

# Sherbornia

An Open-Access Journal of Bibliographic and Nomenclatural Research in Zoology lsid:zoobank.org:pub:916F9AA2-19A5-4DAE-A87D-9A5B2F4CD34E ISSN 2373-7697 (online) Volume 2(2): 9–20 Date of publication: 24 November 2015

## Publication and Dating of the "Zoology of the Voyage of the H.M.S. *Erebus* and *Terror*"

Neal L. Evenhuis

Bernice Pauahi Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817-2704, USA neale@bishopmuseum.org

#### Abstract

The publication of the "Zoology of the Voyage of the H.M.S. *Erebus* and *Terror*" is researched and dates of publication for its 24 parts are given, with many of the dates earlier than published previously.

#### Introduction

In early 1839 the British government, interested in researching terrestrial magnetism at various parts of the globe as well as to launch an investigation of the South Polar Seas and Antarctica, fitted the ships H.M.S. *Erebus* and *Terror*, under the command of Sir James Clark Ross for that purpose. The two vessels left England on 29 September 1839 and the voyage of exploration lasted four years before the ships returned to port. During that time the expedition explored a number of previously unexplored areas, primarily in the southern Pacific, as well as being the first expedition to venture into the Antarctic ice-cap where they discovered one active (Mt. Erebus) and one extinct (Mt. Terror) volcanoes on the Antarctic mainland.

Numerous specimens and objects of natural history were collected during the voyage and soon after the return of the expedition, the government gave £1000 to enable study and publication of the botanical and zoological results. That sum was split so that £500 went to the botanical portion (coordinated by Joseph Dalton Hooker) and £500 went to the zoological portion (coedited by John Richardson and John Edward Gray) (Anonymous, 1875). The resulting "Zoology of the Voyage of the H.M.S. *Erebus* and *Terror*" (hereinafter shortened to "*Zoology*") (Fig. 1) was published in 24 parts from 1844–1875.

Few studies have been done on the dates of publication of the entire work. Sherborn (1922: xlix) gave only yeardates of the portions published before 1851 by animal

Citing this publication:

http://hbs.bishopmuseum.org/dating/sherbornia/index.html



Fig. 1. Title page of volume 1 of the "Zoology".

group and gave a breakdown of pages. This essentially followed Woodward (1913: 1698) who added yeardates for the portions issued in 1874 and 1875, which were beyond the scope of Sherborn's *Index Animalium*. Woodward's (1913) dates are shown in Table 3 to allow comparison of them with the dates on wrappers and/or the dates found in the recording literature.

The serial issuance of this zoological work has caused bibliographers problems, primarily because of conflated

Evenhuis N.L. (2015) Publication and Dating of the "Zoology of the Voyage of the H.M.S. *Erebus* and *Terror*". *Sherbornia* 2(2): 9–20.

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use of the term "part". The entire work was divided into animal groups, each of which had their own pagination. Advertisements initially called each animal group a "part" (later, the terms "department" or "division" were used); each successive published set of pages and plates with wrappers was termed a "part" in the recording literature (even in the publisher's own advertisements, although most wrappers seen used the abbreviated term "No."); and the successive issues within an animal group were termed "part". On most wrappers, the successive issue numbers (to the whole series) were printed in the upper left corner; parts within an animal group were printed centrally above the contents (Fig. 2). However, some wrappers confusingly have the whole series "number" printed where the part number of the animal group would normally be (Fig. 3).

As with most works issued in parts, it is difficult or impossible to ascertain accurately the dates of each part without the original wrappers. Wrappers for 21 of the 24 numbers issued for this work were located in this study (Table 3), which has helped with accurate dating and association with animal groups. However, in this study even finding the wrappers did not solve the entire puzzle of what was contained in each number: the wrappers often provide dates and the animal group, but do not provide page or plate contents. The primary methods in accurately determining contents associated with dates and wrappers are: (1) finding unbound sets of pages and/or plates still in their wrappers and (2) resorting to detailed reviews of each number as they were issued. The dates and associated pages have been found in this study for almost all of the numbers of this work (see Tables 3, 4); those not found are interpolated based on evidence gathered during this study. Plates have been harder to pinpoint as, unlike the botanical results [for details on dates of the botanical version, see Stafleu & Cowan (1979: 269–271)], which had the plates published in order, the zoology plates were probably issued as each was completed within each animal group, but in some cases, plates were finished but their publication delayed (e.g., see Jardine, 1852: 4; Günther, 1868) or some plates were missing (e.g., plates 11–13 of the Mammalia and plates 11, 22 of the Birds were never published) or intended plates were replaced by others. It is hoped that this study will prompt further research once wrappers containing associated unbound pages and plates are found.

#### **Material and Methods**

The following types of sources were used in obtaining dates and contents of the numbers comprising the entire work, as well as for deducing which numbers were associated with a particular animal group: (1) copies of the actual work including bound volumes, separate editions, and portions that were associated with wrappers; (2) the contemporary recording literature; (3) bibliographies; and (4) bookseller's catalogs. Abbreviations used for libraries referred to: BMNH = the Natural History Museum, London [formerly part of the







**Fig. 3.** Detail of the wrapper for number 12 of the *"Zoology"* showing placement of whole series number (center) where part number should be.

British Museum and later known as the British Museum (Natural History)]; BPBM = Bernice Pauahi Bishop Museum, Honolulu; Turnbull = Alexander Turnbull Library, National Library of New Zealand, Wellington.

#### **Actual copies**

Copies available online, as well as the copy in the Bishop Museum were examined by me. The copy held in

n. IM AUFTRAG UND MIT UNTERSTÜTZUNG DER LORDS DER ADMIRALITÄT. So eben ist erschienen Part 1 (royal 4to. color. Preis 10s.) von

The Zoology of the Voyage of H.M.SS. Erebus and Terror, Under the command of Captain Sir Jamen Clark Ross, R.N. P.R.S. &c. during the Years 1839, 40, 41, 42, and 43. Edited by John Richardson, M.D. P.R.S. &c. ; and John Edward Gray, Esq. F.R.S. &c.

F.A.S. &C.; Bud Jona Edward Oray, Ded. F.A.S. etc. Da es sich ergeben hat, dass die bedeutende Sammlung von natur-geschichtlichen Gegenständen, die während der Reise der königlichen Schiffe Erebus und Terror nach den Antarctischen Polargegenden an-gelegt worden ist, viele neue Species von hohem wissenschaftlichem Inte-resse in allen Zweigen der Zoologie enthält, so haben die Lords der Admiralität deren Veröffentlichung bewerkstelligt und solcher eine freige-bige Unterstützung zugewendet.

Admiralität deren Veröffentlichung bewerkstelligt und solcher eine freige-bige Unterstützung zugewendet. Unter den Pfätzen, die von der Expedition besucht wurden, befinden sich die St.-Paul'a, Prinz Edward's, und Crozet's Inseln im Atlantischen Meere, Kergueien's Land, die Aucklaud's Inseln, Graham's Land, Neu Seeland, Van Diemensland, Neu Holland, Cap Horn und die Falkland's-Inseln, wo man überall die Naturproducte des Meeres und Landes auf das sorgramste sammelte. Auch wurde das Hängenetz während der Reise beständig gebraucht und das Schleppnetz zu gewissen Stunden ausgeworfen, wodurch man sich viele Thiere aus grossen Tiefen verschaffle; von den schwor zu präservirenden Entomostaceen und Mollusken entwarf Dr. Hooker Z. ichnungen usch frischen Exemplaren auf der Stelle. Nachatehende Herren haben, in Uebereinstimmung mit dem Wunsche

der Admiralität: der Wissenschaft den Vortheil dieser Entdeckungen in ihrem ganzen Umfange zu sichern, die Beschreibung der Thiere übernommen :-Die vierfüssigen Thiere, Amphybien, Conchylien, Seeeler and Corallen. Herr John Edward Gray; Die Vögel ...... Herr George Robert Gray; Die FISCHE ..... Herr Dr. ROBERTSON ; Die CRUSTACKEN, die Herren BELL und GOODSIR; Die INSECTEN.... die Herren ADAM WHITE und EDW. DOUBLEDAY. Das Werk wird in zweimonatlichen Lieferungen (royal 4to.) à 10s. ausge-geben und soll deren Zahl fünfzehn nicht übersteigen. Es wird darauf geschen werden, dass jede Abtheilung für sich ein vollständiges Ganzes geseßen werden, und geschen Samming in Britischen Museum, \*\*\* Part 1. enthält vierfüssige Thiere, bearbeitet von John Edward Gray, F.R.S. und Aufscher der zuologischen Samming im Britischen Museum, erläutert durch colorirte Tafeln.

Fig. 4. Advertisement in the 1 June 1844 issue of Muquardt's Monthly Circular announcing the publication of the first number of the "Zoology".

Turnbull was examined by their reference librarian with instructions and requests by me. Some of these copies provided useful information, especially those for which wrappers were still bound with the volume copies. Scans were made of as many of the wrappers as possible. Unfortunately, some of the scans of wrappers in the Turnbull copy were not of publishable quality (partial scans at acute angles due to tight binding); however, the information in those scans was still useful in verifying a printed month on the wrapper and the format and style used of title information.

#### **Recording literature**

In addition to researching the wrappers, a diligent search of the contemporary recording literature was conducted to help with dates where wrappers were lacking or to help corroborate, to give dates within the printed month on the existing wrappers, and to help with the contents of each number. Some of the more important recording literature used in this study are listed below with brief discussions.

Athenaeum. Begun in 1828 as an expanded journal of literary notices and reviews (i.e., providing more narrative and reviews than its competitors), the Athenaeum quickly evolved into one of the most complete of the literature recording journals of nineteenth century Britain. It appeared weekly from 1828 until 1915. Although extremely valuable for dating many of the more general scientific works, its usefulness for dating of the zoological results of the Erebus and Terror varies as it focused more on English literature rather than scientific works. As many issues of the Athenaeum as were available were examined during this study. The only number of the zoological results announced in the Athenaeum that was earlier than published elsewhere was for number 9 of the Birds, which (although having "June" on its wrapper), was recorded as published on 31 May 1845 (Anonymous 1845a). Other announcements corroborated the dates on the wrappers.

Muquardt's Monthly Circular. This little-known recording periodical turned out to be fairly faithful for notices of numbers published in the 1840s (14 out of the 18 numbers printed by Longmans were recorded in the issues available for consultation in this study; see Table 1). Initially, advertisements by Longmans & Co. themselves were printed giving the actual month each number came out; later, just a simple listing of the numbers published in the series appeared with other books published in a particular month. For some unexplained reason, the first and earliest announcement of the publication of the first number was in German (Fig. 4) and mixed in with other English advertisements of books published that day by Longmans & Co.

Publisher's Circular. The Publisher's Circular is the single largest printed source of information on books published in Britain in the nineteenth century. Issued fortnightly from 1837-1891 and weekly thereafter, its listings include detailed information on publications (especially those published in parts) that are not generally recorded in library catalogues. It is normally considered one of the most reliable and regular sources of book trade production and distribution data for the nineteenth century; however, not all publishers advertised copies of their works in this periodical. The zoological results of the Erebus & Terror was, unfortunately for this research, among those.

All issues from 1844 through 1875 of the Publisher's *Circular* were examined. After advertising the forthcoming series of zoological results of the Erebus and Terror in 1844 (Anonymous, 1844a, 1844b) only sporadic records of receipt followed. One in 1845 (Anonymous 1845b) recorded that numbers 1-9 had appeared; one in 1847 announced that numbers 12-15 were published; and a final announcement in 1848 (Anonymous, 1848) gave notice of numbers 17 and 18 being published with the indication that these parts "complet[ed] the work". No announcements of the work were recorded in issues of the Publisher's Circular for 1874 or 1875.

#### Bibliographies

Bibliographies are normally the main reference for any work of literature and, as such, they were the initial resource consulted for this study. Woodward's (1913) detailed entry for the *Zoology* in the BMNH Library catalog was the basis for further research. It recorded the breakdown of each animal group by pagination and plates by year.

#### **Bookseller's Catalogs**

In this study, bookseller's catalogs that were contemporary are considered under "Recording Literature" but they performed two roles: selling books but also recording the latest works to come out. Those whose catalogs were primarily geared toward sales of new as well as used books are here treated under "Bookseller's Catalogs". A number of these catalogs are available online and as many as were available were examined during this study for any help with bibliographic research of the Zoology. Most merely listed the entire work or parts of it and the years of publication without further details. However, one little-known source, "Sotheran's Price of Current Literature" was extremely helpful in pinpointing the numbers associated with the Fishes in the Zoology. It was the only source found that gave the make-up of almost all the numbers for that animal group.

#### Method of publication and delays

The biological results of the voyage of the *Erebus* and Terror were published by two different firms: the botanical portion by Reeve, etc. (coordinated by Joseph Dalton Hooker) and the zoological portion by Longman, Brown, Green & Longmans (edited by John Richardson & John Edward Gray). The differences in organization and issuance of publication of the two were strikingly different. The botanical results were issued in a timely and regular manner and completed within a few years. The zoological portion was initially issued rather regularly but soon ran into various circumstances resulting in delays, eventual cessation of publishing by the original firm, and a hiatus of almost 30 years before being taken up by a second publisher, the coleopterist and bookseller, E.W. Janson. Janson finished publishing the remaining numbers still in manuscript but did not take on any work on the two animal groups that were never published (the "sea-eggs" [= sea urchins] and corals). The work completed with the issuance of the 24th number, and all the numbers were then divided into two volumes.

Early advertisements by the publisher Longman give evidence of a regular issuance of every two months (Fig. 5), each issued number which would contain, in whole or in part, a single animal group. The animals to be covered and their original intended authorship are listed in Table 2.

A prospective advertisement in *Muquardt's Monthly Circular* (1 April 1844) and the *Publisher's Circular* (15



**Fig. 5.** Publisher's prospective advertisement in the 15 May 1844 issue of *Publisher's Circular* indicating initial publication every other month and that the first part would be the "Beasts".

May 1844) (Fig. 5) indicated that "Part 1" would contain the "Beasts" by John Edward Gray and would be issued on the 1st of June. The name of that number (dealing with seals; which came out on 1 June 1844) was changed at the last minute to "Mammalia", but the plates of the seals still retained the title "Beasts". The number actually labeled as "Beasts" (which dealt with cetaceans), came out as part 4 in December 1844.

The first published number was listed by the Royal Society (one of the sponsors of the "Voyage") among its donations received from November 1843 to June 1844 without information as to contents. It was noticed by *Muquardt's Monthly Circular* (1 July 1844, n.s. 24: 94) as containing 16 pp. and 16 pls. This meant that the Mammalia (pp. 1–8) plus the summary (pp. v–xii) comprised that first part.

The Summary of the voyage was written by botanist Joseph Dalton Hooker for the botanical results of the voyage. Apparently, the typeset plates of the summary by Reeves were used by Longmans as there is no difference in either copy and the same eight roman numeral pages (v-xii) were kept. There appears to have been some coordination of issuance of both versions simultaneously. The publication date of the botanical version of the summary was given by Stafleu (1967: 207) as 1 June 1844 and dating herein shows that the zoological version of the summary was also issued in June 1844.

Examining the issuance of parts in chronological order shows that the publisher's intention of publishing every other month held up for the first nine numbers in the first year from June 1844 through June 1845 (part 9 actually being received on 31 May 1845). Thereafter, delays appeared with part 10 not being published until October 1845 and an even longer delay of six more months until part 11 came out in April 1846.

The reason for the delays are not entirely known but some may have been attributable to the large number of parts originally intended for J.E. Gray (six parts) and him finding he could not do them all and then having to find others to handle them. Such was the case with the Crustacea (see below). Other reasons might have been illnesses and deaths of originally intended authors (e.g., Harry D.S. Goodsir, originally intended to work up the Crustacea, was one of the crew lost in 1848 on the Franklin Expedition in the second voyage of the *Erebus* and *Terror*) or the slowness or inactivity of them (e.g., Thomas Bell, slated to do the Crustacea for this work, was already guilty of not completing the Crustacea for the (then) recently-published zoology of the H.M.S. *Beagle*).

The long delay between the last issue published by Longmans in 1848 and the next issue being published by Janson in 1874 prompted complaints. Notices of the incomplete state of the whole *Zoology* appeared in various articles. For example, in reviewing the ornithological literature for 1851, William Jardine lamented:

We are sorry not to be able to announce the completion of another Government work, "The Zoology of the Erebus and Terror." The plates to the wanting part of the Ornithology have been for a long time lithographed by Wolf, but we do not know what retards its publication. (Jardine, 1852: 4).

This statement gives evidence that some bird plates were finished long before they were finally issued in April 1875 with the completion of the birds in number 22.

When the last number of the Insects was finally published, notice of the long-awaited completion was remarked upon in the *Zoological Record*:

[...] Completes this portion of the work, which has remained unfinished since 1846, and is now perfected by the enterprise of a private individual. [= E.W. Janson] (Rye, 1876: 239).

A more cutting comment came in a review of the final parts in the journal *Nature*:

The non-completion of the "Zoology of the Voyage of the Erebus and Terror" has long been a public scandal. [...] After the publication of eighteen numbers, the various sections assigned to the different naturalists were left, one and all, incomplete, and have thus remained until the present day. Whether this untoward result was occasioned by the fault of the editor or of the The Zoology of the Voyage of H.M.S. Erebus and Terror, under the command of SIR JAMES CLARK Ross, R.N., F.R.S., during the years 1839–1843. By authority of the Lords Commissioners of the Admiralty. Edited by JOHN RICHARDSON, M.D., F.R.S., &c., and JOHN EDWARD GRAY, ESQ., PH. D., F.R.S.,

The undersigned begs to announce that, having purchased the remaining stock of the above, including a considerable number of unpublished Plates, and, by the kind co-operation of the Officers of the Zoological Department of the British Museum, achieved its completion, he is now prepared to supply the concluding portions of this important Zoological Work.

- Part XIX.—INSECTS (conclusion). By ARTHUR GARDINER BUTLER, F.L.S., F.Z.S., &c. Four Plates. Price 10s.
- Part XX.-CRUSTACEA. By EDVARD J. MIERS, Junior Assistant, Zoological Department, British Museum. Four Plates. Price 10s.
- Part XXI.-MOLLUSCA. By EDGAR A. SMITH, F.Z.S., Zoological Department, British Museum. Four Plates. Price 10s.
- Part XXII.—BIRDS (conclusion). By R. Bowdlen Sharpe, F.L.S., F.Z.S., &c., of the Zoological Department, British Museum. Eight Coloured Plates. Price 10s.
- Part XXIII.-MAMMALIA (conclusion). By JOHN EDWARD GRAY, PH. D., F.R.S., F.L.S., &c. Five Coloured and Nine Plain Plates. Title and Contents of Vol. I. Price 10s.
- Part XXIV.—REPTILES (conclusion). By ALBERT GÜNTHER, M.A., M.D., PH. D., F.R.S., V.P.Z.S., Keeper of the Zoological Department of the British Museum. Ten Plates. Title and Contents of Vol. II. Price 10s.

The following sections, each complete, with distinct pagination and Titlepage, may be had separately.

- BIRDS.—By GEORGE ROBERT GRAY, F.R.S., and R. BOWDLER SHARPE, F.L.S., &c. Thirty-seven Coloured Plates. Price £3 3s.
- FISHES.—By JOHN RICHARDSON, M.D., F.R.S., &c. Sixty Plates. Price £3 3s.
- CRUSTACEA .- By Edward J. MIERS. Four Plates. Price 10s.
- INSECTS.—By ADAM WHITE, M.E.S., and AETHUR GAEDINER BUTLER, F.L.S., F.Z.S., &c. Ten Plates. Price 21s.
- MOLLUSCA.-By EDGAR A. SMITH, F.Z.S., &c. Four Plates. Price 10s.
- GARDINER BUTLER, F.L.S., F.Z.S., &c. Three Plates. Price 7s. 6d.

E. W. JANSON, 35, LITTLE RUSSELL STREET, LONDON, W.C.

**Fig. 6.** Janson's 1876 advertisement at the back of Mathews, A., *An essay on the genus* Hydroscapha.

publisher, or by misunderstandings of the two, has never been divulged to the public, nor does it now much concern us to inquire. Whichever may have been the case, the result was equally discreditable to the parties concerned. (Anonymous, 1875: 289–290).

The slowness or inactivity of authors in getting intended manuscripts completed and to the printer in a timely manner no doubt hurt sales and subscribers to the work and Longman. resorted to various methods to complete things as fast as possible, no doubt in hopes of washing their hands of the matter. Toward the end of Longman's association with the publication, multiple numbers were being issued at the same time and part 4 of the Mammalia (= numbers 13–15) was reprinted in 1847 and labeled as "Parts II, IV, and V" of the Mammalia when in actuality there were only two parts of that animal group that had appeared previously; the final part of the Mammalia (number 23) did not appear until May 1875, long after Longmans had divested themselves of the work. The last numbers by Longmans came out in February 1848 as numbers 17–18 of the Fishes.

About 26 years passed before E.W. Janson took over publication of the work. An advertisement by Janson (Fig. 6) appeared after all the parts had been published and stated:

The undersigned begs to announce that, having purchased the remaining stock of the above [The Zoology of the Voyage of the H.M.S. Erebus and Terror], including a considerable number of unpublished Plates, and, by the kind co-operation of the Offices of the Zoological Department of the British Museum, achieved its completion, he is now prepared to supply the concluding portions of this important Zoological work. (Anonymous, 1876).

Six numbers concluded the work (numbers 19–24). The first three numbers were issued in 1874 and the final three appeared in 1875, the last three appearing out of numerical order (i.e., number 24 came out before numbers 22 and 23). The last published number (23) came out in May 1875 and the completed work was reviewed in the 29 July issue of *Nature* (Anonymous, 1875). No doubt anticipating meager sales based on previous sales from Longman's track record, to further add to his revenue stream, Janson separately issued completed sets of the Birds, Ichthyology, and Insects (e.g., Fig. 7).

With the conclusion of the numbers, the title pages of the volumes were also included (those for Volume I came with the concluding number for the Mammalia and those for Volume II came with the concluding part of the Reptiles), allowing subscribers to finally bind the previously acquired numbers into two volumes.

#### Dates of publication and contents

The results of dating research on this work are given in Tables 3 and 4 and present the earliest dates of publication for each part and the best calculations for contents of each part. Table 3 gives the dates of publication and contents by animal group. Table 4 gives the dates of publication by number.

#### Notes on Publication Dates by Animal Group

The majority of the animal groups covered were issued in parts and are discussed below. Two groups were issued as a whole each in a single issue: Crustacea by E. Miers (published in June 1874, number 20) and Mollusca by E.A. Smith (published in June 1874, number 21). As their publication dates are straightforward and corroborated with associated wrappers, they are not discussed below except for authorship of the Crustacea.

**Mammalia.** The mammals were the subject of the firstissued number of the results of the zoology, but were one of the more difficult animal group for which to find contents and dates per number, primarily because of



**Fig. 7.** Title page of the separate issue of the Insects of the *"Zoology"*.

various confusing factors of name changes, delays, and odd pagination issues. The part to appear first was originally intended to be entitled "Beasts" by J.E. Gray but it was changed to Mammalia and was recorded by the Royal Society in their list of donations from November 1843 to June 1844. It has only the year "MDCCCXLIV" on the wrapper. The part actually entitled "Beasts" (with "December MDCCCXLIV" on the wrapper) came out as the fourth part of the zoology series (although the second chronologically) on 2 December 1844 (date listed by *Muquardt's Monthly Circular*). The first number contained pp. 1–8 of the Mammalia and dealt with seals. The 4th part was pages 13–53, leaving pages 9–12 to be filled in with the completion of the seals.

The seal article, was inexplicably left incomplete until 1874, when Gray finished the article (in number 23 of the series) with pages 9–12. In the same number Gray also added four pages of new material (the Article "Miscellanea"), but pages 1–53 were taken up, so he numbered the additional pages as 12a–12d.

**Birds.** The bird portion was issued in 5 parts, begun in 1844 by G.R. Gray and finished in 1874 by G.B. Sharpe. They comprise numbers 3, 8, 9, 10 and 22. Woodward (1913: 1698) gave a breakdown of pages and plates only by year without association with part numbers. That works fine for associating the first part of the birds with

number 3 issued on 1 October 1844 (pp. 1–8) and with the final part of the birds (number 22; pages 21–39). The difficulty is in associating the three parts issued in 1845 (pp. 9–20) with their whole series parts and what pages and plates were contained in each. Further complications accompany finding these as none of the wrappers to the bird portion indicated an animal part.

*Muquardt's Monthly Circular* recorded number 9 as published in September 1845 but the *Athenaeum* had an earlier publication date for that part as 31 May 1845 (no wrapper has been found for this part). The wrapper for number 8 was found in the New York Public Library (digitized version online via Haithi Trust), which has the date as April MDCCCXLV. Number 10 and its date were given as October 1845 by Pucheran (1853: 128) in the ornithological results of the *Voyage au Pôle du Sud*. The wrapper for number 10 also exists in the Turnbull Library corroborating the date and the animal group associated with that part. Mathews (1930, 1938) solved the matter of contents with his collation of all of the bird parts based on his finding the text and plates unbound in their original wrappers.

The numbers can now be associated with each bird part; however a passage in Wagner (1845: 47–48) seems to contradict the 1845 issue of the second bird part (= number 8). In his review of bird works of 1844 he stated:

Eine Bearbeitung der neuseeländischen Vögel ist von G.R. Gray in der Zoology of the Voyage of the H.M.S. Erebus et Terror begonnen worden. Es sind bisher 2 Hefte erschienen, von denen das 2te den Text des ersten nochmals umgearbeitet hat; ..... [A study of the New Zealand birds by G.R. Gray in the Zoology of the Voyage of the H.M.S. Erebus and Terror was initiated. Until now two parts appeared, of which the second has reworked the text of the first; ....] (Wagner 1845: 47–48).

This essentially means the pages of the second bird part were the same as the first, but the text was re-written. This fact is corroborated by Mathews (1938). The problem here is the second bird part [= number 8] came out in April 1845 as shown on the cover. It could have been that Gray sent to Wagner for his review of the 1844 literature in the Archiv für Naturgeschichte a copy of the first published bird part (number 3, published in October 1844) and proof sheets of the second bird part (number 8, anticipating publication of it in December 1844, which would follow the publisher's intention of issuance every other month). However, a delay in its publication took place for some reason and number 8 did not actually get published until well into the following year. I consider the cover date as the actual publication date for number 8 (April 1845). See Bruce & Jones (2011: 137–138) for nomenclatural changes due to the cancelled and revised pages.

In attempting to solve the dating and contents for four of the five bird parts (numbers 3, 9, 10, and 22), Mathews

(1930) confused matters in mentioning two "editions" and not indicating what was the first edition or what was the second. It is assumed here that Mathews was referring to the final separately issued version of the birds that came out in 1875 as the "second" edition.

Reptiles. Co-editor of the Zoology, J.E. Gray completed the first part of the Reptiles in February 1845 (Gray 1845), covering pp. 1-8, but then mysteriously abandoned this work. Günther (1868) indicated that at the time the work had been discontinued, the plates had already been drawn at Gray's expense and remained in his possession for the next 20 years. By publishing his "Lizards of Australia and New Zealand" (Gray, 1867) made available to the public these plates that otherwise might have been dispensed with. All the plates except 5 and 6 (which Gray, 1867 said were destroyed at the lithographer) were published. Because of the combination of a stroke (that paralyzed Gray on his right side), bad eyesight, and being invalided the last three years of his life (Petit, 2012), Gray was too ill to do any further work (he eventually died on 7 March 1875), so Günther (1875) finished the Reptiles for the Zoology and added plates 5 and 6 as new to the concluding part (= number 24).

Fishes. The Fishes is probably the most complicated of the animal groups in this work with regard to publication and dating. It is the only animal group of the *Zoology* for which not all wrappers were located during this study (missing those for the first three parts), hence finding what parts constituted the Fishes and what the contents of each remained difficult at best given the evidence at hand. Woodward (1913) indicated the Fishes to be comprised of 4 parts issued in 1844, 1845, 1846, and 1848 and all were authored by John Richardson. Bauchot et al. (1982) also implied that the work was published in 4 parts, based on a split of pages and years of publication given by Hureau & Monod (1973): 1844 (pp. 1-16); 1845 (pp. 17-52); 1846 (pp. 58–74); 1848 (pp. i–vii, 75–139). However, Sotheran (1915: 39) stated that the Fishes were comprised of 6 parts which, if correct, meant that there were some parts of the Fishes that contained either no text, or that more than one part was issued in the same year. Further, the Zoological Society of London recorded in 1848 as receiving 4 parts that comprised pp. 33–139. Confounding bibliographic research on the parts comprising the Fishes was that only the last two deliveries making up the Fishes (numbers 16, and 17-18) had part numbers on the wrappers that were labeled as "6" and "7" respectively, the seventh part of which was contrary to Sotheran's (1915) bibliographic record of six parts for completed fishes.

Two more pieces of evidence helped solidify the makeup of the Fishes. An earlier book catalog of Sotheran (Sotheran, 1889) listed a copy of the Fishes for sale that included the following five numbers: 2, 5, 6, 7, 12. Number 6 was clearly the number for the first part of the Reptiles, so this was most likely a case of the bookseller confusing part numbers and whole series numbers: e.g., number 16, which contains the Fishes, also has part "VI" listed on the wrapper. Hence, I conclude that the first 5 parts of the Fishes advertised by Sotheran (1889) was for numbers 2, 5, 7, 12, and 16. The other source was Friedländer & Sohn's (1886) catalog of "Ichthyologie", where on page 27 the entry for the Fishes part of the *Zoology* has: "Fishes coll. during the Voyage of the "Erebus" and "Terror". Part 2, 3. Lond. 1845. roy. 4. w. 20 plates." Thus, two parts (Fishes parts 2 and 3 = whole series numbers 5 and 7) were issued in 1845.

Finally the mystery was solved regarding why previous bibliographers had only recorded four sections for the Fishes: (1) there are actually seven numbers but numbers 17 and 18 were issued as one (as evidenced from the wrapper); (2) number 7 was issued in 1845 along with number 5, thus when bibliographers recorded pp. 17–52 as being issued in 1845, they actually belonged to two different numbers issued at two different times within that year; and (3) number 16 (= Fishes part 6 on the wrapper) must have been issued without text and only included plates.

Thus, the Fishes are here concluded to be comprised of numbers 2, 5, 7, 12, 16, and the combined 17–18 giving 6 parts (see Table 3). Pagination for each Fishes part was able to be deduced for each number (and lack of text for number 16), but only 14 plates [for numbers 5 and 7 (= Fishes parts 2 and 3)] could be found and associated with their Parts. The remaining 46 of the total 60 plates remain undated and unassociated with their issued parts.

Crustacea. The crustaceans were originally intended to be authored by J.E. Gray but were apparently at some point instead given to Adam White to handle. Clark & Presswell (2001) gave a brief discussion concerning White's involvement of the Crustacea of the Voyage, but not the reason or timing of the handover from Gray to White. Whatever the circumstances, White had completed a good part of work on the subject and had even listed many of his manuscript names in his list of specimens of Crustacea in the British Museum (White 1847) [some names even referring to unpublished plate numbers], but White never completed or published the work and it lay dormant for almost 30 years. The continual torment of White by his superior Gray may have led him to abandon the work. The manuscript was finally taken up by Edward Miers and published as part 20 in June 1874. From Miers (1874: 1): "The greater number of the Crustacea here figured have been described by Mr. Adam White. The plates having been printed off many years since, and the stones destroyed, it has not been possible to alter their lettering, and bring it into correspondence with the nomenclature adopted in the text; but whenever I have adopted for any species a different generic or specific name from that used by Mr. White, and printed on the plate, a reference has been made to the latter in the synonyma of the species."

**Insects.** As with the Crustacea, the Insects were also begun by Adam White and finished by someone else.

However, in contrast to the Crustacea, White was able to finish part of the insects (White 1846) before having to quit the work due to ill health (Evenhuis 1997: 647). This first part comprises pp. 1–24 and pls. 1–6. The Insects were finished by A.G. Butler, who kept White as co-author of the concluding portion of the work. The concluding part comprises pp. 25–51 and pls. 7–10. The contents of pages and plates for the concluding part were given by Rye (1876).

#### Acknowledgments

Many thanks to Cecilia Ng (Turnbull Library, Wellington, New Zealand) for her patience with my many questions concerning the copies of the *Zoology* in their library and for her generosity in making available scans of the wrappers they had; The staff of the Library and Archives of the Bishop Museum is thanked for allowing access to the rare book room to study their copy of the *Zoology*. Darren Mann (Oxford University Museum of Natural History) and Richard Pyle (Bishop Museum) are thanked for their efforts at locating material consulted during this study. Two anonymous reviewers are thanked for their suggestions, which helped improve the paper.

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No.	Contents	Date of Circular	Volume: page	Notes
1	"Beasts"	1 May 1844	n.s. 22: 87	to be published "on the 1st of June"
1	"vierfüssige Thiere"	1 June 1844	n.s. 23: 92	"So eben ist erschienen Part 1"
1	Mammalia	1 Jul 1844	n.s. 24: 94	16 pp., 16 pls.
2	Fishes	1 Aug 1844	n.s. 25: 100	"published July"
3	Birds	1 Oct 1844	n.s. 27: 107	"published September"
4	Mammalia	2 Dec 1844	n.s. 29: 116	"published November"
5	Fishes	1 Feb 1845	n.s. 31: 124	"published January"
9	—	2 Jun 1845	n.s. 35: 139	"published May"
11	Insects	1 May 1846	n.s. 46: 118	"published April"
12–15	—	1 Feb 1847	n.s. 55: 218	"published January"
16	_	1 Feb 1847	n.s. 59: 238	"published June"
17-18	_	1 Apr 1848	n.s. 68: 274	"published March"

Table 1. Muquardt's Monthly Circular Notices of the Numbers of the "Zoology of the Voyage of the H.M.S. Erebus and Terror".

#### Table 2. Original animal groups and authorship of the "Zoology of the Voyage of the H.M.S. Erebus and Terror".

Group	Intended Authorship	Actual Authorship
Beasts‡	Gray, John Edward	Gray, J.E.
Reptiles	Gray, John Edward	Gray, J.E. & Günther, Albert
Shells†	Gray, John Edward	Smith, Edgar Albert
Sea-Eggs*	Gray, John Edward	_
Corals*	Gray, John Edward	—
Birds	Gray, George Robert	Gray, G.R.
Fish	Richardson, John	Richardson, J.
Crustacea	Bell, Thomas & Goodsir, Harry D.S.	Miers, Edward John
Insects	White, Adam & Doubleday, Edward	White, A. & Butler, Arthur Gardiner

‡ title changed to Mammalia† title changed to Mollusca.

\* never published.

#### Evenhuis – Zoology of Erebus and Terror

# Table 3. Dating (by animal group) of the "Zoology" of the Voyage of the H.M.S. Erebus and Terror.

(Dates in red are earlier than previously published).

Vol.	Whole Part	Group Part	Wrapper	Article Title	Author	Pages	Plates	BMNH Cat date	Printed Wrapper Date	Date of Publication	Dating Source	Notes	
1	1°		$\checkmark$	Summary of the voyage	Hooker, J.D.	v-xii	_	_	MDCCCXLIV	1 Jun 1844	Muquardt's Mon cat. n.s. 23: 92	No.1 = summary, pp. v- xii; + Mammalia, pp. 1–8 (see text for explanation)	
Mammalia													
	1	[1]	$\checkmark$	Mammalia (= The seals of the Southern Hemisphere)		1-8	1-10	1844	MDCCCXLIV	1 Jun 1844	Muquardt's Mon cat. n.s. 23: 92	pl contents from BMNH Cat.	
1	23 [2]	23	[2]	~	Mammalia [= The seals of the Southern Hemisphere] Mammalia (=	Gray, J.E.	9-12	14-17	1875	May MDCCCLXXV	May 1875	from wrapper (Bayerischen Staatsbibliothek - online via Google Books)	pt. number from Nature 1875: 289, 290; pl contents from BMNH Cat.; wrapper title is
1				Miscellanea)	druy, j.L.	12a–12d	18-28			May 1875		"Mammalia (conclusion)"	
	4	4	√	Beasts [= On the cetaceous animals]		13-53	1-37		December MDCCCXLIV	2 Dec 1844	Muquardt's Mon. Cat. n.s. 29	pl contents from BMNH Cat.	
	[13–15]	3–5	~	Mammalia**		13-53	1–37	1846	MDCCCXLVI	14–29 Jan 1847	Publ. Circular No. 225	contents from Muquardt's Mon. Cat. (2 Aug 1847) says reprint	
				** evidence shows this to be a reprinting of original part 4			49 pls. total; 11–13 wanting				*incorrectly says pt. one will be "Beasts"		
Birds											Muquardt's Mon. Cat. n.s.	contents from Mathews	
	3	[1]	√	Birds	Gray, G.R.	1–8	1*, 2–6	1844	October MDCCCXLIV	Sep 1844	27: 107	(1930,1938)	
	8	[2]	$\checkmark$	Birds		1-8	8–26, 28, 33– 35, 11*, 21* 1845	1945	April MDCCCXLV	Apr 1845	from wrapper (NY Publ. Library online via (Haithi Trust)	contents and date from Mathews (1930,1938)	
1	9	[3]	~	Birds		9–16			June MDCCCXLV	31 May 1845	Athenaeum 1845: 532	contents and date from Mathews (1930,1938)	
	10	[4]	√	Birds		17-20		October MDCCCXLV	Oct 1845		contents and date from Mathews (1930,1938)		
	22	[5]	$\checkmark$	Birds (Conclusion)	Sharpe, R.	21-39	1, 7, 20*, 27, 29, 30, 31, 32	1875	April MDCCCLXXV	Apr 1875		contents and date from Mathews (1930,1938)	
							37 pls. total; pls 12, 22 wanting						
Reptiles	6	[1]	$\checkmark$	Reptiles	Gray, J.E.	1-8	1-4, 8, 9	"[1845]"	February MDCCCXLV	Feb 1845	from wrapper (Turnbull)		
2	24	[2]	~	Reptiles	Günther, A.	9–19	5-7, 10-20	"[1875]"	February MDCCCLXXV	Feb 1875	from wrapper (Turnbull)	* pls. appeared previously in 1867 (Gray, "Lizards of Australia and New Zealand in the collection of the British Museum"); pt. number from Nature 1875: 289-290	
Fishes	20 pls. total												
	2	[1]		Fishes		1-16	1-10	1844		Jul 1844	Muquardt's Mon. Cat. n.s. 25: 100	Quaritch 1899 cat. list 10 pls.	
	5	[2]		Fishes		17-32	11-20	1845		Jan 1845	Muquardt's Mon. Cat. n.s. 31: 124	contents from Natl. Libr. Ireland copy online	
	7	[3]		Fishes		33-52	24, 28, 34, 38	"[1845]"		[Apr 1845]	interpolated based on every two month issuance		
2	12	[4-5]?	~	Fishes	Richardson, J.	53-74	??	1846	May MDCCCXLVI	14–29 Jan 1847	Publ. Circular No. 225	volume t.o.c says "1846" and wrapper has May 1846 , but publisher says not published until Jan 1847	

	16	6	$\checkmark$	Fishes		—	??	—	May MDCCCXLVII	May 1847	wrapper (Turnbull)	
	17-18	7	$\checkmark$	Fishes		i-viii, 75- 139	??	1848	February MDCCCXLVIII	Feb 1848	wrapper (Harvard library online)	
	60 pls. total											
Crustacea					1				1			1
2	20	—	$\checkmark$	Crustacea	Miers, E.	1–5	1-4	1874	June MDCCCLXXIV	Jun 1874	wrapper (Turnbull)	volume t.o.c says "1875"
	4 pls. total											
Insects	1								1			
	11	[1]	$\checkmark$	Insects	White, A.	1-24	1-6	1846	April MDCCCXLVI	Apr 1846	wrapper (Turnbull)	pls. from BMNH Cat.
2	19	[2]	$\checkmark$	Insects (conclusion)	Butler, A.G.	25-51	7-10	1874	June MDCCCLXXIV	Jun 1874	wrapper (Turnbull)	pt. number from Nature 1875: 289, 290; pls. from Rye (1876)
	10 pls. total											
Mollusca												
2	21	—	$\checkmark$	Mollusca	Smith, E.A.	1–7	1-4	1874	June MDCCCLXXIV	Jun 1874	wrapper (Turnbull)	pt. number from Nature 1875: 289, 290
4 pls. total												

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### Table 4. Dating (by issuance of parts) of the "Zoology" of the Voyage of the H.M.S. *Erebus* and *Terror*.

		Group		
Vol.	Whole Part	Part	Article title	Date of publication
1	1°	—	Summary of the voyage	1 June 1844
1	1°	[1]	Mammalia (= The seals of the Southern Hemisphere)	1 June 1844
2	2	[1]	Fishes	July 1844
1	3		Birds	Sep 1844
1	4	4	Beasts (= On the cetaceous animals)	Nov 1844
2	5	[2]	Fishes	Jan 1845
2	6	—	Reptiles	Feb 1845
	7	[3]	Fishes	[April 1845]
1	8	[2]	Birds	Apr 1845
1	9	[3]	Birds	31 May 1845
1	10	[4]	Birds	Oct 1845
2	11	[1]	Insects	Apr 1846
2	12	[4-5]	Fishes	14-29 Jan 1847
1	13-15	3-5	Mammalia [= reprint of orig. pt. 4]	14–29 Jan 1847
2	16	6	Fishes	May 1847
2	17-18	7	Fishes	Feb 1848

#### Issuance by Part (Publisher Longman, Brown, Green, & Longmans)

#### Issuance by Part (Publisher E.W. Janson)

2	19	[2]	Insects (Conclusion)	Jun 1874
2	20		Crustacea	Jun 1874
2	21	_	Mollusca	Jun 1874
1	22	[5]	Birds (Conclusion)	Apr 1875
1	22	[2]	Mammalia (Conclusion) (= The seals of the	Mars 1075
1 23 [2]		[2]	Southern Hemisphere)May 187Mammalia (Conclusion) (= Miscellanea)	
 			Maninana (conclusion) (= Miscenanca)	
2	24	_	Reptiles	Feb 1875