

Alfred Russel Wallace's record of his consignments to Samuel Stevens, 1854-1861

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An annotated facsimile of those pages of Alfred Russel Wallace's notebook recording his consignments from the Malay Archipelago to his London agent, Samuel Stevens, is provided. Records of individual consignments are linked with the stages of Wallace's and Charles Allen's itineraries to which they relate and are amplified from data provided by Wallace elsewhere; wherever possible, dates and places of the despatch of consignments and of the dates of their receipt in London are noted; and the dates of material becoming available for study are established, chiefly from British Museum accessions registers. It is intended that this should provide readier access to scattered collection data and should in particular assist in determining what specimens may properly be regarded as types or syntypes of the many taxa described by numerous contemporary authors from Wallace's material.

Contents

Introduction	254
The notebook	254
The emphasis of Wallace's collecting	254
Profit and loss; the dispersal of Wallace's material	255
The publication of Wallace's collections	257
Collections and consignments	259
Wallace and Allen, 1854-1856	260
Singapore (April-October 1854, January-May 1856; notebook p. [1]-[10])	260
Borneo (November 1854 - January 1856; notebook p. [13]-[21])	262
Wallace, 1856-1862	266
Bali (June 1856)	266
Lombok [Lombok] (June-August 1856, notebook p. [22])	266
Celebes [Sulawesi] (first visit, Macassar district, September-December 1856, notebook p. [23]-[24])	268
Ké [Kai] (January 1857)	269
Aru (January - July 1857, notebook p. [25]-[26])	269
Celebes (second visit, Macassar district, July-November 1857, notebook p. [27]) ...	271
Amboyna [Ambon] (first visit, December 1857-January 1858, notebook p. [28]) ...	272
Ternate (first visit, January-March 1858)	273
Gilolo [Halmahera] (first visit, February 1858)	274
Dorey [Dore Baai] (April-July 1858, notebook p. [29])	275
Ternate (second visit, August-October 1858)	276
Gilolo (second visit, September 1858)	276
Tidore (October 1858)	276
Makian (first visit, October 1858)	277

Kaióa [Kayoa] (first visit, October 1858)	277
Batchian [Bacan] (October 1858-April 1859; notebook pp. [30]-[31])	278
Makian (second visit, April 1859)	279
Ternate (third visit, April-May 1859)	279
Timor (second visit, west Timor, May 1859)	280
Banda (June 1859)	280
Celebes (third visit, north-east Celebes, June-September 1859; notebook p. [32]) ...	280
Amboyna (second visit, September-October 1859)	282
Ceram [Seram] (first visit, SW coast, October-December 1859, notebook p. [33]) ...	282
Amboyna (third visit, December 1859-February 1860)	283
Ceram (second visit, SE and NE coasts, February-April and June 1860, notebook p. [34]); Matabello [Watubela] and Goram [Gorong] Archipelagoes (April-May 1860)	283
Waigiou [Waigeo] (July-September 1860, notebook p. [34])	285
Waigiou to Ternate (September-November 1860)	286
Ternate (fourth visit, November 1860 - January 1861)	286
Timor (third visit, east Timor, January-April 1861, notebook p. [35])	286
Banda (third visit, April-May 1861)	288
Bouru [Buru] (May-June 1861, notebook p. [35]-[36])	288
Ternate (fifth visit, June/July 1861)	289
Java (July-November 1861, notebook p. [36])	289
Sumatra (November 1861- January 1862)	290
Allen, 1860-1862	291
Mysol [Misoöl] (February - September 1860, notebook p. [34])	291
Ternate (mid-October 1860 - January [?] 1861)	293
Gilolo and Morty Island [Morotai] (between mid-October 1860 and mid-March 1861)	293
New Guinea (between February and June 1861)	294
Sula Islands [Kepulauan Sula]; Flores; Solor (between June and December 1861).....	295
Borneo (late 1861)	397
Acknowledgements	397
References	398
Appendix: first notices of localities	303
Notes	305
1. Samuel Stevens (1817-1899)	305
2. Early Dutch collecting in the East Indies	306
3. Allen's further stay in Asia	307
References	307
Figures 2-18	308-341



Fig. 1. Samuel Stevens (1817-1899).
Photograph reproduced by courtesy of the Royal Entomological Society.

Introduction

The notebook

In a small notebook (page size 95 x 155 mm) that he opened from either end, now in the possession of the Linnean Society of London, Alfred Russel Wallace (1823-1913) included, commencing on the verso of the back endpaper, here treated as page [1], a record of the consignments he made to his London agent, Samuel Stevens (1817-1899) in the course of his collecting expedition to the 'Malay Archipelago' accomplished between 1854 and 1861. This record, not paginated, extended to just 36 pages, interrupted by three pages [10-12] of notes on some Malayan mammals. Initially the record was careful and detailed but, from Wallace's leaving Sarawak, it degenerated into a series of summary and uninformative notes that gave no hint of the riches they concealed. An 1861 entry aggregated collections made at different periods in three distinct localities. Surprisingly, details of the places and dates of despatch of consignments were not regularly exactly recorded. The record does not lend itself to direct transcription: everywhere among the original entries are scattered later interpolations of various dates including details of the transit of consignments (obviously mostly based on information supplied by Stevens, some perhaps in part on information supplied by the shipping agencies), notes of sums expected or realised from the the sale of duplicates, summaries of earlier consignments, and subsequent identifications of initially unnamed species. The sequence of the interpolations is not always clear, and, as with some of the original entries, owing in part to the poor quality of the paper or the vicissitudes of time, they are not always either readily legible or readily intelligible. There are also numerous over-inkings, deletions and alterations, and the totals given in the occasional summaries of material consigned do not always agree with exact counts of material listed. For all these reasons, the present paper is presented in the form of a facsimile of the relevant pages of the notebook accompanied by a commentary.

The emphasis of Wallace's collecting

Wallace's collecting was devoted primarily to the insects (of which he obtained nearly 110,000 specimens) and the birds (8,050 specimens), for both of which there existed ready markets, but he also collected mammals and other vertebrates (410 specimens), marine and land shells (7,500 specimens), and plants, these last including living orchids despatched in casks (his fifth lot 'arrived all dead'). Of the insects (especially Coleoptera and Lepidoptera - he was not greatly interested in the 'other orders') and birds he formed extensive personal collections, and from the first his record of consignments distinguished between specimens destined for his private collection and specimens intended for sale. He intended originally to work out his collections himself, and did publish several taxonomic papers, chiefly on insects, Coleoptera and Lepidoptera, and on birds, but, for various reasons (see Baker, 1996: 178), from about 1867, he commenced to dispose of his collections (his remarkable collection of Longicornia, for example, went to F.P. Pascoe). He retained possession of his birds until 1873, when they were purchased by the British Museum: his bird collection then comprised 2474 specimens, including the types of the species listed by Sharpe (1906: 505).

Profit and loss; the dispersal of Wallace's material

So far as the advancement of scientific knowledge of the fauna of the Malay Archipelago is concerned, Wallace's efforts were largely wasted. This was perhaps inevitable, given the purposes of his collecting: 'the main object of all my journeys was to obtain specimens of natural history, both for my private collection and to supply duplicates to museums and amateurs' (MA xi).

Samuel Stevens, as his agent was commendably prompt and efficient in handling the sale of what Wallace regarded as duplicates, which certainly from a financial point of view was advantageous to Wallace but inevitably meant that the dispersal of his consignments commenced well before such time as they might have been properly sorted and evaluated or collections from localities visited on more than one occasion studied in their entirety: one is inevitably reminded of the Berlin Museum's even less excusable wastage of Hemprich and Ehrenberg's collections. Unfortunately for natural science, there was no-one in authority behind Wallace either to caution delay or to advise on the placing of material with competent specialists. The stress in George's appreciation, an appreciation unfortunately marred by numerous factual errors, of Wallace's achievements as a collector (George, 1980) - on the numbers of specimens he collected, on the new species he discovered, on the species named after him, and on the sums raised by the sale of his duplicates, is misplaced - the importance of any collection rests in the use made of it, and, the general conclusions drawn from them apart, Wallace's collections were never fully exploited.

Curiously, although the Museum holds material collected by Wallace, the archives of the Nationaal Natuurhistorisch Museum, Leiden, reveal no direct purchases from Stevens and the material was presumably received in private collections acquired at later dates (Dr C. van Achterberg, *in litt.*, 4 October 2000). It seems probable, if it was not just a matter of lack of funds, that any offers Stevens may have made were declined because the Museum authorities of the day felt they were already receiving adequate collections through what at that date had long been a highly organized administration, quite apart from any material that might have accrued from non-Netherlands expeditions that could reasonably have been expected to deposit representative collections in Leiden.

Insects.— As to Wallace's insects, his collections were divided before consignment into series reserved for his private collection, series intended for sale, and, from the date of his Aru collection, series reserved for W.W. Saunders.

The dispersal of Wallace's insects, with particular reference to his Hymenoptera, was treated by Baker (1993, 184-187; 1995: 173-176). The British Museum purchased a total of 7,758 insects of all orders, a substantial number but still an insignificant portion, 7%, of the whole. The wasted opportunity of acquiring a fully representative selection from the first (and still the only) comprehensive collection to be made throughout Malesia, whether resulting from short-sightedness on the part of the authorities or from lack of funds, resulted in an incalculable loss to science: when, subsequently, from the material acquired by the Museum, new species that could and should have been described from series were described, or little-known species redescribed, they were almost uniformly described from single or but very few speci-

mens, and there can be no doubt but that many undescribed species passed undetected in Stevens' stock. William Wilson Saunders (1809-1879), that Maecenas of the entomological world, took the larger part of Wallace's 'other orders', but whatever records he may have kept of his purchases vanished in the wreck of his fortunes after 1873 (Baker 1998: 164): in those days unlimited liability meant unlimited liability! The dispersal of Saunders' collections is in part chronicled in Janson & Sons' ledger, preserved in the Natural History Museum. Francis Walker (1809-1874), from after-notes on p. [5] of Wallace's notebook, took some of his Diptera and Homoptera from Singapore and Sarawak. Frederick Smith (1805-1879), from 1850 an Assistant in the Zoological Department of the Museum, acquired Hymenoptera for his private collection. It may be noted here that when, later, E.T. Higgins took over Stevens' stock, 'he had all my unsold duplicates' (Wallace to E.B. Poulton, 26 March 1896): evidently, material collected by Wallace was still available for purchase for some years after his return from the East, and insects of this particular provenance may have been included in purchases made by the University Museum, Oxford, between 1866 and 1876. Wallace insects acquired by the University Museum from various sources are listed under Wallace by A.Z. Smith (1986: 157), a list partly duplicated by the same author's list (p. 152) of insects acquired directly or indirectly from 'Stevens, J.C. and S.', unfortunately conflating purchases from Stevens' Auction Rooms and purchases from Samuel Stevens.

Stevens, of course, did not sell only to those who could inspect his stock at 24 Bloomsbury Street, but offered material as it became available to his wide circle of customers in Europe: '... it is now particularly insects that I receive from my correspondents which I distribute all over Europe, for in this department I receive very extensive collections.' (Stevens to W.C.H. Peters, 18 June 1859). These customers included, for example, among private collectors, Cajetan von Felder (1814-1894) and J.M.F. Bigot (1819-1893): 'I have sent you all the Diptera I can at present find in the [Wallace's] boxes. I sent some time ago all I had to Mons. Bigot.' (Stevens to Gerstäcker, 30 March 1861), and, among museums, the Berlin Museum. A list of insects, including Wallace material from Aru and Celebes, sent for selection by Stevens to C.E.A. Gerstäcker in March 1859, is held, with other similar correspondence, in the Historische Bild-und Schriftgutsammlung, Museum für Naturkunde der Humboldt-Universität zu Berlin: it is of interest as showing what prices were being asked for some of Wallace's more prized captures (40/- for a pair of *Ornithoptera aruana*, 50/- for a 'nearly perfect' pair of *Batocera wallacei*) but does not directly disclose what was bought. No doubt similar lists are held by other institutions, but this has not been pursued since, no more than the offer to Gerstäcker, are they likely to throw much light on the crucial matter of when material first became available for inspection and sale.

Birds.— For Wallace's bird collections there are several principal sources of information available but no comprehensive account. These sources include entries in the notebook, references in the 'Malay Archipelago', and entries in the British Museum Accessions Register (Aves, Tring). Sharpe, in Lankester's 'The history of the collections contained in the natural history departments of the British Museum', listed the species new to the Museum included in each accession, but where accessions covered more than one locality did not distinguish between them (Sharpe, 1906). It is by no means certain that these several sources covered between them all the species of birds

obtained by Wallace: the Museum's purchases from Stevens appear to account for only 985 specimens out of the 8,050 he collected (12%) and may well not have included all the species that Stevens had available for selection. Even when Wallace's personal collection was acquired by the Museum in 1873, the Museum's holding amounted to well under half the number of birds he had collected. Sharpe (1906: 505) listed the types acquired with Wallace's collection (Accession Number 73.5.12, 1-2474). As with the insects, Stevens offered birds from Wallace's consignments to his many foreign customers, specimens of *Semioptera wallacei*, for example, to W.C.H. Peters at £20 (letter dated 18 June 1859).

Vertebrates other than birds.— For Wallace's vertebrates other than birds, sources again include the notebook, references in the 'Malay Archipelago', and entries in British Museum Accessions Registers (Mammalia - Reptilia - Pisces, volumes lettered 1854-1861.10.9 and 1861.9.9-1890.30.12). The mammals obtained by Wallace were relatively few in number, 310, and the reptiles still fewer, 100 [MA viii]. The total number of specimens purchased by the British Museum was, apparently, less than 150: some entries in the two Register volumes concerned suggest, from the localities recorded, that the accessions they registered either consisted of or included Wallace material but do not explicitly give Wallace as the collector.

The publication of Wallace's collections

It is no part of the present paper to attempt to list, even if that were possible, all the papers in which species collected by Wallace were described or recorded. Although a large part of Wallace's material was described or recorded within a short period of its becoming available for study, specimens collected by him will have continued to surface in various collections afterwards (cf., e.g., J.E. Gray, 1866) and to have been dealt with in publications not devoted exclusively to his material. There is no doubt that some Wallace material, whether recognized as such or not, remains undescribed and unpublished in collections today. These are problems similar to those which were faced by K.G.V. Smith (1987) in dealing with Charles Darwin's far less numerous but better recorded insects. Some of the more important papers in which Wallace's collections were treated by contemporary authors are indicated below; others may readily be traced under authors' names in, e.g., the Royal Society's 'Catalogue of Scientific Papers' (volumes for 1800-1863 and for 1864-1873).

Insects.— As with the sales, the publication of Wallace's discoveries proceeded piecemeal. The Coleoptera in his private collection were published partly by himself (e.g., Wallace, 1868, Cetoniidae) but chiefly by others (e.g., Pascoe, 1864-69, Longicornia; Baly, 1865, Phytophaga), his butterflies [Lepidoptera] also partly by himself (e.g., Wallace, 1855 and 1865a, Papilionidae; 1867, Pieridae) and partly by others (e.g., Hewitson, 1859-61, 1862a). Hewitson described, in particular, many of Wallace's Lycaenidae (1862b, 1863-78) but often with erroneous localities (Corbet & Pendlebury, 1978: 52). W.W. Saunders, who, as noted above, had engaged to purchase a large proportion of Wallace's insects other than the Coleoptera and Lepidoptera, was instrumental in the publication of the material he had acquired for his personal collection

by the recognized, if not always entirely competent, specialists of the day (e.g., for the Hymenoptera, Frederick Smith, for the Diptera, Homoptera and 'Heterocerous Lepidoptera', Francis Walker). Saunders himself published on Wallace's *Elaphomyia* (Diptera: Muscidae) from Dorey (1861) and on his *Catascopus* (Coleoptera: Carabidae) from the wider region (1863). Westwood early published Cleridae (Coleoptera) from Wallace's initial Singapore consignment (Westwood, 1855). Among Continental authors, Schaum (1863) published on Wallace's Cicindelidae (Coleoptera). Obviously, none of these authors, not even Wallace himself, could draw on the full corpus of Wallace's material, by far the greater part of which has long since vanished into oblivion. Two examples will indicate the scale of the loss. First, Wallace gave (notebook p. [9]) the total number of insects collected by himself and Allen in Singapore and Malacca between April and October 1854 as 7147, of which 5397 were intended for sale. From these the British Museum purchased a total of 336 specimens of all orders, a little over 6%. Second, Wallace gave (notebook p. [25]) the total number of insects collected by himself in the Aru Is. between January and July 1857 as 7848, of which 1104 were intended for his private collection and 596 for Saunders, leaving 6148 for sale. From these the British Museum purchased a maximum (since accession 1858.23 aggregated 328 specimens from both Aru and Ke) of somewhat fewer than 985 specimens of all orders, or under 16%. In both instances, Stevens' sales, after the Museum had made its selections, would have resulted in wide dispersal of the remainder. Since Wallace and Allen labelled only those specimens that were pinned (Wallace no doubt giving preference to specimens he intended to retain), and since much of the material consigned to Stevens was unprepared, it is not difficult to see why extant material may not be recognizable as to provenance: it was up to customers to attach their own labels, and these would not necessarily give the collector's name (see Baker, 1996: 169-173, 183-186). Wallace, in designing for printing 'Locality Tickets to be attached to every insect in my private collection of Coleoptera and Lepidoptera', made provision only for a general locality name, 'TERNATE', 'DOREY', etc., in capitals, and, on a second line, a space for numbering serially every specimen from that locality (notebook, p. [iii]). It may be regarded as axiomatic that if a data label includes the word 'Wallace', it is not an original Wallace label.

Unfortunately, it did not occur to Wallace to include in his notebook the meanings of the contractions of place-names that he and Allen adopted in labelling their insects. In most instances the meanings are clear, but, to instance one particularly bad source of later confusion, 'M' was used both for Morty Island [Morotai] and for Mysol [Mis-oöl]. Some forty years after his travels in the Archipelago, Wallace (1896) did send to Poulton a list recording what he thought he remembered of the contractions used, and this was reproduced by A.Z. Smith (1986: 99-100). In the account below, some variants encountered by the present author are noted while labels recorded but not confirmed by autopsy are marked with an obelus.

Birds.— Wallace's birds were for the most part published by George Robert Gray (1808-1872) in a series of papers published in the 'Proceedings of the Zoological Society of London' between 1858 and 1862 (e.g., Gray, G.R., 1858, 1859a, 1859b, 1860/61, 1862), but Wallace himself published several ornithological papers, e.g., on Allen's birds from the Sula Islands (Wallace, 1863), on the parrots and pigeons of the

Malayan Region (Wallace, 1864, 1865c), and on miscellaneous new birds from many parts of the Archipelago (Wallace, 1865b), this last with the obvious intent of describing all those species in his collection not previously recognized by himself or others. John Gould (1857) early described a *Pitta* and a *Halcyon* from Wallace's Lombok collection, the first from which the British Museum acquired bird specimens, and later (1859) a *Dendrochelidon* from Macassar. The later literature on the regional avifauna is of course extensive but for immediate purposes irrelevant.

Mammals.— Wallace's mammals were for the most part published by John Edward Gray (1800-1875) in a series of papers published in the 'Proceedings of the Zoological Society of London' between 1858 and 1866 (Gray, J.E., 1858a, 1858b, 1860a, 1863, 1866) or in the 'Annals and Magazine of Natural History' (Gray, J.E., 1860).

Collections and consignments

Details of Wallace's consignments to Stevens follow the sequence of his and Allen's itineraries. These, with reference to sources, were given by Baker (1993: 170-175; 1995: 160-169). The principal sources used were Wallace's 'The Malay Archipelago', 1869, indicated as [MA], the page references given being to the Macmillan 1886 edition paginated xvi + 653; his autobiography, 'My Life' [ML]; and his journals, now in the possession of the Linnean Society of London [Jnl]. Details of Wallace's and Allen's itineraries are not reproduced here except so far as is necessary to establish the dates between which their collections were made. Bastin (1986) added a few dates, all from secondary sources and ignoring Allen's independent movements [Bastin].

It will be clear that, from the great preponderance in numbers of those groups in all Wallace's collections, the linking of dates of despatch and receipt of consignments of insects and birds may provide material assistance in determining when and where particular specimens may have been collected, and which specimens out of series of putative syntypes may safely be accepted as such. [For one example of a false lectotype designation, of a subsequently collected specimen, in this instance by Lieftinck (1956: 73), see Baker, 1993: 224, under *Xylocopa perforator* Smith.]

With all their defects, the British Museum Accessions Registers constitute the best available source of information on how early Wallace material became available for study and description: material sold by Stevens to other institutions and to collectors would rarely, if ever, have been as fully recorded. As to the vertebrates, G.R. Gray and J.E. Gray had first choice from Wallace's consignments (Stevens' house in Bloomsbury Street was only a stone's-throw from the Museum, and the Grays would no doubt have been among the first to know of the arrival of fresh consignments), and it is unlikely that any other institution/collector could have received and recorded material from any consignment until well after the Museum had done so. In any event, it would not have been until after consignments had been sorted and the Museum's selections had been made that Stevens would have been able to list in any detail and to price what was available (it would have had to have been named first!); to write individually to potential customers in accordance with their known interests; to await their orders; and to arrange for the packing and despatching of their requirements. As to the invertebrates, Museum staff would again no doubt have had prior

opportunity to make the selections appropriate to their particular fields of responsibility, but here an exception has to be made for the insect 'other orders' which W.W. Saunders had contracted to purchase. Since, at least from the time of Wallace's Aru consignment, Saunders' series were being set aside at source, it is highly probable that these would have reached him before material intended for sale would have become available for selection at Stevens' house by museum representatives and by private collectors. Since Francis Walker and Frederick Smith seem to have been prompt in publishing the material of their respective interests reaching Saunders, the dates on which their papers were read may provide valuable corroborative evidence.

In the account that follows, Wallace and Allen's joint travels in the Malay Peninsula and Borneo (1854-1856) are first dealt with, then Wallace's solo travels (1856-1862) and finally Allen's solo travels (1860-1862). In this account, place-names follow Wallace's spellings [modern equivalents, those of the 'Times Atlas' (1975), being given, in parenthesis at first citation]; scientific names of birds are those used by Wallace in the 'Malay Archipelago' or by Sharpe (1906): it has been thought inadvisable to attempt to convert such names to names currently in use, as this could lend a spurious authenticity to what were possibly in some instances misdeterminations. In any event, the names given by Wallace and Sharpe are given here only to help link collection data, consignments and receipts, and at least in one instance they reveal discrepancies. The inadequacies, for present-day purposes, of Wallace's recording seem only to be matched by the incompleteness and carelessness of British Museum registration.

Acronyms employed in the account are BM for the British Museum, the Natural History departments of which were, at the time of Wallace's travels, at Bloomsbury, the Keeper (1840-1875) of the Department of Zoology being John Edward Gray, and OUM for the University Museum, Oxford, where from 1861 John Obadiah Westwood (1805-1893) was the (first) Hope Professor of Zoology. 'Smith', unaccompanied by initials, refers always to Frederick Smith (1805-1879).

Wallace and Allen, 1854-1856

Singapore (April-October 1854, January-May 1856; notebook p. [1]-[10])

Wallace and Allen arrived at Singapore on 18 April 1854. They collected chiefly at Bukit Timah near the centre of the island [MA 22-25] and spent a week on Pulo-ubim, a small island at the eastern end of the Johor Strait [Wallace, 1871: 285]. In July they went to Malacca, where they spent more than two weeks in the interior [MA 25], staying at Ayer-panas. They visited Mt Ophir, living for a week at the foot of the mountain but spending only one night on the mountain [ML 341]. At the end of September they returned to Singapore [ML 340], where they remained until leaving for Borneo at the end of October [Bastin gives 16 October, but, since Wallace and Allen arrived in Sarawak on 1 November, the interval would seem excessive for the short voyage].

From Singapore, Wallace shipped three consignments of Malayan specimens to Stevens:

'1st Consignment', sent 28 May 1854 [no details of method of despatch]: contents, all Coleoptera, listed on pp. [1-2] of notebook.

'2nd small Box overland, sent Oct. 16th. 1854': contents, Hymenoptera and

Diptera with a few Coleoptera, summarized in top half of p. [8] of notebook.

'3rd Consignment', sent by the 'Royal Alice', leaving Singapore 17 October 1854, arriving in [London] Docks 10 March 1855: contents summarized in bottom half of p. [8] and top half of p. [9] of notebook). This was a large consignment, comprising 7 boxes of specimens for sale and 3 boxes of specimens reserved for Wallace's private collection. The contents of Boxes 1-6 are listed in detail, but not in their numbered sequence, on pp. [3 and 4] of the notebook, those of Box 7 at the top of p. [6] (page [5] is a summary of Wallace's private collection as on 8 July 1854). The contents of the private boxes, P. 1-P. 3, so referred to on p. [6] (P. 3 and P. 1 crosswise at the foot of the page), are not listed in similar detail. The picture is further confused (1), by a note on p. [3] that all Coleoptera in Sale Box 2 (Singapore Lepidoptera) were part of Wallace's private collection; and (2), by a note on p. [6] that certain insects were 'In bird box', no birds being otherwise referred to. One can only wonder how Stevens managed to discern Wallace's intentions.

On returning to Singapore from Borneo towards the end of January 1856, Wallace and Allen remained there until the former's departure for Bali towards the end of May; during this period they again collected at Bukit Timah [ML 348-349]. Collections made during this period were shipped in April 1856 (but May, notebook, foot of p. [9]), as Wallace's '10th Consignment' (notebook, p. [21], foot) by the 'Dunedin', arriving [?] in July. This consignment included '70 small shells from Biliton' [Belitung, small island E of Bangka, 108°E 3°S; it was not visited by Wallace or Allen], some birds from Malacca and Singapore, some insects, and, again, like Wallace's last Borneo consignment (no. 13, below), a number of miscellaneous items: with these two consignments Wallace was evidently clearing out accumulated specimens and personal property prior to leaving for Macassar.

Insects.— Wallace's '1st Consignment' comprised 1087 specimens (all for sale); the '2nd small box overland' about 1250 (about 850 sale, about 320 private); and the '3rd Consignment' 4348 specimens (comprising, according to the summary at the foot of p. [8], 2648 for sale, agreeing very nearly with the total of boxes 1-7, and 1700 private. These figures give a total of 6685 specimens collected (4585 sale, 2020 private), a figure that cannot readily be reconciled with Wallace's summary of consignments on p. [9].

As to the first consignment, the Coleoptera included were listed in some detail on pp. [1] and [2] of the notebook; at this stage Wallace was allotting serial numbers to the species he thought to recognize (and not only the Coleoptera since Hymenoptera similarly numbered exist), a procedure inevitably doomed to failure and soon abandoned. Pp. [3-4] of the notebook gave, as indicated above, details of the contents, by orders, of the Sale Boxes 1-6, and p. [6] gave details of some of the Malacca butterflies packed in Box 7.

British Museum: the BM purchased from Stevens (1) 69 Hymenoptera and 43 Diptera from 'Singapore (Malacca)' from Wallace's second consignment, the price paid [at 1/- each] being £5. 12. 0 (Accession Number 55. 9, March 1855); (2) 224 specimens of various orders, chiefly Coleoptera, from 'Singapore, Malacca etc.', possibly including material from both the first and third consignments (Accession Number 55.26, 24 April 1855); (3) 37 Coleoptera and 9 Hymenoptera from Singapore, these possibly from the April/May 1856 ('10th') consignment (Accession Number 57.47, May 1857).

W.W. Saunders: Singapore and Malacca specimens acquired by Saunders were treated by Walker (1856a, read 15 January 1856, Diptera; 1856b, read 6 May 1856, Homoptera; 1859a, read 17 February 1859, 'heterocerous Lepidoptera', Singapore; 1859b, read [?date], 'heterocerous Lepidoptera', Malacca) and, jointly with others from Borneo, by Smith (1857-58, read 16 June 1857, Hymenoptera).

Westwood published Singapore Cleridae (Coleoptera) from Wallace's first consignment (probably, allowing for the preparation of his plate, acquired before the end of 1854) as early as April 1855 (Westwood, 1855, read 13 February 1855).

Pinned specimens were labelled by Wallace or Allen (see Baker, 1996: 169-173), 'SING.' or 'Sing' for Singapore, 'MAL.' † or 'Mal' for Malacca, 'MT. OPHIR' or 'M. Ophir' for Mt Ophir. It must be emphasized that, here and generally, as indicated in the introduction, specimens not pinned and labelled at source, and much of Wallace's insect material was in fact sent papered, layered or in spirits, will have lost their identity as Wallace specimens if buyers did not take the trouble to label them with details of locality and captor at the time of purchase.

Birds.— Wallace recorded obtaining in Malacca the blue-billed gaper, *Cymbirhynchus macrorhynchus*, trogons [*Harpactes*], barbets, *Megalæma versicolor*, the green gaper, *Calyptomena viridis*, and various unidentified woodpeckers, kingfishers, cuckoos, doves and honey-suckers [MA 28]. His summary of his third consignment [notebook, p. [9]] records that 331 birds from Singapore and Malacca [probably most from Malacca: Wallace noted that birds were scarce at Singapore] were included, of which, apparently, 170 were intended for his private collection. No details were given. Apparently no birds from this consignment were acquired by the BM (see under Lombok).

Vertebrates other than birds.— Wallace's summary of his third consignment records that 19 mammals from Singapore and Malacca were included, of which 14 were intended for his private collection. Descriptive notes on these filled three pages [10-12] of the notebook; in most instances determinations to species were added subsequently. The consignment included also 12 'reptiles' (9 for sale), notebook, p. [9], and 11 tortoises (8 for sale), notebook, p. [7]. The BM purchased, in May 1855, 10 specimens from Singapore (Accession Number 1855.5.3).

Borneo (November 1854 - January 1856; notebook p. [13]-[21])

Wallace and Allen arrived at Saráwak [town: Kuching] on 1 November 1854 [MA 34]. Their first four months were spent on parts of the Saráwak R. from Santubong at its mouth to the gold-fields of Bow [Bau] and Bedé [MA 35]. Next they travelled up the Sádong or Sadang R., arriving on 12 March 1855 at the landing place on its tributary the Simunjon [Simunjan] R. (notebook, p. 1). They remained for nearly nine months in the vicinity of the coal works then being opened on the Simunjon, and 'made an immense collection of insects' [MA 36], and during this period made visits to Semábang [MA 52] and Menyille [MA 54] on other tributaries of the Sádong. In November Allen was sent down to Saráwak and between the 27th of that month and early December Wallace made a journey to the sources of the Sádong, descending by

the Sarawak valley to Sarawak [MA 64-74, 84]. The 13-19 December were spent at Sir James Brooke's cottage on Peninjauh, to which Wallace returned with Allen for further collecting between 31 December and 18 January 1856 [MA 85-86]. They left Sarawak for Singapore on 25 January 1856.

From Sarawak, Wallace made a number of consignments to Stevens. His notebook record is confusing, but these apparently comprised:

- (a) A box of orchids (1st), sent 'by Rapid, in England abt. June', by the 'Randolph'.
- (b) '4th Consignment [i.e., ignoring (a) but including the three Singapore consignments], overland, Feb. 1855', sent by the 'Weraff', left Sarawak 10 February 1855, 'Left Sing. Feb. 18. London abt April 3rd', but, from marginal note on p. [14], did not in fact leave Singapore until 24 April, by the 'Bangalore', together with the next three items, (c)-(e). Contents, land and marine shells, listed on notebook p. [13].
- (c) '5th Consignment (2nd Sarawak)', Feb. 1855', also sent by the 'Weraff', left Sarawak 10 February. Contents a jar of Coleoptera packed in a second box of orchids.
- (d) '5th Consignment. Insects', sent by the 'Dido', left Sarawak 3 March 1855, '? England. August'. Contents, chiefly insects in five boxes, listed on notebook p. [14]; also a third box of orchids.
- (e) A fourth lot of orchids, a cask containing *Vanda* and *Renantheria* [?] species, 'left Sarawak April 3rd-4th. England abt. Sepr. 1st.'
- (f) A fifth lot of orchids, from Simunjon, sent by the 'Weraff', left Sarawak 19 May 1855, arrived Singapore 24 May, left Singapore by the 'Johann Lange' [?]; these 'arrived all dead'.
- (g) '6th Consignment, a box of Beetles overland', left Sadang 20 June 1855, Sarawak 18 July, and Singapore '18 August?'. They arrived in England on 1 October. Contents listed in detail under Wallace's species identification numbers on notebook p. [16].
- (h) '7th Consignment', left Sadang 21 July 1855, 'Left Singapore by 'Cornubia' for London early in August' ['20th' inserted]. England in Jan.?. Contents vertebrates, including orang-utan skeletons, skulls and limbs, *Ursus* skull, and tortoises, listed on notebook p. [17], also (small slip tipped in) miscellaneous items including six bottles of Coleoptera in spirits.
- (i) '7th Consignment - Insects, 4th Sarawak', no separate consignment details given, presumably sent with (h). Contents all insects, listed on notebook p. [18].
- (j) '5th consignment Sarawak (8th in all), Small Box overland', arrived December 1855 but no other consignment details given. Contents all insects, Coleoptera and Lepidoptera, listed on notebook p. [19].
- (k) A cask containing skins of orang-utan, sent by the 'Margaret West'.
- (l) '6th Consignment (Sarawak.) 9th in all', left Sarawak [Santubong ?] 1 January 1856, left Singapore 2 March by the 'Water Lily'; arrived London 21 June. Contents various, listed on notebook p. [19-21]. This large consignment, which included personal as well as natural history items, was the last Wallace made from Sarawak.

Insects.— Wallace summarized, in a vacant space on notebook p. [15], the 'Insects collected in Borneo from Nov. 1st. 1854 to Jan. 31st. 1856'. He listed these under six consignments (the fifth and sixth sent together), inserting later the sums paid by the BM for their selections from these consignments:

'1st Consignment, Mar 11/55', total 4751, for sale 2750, breakdown to orders on p. [14]. This corresponds with (d) above. The BM paid £15 for the 250 specimens selected.

'2nd Consignment, overland', total 719, all for sale, breakdown on p. [16]. This corresponds with (g) above. £25.

'3rd Consignment, July 16th 55', total 7600, for sale 6500, all orders, detailed breakdown on p. [18]. This corresponds with (i) above. £45.

'4th Consignment, overland Oct [not clearly legible]', total 4910, for sale 4084, Coleoptera and Lepidoptera, breakdown on p. [19]. This corresponds with (j) above. £13. 15. 0.

'5th Consignment', total 5590, for sale 3900, breakdown to orders on p. [20].

'6th Consignment', total, 1764, and partial breakdown to orders, given in three separated entries on p. [21], for sale '1100 ?' added on p. [15].

The '5th' and '6th' were not strictly separate consignments but together correspond with (l) above. The BM paid £44. 5. 0 for its selection from the combined lots. These give a total of 25,334 insects collected, of which 19,054 were for sale.

British Museum: the BM purchased from Stevens, between November 1855 and August 1858, several lots variously described as from Borneo (Sarawak), Borneo (nr Sarawak) or Borneo, the total quantity 1930, and one small mixed lot from 'Malacca and Borneo'. If there are problems in ascertaining the localities of Wallace's Singaporean and Malaccan insects, these are exacerbated when it comes to dealing with his Bornean ones. All pinned specimens from Sarawak were apparently labelled 'SAR.', 'SAR' or 'Sarawak' regardless of locality. Can the Museum's Accession Numbers endorsed on these labels be used to throw at least a faint light on what parts of Sarawak individual specimens may have come from ? The following is a provisional attempt to do so. One does not know, of course, to what extent Wallace's consignments remained separate in Stevens' hands.

Date and accession number of the specimens bought by BM of this lot:

7 Nov 1855; 55. 77. Borneo (Sarawak), 200 Coleoptera. This purchase, consisting solely of Coleoptera, presumably came from Wallace's overland consignment (g), sent from Sadong on 20 June 1855 and arriving in London on 1 October. The specimens would therefore have come from upstream on the Sadong R., in the Simunjon area.

9 Jan 1856; 56. 3. Borneo (Sarawak 20 miles), 7 *Lucanus* @ 10/-. These probably came from (c), from the 'Jar of Beetles ... Contg. 105 Lucani & Passali', despatched from Sarawak on 10 Feb 1855, and quite certainly from Wallace's stay, December 1855 - January 1856, at Sir James Brooke's cottage on Peninjauh ('twenty miles up the river' [MA 84].

31 Jan 1856; 56. 14. Borneo (nr Sarawak), 253 specimens of all orders. These presumably came from Wallace's first large, mixed sending (d), despatched on 3 March 1855 and arriving in London in January 1856. [One does not know, of course, how much time to allow between the arrival of consignments in London and their contents becoming available for inspection at Stevens'; but there would have been keen competition among collectors and Stevens would not have wasted time in showing his wares.] They would have come from localities on the Sarawak R., from Santubong at its mouth up to the gold-fields of Bow and Bedé [MA 35].

- 11 April 1856; 56. 44. Borneo (Sarawak), 498 specimens of all orders. These presumably came from Wallace's second large, mixed sending (i), despatched from Sadong on 21 July 1855 and arriving in London in [?] January 1856. They would have come from upstream on the Sadong R., especially the Simunjon area.
- 12 Nov 1856; 56. 140. Malacca and Borneo, 42 specimens of all orders. Uncertain: could be further selection from existing stock; could include specimens from (j), sent papered or layered.
- 2 May 1857; 57. 36. Borneo, 813 specimens of all orders. This selection presumably came from (l), despatched from 'Sarawak' on 1 January 1856 and arriving in London on 21 June. The lateness of the purchase is unexplained. The purchase would have included, primarily, specimens from the Sadong R., especially Simunjon, but also the probably small collection made by Wallace on his ascent of the Sadong R. and subsequent descent by the Sarawak R. in early December 1855. The very large collections made in the vicinity of the Simunjon coal-works in March-November 1855 must have been despatched in at least two consignments. Although Wallace wrote [MA 64]: 'As the wet season was approaching [November 1855] I determined to return to Saráwak, sending all my collections with Charles Allen round by sea', a substantial part must have been sent down earlier to account for the July 1855 consignment (i) which would have reached London about the end of the year. The remainder of the Simunjon collections would then have followed in November, accounting for part of the January 1856 consignment, which would have reached London about May.
- 4 Aug 1857; 57. 81. Borneo, 47 Coleoptera, Hymenoptera and Hemiptera. This and the next two small, late purchases may have come from re-inspection of Stevens' existing stock or from additional material placed on sale: much of Wallace's material was sent papered or layered and would not have become available until Stevens had found time for its preparation.
- 9 Jun 1858; 58. 66. Sarawak, 13 Orthoptera.
- 21 Aug 1858; 58. 92. Borneo, 99 Coleoptera.

W.W. Saunders: Sarawak specimens acquired by Saunders were treated by Walker (1856, MS received 15 September 1856, Diptera; 1857, read 20 January 1857, Homoptera; 1862-1863, read 4 April 1861, 'heterocerous lepidopterous insects'), 1862-1863, read 4 April 1861) and, jointly with others from Singapore and Malacca, by Smith (1857-1858, read 16 July 1857, Hymenoptera).

Pinned specimens, as noted above, were labelled 'SAR.', 'SAR' or 'Sarawak'. Specimens labelled 'Borneo (Low)' in OUM are not Wallace's but were collected by Sir Hugh Low in North Borneo.

Birds.— Wallace, in the Malay Archipelago, did not name any of the birds he collected. He noted merely [MA 39]: 'During my stay in Borneo I had no hunter to shoot for me regularly, and being myself fully occupied with insects, I did not succeed in obtaining a very good collection of the birds or Mammalia'. His notebook records (p. [20]) simply 'Birds private - 96 species', the number of specimens not given, and '[do.] sale in tin box - 60'. The BM appears to have purchased no specimens from this consignment, Sharpe (1906: 489) noting that Wallace's Lombok birds were the first to be

received from him. There appears therefore to be not even a partial record of the species obtained.

Vertebrates other than birds.— Wallace obtained a flying frog, *Rhacophorus* ? [MA 38, woodcut], 'five squirrels, two tiger-cats, the *Gymnurus Rafflesii* ... and the *Cynogale Bennetti*' [MA 39], and, at Semábang on the Simunjon R., shot a deer and several monkeys [MA 53]. He wrote [MA 39]: 'One of my chief objects in coming to stay at Simunjon was to see the Orang-utan ... to study his habits, and obtain good specimens ... of both sexes, and of the adult and young animals', and in the latter respect was, from today's viewpoint, all too successful. The notebook records as consigned, apart from orang-utan, a number of tortoisés and a skull of '*Ursus malayanus*' (p. [17]), crania of musk deer and otter and the skeleton of a lemur (p. [20]), and five bottles of reptiles (p. [21]).

According to Wallace (notebook, p. [20]), the BM took 16 mammals and 5 tortoisés for £12 ('Stevens Oct. 3') and Franks [?] 13 mammals and 3 skulls for £16. The BM, according to the Accessions Register, purchased from Stevens, in September 1856, 22 specimens from Sarawak (Accession Number 1856.9.19) and 10 mammals, reptiles and amphibia from Borneo (Accession Number 1856.9.27), and, in October 1858, a mixed lot including 4 *Coluber* in spirits from Sarawak (Accession Number 1858.10.30, not ascribed to Wallace but very possibly from the bottled material referred to above).

Wallace, 1856-1862

Bali (June 1856)

Wallace arrived in the roadstead of Bileling [Buleleng], on the north side of the island, on 13 June 1856 after a twenty days' passage from Singapore in the schooner 'Kembang Djepoon'. He stayed for two days [MA 151]. There is no reference to any Bali material in the notebook - it would have been inextensive - and it was evidently despatched with the material collected subsequently on Lombok.

Insects.— British Museum: the BM purchased from Stevens 7 Lepidoptera and 3 Coleoptera from Bali (part of Accession Number 57.54, 26 May 1857, the others being from Lombok). Pinned specimens collected on Bali were labelled 'Bali' †.

Birds.— Wallace recorded [MA 152] having shot and preserved several species of birds, including a wagtail-thrush, an oriole and some starlings, and [MA 202-203] having observed various others that he named but failed to collect. See under Lombok.

Lombok [Lombok] (June-August 1856, notebook p. [22])

Wallace arrived in the roadstead of Ampanam on 17 June 1856 [MA 152: 'two days' sail from Bileling] and stayed until 30 August. During this period he visited Labuan Tring [MA 155-163] and made excursions to Coupang [MA 163-168], where apparently he did no collecting, and Gunong Sari [MA 172]. Wallace's Bali and Lom-

bock [Lombok] collection apparently left Singapore on 22 September 1856 in the 'City of Bristol'.

Insects.— Wallace recorded (notebook, p. [22]) that he collected 465 insects on Lombok, a subsequent note on the same page indicating that, of this total, 80 Coleoptera and 40 Lepidoptera were reserved for his private collection.

British Museum: the BM purchased 36 specimens of various orders (part of Accession Number 57.54, 26 May 1857, the others being from Bali).

Pinned specimens collected on Lombok were labelled 'Lom.' † [Pinned specimens labelled 'Coup.' † are all almost certainly not from Coupang in the interior of Lombok but from Coupang [Kupang] on Timor.]

Birds.— Birds collected on Lombok comprised 69 species, the total number of specimens not recorded but 300 marked for sale. Wallace recorded having obtained having at Ampanam [MA 154] 'an oriole, *Oriolus broderipii*, and a honey-sucker, *Tropidorhynchus timoriensis*; at Labuan Tring' [MA 155-158,] 'some small honey-suckers, *Ptilotis*, a mound-builder, *Megapodius gouldii*, some eight species of kingfishers including *Halcyon fulgidus* and *Ceyx rufidorsa*, a bee-eater, *Merops ornatus*, a ground-thrush, *Pitta concinna*, a yellow white-eye, *Zosterops*, and various other species insufficiently identified'; and at Gunong Sari [MA 172-173] '*Halcyon fulgidus* again and another ground-thrush, *Zoothera andromeda*'. No birds appear to have been obtained at Coupang.

The BM purchased from Stevens in June 1857 a possibly mixed lot recorded under the Accession Number 1857.6.13, 1-50. Numbers 1-30 were recorded as having been collected by Wallace, numbers 1-38 were recorded as having come from Lombok, and numbers 39-50 were assigned no localities: some of these last may have come from Bali. Sharpe (1906: 489) recorded the accession as consisting of '50 specimens from the island of Lombok, collected by Dr. A.R. Wallace'. According to Sharpe, who here did not list any species as new to the Museum, this was the first collection sent by Wallace from the Malay Archipelago, but Wallace had before then consigned to Stevens birds and eggs from Malaya and Borneo. Further, Sharpe's statement: 'The understanding between [Wallace] and George Robert Gray was, that the latter should describe the collections in their entirety, which was done. The first set Dr. Wallace retained for himself, and the second set was to go to the British Museum. These separate series were selected by the traveller, and the types of the new species remained in the care of Mr. Samuel Stevens, until the return of Dr. Wallace' does not entirely accord with the facts: from his record of consignments, Wallace, after segregating the birds destined for his own collection, made no further division but treated the whole of the remainder as for sale. Presumably, Gray saw Wallace's consignments in their entirety; sorted (if this had not already been done by Stevens) and determined (and recorded?) them; described any new species recognized, adopting as types specimens in Wallace's private series; and finally arranged for the purchase by the British Museum of specimens from among Wallace's sales series.

The *Halcyon* and the *Pitta* recorded by Wallace were described by Gould (1857).

**Celebes [Sulawesi] (first visit, Macassar district, September-December 1856,
notebook p. [23]-[24])**

Wallace arrived at Macassar [Ujung Pandang] on 2 September 1856. He spent two months at a village about 12 miles off [MA 286; about eight miles inland, ML 356] and then, returning to Macassar, stayed on until 13 December [19, Jnl] when he boarded a prau for Aru [MA 227].

The collections made during Wallace's first stay in south Celebes [south Sulawesi] in September - November 1856 were shipped first to Batavia and thence by the 'Margaret West' to London, arriving at the Downs [roadstead off east Kent] on 10 June 1857 and in London on 1 July (Stevens' letter dated 10 August 1857). By September 1857 material from this consignment had produced £130, and by February 1858 £140 ('Say £100 clear'). The consignment included, in addition to the zoological specimens, 'One bundle of Plants from Lombock', presumably from Wallace's collecting on that island in June-August 1856.

Insects.— Wallace recorded (notebook, p. [23]) that the total number of insects sent was 2774, including 270 Coleoptera and 200 Lepidoptera reserved for his private collection.

British Museum: the BM purchased from Stevens (1) 264 specimens of Coleoptera, Hymenoptera and Hemiptera (Accession Number 57.101, 28 September 1857), (2) 109 Lepidoptera and Diptera (Accession Number 57.102, 29 September 1857). This one example illustrates how small a portion of Wallace's material entered the national collection and how large a portion became available to dealers and private collectors and consequently predisposed to dispersal, loss of identity and ultimately loss.

W.W. Saunders: Saunders, apparently, took no specimens from Wallace's first Macassar collection, since both Walker (1859-60) and Smith (1860a) refer to Wallace's second collection. It seems unlikely that any material that might have come from the 1856 visit would have been held back in anticipation of a later one.

Pinned specimens were labelled 'Mak.', 'Mak' or 'MAK' [Baker, 1996, fig. 12(c)] following the Malay transcription, which is oddly, since Wallace regularly wrote 'Macassar'.

Birds.— Wallace named in MA few of the birds he obtained during his first visit to the Macassar district: those he did included a pigeon, *Carpophaga luctuosa*, a blue-headed roller, *Coracias temmincki*, wood-swallows, *Artamus*, 'a lyre-tailed drongoshrike' and a cuckoo, *Phoenicophaeus callirhynchus*. The birds sent totalled 247, including 82 specimens with red-banded tickets destined for his private collection. The 165 specimens intended for sale included 30 raptors of seven species, but apart from that the notebook gives no details.

The BM purchased from Stevens 16 specimens in 1857 (Accession Number 1857. 8. 3, 4-19) and two more, similarly recorded as from 'Makassar, Celebes' and possibly collected by Wallace but the collector's name not given, in February 1858 (Accession Number 1858.2.3,2 and 3), this date too early for Wallace's second Macassar consignment. Sharpe (1906: 490), gave '74 specimens from Makassar ... [57.8.3, 4-19; 58.12.2, 39-96]', clearly aggregating Wallace's first and second Makas-

sar sendings. Species he listed as new to the Museum were '*Gazzola typica*, *Macropteryx wallacei*, *Hypothymis puella*, *Geocichla erythronota*, *Lalage leucopygialis* and *Penelopides exarrhatus*'.

Macassar in S Celebes was the first Moluccan locality to be visited by Wallace. G.R. Gray did not devote any paper specifically to Wallace's Macassar birds but published in 1860/61 a 'List of the Birds collected by Mr. Wallace at the Molucca Islands' (G.R. Gray, 1860/61, read 26 June 1860). In this paper, new species were described from Batchian, Gilolo, Ternate, Amboyna and Kaióa. From the date, the species described could have come only from Wallace's first and second visits to Macassar, from his visit to Batchian (with Tidore, Makian and Kaióa) in October 1858 - April 1859 (and then only from his small overland consignment), and from early collecting at Ternate and on the immediately adjacent parts of Gilolo.

Ké [Kai] (January 1857)

Wallace arrived in the Ké Islands on 31 December 1856 and landed at Har [at N end of Kai Besar] on the following day [MA 417], leaving on the 6th [MA 426]. The Ké collections were small. There is no reference to them in the notebook, but Wallace recorded [MA 425] that during his four days stay he collected 13 species of birds, 194 of insects and 3 of land shells.

Insects.— Wallace left no record of the number of specimens collected on Ké.

British Museum: the BM purchased from Stevens (1) a mixed lot of 326 specimens from Aru and Ké (Accession Number 58.23, 15 March 1858: some of these were apparently mislabelled as 58.124 [Accessions Register, Annulosa, 3; note]), (2) 53 Coleoptera from Ké (part of Accession Number 58. 48, 23 May 1858).

W.W. Saunders: Saunders' Ké Diptera were included by Walker at the end of his paper on Aru Diptera (1858-59), his Ké Hymenoptera, jointly with those from Aru, by Smith (1859, read 3 December 1858).

Pinned specimens were labelled 'Ke' or 'Ké' (also [? Wallace] 'Key I').

Birds.— Wallace recorded collecting only the pigeon *Carpophaga concinna* [MA 418].

The BM purchased from Stevens in 1858 a mixed lot of 151 specimens from Ké and Aru (Accession Number 1858.3.10, 1-151): see under Aru. Wallace's Ké birds, jointly with those from Aru, were treated by G.R. Gray (1858).

Aru (January - July 1857, notebook p. [25]-[26])

Wallace arrived at Dobbo [Dobo] on the islet of Wamma on 8 January 1857 [MA 427] and commenced collecting on the following day. On 5 February he visited Wokan I. [Wokam, northern part of Aru] [MA 435] and on 13 March left Dobbo for the mainland [MA 441; map 442]. On 29 March he moved to an un-named settlement [MA 451] where he spent two days [MA 452], subsequently visiting the Watelai chanel and Wanumbai [centre of Maikoor, middle part of Aru] [MA 454], where most of his collecting was done. On 9 May he returned to Dobbo [MA 471, 472] where he was confined to his house for six weeks. On 2 July he left for Macassar.

The Aru collection was despatched from Macassar at some date after his arrival there on 11 July (MA 483), apparently on 1 August by the *Alma* [the sequence of Wallace's annotations is not clear: he recorded elsewhere [MA 228] that he spent a month dealing with his Aru collections, which would indicate a latter date]. From Singapore the collection was shipped on the 'Maori', leaving about 5/10 September and arriving in London in January 1858.

Insects.— Wallace recorded (notebook, p. [25]) his Aru collections as comprising 7848 specimens, including 1104 for his private collection and 596 for Saunders, this being the first reference in the notebook to material set aside for Saunders at source. These figures presumably included his Ké specimens, not separately referred to in his notebook.

British Museum selection: the BM purchased from Stevens a mixed lot of 326 specimens from Aru and Ké (Accession Number 58.23, 15 March 1858: some of these were apparently mislabelled as 58.124) and a further mixed lot of 656 specimens from Aru (part of Accession Number 58.48, 23 May 1858).

W.W. Saunders: the Diptera (195 specimens of 185 species) were treated by Walker (1858-59, date of reading not given); the Hymenoptera, jointly with those from Ké (230), by Smith (1859, read 3 December 1858). Pinned specimens were labelled 'Aru'.

A number of Wallace's Aru insects, of various orders but chiefly Lepidoptera and Coleoptera, were included in a collection (which contained also Bates specimens from Ega and St Paulo) sent by Stevens to Berlin on 25 March 1859 for selection by Dr Gerstäcker (see also under Macassar).

Birds.— Wallace obtained few birds while at Dobbo. He noted, in his account of an excursion to Wokan [MA 435-436], that on that one day he obtained five species of birds that he had not obtained during a month's shooting on Wamma, these including two flycatchers, *Monarcha chrysomela* and *M. telescopthalma*. Later, in the neighbourhood of Wanumbai on Maykor, he obtained, among other species, the ground-thrush *Pitta nova-guineæ*, a racquet-tailed kingfisher, *Tanysiptera hydrocharis*, and the King and Great Birds-of-Paradise, *P. regia* and *P. apoda* [MA 455-457, *passim*]. In his notebook, Wallace recorded 422 duplicates consigned but not the number of specimens reserved for his private collection. He did note that among the birds were *Paradisea regia* (16 males, 'fine specimens'), *P. apoda* (26 males, 'fine specimens'), *Microglossus* (4), *Carpophaga* (26, of five species), *Dacelo* (13), *Tanysiptera* (16), 'and many small things'.

The BM purchased from Stevens in March 1958 a mixed lot of 150 specimens from the 'Aru Islands and Key Island' (Accession Number 58.3.10, 1-150). Sharpe (1906: 490), who also did not separate the Aru and Ké collections, recorded the accession as comprising 151 specimens, probably an error in transcription.

Wallace's Aru birds, jointly with those from Ké, were treated by G.R. Gray (1858).

Vertebrates other than birds.— Wallace recorded 9 species of mammals, in 9 specimens, as included in his Aru consignment. The BM registered 11 specimens under Accession Number (i.e., date) 1858.2.20 and, under number 1858.4.10, a sternum of 'Casaurus' (a *Casuarius* that should have been in the Aves register?). Wallace's Aru Mammalia were treated by J.E. Gray (1858b).

Celebes (second visit, Macassar district, July-November 1857, notebook p. [27])

Wallace returned to Macassar on 11 July 1857 [MA 483], when he spent a month dealing with his Aru collections [MA 228]. In August he went to Mâros [MA 228] and in late September visited the falls of the Mâros R. [MA 233 et seq.]. In early November he returned to Macassar [MA 240] and packed his collections. On 19 November [Bastin] he left by the Dutch mail steamer for Amboyna and Ternate [MA 240]. Wallace's second Macassar collection was despatched, on 20 December 1857, by the 'Corcyra' to Singapore and arrived in London in July 1858 (notebook, p. [27]). Wallace noted that it 'should produce near £300' and added later 'Produced £260 gross without Saunders/£100?/to Mar 15 [1859]'. Apart from the insects and vertebrates noted below, the consignment included 160 marine and freshwater shells.

Insects.— Wallace gave the total number of insects he collected as 8080, but a count of the figures in his breakdown to orders does not agree with this. The consignment comprised 5360 Coleoptera (1075 private), about 1065 Lepidoptera (280 private, '185 + 600? for sale) and 1410 'other orders' (460 private). Wallace noted later that no Diptera were included in the consignment, the 202 species collected being sent afterwards with his Amboyna collection; he noted also '100 *Ornithop[tera]*.' but whether these were included in the above figures is uncertain.

British Museum: the BM purchased from Stevens 1099 specimens of various orders (Accession Number 58.142, 4 December 1858).

W. W. Saunders: Saunders' Diptera were treated by Walker (1859-60, read 2 June 1859), his Hymenoptera by Smith (1860a, read 3 November 1859).

A number of Wallace's Celebes insects, of various orders but chiefly Lepidoptera and Coleoptera, were included in a collection (which contained also Bates specimens from Ega and St Paulo) sent by Stevens to Berlin on 25 March 1859 for selection by Dr Gerstäcker. Since Stevens' list included also Wallace material from Aru, it is probable that the Celebes insects came from Wallace's second visit to Celebes, and therefore from the Macassar area: they obviously could not have come from Wallace's visit to Minahasa in the northern arm of Celebes, which he did not visit until June 1859.

Pinned specimens were labelled 'Mak.', 'Mak' or 'MAK'. BM specimens can be attributed to Wallace's first and second Macassar collections on the basis of the Accession Numbers endorsed on Wallace's labels; ex-Saunders specimens in OUM can be so attributed only where identifiable from dates of record or description. [Specimens labelled 'Cel.' or 'Celebes' are to be referred to Wallace's later Minahasa collections.]

Birds.— Wallace gave the number of birds sent as 166, 85 specimens belonging to species included in his first Macassar consignment and 81 to species not obtained previously; all were for sale (notebook, p. [27]).

The BM purchased from Stevens, in December 1858, 58 birds collected by Wallace (Accession Number 1858.12.2, 39-96, only no. 39 expressly registered as from '(Makassar) Celebes'). Sharpe (1906: 490), giving a total of 74 specimens, clearly aggregated this and Wallace's first Makassar sending: see above.

Vertebrates other than birds.— Wallace recorded only three bats and a squirrel for his private collection, and two crania of wild pig.

A BM purchase of April 1859, a mixed lot, included three skulls of *Sus* from Makassar and Amboyna (Accession Number 1859.4.6).

The bat described by J.E. Gray (1866: 65) as *Pteropus wallacei* presumably came from this, Wallace's second Macassar consignment, since Gray gave the date 1857. ['This beautiful species was brought to England by Mr. Wallace, but appears to have been overlooked; for Mr. Edward Gerrard, Jun., purchased it at Stevens's sale-room, included in a considerable lot of skins of birds and other animals of little value ... Celebes: Macassar (Mr. Wallace, 1857).']

Amboyna [Ambon] (first visit, December 1857-January 1858, notebook p. [28])

En route for Amboyna, Wallace touched on Coupang [Kupang] in W Timor, where he stayed a day [MA 184, 285; 25-26 November, Bastin], and Banda, where he stayed one or two days [MA 290; 1-3 December, Bastin]. Arrived in Amboyna, 20 hours from Banda [MA 291; 4 December: Bastin], he made arrangements to visit the interior [MA 294 et seq.]. There are discrepancies in Wallace's accounts of his collecting in Amboyna: (1) according to his notebook, Wallace was in Amboyna from 1 December to 31 December and while there had 20 days collecting; (2) in his notes on the localities given in Pascoe's 'Longicornia Malayana', he wrote (1869: 694) that his 'insect collections here [Amboyna] were almost all made during three weeks spent at a new plantation in the middle of the island, in January 1858', which agrees well enough with the '20 days' but is obviously wrong as to the date; and (3) in 'My life' (1905) the reference is to 'a fortnight's [present italics] visit to an estate in the interior surrounded by virgin forest'. Whatever the date Wallace set off for the interior (which cannot have been before the 5th at the earliest), he returned to (the town of) Amboyna on the 24th when he stayed ('about ten days') with Dr Mohnike [MA 299]. On 5 January 1858 [Jnl; 4 January MA 301] he left for Ternate. The journal date is supported by a letter written to Bates, commenced in Amboyna on the 4th.

The Amboyna consignment was despatched by steamer to Batavia on 6 January 1858, after Wallace's departure, the date at the head of the journal page presumably derived either from a consignment note subsequently supplied by the Dutch mail service or from Stevens' acknowledgement of receipt.

[In October 1859, Wallace again visited Amboyna, where he rented for one month a house in the town for the purpose of sorting and packing the collections he had brought from North Celebes, Ternate and Gilolo. These were despatched on 10 November to Batavia, and from Batavia reconsigned to Singapore. See under Celebes (third visit).]

Insects.— The consignment included, for his private collection, apart from the Coleoptera and Lepidoptera collected on Amboyna, the Coleoptera Wallace had collected on his brief visits to Timor and Banda and 202 species of Diptera excluded from the consignment of his second Macassar collection. It included also, for his private collection, a number of Coleoptera from Java and Menado, neither of which places, he had at that date visited, and from Japan, where he at no time collected. This Java, Menado and Japan material he had perhaps acquired from Dr Mohnike, whose

acquaintance he made in Amboyna: 'Dr. Mohnike confined himself chiefly to the beetles, and had formed a magnificent collection during many years' residence in Java, Sumatra, Borneo, Japan and Amboyna'. The insects collected on Amboyna totalled 3,000; those intended for sale had realised £80 clear to 10 March 1859 (Stevens must have kept very detailed records of the Wallace material passing through his hands).

British Museum: the BM purchased from Stevens 31 Lepidoptera (Accession Number 58.53, 28 May 1858).

W.W. Saunders: Diptera from Amboyna in Saunders' collection were described by Walker (1860, read 19 January 1860), Hymenoptera, jointly with others from Bachian, Kaisaa, Gilolo, and Dory, by Smith (1860b). Despite the late dates of these two papers, they must refer to material collected on Wallace's first visit to Amboyna since he did not return there until October 1859. Pinned specimens were labelled 'Amb.' or 'Amb'. Pinned specimens from Coupang and Banda were labelled 'Coup.' † or 'Ban.' †. ['Ban.' was apparently not used for Bangka.]

Birds.— Wallace 'did not get a great many birds' in Amboyna (the notebook entry records no birds) but in MA referred to a lory, *Eos rubra*, a brush-tongued parrot, and a racket-tailed kingfisher, *Tanysepta nais* Gray.

The BM purchased from Stevens on 25 March 1859 five birds collected by Wallace on Amboyna (Accession Number 59.3.25, 1-5) and on 30 March four birds for which the Accessions Register gave no indication of collector, date or locality (Accession Number 59.3.30, 1-4; these specimens included *Lorius* [?], *Psittacus* and *Cracticus*). Sharpe (1906: 490), who quoted the Accession Numbers as 59.3.25, 1-5 and 59.3.30, 1-11 [sic], gave '16 birds from Amboina, collected by Dr A.R. Wallace, including *Cyanalcyon lazuli* new to the collection'. The discrepancy is presently unexplained.

Vertebrates other than birds.— The notebook records no Amboyna specimens but Amboyna appears in the BM Accessions Register for 1854-1861 in an entry, dated 6 April 1859, that records the purchase from Stevens of three skulls of *Sus* from Macassar and Amboyna. It is probable but not certain that this was Wallace material (see also above under Celebes. The skin of the python illustrated in Wallace's plate is preserved in the Linnean Society's rooms.

Ternate (first visit, January-March 1858)

Wallace was to make Ternate the base for his future wanderings in the islands: from Ternate he was to despatch, by the Dutch mail steamers that operated a regular monthly service between the islands, his future collections. He first arrived in Ternate on 8 January 1858 [MA 304] and soon after arriving visited Gilolo (below). On 25 March he left for New Guinea in the trading schooner 'Hester Helena'. From the itinerary given by Bastin (1986: xiv), the 'Hester Helena' must have called at Gilolo [Halmahera] 28-29 March. It is unlikely that any collecting would have been done on that occasion.

Pinned specimens from all Wallace's and Allen's collecting at Ternate appear to have been labelled 'Ter'.

Gilolo [Halmahera] (first visit, February 1858)

Wallace recorded that soon after his first arrival at Ternate he went to the island of Gilolo. This must have been on or about 1 February, since on 25 January, completing a letter to Bates commenced in Amboyna on 4 January, he wrote: 'In about a week I go for a month collecting there [Gilolo]'. Wallace arrived in Gilolo at Sedingole [Sidangoli], on the small headland opposite Ternate, but, finding the locality did not suit his purposes, stayed only two days before moving on to Dodinga on the narrow central isthmus of the island [MA 312, 313]. He returned to Ternate on 1 March [Jnl]. Wallace noted [MA 313] that he 'made but few and comparatively short visits' to Gilolo, but 'obtained a considerable knowledge of its natural history by sending first [his] boy Ali, and then ... Charles Allen, who staid two or three months each in the northern peninsula' (see under 'Allen').

There is no separate or comprehensive record of Gilolo material in Wallace's notebook, where Dorey follows directly on Amboyna. Apart from the insects and vertebrates dealt with below, Wallace's Batchian shipment of April 1859 included 88 *Helix* from Gilolo and shells from Gilolo were also included in the 'Ternate &c and Menado' shipment of October 1859, in the Ceram collection sent [10 February 1860], and in the Ceram, Mysol & Waigiou collection sent in January 1861.

Insects.— Gilolo and Ternate insects, the localities not distinguished between, were included in Wallace's Dorey shipment of late 1858 (Coleoptera 1300, Lepidoptera 100, miscellaneous 25), and again in his Batchian shipment of April 1859 (Coleoptera 470, Lepidoptera 50, miscellaneous insects 135; Saunders miscellaneous insects 310).

British Museum: the BM purchased from Stevens a mixed lot of 226 specimens of various orders from Gilolo and Ternate (Accession Number 60.113, 27 November 1860). The entry in the Register is annotated 'marked Ternate, unless when 'Gil' was on the specimens', implying both that 'Ternate' labels on BM specimens should be regarded as suspect and that unprepared material was involved.

W.W. Saunders: Diptera from Gilolo in Saunders' collection were dealt with, jointly with others from Ternate and Ceram, by Walker (1861c, read 21 February 1861); Hymenoptera, jointly with others from Batchian, Kaisaa, Amboyna and Dory, by Smith (1860b, read 3 May 1860). Clearly, both the BM and the Saunders material described or recorded in these two papers must have come from Wallace's early visits to Gilolo: Allen's longer visit did not take place until October 1860. More Hymenoptera from Gilolo, jointly with others from Ceram, Celebes and Ternate, were treated by Smith in a later paper (1861-62, read 6 June 1861). It is most improbable, allowing time for the transit of Wallace's consignment and Smith's preparation of his paper, that these either could have come from Allen's visit (see under 'Allen', Gilolo). Pinned specimens were labelled 'Gil.', 'Gilolo' or [?] 'G'.

Birds.— Wallace, in MA, named few of the birds obtained in Gilolo. They included, however, the ground-thrush *Pitta gigas*, obtained by Ali at Dodinga in January/February 1858, and the brush-tongued lory, *Charmosyna placentis*, obtained by himself near the village of Djilolo in September of that year.

Birds from Gilolo appear among the items Wallace left at Batavia in November 1861

(Case 1: see below, under Bouru), but some must have been sent earlier to have reached the BM by September 1860. Since no Gilolo material appears in the BM Accessions Registers for insects and birds before that month, it does not seem possible to assign any Gilolo material to particular collectors or dates except in the rare instances where Wallace included sufficient information in the Malay Archipelago.

The BM purchased from Stevens in September 1860 a mixed lot comprising 56 birds from Gilolo and Ternate (1860.9.5, 1-56, no dates or collector given) and 23 from Timor attributed to Wallace (1860.9.5, 57-79). Sharpe (1906: 491) recorded these as '79 birds from Timor, E. Gilolo, Ternate, collected by Dr. A.R. Wallace ... [60.9.5, 1-79]'. More Gilolo birds, probably now including some of those obtained by Allen towards the end of 1860, were included in later purchases: 35 birds from Morty Island, New Guinea, Salawetti, Gilolo and Ternate (1862.9.11, 1-35), perhaps from the material Wallace left to be consigned from Batavia in November 1861; 29 birds from Gilolo, Batchian, N Celebes, Amboyna, Salwatty, Dorey, Bouru, Aru, New Guinea and Borneo (1865.9.7, 1-29, no collector given), perhaps at this late date from material released by Wallace from his private collection.

Dorey [Dore Baai] (April-July 1858, notebook p. [29])

Wallace arrived at Mansinam I. on 11 April 1858, and, after a preliminary visit to Dorey [Teluk Dore, N coast western New Guinea, Vogelkop] to choose a site for a house [MA 494, 496], commenced collecting there on the 17th [MA 499]. Wallace suffered from an injured foot during a large part of his stay at Dorey, and his personal collecting was done 'in a space not much exceeding a square mile' [MA 511]. His assistants Ali and Lahagi, sent to Amberbaki, Ali specifically to collect birds, obtained little [MA 507]. Wallace and his small party left for Ternate in the 'Hester Helena' on 29 July 1858. They had all been ill at Dorey, and one of his men had died.

The collections made at Dorey were despatched from Ternate in October 1858 and, apparently, reaching Singapore on the 29th of that month, were reconsigned on the 1st November. Allowing a total of four months in transit, for goods consigned by the long sea route round the Cape, they should have reached Stevens about the end of February 1859, but at least on this occasion, the journey seems to have taken considerably longer: Stevens wrote to Gerstäcker, on 10 May 1859, 'I have just received another collection from ... Wallace from New Guinea (Dorey) ...'. With the Dorey collections went a smaller collection from Ternate and Gilolo: 1300 Coleoptera (600 in pin[?] boxes, 500 in bottles, 200 pinned), 100 [?: illeg.] Lepidoptera and 25 miscellaneous insects. There were also included, as an experiment, some 'Insects [packed in ?] bamboo', about 100 Macassar shells, and some Papuan ethnographical specimens. A note 'also Delli [?]. Mac[assar]. B. . . [Bachian?]. etc. abt. 100 specns', is unexplained: if 'Delli' has not been misread, then at that date Wallace had not collected there.

Insects.— The collections made at Dorey comprised 6400 Coleoptera (1400 for Wallace's private collection), 413 Lepidoptera (118) and 635 miscellaneous insects (375). Among these last, Wallace noted in particular [MA 502-503, woodcut] some curious horned flies, '*Elaphomia*' [(= *Elaphomyia* Saunders, 1861; = *Phythalmia* Gerstäcker, 1860] spp.

British Museum: the BM purchased from Stevens 41 Lepidoptera (accession number 59.53, 10 June 1859) and a mixed lot of 924 specimens of all orders, chiefly Coleoptera (Accession Number 59.58, 24 June 1859).

W.W. Saunders: Saunders' Dorey Diptera were treated by Walker (1861a, read 21 June 1860); his Hymenoptera, jointly with others from Bachian, Kaisaa, Amboyna and Gilolo, by Smith (1860b, read 3 May 1860).

Pinned specimens were labelled 'Dor.' or 'Dor'.

Birds.— Wallace's Dorey consignment included 317 birds, 94 for his private collection. Species he named in MA as collected at Dorey included the lory *Lorius domicella*, a grackle, *Gracula dumonti*, a king-hunter, *Dacelo gaudichaudi*, a racquet-tailed kingfisher, *Tanysiptera galatea*, and the bird-of-paradise *Ptiloris magnificus*.

The BM purchased from Stevens, in April 1859, 74 birds from this consignment (Accession Number 1859.4.8, 1-74). Numbers 1-45 were recorded as from Dorey, except one from Mafor; numbers 46-74 had no localities given. According to Sharpe (1906: 490), who erroneously gave the Accession Number as '1859.4.5, 1-7', all 74 specimens were from Dorey. Species new to the Museum included 'Corone orru, *Gymnocorax senex*, *Pseudorhynchus ferrugineus*, *Chalcophaps stephani* and *Mino dumonti*'. Wallace's birds from Dorey were treated by G.R. Gray (1859b).

Ternate (second visit, August-October 1858)

Wallace arrived at Ternate on 15 August 1858 [seventeen days after leaving Dorey: MA 512]. Here he remained until 9 October when he left for Batchian [MA 319], touching on Tidore, Mareh and Motir. While at Ternate, Wallace paid a second visit to Gilolo.

Gilolo (second visit, September 1858)

At some time in September 1858, Wallace again collected on the W coast of the island, on this occasion a little further north, visiting first the village of Djilolo [Jailolo] and then, by a track overland, the village of Sahoe [Sahu]. Collecting generally was poor, and after a week Wallace returned to Ternate [MA 314-316].

Birds.— Wallace recorded obtaining a few new birds, but named only a 'brush-tongued lory, *Charmosyna placentis*' [MA 315].

Tidore (October 1858)

Wallace arrived on Tidore on 9 October 1858 and left the following day at sunset. He recorded [MA 320]: 'I in vain searched for any insects worth capturing. One of my men went out to shoot, but returned home without a single bird'.

Insects.— British Museum: the Annulosa Accessions Register records no purchases of Tidore specimens.

W.W. Saunders: despite Wallace's remark, some insects were collected, since Diptera from 'Tidon' were dealt with, jointly with others from Batchian, Kaisaa and

Makian, by Walker (1861c, read 15 November 1860). Pinned specimens were labelled 'Tid.' † (A.Z. Smith, 1986: 100).

Makian (first visit, October 1858)

Insects.— Landing on 12 October, while coasting along Makian, Wallace 'obtained a few interesting insects'. Wallace's notebook makes no reference to Makian, and his Makian insects would presumably have been included in his Batchian consignment of January 1859 (notebook, p. [30]).

British Museum: the Annulosa Accessions Register records no purchases of Makian specimens.

W.W. Saunders: Saunders' Makian Diptera, jointly with others from Batchian, Kaisaa and Tidore, were treated by Walker (1861c, read 15 November 1860).

Pinned specimens were labelled 'Maki.' †.

Kaióia [Kayoa] (first visit, October 1858)

Wallace left Ternate on 9 October 1858 and arrived on Kaióia late on the 14th. Here he had five days good collecting (14-20 October) before leaving for Batchian [MA 322-325]. Wallace's notebook makes only a single reference to Kaióia, a few shells for his private collection included in his Batchian consignment of January 1859 (notebook p. [30]). Probably the whole of his 1858 Kaióia collection was included in this consignment.

Insects.— In a clearing in the forest Wallace took about 100 species of Coleoptera, including some 44 species of 'Longicornia' [Cerambycidae, Lamiidae, Prionidae], and of this locality he wrote: 'It was a glorious spot, and one which will always live in my memory as exhibiting the insect-life of the tropics in unexampled luxuriance' [MA 324].

British Museum: the BM apparently purchased no specimens from this 1858 collection. [Kaióia does not appear in the BM Annulosa Register until 1862 [January?], when it is grouped, as 'Kaisa', with Goram and Matabello, suggesting that the Kaióia material in that lot (Accession Number 62.5) came from Wallace's second visit in October 1860. It appears again in the same year, this time as 'Kaisaa', now linked with Batchian, in another lot acquired in March (Accession Number 62.30): the Batchian specimens, 210 Coleoptera, were most probably held over from Wallace's 1858/59 visit, and the association does not necessarily put the Kaióian material back to the first visit.]

W.W. Saunders: Saunders' Kaióia Diptera, jointly with others from Batchian, Makian and Tidore, were treated by Walker (1861c, read 15 November 1860), his Hymenoptera, jointly with others from Batchian, Amboyna, Gilolo and Dorey, by Smith (1860b, read 3 May 1860). [Wallace's second visit to the island did not take place until October 1860: see below.] Pinned specimens were labelled 'Kai.'.

Birds.— Wallace recorded [MA 324] that 'The only birds at all common were the great red parrot (*Electus grandis*) ... a crow, and a *Megapodius*' and that 'A few of the

pretty racket-tailed kingfishers [*Tanysiptera*] were also obtained'.

Five of Wallace's Kaióa specimens were included in BM accession 60.2.4: see below, under Batchian.

Batchian [Bacan] (October 1858-April 1859; notebook pp. [30]-[31])

Wallace arrived at the village of Batchian on 21 October 1858 [MA 325]. From Batchian, during March 1859, he visited Kasserota I. [Kasiruta] [MA 338-340] and Langundi I [MA 340], returning to the main island on 1 April [MA 342]. He left for Ternate on 13 April 1859 [MA 348], visiting Makian en route. From Batchian Wallace wrote to Stevens on 29 October 1858 and again on 28 January 1859. Extracts from these letters, in which Wallace referred to some of his discoveries, were read to meetings of the Entomological Society of London on 7 March and 6 June 1859 (Stevens, 1859a: 61; 1859b: 70). Specimens of two butterflies referred to in these letters, under the names *Ornithoptera croesus* and *Papilio telemachus*, were exhibited by Stevens at the meeting of 4 July 1859 (Stevens, 1859c: 72): they had already been exhibited at a meeting of the Zoological Society on 28 June. These specimens, together with a new *Paradisea* [bird-of-paradise], had been despatched by Wallace as an advance consignment, for delivery by the overland route [i.e., via Suez and Alexandria] on 30 January (transit dates given in the notebook as Ternate 6 March, Batavia 9 April, Singapore 12 April). Wallace's main Batchian collection was not despatched until after his return to Ternate, i.e., between 20 April and 1 May (when Wallace left for Timor). This consignment included land and fresh-water shells from Batchian, shells unspecified from Kaióa as noted above, and 88 Gilolo *Helix* from his September 1858 visit. That the dates given by Wallace, with question marks, at the foot of p. [31] of the notebook refer to shipment of the main Batchian consignment is uncertain but seems probable.

Insects.— The insects sent overland were an advance lot of the *Ornithoptera* and *Papilio* species referred to above. The total number of insects collected on Batchian was given by Wallace as 10,400, including 245 *Lepidoptera* and 1870 *Coleoptera* reserved for his private collection and 583 specimens of various orders reserved for Saunders (breakdown on p. [31] of the notebook).

British Museum: the BM purchased from Stevens (1) 24 *Hymenoptera* (Accession Number, 60.10, February/March 1860), (2) 6 *Lepidoptera* (part of Accession Number 60.92, October [?] 1860), (3) an unstated number of *Coleoptera*, part of a mixed lot of 210 from Batchian and Kaióa (Accession Number 63.20, March 1862), (4) 32 *Lepidoptera* and 14 *Hemiptera* (Accession Number 62.58, July/August 1862).

[Howarth (1977: 158) gave as the type of *Papilio (Ornithoptera) croesus* G.R. Gray, 1859 [1859/60], a specimen labelled '60 92 Batchian', and noted that G.R. Gray, in his paper read 8 November 1859, described both sexes in detail. It is difficult to see how Gray could have described prior to November a specimen not registered, and presumably not received, by the Museum until October or November of the following year. It appears inescapable that the specimen taken by Howarth to be the type came from the long series (75, 51) included in Wallace's main Batchian consignment, despatched from Ternate in April 1859, and that the specimens described by Gray came from the few (11, 8) sent in Wallace's overland box despatched on 6 March 1859

and exhibited by Stevens on 4 July 1859 (cf. notebook, pp. [30, 31]). Since, additionally, Wallace noted (p. [30]) of the latter series 'best pair private', it might be surmised that he intended one of these to be the type of the species for which he had proposed the name *cræsus*, and not one of the duplicates intended for sale.

W.W. Saunders: Saunders' Batchian Diptera, jointly with others from Kaióa, Makian and Tidore, were treated by Walker (1861c, read 15 November 1860); his Hymenoptera, which included the remarkable bee *Megachile* [now *Chalicodoma*] *pluto* Smith, 1860 (Baker, 1996, figs 13, 15), jointly with others from Kaióa, Amboyna, Gilolo and Dorey, by Smith (1860b, read 3 May 1860).

Pinned specimens were labelled 'Bac.' or 'Bac'.

Birds.— The birds sent overland comprised 'four males, one female, and one young bird of the new Batchian *Paradisea*, besides one red-ticketed private specimen' according to Wallace's letter of 28 January, but '6 ♂♂. 1 ♀. 1 Juv. (& 1 private)' according to the notebook. These apparently brought £ 88 (notebook p. [30]), including 4 purchased by the BM (Accession Number 59.6.13, 1-4). The birds sent by sea in the general collection totalled 485 of which 371 were for sale. They included 19 ♂♂ and 17 ♀♀ of the *Paradisea* [to be described by G.R. Gray (1859a) as *Semioptera wallacei*]. The BM purchased from Stevens in February 1860 a mixed lot of 103 birds, some registered as from Batchian, 3 from Kaióa and 2 from 'Kaisa' [Kaióa] (Accession Number 60.2.4, 1-103). Sharpe [1906: 490], who, ignoring the register entry, gave the whole collection as coming from Batchian, noted that it added the following species to the Museum: '*Ceyx uropygialis*, *Alcyone affinis*, *Hermotimia auriceps*, *Dicæum schistaceiceps*, *Lalaga aurea*, *Melitograis giloloensis*, *Carpophaga basilica*, *Grauculus papuensis*, *Piezorhynchus nigrimentum*, *Pitta cyanonota* and *Pitta rufiventris*'. Presumably the *Melitograis* and the *Grauculus* did not come from Batchian but from Wallace's earlier visits to Gilolo and Dorey.

Vertebrates other than birds,— Wallace recorded obtaining 'a monkey, *Cynopithecus nigrescens*, an opossum, *Cuscus ornatus*, a small flying opossum, *Belideus ariel*, a civet cat, *Viverra zebetha*, and nine species of bats' [MA 338]. These were all included in the list given on p. [30] of the notebook. The BM purchased from Stevens in January 1860 18 specimens from the total of 63 recorded in the notebook (Accession Number 1860.1.10). Wallace's new *Cuscus, ornatus*, was described by J.E. Gray (1858a, 1860a, 1860), who also (1860) listed Wallace's Batchian collection of Mammalia.

Makian (second visit, April 1859)

Wallace visited Makian en route from Batchian to Ternate and stayed one night [MA 348]. No collecting appears to have been done on this occasion.

Ternate (third visit, April-May 1859)

Wallace was at his base in Ternate from 20 April to 1 May 1859. No specimens can be definitely assigned to this particular visit. Wallace and Allen no doubt did some collecting on all their visits to the island, and probably acquired also specimens collected by locals.

Timor (second visit, west Timor, May 1859)

Wallace stayed from 13-27 May 1859 in the neighbourhood of Coupang, the chief Dutch town, in the west of the island [MA 184], which he had previously visited for one day only, in 1857 (see under Amboyna, above), and from Coupang visited the village of Oeassa on the island of Semaο off the western extremity of Timor [MA 186-187]. From Coupang Wallace travelled to the northern arm of Celebes via Banda, Amboyna and Ternate [MA 241, ML 369].

Insects.— Wallace's Timor insects were included in his 'Ternate &c and Menado' consignment of October 1859 (notebook, p. [32]). They were not listed separately but counted in with the Ternate insects, the totals being private 900, sale 'abt. 2000'. British Museum: the BM appears to have purchased no Timor insects from this consignment, unless they became mixed with the Menado material purchased in September and October 1860 (Accession Numbers 60.76, 60.90). The only direct reference in the Accessions Register to Timor material does not appear until August 1862 and even that entry is doubtful, having been annotated 'should be Batchian v. Koltēs Novitates'. W.W. Saunders: Saunders' Timor Hymenoptera, jointly with others from Mysol, Ceram, Waigiou and Bouru, were treated by Smith (1863, read 15 January 1863). Pinned specimens were labelled 'Tim.'.

Birds.— In the vicinity of Coupang, Wallace took two parrots, *Platycercus vulneratus* and a *Geoffroyus*, more of the *Tropidorhynchus* he had taken on Lombok [*T. timorensis*], an oriole, *Sphæcothera viridis*, and various finches, warblers and flycatchers, among them *Cyornis hyacinthina* [MA 188]. Birds taken on Semaο were not named. Wallace's Timor birds were included in his 'Ternate &c and Menado' consignment of October 1859. They appear in his notebook only as a marginal note on the page recording details of this consignment (p. [32]): '45 pr[ivate]. 46 sale'.

The BM purchased from Stevens in September 1860 23 birds from 'Lamas (Timor), Timor or Lamaο' [presumably Semaο] (Accession Number 1860.9.5, 57-79) and a mixed lot of 46, all from 'N. Celebes (Tondano) or (Menado)' except one from 'Lamaο, Timor' (Accession Number 1860.9.6, 1-46). Sharpe (1906: 491), giving a total of 79, unhelpfully aggregated the former collection with another from Gilolo and Ternate (Accession Number 1860.9.5, 1-56), whence his list of species new to the collection does not distinguish the Timor birds from the others (excepting, from the name, *Philemon timoriensis*).

Banda (June 1859)

Arrived Banda 1 June, left 3 June for Menado, touching on Amboyna and Ternate.

Celebes (third visit, north-east Celebes, June-September 1859, notebook p. [32])

Wallace arrived at Menado on 10 June 1859 [MA 241, 246 (map)]. On 22 June he came to the Tondano plateau and Tomohón, at 2500 ft [MA 244] and on the 23rd moved to Rurukan, at about 3500 ft [MA 245], where he stayed for two weeks [MA

258]. On 6 July [Jnl] he left Rurukan for Kákas and Langówan, and subsequently visited Panghu, at about 1500 ft, remaining there for three weeks [MA 261]. On 2 August [Jnl] he left Panghu for Menado, where he remained for two weeks [MA 263] before again setting out, this time eastwards, skirting Mt Klabat, and passing through Lempias, where he stayed for ten days [MA 263] before arriving at Licoupang [Likupang], on the coast at the extreme end of the peninsula. While at Licoupang he made an excursion to the bay between the islands of Limbé and Banca [MA 264; Banca of map, p. 246] before finally returning to Menado. On 23 September 1859 he left for Amboyna.

Wallace's 'Ternate &c and Menado' consignment of October 1859 was apparently despatched to Batavia on 10 November and reconsigned to Singapore in December. The record in his notebook (p. [32]) only partly distinguished between its various components. As well as material from Ternate and Menado, the consignment included material from Timor and Gilolo.

Insects.— The total number of insects consigned was 5420, including about 2000 from 'Ternate Timor &c'. The total was made up of 1995 specimens intended for Wallace's private collection (270 Lepidoptera and 825 Coleoptera from Menado, 900 Coleoptera from Ternate and Timor), 320 for Saunders, and 3105 for sale. As to the Coleoptera, Wallace wrote in MA that at Panghu the Cicindelidae [always much prized by collectors] seemed more abundant and varied than anywhere else in the Archipelago, mentioning particularly the large *Cicindela heros* [*C. heros* F., 1801] and *C. gloriosa* [*C. gloriosa* Schaum, 1861].

British Museum: the BM purchased from Stevens (1) 148 insects of all orders except Lepidoptera (Accession Number 60.76, September 1860), and (2) 10 Lepidoptera (Accession Number 60.90, October 1860), all from 'Celebes (Manado)'.

W.W. Saunders ('moths 65, alia 225'): Saunders' Menado Diptera, jointly with others from Tondano, were treated by Walker (1861b, read 15 November 1860), his Hymenoptera, jointly with others from Ceram, Ternate and Gilolo, by Smith (1861-62, read 6 June 1861).

Pinned specimens were labelled 'Men.' or 'Tond.' [the latter presumably for all specimens taken on the Tondáno plateau].

Birds.— Wallace wrote that he collected, at Panghu, 'a pretty little flower-pecker of a new species (*Prionochilus aureolimbatus*)', some honey-suckers, and a fruit-pigeon, *Carpophaga forsteni* [MA 261]; at Lempias, a kingfisher [the blue-eared kingfisher], *Cittura cyanotis*, a small new *Megapodius*, and the maleo, *Megacephalon rubripes* [MA 263]; at Licoupang, the ground-dove, *Phlegænas tristigmata*; and, at the bay east of Licoupang, a series of the maleo. In his notebook he recorded (p. [32]) that his Menado consignment included 311 birds, of which 216 were for sale.

The BM purchased from Stevens a mixed lot of 45 specimens, all from 'N. Celebes (Tondano) or (Menado)' except one specimen from Semaó I. off Timor (Accession Number 1860.9.6, 1-46, 6 September 1860). Sharpe (1906: 491) gave the entire collection as from Celebes and listed the following as new to the Museum: '*Ptilopus gularis*, *P. formosus*, *Carpophaga radiata*, *Myristicivora luctuosa*, *Macropygia albicapilla*, *Chalcophaps stephani*, *Coracias temmincki*, *Pelargopsis melanorhyncha*, *Lyncornis macropterus*,

Scissirostrum dubium, *Prioniturus platurus* and *Hypotaenidia celebensis*'. Curiously, this list omits the *Prionochilus* that Wallace recorded as new.

Vertebrates other than birds.— Wallace's notebook records 35 mammalian specimens, including crania of babirusa and anoa, on both of which he wrote in the 'Malay Archipelago' [MA 275-277]. The notebook does not include under any of the Celebes entries references to Wallace's 'curious Lemur (*Tarsius spectrum*), also referred to in his survey [l.c.] of Celebes Mammalia and, presumably, collected. There is no reference to N Celebes material in either the 1854-1861 or the 1861-1890 Accessions Register, from which the BM would appear to have purchased no specimens from Wallace's 'Ternate &c and Menado' consignment. However, one accession (1860.8.26) recorded in the earlier volume (p. 339), of 21 specimens from 'Ternate', included three skulls of Anoa, suggesting that the Register confused locality with point of consignment.

Amboyna (second visit, September-October 1859)

Arrived Amboyna 29 September, left 29 October for Ceram.

Ceram [Seram] (first visit, SW coast, October-December 1859, notebook p. [33])

Wallace left Amboyna for Ceram on 29 October 1859 [MA 349] and arrived at Hatosúa, on the south coast, near the western extremity of the island, on 31 October 1859 [MA 349]. After a few non-productive days spent at Hatosúa, he travelled east along the coast, visiting Elpiputi [Elpaputih] and Awaiya [Waiya]. After three weeks spent at Awaiya [MA 354], he visited Makariki, a little further along the coast, near the mouth of the Ruatan R. Returning to Makariki, he set off inland, on 18 December, following the Ruatan, for a visit to the centre of the island [MA 355]. From the Ruatan he returned to Awaiya, leaving again on 24 December to return to Amboyna.

Wallace's 'Ceram Collection. Feb. 10. 1860' (notebook, p. [33]) was despatched from Amboyna in March of that year and would have reached Stevens about July. In addition to the insects and vertebrates treated below, Wallace obtained about 850 land shells, and, for his private collection, 1350 marine shells in about 300 species. (There were also 'Kanary nuts for Mrs Wallace'.)

Insects.— Wallace collected '4000' [4033] insects on this journey, comprising 3117 Coleoptera (775 for his private collection), 776 Lepidoptera (176) and 140 (80) representatives of other orders - a total for sale of 3002.

British Museum: the BM apparently purchased no insects from this collection, the first appearance of Ceram in the Accessions Register being in January 1862 (Accession Number 62.7), and then for north Ceram.

W.W. Saunders: Saunders' Diptera from the southern coast of W Ceram, jointly with others from Gilolo and Ternate, were treated by Walker (1861c, read 21 February 1861), his Hymenoptera, jointly with others from Celebes, Ternate and Gilolo, by Smith (1861-62, read 6 June 1861). Other Ceram Hymenoptera described or recorded by Smith (1863) came from Wallace's later visit to eastern Ceram.

Pinned specimens were labelled 'Cer.' or 'Cer'.

Birds.— Wallace and his collectors obtained few birds on this journey, none named in MA. He recorded 65 specimens for his private collection and 91 duplicates for sale. The BM purchased from Stevens in December 1860 27 birds evidently from this consignment (Accession Number 1860.12.6, 1-27, only number 1, however, having the locality 'Ceram' given). Sharpe (1906: 491) listed '*Baza reinwardti*, *Philemon subcorniculatus*, *Ceyx lepida* and *Eclectus cardinalis*' as new to the collection.

Vertebrates other than birds.— The notebook records only a few mammals: seven bats in three species, six *Cuscus* in two species. The BM purchased from Stevens (1), in December 1860, 3 specimens from Ceram (Accession Number 1860.12.6) and (2), in December 1861, a mixed lot of 28 specimens from various localities including Ceram and E. Ceram (Accession Number 1861.12.11): the 'Ceram' specimens should be from Wallace's visit to the south coast of W Ceram in 1859, the 'E. Ceram' from his second visit in 1860.

Amboyna (third visit, December 1859-February 1860)

Wallace returned to Amboyna on 25 December 1859 and remained there until 24 February 1860 when he started again for Ceram, proposing to continue his collections along the south coast and to revisit Ké.

Ceram (second visit, SE and NE coasts, February-April and June 1860, notebook p. [34]); Matabello [Watubela] and Goram [Gorong] Archipelagoes (April-May 1860)

Wallace left Amboyna on 24 February 1860 and arrived at Amahay on the 26th. From Amahay [Amahai] he went, touching on Cepa [Sepa], Tamilan [MA 358], and Hoya [Haja] to Teluti [MA 359], where he stayed three days [MA 360]. From Teluti he went via Batuassa [MA 360], Tobo and Ossong to Kissa Laut, where he was delayed for four weeks 'during all which time I was getting absolutely nothing... [except] a few good land shells' [MA 361-362], eventually leaving on 4 April 1860 [MA 364]. Wallace reached Manowolko [Manawoko of his map; Manawoka] on 8 April, Kissiwoi in the Matabello group [Kepulauan Watubela] on 12 April and finally Uta, the southern island of the group. Leaving Uta for Teor [Tioor], adverse winds forced Wallace to abandon his intentions of continuing to Ké, and on 17 April he put about for Matabello, arriving in Uta on the evening of the 18th. On 25 April he returned to Manowolko, and on the following day crossed to Ondor, the chief village of Goram [Gorong] [MA 370], where he stayed a month [MA 371]. On 27 May he left for Ceram, staying two days (29-30 May) on Kilwaru [Kiliwara of his map] en route. From Kilwaru he sent two boxes of specimens by a Macassar prau to be forwarded to Ternate. He arrived at Warus-warus [Waru] on the north-east coast, where he was delayed for one week [MA 377] and was unable to collect much [MA 381] on 1 June and at Wahai, the chief Dutch station on the island, on the 15th [MA 382].

The collections made on this journey were probably all included in Wallace's 'Ceram, Mysol & Waigiou' consignment, sent in January 1861 by the 'J.B. Cain' [?], which apparently arrived in London on 15 April. Of the islands visited, where his collections would not have been large, Wallace's notebook mentions only Goram (238

land shells); the Ceram material would include his collections made along the south coast of eastern Ceram in February and March 1860 and along the north-west coast, between Warus-warus and Wahai, between 1 and 17 June. Apart from the insects and the vertebrates, these included 204 land shells in about 10 species.

The 'Ceram, Mysol & Waigiou' shipment was obviously a composite one, including not only Allen's Mysol collections but also any material that he may have obtained during his enforced stay at Wahai in July/August 1860 (see under Allen): this Ceram material would have reached Wallace when Allen rejoined him at Ternate at the end of 1860.

Insects.— Wallace's notebook gives no separate details for the Ceram, Mysol and Waigiou insects. The totals collected by him and Allen were: Coleoptera 7782 (2436 private), Lepidoptera 2718 (580), miscellaneous 3151 (1246).

British Museum: the BM purchased from Stevens (1) 22 Coleoptera and 3 Hemiptera from Goram, Matabello and 'Kaisa' (Accession Number 62.5, entry not dated), (2) 25 Lepidoptera from 'North Ceram' (Accession Number 62.6, entry not dated), (3) a small mixed collection, including 33 Coleoptera and 18 'Hymenoptera etc' from 'N. Ceram' (part of Accession Number 62.7, entry again not dated but like the two preceding probably January; the greater part of the accession was from Waigiou), and (4) 39 Lepidoptera from 'Ceram' (Accession Number 62.19, 7 February 1862).

W.W. Saunders: Saunders' Ceram and 'Martabello' Hymenoptera were treated by Smith (1863, read 15 January 1863; Matabello is not included in the title of Smith's paper but see, e.g.p. 17, *Polyrhachis paxillus*).

Pinned specimens labelled 'Cer. E.' are no doubt from the southeast and northeast coasts of Ceram, taken by Wallace on the present voyage. It is uncertain whether specimens labelled 'Cer' or 'Cer.' may not include, as well as material from Wallace's earlier visit to the south-west coast, material from the north coast obtained by Allen at Wahai in July/August 1860. Specimens labelled 'Mano.' † [Manowolko], 'Mat.' [Matabello], or 'Gor.' † [Goram] need no further explanation.

Birds.— Wallace recorded (notebook, p. [34]), as taken on Ceram, 317 birds of 68 species, of which 95 specimens were reserved for his private collection and 222 were for sale. The Ceram figures almost certainly included specimens taken on the small chain of islands east of Ceram, as named above. The BM purchased from Stevens in December 1861 a mixed lot of 116 birds from 'Waigiou, N Ceram, Mysol, Goram, Matabella, Matabello' (Accession Number 1861.12.11, 1-116). Sharpe (1906: 491) listed species from this collection new to the Museum but did not distinguish between the localities. His list therefore is of little use and is not reproduced here.

Vertebrates other than birds.— Wallace, in the 'Malay Archipelago', made no reference to any specimens obtained on Ceram on either the outward or the homeward voyage, but did note several times that collecting generally was poor. The notebook records few mammals: 1 Cuscus, 2 small bats, 10 *Pteropus* of three species and 1 *Sorex*. In December 1861 the BM purchased a mixed lot of 28 specimens from various localities including Ceram and E. Ceram (Accession Number 1861.12.11): the 'E. Ceram'

specimens should be from Wallace's visits to eastern Ceram in 1860. [36 Reptilia from N Ceram (Accession Number 1863.2.28) and 13 vertebrates in spirits (Accession Number 1863.3.30) were acquired by the BM in 1863. The Register does not identify the collector, but this was probably Wallace material released after his return to England in 1862.]

Waigiou [Waigeo] (July-September 1860, notebook p. [34])

After an eventful voyage, Wallace arrived at Muka on the south coast of Waigiou on 4 July 1860 [MA 523]. After a month [mid-August ?] he moved to Bessir [Besir] [MA 350] where he stayed six weeks [MA 531]. He left Waigiou for Ternate on 29 September 1860.

Wallace's Waigiou material was included in the 'Ceram, Mysol & Waigiou' collection referred to above, despatched from Ternate in January 1861 and arriving in London on, apparently, 15 April. Apart from the insects and birds, the consignment included, from Waigiou, a few mammals (1 small bat, 1 *Mus* and 6 *Cuscus*) and 403 land shells.

Insects.— As noted above, Wallace's notebook gives no separate details for the Ceram, Mysol and Waigiou insects included in the January 1861 shipment. British Museum: the BM purchased from Stevens 122 specimens from Waigiou, chiefly Coleoptera and Lepidoptera (Accession Number 62.7, entry not dated but probably January).

W.W. Saunders: what were presumably Wallace's Diptera from Waigiou (Walker did not identify the collector) were the subject of Walker's 'Descriptions of new species of the dipterous insects of New Guinea' (Walker, 1865a, read 3 March 1864): Walker's later paper (Walker, 1865b, read 3 March 1864, in which he again did not identify the collector) dealt specifically with Diptera (presumably Allen's) from Salwatty. Saunders' Hymenoptera from Waigiou were treated by Smith, jointly with others from Mysol, Ceram, Bouru and Timor (Smith 1863, read 15 January 1863).

Pinned specimens were labelled 'Wag.' or 'Wag'.

Birds.— Wallace wrote that he collected 73 species of birds on Waigiou, including 'the New Guinea kite, *Henicopernis longicauda*, a new goatsucker, *Podargus superciliaris*, a ground-pigeon representing a new genus, *Henicophaps albifrons*, the large fruit-pigeon *Carpophaga tumida* and twenty-four fine specimens of the *Paradisea rubra*' [MA 536]. In his notebook, Wallace recorded having taken 343 birds of 74 species, of which 96 specimens were reserved for his private collection and 247 were for sale.

The BM purchased from Stevens in December 1861 the mixed lot of 116 birds already referred to that included, among others, specimens from Waigiou (Accession Number 1861.12.11, 1-116). Sharpe's list (1906: 491) of species in this lot new to the Museum did not include any of those named by Wallace; however his list (l.c.) of birds new to the Museum in a subsequent lot of 35 birds from 'Morotai, Gilolo, Ternate, New Guinea, Salawati' did include the *Henicophaps*: some carelessness in the handling of Wallace's material seems to have occurred. Wallace's birds from Waigiou, jointly with those from Gagie and Allen's birds from Mysol, were treated by G.R. Gray (1860/61).

Waigiou to Ternate (September-November 1860)

Wallace sailed from Waigiou for Ternate on 29 September 1860 [MA 537]. He called en route at Gagie [Gag] (3-4 October) [MA 538; map], and, arriving off the southern tip of Gilolo on the 6th October, was forced by weather conditions to run northwards along the eastern coast of the peninsula [MA 540-543]. The Dammer [Damar] strait was finally negotiated on the 18th and a slow voyage up the west coast of the peninsula brought him to Kaióa on the 25th, where he stayed a few days [MA 544] but obtained few insects [MA 545], and eventually, skirting Makian on the 3rd November, to Ternate on the 5th. Here he found Allen, who had arrived from Mysol about three weeks earlier, waiting.

Little collecting was done in the course of this voyage, and there is no direct reference to it in the notebook, but the Gilolo land shells included in the Ceram-Mysol-Waigiou shipment were possibly obtained on it.

Insects.— Gagie does not appear in the BM accessions register.

Insects from Gagie were labelled 'Gag.', from Kaióa, presumably 'Kai', as on Wallace's first visit in 1858.

Birds.— Gagie does not appear in the BM accessions register.

Wallace's birds from Gagie, jointly with those from Waigiou and Allen's birds from Mysol, were treated by G.R. Gray (1862).

Ternate (fourth visit, November 1860 - January 1861)

Wallace wrote [MA 317] that on his return from Waigiou in 1860, he 'stayed some days on the southern extremity of Gilolo'. If he was referring to his call at Gani while slowly working his way up the W coast of the southern peninsula of Gilolo, then neither his account of his voyage nor the dates shown on his map [MA 538] allows for such a visit: he was at Gani only from the evening of 18 October until the afternoon of the 20th. If he was referring to some other visit made between his arrival at Ternate on 5 November 1860 and his departure for Timor on 1 January 1861, then no other reference to it has been noted. He was certainly in Ternate on 20 December (letter of that date, addressed to Pascoe, in Hope Library), and apparently stayed there until the end of the month [ML 373]. Whether Allen remained with him until his departure for Timor, or had already left for the northern peninsula of Gilolo and for Morty Island, is unclear, but it seems likely that the two would have stayed together over Christmas (see under 'Allen').

Timor (third visit, east Timor, January-April 1861, notebook p. [35])

Wallace left Ternate for Delli [Dili], the principal town of Portuguese east Timor, on 1 January 1861 [Jnl] and arrived on 12 January [MA 188]. He remained there, apart from a week spent inland at Baliba, at about 2000 ft., during February [MA 190], until leaving for Banda on 23 April. The entries in the notebook are not readily interpreted. A part of Wallace's Delli collections, comprising a small num-

ber of Lepidoptera and Coleoptera in papers and most of his birds, packed in four cases, was apparently consigned to Batavia on '4 Ju.' [probably June, as Wallace used this abbreviation elsewhere] and reconsigned on 5 August by the 'W. Simpson'. A second and larger part, consisting of Lepidoptera and Coleoptera with some miscellaneous insects, was sent with his Bouru collections, apparently despatched from Sourabaya on 20 July and this also reconsigned by the 'W. Simpson' on 5 August.

Insects.— The first of Wallace's consignments from Delli included 26 Coleoptera and 180 Lepidoptera, all in papers; the second 146 Coleoptera for his private collection and 250 (probably an approximate figure) for sale, 140 Lepidoptera for his private collection and 150 (pinned) for sale, and 130 miscellaneous insects, all for sale.

British Museum: the BM purchased from Stevens 23 Coleoptera and 20 Lepidoptera entered as from Timor but later annotated (whether correctly ?) 'should be Batchian v. Koltes [?] Novitates' (Accession Number 62.62, 8 August 1862).

W.W. Saunders: Timor Hymenoptera in Saunders' collection were treated by Smith (1863, read 15 January 1863) when they were associated with, in particular, Bouru material, whence almost certainly they came from this, Wallace's third visit to the island, and, therefore, east Timor. Pinned specimens were labelled 'Del.' †; specimens labelled 'Tim.' are probably not from Delli but from W Timor.

Birds.— Wallace wrote that he collected, on the way up to Baliba, the white-headed pigeon *Ptilonopus cinctus* and the lorikeets *Trichoglossus euteles* and *T. iris* [MA 191].

The first of Wallace's consignments from Delli included 141 birds for his private collection and 475 duplicates intended for sale. The BM purchased from Stevens, in March 1862, 114 birds from this consignment (Accession Number 1862.3.20, 1-114). Sharpe (1906: 491) listed as new to the Museum '*Ptilotis maculata*, *Philemon inornatus*, *Myzomela vulnerata*, *Dicæum mackloti*, *Halcyon australasiæ*, *Rhipidura semicollaris*, *R. rufiventris*, *Ptistes jonquillaceus*, *Artamides personatus*, *Pachycephala calliope*, *Lalage timoriensis*, *Turacæna modesta* and *Geopelia maugei*'.

Two gin cases included in Wallace's Bouru consignment (notebook, foot of p. [35], boxes 4 and 5) included some Timor birds (not necessarily from his 1861 visit, as he was obviously clearing out the residue from his earlier travels), and there were also a few in the large case numbered '1' originally intended to form part of his Bouru consignment but left instead at Batavia on 1 November 1861 to be sent on to Stevens after his departure (marked 'A' on notebook pages 35, 36: 'In large case all Bouru birds with a few Timor and Gilolo to fill up - all marked'). The Timor birds included in these two consignments would not have reached London in time for any to have been included in the Museum's 1862 purchase. Some may have been included among the '29 birds from various Molucca Islands' purchased by the BM in 1865 (Sharpe, 1906: 492).

Vertebrates other than birds.— No record in MA. Two specimens from Timor included in a mixed lot purchased by the BM in March 1862 (Accession Number 1862.3.24) presumably came from the same consignment as the birds purchased in that month (vide supra).

Banda (third visit, April-May 1861)

Wallace arrived at Banda on 29 April 1861 and left on 1 May for Bouru. This visit was not noticed in his notebook, and as it was so short he can have undertaken little collecting.

Bouru [Buru] (May-June 1861, notebook p. [35]-[36])

Wallace arrived at Kajeli [Kayeli], at the eastern end of the island, on 4 May 1861. From Kajeli he visited Wayapo, which he found unpromising, and then Waypoti [? Wapotin], which he reached on 19 May [MA 386]. On 27 June he left for Java, via Ternate, Menado and Macassar. Wallace's Bouru collections appear to have been despatched, at least in part, from Sourabaya on 20 July 1861 and reconsigned from Batavia, on 5 August, by the 'W. Simpson'. With the Bouru collections were despatched seven cases or boxes (p. 35, foot, items numbered 2 to 8) containing miscellaneous specimens from various localities.

Insects.— Wallace's notebook records his Bouru collections as totalling 1226 Coleoptera [in 210 species: MA 387] (366 private), 311 butterflies (121 private) and 180 miscellaneous specimens, in all 1717.

British Museum: the BM purchased from Stevens (1) 10 Lepidoptera from 'Boroo' (Accession Number 62.87, November/December 1862), and (2) 22 Coleoptera, 5 Orthoptera and '11 various' (Accession Number 63.8, January [?] 1863).

W.W. Saunders: Saunders' Hymenoptera from Bouru, jointly with material from Mysol, Ceram, Waigiou and Timor, were treated by Smith (1863, read 15 January 1863). Clearly this material must have been in Smith's hands well prior to the date of the BM's purchase. Pinned specimens from Bouru were labelled 'Bouru' or 'Booro'.

Birds.— Wallace recorded that he collected 66 species on Bouru, of which 17 were new or had not previously been found in any island of the Moluccas [MA 390]. These included 'a new *Pitta*, two kingfishers, *Tanysiptera acis* and *Ceyx cajeli*, a sunbird, *Nectarinea proserpina*, and a flycatcher, *Monarcha loricata*. Some of Wallace's Bourou birds (84 for his private collection, 183 for sale) appear to have been despatched from Sourabaya on 20 July 1861 and reconsigned from Batavia on 5 August in the 'W. Simpson' (note at foot of p. [35] of notebook). Others were included in the large case 'A' left at Batavia on 1 November 1861 to be sent on: 'A large case all Bouru birds and all pinned specimens N[ew]. G[uinea]. Bouru & T[imor]. Delli with a few Timor & Gilolo to fill up'. From these consignments the BM purchased from Stevens in February 1863 15 birds collected by Wallace: 'All Bouru except one Ceram and one New Guinea?' (Accession Number 1863.2.16, 29-43). Sharpe (1906: 491), who, however, gave all 15 birds as from Bouru, listed as new to the collection: '*Pitta rubrinucha*, *Rhipidura bouruensis*, *Monarcha loricata*, *Philemon moluccensis*, *Oriolus bouruensis*, *Edoliisoma marginatum*, *Criniger mystacalis*, *Athene hantu*, *Myristicivora melanura*, *Tanygnathus affinis* and *Ninox squamipila*'.

Vertebrates other than birds.— Wallace identified no mammals in his notebook but recorded [MA 391] having obtained a skull of the hog-deer, babirusa, *Babirussa*.

The BM purchased from Stevens a mixed lot of 9 specimens from Bouru and N. Guinea (Accession Number 1862.5.24).

Ternate (fifth visit, June/July 1861)

Wallace stayed only two days in Ternate on this, his last visit, before crossing to Menado en route for Java [MA 390]. The visit was largely devoted to retrieving and taking on board the various possessions he had accumulated there. It marked the end of his travels in the Moluccas.

Java (July-November 1861, notebook p. [36])

Wallace arrived in Sourabaya from Ternate on 18 July 1861 [MA 94, 99]. After a fortnight spent in sending off his last collections [viz., those from E Timor and Bouru], he started on a journey into the interior [MA 99]. After a month's collecting at Wonosalem and Djapannan he returned to Sourabaya and a few days later went by steamer via Samarang [MA, map accompanying preface] to Batavia [MA 110]. He stayed in Batavia [Jakarta] for about a week and then travelled inland via Buitenzorg [Bogor] as far as Mt Pangerango, where he collected at altitudes of up to about 9,000 ft. Wallace spent a month in the interior [MA 114] before returning to Batavia to pack his collections and arrange for their despatch, and finally left on 1 November 1861 for Banca [Bangka] and Sumatra. Wallace's Javan collections were left at Batavia addressed to Stevens (notebook, p. [36]). The notebook (p. [36]) gives few details of the contents of this consignment, and none at all of its passage to London. By the long sea route, the consignment, if shipped promptly, should have arrived by March 1862, but there appear to be no references to material derived from it in BM Accessions Registers.

Insects.— Wallace referred in MA to several of the more striking butterflies he observed or collected in both East and West Java, noting that at Wonosalem and Djapannan he 'accumulated ... a most miserable lot of insects' [MA 110] but that in the west 'Large and handsome butterflies were ... tolerably abundant'. There is no reference to any Javan insects in Wallace's notebook.

British Museum: Java does not appear in the BM Annulosa Register.

W.W. Saunders: Java does not appear in the titles of any of Walker's or Smith's series of papers.

Pinned specimens were labelled 'Java' or (A.Z. Smith, 1986: 99) 'Jav.' †.

Birds.— Wallace obtained at Wonosalem the Javan peacock [MA 107]; at Djapannan he made 'a tolerable collection' of birds, including 'more of the peacock, the green and common jungle-fowl, *Gallus furcatus* and *G. bankiva*, six species of woodpeckers and four of kingfishers, the hornbill *Buceros lunatus*, and a small lorikeet, *Loriculus pusillus* [MA 108-109]; and in the month's collecting at these two localities a total of 98 species of birds. In W Java he obtained, near the summit of the pass over the Megamendong Mountain, 'a trogon, *Harpactes Reinwardti*, the minivet flycatcher *Pericrocotus miniatus*, and the black and crimson oriole *Analcipus sanguinolentus*' [MA 113]; in a fortnight he had added 40 species to the number collected in the east of the

island. In his notebook, Wallace recorded only 'Gin case, Java birds. Private.' and '[Box] with Peacock and Hornbills'.

Vertebrates other than birds.— No record. The skull of a man-eating tiger killed near Modjo-agong was destroyed before Wallace could secure it.

Sumatra (November 1861-January 1862)

Wallace arrived at Muntok [Mentok] on Banca on 3 November 1861 and left for Palembang on the 7th, arriving the following day [MA 121-122]. After a week at Palembang, he travelled inland by stages to Lorok, Moera-dua and Lobo Raman, where he had a month's collecting [MA 127]. From Lobo Raman [he was there on 22 December: ML 379] he returned to Palembang, and on 20 January 1862 left Sumatra for Singapore. Although he remained in Singapore until 20 February [Bastin], his departure from Sumatra marked the end his travels in the East and the end of any serious collecting. Sumatra does not appear in Wallace's notebook, which ends with the consignment left in Batavia on his departure from Java. Presumably, his Sumatran collections travelled with him when he returned to England.

Insects.— Wallace recorded that although he was at Lobo Raman in the rainy season, 'when in the very best of localities, insects are always scarce', he obtained 'several fine species [of butterflies] quite new to me, and a considerable number of very rare and beautiful insects' [MA 127]. In MA he included an extensive note (pp. 128-133), with woodcuts, on two of the butterflies, the mimetic swallow-tail *Papilio memnon* Linnaeus, 1758, and the leaf-butterfly *Kallima paralekta* (Horsfield, 1829).

British Museum: Sumatra does not appear in the BM Annulosa Register.

W.W. Saunders: Saunders' Sumatran Hymenoptera, jointly with others from Sula, Gilolo, Salwatty and New Guinea, were treated by Smith (1865, read 2 June 1864). Pinned specimens were labelled 'Sum.' †.

Birds.— During his stay at Lobo Raman, Wallace added only three or four new species to his list but 'obtained very fine specimens of many which were rare and interesting [MA 127]. At Palembang on his return he obtained male, female and young of the hornbill *Buceros bicornis* (illustrated in the 'Malay Archipelago' by a wood engraving by T.W. Wood).

The BM Aves Accessions Register records no Sumatran material, unless a mixed lot of birds from 'Sumatra & Siam. Lao Mountains' included Wallace material (Accession Number 1862. 9. 22, no collector given). The BM continued to buy what was evidently Wallace material from Stevens for several years after Wallace's return to England (e.g., Accession Number 1865.9.7, 1-29, from Gilolo, Batchian, N. Celebes, Amboina, Salawatti, Dorey, Bouru, Aru, N.G., Borneo; no collector given), but whether these purchases came from a further viewing of Stevens' stock or from material released by Wallace from his private collection is immaterial: such late purchases can throw no light on when material from those and other localities first became available.

Vertebrates other than birds.— Wallace recorded that about Lobo Raman tusks

and bones of elephant, then already scarce and in retreat, were occasionally found, and that he obtained a skull of the then still abundant *Rhinoceros sumatranus*. He collected the flying lemur *Galeopithecus*, which he had encountered earlier in Singapore and Borneo, and took live to Singapore a siamang, *Siamanga syndactyla* [MA 134-137]; he referred also, without disclosing whether they were collected, to two species of monkeys, *Semnopithecus*.

Allen, 1860-1862

About the end of January 1860, at Amboyna, Wallace was rejoined by Allen [MA 303]. From that date until Wallace's departure for England in February 1862 and Allen's abortive visit to Borneo in late 1861 the two were to travel independently.

Wallace left Amboyna for Ceram and Waigiou on 20 February 1860, leaving Allen 'to go by a Government boat to Wahai on the north coast of Ceram, and thence to the unexplored island of Mysol' [MA 304]. Allen's Mysol visit is sufficiently well documented in the 'Malay Archipelago', but from his return to Ternate about the middle of October 1860 until his arrival at Coti towards the end of 1861 the dating of his journeys poses problems.

Allen apparently left no independent record of where he went, what he observed, or what he collected, and for his movements after leaving Amboyna for Mysol one is dependent on occasional cursory references in the 'Malay Archipelago'; entries, which do not extend in date beyond the Sula Is. in Wallace's notebook; and on the generally unhelpful appearance in BM Accessions Registers and in published papers of the names of places where Allen alone collected. Unfortunately also, Wallace's map, which purports to show 'Mr. Allen's routes' as well as his own, is remarkably deficient in this respect.

From Ternate, towards the end of 1860 or early in 1861, Allen went first to Gilolo and Morty Island, where he stayed 'two or three months' [MA 313] and then to New Guinea, where he stayed for a period of more than one but perhaps less than two months. From New Guinea he went first to the Sula Islands, where he stayed for two months [ML 395], then to Flores, where he stayed 'some months' [ML 288; but, ML 395, two months], next to Solor, the duration of this visit apparently unrecorded, and finally to Coti on the E coast of Borneo. In between these visits he presumably, on two occasions at least, rendezvoused with Wallace in Java, since his New Guinea collections were included in Wallace's July shipment from Sourabaya and his Sula birds in the consignment left by Wallace at Batavia on 1 October 1861 for onward shipment; certainly, it was planned that, on leaving Coti, Allen was to return to Sourabaya with his collections before visiting Sumba, a journey that, as it happened, was never undertaken.

Mysol [Misoöl] (February - September 1860, notebook p. [34])

Allen collected for more than six months [Wallace, 1871: 288] at Silinta [Lelintah] on the south coast of Mysol [MA 376]. Wallace, arriving at Wahai in Ceram on 15 June 1860, found a letter from Allen, who was ill and short of supplies, awaiting him [MA 382]. Wallace left for Silinta on 17 June to relieve Allen, but his prau was carried west

of Mysol by the current and he was forced to make for Waigiou [MA 513-515]. Allen, having waited until he was nearly starved, came to Waihai only to find that Wallace had departed a fortnight previously [MA 548]. He was delayed in Waihai for two months [ML 390; viz, throughout July and August] and then returned to Mysol where he found better collecting on the north coast but had only two weeks before the last prau of the season left for Ternate [MA 548]. This was presumably at some date towards the end of September or early in October, since he arrived in Ternate in the middle of that month (see below, under Gilolo). The material collected by Allen on Mysol was included in Wallace's shipment of January 1861, 'Ceram, Mysol & Waigiou, 1860'.

Insects.— Wallace (notebook, p. [34]) aggregated the Ceram, Mysol and Waigiou specimens in this shipment. The 13,651 specimens consigned comprised 4262 for his private collection and 9389 duplicates for sale.

British Museum: the BM purchased from Stevens 485 Mysol specimens of all orders (Accession Number 61.124, December 1861).

W.W. Saunders: Allen's Hymenoptera from Mysol, jointly with Wallace's from Ceram, Waigiou, Bouru and Timor, were treated by Smith (1863, read 15 January 1863).

Pinned specimens were labelled 'M.' or 'M' (see, for examples, Baker, 1993: 205, 223, 229, 230), but 'M' was also used for Morty specimens collected by Allen (Baker, 1993: 214, 222, 235, 236). It was thought formerly (Baker, 1996) that 'M' written by Wallace could be distinguished from the same letter written by Allen, but it is now evident that Wallace himself used two very different forms: compare the 'M' in 'Mammalia' as it appears on pages [10] and [26] of his notebook. Where a specimen labelled 'M' cannot be directly associated with a published description, and the species to which it is referred is not a known Mysol or Morty endemic, its origin may be problematic. In the instance of specimens directly acquired by the British Museum from Stevens, however (i.e., not at some later date as part of Frederick Smith's or other private collection), any labelled 'M' associated with the Accession Number 61.124 must be from Mysol and most probably from the Silinta district: in December 1861, Morty material had not reached London.

Birds.— Allen obtained 503 birds of 100 species on Mysol, of which total 117 specimens were reserved by Wallace for his private collection (notebook, p. [34]).

The BM purchased from Stevens in December 1861 a parcel of 116 birds from various localities including Mysol, those from this locality evidently Allen specimens (Accession Number 1861.12.11, 1-116): see above under 'Wallace', Ceram, second visit. Sharpe, who persistently ignored the fact that Allen alone had collected in certain localities, and credited all his collecting to Wallace, did not (Sharpe, 1906: 491) distinguish between Mysol specimens and those from other localities included in the accession, and his list of species new to the Museum is not, therefore, reproduced here. Allen's Mysol birds, jointly with Wallace's birds from Waigiou and Gagie, were treated by G.R. Gray (1862).

Vertebrates other than birds.— Wallace listed from Mysol (notebook, p. [34]) 6 kangaroos, 3 rats, 1 *Belideus*, 3 *Pteropus* and 2 bats. The BM purchased from Stevens in

December 1861 a parcel of 28 specimens from various localities including Mysol, those from this locality evidently Allen specimens (Accession Number 1861.12.11).

Ternate (mid-October 1860 - January [?] 1861)

Allen arrived back in Ternate on or about 16 October 1860 expecting to find Wallace there, but Wallace's return voyage from Waigiou had been slow and he did not arrive until 5 November [MA 537] when he found Allen anxiously awaiting him [MA 546]. From Ternate, Allen's Mysol and Wallace's Waigiou and Ceram collections were despatched in January 1861 (notebook, p. [34]).

Gilolo and Morty Island [Morotai] (between mid-October 1860 and mid-March 1861)

Apart from his two brief visits to western central Gilolo in 1858 and an unsatisfactorily documented visit of 'some days' to the southern extremity of the island at some date between 5 November and 20 December 1860 (see above, under Waigiou to Ternate), Wallace did not collect on Gilolo. He did, however, send first Ali and then Allen who 'stayed two or three months each in the northern peninsula, and brought me back large collections of birds and insects' [MA 313]. Wallace's route map shows that Allen crossed the isthmus separating the northern arm of Gilolo and travelled up the east coast to Galela whence he crossed the strait to Morty Island. When was this visit made? When was Ali's visit made? It is regrettable that Wallace was so uninformative, if not ungenerous, concerning the very important contributions made to his enterprise by his principal assistants.

As to Allen, if he left Ternate for Gilolo and Morty shortly after Wallace's return from Waigiou on 5 November 1860, and spent, say, two and a half months in those places, he should have been back in Ternate (to prepare for his next voyage, to New Guinea) by about the beginning of February 1861; if not, if he remained with Wallace in Ternate until about the the time of the latter's departure for Delli in E Timor at the end of December [ML 373], then by about mid-March. The dates indicated above are the widest probable limits.

Insects.— As indicated above, there is no reference to Allen's 'large collection' of Gilolo insects in Wallace's notebook or to any Morty material.

British Museum: the BM apparently purchased no material from Allen's visit of about the end of 1860. [For an 1860 BM accession of Gilolo material see above under 'Wallace', Gilolo.]

W.W. Saunders: Allen's 1860/61 Hymenoptera from Gilolo and Morty, jointly with those he obtained in New Guinea and the Sula Is and with Wallace's from Sumatra, were treated by Smith (1865, read 2 June 1864).

Pinned specimens from Gilolo labelled 'Gil.' are not necessarily from Allen's 1860/61 collection, but, of course, given the length of his visit and Wallace's comment, the majority probably are. Pinned specimens from Morty were labelled 'Morty I.', 'Morty Isl.', or, unfortunately, 'M', inviting confusion with Mysol material: see above, under Mysol. It is suggested that Allen, who had already used 'M' for Mysol,

might have used 'Morty' or 'Morty Isl.' for his subsequent captures on Morty, and that Wallace might have used 'M' for material collected by Ali, but this of course is pure conjecture.

Birds.— Unspecified numbers of birds from Gilolo, probably in large part from Allen's longer visit, were included both in Wallace's Bouru consignment despatched from Sourabaya on 20 July 1861 (notebook, p. [35]) and in the large case 'A' left at Batavia on 1 November 1861 for subsequent despatch. Unspecified numbers of birds and mammals from New Guinea, almost certainly from Allen's visit to Salwatty and Sorong, were, also, included in the Sourabaya consignment.

How was it that Wallace received Allen's Gilolo and New Guinea collections in time to include them in his Sourabaya shipment? Were they despatched, together or individually, to Wallace in Sourabaya, did Allen carry them himself to Sourabaya (in either instance, Allen would have needed to know Wallace's plans well in advance), or, as seems probable for the Gilolo and Morty material at least, did Wallace pick them up at Ternate on his last, brief, two-day, visit at some time in June-July 1861? The BM purchased from Stevens in September 1862 a parcel of 35 birds from various localities including Morty Island and Gilolo (Accession Number 1862.9.11, 1-35), these last evidently from Allen's visit. Sharpe (1906: 491) did not distinguish between Morty and Gilolo specimens and those from other localities included in the accession, and his list of species new to the Museum is not, therefore, reproduced here.

Vertebrates other than birds.— There is no record of any in the notebook, but some must have been collected: the BM purchased from Stevens in October 1862 a mixed parcel of 21 specimens from Morty and 'Jilolo' of which only four were attributed to Wallace although in all probability all formed part of the Sourabaya consignment. The bat *Cynopterus albiventer* was described by J.E. Gray (1863, read 25 November 1862) from Morty.

New Guinea (between February and June 1861)

At some date early in 1861, Allen sailed from Ternate for New Guinea. Using the small prau that Wallace had fitted out at Goram [MA 571], he went first to Salwatty [Salawati] and next crossed to the mainland at Sorong, on the NW coast of the Vogelkop peninsula. After some delay he was able to penetrate some distance inland, where he remained a month at a hill village [MA 572].

The dates of Allen's setting out for Salwatty and of his leaving Sorong are uncertain. He could hardly have left Ternate before February 1861 and may have left as late as mid-March: see above, under Gilolo and Morty Island. As to his departure from Sorong, there is some slight evidence in Wallace's notebook. There is no direct reference to Allen's New Guinea collections, as such, in the notebook, but two entries do, in all probability, relate to Allen's Salwatty and Sorong specimens: (1) two cases containing 'N. Guinea Birds & Mammals' were included in Wallace's Bouru (Sourabaya) consignment of 20 July 1861 (cases 2 and 3), whence it seems reasonable to assume that Allen must have left New Guinea before that date,

perhaps in June; and (2) 'all pinned specimens N.G.' were included in the large case 'A' held back from this consignment and subsequently left at Batavia for onward consignment (see above). The dates given above are the widest possible limits within which Allen's New Guinea voyage, of not, probably, much more than two months, should fall.

Insects.— British Museum: the BM purchased from Stevens (1) 85 Lepidoptera and Coleoptera [also some Diptera?] from 'Salwatty & New Guinea' (Accession Number 62.91, November/December 1862), and (2) 346 Hymenoptera, Diptera and Hemiptera from 'New Guinea and Salwatty' (Accession Number 63.7, January [?] 1863). All these were clearly from Allen's collections.

W.W. Saunders: Diptera from 'New Guinea' [Sorong] and from Salwatty were dealt with separately by Walker (1865a, 1865b, both read 3 March 1864). Walker did not include 'collected ... by Mr. A.R. Wallace' in the titles of these papers, as he had in his earlier papers dealing with material in Saunders' collection, and did not refer to Wallace in the text, but there can be no doubt that he was dealing with Allen's 1861 collections. Allen's Hymenoptera from Salwatty and New Guinea [Sorong], jointly with those he obtained in Gilolo, Morty and the Sula Islands and with Wallace's from Sumatra, were treated by Smith (1865, read 2 June 1864).

Pinned specimens were labelled 'N' [New Guinea: for Sorong specimens?], 'S' † or 'Sal' for Salwatty.

Birds.— Of the birds obtained by Allen in New Guinea, Wallace mentioned only *Seleucidés alba*, collected both on Salwatty and at Sorong [MA 572].

The BM purchased from Stevens in June 1862 three birds all from New Guinea (Accession Number 1862.6.20, 1-3); in September of that year a mixed collection of 35 birds from 'Morty Island, New Guinea, Salawetti, Gilolo, Ternate' (Accession Number 1862.9.11, 1-35); and in December five more birds from New Guinea (Accession Number 1862.12.20, 5-9). The New Guinea and 'Salawetti' birds in these parcels clearly came from Allen's collecting. Sharpe (1906: 491) did not distinguish between Morty and Gilolo specimens and those from other localities included in the accession, and his list of species new to the Museum is not, therefore, reproduced here.

Vertebrates other than birds.— Some New Guinea mammals were despatched with the birds, as indicated above. A mixed lot of 9 specimens from Bouru and New Guinea was purchased by the BM in May 1862 (Accession Number 1862.5.24).

Sula Islands [Kepulauan Sula]; Flores; Solor (between June and December 1861)

Wallace recorded that Allen, on his return from New Guinea, 'went to the Sula Islands, and made a very interesting collection', and that 'His next journey was to Flores and Solor, where he obtained some valuable materials' [MA 548]. Wallace's map of his and Allen's routes [MA, at beginning of preface] does not show Allen's route to Flores and Solor; it does purport to show that Allen went directly from New Guinea to Sula Mangola.

Allen collected on the southern and eastern Sula Islands (Wallace, 1862: 334). Wal-

lace received his collections at some date after 20 July 1861 (assuming that negative evidence is admissible: there is no reference to any Sula material in Wallace's record, notebook, p. [35], of the his Sourabaya consignment of his Bouru collections) and before 1 October 1861 (Sula birds were included in the consignment left at Batavia on that date for onward shipment), whence Allen would have left the Sula Islands at some intermediate date. If he left New Guinea in June, as suggested above, and was in the Sula Islands two months [ML 395], his stay there may approximately be dated to August-September 1861. This leaves the period October-December to accommodate his visits to Flores (where he spent 'some months' [Wallace, 1871: 288]; 'two months' [ML 395]) and Solor, and his starting for Coti.

Insects.— British Museum: the Sula Islands, Flores and Solor do not appear in the BM Annulosa Accessions Register.

W.W. Saunders: Allen's Hymenoptera from the Sula Islands, jointly with those he obtained in Gilolo, Morty and New Guinea and with Wallace's from Sumatra, were treated by Smith (1865, read 2 June 1864). Flores and Solor do not appear among the titles of Smith's papers.

Pinned specimens from Sula were labelled 'Sula' †, from Flores 'F.' or 'Flo.' † (A.Z. Smith 1986: 99). Specimens labelled 'S' are from Salwatti, q.v.

Birds.— Allen's Sula birds, in two boxes, were left by Wallace at Batavia on 1 November 1861 to be sent on to Stevens (notebook, p. [36]). There is no record of the date of their despatch, but they should have reached Stevens by about March 1862. There is no mention in Wallace's notebook of Allen's Flores and Solor collections. Wallace published in 1863 a 'List of birds from the Sula Islands ... with descriptions of the new species' (Wallace, 1863).

The BM purchased from Stevens in December 1862 a mixed batch of 30 birds, 28 from Sula, evidently of Allen's collecting, and one each from Bouru and Batchian (Accession Number 62.12.21, 1-30). Sharpe (1906: 491), who gave all the specimens as having come from Sula and, as usual, as having been collected by Wallace, listed as new to the Museum in this accession '*Loriculus sclateri*, *Psitteuteles flavoviridis*, *Oriolus frontalis*, *Criniger longirostris*, *Pitta crassirostris*, *Pelargopsis melanorhynchus*, *Chibia pectoralis*, *Artamus monachus*, *Hypotaenidia sulcirostris* and *Rallina minahassa*'.

The BM purchased further, in December 1863, another mixed batch, of 25 birds, 23 from Flores (although only one, no. 1, so marked), evidently of Allen's collecting, and one each from 'Salwatti' (no. 23) and Batchian (no. 25) (Accession Number 63.12.16, 1-25). Sharpe (1906: 492), who gave all the specimens as having come from Flores, listed as new to the collection '*Rhipidura diluta*, *Pachycephala fulvotincta*, *Taeniopygia insularis*, *Sporæginthus flaviventris*, *Zosterops aureifrons*, *Dicæum ignifer*, *Osmotreron floris* and *Accipiter sylvestris*'.

The Bouru, Batchian and Salwatti specimens in these two purchases may have formed part of the Sula and Flores sendings, coming from material not packed in previous consignments, or may simply have been found on re-inspection of Stevens' existing stock.

Vertebrates other than birds.— There is no record of any in the notebook.

Borneo (late 1861)

It was planned that, after visiting Flores and Solor, Allen should first visit Coti [Koti, on the Mahakkan R., 0°58' S, 117°10' E], on the east coast of Borneo, and then, after returning to Sourabaya, visit Sumba. Allen, however, 'was seized with a terrible fever on his arrival at Coti, and after lying there some weeks, was taken to Singapore in a very bad condition', arriving there after Wallace had left for England [MA 548]. He subsequently settled in Singapore and, apparently, undertook no further collecting.

Just as he had earlier dismissed Ida Laura Pfeiffer's efforts, Wallace sought later to belittle Allen's efforts. He wrote to Poulton (15 March 1896): 'All insects were collected by myself except those from Mysol, Salwatty, and a few from Flores, where C. Allen went alone, but I selected the series and labelled them where required myself ...'. This statement was manifestly untrue: Wallace conveniently forgot Allen's 'large collections of birds and insects' from Gilolo [MA 313], his collections from Morty Island and his 'very interesting' collections from the Sula Islands.

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Dates of the reading of papers have been included where known, since they obviously set, by a substantial if variable margin, *termini ante quem* for the receipt by authors of the material they treat. Dates of publication of papers published in the Proceedings of the Zoological Society of London are based on Duncan, 1937. It may be noted that up to 1860 the Society's annual volumes were described as 'Parts' (Parts I-XXVIII) and that from 1861 onwards the annual volumes (issued in parts, now in the ordinary sense) were identified simply by nominal dates, those of the years for which they were issued, no volume numbers being assigned. As a result, papers not in fact published within volume years have frequently been mis-dated by later authors.

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Appendix: first notices of localities in the literature, in British Museum accessions registers, or in MS sources

Note: (1), (2), etc = 1st, 2nd, etc, visits; (A) :Allen.

Locality	Date of visit	First notice
Amboyna (1)	Dec 1857- Jan 1858	28 May 1858 (BM, Annulosa register)
Amboyna (2)	Sep-Oct 1859	?
Amboyna (3)	Dec 1859-Feb 1860	?
Aru Is	Jan-Jul 1857	20 Feb 1858 (BM, Mammalia etc register) [arr. London Jan 1858]
Bali	June 1856	26 May 1857 (BM, Annulosa register)
Batchian	Oct 1858-Apr 1859	1) from advance consignment, 13 June 1859 (BM, Aves register); 2) from main consignment, 10 Jan 1860 (BM, Mammalia etc register)
Bouru	May-Jun 1861	Nov/Dec 1862 (BM, Annulosa register)
Ceram, SW	Oct-Dec 1859	6 Dec 1860 (BM, Aves register)
Ceram, E (incl. Matabello & Goram)	Feb-Apr, Jun 1860	11 Dec 1861 (BM, Aves, Mammalia etc, registers)
Dorey	Apr-Jul 1858	8 April 1859 (BM, Aves register)
Gilolo, Centr (1)	Feb 1858	5 Sep 1860 (BM, Aves register)
Gilolo, Centr (2)	Sep 1858	?
Gilolo, N (A)	Oct 1860-Jan [?] 1861	11 Sep 1862 (BM, Aves register)
Java	Jul-Nov 1861	?
Kaióa (1)	Oct 1858	4 Feb 1860 (BM, Aves register)
Ké Is	Jan 1857	10 Mar 1858 (BM, Aves register) [arr. London Jan 1858]
Lombok	Jun-Aug 1856	26 May 1857 (BM, Annulosa register)
Macassar (1)	Sep-Dec 1856	3 Aug 1857 (BM, Aves register) [arr. London 1 July 1857, Stevens]
Macassar (2)	Jul-Nov 1857	4 Dec 58 (BM, Annulosa register) [arr. London July 1858]
Makian (1)	Oct 1858	before 15 Nov 1860 (Walker 1861c)
Makian (2)	Apr 1859	no collecting done ?
Malacca	Jul-Sep 1854	included under Singapore (1)
Morty (A)	Oct 1860-Jan [?] 1861	11 Sep 1862 (BM, Aves register)
Mysol (A)	Feb-Sep 1860	11 Dec 1861 (BM, Aves, Mammalia etc, registers)
N Celebes	Jun-Sep 1859	6 Sep 1860 (BM, Aves register)
New Guinea (A)	Jan [?]-Jun/Jul 1861	24 May 1862 (BM, Mammalia etc register)
Sarawak	Nov 1854-Jan 1856	7 Nov 1855 (BM, Annulosa register). See text for details of individual consignments.
Singapore (1)	Apr-Oct 1854	13 Feb 1855 (Westwood 1855). See text for details of individual consignments.
Singapore (2)	Jan-May 1856	May 1857 (BM, Annulosa register)
Sula Is (A)	[2nd half] 1861	21 Dec 1862 (BM, Aves register)
Sumatra	Nov 1861-Jan 1862	before 2 Jun 64 (Smith 1865), possibly as early as 22 Sep 1862 (BM, Aves register: see text)
Ternate (1)	Jan-Mar 1858	Sep 1860
Ternate (2)	Aug-Oct 1858	It is probably not possible to assign

Ternate		
Ternate (3)	Apr-May 1859	material to specific consignments after the first
Ternate (4)	Oct 60-Jan [?] 61	unless specimens bear BM accession numbers
Ternate (5)	Jun-Jul 1861	no collecting: stayed only two days
Tidore	Oct 1858	before 15 Nov 1860 (Walker, 1861b)
Timor, E	Jan-Apr 1861	20 Mar 1862 (BM, Aves register)
Timor, W (2)	May 1859	5 Sep 1860 (BM, Aves register)
Waigiou	Jul-Sep 1860	11 Dec 1861 (BM, Aves register)

Notes

1. Samuel Stevens (1817-1899)

Samuel Stevens was born in London on 11 August 1817. In early life it was his ambition to become an artist, and he studied with that occupation in view, but a severe illness compelled him to abandon his intentions and, about 1840, he entered into partnership with his elder brother, John Crace Stevens, already established in an auctioneer's business in King Street, Covent Garden.

The King Street auction rooms had been opened by Samuel Patterson in 1776, initially dealing in books and manuscripts. Patterson was succeeded by King, Collins and Chapman, and, in 1831, after several other changes of management, by Thomas and Stevens. Samuel Stevens' partnership with his brother ended in 1848, when he withdrew to establish a natural history agency at 24 Bloomsbury Street. On the death of his brother in 1859, he took charge of the auction house on behalf of his sister-in-law and, while still carrying on his Bloomsbury Street agency, continued to conduct the business until his nephews were old enough to take over. These nephews were Henry Stevens (1843-1926) and John Sanders Stevens.

[The King Street rooms ceased to exist as 'Stevens's' in 1939. Occasional sales of natural history specimens continued to be held there, however, for some years after the War. The rooms had, for some time in their latter years, a working relationship with that other long-established concern, Janson & Sons, later W.H. Janson & Son, of Great Russell Street: Oliver Jordan Janson (1876-1964) catalogued collections for sales. Some information on collections that had passed through the King Street rooms was given by Allingham (1924), who had access to the firm's records; later sales were recorded by Chalmers-Hunt (1976), based chiefly on sale catalogues.]

John Sanders Stevens, born about 1844, was elected to membership of the Entomological Society of London in 1862. He assisted his uncle in the agency in Bloomsbury Street until it was sold to E.T. Higgins in 1867. After that date he became a partner in an engineering concern but he retained a keen interest in entomology - he was a constant attendant at the meetings of the Entomological Club at his uncle's house in Norwood - until his death, from pneumonia, at his home in Woking, on 15 July 1903.

Samuel Stevens' agency had been established at the time Wallace and Bates were about to start for the Amazon, and he undertook to act as their agent in the distribution of their natural history collections, an undertaking which he carried out to their full satisfaction and considerable financial advantage. Subsequently, from 1855 until 1862, he again acted as Wallace's agent during the latter's travels in the Malay Archipelago, providing his various requirements and dealing with his consignments. He stored the material that Wallace intended for his private collection, attended to the distribution of any material reserved by Wallace for other collectors, notably W.W. Saunders, and, until the sale of his business to Higgins in 1867, remained responsible for the sale of Wallace's duplicates. Higgins consequently acquired, among the residues of the many collections that had passed through Stevens' hands since 1848, all the then unsold duplicates from Wallace's travels.

Stevens was a skilled and successful collector, forming extensive and important

collections of British Coleoptera and Lepidoptera, and a good observer, but he undervalued his knowledge and abilities and in consequence left little published work apart from short notes scattered throughout nearly 60 years of the entomological literature. He was, however, at the centre of London entomological society. He was elected to fellowship of the Entomological Society of London on 6 November 1837 and until his death, save during a long and serious illness, rarely missed a meeting. He served on the Council at various dates between 1841 and 1847 and again between 1873 and 1887, was Treasurer from 1853 to 1873, a Vice-President in 1885, and was a member of the Committee that during the 1850s was charged with the disposal of the Society's collections after they had outgrown the Society's capacity to care for them. He took a warm interest in the Society's welfare during the many years it suffered financial difficulties, was for some period a Trustee, and he made a generous bequest to the Society in his will. At the time of his death was, with the exception of W.B. Spence (the only remaining original member), the Society's oldest Fellow in length of membership. He was elected to fellowship of the Linnean Society in 1850, and from 1852 was a member of the Entomological Club, which, only a few years before his death, he had practically saved from extinction.

In his long retirement, Stevens devoted himself almost entirely to his favourite interests of insect collecting, fishing, gardening, and, an accomplishment at which he was highly skilled, painting in water-colours. He died at his home, Loanda, Beulah Hill, Upper Norwood, on 29 August 1899. He had married rather late in life and his wife had long pre-deceased him; he left no family. He was remembered as a genial companion whose chief pleasure had been the society of other entomologists. His collections, left to his nephew J.S. Stevens, were dispersed by auction at the King Street sale-rooms in 1900.

(Sources: as quoted in text and also Anon., 1899 (four titles); Anon., 1900; Anon., 1903; Horn & Kahle, 1935-1937; Horn, Kahle, Friese & Gaedike, 1990; Neave, 1933; Wallace, 1905.)

2. Early Dutch collecting in the East Indies

The *Natuurkundige Commissie voor Nederlandsch Indië* (Commission for the Study of the Natural Sciences of the Netherlands East Indies) was established by royal decree in 1820. Two naturalists, a preparator and an artist were despatched in that year to Buitenzorg, and in the course of time they were followed by others. Three members of the original party and the majority of their successors, mostly young men, were to die in the East (Boie, Diard, Keultjes, Kuhl, Schwaner and van Hasselt all died in Java and Macklot was killed there at Poerwakarta in a local Chinese uprising; van Raalten and Zippelius died in Timor; van Oort and Horner in Sumatra; Forsten on Ambon), losses that make Wallace's survival - in eight years of travel under inhospitable conditions he was often seriously ill - the more remarkable. Initially, the scientific results of the explorations of the *Commissie*, from the outset largely confined to W Java (no collecting was undertaken outside Java until 1828, when members of the *Commissie* accompanied, in HMS 'Triton', the expedition that annexed western New Guinea to the existing Dutch possessions), were published

haphazardly, but in 1837 a special commission was formed to supervise in Holland the storage and study of the Indies Commission's collections. At the instigation of this commission, the Netherlands Government agreed, in 1839, to publish a work which would include the natural history results of the Indies Commission's explorations. This work was the *Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche Overzeesche Bezittingen* [Transactions on the natural history of the Netherlands overseas possessions], published between 1839 and 1847 under the general editorship of C.J. Temminck, director of the Rijksmuseum van Natuurlijke Historie. The Indies Commission was dissolved in 1850, four years before Wallace arrived in the East. Although in the first half of its existence it had functioned effectively and the interests of the Leiden Museum had been well served, it later became increasingly complicated to administer efficiently and also increasingly expensive to conduct, while at the same time the energies of its remaining scientific members became progressively more directed to economic ends. With the dissolution of the Indies Commission, investigation of the natural history of the region devolved on government officials, who were subsidized for their work in this rôle, and on interested residents, an arrangement that was to prove more efficient. (Sources: Husson & Holthuis, 1955; Fransen, Holthuis & Adema, 1997.)

3. Allen's further stay in Asia

Allen prospered in Singapore. He married, and in 1883 he was recorded in the 'Singapore and Straits Directory' as manager of the Perseverance Estate, then owned by a Mr J. Fisher. The Perseverance Estate at Gaylang comprised 450 acres planted with citronella [lemon grass, the plant from which citronella oil, a scent used in toilet soap manufacture, is extracted, apparently not since grown locally on a commercial scale. Bailey (1949: 155) gives two species, Citronella-grass, '*Cymbopogon nardus*' Rendle, and Lemon-grass, '*C. citratus*' Stapf., Gramineae], patchouli [*Pogostemon patchouly*' Pellet, Labiatae, the source of the perfume] and pineapples.

There is a photograph of the Estate in Wright's 'British Malaya' (p. 664). In 1888 Allen was recorded in the 'Directory' as owner of the estate, and it was there that he died on 7 July 1892. The Estate itself seems to have come to an end during the 1890s, but some of Allen's children lived on in the Settlement until at least the beginning of the 1920s. (Sources: Baker, 1996; Price, 1921; Sherry, 1966; Wright, 1908.)

Collection of Beetles sent to Mr. Stevens - May

No.	Spec.	No.	Spec.	No.	Spec.	No.	Spec.	No.	Spec.
41	12	372	8	299	1	294	1	171	1
43	2	360	2	39	1	296	3	172	10
44	16	359	2	72	1	202	7	162	5
51	2	127	6	262	1	297	3	163	1
45	1			330	1	295	2	164	4
42	14	14	160	333	1	298	6	173	2
46	18			273	1	79	1	141	12
226	10	<i>Leptocoma</i>		332	1	80	3	26	80
61	2	6	5	59	1	203	2	192	12
50	8	54	4	11	1	375	1	<i>Erotylidae</i>	189
62	1	37	5	358	1	1	6	<i>Galerucidae</i>	—
225	1	26	1	53	1	2	6	<i>Heteromera</i>	155
227	3	24	1	167	1			<i>sp. etc.</i>	—
47	4	33	1	308	1	18	63	86	8
63	11	272	2	40	2			234	5
122	2	263	2	10	2	<i>Meloidae</i>		122	7
242	2	217	7	56	2	<i>Stalotidae</i>		126	35
48	3	13	7	35	5	223	1	204	10
49	18	14	3	17	5	185	2	87	14
94	18	28	6	15	6	184	1	236	12
		8	20	70	2	224	2	235	1
20	143	218	1	219	1	268	2	88	9
<i>Geodiphaga</i>		71	5	78	1	183	1	433	12
<i>Cloridae</i>		23	2	368	1	265	2	239	5
19	16	34	3	16	1	163	1	89	4
21	22	58	3			266	1	240	7
125	16	9	6	52	154	182	10	148	10
361	3	12	6			177	5	140	11
20	20	274	4	<i>Samollicornes</i>		325	1	160	8
52	20	27	1	85	7	130	7	147	8
22	24	7	1	84	1	348	1	146	6
126	18	38	4	267	1	157	3	156	2
363	2	264	4	432	6	498	2	168	2
451	1	73	4	256	1	309	1	169	1
		300	1	293	6	174	1	427	6
						245	1	188	3
								120	23
								121	4
								112	4
								46	311

Fig. 2a. Wallace's notebook, p. [1].

28th. 1854 from Singapore.

No.	Sp.	Recapitulation -	Species	Specimens
31	16	Geodephaga	20	143
277	1	Clerida	14	160
98	2			
23	2	Longicornes	52	154
337	2			
103	2	Lamellicornes	18	63
102	2			
99	1	Molacoderus	26	80
293	1			
96	1	Galeridae	16	80
336	2	Hypostictidae		
389	1	Eristylidae, Chrysomelae	46	311
93	1			
109	1	Galerucida heterocera	46	311
392	1	Haphelunda		
388	1	Rhynchophora.	46	167
107	5			
386	1	Totalt.	222	1087.
101	1			
391	2			
450	1			
405	2			
108	1			
398	4			
270	10			
119	6			
387	1			
233	5			
339	1			
381	1			
402	2			
395	9			
394	7			
401	1			
403	2			

300 2 40 — 30.0
 300 2 100 — 10
 167 — 167 — 167
 311 — 311 — 311

Fig. 2b. Wallace's notebook, p. [2].

3rd
2nd. Consignment -
 Box. no. 1 - Singapore & Malacca
 134. Dragon flies. - ~~being ticketed some of 47 flies~~
 44. Homoptera grasshoppers.
 15 Orthoptera.
 7 large cricket
 2 Am. green locusts.

193 Blattoe all diff. species
Box. no. 6.
 Dragon flies ——— 25
 Orthoptera ——— 25
 Homoptera ——— 67
 Hemiptera ——— 150
 Coleoptera ——— 545
 White ant ——— 5
 Lepidoptera ——— 11
197 specimens - 828

Box. no. 2 - Singapore (all better in the
 box part of 2nd consignment)

2	Tachina Atlas -	3	
7	Euphaea (no. 1)	2	
3	Papilio (no. 60)	3	
2	P. (no. 53)	2	
2	— (no. 8)	1	
2	— (no. 8)	2	
1	— (no. 7)	2	
2	— (no. 5)	2	
2	— (no. 45)	4	
2	— (no. 45)	2	
2	— (no. 45)	15	

66 specimens

Fig. 3a. Wallace's notebook, p. [3].

Box - no. 3. Singapore.

164 Butterflies. including 2 sp. of the fine
 Euphaea prothes. 8. Peris Lee.
 12 Patia Imane. 9 of Javan daos. 4.

Box. No. 4. Singapore

158 Butterflies of abt 50 species mostly small
 12 Moths 20 species
 2 Hymenoptera
 1 Hemiptera
 1 Arachnida

210

Box. No. 5. Singapore. (Coloptera.)

940 { 840 Coloptera (Sing.) 165 are longicornis.
 101 " Malacca 15 sp. not sent before
 95 are lineata. 235 Ceram Isle
 young from Malacca

[Faint handwritten notes and scribbles at the bottom of the page, including "18", "27", "10", "14", "17", "16", "18", "19", "20", "21", "22", "23", "24", "25", "26", "27", "28", "29", "30", "31", "32", "33", "34", "35", "36", "37", "38", "39", "40", "41", "42", "43", "44", "45", "46", "47", "48", "49", "50", "51", "52", "53", "54", "55", "56", "57", "58", "59", "60", "61", "62", "63", "64", "65", "66", "67", "68", "69", "70", "71", "72", "73", "74", "75", "76", "77", "78", "79", "80", "81", "82", "83", "84", "85", "86", "87", "88", "89", "90", "91", "92", "93", "94", "95", "96", "97", "98", "99", "100"]

Fig. 3b. Wallace's notebook, p. [4].

Singapore - July 8th,
 Private Collection of insects

Class	Specimens	Value	Notes
Hymenoptera	116	193	138 35 cents
Diptera	92	156	(123 Walker) 31 cents
Hemiptera	75	143	
Hemiptera	53	55	(72 Walker)
Grasshopper	53	72	+ 5 cents
Orthoptera	37	70	
Dermaptera	15	56	
Beetles	107	227	
Moths	105	155	
Collembola	10	9	
		13	50 cents
= 1420 cents			
1880 duplicate packed in 2 boxes			
1000 insects sent to Stevens			
<u>4380</u> total insects collected for			
9 weeks - in period of 9 weeks			
Sarawak 170 sp. of (Diptera) (Walker) 250			

Fig. 4a. Wallace's notebook, p. [5].

Box. No. 7. Malacca Butterflies -
 3 Ornithoptera Amphioxys - (not good)
 17 Papilios. 2 new Pap broken. 1 P. ^{delavanti} ~~delavanti~~
 2 P. ^{leucogalcedo} ~~leucogalcedo~~
 40 Euphaea + Danaus. 1 large Euphaea. 7 lit. Phi
 2 Thaumantis odana. (fine)
 5 Minis. 2 sp. but. often. 7 smaller
229 specimens in all

In Box. P. 2. (Private) are for sale
 a pair of the Atlas + 16 duplicate notes to
 the right of the pencil line. 18

In bed box -
 6 Monialysa
 3 Lycena Vata. (Private)
 1 large scarabaeus (private)
 one of small wood (not available)

Box No. 7
 Malacca
 Butterflies
 Papilios
 Euphaea
 Danaus
 Thaumantis
 Minis
 P. 2
 Atlas
 Scarabaeus
 Wood

Fig. 4b. Wallace's notebook, p. [6].

Shells - Land shells - 28 in card box
 small do. All boxes 18 - -
 large Helix 7
 Cyclostoma (2 sp.) 11
 Bulimus - 11
 Helix adan. 6

 71
 Fresh water Int. Africa 30 - (2 sp.)
 Sea shells, Aden + Singapore
 a miscellaneous lot. }
Total 101 (land & freshwater)

Tortoises
 Emys ^{platynota} in S. (a) 2 shells (private)
 3 skins + 2 shells
 Geomys in S. - 2 skins - (sale)
 Testudo Javaensis 1 skinned 1 sale
 Geomys in S. 1 skinned private
 Total Private 3 - Sale 8 - 11

Fig. 5a. Wallace's notebook, p. [7].

2nd. small Box overland, sent
 Oct. 16th. 1854. Contains
 On lower side. value £20

Private series of Hymenoptera & Diptera.

Hymenoptera — 173 species } about 320 spec.
 Diptera — 136 species }
 £20

On upper side. for sale Duplicates —

Hymenoptera — 206. on papers 200 abt. 400
 Diptera — 134 spec. 530

1/2 bottle in the box are private collections.
 on. 10. 5. 25

Summary of 30th Consignment

	Sale	Private	
Hymenoptera	1525	950	} 1320
Diptera	670	370	
Leptoptera	164	80	} 380
Orthoptera	40	70	
Arachnida	151	145	
Isopoda	111	85	} 500
Others	12		
	2648	1700	

Fig. 5b. Wallace's notebook, p. [8].

30th Nov 1856

Plants	27 packed	200 to 300 specimens	5
Manuscripts	-	19	14 3
Birds	331	Eggs 14	170 15
Reptiles	12		9 8
Insects	4350		26 00 160
Shells	101	Land specimens	101 5
Land shells	200		1 00 1
Income for	£150		£135

April 20th. Oct. 15.

Insects coll ^d at Sing. Malacca	total	Date	Vol.
1st. Consignment	1087	1087	0 0
2 nd	850	850	0 0
3 rd .	4350	4350	0 0
	<u>6287</u>	4987	

Left Singapore in Oct^r 17th. ^{Royal} Alice. ^{abst.} March 1st.

arrived in Docks - 10th March

in May 1856

	860	330	40
Total Malay insects	<u>7147</u>	<u>5397</u>	<u>100</u>

Fig. 6a. Wallace's notebook, p. [9].

Mammalia observed.

1. Monkey *Leucopithecus Malacca* ^{observed} *levis*
 Hands feet snails jet black, a crescent round
 eye above & the upper & lower lips pure white.
 tail 1/3 longer than body, skin blueish, hair
 above, dark greyish brown, near black, below
 & tail light ash. Crown with a tuft of
 waved peale hair, rump with a bare blackish
 horny callosity. 1 sp.

♂? crown with a black transverse line, back greyish brown
 lips dusky. Body 20". tail 26. Sarawak.

2. Squirrel - L. H. tail 12".
 above deep black, beneath light red brown,
 a line inside of thigh & tail bl. tail with a
 broad ring of brown hair near end - these hairs only
 have dilated tips - tip of tail also brownish.
 a broad band beneath scapula over the fore
 shoulder along the side & down the middle
 of the hind back pure white, soles & claws
 brownish black, whisker long, black.

Myogaster
 2 spec. Malacca
 1 spec. Malacca
 hands, rufous grey found by the hair being
 black & red. Head side of neck, all
 rest of tail & inner part of rump found of
 hair, back white & black grey - feet & tail
 entirely black, beneath broad rufous - hair
 of tail more spreading beneath than last of rump

Fig. 6b. Wallace's notebook, p. [10].

to see contents by Rapid. in England abt June.

1/6. Consignment - overland
 Feb. 1855 Parauak. (by Rapid) (by Rapid) (by Rapid)

1 box of land shells, cont^d. 20 species
 and 460 specimens with 40 water
 as follows

1	<i>H. glaucosa</i>	4 spec ^{ies}	13. <i>Cyclotoma</i> white.	1
2	<i>regalis</i>	7 "	14. <i>C. Bonetense</i>	37
x 3.	<i>regalis</i>	2.2 "	15. <i>Bulinus uchatinaceus</i> .	88
x 4.	<i>schemaculana</i>	30 "	16. <i>Helix</i> small	28
5	<i>convicordes</i>	26 "	17. <i>H. trochodophora</i> .	
x 6.	<i>consol.</i>	17 "	x 18. <i>H. Brookeri</i>	12
7	<i>auricula hude</i>	20 "	x 19. <i>Aph.</i> <i>viridula</i>	21
8	<i>Juda</i>	30 "	x 20. <i>Tayloranum</i> .	21
x 9	<i>aurismalchi</i>	16 "	Land shells -	10
10	<i>Casidula multicolor</i>	40 "	<i>Littorina</i> 2 sp.	
11	<i>C. coffee</i>	35 "		
12	<i>Paratus Bonense</i>	3 "		

total 500

Declared value £15 -

Left Eng. Feb. 18. London abt ~~March~~ ^{April} 3rd.

all marked thus pretty good; none with shells.

Fig. 7a. Wallace's notebook, p. [13].

arrived Aug. 16th. England ^{at} July

5th. Consignment. (2nd consignment) July
 Feb. 1855. Sarawak -
 a pair of Beetles in Box of Orchids (2nd)
 Cont. 105 Lucania + Passali.

Both these left Sarawak in the Winaff Feb. 10th.

5th. Consignment. Insects.

Private Lepidoptera	2000
Lepidoptera for sale	870
Coleoptera for sale	980
Miscellaneous for sale (consignment)	800
In 5 boxes Total	<u>4650</u>
and to King crabs. 3 for sale	<u>1750</u>
also 1 box (3rd) of Orchids	

by Dida. left Sarawak. March 3rd.

arrived in Jan. 4. England. August

1st. lot of Orchids - a cask cont^d

- 5. *Vanda Loxii*
- 6 *Rexanthina* (red.)
- 6 " white -

left Sarawak. April 3rd - 4th. England at Sept. 1st.

Fig. 7b. Wallace's notebook, p. [14].

5th lot of Orchids. arrived all dead.
 2 Boxes with 20 odd plants of *Vanda soubirvi*
 + 3 other small orchids. in Muzya May 16th.
 in Waroff. left Sarawak. " 19th.
 arrived at Singapore 24th.
 left Singapore June 13th.
 with
 left by "Johanna" June 14 London.

Insects collected in Borneo from
 Nov. 1st. 1854 to Jan 31st 1856.
 Sale. Total.

1st Consignment Mar 1/55	2751	2751
2nd. " overland	719	719
3rd. " July 16th. 55	6500	7600
4th. " Overland Oct. 17.	4084	4910
5th. " } together	3900	5590
6th. " }	1100	1764
	<u>19,054</u>	<u>25,334</u>
	330	860
	<u>19,414</u>	<u>26,194</u>
Private	6200	

Fig. 8a. Wallace's notebook, p. [15].

Left Sarawak, July 20. - Sarawak, July 15th. - Aug. 10. 1
 England Oct. 1st. 1855.

6th Consignment, a box of Beetles overland.

No.	No.	No.	No.	No.	No.	No.	No.
359	6	347	3	350	6	55	4
993	8	367	8	369	5	625	3
582	7	326	8	666	4	14 sp.	6
540	7	353	10	807	6	53	1002
164	6	334	6	521	4	Cuscut	715
357	11	782	4	1011	2	8 sp.	3 sp
344	8	505	1	362	1	1067	3
351	9	527	4	363	1	937	2
1041	1	201	6	483	1	928	2
358	7	336	4	1013	1	266	4
521	10	513	3	367	6	119	2
794	7	360	3	1071	10	83	2
24	4	426	10	736	2	18	3
583	9	961	2	522	3	12	4
322	6	586	2	736	4	920	2
966	3	763	7	22 sp.	211	6	858
200	5	585	3	368	3	369	6
368	8	361	5	369	6	1011	5
1263	8	584	3	100	3	71	6
1125	3	337	10	4	0	321	2
581	4	322	4	27	0	27	1
345	14	781	2	1466	7	377	1
959	3	620	4	599	4	710	4
354	3	580	5	200	2	372	5
766	5	601	2	384	5	77	0
1018	1	913	2	384	5	77	0
360	5	202	3	384	5	77	0
1009	3	454	4	384	5	77	0
522	12	452	4	384	5	77	0
332	4	Long.	4	384	5	77	0
946	5	3	6	384	5	77	0
640	10	361	6	384	5	77	0
31	4	209	6	384	5	77	0
943	5	207	2	384	5	77	0
937	10	72	6	384	5	77	0
515	4	1011	6	384	5	77	0
37	6	749	8	384	5	77	0
356	8			384	5	77	0

632 4
 731 7
 316 4
 434
 19
 152 shrew
 719 beetle
 Longicornis
 65 352
 Buprestidae
 29 99
 Curculionidae
 14 58
 Elater
 11 50
 Cantharid
 10 57

Fig. 8b. Wallace's notebook, p. [16].

Left Singapore by Comberia f London
 - early in August 20k.
 of the Consignment England in Jan. 9

Long packing case contains

Skeletons of Orany utans

♂ adult (nos. 2, 9, 11) ————— 3 (English)

♀ adult. (nos. 6, 7, 12) ————— 3 (English)

young ♂ — (3) ————— 1 sale

Bones of limbs of nos. 1, 4, 5

Tortoises

No. 1. — 2 stuffed 3 adult shells young 1 skel. 7

No. 2 — 4 stuffed — (1 private) ————— (4)

No. 3 — 2 skulls 2 stuffed 1 skel. 5

No. 4 — 1 stuffed in Beattie box, private. 1

No. 5 — 2 young skulls (not out)

No. 6. 1.. large private. ————— 1

In square case nos. (345) (no. 4)

2 skulls of young Nicot. — 1 imperfect of ♀ adult

2 skulls dried of same. all for sale

Small box in Case ..

5 Bottles .. Coleoptera in spirits

1 small do. .. minute do.

2 Bauboo with 4 Tortoise eggs.

1 Box with wasp nest.

8 or 10 dry fruits ..

1 small tortoise shell ..

Fig. 9a. Wallace's notebook, pp. [17].

200 lbs boxes, 5 lbs boxes, 1 caging box of beetles paper

The Consignment - Miscellaneous

	Sale	Princed	Total
Colleptera -			
In spirits in 5 bottles	800	150	950
In small bottle at 100 runs in paper	89	12	101
In boxes pinned	4215		4215
In a caged box		700	700
	5104	862	5966
Other pinned			
Magnum pinned	830		
Etched	9		
Impressed	1050		
Impressed	49		
Impressed	512		
Impressed	170		
Impressed	278		
Impressed	177		
Other			
Impressed	17	15	32
Impressed			23
Impressed			43
Impressed			100
Impressed			110
	2307	1123	3430
Other			
Other pinned - 28 + 102 + 33	= 163		
Other pinned - 162 + 508 + 410	= 1080		
Total insects about 1500 for sale	4600		7391

1283

Fig. 9b. Wallace's notebook, pp. [18].

5th consignment Sarawak, (8th in all)

	Price	Value	Total
Small box overland			
On card on sheet of paper (366 covered - present)	830	1045	1875
On card in ^{two} one boxes		1500	1500
Belian paper in boxes		1500	1500
Large Col. in papers	2	25	27
Butterfly in papers	1	14	15
Arrived in Dec. 55/.		<u>4084</u>	<u>4910</u>

1 cask containing skins of Orang- by "Margaret West."
nos. 6, 7, 8, 9, & 12 -

by "Water Lily" - Singapore, Sarawak, & Borneo

6th Consignment (Sarawak.)

2 casks each? skins of orang. 2s. + young.

1 Box cont? 16 skulls of orang &
2 skeleton, marked,
Skins & misc - 2 ♂ larger, 2 ♂ small, 4 ♀, 2 young.

1 Box. cont? a bundle of bones.

the following insects in
to bones - off Sarawak, Jan. 1st
- Santalung.

Fig. 10a. Wallace's notebook, p. [19].

Insects, pinned	Sale	Private
Coleoptera	1583	1690
Lepidoptera	1266	
Miscell.	1128	
<hr/>		
Lepidoptera - Paper	252	
Coleoptera - Card	650	
in Paper	20	
<hr/>		
Totals	3980	1690
<hr/>		
2 boxes of birds - private		
2 boxes of birds skin & other		
1 skeleton of human		
1 skull of young monkey - (left Jan. 1856)		
also large skull - in with box		
Shells - 1000 2 (3) 100 (9) 135 (18) 16		Oct. 2/56
(14) 50 (13) - 3 (4) 80 (8) 80		note sold. £9.
Birds private - 96 species -		
in scale in two boxes -		60
Mammals - 26 + 30		56
<hr/>		
P.M. took 16 mammals 5 skeletons for	£12.	(Stevens Oct. 3)
Stevens took 13 mammals + 3 skulls	£16	

Fig. 10b. Wallace's notebook, p. [20].

5 bottles of reptiles .. 1 Tortoise (Tyras)
 3 tortoise shells.

Lepidoptera in box - Sale? 1080.

2 pieces of indigenous wood (Siliaceae?)
 a quantity of paper books private ..

In small box.

Books & papers private ..

3 for Mr. Silk - 4 bird skins (Sale)

Lepidoptera Private with 585

Miscell. 4/4

Coleoptera - (4/4 private) 55

and the Chinese insects
 Insects from + Chinese papers

Total insects (Sarawak) - 1766

other boxes

by "Water table"	Sale		
by Mr. in Sale	1100	2000	650
by Mr. in Sale	3000		1300
by Mr. in Sale	65000		2850

April - 1856. 70 small shells - from Kiliton - Sale.

10th consignment. 38 Birds - Malacca & Singapore (Private)

Insects - Private 430 - Sales 436. (see above)

2 small boxes - watch - 2 Chinese papers - Chinese glass box

3 shells - monkey's skulls - private. Butterfly paper - 30

2 monkey skins - 38 crustaceas - " " - 32

for Dunedin - July " " boxes - 200

Fig. 11a. Wallace's notebook, p. [21].

Left Singapore Sept. 22 in "City of Bristol".
Lombok's collection - Aug. 1856.
 Birds — 69 species — skulls. 300
sterna + skulls - private.
 Butterflies — papers 150
 Beetles — 250
 Miscell. — 65

 Bats — 1 sp. 8.
 Musang — 1
 Land & freshwater shells... 7 sp. 100.

Private Collections.	Col.	Exp.
400 Singapore Mal.	950	370
1000	300	150
2000 Sarawak	260	150
	220	100
	1136	400
80 Lombok	70	40
900 Macassar 257 sp.	270	200
1000 " " "	1075	280
572 Oran	745	270
290 Ambon	330	140
1050 " " "	1450	118
1050 " " "	1870	245

Fig. 11b. Wallace's notebook, p. [22].

(pt.) 8th. (pt.) 18th.

Macassar Collections - Sept. Oct. Nov. 56.

Shells... (Freshwater abt 50-50... (2-3 sp))

Helix... *aidays*... large brown... rare... 5 specimens

" *trichma*... white single brown band... 130 "

" pale purplish, speckled... 84 "

" very small, globular, brown... 6 "

Bulinus interruptus... cone, yel. single line 32 "

very yellow lightly brown banded... 39 "

more " darkly " " " 42 "

B. procellatus... 3 small pretty species... 12 "

Cyclostoma? (Sarawak. 13.)... 30 "

all 10... packed in Agar boxes... 12 species

Birds... (247 in all sent.)

Private collection 82 specimens, red banded tickets..

Sale... 165 sp^{vs} included? 30 Raptors of 7 sp.

Insects... total sent... 2774

Coleoptera 270 Lepidoptera 200 private 470.

Sale... *Samuellicornis*... 350

Geodoptera... 245

Longicornis... 70

Others... 350 } 1015 private

in papers & pin boxes... 375

Total... 1390

Fig. 12a. Wallace's notebook, p. [23].

Lepidoptera... 264 pinned mostly small,
 215 Unspicimens & 192 in papers...

Hymenoptera... 378 .. all pinned...

Other orders... 80 .. mostly pinned...

Total Insects for sale, 2300 specimens

Bats — ? 10 of two species

Felis — 2 } ♂ + ♀ (3 vols. f.)

Carcass — 1 (B.M. £4) (Books, private)

Skull of the wild Pig. young

One bundle of Plants from Lombok.

By "Margaret West" from Batavia
 in Letter arrived at Downs Jan. 10.
 Subject sh. in London — Aug. 10. letter from Dr.
 By M. 12 had produced £130.
 Feb. 10. ... £140 ... say £100 clear

Fig. 12b. Wallace's notebook, p. [24]. Note the different forms of 'M' in Macassar and Margaret.

Insects 4750 specimens collected

New Collections. Jan. to July 1857.

at 60 Malacca.

Coleoptera .. pinned 225 sp. 25 pins ..	2000
" in papers 50 Tr. admirabilis ..	300
The species Chrysoderma leucophaea ..	400
" on card in pin boxes ..	545
Lepidoptera .. pinned 65 sp.	860
" in papers .. 55 Comthebita ..	465
65 pins. 6 pins 16 boxes.	
Miscellaneous .. pinned ..	760
" in papers ..	18
" on card in pin boxes ..	200
	6148
<u>Mrs. Saunders' boxes</u>	
	specimens
Hymenoptera (incl. 59)	230
Diptera .. 185 sp. ..	195
Hemiptera	88
Hornetia	52
Orthoptera & Neuroptera &c.	34
<u>Private Collection</u>	
	specimens
Coleoptera 572 specim.	745
Butterflies 157 specim.	269
Worms ... 40 specim.	46
Insects in papers ..	161

Fig. 13a. Wallace's notebook, p. [25].

1857

Birds... duplicates... 1922

Mammalia 9 species... 19

Land shells... 570

Freshwater & Marine about 200...

Among the birds are

Paradisea regia ... 16 ♂ juv. spec^{ies}

P. apoda .. 26 ♂ .. "

Miroglossus 4.

Carpophaga... 26 - 5 species

Quail 13

Tamiasptera 16

and many small things

From Singapore by ^{over} "Maver" for London
 about 5th 10th Sept^r. Letter abt Sept. 1st.

Letter to Stevens by mail Aug. 1st. from Sing.
 sent by Capt. of "Alma" to Singapore.

... of fish near ...

Arrived in Jan. & up to June had produced
 3000 eggs! without Saunders.

Fig. 13b. Wallace's notebook, p. [26].

By *Conyza* - Dec. 20th 1857 to Singapore
Macassar. Zool. Coll. Nov. 1857

<i>Coleoptera</i> -	1075 ⁵	sale	958 + 3327
<i>Lepidoptera</i> -	280		185 + 600?
Other insects -	460		950
	<i>no diptera</i>		

3320 Id. in four boxes. 100 *Smiths*.
 7 days in papers. Total insects coll^d 8080

Shells. *Helix edwardsi* - 108 }
 other species - 32 } 160
 Freshwater - ? 50 -

Birds - 85 of species before sent
 " - 81 of fresh species
 Total - 166 species for sale.

3 Bats (species 3) + 1 squirrel private
 2 Crania of ♂ adult warts pig

Diptera private. 202. species sent afterwards
 with *Aculeopora* coll^d -
 Produced £250 price (£200 clear) without *Securid* to him 10
 Shells private new £300
 arrived in London in July - 1858

Fig. 14a. Wallace's notebook, p. [27].

1858

Hystrax + *Batavia* Jan. 6th

Amboyna - Dec. 1. to 31. 1857. (20 days coll.)

Coleoptera (Tiuon + Banda)	265	
do .. (Amboyna pinned)	540	
do .. (Amb. in pin box + papers)	130	
	<u>935</u>	
In spirits (6 E. longicauda)	about	1000
Lepidoptera .. pinned	84	
" .. in papers (overland)	170	
	<u>254</u>	
<u>Miscellaneous</u>		
Saunders (150 sp.)	170	} .. 200
" Banda &c	130	
Sale	65	<u>65</u>
		<u>265</u>
<hr/>		
<u>Private Collections</u>	species	spec ^{ns}
Coleoptera .. (Amboyna)	290	330
" Larva + Pupa in spirits & 1 Dm. Gidem. large from Ceram private		
" Banda, Tiuon, Java, Menafo	55	80
" Japan (July 12)	50	60
<hr/>		
Lepidoptera diurna	140	} .. 87
" nocturna	45	
		185
Total Insects coll. 3000		

Fig. 14b. Wallace's notebook, p. [28].

Macassar | total abt 7500 insects.
 Collections - Docoy. N. Guinea.
 Sep. 1858. in diff. - month Aug. - Proctor. - Sales.
 Coleoptera .. 2000 preserved
 1700 in boxes
 300 in spirit 1100 500
 Lepidoptera .. 100 - papers. 118 295
 Miscell. .. 375 260

 Also. Semata & Gilolo. Col. box in fine paper
 1300 insects 500 - bottles
 25 misc. 200 preserved
 1000 Lep.
 also Batavia. Java. Mal. in. abt. 100 spec.

Orania, stroma, Papuan articles, feathers
 bird skins & private - also
 land shells..
 abt. 200 Lauria & 40 Oryzops Docoy
 in spirit - Lauria with preserved.
La Cu. longicauda for sale.
Insects in bamboo for experiment
 Abt. 100 Macassar shells - to keep spec.
Bamboo ferns spores for Macassar birds.

Birds: 223 duplicates
 " 96 private 1858
 Singapore Oct. 29/58.

Fig. 15a. Wallace's notebook, p. [29].

1859. Letter reached Stevens May 24

Batchian - Jan. 30th. (Apr Formate Mar. 6th.) Bal. Apr. 7th.

Small box for overlaid. cont'd. Sing. Apr. 12th.

Paradisaea n.s. 5♂. 1♀. 1 juv. (♂ - 1 private ♂)

Ornithopitona Cresus. 11♂. 8♀. best pair private
2-3 of ♂. 6 ad.

Pap. telemachus. 11 spec^m. best ♂ + a var. private.
3-4 spec^m.

Batchian - general collection.

Bats - 8 or 10 sp. (20 large) : 54

Belidens 2

Passerinus - 1. Cuscus. 1 2

Amphipithecus. 1. 2, young. 1 3

Skull. head & horns & skull (not sent) 1

Skull of the monkey & a ♀ skull.

Specimen of Batchian pig. (not sent) 1

Shells. (Kaioa private 5 or 6 sp.)

Land shells (of about 20 sp.) 300

Fresh water shells about 200

Private 28 sp. 58 specimens. (19 shells)

Birds - Private 114 - Salt. 371 -
(Candua 5 - 19) 7 17.

Fig. 15b. Wallace's notebook, p. [30].

1859. Mr. Simbleton's £1000 gross at least
Barbican. general collection (cont.)
Insects.
 Lepidoptera 245 sp.^{ms} Coleoptera 1870 - Private
 Beetles. 28. 50 } Dep. in papers - 620
 Dip. 105 140 } " pinned - 340
 Hymen. 100 210 } Col. in pin boxes 1950
 aut 72 } " in papers - 300
 Hemip. 62 83 } " in tin boxes - 350
 Hornop. 53 60 } " pinned - 3770
 Orthop. 20 21 }
 Neurop. 7 7 }
 Alce - 12 12 } 180 sp. Saunders
 Miscell. - 400
 7730

Or. cradus - ♂ 75 (50 fine) ♀ 51 (36 fine)
 Pip. tetanachus - 65 spec.^{ms} most ♂. (20 very fine)
 Total insects collected in month 10,450

Terrate Gylolo Box, sent with above, contains
 Saunders Misc. 310 specimens. (1000 specimens)
 Duplicates - Dep. 50. Col. 270. Miscell. 135.

Helix - Gylolo - 88 specimens.

Left Terrate May 1st.
 Overland box of Packed bottles in leaves between June 8.
 sent in a unit $\frac{2}{3}$ by ship to Liverpool - Glasgow.
 by John Knox from Rotterdam July - 12th?

Fig. 16a. Wallace's notebook, p. [31].

1859 October. Ternate & and Menado — Insects &c.

Private — Lepidop. 270 Coleoptera 825 }
 Sent to Singapore Dec. " Ternate 900 }
 " Ternate

Founders series.	Duplicates
Moths — 65	Lep. in papers — 125 }
Alia — 255	" pinned — 75 }
320.	Col. in pin boxes 350 }
	" in papers — 255 }
	" pinned — 1880 }
700 Cicadellidae	Miscellaneous 420
Private insects 1995	Total 3405
Sanders do " 320	
Sale 3105	
Total insects : 5420	of wh. abt. 2000 Ternate Tern

Shells — Terns Company - 1 Nelson Shell. 170
 Gibbla & Ternate — 6. 8 sp. 50
 Menado — (Large Nelson . 7. small 40) 130
 Total shells — 350

Mammals — Ternate & Cuscus — 3. Rat. 3 }
 do with crania 13 } (Total 4 sp. — 7. }

Menado — Sciurus — 1 private —
 " — 5 sp. — 7 } 21 specimens —
 Rato — 5. 6 sp. — 11 }
 " — 3 }
 2 skulls Babour Private
 " " f. scale — + 2 Java skulls

Birds } 95 pr. 216 sale — Menado
 } 111 pr. 242 sale — Ternate Gibbla
 } 158

Ternate Tern

Fig. 16b. Wallace's notebook, p. [32].

Ceram Collection Feb. 10. 1860

Total insects collected 2000

March left Am

Private. Col. 475 Sep. 176 - Misc (S.) 80

	<u>Shells.</u>
Bettles. in paper - 230	Hel. citrina — 120
" in pin boxes 220	" white — 550
" pinned 1670	" spotted — 70
" loose - box 160	" dark small 20
" S. longimanus (S. 46) 62	" hollow apex 50
2342	" small horn 20
Butterflies — 600	" Amb. white 20
Miscell — 60	dried shells 850
Total for sale — 3002	

Birds - 65 private - 91 duplicates.

Bats - 3 sp. 7 spec^{ms} Cuscus 2 sp. 6 spec^{ms}

Marine shells - 1350 spec^{ms} (205 sp.) Private

Cassowary eggs + duck horns (2) Private

Kennery suits for Mrs. Wallace - + cloths

(3 light 11k trousers) for Mr. Stone -

Books to be kept - if any given private -

sh. p. pedunc. abstr £200 clean.

Menudo } " " £600 clean

Fernando }

Fig. 17a. Wallace's notebook, p. [33].

Sent Jan. 1861 4 "S.B. Cair" - April 15.

Ceram - Mysol - Wayson - 1560

Coleptera.	Pr. 2136.	Dup.	5346
Lepidoptera.	" 580	(600/100)	2138
Muscell.	S. 1246		1905

Total	13,651	4262	9389
-------	--------	------	------

Land shells -

Ceram	206	at.	10 sp.
Ceram	238	"	2 "
Mysol	36	"	12 "
Wayson	403	"	10 "
Gilolo	25		1.0
	<u>908</u>		

<u>Birds</u> -	sp.	pr.	dup.
Wayson	76	96	217
Mysol	100	117	336
Ceram	68	95	222
		<u>308</u>	<u>855</u>

Mammals -

6 Keyasore	1 Cuscus	Wayson
3 Bats	2 Small bats	
1 Bat Beliden	10 Pteropus (2 sp.)	1 Bat small
3 Pteropus	1 Sorex	1 Mus.
1 Mouse Bat		6 Cuscus
1 Bk. dv.		
<u>15</u>	16	<u>8</u>
	Total	
	37 Mammals	

Fig. 17b. Wallace's notebook, p. [34].

Tomor Delli - Jan. 4th 1861
 4 cases Batavia No. 4
 Butterflies - in papers 150 Aug. 5. by "W. Simpson"
 Beetles. (papers 25)
Birds. 151 pr. 475 duplicates.

Sent with Bowen's Coll. July 1861
 Beetles - Pr. 116 Sale 250
 Beetles. " 140 " 150 pinned
 Miscellaneous " 130

Bowen May June 1861
 Beetles - Private 366 - Sale 560⁰⁰
 Butterflies " 121 - " 645⁰⁰
 Miscellaneous " " 507⁰⁰
 and all pinned insects n.g. Bowen's papers 130⁰⁰

D In large case all Bowen birds & etc. a
 A few Tomor + Gilolo to fill up - all marked.
 2 Cases - N. Guinea Birds + Mammals.
 3 Gun case " " "
 4. 5 - Gun cases - Ternat Gilolo + Ternat birds
 Brown bottles - papers - etc. in Sundanese pr.
 6 " - Beetles - papers - Skulls, bones private.
 7. Small box of Papuan shells - (upright)
 8. Small box with honey, combs, private.

Bowen/Birds. } July 20th - from Sourabaya
 etc. Pr. 183 Dup. } Aug. 5. 4. by "W. Simpson"

Fig. 18a. Wallace's notebook, p. [35].

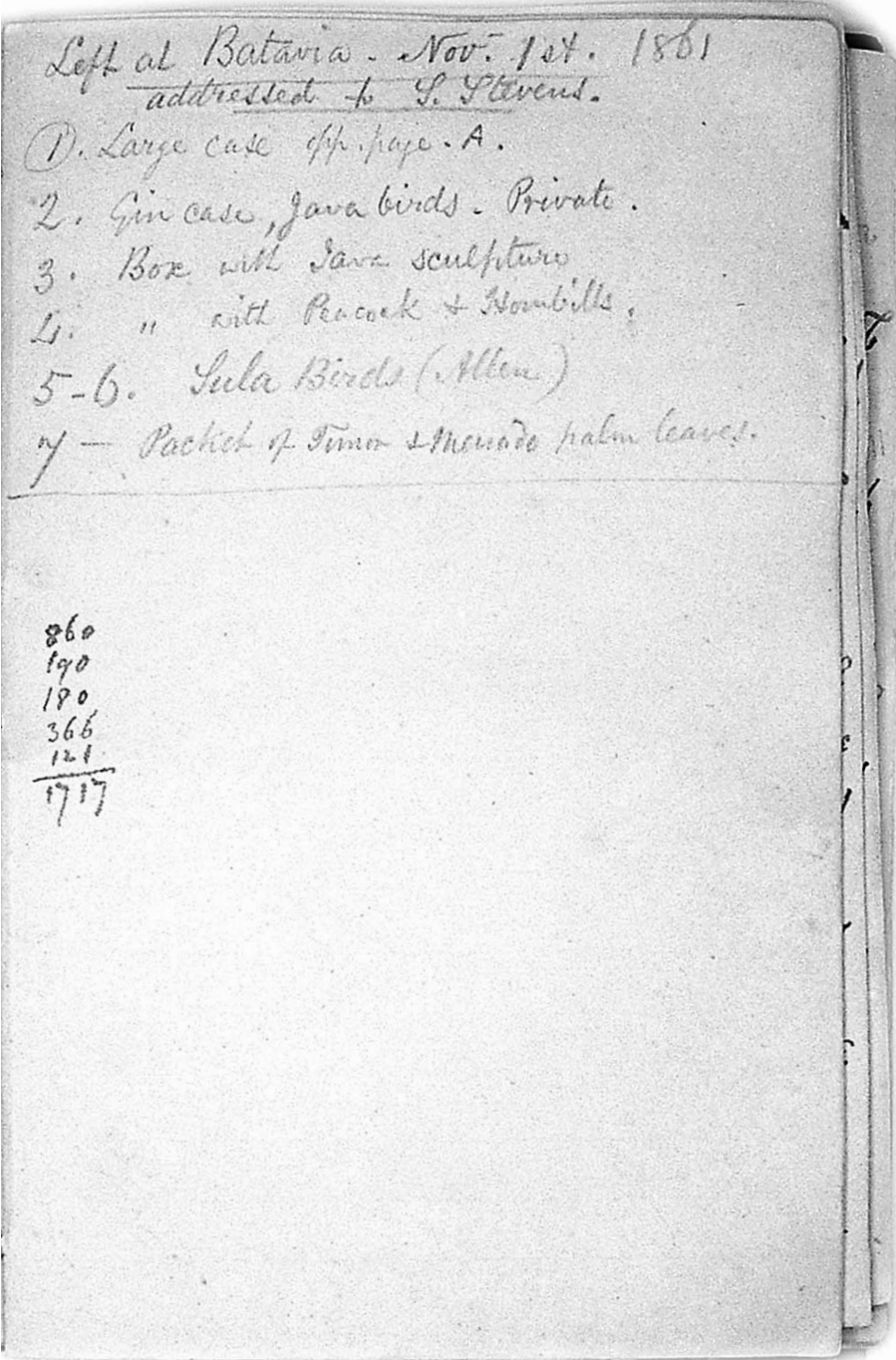


Fig. 18b. Wallace's notebook, p. [36].

