, 107
Dicyclus arduine 90
 lynastes 87
Didelphis 81
Didelphis thoracicus 59
Dineutes aereus 25, 46
 subspinosus 25, 46
Dinocoris 98, 99
- Diomus brasiliensis* 47
 effusus 58
 genialis 47
 notescens 99
 pumilio 98, 99
Diome 38
Diopaea 101 *see* *Deiopeia*, *Utetheisa*
Diplatys darwini 106
Diplax frequens darwiniana 107
Diponthus 59
Diptera 12, 33, 34, 38, 46, 49, 50, 53–5, 57, 59, 60, 65, 72,
 75, 77–80, 82, 84–91, 94, 96, 98–9, 101–3, 106, 109
Distogastera darwini 73, 74, 95, 108
Ditropidus inconspicuus 98, 99
 jacobyi 100
 lentulus 99
 minutus 98
 stratiopuncatus 99
Docema darwini 108
 galapagoense 91
Docemina crassipes 71
Dolichopodidae 84, 91, 98, 99, 101, 103, 109
Dolichos 63
Donacia braccata 9
 nigra 9
Dorcus bacchus 88
 darwini 70, 88, 108, 109; *see* *Sclerognathus*
Dorylinae 48
Dragonflies (Odonata) 38, 57, 67, 70, 85, 106–7
Dromius 82
Drosophilidae 103
Dryophilodes angustus 98
 squalidus 98
Dung 12, 102, 103
 bird's 47, 62
 cow's 81, 97
 guanaco 80
 horse's 76, 80, 97
 human 48, 83
 kangaroo 97
 ostrich[rhea] 62
 sheep 80
Dynastidae[inae] 74, 89, 108
Dytiscidae 25, 46, 50, 52, 59, 63, 67, 70–1, 74–5, 77–8, 80,
 82, 90–1, 100, 102, 106, 108
Dytiscus conformis 8
 marginalis 8
- Eciton* 48
Ecantheria indecisa 60
Ectemnostega darwini 107
Edessa 61
Elachestus artoeus 98
 catta 103
 gyes 84
Elachiptera lyrica 102
Elaphrus uliginosus 10, 28
Elasmostethus 99
Elater 48, 63, 85, 101
 luteipennis 85
Elateridae 9, 21, 48, 63, 85, 94, 102
Elleschodes tenuistriatus 98
Elmis 12, 55, 83, 89
 chiloensis 83

- Empididae 85, 87, 88, 98, 99
Empoia leai 99
Encosmia ventralis 98
 Encyrtidae 98, 100, 101, 103
Encyrtus arsenes 98
 cheles 98
 epytus 103
 lucetius 98, 101
 odacon 98
 pacorus 100
 salacon 98
 xuthus 98, 101
 zameis 101
 zebina 98
Endalus 51
 Endomychidae 58
Enhydrus sulcatus 25, 56
Enochrus 67, 74, 76, 84, 108
 affinis 25
 atomus 50
 vulgaris 25, 74
Enoplurus 25
Entedon antander 103
 bedius 82
 cleodora 90
 diocles 100
 flacilla 82
 hegelochus 103
 hestia 98
 thestius 103
 ufens 86
Entimus imperialis 57
 nobilis 57
Entomoderes erebi 21, 89
Entypus 54
Epamaebus ziczac 98
Epantius 71
Epeira (spider) 53
 Ephydriidae 84, 87–8, 91, 99, 103
Epipedonota
 affinis 89
 honariensis 61, 63
 ebenna 89
 erythropus 89
 lata 78
 multicosta 89
 rugosa 89
Epirix darwini 73, 108
 uruguayica 73
 spp 58
Epuraea biguttata 8
 darwinensis 108
 limbata 8
Erebia 79
Erechthias darwini 47, 110
Erydymus chryscus 101
Eriopsis
 16-pustulata (= connexa) 88
 sp 80
Eristus blackburni 98
Erotulus 50
Ethadomorpha clauda 100
Ethra maledicta (= lateralis) 56
Etiella zinckenella 45
Euaereta 94
Eucalyptus 98
 Eucharidae 32
Eucharis eribotes 98, 100
 furcata 103
 iello 92, 98
 rapo 103
 theocles 100
 vulgus 100
 volusus 92, 101
 xeniades 100
 zalates 92, 100
 Eucharitidae 93, 98, 100, 101, 103
Euchirus longimanus 35, 36
Euconnus 102
Eucranium dentifrons 62
Eulerus mestor 101
Eulicella darwini 108
 darwiniana 108
 Eulophidae 84, 86, 94, 98, 100–103, 110–111
Eulophus
 itea 98
 laonome 84
 megalarus 101
 rhianus 82
 Eumenidae 48, 56, 110
 Eupelmidae 100, 101, 110
Eupelmus dodone 101
 eurozonus 100
Euphaonia fulvohumeralis 79
Euplectrus bicolor 98
 Eurymelidae 101, 107
Eurytoma aretheas 101
 eleuthor 99
 euclus 103
 menon 103
 olbus 100
 pidytes 99, 101
 philager 84
 tellis 100
 volux 99, 100
Euxesta 54
Evyllaes 110
Eynisacris extranea 59

Fagus antarcticus (Nothofagus) 67, 70
 Falco 71
Falklandius turbificatus 72, 79
Falkocholeva cribellata 79
Feronia 46, 60
 aerea 89
 apicalis 74
 assimilis 61
 audouini 76
 bonellii 84, 86, 89
 brullei 76
 calathoides 90
 chalcea 74
 chaudoiri 82
 chilensis 73, 84, 89
 cordicollis 29, 61, 65, 74
 corinthia 61, 74
 dejeani 61
 depressa 66
 eydouxii 90

- galapagoensis* 94
guerinii 73
marginata 88, 89
meticulosa 89
nebroides 84, 88, 89
obsidians 29
patagonica 61, 76
peruviana 90
rufipalpis 86
submetallica (= *lucidus*), 61, 76, 89
unistriata 90
Feroniola laticollis 61, 65, 74
Figites 32
Fireflies 51
Fish 14
Fitans 30
Flattidae 99
Fleas 43, 88 see *Siphonaptera*
Foemus darwini 99, 110
Forficula 21, 56, 60, 61, 75
Formicidae 94 see *ants*
Fossils 14
Frigania 57
Frigate bird 49
Fucellia 85
Fulgoroidea 94, 96
Fulgoroidea 99
Fulmarus glacialisoides 75
Fungus 12, 57, 67, 68, 72, 83, 84

Galapagomyia 94
Galapagos hawk (*Buteo galapagoensis*) 90
Galapagosana 94
Galapodactylum 108
Galeruca 60, 80
Gallino paraquiae magellanica 72
Ganthidium ruficollis 48
Gasteruptionidae 99, 110
Gastrancistrus cephalon 88
menoetes 100
polles 88
Geobius pubescens 74
Geometridae 66, 77, 79, 110
Geotrupes 48, 53, 57, 72, 80
laevis 9
stercorarius 35
vernalis 9
Geraeus 103
Germanica lilliputana 99
Gerris 46
Gigantotheca 94
Glow worms 87 see *Lampyridae*
Glycaspis 98
Gnat 59
Gnathaphanus darwini 108
Gonatocerus darwini 110
Goniocantho smaragdulus 53
Gonoleptes 72, 83
Grammicus chilensis 82
Graphiphora plectra
Graptostethus 99
Gryllus 101
migratorius 90
Guano 47

Guanaco 77–8, 80
Guinea pig 43
Gull 46
Gunpowder mites 43
Gyretes glabratus 25, 57
Gyrini 50, 56
Gyrinidae 24, 25, 46, 50, 56–7
Gyrinus 46, 57
ovatus 25, 50
parvus 25, 50

Habropus carnifex 67, 69, 79
Halictus (*Evyllaes*) *darwiniellus* 99, 110
eyrei darwiniensis 110
repertus 99
Haliphys elevatus 7
Halmaessa 72, 109
Halobates darwini 107
Haltica 60, 71
acuminata 100
aenea 99
aeneo-nigra 100
bicolor 99
bivittata 100
crassicornis 99
galapagoensis (= *Docema*) 91
labialis 99
nitida 100
ochracea 100
ovata 100
picea 100
pygmaea 100
scutellata 99
subaenea 100
substriata 100
variegata 98
Halticidae 108, 110 see *Chrysomelidae*
Haplodiphax darwini 101, 107
Haptoncura darwiniensis 108
Harmonia conformis 99
Harpales 60
Harpal[inae] (*Carabidae*) 61, 71, 82, 83
Harpalus 60, 65, 77
puncticollis 10
punctatulus 10
rubripes 10
Harrier, long winged 75
Hedylepta indicata 45
Helcomyzidae 85
Heleomyzidae 72
Helobata striata 25, 51
Helopeltis 25
Helops 49
Hemerobiidae
Hemerobius 101
Hemiptera 20, 24–5, 29, 39, 47–8, 50, 54–5, 61, 66–7, 70, 72–3, 75, 80–2, 84, 86–7, 89–90, 93–4, 95–9, 101–2, 106–7
Henicocephalidae 82
Hephaestion macer 84
ocretus 84
Heterodiomus darwini 58, 108
tetraspilotus 73–4
Heterom[era] 60–2, 65–6, 71–2, 76, 78, 80, 85, 88, 89, 90

- Heteronyx darwini* 108
 Heteroptera 94, 95, 96–9, 101–2
Hilarempis 98
Hippobosca nigra 46
 Hippoboscidae 46, 49, 90
Hister 60, 83
 quadristriatus 9
 Histeridae 9, 57, 82, 83, 108
Hockeria dextris 101
 eracon 98
 nyssa 100
 proxenus 98, 100
Homalictus 110
Homalochilus niger 62
Homoeodera pygmaea 102
 Homoptera 81, 84, 86–7, 94, 96, 98–9, 101–2
 Hoplia 62
 Horsely 77
 Horses 55, 75, 76, 80, 87, 97
Hugoscottia darwini 25, 74, 108
 Humble-bees 11
Hybos 99
Hydaticis havantensis 51
 hybneri 8
 seminiger 8
Hydnobius forticornis 84
 Hydradephaga 21
Hydrellia 84, 99
 Hydrobii 12
Hydrobius 46, 52, 67
Hydromedion elongatum 69, 71
 Hydrophilidae 24, 25, 46, 50–2, 67, 73–4, 76, 84, 91, 98–9,
 101–2, 108
Hydrophilus 52
 Hydropori 12
Hydporomorpha parallela 51, 52
Hydporus 67
 areolatus 7
 darwini 100, 108
 lepidus 7
 nitidus 51
 obscurus 51
 undecemlineatus 67, 100
Hydrous
 ater 25, 52
 palpalis 25, 73
 Hygroti 12
Hygrotus 46, 60
 scitulus (= *Hydporus lepidus*) 7
Hymenophallus 56
 Hymenoptera 20, 30, 46, 48, 53–4, 56–7, 65, 70, 73, 78–9,
 82, 84–8, 90–4, 96, 98–9, 101–3, 110–111
Hypattalus abdominalis 98
Hypaulax
 amplidata var *parryi* 100
Hyperaspis arrowi var *darwini* 73, 108
 festiva 48
Hyphil[y]drus maculatus 46
Hypocaccus rugiceps 9
Hypolimnas alimena darwinensis 110
Hypomedon 109
Hyptiogaster 99, 110

 Ichneumonidae 103

Icosta nigra 90
Idiocephala darwini 98, 108
 semibrunnea 98
 tasmanica 98
Ilburnia 96
Inostemma quinda
Ionthodophrys 87
Ischnocera 71
Ischnodemus darwini 102, 107
Isomyia 109
 Isoptera (termites) 47, 106
Isosoma oritias 101
 ravola 99
Issoria lathonioides 79, 110
Issus rostrifer 94
 varius 94, 96
Ixodes 20

Jassus lucidus 96
 planus 94
 striolarius 94

Kaapia darwini 102, 107
Kaloterme darwini 106
 Kalotermitidae 106
 Kangaroo 97
 Kelp flies 85
 Kleter 56

Labidura 99
Laüs cinctus 99
Lama guanaco 77, 78, 80
 Lamellicorn[ia] 61, 63, 66, 75, 83, 89
Lampronia cathella 35
Lamprotatus alcander 88
 bato 99
 bisaltis 87
 caecina 82
 ciron 99
 damia 100
 dioxippe 103
 eleus 84
 hecatoeus 99
 mycon 100
 naevohus 88
 nages 84
 natta 87
 nelo 101
 nicon 100
 numitus 86
 orobia 87
 thera 99
 tubero 88
 Lampyridae 50–1, 53, 56–7, 59, 85, 87
Lampyrus 51, 53, 55, 57, 59
 occidentalis 51
 Lampyrus see *Lampyrus*
Lanctes nigriceps 70, 82
 signatus 82
 varius 78, 81, 82
 Languridae 58, 84
Larentia esuriata 79

- Lasiocampidae 79
 Latridius [sic] 12
 Lathridiidae 74, 82, 84, 88, 96, 99
 Lauxaniidae 55, 84, 99, 103
 Lebiinae 21
 Leguminosae 63
Leia 102
Leiodes 12, 56
 Leioididae 107
Leonota 75
Lelaps sadates 94
Lepidota darwini 108
 Lepidoptera 20, 37, 45, 47, 49, 58–9, 66, 72–3, 77, 79, 94, 95, 110
Leptocera 102
 darwini 88, 109
 Leptopiinae (Curculionidae) 58, 84
Leptosomus acuminatus 93, 99
Leskia darwini 102, 109
Lethrus cephalotes 35
Lewania extranea 59
Leuronectes gaudicaudi 82
 Libellula 20, 55, 67, 70, 85
 Libellulidae 107
 Lice, see Phthiraptera 29, 82, 88
Licinus
 punctulatus 10
 silphoides 10
 Limnichidae 50
Limnobia reciproca 59
Limnogogus cereiventris ssp *leptocerus* 46
Limnoxemus 25, 101
Limosina 88
 Limpet 71
Lissopterus quadrinotatus 79
Listroderes apicalis 61, 73
 costirostris 73–4, 88
 delaigei 73
 katerensis 69
 lacunosus 69, 85
 quadriloberculatus 69
 robustus 88
 rugirostris 69
Listronyx testaceus 69
Litochrus sydneyensis 97
Lixus 57
Lama guanacoe 78, 80
 Locust 45, 90
Longitarsus chiloensis 84
 darwini 74, 109
 hnatus 9
Lopha 51
Lophocomus anaitis 84
Lophotus eschscholtzi 83
 longipes 70
 nodipennis 86
 vitulus var *bulbifer* 70
Loxostege 110
 Lucanidae 70, 81, 88, 108–9
Lucanus 70
Lucilia
 eximia 103 see *Phaenicia*
Lametrus 25
 Lycaenidae 110
 Lycoper[dium] 72
 Lygacidae 87, 94, 99, 101, 102, 106, 107
Lycus origo 82

Macaria subornata 66
Macrogyrus ellipticus 25, 50
 Macronemuridae 107
Macronemurus darwini 107
 Malachiidae 93, 100
 Malacodermidae 98, 99
Malaeopsylla grossiventris 43
 Mantis 48–9
 Mantispidae 99
 Mantodea 48, 49
Marcodava egenaria 79
Mastotermes darwiniensis 106
 Mastotermitidae 106
Mecocephala acuminata 61
Medon darwini 109
Megacera parvula 47
Megachile darwiniana 110
 Megachilidae 110
Megadytes 74
Megalomus darwini 107
Megalophrys patagonica 78
Megastigmus borus 99
 drances 99
 laminus 99
Megathopa violacea 62
Melampsalta 99
Melaphorus reichei 90
Melasomes 62
Meligethes 58
 splendidulus 102
 viridulus 102
Melipona 57
Melzoderes darwini 87, 107
Meloe 38, 61, 62, 65, 66, 87
 Meloidae 61, 62, 66, 87
 Melontheinae 108
 Melyridae 49, 65, 74, 76, 82, 88, 94, 107
 Mercurialis 35
Merizodus maceyi 72
Meronidius inornatus 75
Merostenes sadales 91, 92
Mesamia 96
 Mesoveliidae 106
Metius 88
 bonariensis 74
 femoratus 84
 flavipes 84, 88, 89
 malachitus 71
 ovalipennis 84, 89
Microgyrtes ocelligerus 84
Microberosiris exilis 100
Microcleptes aranea 90
Micromelus silanus 99
 Micropezidae 57, 84, 99
Micropterix 35
Migadops darwini 70, 109
 falklandicus 72
 nigrocaeruleus 70
 ovalis 68, 69
 virescens (= *laeta*) 68, 69, 70
Milvago chimango 71

- pexoporus* 71
Mimacraea darwinia 110
Mimosa 91
 Miridae 87, 94, 107
Miris lineata 94
Misophrice submetallica 28
Molops corinthia 61
 rivalis 61
Molaris 22
Monanthia cytharina 96
Monolepta nigricornis 98
 ordinaria 98
 sordidula 99
 subsuturalis 99
Monomachus falcator 99
Mordella 93
 Mordellidae 98
Morphoides immaculatus 50
Morychastes australis 70
 Mosquitoes 77
 Moss 81
 Moths 20, 35, 45, 47, 59, 60, 66, 72, 77, 79
Musca domestica 50
 gamelia 59
 lyrcea 59
 phauda 91
 pionia (= *Phaenica*) 91
 Muscidae 38, 55, 59, 79, 84, 91, 98-9, 106
 Mycetophilidae 84, 102-3
Mygalus 54
 Mymaridae 110
Myolucilia 59
 Myrmeleontidae 107
Mythimna unipuncta 59
- Nargus anisotomoides* 8
 wilkinsi 8
Necrobia 60
Necrophorus interruptus 8
 vestigator 8
Necterosoma 67, 100, 108
Nemoria 110
Neobrachypterus darwini 62, 109
Neohydrophilus politus 25, 51
Nephopullus darwini 74, 109
 Nests, of ants 53, 60
 of bees 65, 78
 of Hymenoptera 53
 of Isoptera (termites) 47
 Neuroptera 99, 101, 107
Neurotrixa 59
Nezara (genus near) 98, 99, 101
Nialus 103
Nicrophorus 8
Nitela darwini 94, 110
Nitidula limbata 8
 obsoleta 8
 punctatissima 8
 Nitidulidae 8, 23, 56, 58, 62, 75, 91, 102, 108-9
Nocticanace darwini 109
 Noctuidae 77, 110
Noctua (*Agrotis*) *suffusa* 77
Noloptes 60
Nomia darwinorum 110
- Nomophila noctuella* 45
Nordenskjoldella flavitarsis 69
Nostima 103
Notaphus 60, 65
 galapagoensis (= *Bembidion*) 94
Nothofagus 70, 71
Notioxenus ferrugineus 102
Notiphila 84, 87, 99
Notonecta 72
Notophorina 87
Novius bellus 99
 sanguinolentus 99
Nyctelia 62
 angustata 81
 brunnipes 81
 darwinii 78, 109
 erythropus 89
 fitzroyi 78
 granulata 78
 guerini 80
 newporti 78, 81
 nodosa 63, 89
 plicata 78
 puncticollis 62
 rugosa 66, 89
 saundersii 62
 solieri 78
 stephensii 8
 subsulcata 89
 sulcicollis 80
 westwoodi 78
 Nycteribiidae 48
 Nymphalidae 38, 110
Nysius marginalis (= *Darwinysius*) 94, 106
- Ochropleura plecta* 9
Ochthebius macrognathus 98
Ocys tempestivus 7
 Odonata (dragonflies) 38, 55, 57, 67, 70, 85, 106, 107
Odontoscelis curtisii 78
 darwinii 63, 64, 109
 striatus 63
 substriatus 89
 tenyrioides 89
 Oedemeridae 53
Oemona humilis 96
Ogcodes darwini 101, 109
Olanea 100
Olfersia 20
 aenescens 46
 spinifera 49
Oliarus oppositus 96
Omaloderus affine 88
 intrepidus 88
Oniscus 47
Onthoph[agi] 77, 82
Onthophagus 35
 auritus 97
 darwinii 109
 fixiceps 109
 fuliginosus 97
 haematopus 49
 mutatus 97
 posticus 97

- Onthophilus* 82
Ontiscus darwini 99, 101, 107
Oopterus solidademus 72
Oosomus hariolus 102
Ophelimus sabella 98
 ursidus 98
Ophyra aenescens 91
Opiinae 103
Opius 91
Opossum 81
Orichora trivergata 100
Ormiscus variegatus 91
Ornidea obesa 103
Ornithomyia 46, 49
 intertropica 46, 90
 nigra 46
Orthoptera (s.l.) 45, 56, 59, 75, 90, 99, 100, 106
Orthoraphia 99
Orthosia darwini 110
Oryctes galapagoensis 91
 grypus 35
 nasicornis 35
Oryctomorpha picus 89
Oryzopus darwini 84, 109
Orotinychus atroapterus 9
 cuneiformis 91
Otitidae 54, 91
Oxelytrum erythrurum 61, 65
Oxycara cribratum 45
Oxycnemis 56
Oxysarcodia 103
Oxytelus alutaceifrons 102
 darwini 109
 darwinianus 109
- Pachrodema flaveola* 65
Pachylarthrus cleodoxa 90
 sariaster 87
Pallodes 58
Palmon olenus 100
Palpibracus 106
Panagaeus bipustulatus 10
 cruxmajor 10
 4-pustulatus 10
Panstrongylus megistus 97
Pantinia darwini 107
Papilio feronia 58
Parachlus darwini 109
Paracletis darwini 109
Paractora 85
 trichosterna 79
Paracymus armatus 25, 51
 debilis 25, 51
 lindi 99
Paruhelops darwini 70, 71, 86, 89, 109
 pubescens 69–71
 quadricollis 72
Parulastor darwinianus 110
Paranacaena 24–5
 horni (sp near) 99
Parapalaeseopsis plebeia 99
Passalus 53
Passandridae 84
Peaches 83
- Pediculi*(lice) 43, 75, 88
Pediculus 59
Pediobomyia darwini 110
Pedonoeceus costatus 94
 pubescens 90
Peewit 60
Pelecorhynchus darwini 87, 109
Pelagonidae 24, 25, 61, 86
Peloriidiidae 107
Pelycaps darwini 79, 109
Pentarthrum 88
Pentatoma 60
Pentatomidae 61, 98–9, 101, 107
Pepsis 54, 56
Peridromia feronia 58
Perilampus salcius 101
Perimylopidae 69, 71
Perizoma 77
Peryphus 60
Phaenica 91
Phalacricrus atomarius 50
Phalacridae 74–5, 91, 97, 109
Phalacrus
 corruscans 97
 darwini 91, 109
 picipennis 74, 75
 striatodiscus 74
Phalangium 75
Phaleria 71
Phallus (fungus) 56, 80
Phanaeus 80
Philatis 94, 96
Philomachus cayanus 60
Philonthus 31
 cliens 47
Philopteridae 71
Philothermus crabricollis 84
Phlebotominae 54
Phlyctaenodes darwinalis 110
Phoridae 84, 98, 99
Photaris fulvipes 51
Phryganea 57
Phthiraptera (lice) 29, 43, 46, 48, 53, 59, 60, 70–72, 75, 82,
 85
Phthiropsylla agenoris 43
Phyllostoma grayi 48
 perspicillatum 48
Physorhinus galapagoensis 94
Phytosus darwini 72, 109
Pichi 43
Pied Plover 60
Pieridae 66, 110
Pieris 79
 napi bryonia ssp *darwiniana* 110
Pinotus torulosa 81
Pintado 59
Piophila atrata (= *casei*) 94
Piophilidae 84, 94
Pipunculidae 88, 103
Pipunculus posticus 88
Plagithmysus darwinianus 109
Platethes silphoides 78
Platygastrer paches 87
 sylea 88
Platynectes magellanicus 67

- Platynocera murina* 61
Platypalpus 88
Platyterma nephele 88
Platytomus 108
Platopuserica darwiniana 109
 Plums 83
Plusia detrusa 77
 Plytocalla (tree) 65
Poecilus 60, 66, 73, 82
Polygenis 81
Polylobus darwini 84, 109
Polymerus 94
Polynema darwini 110
 Pompilidae 54, 56
Pompilus 56
Prionus 90
Pristhesancus darwinensis 107
Procellaria glacialisoides (= *Fulmarus*) 75
Proctammodus (= *Proctophanes*) *sculptus* 97
Prosopanthrum acquisetia 72
Prosthetops capensis 102
Psammoecus bipunctatus 9
Psectrascelis 80
 pilipes 88
 Pselaphi 12
 Pselaphidae 85
Pselaphus 12, 85
 Psephenidae 55, 109
Psephenus darwini 55, 109
Pseudaletia 59
Pseudoleucopis ?fasciventris 98
Psilochaeta chalybea 59
 Psychodidae 54
 Psyllidae 84, 87, 98, 101
 Pteromalidae 82, 86, 94, 96, 99, 101–3, 110
Pteromalus archia 90
 baton 99
 calenus 88
 cosis 103
 driopides 103
 eneobulus 94
 fabia 101
 gryneus 82
 ipsea 102
 lelex 96
 megareus 87
 mydon 84
 niphe 99
 occia 99
 oene 88
 oxynethes 86
 protheus 84
 rhao 84
 rhoebus 88
 thestar 99
 toxus 88
 traulus 84
 unca 99
 vitula 88
 vulso 84
 Pterophorus 101
 Pterostichinae 77
Pterostichus 60, 73, 74, 76, 81, 82, 94
 blandus 88, 89
 bonellii 86
 chalybicolor 86, 89
 chaudoiri 90
 galapagoensis 94
 inaequalis 10
 longicollis 10
 lucidus 76
 macer 10
 picimanus 10
 Ptiliidae 57, 109
 Ptinidae 98
Ptomophagus
 anisotomoides 8
 medius 8
 wilkinii 8
Pulex 43, 63, 81, 90
 irritans 29, 88, 90
Pullus (see *Scymnus*)
 caseyi 58
 hians 58
 piceipennis 62, 76
 Pulse (Leguminosae) 63
 Puna snipe 72
 Pyralidae 110
 Pyrgotidae 59
Pyrophorus luminosus 48

Quedius 31
 mesomelinus 47

 Reduviidae 29, 89, 96, 97, 99, 107
Reduvius 97
Repenia testacea 99
 Reptiles 14
Rhadinosomus 99
 Rhagionidae 84
Rhamphus acaciae 98
 perpusillus 100
 setistriatus 98
Rhantus
 aberratus 8
 adspersus 8
 bistratus 8
 exoletus 8
 frontalis 8
 signatus 67, 82, 108
 suturalis 8
Rhea americana 62
Rhinocorymura 110
Rhizobius alphabeticus 98
 debilis 99
 forestieri 99
 occidentalis 100
 pulcher 98
 subhirtellus 100
 ventralis 99
Rhopalomerus tenuirostris 87
 Rhynchites 47
 Rhyncophora 58
Rhynchops niger 60
Rhyparida commutabilis 98
Ricinus 53, 60, 70, 72, 81
Risius darwini 102, 107
Romilus zotale 87

- Sand-dunes 88
 Sand-fly 54, 57
 Saperda 65
Saprosites aspericeps 49
Sarcodexia 103
Sarconesia chlorogaster 59
Sarcophaga 82
 inoa 94
 proerna 59
 tessellata 59
 violenta 94
 Sarcophagidae 59, 81, 82, 94, 103
 Satyridae 79, 110
 Scaphidiidae 49, 98
Scaphisoma elongatum 49
 instabile 98
Scaptia seminigra 54
 Scarabaeidae 48, 49, 53, 55, 57, 58, 61–2, 65, 69, 72, 74,
 76–7, 80–3, 88–9, 91, 97, 99, 102–3, 108–9
 Scarabaeus 72
Scarodytes halensis 7
Scatella vulgata 88
Scathophaga stercoraria 102
Schistocerca gregaria 59
 Sciaridae 84, 99, 103
 Sciomyzidae 60, 84
Sclerognathus bacchus 109
 femoralis 70, 88, 108
Sclerostomus darwini 109
Scolopax magellanicus 72
 Scolytidae 109
Scolytogenes darwini 109
 Scolytus 91
Scotobius akidoides 78
 crispatus 63, 74
 gayi 88
 miliaris 65
 muricatus 63, 74
 ovalis 62
 pilularius 65
 rugosulus 88
 tristis 74
 Scraptidae 77
 Screw worm fly (secondary) 91
 Scydmaenidae 102
Scymnus 31, 58, 109 *see also Nephropullus, Pullus*
 elutus 99
 flavifrons 100
 flavolaterus 99
 galapagoensis 91, 94
 maestus 98
 notescens 99
 vagans 98
 Scyomyza reversa 38
 Seaweed 39, *see Kelp*
Seladerma athanis 100, 101
 cermus 99
 letus 99
Selenophorus galapagoensis 91
 obscuricornis 91
Selitrichodes darwini 110
Semiotus dice 101
 merula 99
 theope 101
 Sepsidae 99
 Septaira 81
 Serangium mysticum 99
 obscuripes 99
 Serica 82
 Sericodes Reichii 69
 Sericoides
 glacialis 69
 Sigara australis 99
 Silpha 60
 Silphidae 8, 61, 65, 84
 Silvaniidae 9
 Simulium 57
 perlinax 54
 Siphonaptera 29, 43, 63, 81, 88, 90
Sitophilus linearis 47
Smiera piehls 53
 punctata 103
 subpunctata 103
 teleute 98
 Snipe, puna 72
Solanophila rufiventris 48
Somillus 84
Soronia punctatissima 8
Spalangia endius 94
 nigra 94
Sphaeroceridae 60, 84, 88, 102, 103
Sphex 48, 53, 56, 94, 103, 110, 111
Sphex darwiniensis 111
 Sphingidae 77
Sphingolabis perplexa 56
Sphodrus 72, 79
Spiders 48, 53, 54, 56, 72, 83
Spilochalcis 53
Spodyliaspidae 98
 Springtails 43
 Stable fly 55
Stagira darwini 101, 107
 Staphylini 12
Staphylinidae 62, 69, 72, 80, 84, 85, 91, 97, 102, 108–9
Staphylinus 20, 31, 47, 62, 91, 97
Stelidota 58
Stenocephalus insularis 94
Stenocochnyoptera darwini 102, 107
Stenolophus mixtus 10
 teutomus 10
 vespertinus 10
Stenopteryx hybridalis 45
Stenotarsus areolus 58
Sternolophus solteri 24–5, 46
Stictospilus darwini 84, 109
Stigmaeus neotropicus 103
Stomion galapagoensis 90
 helopoides 91, 94
 laevigatus 91, 94
Stomoxys calcitrans 55
 Stones 82, 83
Storeus brachyderes 98
 metasternalis 98
 variabilis 100
 Stratiomyidae 50, 84, 99, 103
 Stream 83
 Streblidae 48
 Strepsiptera 55
Strichosa eborata 84
Strina aurichalcea 22

- Strongyloleura darwini* 109
Strongylus 56
Stuardosatyrius 79
 Stylopoidea 55
 Stylops 55
Styponmia 87
 Sugar 87
Sula 49
Symphothinus squalidus 98
Sympetrum 107
Sympycnum 84
Syphrea bahiensis 58, 103
 Syrphidae 91, 96, 103, 109
Systolosoma brevis 21
- Tabanidae 50, 54, 75, 77, 87, 109
Tabanus 77
 anachoreta (= *Dasybasis* sg. *Agelanius meridiana*) 87
 darwinensis 109
 dorsiger 75
 Tachinidae
Tachyina 49–51, 58
Tachys 50
Taenioptera lasciva 99
 Tamarind 47
Tanytarsus 59
Tatochila gymnodice 79
 theodice 79
 Tatusia 43
Tautocerastes patagonicus 21
 Tea-plant 79
 Telephoridae (= Cantharidae) 85
Telephorus darwinianus 109
Telmatophilus typhae 9
Telmetias 72
Telurus 86
 Tenebrionidae 22, 28, 45, 49, 50, 54, 61–2, 66, 69–72, 74–5,
 78, 80–2, 86, 88–91, 94, 100, 106, 109
 Tephritidae 79, 84, 94, 103
 Termites (Isoptera) 47
 Tero-tero 60
Tetamocera angulifera 60
Tetraphlebia ?plumbeola 79
Tetrastichus archideus 103
 arses 98
 athenais 103
 autonae 98
 cacus 103
 cleonica 103
 daimachus 103
 darwini 111
 deilochus 103
 dymas 98
 fannius 98
 februs 103
 glycon 98
 hippasus 98
 lelaps 101
 narcacus 88
 naucles 88
 neis 98
 norax 88
 polybaea 82
 proto 98
 scadius 82
 valens 98
 valerus 103
 xenares 98
 xenocles 84
 zaleucus 98
 Tettigonidae 75, 100, 106
Thechia brevirostris 100
 longirostris 100
 pygmaea 98
 Therevidae 103
Thoracantha furcata 92, 103
 latreilli 93, 103
 Thrips (Thysanoptera) 30
 Thynnidae 94, 111
Thynnus darwinensis 111
 Thysanoptera (thrips) 30
 Ticks 47
 Tiger beetles 50 see Cicendelidae
 Tineidae 47, 110
 Tingidae 96, 107
 Tipulidae 59, 84, 89
Torcus nitidulus 74
 Tortoise 91
 Torymidae 99–101, 103
Torymus phormio 82
 Totipalmes 49
Trabala 79
Trachys pygmaea 9
 trogodytes 9
Tramea darwini 107
Trechisibus 69, 71, 72
 australis ssp. *patagonicus* 80
 darwini 109
 femorals 89
 politus 89
Trechus 46, 60
 antarcticus (= *Trechisibus*) 69, 72
 hornensis 69, 71
 quadristriatus 7
Triatoma infestans 48, 89, 96, 97
Trichillum heydeni 48
Trichiolopha brazilensis 50
 Trichogrammatidae 110
 Trichoptera 57
 Trichopterygidae 109
Trichopteryx darwini 57, 109
 Tricoptera 57
Trigona 57
Trigonotylus 94
Trimicra pilipes 59
Tringa 60
 Tropiduchidae 102, 107
Tropisternus collaris 25, 51
 laevis (= *nitens*) 25, 51
 lateralis 25, 51, 91
 nitens 25
 nitidulus 25, 51
 setiger 25, 51
Trox
 brevicollis 61
 bullatus 89
 pilularius 61
 Truncatipennis 77
Trypanosoma cruzi 97

Trypanosomiasis (American) 96
Trypanea nigrisepta 79
Trypeta aesia 94
Trypoxylon 56
 Tucutucu 43
Tychius minutissimus 98
Utetheisa ornatrix 94, 95
pulchelloides ssp *darwinii* 101, 110

Valdivia darwini 89, 109
Valdiviomyia 89, 109
Vanellus cayanus 60
 Vespertilio 48
Vilga westwoodii 48
Villa 91
Viridinsula 91
Vultur gryphus (condor) 82

Water beetles 101
 Whale 86

Xanthactura ?insecta 103
 Xenos 55
Xenopsepsis sydneyensis 99
Xylocopa 20
darwinii 111
 Xylocopidae 110, 111
Xylotoles lentus 96
Xynotropis micans 98

Ypsipetes impromissata 77

Zabrotes subfasciatus 58
 Zeta 56
Zophosis nodosa 89
 Zygaena 5
 Zygoptera (Odonata) 57