ISSN 2045-4643 (Print) ISSN 2045-4651 (Online)

## ZOOLOGICAL BIBLIOGRAPHY

or

Opera Zoologica

Edited by

Edward C. Dickinson

Volume 2 Number 4 August 2013



**ZOOLOGICAL BIBLIOGRAPHY** or *Opera Zoologica* was conceived as a quarterly, but this frequency must depend on the supply of appropriate papers and quarterly issues are proving to be impossible. Once the journal is well known across all fields of zoology we hope to be able to achieve regular quarterly publication. All issues are open access and are made available for download free from the website of Aves Press Limited, who publish this focused journal as a service to the zoological community.

The periodical has as its object the dissemination of reports on investigations into the bibliography of zoology, especially those relating to the dating of publications and to authorship. Our Notes section seeks to list recent publications elsewhere on the same topic, please send contributions whether of proposed papers or to the Notes section to ZoolBibl@avespress.com.

All papers are sent for peer-review, sometimes by board members, but also by appropriate scientists known to them or to the Acting Editor.

Our intent is to guarantee publication of an accepted proposal within six months of submission of a finished MS that meets our guidelines and editorial requirements. For this reason issues will vary in length but the target is a volume of four issues filling a total of at least 160 pages. We do not place 'Supplementary Material' on our website; instead we will discuss and agree the length of the paper so that what needs to be published, is published.

Recent changes to the International Code of Zoological Nomenclature, 1999, now provide for certain forms of electronic publication to qualify for recognition from the date of electronic publication. Our volumes 1 and 2 have been completed with both a print edition and an "online" edition each with its own ISSN. With effect from Volume 3, Zoological Bibliography will appear as an online journal with ISSN 2045-4651. Where appropriate, articles will be registered with ZooBank and the location of archived issues will be made known.

#### Editorial Board:

Kraig Adler, USA [Herpetology]
Patrice Bouchard, Canada [Entomology]
Les Christidis, Australia [Ornithology]
Neal Evenhuis, USA [Entomology]
Alfred Gardner, USA [Mammalogy]
Andrea Kourgli, Austria [Zoology Librarian]
Christopher Lyal, United Kingdom [Entomology]
Svetlana Nikolaeva, United Kingdom [Palaeontology]
Constance Rinaldo, USA [Zoology Librarian]

#### Acting Editor:

Edward C. Dickinson

*Aves Press Limited* is a registered private company with registration no. 07033641 and an ethical niche publisher which operates a wholly different and largely co-operative business model.

All rights reserved; the PDF version of this whole issue may be distributed freely for the purposes of research, private study, criticism or review but may not be sold or traded. Photocopies made from individual articles may also be made under the same conditions.

Our authors retain copyright, but licence us under the Creative Commons Attribution Licence.

## **ZOOLOGICAL BIBLIOGRAPHY**

or Opera Zoologica

Volume 2 Number 4

Published 8 August 2013

#### LETTER FROM THE EDITOR

Both readers and our helpful depository libraries will have realised that this is an *occasional publication* and not a regular quarterly or annual. This has caused our librarian friends needless problems as they seek to know whether they have missed an issue. Ideally, and perhaps in time when there is a regular and sufficient flow of quality papers offered for publication, we hope that regular publication can be guaranteed and that based on that we can seek an Impact Factor. However, it is not clear when this may be expected.

Thus, as we come to the end of our second volume it is time to announce some changes. First, please note that no further issues will be made available in print form. Archiving of the electronic edition will be arranged to meet the requirements established by ZooBank so that new nomenclatural acts and new names appearing in *Zoological Bibliography* can be registered and thus accepted as published in accordance with the amended *International Code of Zoological Nomenclature*.

Secondly, downloads of *Zoological Bibliography* will need regular readers to become subscribers and to register. Please register as a subscriber in the Registration Box on the website – which will be put in place in August 2013. This will allow us to manage your subscriptions. If you first register by requesting the "newsletter" that will guarantee that you are told when website-based registration is available.

The volume subscription is set at £20 (US\$30) per subscriber for a volume which will contain issues – excluding supplements – making up not less than 160 pages. Institutions are asked to pay that same basic fee, but will be encouraged to make a regular donation that reflects the reach of their Local Area Network and their appreciation of the existence of this journal. By providing subscription-based access we will be able to continue without requiring page charges from our authors. All papers will be promptly available to authors as PDFs – with no restrictions on their distribution or their placement on such websites as they may professionally maintain; however, they will not be made available as individual PDFs on our website. The Creative Commons copyright arrangement will be maintained. The archival arrangements we make, as required by ZooBank, will be announced on the Aves Press website as soon as possible and will appear in the first issue of volume 3. It is hoped that BioOne will agree to make this journal more widely available; but this is unlikely to occur before 2015.

A further change, beginning with the first issue of Vol. 3, is the appointment of two coeditors. At least one will be a member of the editorial board, and we are very happy to announce that Patrice Bouchard will become a co-editor after this issue appears. The undersigned will act as a co-editor until the second position is filled.

As usual at the end of a volume we extend our grateful thanks to those who refereed papers which appeared in this volume. So our thanks and a free subscription to volume 3

goes to the following generous friends who assisted in this way: Patrice Bouchard, Roger Bour, Anthony Cheke, Alice Cibois, Les Cristidis, Robert Dowsett, Donald Duszynski, Neal Evenhuis, Daphne Fautin, Tim Inskipp, Justin Jansen, James Jobling, Chris Lyal, Adrian Pont, Richard Schodde and Frank Steinheimer (as well as those who assisted in the same way with volume 1).

We also thank our authors in this volume, and volume 1, by providing them too with a free subscription to volume 3. If subscription income suffices we shall try to extend the privilege of free subscriptions to authors for a period of 3 years from the date of the last article they published in our pages. On publishing a first paper the author(s) will qualify immediately for free downloads during the year in course.

#### **EDITOR'S COMMENTS**

In our last issue we provided some information on how the International Code of Zoological Nomenclature had changed to permit electronic publication. We had supposed, naively it appears, that an electronic journal would have to be published in full. We are now informed that this is not the case and we consider that the community of institutional librarians and zoological bibliographers will wish to know the details. A new bird species found in Cambodia is to appear in the next issue of a journal called Forktail. We anticipate that this will appear, as usual, in August. The publishers decided to register the new taxon name with ZooBank and obtain a Life Science Identifier (LSID). Following communications between the journal publishers and Dr. Richard Pyle of ZooBank it is now claimed that the PDF, placed on the publishers' website – of a single article from a journal issue, which will not appear as an electronic journal with its own ISSN - is considered to have been electronically published from the moment that ZooBank was informed of the date the PDF was made available. When this was questioned with Dr. Pyle he was as concerned as the undersigned to be sure that this treatment was indeed viewed by the Commission as valid publication. His poll of a number of Commissioners gave the decision support from, I believe, all those who replied.

This is a curious and potentially dangerous interpretation of the revised Code, although very probably the careful wording of the amendment to the Code supports it, or so I am told. The *curiosity* lies in the fact that the new taxon will have to be cited from a non-existent electronic journal with a date that is not the date of printed articles that make up the rest of the published printed journal. The *danger* surely lies in the blurring of the meaning of publication. At least some of the Commissioners that Dr. Pyle consulted agreed that while this counts as published it is not published in the generally understood meaning of that word. Fresh evidence of the divergence of the Code from the real world of language! It was also surely unnecessary. Why could the parties not simply accept that registration protected the name and that the article should be under embargo until the date of publication of the issue of the journal as a whole?

Edward Dickinson, Acting Editor August 2013

# Nomenclatural and bibliographical notes on new taxa of protozoan parasites described by Ernest Edward Tyzzer (1875–1965)

#### R. B. Williams

COPYRIGHT: © 2013 Williams. This is an open-access article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ABSTRACT: Ernest Edward Tyzzer (1875–1965) was a world-renowned physician at the Harvard Medical School, Boston, USA. His research embraced oncology, pathology, virology, bacteriology, parasitology and taxonomic zoology in relation to both human and veterinary medicine. The present paper addresses some nomenclatural and bibliographical aspects of Tyzzer's taxonomic work in protozoan parasitology, and discusses the difficulties caused by his habit of publishing the same information in more than one place. The publication dates and present statuses of his new protozoan taxa are reviewed. The genus Pygolimax Tyzzer, 1920 (Rhizopoda) is a junior subjective synonym of *Endolimax* Kuenen & Swellengrebel, 1917; hence Pygolinax gregariniformis Tyzzer, 1920 is now known as Endolinax gregariniformis (Tyzzer, 1920). Two genera of Zoomastigophora are also now invalid: Cyathosoma Tyzzer, 1930 is a junior subjective synonym of Cochlosoma Kotlán, 1923, so Cyathosoma striatum Tyzzer, 1930 is now known as Cochlosoma striatum (Tyzzer, 1930); also, Ptychostoma Tyzzer, 1930 is both a junior homonym of *Ptychostonia* Laube, 1868 (Mollusca) and a junior synonym of *Cochlosoma* Kotlán, 1923, so Ptychostoma bonasae Tyzzer, 1930 is here renamed Cochlosoma bonasae (Tyzzer, 1930) comb. nov. Other new taxa published by Tyzzer are still valid, namely the family Cochlosomatidae Tyzzer, 1930 emend. Pecka, 1991 and the genus Histomonas Tyzzer, 1920 (Zoomastigophora); the species Entamoeba gallinarum Tyzzer, 1920 (Rhizopoda); and the genus Cryptosporidium Tyzzer, 1907 and the species Cryptosporidium muris Tyzzer, 1907, Cryptosporidium parvum Tyzzer, 1912, Eimeria acervulina Tyzzer, 1929, Eimeria dispersa Tyzzer, 1929, Eimeria meleagridis Tyzzer, 1929, Eimeria meleagrimitis Tyzzer, 1929, Eimeria mitis Tyzzer, 1929, Eimeria maxima Tyzzer, 1929, and Eimeria phasiani Tyzzer, 1929 (Apicomplexa).

KEYWORDS: amoebae, coccidia, Ernest Edward Tyzzer, flagellates, journal issues, paginations, parasites, plate numbers, Protozoa, publication dates.

#### INTRODUCTION

Ernest Edward Tyzzer, M.D. (1875-1965) (Figure 1), sometime Director of the Harvard Cancer Commission (1905-1916) and subsequently George Fabyan Professor of Comparative Pathology in the Harvard Medical School (1916-1942), was a highly regarded scientist. He established an international reputation for work in fields as diverse as oncology, pathology, virology, bacteriology, parasitology and taxonomic zoology in relation to both human and veterinary medicine (see Weller, 1978). According to Lund (1977), "Tyzzer, more than any other individual, ushered in the era of modern research on two of the greatest parasitic scourges of poultry in our time, blackhead [histomonosis] and coccidiosis". During a biographical study of Tyzzer at present in progress (Williams, in press), certain important facts bearing on the validity of some new protozoan taxa that he described, and on the dating and identification of relevant publications have come to light. Tyzzer's publications

on previously described protozoa that remain non-controversial are not dealt with here, but several methodological papers, crucial to taxonomists, that were published more than once (though omitted from Weller's 1978 bibliography) are discussed.



**Figure 1.** Ernest Edward Tyzzer, when aged 74 years. Frontispiece of *Annals of the New York Academy of Sciences*, vol. 52, art. 4 (1949), with the legend on the reverse, "DEDICATION. This volume on Coccidiosis is respectfully dedicated to Doctor E. E. Tyzzer, who unquestionably, more than anyone else, put the study of Coccidia on a critical basis with his early investigations of life cycles, biology, and pathology of these parasites." (Photograph reproduced by kind permission of the New York Academy of Sciences).

#### NOMENCLATURAL NOTES

Exceptionally for a physician and pathologist, Tyzzer described and named a significant number of previously unknown species of organism, occasionally establishing new genera or families to accommodate them (see Hassall et al., 1952; Weller, 1978). All are parasites, mostly protozoans of the phyla Apicomplexa, Rhizopoda or Zoomastigophora. The following sub-headings give the original names and years of publication of the new protozoan taxa proposed by Tyzzer, in chronological order. Their validities are confirmed when appropriate, but for various reasons some are confusing, controversial or simply invalid, in which cases any necessary emendations or generic reassignments are discussed.

#### Cryptosporidium Tyzzer, 1907 (Apicomplexa)

Cryptosporidium Tyzzer, 1907 is a valid genus of apicomplexans, originally discovered in mice. Cryptosporidians have long been regarded as coccidia, but are now considered to be more closely related to gregarine apicomplexans (see review by Barta & Thompson, 2006). Tyzzer (1907) originally described a parasite that he considered to be an extracellular coccidium, conferring on it the name Cryptosporidium muris. Although he provided no separate descriptions as "gen. nov." or "sp. nov.", both the generic and the specific name were thereby validly published, since the genus is monotypic and the description of the type-species therefore serves also as a description of the genus. However, Tyzzer caused confusion when in 1910 he republished the genus-name Cryptosporidium with a more detailed description of the type-species (Tyzzer, 1910), misleadingly including in the title the words "Cryptosporidium muris (gen. et sp. nov.)". As a result, some authors have erroneously cited Tyzzer (1910) as the authority for Cryptosporidium Tyzzer (e.g., Slavin, 1955). The authority and date for the genus have even been implied to be Tyzzer (1912) (e.g., Barta & Thompson, 2006), but Tyzzer (1912) is, in fact, the correct citation for the description of the second species of Cryptosporidium to be described, C. parvum (see later).

#### Cryptosporidium muris Tyzzer, 1907 (Apicomplexa).

As noted above, Tyzzer's original description (Tyzzer, 1907) of the type-species, *C. muris*, of *Cryptosporidium* was published simultaneously with its genus-name, and so shares the same valid publication date of 1907. However, as with the genus-name, the type-species description is sometimes erroneously dated 1910, because of its republication (Tyzzer, 1910). *C. muris* is currently regarded as a valid species (Šlapeta, 2009).

#### Cryptosporidium parvum Tyzzer, 1912 (Apicomplexa).

The original publication of *Cryptosporidium* has on occasion been attributed to Tyzzer (1912) (see earlier), which is a mistake. However, Tyzzer (1912) is the correct reference for the publication of *C. parvum* Tyzzer, 1912, originally found in mice and currently regarded as a valid species (Šlapeta, 2009).

#### Histomonas Tyzzer, 1920 (Zoomastigophora)

The causative organism of the disease blackhead (now known as histomonosis) in gallinaceous birds was originally described by Smith (1895) as *Amoeba meleagridis* Smith, 1895. Tyzzer (1920a) later established that this parasite is a flagellate, and created a new

genus for it, *Histomonas* Tyzzer, 1920. Hence *Amoeba meleagridis* Smith, 1895 is the typespecies of *Histomonas*, now classed as a zoomastigophoran. The genus remains valid (McDougald, 2005).

Unfortunately, Tyzzer cited the new combination wrongly, as "Histomonas meleagridis (Smith, 1895) Tyzzer, 1919", in the very paper in which he defined the new genus (Tyzzer, 1920a: 130). He had previously (Tyzzer, 1919) retained Amoeba meleagridis only provisionally as "probably somewhat of a misnomer", having assembled evidence that "suggests strongly that we are dealing with a species of flagellate".

#### Entamoeba gallinarum Tyzzer, 1920 (Rhizopoda)

During his studies on the causative organism of histomonosis, Tyzzer found it necessary to distinguish *Histomonas meleagridis* from various other protozoa found in the caeca of chickens and turkeys, which led to his discovery of several new rhizopodan taxa (Tyzzer, 1920b). One such is *Entamoeba gallinarum* Tyzzer, 1920, still recognized as a valid species (see Levine, 1961: 145; Daugschies, 2006: 580).

#### Pygolimax Tyzzer, 1920 (Rhizopoda)

Another new rhizopodan taxon described from chickens and turkeys (Tyzzer, 1920b), arising from Tyzzer's studies of histomonosis of gallinaceous birds, is the genus *Pygolimax* Tyzzer, 1920, long regarded (since Wenyon, 1926: 242) as a junior subjective synonym of *Endolimax* Kuenen & Swellengrebel, 1917.

#### Pygolimax gregariniformis Tyzzer, 1920 (Rhizopoda)

The genus Pygolimax Tyzzer, 1920 is monotypic (Tyzzer, 1920b), with the type-species *P. gregariniformis* Tyzzer, 1920. As the result of the synonymization of *Pygolimax* Tyzzer, 1920 with *Endolimax* Kuenen & Swellengrebel, 1917 (see above), *P. gregariniformis* Tyzzer, 1920 became known as *Endolimax gregariniformis* (Tyzzer, 1920) (see Levine, 1961: 154).

#### Eimeria meleagridis Tyzzer, 1927 (Apicomplexa)

Tyzzer (1929) regarded *Eimeria meleagridis* Tyzzer, 1927 as the correct citation for a species of turkey coccidium. He was, however, mistaken because that name (Tyzzer, 1927) is a *nomen nudum*. Subsequent authors perpetuated that error until recently, when Williams (2010) pointed out that Tyzzer did not validly make the name *Eimeria meleagridis* available with a valid description until two years later (Tyzzer, 1929). The correct formal citation for the species is therefore *Eimeria meleagridis* Tyzzer, 1929.

## Eimeria acervulina, E. dispersa, E. meleagridis, E. meleagrimitis, E. mitis, E. maxima and E. phasiani Tyzzer, 1929 (Apicomplexa)

Publication of these seven coccidian species of gallinaceous birds by Tyzzer (1929) is unexceptionable; all remain valid names, but note Tyzzer's originally incorrect dating of *E. meleagridis* discussed above. *Eimeria acervulina*, *E. mitis* and *E. maxima* were originally described from chickens; *E. phasiani* from pheasants; *E. dispersa* from quail; and *E. meleagridis* and *E. meleagrimitis* from turkeys.

#### Cochlosomidae Tyzzer, 1930 (Zoomastigophora)

Tyzzer (1930) established this family to accommodate, with its type-genus *Cochlosoma* Kotlán, 1923, the new genera *Cyathosoma* Tyzzer, 1930 and *Ptychostoma* Tyzzer, 1930, protozoans found in the intestines of ruffed grouse. More recently, Kulda and Nohýnková (1978) considered that the family comprises only one valid genus, *Cochlosoma* Kotlán, 1923, which occupies an uncertain position in the phylum Zoomastigophora.

The family name, based on the Greek-derived name of the type-genus *Cochlosoma* Kotlán, 1923, was originally wrongly formed as Cochlosomidae Tyzzer, 1930. This was recognized 60 years later by Pecka (1991), who emended it to Cochlosomatidae. However, Article 29.5 of the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature, 1999) states: "If a spelling of a family-group name was not formed in accordance with Article 29.3 but is in prevailing usage, that spelling is to be maintained, whether or not it is the original spelling and whether or not its derivation from the name of the type genus is in accordance with the grammatical procedures in Articles 29.3.1 and 29.3.2". Investigation of the relative usage of the original and emended forms of this family-name is therefore required in order to decide which spelling should now be used.

Zoological Record, Scopus and PubMed online databases were addressed (accessed 4 December 2012). Since they index only primary scholarly publications, the results are more reliable than those obtained with internet search engines, which can be seriously misleading because of the repeated secondary and tertiary publications that they pick up (Lawrence et al., 2010). Zoological Record lists five primary uses of Cochlosomidae (including the original publication) and two uses of Cochlosomatidae; Scopus lists one use of Cochlosomidae and six of Cochlosomatidae; PubMed lists one use of each. Some other usages were discovered from additional sources. Omitting repeated primary references, the accumulated results total six uses of Cochlosomidae and seven of Cochlosomatidae. Since the spelling Cochlosomidae clearly does not prevail, Article 29.5 of the Code need not be invoked and the spelling Cochlosomatidae Tyzzer, 1930 emend. Pecka, 1991 may be maintained without disturbing nomenclatural stability.

#### Cyathosoma Tyzzer, 1930 (Zoomastigophora)

Kulda and Nohýnková (1978) regarded the zoomastigophoran *Cyathosoma* Tyzzer, 1930 as a junior subjective synonym of *Cochlosoma* Kotlán, 1923 (type-genus of Cochlosomatidae Tyzzer, 1930 emend. Pecka, 1991). *Cyathosoma* Tyzzer, 1930 is therefore currently regarded as invalid.

#### Cyathosoma striatum Tyzzer, 1930 (Zoomastigophora)

Cyathosoma striatum Tyzzer, 1930 is the type-species by monotypy of Cyathosoma Tyzzer, 1930. Because Cyathosoma is a junior synonym of Cochlosoma Kotlán, 1923 (see above), Kulda and Nohýnková (1978) reassigned Cyathosoma striatum, forming the new combination Cochlosoma striatum (Tyzzer, 1930).

#### Ptychostoma Tyzzer, 1930 (Zoomastigophora)

The name of the zoomastigophoran *Ptychostoma* Tyzzer, 1930 is a junior homonym of *Ptychostoma* Laube, 1868 (a gastropod mollusc) and is therefore invalid. There is already an

available replacement name, *Cochlosoma* Kotlán, 1923, with which *Ptychostoma* Tyzzer, 1930 was synonymized by Kulda and Nohýnková (1978).

#### Ptychostoma bonasae Tyzzer, 1930 (Zoomastigophora)

Ptychostoma bonasae Tyzzer, 1930 is the type-species by monotypy of Ptychostoma Tyzzer, 1930. The synonymizing by Kulda and Nohýnková (1978) of Ptychostoma and Cochlosoma Kotlán, 1923 should have led to the reassignment of Ptychostoma bonasae Tyzzer, 1930 to Cochlosoma, which was not done at that time. Therefore, that action is taken here, resulting in the combination Cochlosoma bonasae (Tyzzer, 1930) comb. nov.

#### **BIBLIOGRAPHICAL NOTES**

Tyzzer occasionally published the same information, or even a whole abstract or paper, two or three times (see Hassall et al., 1952). As already pointed out, such actions have sometimes caused confusion about the correct date of availability of a new taxon. Sometimes, dating or pagination of a paper may be suspect, necessitating careful appraisal. Apart from descriptions of new taxa, other examples of publications important to taxonomists include Tyzzer's discussions of criteria and methods for the recognition of new coccidian species, which again he published more than once. Such examples of bibliographical importance are addressed hereunder and the exact or latest possible day of publication, ascertained from the original journal, is given for papers that include new taxa. The following sub-headings tally with the Harvard-style citations in the end-references.

#### **Tyzzer (1907)**

Cryptosporidium Tyzzer, 1907 and C. muris Tyzzer, 1907 were described in volume 5 of Proceedings of the Society for Experimental Biology and Medicine (Tyzzer, 1907). The customary dating of this paper is 1907, yet the title-page of the completed volume bears a publication date of 1 July 1908. It therefore seemed advisable to investigate the dates of issue of the journal parts. Examination of each part revealed that publication of the volume was, in fact, commenced in 1907 and completed in 1908. As Tyzzer's paper appeared in part 1, dated 15 November 1907, publication in 1907 is confirmed.

#### Tyzzer (1912)

*Cryptosporidium parvum* was published in part 3 of volume 26 of *Archiv für Parasitenkunde* (Tyzzer, 1912). The publication date 6 September 1912 is given on the front wrapper of part 3.

#### **Tyzzer** (1920a)

Although *Histomonas* Tyzzer, gen. nov. in part 3 of volume 6 of the *Journal of Parasitology* (Tyzzer, 1920a) is stated in the journal to have been published in March 1920, reprints of this paper give the actual date of issue as 17 May 1920.

#### **Tyzzer (1920b)**

This paper on amoebae of chickens and turkeys (Tyzzer, 1920b), was published in part 2 (for January 1920) of volume 41 of the *Journal of Medical Research*. However, a footnote on p. 199 states that the submitted paper was corrected on 20 April 1920, so it could not have been published before that date.

#### Tyzzer (1926); Tyzzer (1927); Tyzzer (1929)

These three papers are crucial to establishing the availability of *Eimeria meleagridis* Tyzzer, 1929, which Tyzzer himself wrongly cited as 1927. Williams (2010) noted that Tyzzer published the name three times. The first time was as a *nomen nudum* in an inadmissible publication of conference abstracts with limited distribution (Tyzzer, 1926); the second time was in an abstract with an identical title and text in an acceptable journal, but still as a *nomen nudum* (Tyzzer, 1927); and the third time was with a valid description in a major monograph (Tyzzer, 1929). It is hoped that this bibliographical analysis will obviate further perpetuation of the incorrect citation, *"Eimeria meleagridis* Tyzzer, 1927".

#### **Tyzzer (1929)**

In this major seminal paper on avian coccidiosis, "Coccidiosis in gallinaceous birds", Tyzzer (1929) named seven species of *Eimeria*, all still accepted as valid: *Eimeria acervulina*, *E. dispersa*, *E. meleagridis*, *E. meleagrimitis*, *E. mitis*, *E. maxima* and *E. phasiani*. All these taxa are attributable to Tyzzer, whose name appears at the head of the paper. It should be noted, though, that section IV (pp. 324–339), stated in a footnote to be authored by Tyzzer and Eva Elizabeth Jones, comprises "An experimental study of the host-limitation of certain species of *Eimeria* found in the chicken, the pheasant, the turkey and the quail". However, this section did not include any of the new species descriptions, so Jones is not to be regarded as joint authority of the names with Tyzzer.

Confusingly, two different paginations of this paper may be found in citations by more recent authors, so it might appear that those names were published twice. In fact, one version is the original *American Journal of Hygiene* publication, and the other is a reprint that is repaginated with the plates renumbered, but the main text is otherwise unchanged. The original paper comprises pages 269–383 of part 2 of volume 10 of the journal, but the reprint, which has its own printed wrappers, is paginated 1–115. Importantly, it also has four additional un-numbered pages at the beginning with a separate title-page, a dedication, and a foreword that gives supplementary information about the purpose of the research with acknowledgements of assistance and provision of pathological materials.

The differences between the plate numbers in the two versions of the paper also might cause confusion in citations of species descriptions. In the original journal printing, the plates are numbered III to XI, whereas for the reprint, it was clearly intended to renumber them as I to IX. Unfortunately, the printer achieved only partial success in this. The original plate numbers III to VIII and also their descriptions were correctly altered to I to VI in the reprint. However, although the numbers of the last three plates themselves were correctly amended to VII, VIII and IX in the reprint, the headings of their respective descriptions on pp. 88–89, 102–103 and 109–110, respectively, remained unchanged as plates IX, X and XI. The original plate numbering as III to XI in the journal printing occurs because the plates for all of the papers in volume 10 are numbered sequentially, and Tyzzer's paper is not the first one in the volume.

Details printed at the head of the first page of the journal version, including the journal title, volume and part numbers, and month of issue, are omitted from p. 1 of the reprint. Although that information appears on the front wrapper of the reprint, the journal pagination does not, so any person using only the reprint for reference might not be aware of the original correct journal pagination. According to the index in the complete volume 10 of the *American Journal of Hygiene*, publication of part 2 was on 1 September 1929.

Modern information technology has added to bibliographical confusion by introducing a spurious title for the journal in which this paper (Tyzzer, 1929) was published. The original proprietor of the *American Journal of Hygiene* was the Johns Hopkins Press. However, the journal is now published by Oxford University Press, and was renamed the *American Journal of Epidemiology* from volume 81 for 1965 onwards (Anonymous, 1965). Unfortunately, this new journal title is used for all the original volumes of the *American Journal of Hygiene* on the Oxford University Press website and also in the Scopus online database (both accessed 7 December 2012). If any future research paper might repeat that citation error, it could indicate that the original publication has been cited without the author(s) seeing it.

#### Tyzzer (1930)

According to the index in the complete volume 11 of the *American Journal of Hygiene*, this paper on flagellate taxa from the ruffed grouse (Tyzzer, 1930) was published in part 1 on 1 January 1930. It is stated erroneously on the Oxford University Press website and also in the Scopus database (see above) to have been published in the *American Journal of Epidemiology*.

#### Tyzzer et al. (1932)

This was Tyzzer's second major paper on coccidiosis in gallinaceous birds, this time with co-authors Hans Theiler and Eva Elizabeth Jones, but no new taxa were included. Unlike in the case of his other major coccidiosis paper (Tyzzer, 1929), offprints, rather than reprints, of Tyzzer et al. (1932) were distributed to colleagues. The pagination and plate numbers of the offprints are not different from those of the original journal paper. Nevertheless, the offprints can be distinguished from the original paper, which is sometimes found disbound from the journal volume. Not only do offprints have their own printed wrappers, but the first page lacks the bibliographical details printed in the journal version, including the journal title, volume and part numbers, and month of issue, which appear instead on the front wrapper. Furthermore, the journal version has a misprint in Tyzzer's middle name, given as "Esward", which is corrected to "Edward" in the offprint. Otherwise, there are no changes to the original text. According to the index in the complete volume 15 of the American Journal of Hygiene, publication of part 2 was in March 1932. It could not have been issued later than 31 March but, if consistent with other issues of this journal (see above), is most likely to have appeared on 1 March. It is stated erroneously on the Oxford University Press website and also in the Scopus database (see above) that this paper was published in the American Journal of Epidemiology.

#### Tyzzer (1928); Tyzzer (1931); Tyzzer (1932a); Tyzzer (1932b)

A crucial aspect of Tyzzer's seminal work on avian coccidiosis is that he established the essential requirements for the characterization of any newly described species of *Eimeria* (Joyner, 1986); this is vital advice for taxonomists of the Apicomplexa. Most importantly, the

characteristics include data on parasitological, immunological and ecological relationships between parasites and hosts, relegating morphometric descriptions of the oocysts to a lesser degree of importance than previously. The species criteria set out in his "Methods for isolating and differentiating species of *Eimeria*" (Tyzzer, 1928) are:

- 1. The length of the period of development up to the discharge of oocysts.
- 2. The time required for sporulation at a given temperature.
- 3. Host specificity or degree of restriction to a given host.
- 4. Characteristic habitat or distribution of the organism in its host.
- 5. Cross immunity tests.
- 6. Pathogenicity as determined by both experimental and natural infection.
- 7. Morphological studies, applying as well to the forms developing in the tissue and not confined solely to the size and shape of the oocyst.
- 8. The relation of parasite to host-cell, together with the reaction of the latter.

The relevance and importance of these criteria remain crucial today. Tyzzer built on them with an exposition of the laboratory methods by which he obtained the information that underpins his descriptions of *Eimeria* species in gallinaceous birds (Tyzzer, 1929; Tyzzer et al., 1932). Present-day researchers might also still benefit from reading the paper, "Criteria and methods in the investigation of avian coccidiosis", which was published three times. The first time was in the proceedings of a meeting of the United States Live Stock Sanitary Association (Tyzzer, 1931), when it was supplemented by a penetrating public discussion. The same paper was published twice more during the following year in journals, once including the discussion (Tyzzer, 1932a) and once without it (Tyzzer, 1932b).

It is important to emphasize that modern advances in molecular biological techniques should not supplant Tyzzer's *in vivo* criteria. Indeed, as a general rule it is strongly recommended to correlate molecular analyses with parasitological criteria, both for newly described species and also for well-established species when authenticated laboratory strains already exist, to facilitate identification by traditional methods in the field or laboratory when molecular-based methods might be impracticable (Williams et al., 2010).

#### Tyzzer (1936); Tyzzer (1937a); Tyzzer (1937b)

Tyzzer's last publications on protozoans emphasized his insistence on accurate species identification of coccidia, and the importance of their parasite-host interactions. Again, the same information was published repeatedly. The abstract of a lecture presented in London at the International Congress for Microbiology during July-August 1936 was reported in *The Veterinary Record* on 17 October (Tyzzer, 1936). The same abstract appeared in the proceedings of the congress published the following year (Tyzzer, 1937a), but without any mention of its previous publication. The final paper (Tyzzer, 1937b) expanded on those last two, entering into more detailed discussion on the aetiology and epizootiology of coccidioses in domesticated fowl.

#### **CONCLUDING REMARKS**

Although a meticulous experimentalist and an acute observer, Tyzzer was apt to cause confusion over priority of his publications by repeating certain information, or even whole

papers, in different places (see Hassall et al., 1952), some of which have been overlooked by later workers. It is hoped that the foregoing notes will be of assistance both to systematists and experimental scientists in choosing the correct citations for Tyzzer's new taxa and crucial taxonomic criteria, and will also be a useful source of information on his original names.

#### **REFERENCES**

Anonymous, 1965. Change in name. – American Journal of Epidemiology, 81: 1.

Barta, J. R. & R. C. A. Thompson, 2006. What is *Cryptosporidium?* Reappraising its biology and phylogenetic affinities. – *Trends in Parasitology*, 22: 463-468.

Daugschies, A., 2006. Protozoeninfektionen des Nutzgeflügels (pp. 576-599). In: Schneider, T., ed. *Veterinärmedizinische Parasitologie*. 6th edition. – Parey, Stuttgart.

Hassall, A., M. A. Doss & J. M. Humphrey, 1952. Tyzzer, Ernest Edward (pp. 5208-5210). In: *Index-Catalogue of Medical and Veterinary Zoology*. Part 16. – United States Department of Agriculture, Washington, D.C.

International Commission on Zoological Nomenclature, 1999. *International Code of Zoological Nomenclature*. 4th edition. i-xxix, 1-306. – International Trust for Zoological Nomenclature, London.

Joyner, L. P., 1986. The development of knowledge on the speciation of coccidia (pp. 1-12). In: McDougald, L. R., L. P. Joyner & P. L. Long, eds. *Research in Avian Coccidiosis*. – University of Georgia, Athens, GA.

Kotlán, A., 1923. Zur Kenntnis der Darmflagellaten aus der Hausente und anderen Wasservogeln. – Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskraukheiten und Hygiene, Abt. I, 90: 24-28.

Kuenen, W. A. & N. H. Swellengrebel, 1917. Korte beschrijving van enkele minder bekende protozoën uit den menschelijken darm. – *Geneeskundig Tijdschrift voor Nederlandsch-Indië*, 57: 496-506.

Kulda, J. & E. Nohýnková, 1978. Flagellates of the human intestine and of intestines of other species (pp. 1-138). In: Kreier, J. P., ed. *Parasitic Protozoa*. Vol. 2. – Academic Press, New York.

Laube, G. C., 1868. Die Fauna der Schichten von St. Cassian. – Denkschriften der Kaiserlichen Akademie der Wissenschaften. Wien, 28(2), 29-94.

Lawrence, T., N. Pelkey & S. Soares, 2010. Comment on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea*) (Reptilia, Testudines). 'Googleology': powerful tool or unreliable evidence? – *Bulletin of Zoological Nomenclature*, 67: 246-254.

Levine, N. D., 1961. *Protozoan Parasites of Domestic Animals and of Man*. i-iii, 1-412. – Burgess Publishing Company, Minneapolis.

Lund, E. E., 1977. The history of avian medicine in the United States. IV. Some milestones in American research on poultry parasites. – *Avian Diseases*, 21: 459-480.

McDougald, L. R., 2005. Blackhead disease (histomoniasis) in poultry: a critical review. – *Avian Diseases*, 49: 462-476.

Pecka, Z., 1991. Domestic geese (*Anser anser* L.) as a new host of *Cochlosoma anatis* Kotlán, 1923. – *Folia Parasitologica*, 38: 91-92.

Šlapeta, J., 2009. Centenary of the genus *Cryptosporidium*: from morphological to molecular species identification (pp. 31-50). In: Ortega-Pierres, G., S. Cacciò, R. Fayer, T. G. Mank, H. V. Smith & R. C. A. Thompson, eds. *Giardia and Cryptosporidium*: from molecules to disease. – CAB International, Wallingford.

Slavin, D., 1955. *Cryptosporidium meleagridis* (sp. nov.). – *Journal of Comparative Pathology*, 65: 262-266.

Smith, T., 1895. An infectious disease among turkeys caused by protozoa (infectious entero-hepatitis). – *U.S. Department of Agriculture Bulletin*, 8: 7-38.

Tyzzer, E. E., 1907. A sporozoan found in the peptic glands of the common mouse. – *Proceedings of the Society for Experimental Biology and Medicine*, 5: 12-13.

Tyzzer, E. E., 1910. An extracellular coccidium, *Cryptosporidium muris* (gen. et sp. nov.), of the gastric glands of the common mouse. – *Journal of Medical Research*, 23: 487-509.

Tyzzer, E. E., 1912. *Cryptosporidium parvum* (sp. nov.), a coccidium found in the small intestine of the common mouse. – *Archiv für Protistenkunde*, 26: 394-412.

Tyzzer, E. E., 1919. Developmental phases of the protozoon of "blackhead" in turkeys. – *Journal of Medical Research*, 40: 1-30.

Tyzzer, E. E., 1920a. The flagellate character and reclassification of the parasite producing "Blackhead" in turkeys – *Histomonas* (gen. nov.) *meleagridis* (Smith). – *Journal of Parasitology*, 6: 124-131.

Tyzzer, E. E., 1920b. Amoebae of the caeca of the common fowl and of the turkey. *Entamoeba gallinarum*, sp. n., and *Pygolimax gregariniformis*, gen. et spec. nov. – *Journal of Medical Research*, 41: 199-209.

Tyzzer, E. E., 1926. Species and strains of coccidia in poultry (pp. 4-5). In: *Program of the Second Annual Meeting of the American Society of Parasitologists*, 28–30 December. – American Society of Parasitologists, Philadelphia.

Tyzzer, E. E., 1927. Species and strains of coccidia in poultry. – *Journal of Parasitology*, 13: 215.

Tyzzer, E. E., 1928. Methods for isolating and differentiating species of *Eimeria*. – *Journal of Parasitology*, 15: 148-149.

Tyzzer, E. E., 1929. Coccidiosis in gallinaceous birds. – *American Journal of Hygiene*, 10: 269-383. [Reprints are repaginated 1-115, with additional unpaginated dedication and foreword.]

Tyzzer, E. E., 1930. Flagellates from the ruffed grouse. – *American Journal of Hygiene*, 11: 56-72.

Tyzzer, E. E., 1931. Criteria and methods in the investigation of avian coccidiosis (pp. 474-483). In: *Proceedings of the Thirty-fifth Annual Meeting of the United States Live Stock Sanitary Association*, 2–4 December. – United States Live Stock Sanitary Association, Chicago.

Tyzzer, E. E., 1932a. Criteria and methods in the investigation of avian coccidiosis. – *Journal of the American Veterinary Medical Association*, 80: 474-483.

Tyzzer, E. E., 1932b. Criteria and methods in the investigation of avian coccidiosis. – *Science, New York*, 75: 324-328.

Tyzzer, E. E., 1936. Coccidia in relation to domesticated animals. – Veterinary Record, 48: 1239-1240.

Tyzzer, E. E., 1937a. Coccidia in relation to domesticated animals (pp. 341-342). In: St.John-Brooks, R., ed. *Report of Proceedings of the Second International Congress for Microbiology*. – International Society for Microbiology, London.

Tyzzer, E. E., 1937b. A discussion of factors influencing the course of coccidiosis. – *Journal of the American Veterinary Medical Association*, 90: 341-346.

Tyzzer, E. E., H. Theiler & E. E. Jones, 1932. Coccidiosis in gallinaceous birds. II. A comparative study of species of *Eimeria* of the chicken. – *American Journal of Hygiene*, 15: 319-393.

Weller, T. H., 1978. Ernest Edward Tyzzer (1875–1965): a biographical memoir. – *Biographical Memoirs*. *National Academy of Sciences*, 49: 353-373.

Wenyon, C. M., 1926. *Protozoology. A Manual for Medical Men, Veterinarians and Zoologists*. Vol. 1. i-xvi, 1-778. – Baillière, Tindall and Cox, London.

Williams, R. B., 2010. The correct date of the original description and availability of the coccidian name *Eimeria meleagridis* Tyzzer (Apicomplexa: Eimeriorina: Eimeriidae). – *Systematic Parasitology*, 76: 77-79.

Williams, R. B., in press. A prepared mind – Ernest Edward Tyzzer's legacy of research into avian diseases. – *Avian Diseases*, 57.

Williams, R. B., P. Thebo, R. N. Marshall & J. A. Marshall, 2010. Coccidian oocysts as type-specimens: long-term storage in aqueous potassium dichromate solution preserves DNA. – *Systematic Parasitology*, 76: 69-76.

Address: Williams, R. B., Norfolk House, Western Road, Tring, Herts. HP23 4BN, U.K; e-mail: ray.coxitec@tesco.net.

## Dating of papers published in the "Annalen des Naturhistorischen Museums in Wien", Austria, vols. 33/1919 – vol. 83/1979

#### Ernst Bauernfeind & Andrea Kourgli

COPYRIGHT: © 2013 Bauernfeind & Kourgli. This is an open-access article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ABSTRACT: We show that the *Annalen des Naturhistorischen Museums in Wien* were at least sometimes issued as dated preprints and that the evidence available to establish the correct date of publication must be examined carefully. Examples are provided from the 1930s. No full study of the problem is known.

KEYWORDS: preprints, dates of publication, Annalen des Naturhistorischen Museums in Wien, lepidoptera, aves.

The date of publication for the taxon *Celeus grammicus latifasciatus* Seilern (Aves: Picidae), published in "Annalen des Naturhistorischen Museums in Wien", vol. 47, has been cited either with the date 1934 (e.g. Hellmayr & Conover, 1942: 276) or 1936 (e.g. Peters, 1948: 125; Dickinson, 2003: 325).

Examination of complete original copies of the *Annalen des Naturhistorischen Museums in Wien* (bound and unbound, with original covers) as well as of separates (in original wrappers) housed in the Museum of Natural History, Vienna (Naturhistorisches Museum Wien, NHM) revealed the frequent practice of delivering preprints carrying their own dates which differed from the date of publication of the respective volume.

Unfortunately whether preprints were issued or not is not obvious, and it is only rarely – and in some cases even incorrectly – mentioned either in the "content page(s)" of the individual volume or in the printed paper itself (where the volume number and year of publication usually appear in small print at the bottom of the printed sheet … often on the first, third or last page). The relevant preliminary pages are frequently lost before or during the process of binding.

In exploring the question put to us we have carefully examined vols. 46 and 47.

Volume 46, dated "Wien 1932/33" on the volume title page (figure 1), may serve as an example. The date of publication of the volume is provided at the end of the "Inhalt" [Contents] and says "Erschienen Juli 1933" [Published July 1933]. This is followed by the remark that "Sonderabdrücke" [separates] of 12 papers – which are listed with their titles and date of publication [month, year] (see figure 2) – had been issued earlier (i.e. from April 1931 to July 1932). Below this list follows a statement that the year marked on the printed sheets should be altogether ignored [... "der Jahreszahl auf den Bogenvermerken ist keine Bedeutung beizumessen."]. In fact, the first paper by Rebel (1931) on Lepidoptera from the vicinity of Ankara (containing descriptions of several new taxa) has an [obviously wrong] inscription on the sheet of "Bd. 46, 1930". Rebel actually finished the manuscript on

December 23rd, 1930 (see p. 2). As a result several of the taxa described in this paper have been cited from 1930, 1932 and even 1933.

Volume 47 is dated "Wien 1936" on the original cover and on the title page (see figure 3). The dates of publication ["Erscheinungszeit"] are again provided at the end of the "Inhalt" [Contents]: "S. 1-32 im Jahre 1934. S. 32 bis Schluß Anfang März 1936." [Pages 1- 32 in the year 1934. Pages 32 to the end in the beginning of March 1936].

Count Seilern's paper "Ornithologische Miszellen. I. Bemerkungen über Vögel aus Südostperu" comprises pages 34-40. Page 34 bears the remark "Bd 47, 1936" [sic]; the date is somewhat elevated and in a slightly smaller font (see figure 4). However, the wrapper of the original preprint bears the remark: "Ausgegeben am 24. Juli 1934". [Distributed July 24th, 1934] (see figure 5) and in agreement with this the first page of the separate [page 33, page number missing on the first page of a paper] the bottom line runs "Bd. 47, 1934." (see figure 6). Wrong dates on the wrapper have usually been corrected (see figure 7) and it is therefore most likely that in this case the entry on the content page is incorrect and the preprint actually appeared in July 1934.

For the taxon in question the citation *Celeus grammicus latifasciatus* Seilern, 1934; *Annalen des Naturhistorischen Museums in Wien*, vol. 47, 1936 [1934-1936]: 36 (preprint ICZN Art. 21.8.) is recommended.

On present evidence papers published in the "Annalen des Naturhistorischen Museums in Wien" require careful dating. We summarise as follows:

In doubtful cases the date of publication must be checked to the individual paper taking account of all available information

At least in some instances true preprints (bearing their own date of publication) have been distributed prior to the publication of the respective volume

Distribution of preprints is usually mentioned at the end of the Contents page (however, in some instances these are probably incorrect)

Dates (of the year) on the printed sheets should not be relied upon

In the absence of better evidence the date on the wrapper of separates is considered to represent the correct date of publication (however at least in some instances an incorrect date on the wrapper appears to have been corrected before the separate was distributed) unless a preprint can be found and its date checked

The complete series of "Annalen des Naturhistorischen Museums in Wien" is available in electronic form (www.landesmuseum.at/biophp/de/annalen.php). The digitized version, however, includes neither the title pages nor the contents pages and the publication dates provided there for the various volumes should not be used without checking further.

Detailed information on the various series published by the Museum of Natural History Vienna has been provided by Gaal & Vitek (1998).

#### REFERENCES

Dickinson, E. C. (ed.), 2003. *The Howard & Moore Complete Checklist of the Birds of the World,* 3rd Edition: 1-1039. – Christopher Helm, London.

Gaal, S. & E. Vitek, 1998. Die Publikationsreihen des Naturhistorischen Museums in Wien. – *Annalen des Naturhistorischen Museums in Wien*, 100 B: 11-14.

Hellmayr, C.E. & H. B. Conover, 1942. Catalogue of birds of the Americas and the adjacent islands in the Field Museum of Natural History, Part I, no. 1. Rheidae, Tinamidae, Cracidae, Tetraonidae, Phasianidae, Numididae, Meleagrididae, Opisthocomidae, Gruidae, Aramidae, Psophiidae, Rallidae, Heliornithidae, Eurypygidae, Cariamidae, Columbidae. – Field Museum of Natural History, Zoological Series, 13: 1-636.

International Commission on Zoological Nomenclature (ICZN), 1999. *International Code of Zoological Nomenclature*: 1- 306. – International Trust for Zoological Nomenclature, London.

Peters, J. L., 1948. Check-list of Birds of the World. 6: i-xi, 1-259. – Harvard University Press, Cambridge, Massachusetts

Rebel, H., 1931. Lepidopteren aus der Umgebung Ankaras. – *Annalen des Naturhistorischen Museums in Wien*, 46, 1933 [1931-1933]: 36 (1933, but preprint 1931: see ICZN, 1999: Art. 21.8.)

Seilern (Graf), J., 1934. Ornithologische Miszellen. I. Bemerkungen über Vögel aus Südostperu. – *Annalen des Naturhistorischen Museums in Wien*, 47, 1936 [1934-1936]: 33-40 (1936; but preprint 1934 : see ICZN, 1999: Art. 21.8.)

www.landesmuseum.at/biophp/de/annalen.php (accessed 19.3.2013)

Addresses: Ernst Bauernfeind, Naturhistorisches Museum Wien, Burgring 7, A-1010 Wien, Austria, e-mail: ernst.bauernfeind@nhm-wien.ac.at. Andrea Kourgli, Naturhistorisches Museum Wien, Burgring 7, A-1010 Wien, Austria, e-mail: andrea.kourgli@nhm-wien.ac.at.

Inv. Nr. Z 1909 Annalen Band 46. Band XLVL ANNALEN NATURHISTORISCHEN MUSEUMS IN WIEN Im Auftrage der Museumsleitung redigiert von DR. KARL KEISSLER (Mit 14 Tafeln, 13 Tabellen, 116 Abbildungen, 1 Karte und 1 Bildnis im Texte) WIEN 1932/33 SELBSTVERLAG DES MUSEUMS Druck von Perdinand Berger in Born, N.-O.

**Figure 1.** Cover of volume 46, 1932 / 1933 [published July 1933].

(Budapest)	319
Erschienen Juli 1933.	
** **	,
Die Sonderabdrücke folgender Arbeiten wurden schegeben, und zwar:	on früher ausge-
Lepidopteren aus der Umgebung Ankaras. Von H. Rebe l.	April 1931
Neue Zähne von Menschenaffen aus dem Miozän des Wiener Beckens. Von Dr. M. F. Glaessner. Über einige neue oder wenig bekannte orientalische Tenthredinoiden (Hymenopt.). Von Runar Forsius	Juli 1931
(Helsingfors-Kottby).  Zur Frage der europäischen Faunenelemente. Von H.	Juli 1931
Rebel.  Die in der Unterfamilie Parmacellinae gehörenden Formen des Naturhistorischen Museums in Wien. Von	Oktober 1931
Dr. H. Wagner (Budapest).  Bearbeitung der von K. H. Rechinger (fil.) im Jahre 1927  auf den Ägäischen Inseln gesammelten Flechten. Von	Dezember 1931
M. Servit (Horice).	Dezember 1931

**Figure 2.** Remark "Erschienen Juli 1933" appended to the list of contents of Vol. 46, 1932/1933 and list of preprints with their respective dates of distribution ("... wurden schon früher ausgegeben, und zwar: ").

Annalen, Band 47. Band XLVII. ANNALEN NATURHISTORISCHEN MUSEUMS IN WIEN Im Auftrage der Museumsleitung redigiert von DR. KARL KEISSLER (Mit 3 Tafeln und 12 Abbildungen Im Texte) **WIEN 1936** SELBSTVERLAG DES MUSEUMS Druck von Perdinand Berger in Horn, N.-D.

**Figure 3.** Cover (identical with title page) of volume 47, 1936

zu H. t. hypostictus noch weitere Untersuchung verlange der beiden Rassen fallen als Kennzeichen der Carabayalich stärker ausgeprägte Fleckung der Oberseite auf dunl die stärkere, dunklere Bänderung auf Bürzel und Unters die reiner weiße Unterseite mit viel reichlicherer, dunks

<sup>1</sup> Hellmayr, Verh. Orn. Ges. Bay., Bd. 11 (1912), pp. 159-Bd. 11 (1913), pp. 276—277; Hellmayr und Seilern, l. c., Bd. <sup>2</sup> Arch. Naturg., Bd. 85, A, Heft 10 (1920), pp. 1—131.

Annalen des Naturhistorischen Museums in Wien, Bd. 47, 1936.

Figure 4. Footer from p. 33 in vol. 47 showing date inserted; note alignment implying later addition.



**Figure 5.** Exact date shown on preprint cover of article forming part of vol. 47 (1936).

der beiden Rassen fallen als Kennzeichen der Carabay lich stärker ausgeprägte Fleckung der Oberseite auf die stärkere, dunklere Bänderung auf Bürzel und Unte die reiner weiße Unterseite mit viel reichlicherer, dun

<sup>1</sup> Hellmayr, Verh. Orn. Ges. Bay., Bd. 11 (1912), pp. 15 Bd. 11 (1913), pp. 276—277; Hellmayr und Seilern, I. c., Bo <sup>2</sup> Arch. Naturg., Bd. 85, A, Heft 10 (1920), pp. 1—131.

Annalen des Naturhistorischen Museums in Wien, Bd. 47, 1934.

Figure 6. Footer (print sheet) from preprint (for vol. 47, 1936, p. 33); note the date (1934).



**Figure 7.** Date revision, superimposed above cancelled "ENDE 1931" (applied on preprint cover for Vol. 46, pp. 185-199).

### The dating of the Second Supplement to Jerdon's Catalogue of the birds of the peninsula of India in the Madras Journal of Literature and Science, volume 13 number 31

#### Aasheesh Pittie & Edward C. Dickinson

COPYRIGHT: © 2013 Pittie & Dickinson. This is an open-access article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ABSTRACT: The discovery of the cover of issue No. 31 of the *Madras Journal of Literature and Science* finally proves wrong the traditional understanding that the work in here by Jerdon was published before much the same information was published by Blyth. As a result corrected precedence changes the authorship of eleven names from Jerdon to Blyth, while the generic name *Phragamaticola* Jerdon, 1846 must yield to *Arundinax* Blyth, 1845. Eight names remain credited to Jerdon, but must date from 1846; three other names Jerdon seemed to introduce here were first published in one of the parts of his *Illustrations of Indian Ornithology*.

KEYWORDS: dates of publication, Madras Journal of Literature and Science, Journal of the Asiatic Society of Bengal, Illustrations of Indian Ornithology, Jerdon, Hay, Blyth, Malherbe, Arundinax, Picus chlorigaster, Phragamaticola, Phragmaticola, Picus xanthoderus.

#### **INTRODUCTION**

A recent receipt was a copy of the scholarly PhD thesis of John Mathew. This 'examines the development of taxonomic zoology in India between the late eighteenth and midtwentieth centuries' (Mathew, 2011: iii). In a footnote he (Mathew, 2011: 181) cited a review published in the *Madras Journal of Literature and Science* (hereinafter *MJLS*), vol. 13 number 30 (Anonymous, 1844a¹) of the first part, of four, of the *Illustrations of Indian Ornithology* by Thomas Caverhill Jerdon which was expected to be of interest due to a recent library acquisition of that work. This part of Jerdon's *Illustrations* was published in 1843 (Dickinson & Gregory, 2006; Dickinson 2011a).

An online search revealed the availability of the 30th issue of the *MJLS* as a download from www.archive.org [http://archive.org/details/MadrasJournalOfLiteratureAndScience 301844]. The download turned out to include parts 30 and 31 and, importantly, images of the covers of both issues.

The *MJLS* was published under the aegis of the Madras Literary Society, Madras², from 1833–1894 (Dickinson, 2011b). This journal had by late 1840 published Jerdon's 'Catalogue of the birds of the peninsula of India' (Jerdon, 1839a, b; 1840a, b, c, d) and it is in the immediately subsequent issues 30 and 31 that one finds Jerdon's two supplements to that serialised work. Both papers include what appear to be new names and for this reason, and because of parallel work by Edward Blyth, with whom Jerdon corresponded, and which Blyth published in the *Journal of the Asiatic Society of Bengal* (Blyth, 1845a, b, c), issues of precedence arise over the authorship of certain names introduced by both authors.

<sup>&</sup>lt;sup>1</sup> Mathew attributes this to 'J. B. Pharaoh,' (Mathew 2011: 181), who was actually its publisher.

<sup>&</sup>lt;sup>2</sup> Now Chennai, India.

These issues of precedence are not new. They have been examined in different contexts. First, Dickinson et al. (2004) discovered that the *First Supplement* was not original when it appeared in the MJLS, that Jerdon had had J.B. Pharaoh, his publisher, put the Catalogue together as a book (Jerdon, 1841). They reported two copies in the Newton and Balfour Library in Cambridge: one was through-paginated to the end of the First Supplement (and without the Second Supplement) and had an 1839 title page, while the other was a composite containing 140 pages from Jerdon's Catalogue, repaginated, to which had been added various offprints<sup>3</sup>. It is important to keep in mind that at this time the binding of books was often arranged by the purchaser rather than the printer, so that it is normal that Pharaoh was able to supply copies of sets of pages at various points in time, presumably on Jerdon's request, although it is unusual that the pages were repaginated – apparently first to page 140, and later to the end with the First Supplement taking the pagination up to p. 203. The date 1839 is, of course, relevant only to the earliest parts of the Catalogue in journal form, and for a date of issue of the consolidated and repaginated version Dickinson et al. (2004) used 1841 and cited Gray (1848a, b, c). A recently discovered entry in the Asiatic Society of Bengal's list of library receipts dated October 7, 1840 lists a book by Jerdon which can only have been one of the two consolidated versions referred to by Dickinson et al. (2004). If it only contains the repaginated pages (1-140) then it should be expected to lack the content of the First Supplement in which case its date of receipt does not affect the 1841 date recently brought into use; however, if the repaginated pages include those of the First Supplement then the date of publication of the new names in Jerdon's *First Supplement* will have to be advanced to October 1840.

Later, Dickinson & Gregory (2006) examined the conflicting evidence relating to the publication of (i) three 1845 papers by Blyth (1845a, b, c) – dated, respectively and somewhat tentatively, March, September and December 1845, by Dickinson & Pittie (2006) and (ii) the Second Supplement to Jerdon's Catalogue. The content of Jerdon's Second Supplement strongly suggests that Jerdon had at least seen page proofs of Blyth (1845a) which comprised pp. 944– 963 in issue no. 156 in Vol. 13 of the Journal of the Asiatic Society of Bengal (see Jerdon, 1846: 124, 135, 136) and of Blyth (1845b) which was in issue 159 in Vol. 14 pp. 173–212 (see Jerdon op. cit. pp. 138, 139), while on p. 129 he says that "Mr. Blyth ... will shortly fully describe ..." referring to what he, Jerdon called *Phragamaticola* implying that he had not seen Blyth (1845c) where on p. 595 in issue 164 of Vol. 14 Blyth describes this using the name Arundinax. Dickinson & Gregory (2006: 173) found inconsistency in the widely followed Fauna of British India by Baker (1930a, b). Baker (1930a, b) gave differing dates for the Second Supplement, treated lark names from issue 156 of the Journal of the Asiatic Society of Bengal (Blyth, 1845a) as prior to their usage in the Second Supplement but gave precedence to Jerdon ('1844' = 1846) in respect of an owl, a bulbul and a warbler (rather than to Blyth (1845b – JASB issue 159) and Blyth (1845c – JASB issue 164). Thus Dickinson & Gregory came to believe that Baker (1930a, b) had placed the date of Jerdon's Second Supplement between Blyth (1845a) and Blyth (1845b) and c).

Knowing the dates considered appropriate for each of these by Dickinson & Pittie (2006), Dickinson & Gregory (2006) put forward the date "not before Aug. 10th. 1845" for the *Second Supplement*, thus implying that this might have appeared before the September issue of Blyth (1845c). The explicit references in the *Second Supplement* to page numbers in Blyth (1845b) were thus implicitly rationalised as pages that must still have been in press, but this was a

<sup>&</sup>lt;sup>3</sup> Matched it seems by a copy in the McGill Library in Montreal, Canada.

dubious and risky assessment, which they acknowledged by stating that this date should be used "unless and until Baker's sequence of these publications can be shown to be wrong". They were unaware of the continuing existence of a cover for No. 31 (or indeed No. 30) of the *MJLS*.

Both these issues of the *MJLS* appeared late due to the Society's financial problems, which were severe enough to cause the suspension of the journal. There had been four issues of volume 12 in 1840 and all of volume 13 would have appeared in 1841 and Jerdon's *First Supplement* was apparently made ready to be included in the first such issue (No. 30), but the suspension of publication lasted at least three years and differing dates were subsequently cited for No. 30. These are not reviewed here because precedence has been assigned to the book form of this paper which Jerdon allowed to be distributed earlier. However, No. 30 reached the library of the Asiatic Society of Bengal between September 4 and October 2, 1844, as recorded in the minutes dated 2 October 1844, wherein, under the list of books presented, at item number 12 is "Madras Journal of Literature and Science, No. 30, June 1844," (Anonymous, 1844b: xcvii). The downloaded cover image for No. 30 (see Figure 1) shows the date "June 1844" and that may now be taken as the "specified date" [Art. 21.2 in the International Code of Zoological Nomenclature (I.C.Z.N., 1999), hereafter "the Code"] although it is the specified date of a print run that only differs in its page numbers from the version that Jerdon published privately.

Jerdon's *Second Supplement*, in issue 31, is the main focus of this report. Here too a cover exists (see Figure 2) and this is dated "March, 1846".

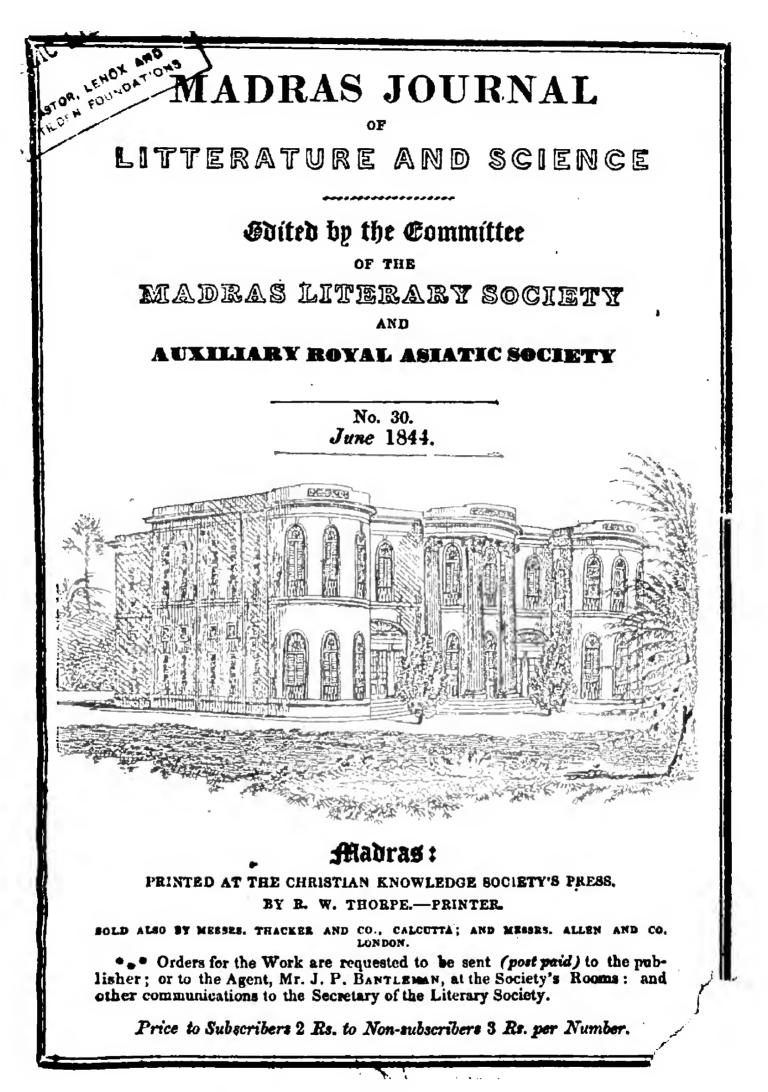
This contradicts the use of '1845' by Dickinson et al. (2004; 214); furthermore the revised view of Dickinson & Gregory (2006: 173) of 'not before Aug. 10th 1845' which while capable of meaning "in 1846" was used for Jerdon's *Second Supplement* in conjunction with "before September" thus placing it before Blyth (1845b and c) and as regards the latter proposed it be dated 31 December 1845, a date consistent with the wording of Art. 21.3.2 in the Code (I.C.Z.N., 1999). Here, believing in stability, they sought to avoid reassigning several names from Jerdon to Blyth when Jerdon was usually credited with them. Faced with the evidence of the dated cover for No. 31 of the *MJLS* it is now necessary to conclude that Blyth must be credited with original authorship of a number of the names involved.<sup>4</sup>

## WHAT DATES HAVE PREVIOUSLY BEEN CITED FOR TAXA APPARENTLY NAMED IN THE SECOND SUPPLEMENT?

Having referred to inconsistencies in the dates previously cited, e.g., by Baker (1930a, b), Peters (1960), Rand & Deignan (1960), Deignan (1964), Snow (1967), Ripley (1982), and Watson et al. (1986), details are tabulated below. Sherborn (1923, 1924, 1925, 1926b, 1927a, b, 1928a, b, 1929, 1932) was almost completely consistent in dating no. 31 from 1844; only in Sherborn (1926a) did he use 1845.

The dates used by Baker (1930a, b) seem to have been followed by later authors, and his inconsistencies seem to have led others to err in that respect too (e.g. Peters, 1960; Ripley, 1982; Dickinson, 2003; Dickinson & Remsen, 2013) (see Table 1). Warren & Harrison (1971: 6–7) indicated "pub. 1846," but they did not explain their authority or reasons for the use of that date and were not followed. However, now a cover image is available it seems probable

<sup>&</sup>lt;sup>4</sup> One might say "certain" except that it could yet be found that Blyth's paper was delayed! Note too that the paper by Hay in the same issue of the *MJLS* must also now be cited as Hay (1846).



**Figure 1.** Front cover of *Madras Journal of Literature and Science* Vol. 13 No. 30, dated, "June 1844." Source: www.archive.org.

### MADŖAS JOURNAL

OF

LITERATURE AND SCIENCE.

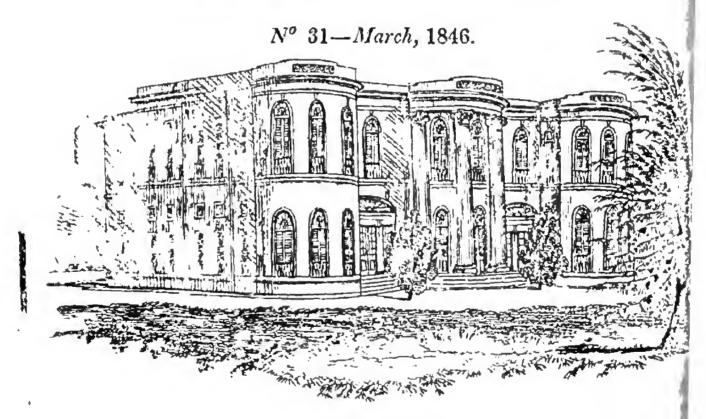
#### EDITED BY THE COMMITTEE

OF THE

MADRAS LITERARY SOCIETY

AND

#### AUXILIARY ROYAL ASIATIC SOCIETY.



#### Madras:

PPINTED AT THE UNRISTIAN KNOWLEDGE SOCIETY'S, PRESS, BY REUBEN TWIGG.

SOLD ALSO BY MESSIS, THACKER AND CO., CALGUTTA; AND MESSES. ALLEN AND CO., LONDON.

\*In. J. P. Bantleman, at the Society's Rooms; and other communications to the Secretary of the Literary Society.

Price to Subscribers 2 Rs., to Non-subscribers 3 Rs. per Number.

**Figure 2.** Front cover of *Madras Journal of Literature and Science* Vol. 13 No. 31, dated, "March, 1846." Source: www.archive.org.

**Table 1.** New names validly introduced by Jerdon in *MJLS* Vol. 13 No. 31, to show dates cited by various authorities (in all cases the citations are to the *MJLS* whether assigning it precedence or not).

No.	Authority and date of publication with page number	Citation date	Species and page number in MJLS	
43 ter	Sherborn (1926b: 2838); Peters (1940: 99).	1844	C 110	
	Blanford (1895: 297); Baker (1930a: 385) <sup>5</sup> .	1845	Scops griseus, p. 119	
69 bis	Oates (1889: 289); Baker (1930a, b: 86, 616); Sherborn (1932: 7016); Ripley (1982: 314).	1844	Brachmuc vantholaemus n 199	
09 018	Rand & Deignan (1960: 245); Dickinson (2003: 568).	1845	Brachypus xantholaemus, p. 122	
74	Sherborn (1926a: 2042); Rand & Deignan (1960: 247).	1845	[Pycnonotus] dumeticolus, p. 1266	
113 bis	Baker (1930a: 179); Ripley (1982: 422); Watson et al. (1986: 57).	1845	Phragamaticola, p. 129	
	Seebohm (1881: 121); Oates (1889: 390).	1844	Phragamaticola olivacea 'Blyth', p. 129	
113 bis	Baker (1930a: 179); Watson et al. (1986: 57).	1845		
121 bis	Sherborn (1928b: 4279); Baker (1930a: 201).	1844	P.[rinia] neglecta, p. 130	
	Watson et al. (1986: 139).	1845		
124 bis	Oates (1889: 359); Sherborn (1923: 151).	1844		
	Baker (1930a: 169); Ripley (1982: 424); Watson et al. (1986: 61); Dickinson (2003: 586).	1845	Sylvia (Acrocephalus) agricola, p. 131	
125 bis	Sherborn (1929: 4512).	1844	Phyllopneuste occipitalis 'Blyth', p. 131	
127 bis	Sherborn (1927b: 3173).	1844	Phyllopneuste Indica 'Blyth', p. 131	
129 bis	Oates (1889: 49); Baker (1930a: 13); Sherborn (1928: 4433); Ripley (1982: 496).	1844	Parus nuchalis, p. 131	
12) 013	Snow (1967: 111); Dickinson (2003: 524).	1845		
189	Oates (1890: 334); Baker (1930a: 277).	1844	1411 4 1 P 14 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Peters (1960: 23).	1845	M.[irafra] Erythroptera, p. 136 <sup>7</sup>	
188 bis	Sherborn (1927a: 2926).	1844	Mirafra Hayii, p. 1368	
	Peters (1960: 55)9; Baker (1930a: 278).	1845		
209	Hargitt (1890: 328); Blanford (1895: 47); Sherborn (1927a: 2912); Peters (1948: 203); Ripley (1982: 240); Dickinson (2003: 318).	1844	P.[icus] (Dendrocopus) Hardwickü,¹º p. 138	
	Baker (1930a: 310); Dickinson & Remsen (2013: 313).	1845		

<sup>&</sup>lt;sup>5</sup> "Strix griseus."

<sup>&</sup>lt;sup>6</sup> It is doubtful that this was validly introduced; Jerdon had coined the name to replace the use of *virescens* Temminck for Indian birds but had not published it before and in mentioning it noted that Strickland had already provided a suitable name.

<sup>&</sup>lt;sup>7</sup> These authorities list both, Blyth 1845b & Jerdon 1846. However, Jerdon himself provides a clear & specific *indication* to Blyth in *JASB* 13: 958, i.e., Blyth, 1845b, and from where it must be dated.

<sup>&</sup>lt;sup>8</sup> Jerdon provides a clear & specific *indication* to Blyth in *JASB* 13: 958, i.e., Blyth, 1845b, and from where it must be dated.

<sup>&</sup>lt;sup>9</sup> Spelling in Peters is "Mirafra hayi."

<sup>&</sup>lt;sup>10</sup> *Hardwickii* = *Hardwickii* (see subsequent text).

No.	Authority and date of publication with page number	Citation date	Species and page number in MJLS	
211	Hargitt (1890: 62); Blanford (1895: 25); Sherborn (1925: 1244); Peters (1948: 140); Ripley (1982: 230); Dickinson (2003: 327).	1844	[P.] chlorigaster, p. 139	
	Hume (1878: 517); Baker (1930a: 303); Dickinson & Remsen (2013: 301).	1845		
214	Hargitt (1890: 399); Blanford (1895: 57); Sherborn (1926b: 2860); Peters (1948: 128).	1844	P. (Micropternus) gularis, p. 139	
	Baker (1930a: 313, b: 673).	1845	, , , , , , , , , , , , , , , , , , , ,	
222	Sclater & Shelley (1891: 263).	1842	Cumbia manuatua - 14111	
223	Sherborn (1932: 6850).	Sherborn (1932: 6850). 1844	orn (1932: 6850).	Cuculus venustus, p. 141 <sup>11</sup>
245	Sherborn (1924: 911).	1844	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Blanford (1895: 129); Baker (1930a: 352).	1845	Halcyon bruniceps, p. 143	
255 ter	Blanford (1895: 168); Sherborn (1928a: 4150).	1844	Cypselus montanus, p. 144 <sup>12</sup>	

that they saw one. Anyway, based on the images now available we have what the Code (I.C.Z.N., 1999) calls a "specified date" for the publication of No. 31 and we may adjust this, as the Code requires, to 31 March 1846 (Art. 21.3.1). It remains possible, of course, that distribution was delayed beyond the month end.

Omitted from Table 1 are a number of unquestionable *nomina nuda* which do not need listing here plus certain names that although said to be 'new' had in fact been used with descriptions by Jerdon (1843), these are:

Malacocircus orientalis (p. 128) now Turdoides striatus orientalis (Jerdon, 1845) [see Deignan, 1964: 338 cited correctly];

Malacocircus affinis (p. 128) now Turdoides affinis affinis (Jerdon, 1845) [see Deignan, 1964: 339 cited correctly];

Pastor Blythii (p. 133) now Sturnus malabaricus blythii (Jerdon, 1845) [see Amadon, 1962: 105: incorrectly cited vol. 13, page 133 of the MJLS from '1844' i.e. Jerdon's Second Supplement], here shown to have previously appeared in part 2 of Jerdon's Illustrations.

In several cases Jerdon provided what is known as an "indication" (see Art. 12.2 of the Code – I.C.Z.N., 1999) to publication by Blyth. The various authors who assigned precedence to Jerdon's names placed themselves, no doubt inadvertently, in the curious situation where they must have considered Blyth's work to have appeared later and yet accepted these indications as valid even though the information to which the indications pointed were supposedly still unpublished. Of course, if Blyth had already published but given no names to go with his descriptions Jerdon's names would have been validly introduced and would have applied.

These cases are:

*Mirafra cantillans* – on p. 135: with indication to *JASB* 13: 960.

<sup>&</sup>lt;sup>11</sup> This was a *nomen nudum* but, as discussed below, the name has been validated.

 $<sup>^{12}</sup>$  This can only be considered as described here by the standards of the day.

Mirafra Erythroptera – on p. 136: with indication to JASB 13: 958.

*Mirafra affinis* – on p. 136: with indication to "Blyth l.c." [= *JASB* 13 c. p. 958.]

*Mirafra Hayii* – on p. 136: with indication to "Blyth l.c." [= JASB 13 c. p. 958.]

*Picus (Brachypternus) micropus* – p. 139: with indication to *JASB* 14: 194.

These, of course, must be credited to Blyth (1845a or b).

#### OTHER CHANGES IN DATE AND/OR IN AUTHORSHIP: A CASE BY CASE DISCUSSION

- Jerdon (1846), i.e. in the *Second Supplement*, introduced the following names with some degree of description.
- *Scops griseus*, p. 119 (where no. 43 ter): just a date change to 1846 making this a junior synonym to *Strix lettioides* Blyth, 1845b; both names being synonyms of *Otus bakkamoena* see Baker (1930a: 385).
- *Brachypus xantholaemus*, p. 122 (where no. 69 bis): this is revealed to be a junior synonym of *P*.[*ycnonotus*] *zantholaimus* Blyth 1845c: 568) where Jerdon is mentioned as the author of the MS name that Blyth used with a different spelling. Thus here spelling of the taxon name should be *zantholaimus*, and the author's name must change while the year date remains 1845.
- *Phragamaticola olivacea*, p. 129 (where no. 113 bis): a name Jerdon suggested was supplied by Blyth the generic name being new as well. This turns out to be a junior synonym of *Arundinax olivaceus* Blyth (1845c: 595) which is, in turn, a junior synonym of *Acrocephalus aedon aedon* (Pallas, 1776) see Watson et al. (1986: 57, 77) and the name *Phragamaticola* loses precedence to *Arundinax* Blyth, (1845c: 595) *contra* Baker (1924: 439). Thus the single species in this genus becomes *Arundinax aedon aedon* (Pallas, 1776).
- *Prinia neglecta*, p. 139 (where no. 121 bis): date change only. Considered a junior synonym of *Prinia sylvatica*, see Baker (1930a: 201), Watson et al. (1986: 139).
- Sylvia (Acrocephalus) agricola, p. 131 (where no. 124 bis): yields precedence to Calamoherpe agricola "Jerdon" Blyth, 1845c: 595. Now Acrocephalus agricola agricola see Watson et al. (1986: 61).
- *Phyllopneuste occipitalis* p. 131 (where no. 125 bis): yields precedence to *Phylloscopus occipitalis* "Jerdon" Blyth, 1845c: 593 as already accepted by Watson (1986: 245).
- Phyllopneuste Indica p. 131 (where no. 127 bis): logically might be expected to yield precedence to Phyllopneuste indicus Blyth (1845c: 593). The history of this name however is complex. Jerdon (1840a) coined the name Sylvia indica and in 1846 did not consider Blyth's Phyllopneuste Indica [sic] to be that species. Blyth (1847: 443) after referring to a "Ph. indica" in line 13 of p. 442 referred to "Ph. affinis (Tickell) to which Mr. Jerdon refers his Sylvia indica" and then says "the last appears to be a bird which I long regarded as the young (in yellow dress) of Ph. lugubris; and which Mr. Jerdon thinks is his Ph. indicus, but wishes to see a recent specimen before he quite decides that it is so" and then, seemingly in no way connected, on p. 443 Blyth (1847) described Ph. griseolus giving no type locality and mentioning no retained specimen. From Blyth's Catalogue (1852: 183) it is apparent that Blyth had specimens of his earlier Phyllopneuste indicus, of which "B" must evidently have been his type specimen. But in his Appendix no. 6, almost certainly written some months or even years later, he listed Phylloscopus indicus

as a species of which the Asiatic Society museum had no specimens, while associating this name with Jerdon's *Sylvia indica* and with his own *Ph. griseolus*. Thus Blyth had two distinct taxa in mind here. Seebohm (1881: 47, 48) listed Blyth's *indicus* of p. 593 in 1845 partly under *P. magnirostris* Blyth, 1843, and partly under *P. lugubris* (a name now in the synonymy of *Ph. trochiloides* – see Ticehurst, 1938, p. 143); Ticehurst did not acknowledge the existence of *Phyllopneuste indica* of either Jerdon or Blyth. Seebohm (1881: 126) considered Jerdon's *Sylvia indica* and Blyth's *P. griseolus* to translate into *Lusciniola indica*, but the species was restored to *Phylloscopus* and the name *indica* considered unavailable by Ticehurst (1938: 78) who recognised Blyth's *Phylloscopus griseolus* adding "type no longer in existence?" The question mark suggests that Ticehurst missed the evidence in Blyth's Appendix 6 to his Catalogue.

- Parus nuchalis p. 131 (where no. 129 bis): yields precedence to Parus nuchalis "Jerdon" Blyth, 1845c: 553.
- *Picus* (*Dendrocopus*) *Hardwickii* p. 138 (where no. 209): with indication to the "Cawnpore Woodpecker" of Latham "No. 19 the variety A. of his *P. moluccensis* being one of his allied Indian species". Date change to 1846 only. Now *Dendrocopos moluccensis hardwickii* Jerdon. Though Jerdon's specific name is spelled *hardwickii* it is a *lapsus calami* under Art. 32.5.1 of the Code, and is correctable to *hardwickii*.
- *Picus chlorigaster* p. 139 (where no. 211): apparently yields precedence to *Picus xanthoderus* Malherbe, 1845; however that name does not appear to have been used since 1899 and Jerdon's name has been used as valid by all the standard works since then and by the authors listed in our Appendix. Thus, in accordance with Art. 23.9.1 of the Code, precedence is reversed in favour of *chlorigaster*.
- *Picus* (*Micropternus*) *ĝularis* p. 139 (where no. 214): valid when proposed but the name proved to be preoccupied in *Picus* and was replaced by *Micropternus brachyurus jerdonii* Malherbe, 1849 (see Baker, 1930a: 313, 1930b: 673).
- Cuculus venustus p. 141 (where no. 223): recognised by Baker (1930a: 331) as a subspecies of *Penthoceryx sonneratii* but it is now a synonym of nominate *sonneratii* (see Ripley, 1982: 168). This name was originally a *nomen nudum*, but its use by Baker (1930a) made it available; see Art. 11.6.1 in the Code.
- *Halcyon bruniceps*, p. 143 (where no. 245): listed as a synonym of *Ramphalcyon capensis gurial* Pearson, 1841, by Baker (1930a: 352); now both names are synonyms of nominate *Pelargopsis capensis* see Ripley (1982), and Dickinson & Remsen (2013).
- *Cypselus montanus* p. 144 (where no. 255 ter): diagnosis weak but acceptable for its time; not listed by Baker (1930a, b) but Blanford (1895) treated this as a synonym of *Apus affinis* J.E. Gray, 1832.

#### **CONCLUSION**

Issue No. 31 of in Vol. 13 of the *MJLS* henceforth should be dated from '31 March 1846.' It contains ornithological papers by Jerdon and by Hay (1846). Here the paper by Jerdon is reviewed; the paper by Hay presents fewer problems and will be reviewed elsewhere. Apart from the change of date the major change is that the warbler name *Phragamaticola* Jerdon dates from 1846 and is antedated by *Arundinax* Blyth, 1845, a name used since 1899 and thus necessarily brought back into use.

#### **ACKNOWLEDGEMENTS**

We thank John Mathew for sharing his PhD thesis with AP; we would also like to thank the people and organisations behind the websites, www.archive.org, and www. biodiversitylibrary.org, for scanning and uploading historic books and journals for the common good. We would also like to thank Mohammed Iqbal, Krys Kazmierczak, Richard Klim and Clive Mann for help with references. Our referees Tim Inskipp and Justin Jansen helped to improve the paper.

#### REFERENCES

Amadon, D., 1962. Passeriformes: suborder Oscines, family Sturnidae. In: *Check-list of birds of the world.* A continuation of the work of James L. Peters. Mayr, E. & J. C. Greenway, Jr., (eds.). 15: 75–121. — Museum of Comparative Zoology, Cambridge, Massachusetts.

Anonymous, 1844a. Review. — "Illustrations of Indian Ornithology. No. 1 to be completed in 4 Nos. By T. C. Jerdon, Esq., J. B. Pharaoh, Madras 1843". — Madras Journal of Literature and Science 13 (30): 220–222.

Anonymous. 1844b. Proceedings of the Asiatic Society for the month of October, 1844. — *Journal of the Asiatic Society of Bengal* 13 (154): xcvii–cxx.

Baker, E. C. S., 1924. *The fauna of British India, including Ceylon and Burma. Birds.* 2nd ed. 2: i–xxiii+1, 1–561. — Taylor and Francis, London.

Baker, E. C. S., 1930a. *The fauna of British India, including Ceylon and Burma. Birds.* 2nd ed. 7: i–viii, 1–484. — Taylor and Francis, London.

Baker, E. C. S., 1930b. *The fauna of British India, including Ceylon and Burma. Birds.* 2nd ed. 8: i–iv, 485–801+1. — Taylor and Francis, London.

Blanford, W. T., 1895. *The fauna of British India, including Ceylon and Burma (Birds)*. 1st ed. 3: i–xiv, 1–450. — Taylor and Francis; Thacker, Spink, & Co.; Thacker & Co.; R. Friedländer & Sohn, London; Calcutta; Bombay; Berlin.

Blyth, E., 1845a. Synopsis of the Indian Fringillidae. — *Journal of the Asiatic Society of Bengal* 13 (Part II, No. 156, New Series 72): 944–963 (1844).

Blyth, E., 1845b. Notices and descriptions of various New or Little Known species of Birds. — *Journal of the Asiatic Society of Bengal* 14 (Part I No. 159, New Series 75): 173–212.

Blyth, E., 1845c. Notices and descriptions of various new or little-known species of birds. — *Journal of the Asiatic Society of Bengal* 14 (Part II No. 164, New Series 80): 546–602.

Blyth, E., 1847. Notices and descriptions of various new or little known species of birds. -- *Journal of the Asiatic Society of Bengal*, 16 (New Series No. 5): 428-476.

Blyth, E., 1852. Catalogue of the birds in the Museum Asiatic Society (sic). 1st ed. Pp. i–xxxiv, 1–403. — The Asiatic Society, Calcutta (1849).

Deignan, H. G., 1964. Passeriformes: suborder Oscines, family Muscicapidae, subfamily Timaliinae. In: *Check-list of birds of the world. A continuation of the work of James L. Peters.* Mayr, E. & R. A. Paynter, Jr., (eds.). 10: 240–427. — Museum of Comparative Zoology, Cambridge, Massachusetts.

Dickinson, E. C., (ed.) 2003. *The Howard and Moore complete checklist of the birds of the world*. Revised and enlarged 3rd ed., 1–1039. — Christopher Helm, London.

Dickinson, E. C., 2011a. Jerdon, T. C. ("1847" = 1843–1847). Illustrations of Indian Ornithology containing fifty figures of new, unfigured and interesting species of birds, chiefly from the south of India. In: Priority! The dating of scientific names in ornithology: a directory to the literature and its reviewers. Dickinson, E. C., L. K. Overstreet, R. J. Dowsett & M. D. Bruce (eds.). Pp. 112–113. — Aves Press Limited, Northampton, U.K.

Dickinson, E. C., 2011b. Madras Journal of Literature and Science. In: *Priority! The dating of scientific names in ornithology: a directory to the literature and its reviewers*. Dickinson, E. C., L. K. Overstreet, R. J. Dowsett & M. D. Bruce (eds.). Pp. 213. — Aves Press Limited, Northampton, U.K.

Dickinson, E. C., & J. V. Remsen, Jr. (eds.) 2013. *The Howard and Moore complete checklist of the birds of the world:* 1. *Non-passerines.* 4th ed., i–l, 1–461. — Aves Press, Eastbourne, U.K.

Dickinson, E. C., M. Bruce, S. Gregory, A. P. Peterson & A. Pittie, 2004. The dating of names proposed in the First Supplement to Thomas Jerdon's Catalogue of the birds of the peninsula of India. — *Bulletin of Zoological Nomenclature* 61 (4): 214–224.

Dickinson, E. C., & S. M. S. Gregory, 2006. Systematic notes on Asian birds. 55. A re-examination of the date of publication of Jerdon's Second Supplement to the Catalogue of the Birds of southern India. — *Zoologische Mededelingen, Leiden* 80-5 (7): 169–178.

Dickinson, E. C., & A. Pittie, 2006. Systematic notes on Asian birds. 51. Dates of avian names introduced in early volumes of the Journal of the Asiatic Society of Bengal. — *Zoologische Mededelingen, Leiden* 80-5 (3): 113–124.

Gray, G. R., 1848a. In: Gray, G. R., 1844–1849. The genera of birds comprising their generic characters, a notice of the habits of each genus, and an extensive list of species referred to their several genera. 1: post-paginated (=1–300). See 'Ordo II. Passeres, Dentirostres. Family Luscinidae. Subfamily Malurinae'. Pp. [166–169]. Pls. 48–50. — British Museum, London.

Gray, G. R., 1848b. In: Anonymous, 1848. List of the specimens of birds in the collection of the British Museum. Accipitres [incl. Accipitres Nocturni]. Part I. 2nd ed., i–viii, 1–120. — British Museum, London.

Gray, G. R., 1848c. In: Anonymous, 1848. List of the specimens of birds in the collection of the British Museum. Fissirostres. Part II. Sec. I., i–iv, 1–80. — British Museum, London.

Hargitt, E., 1890. Catalogue of the Passeriformes, or Perching Birds, in the collection of the British Museum. Scansores, Containing the Family Picidæ. 18: i–xv, 1–579. — British Museum of Natural History, London.

Hay, A., 1846. Description of some supposed new, or imperfectly described, species of birds. — *Madras Journal of Literature and Science* 13 (31): 145–164.

I.C.Z.N., 1999. *International Code of Zoological Nomenclature*. 4th ed., i–xxix, 1–306. — The International Trust for Zoological Nomenclature, London.

Jerdon, T. C., 1839a. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* X (24): 60–91.

Jerdon, T. C., 1839b. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* X (25): 234–269.

Jerdon, T. C., 1840a. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* XI (26): 1–38.

Jerdon, T. C., 1840b. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* XI (27): 207–239.

Jerdon, T. C., 1840c. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* XII (28): 1–15.

Jerdon, T. C., 1840d. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. — *Madras Journal of Literature and Science* XII (29): 193–227.

Jerdon, T.C., '1839' = 1841. Catalogue of the birds of the peninsula of India, arranged according to the modern system of classification; with brief notes on their habits and geographical distribution, and description of new, doubtful and imperfectly described species. I-xxiv, 1-203). – J.B. Pharaoh, Madras

Jerdon, T. C., 1843. *Illustrations of Indian ornithology*. 1st ed., part 1: 1 l., 22 ll., 21 l., pll. I–XII (col.). — J. B. Pharaoh, Madras.

Jerdon, T. C., 1844. Supplement to the catalogue of birds of the peninsula of India. — *Madras Journal of Literature and Science* 13 (30): 156–174.

Jerdon, T. C., 1845. *Illustrations of Indian ornithology*. Part 2: 25 ll., pll. XIII–XXV (col.). — R. W. Thorpe, Christian Knowledge Society's Press, Church Street, Vepery, India.

Jerdon, T. C., 1846. Second supplement to the catalogue of the birds of southern India. — *Madras Journal of Literature and Science* 13 (31): 116–144.

Mathew, J., 2011. To fashion a fauna for British India. Department of the History of Science. PhD. Thesis. Pp. i–xiv, 1–400. — Harvard University, Cambridge, Massachusetts.

Oates, E. W., 1889. *The fauna of British India, including Ceylon and Burma (Birds)*. 1st ed., 1: i–xx, 1–556. — Taylor and Francis, London.

Oates, E. W., 1890. *The fauna of British India, including Ceylon and Burma (Birds)*. 1st ed., 2: i–x, 1–407. — Taylor and Francis; Thacker, Spink, & Co.; Thacker & Co.; R. Friedländer & Sohn, London; Calcutta; Bombay; Berlin.

Peters, J. L., 1940. *Check-list of birds of the world.* 4: i–xii, 1–291. — Harvard University Press, Cambridge, Massachusetts.

Peters, J. L., 1948. *Check-list of birds of the world*. 6: i–xi, 1–259. — Harvard University Press, Cambridge, Massachusetts.

Peters, J. L., 1960. Passeriformes: suborder Oscines, family Alaudidae. In: *Check-list of birds of the world. A continuation of the work of James L. Peters*. Mayr, E. & J. C. Greenway Jr., (eds.). 9: 3–80. — Museum of Comparative Zoology, Cambridge, Massachusetts.

Rand, A. L., & H. G. Deignan, 1960. Passeriformes: suborder Oscines, family Pycnonotidae. In: *Check-list of birds of the world. A continuation of the work of James L. Peters*. Mayr, E., & J. C. Greenway Jr., (eds.). 9: 221–300. — Museum of Comparative Zoology, Cambridge, Massachusetts.

Ripley, S. D., 1982. A synopsis of the birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan, Bangladesh and Sri Lanka. 2nd ed., i–xxvi, 1–653. — Bombay Natural History Society; Oxford University Press, Bombay; Oxford.

Sclater, P. L., & G. E. Shelley, 1891. *Catalogue of the Picariæ in the Collection of the British Museum. Scansores and Coccyges, Containing the Families Rhamphastidæ, Galbulidæ, and Bucconidæ, by P.L. Sclater, and the Families Indicatoridæ, Capitonidæ, Cuculidæ, and Musophagidæ, by G.E. Shelley.* 19: i–xii, 1–484. — British Museum of Natural History, London.

Seebohm, H., 1881. Catalogue of the Passeriformes, or Perching Birds, in the collection of the British Museum. Cichlomorphæ: Part II. Containing the Family Turdidæ (Warblers and Thrushes).5: i–xvi, 1–426. — British Museum of Natural History, London.

Sherborn, C. D., 1923<sup>13</sup>. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* II. Index *Aff.–Anus.* 129–384. — Trustees of the British Museum, London.

Sherborn, C. D., 1924. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* IV. Index *Bail.–Byzos.* 641–943. — Trustees of the British Museum, London.

Sherborn, C. D., 1925. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt.* 1801–1850. VI. Index *Ceyl.*—Concolor. 1197–1452. — Trustees of the British Museum, London.

Sherborn, C. D., 1926a. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* IX. Index *Dorsalis–Erystomus.* 2009–2248. — Trustees of the British Museum, London.

Sherborn, C. D., 1926b. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* XI. Index *funereus–gyzehensis.* 2569–2880. — Trustees of the British Museum, London.

Sherborn, C. D., 1927a. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt.* 1801–1850. XII. Index *haani–implicatus.* 2881–3136. — Trustees of the British Museum, London.

Sherborn, C. D., 1927b. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt.* 1801–1850. XIII. Index *implicatus–laminella*. 3137–3392. — Trustees of the British Museum, London.

<sup>&</sup>lt;sup>13</sup> Access to all volumes of the *Index Animalium* was through the Biodiversity Heritage Library.

Sherborn, C. D., 1928a. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* XVI. Index *melanophysa–munchissoni.* 3971–4194. — Trustees of the British Museum, London.

Sherborn, C. D., 1928b. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* XVII. Index *munda–nyx.* 4195–4450. — Trustees of the British Museum, London.

Sherborn, C. D., 1929. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt. 1801–1850.* XVIII. Index *o-vigrum–pallens.* 4451–4690. — Trustees of the British Museum, London.

Sherborn, C. D., 1932. *Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt.* 1801–1850. XXVIII. Index *variegatus–zizyphinus.* 6807–7056. — Trustees of the British Museum, London.

Snow, D. W., 1967. Passeriformes: suborder Oscines, family Paridae. In: *Check-list of birds of the world. A continuation of the work of James L. Peters.* Paynter, R. A., Jr., (ed.). 12: Pp. 70–124. — Museum of Comparative Zoology, Cambridge, Massachusetts.

Ticehurst, C. B., 1938. A systematic review of the genus Phylloscopus (Willow-warblers or Leaf-warblers): i–viii, 1–193. — Trustees of the British Museum, London.

Warren, R. L. M. & C. J. O. Harrison, 1971. *Type-specimens of birds in the British Museum (Natural History)*. *Passerines*. 2: i–vi, 1–628. — Trustees of the British Museum (Natural History), London.

Watson, G. E., M. A. Traylor Jr. & E. Mayr, 1986. Passeriformes: suborder Oscines, family Sylviidae. In: *Check-list of birds of the world. A continuation of the work of James L. Peters.* Mayr, E. & G. W. Cottrell (eds.). 11: Pp. 3–294. — Museum of Comparative zoology, Cambridge, Massachusetts.

# APPENDIX: LIST OF RECENT REFERENCES THAT USE THE SUBSPECIFIC NAME PICUS CHLOROLOPHUS CHLORIGASTER

Abdulali, H., 1975. A catalogue of the birds in the collection of the Bombay Natural History Society-16. Capitonidae, Indicatoridae and Picidae (part). — *Journal of the Bombay Natural History Society*, 71 (2): 244—265 [p. 265].

Abdulali, H., 1981. Checklist of the birds of Maharashtra with notes on their status around Bombay. 2nd ed. Pp. i–ii, 1–16+2. — Bombay Natural History Society, Bombay. [p. 10].

Ali, S., & S. D. Ripley, 1970. *Handbook of the birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan and Ceylon. Frogmonths to pittas.* 1st ed., 4: i–xvi, 1–256, 1 l. — (Sponsored by Bombay Natural History Society), Oxford University Press, Bombay. [p. 194].

Ali, S., & S.D. Ripley, 1983a. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. Frogmouths to pittas.* 2nd ed. 4: i–xvi, 1–267+5. — (Sponsored by Bombay Natural History Society.) Oxford University Press, Delhi. [p. 194].

Ali, S., & S. D. Ripley, 1983b. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*. Compact ed.; i–xlii, 1 l., pp. 1–737, 56 ll. — Oxford University Press, Delhi. [p. 308.]

Ali, S., & S. D. Ripley, 1983c. *A pictorial guide to the birds of the Indian Subcontinent*. 1st ed.: ll., 1–177+2. — Oxford University Press, New Delhi. [p. 131].

Ali, S., & Ripley, S. D., 1987. Compact handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutau and Sri Lauka. 2nd ed.; i–xlii, 1 l., 1–737, 52 ll. — Oxford University Press, Delhi. [p. 308.]

Clements, J. F., 2000. *Birds of the world. A checklist*. Pp. i–xx, 1–867. — Ibis Publishing Co., U.S.A., and Pica Press, U.K. [p. 263].

Clements, J. F., 2007. *The Clements checklist of birds of the world*. 6th ed. Pp. 1–855. — Cornell University Press, Ithaca. [p. 258].

Dickinson, E. C., (ed.) 2003. *The Howard and Moore complete checklist of the birds of the World*. Revised and enlarged, 3rd ed.; 1–1039. — Christopher Helm, London. [p. 327].

Dickinson, E. C., & J. V. Remsen, Jr., (eds.) 2013. *The Howard and Moore complete checklist of the birds of the world:* 1. *Non-passerines.* 4th ed., 1: i–l, 1–461. — Aves Press, Eastbourne, U.K. [p. 301].

Director, Zoological Survey of India, (ed.) 2008. *Fauna of Audhra Pradesh. Part 8. Aves.* 1st ed. State Fauna Series 5 (Series). 8: [i–iv], 1–68. — Zoological Survey of India, Calcutta. [p. 35].

Goodwin, D., 1968. Notes on woodpeckers (Picidae). — Bulletin of the British Museum (Natural History) Zoology, 17 (1): 3–44. [p. 24].

Grimmett, R., C. Inskipp & T. Inskipp, 1998. *Birds of the Indian Subcontinent*: 1–888. — Christopher Helm, London. [p. 387].

Grimmett, R., C. Inskipp, & T. Inskipp, 2011. *Birds of the Indian Subcontinent*. 1–528<sup>14</sup>. — Oxford University Press & Christopher Helm, London. [p. 260].

Güntert, M., & D. Homberger, 1973. Die Vögel des Kanha-Nationalparkes am Ende der Monsun-Regenzeit. In: F. Kurt (ed.), Zoologische-ökologische Exkursion in deen Kanha-Nationapark (Indien).— *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich* 118 (1): 31–53 [p. 44].

Howard, R., & A. Moore, 1980. *A complete checklist of the birds of the world*. 1st ed.; i–viii, 1–701. — Oxford University Press, Oxford. [p. 265].

Howard, R., & A. Moore, 1984. *A complete checklist of the birds of the world*. Revised ed.; i–viii, 1–732. — Macmillan, London. [p. 265].

Howard, R, & A. Moore, 1994. *A complete checklist of the birds of the world*: i–xxxiv, 1–630. — Academic Press, London. [p. 197].

Kazmierczak, K., 2009. Birds of India, Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh and the Maldives. Reprint ed.; 1–352. — Om Books International, Noida, India. [p. 174].

Manakadan, R., J. C. Daniel & N. Bhopale, 2011. *Birds of the Indian Subcontinent: a field guide (based on Salim Ali & Dillon Ripley's 'Pictorial Guide')*. 1st ed.; i–xii, 1–409+8+3. — Bombay Natural History Society & Oxford University Press. Mumbai, India. [p. 199].

Mazumdar, M. and J. M. Dasgupta, 1993. Birds. Pp. 75-142 in A. K. Ghosh, ed. *Fauna of Orissa*. Part 4. State Fauna Series 1. – Zoological Survey of India, Calcutta.

<sup>&</sup>lt;sup>14</sup> Despite the title apparently a different book to that from 1998; not supposed to be a second edition.

Rasmussen, P. C., & J. C. Anderton, 2005. *Birds of South Asia: the Ripley guide*. 1st ed., 2 vols: 1–378 and 1–683. — Smithsonian Institution, Washington, D.C. and Lynx Edicions, Barcelona. [pp. 196; 286].

Rasmussen, P. C. & J. C. Anderton, 2012. *Birds of South Asia: the Ripley guide*. 2nd ed. 2 vols. . 1–378 and 1–684. — Smithsonian Institution, Washington, D.C and Lynx Edicions, Barcelona. [pp. 196; 286].

Ripley, S. D., 1982. *A synopsis of the birds of India and Pakistan together with those of Nepal, Sikkim, Bhutan, Bangladesh and Sri Lanka*. 2nd ed., i–xxvi, 1–653. — Bombay Natural History Society; Oxford University Press, Bombay; Oxford. [p. 230].

Sashikumar, C., Praveen J., M. J. Palot & P. O. Nameer, 2010. A checklist of birds of Kerala. — *Malabar Trogon*, 7 (3): 2–13 (2009) [p. 9].

Sashikumar, C., Praveen J., M. J. Palot & P. O. Nameer, 2011. *Birds of Kerala: status and distribution*. 1st ed.; 1–835. — DC Books, Kottayam, Kerala. [p. 485].

Short, L. L., 1982. *Woodpeckers of the world*. 1st ed.; i–xviii, 1–676. — Delaware Museum of Natural History, Greenville, Delaware. [p. 458].

Winkler, H., & D. A. Christie, 2002. Family Picidae (Woodpeckers). In: *Handbook of the birds of the World. Jacamars to Woodpeckers*. del Hoyo, J., A. Elliott & J. Sargatal, (eds.). 7: 296–555. — Lynx Edicions, Barcelona. [p. 537].

Winkler, H., D. A. Christie & D. Nurney, 1995. *Woodpeckers. A guide to the woodpeckers, piculets and wrynecks of the world.* 1st ed.; 1–406. — Pica Press, Mountfield & Russel Friedman Books, South Africa. [p. 357].

*Addresses*: Aasheesh Pittie, 2nd Floor, BBR Forum, Road No 2, Banjara Hills, Hyderabad 500034, India. e-mail: aasheesh.pittie@gmail.com. Edward Dickinson, Flat 3, Bolsover Court, 19 Bolsover Road, Eastbourne BN20 7JG. e-mail: edward@asiaorn.org.

### Review

Contributions to the history of herpetology. Volume 3.

Edited by Kraig Adler, 2012. 566 pp. Society for the study of amphibians and reptiles (*Contributions to Herpetology, vol.* 29), Salt Lake City, Utah, USA. ISBN 978-0-916984-82-3.

This volume, issued to commemorate the 7th World Congress of Herpetology held in Vancouver 2012, follows on from Volume 1 (published 1989, marking the 1st World Congress) and 2 (2007, marking the 50th anniversary of the Society for the Study of Amphibians and Reptiles). As with the former volumes, the latest in the series is divided into three sections written by different authors, (1) Herpetologists of the past, by K. Adler; (2) Index of authors in taxonomic herpetology, by J.S. Applegarth; (3) Academic lineages of doctoral degrees in herpetology, by R. Altig. Volume 3 is substantially larger than its predecessors, 564 pages versus 389 (Vol. 2) and 202 (Vol. 1), though the proportions represented by the three main sections has remained constant, with the bulk of each volume (approximately 70%) taken up by the first section, and the last two sections occupying approximately equal space.

As well as being the largest, the first section to me is the most interesting, and the herpetological community owes a debt of gratitude to Adler for gathering, synthesizing and crystalizing a substantial part of its heritage. Volumes 1 and 2 included a total of 152 and 285, respectively, biographies of deceased people who had made scientific contributions to the field of herpetology. The new volume adds a further 349 individuals. The biographies are generally short, often less than one page in length, and most include also a portrait and a copy of the person's signature. I can imagine rare occasions that being able to check someone's signature might be useful but otherwise I can take or leave the autographs. The portraits are an excellent component, especially because many are associated with a date as well as source. Indeed, these three volumes include the only published images I know of for some herpetologists. The biographies in Volume 1 generally were of some the most prominent and notable contributors in the field, including A. Seba (1665-1736) J.E. Gray (1800-1875), W.C.H. Peters (1815-1883), A. Günther (1830-1914), E.D. Cope (1840-1897), G.A. Boulenger (1858-1937), E.H. Taylor (1889-1978), M.A. Smith (1875-1958), G.K. Noble (1894-1940), E.R. Dunn (1894-1956) and A. Loveridge (1851-1980). Volume 2 extended this list of major historical figures and introduced also biographies of relatively recently deceased figures in the field, including sorely missed and influential colleagues such as G.L. Underwood (1919-2002) and J.B. Rasmussen (1947-2005). Herpetologists making their first appearance in the biography section of Volume 3 include characters that have died since the publication of Volume 2 (e.g., C. Gans, 1923-2009; J.W. Daly, 1933-2008), and many notable and influential people who hadn't made the earlier volumes (e.g., P. Kammerer, 1880-1926) but also seemingly more herpetologists from countries beyond North America and Western Europe, such as Brazil (e.g., P. Sawaya, 1903-1995), Argentina (e.g., O.A. Reig, 1929-1992), India (e.g., C.R. Narayan Rao, 1882-1960), Russia (e.g., L.I. Khosatzky, 1913-1992) and Japan (e.g., J. Oyama, 1894-1979). I have not checked the numbers, but Volume 3 probably also includes biographies of more women (e.g., M. Phisalix, 1861-1946) who historically, at least, formed a tiny proportion of the academic herpetological community.

The majority of the biographies in Volume 3 are entirely new to me, though I am far from expert in herpetological history. Those that I read are well written – clear, succinct and

informative. In a work of this kind minor omissions and mistakes might be expected. I am too unfamiliar with most of the people for whom biographies are included to provide a thorough assessment. However, I could not find factual errors and only in a couple of places did I note some missing (admittedly minor) information of potential interest. For example, the biography of A.W. Alcock (1859-1933) summarizes his relatively modest herpetological contributions but neglects to mention his description of the biogeographically intriguing northeast Indian caecilian *Herpele fulleri*; the "several new taxa of frogs" described by C.R. Narayan Rao is actually as many as 19 currently recognized Indian species (Dinesh et al., 2012), he has a genus (Raorchestes) named in his honour, and the loss of many of his types has confounded Indian frog taxonomy; Kallokibotion bajazidi was named by F. Nopcsa (1877-1933) for his lover and possibly one of his physical attributes; and it is not mentioned that J.C. Daniel (1927-2011) and M. Lamotte (1920-2007) have caecilian species named in their honour. Even where there are minor omissions of detail these biographies remain excellent starting points for further discovery because each includes additional references, so that most of the absent threads I noted could be tracked down simply by following these leads. The biographies are necessarily brief and focused on herpetological contributions, though it is a shame nonetheless that some interesting personal information is left out.

Adler acknowledges that the selection of biographies is subjective. The stated aim of including in this volume more people for whom biographies do not exist elsewhere is highly laudable. In some respects the unevenness of inclusion appears (to my superficial examination) most notable in terms of nationality and topic. For example, I was disappointed not to find a biography of the Indian L.S. Ramaswami (1907-1987) who published some outstanding work (and I note also that his contribution to taxon names in the second section was not recognized prior to Volume 3). Also, palaeoherpetologists (including major figures in the field, see below) seem to be disproportionately absent. This is not a substantial criticism, rather an observation and a pointer for future consideration.

As well as the biography section being a useful resource and gateway to further useful material, it is interesting and enjoyable to simply browse these pages. Having these biographies together in a book encourages serendipitous discoveries. Of course, having electronic copies of such works is advantageous in terms of comprehensive searches for words that cannot be covered in a printed index. The biographies included in Volume 1 are available online at the publisher's website, though not in a fully searchable format.

The other two sections of the volume, a list of taxonomic authors and academic lineages, are (at least to me) of less interest and use. Perhaps I am too narrow in my vision and am ignorant about how useful these types of data are to historians of science and/or to the identity of an academic community. The list of taxonomic authors (people who have named taxa at the genus-level or below, or for whom such taxa have been named) provides full names, dates of birth and death, countries born, resided and died in and orders within which described taxa are classified. The most useful information is perhaps full name and date of birth and death. The ordinal taxonomic level is coarse and there is no easy immediate way of using the information provided to follow up which taxa were named by/for a particular individual. Of course, for many people such a taxon list would be very long. This is something that could be better conveyed and made more useful by being on the internet as webpages updatable by the community or a subset thereof (= a wiki).

This second section is the only one that addresses the issue of extinct *versus* extant amphibians and reptiles, in that it is explicitly stated to include only extant orders, such that palaeontologists who have described extinct taxa within Crocodylia are included, but those

who have described only pterosaurs are excluded. This raises further questions in terms of whether this is always a sensible demarcation and whose classifications are used as the arbitration framework given that different scientists have different views on the definitions of particular taxa as well as the phylogenetic inferences that provide evidence for deciding whether a given extinct taxon is a member of a stem- or crown-group. Uncertainty over the exact nature of the demarcation also makes it unclear whether some omissions are purposeful or accidental. For example, is the time I worked in Germany not recognized because I was working (and publishing) on extinct, non-crown-group archosaurs or because it was accidentally overlooked?

The division between neo- and palaeoherpetology will increasingly become an issue in future extensions of this series of volumes because, thankfully, today it is a much more permeable barrier. Elsewhere in the volume it is not so clear how the palaeo-neo demarcation was handled, but the content alone demonstrates that the series is concerned primarily (but not exclusively) with neoherpetology. I have no problem with this, but suggest that a clearer statement of aims and extent might help along the way, and that the project might even be restricted in future to people who have worked at least partly on extant taxa in order to keep it manageable, precise and accurate. In accepting palaeontologists who have described taxa within extant orders, the list of taxonomic authors is less respectful of the palaeo/neo divide than the biography section because it includes, for example, F. von Huene (1875-1969) who has yet to appear in the biography section despite being a truly major figure in (at least palaeo-) herpetology. Continued or extended inclusion of palaeoherpetologists might also draw more sharply into focus the issue of monophyly, given that "reptiles" as studied by herpetologists are not a natural group (through the exclusion of birds).

The third section of this volume, academic lineages, is more interesting to me than a list of taxonomic authors, at least in terms of browsing through a book. The information presented includes peoples' names, the place and year that their doctoral degree was awarded, who their supervisor was, and who they supervised to the same level. Altig notes some of the challenges in compiling these lineages in his introduction. One major issue apparent to me is the difficulty of conveying multiple supervisors. In the U.S.A., at least, students generally have a major professor, but in the UK, at least, it is becoming increasingly common for PhD students to have multiple supervisors, none of whom can be identified as the sole lead. For example, my former student S.P. Loader appears only under my name but he was cosupervised equally also by M. Wilkinson and B.L Cohen but this is not conveyed. There are many similar cases for at least relatively recent UK herpetologists. Joint cosupervision of doctoral students is the norm for institutions (such as my own) that lack degree-awarding powers. Academic 'lineages', like some of those in nature, are not always amenable to complete documentation in a simple, linear, ancestor-descendent hierarchy.

This third section includes some incomplete links, for example M.J. Benton is correctly listed as a student of A.D. Walker and a supervisor himself of several students (though more than are listed here), but these two lists are not linked. There are quite a few question marks (incomplete data) also in some parts, though these could be seen as an asset in terms of intent to improve the data in future. A little bit of inconsistency among different sections of the volume crops up here and there, for example O. Rieppel is in the list of taxonomic authors but not in the academic lineages. The issue of national borders also complicates the academic lineages. There are devices to try and overcome this (in the form of directions to check other subsections) but I still find it odd that, for example, the German W. Himstedt

and all of his doctoral students are listed under Austria even though he was based in Germany for most of his career.

As with the list of taxonomic authors, the academic lineage section is ripe for development as a wiki, with the hierarchical (but partly network-like) information also likely to be more efficiently displayed, searched and easily amended in an online format. A wiki would also allow more data to be incorporated, for example, titles of doctoral theses, the nationality of students, and other information that would more readily link to the first two sections of the volume. On that note, a minor inconsistency between sections 2 and 3 is whether the United Kingdom or its constituent countries are used as political units.

Many of the minor details I have raised here are about omissions, and these are clearly less of a problem than mistakes for a reference work like this. As a herpetologist I am grateful to the authors for compiling this volume. It is nicely produced, well bound with good print quality of text and images, with functioning indexes, and some attractive attention to detail. Herpetologists would do well to ensure a copy is in their institutional library. I hope the series continues in some form into the future, though further iterations will benefit from careful consideration of, for example, the extent to which palaeoherpetology is covered and the use that can be made of the internet in extending the accuracy, precision and utility of the content.

David J. Gower
Herpetology Research Group, Department of Life Sciences, The Natural History Museum,
London, SW7 5BD, UK
d.gower@nhm.ac.uk

#### Notes

We are happy to acknowledge a special 'feed' from Thompson-Reuters which suggests papers for inclusion in this section of our journal. This feed flows to Connie Rinaldo, of our board, who watches over our Notes. We should also like to thank various board members for comments on articles in the 'feed' and for their comments, suggestions and offers of help.

**2/30** Banks, R.C., 2012. Review: Priority! The Dating of Scientific Names in Ornithology: a Directory to the Literature and its Reviewers. – *Auk*, 129 (2): 358-359.

A review for ornithologists which also endorses the need for all taxonomists to take care over matters of date and precedence.

**2/31** Bousquet, Y. & P. Bouchard, (2013) The genera in the second catalogue (1833) of Dejean's Coleoptera collection. *ZooKeys* 282: 1, doi: 10.3897/zookeys.282.4401

A *tour de force* compilation of all genus-group names in Dejean's 1833–1836 second catalogue, clarifying the nomenclatural status of each and giving dates of publications of the livraisons comprising this catalogue. Over 2400 generic names were treated in this publication.

**2/32** Bousquet, Y. & P. Bouchard, (2013) The genera in the third catalogue (1836) of Dejean's Coleoptera collection. *ZooKeys* 282: 221, doi: 10.3897/zookeys.282.4402

A compilation of all genus-group names found in Dejean's 1836–1837 third catalogue, clarifying the nomenclatural status of each, and giving dates of publication for the livraisons comprising this catalogue.

**2/33** I.C.Z.N., 2012. Editorial. Amendment of Articles 8, 9, 10, 21 and 78 of the *International Code of Zoological Nomenclature* to expand and refine methods of publication. – *Zootaxa*, 3450: 1-7.

These Amendments have a significant impact of the judgement of priority since it becomes possible to achieve precedence through the issue of an electronic journal whether it has a print edition or not. However see p. 130 of this issue of *ZB* for an expression of concern about how the wording of the Code is being allowed to permit acceptance in circumstances which many will regard as problematic.

**2/34** Lee, B.Y. & M.E.Y. Low, 2013. The leucosiid crabs described by Thomas Bell in 1855: original description and dates of publication (Crustacea: Decapoda: Brachyura). – *Zootaxa*, 3637(2): 176–182.

The authors list the leucosiid crabs described by Thomas Bell and determine accurate dates of publication for them.

**2/35** Low, M.E.Y., 2013. The Decapoda described by Henri Filhol: checklist and dates of publication (Crustacea: Anomura, Brachyura, Caridea). – *Zootaxa*, 3636(2): 385–393.

The author lists the decapods described by Henri Filhol and determines accurate dates of publication for his publications.

**2/36** Mlíkovsky, J., 2013. The authorship and type locality of *Melanocorypha leucoptera* (Aves: Alaudidae). – *Zootaxa*, 3616 (3): 298-300.

The author proposes to transfer this name from the authorship to which it has long been accredited on the basis of priority; however he overlooked the fact that the name in question has been placed on the Official List of Specific Names and that such a change requires the Commissioners to use their plenary powers to make the change.

**2/37** Palma, R.L., A.J.D. Tennyson, C.P. Gaskin & A. Jaramillo, 2012. The scientific name, author, and date for the "Fuegian storm-petrel", a subspecies of *Oceanites oceanicus* from southern South America. – *Notornis*, 59: 74-78.

The authors provide an almost comprehensive review of the literature regarding the nomenclature of the Feugian storm-petrel. However, they missed a key reference which would have invalidated their conclusion. This error is corrected in a subsequent paper listed below.

**2/38** Palma, R.L., A.J.D. Tennyson, C.P. Gaskin & A. Jaramillo, 2012. A correction to Palma *et al.* (2012) on the nomenclature of the Fuegian storm-petrel, *Oceanites oceanicus chilensis.* – *Notornis*, 59: 187-188.

Here the authors correct an omission of a key reference thereby nullifying the conclusions of their previous paper on the nomenclature of the Feugian storm-petrel. This is a salutary reminder of the importance for comprehensive searching of the literature when publishing on nomenclatural issues.

#### INSTRUCTIONS FOR AUTHORS

Authors wishing to publish in this journal are invited to use the Aves Press website to reach the editor with an outline proposal giving the title, authors, draft abstract, expected page requirements and needs for illustration, on a single page if possible. If the subject is not obviously connected to zoological bibliography then the proposal should explain the relevance. This journal does not carry original descriptions of taxa that are being newly proposed; by contrast proposals of *nomina nova* and most other nomenclatural acts will be welcome, and by the provision of printed depository copies, will be within the prescriptions of the International Code of Zoological Nomenclature.

The single spaced manuscript should be submitted by e-mail as a Word ® document or in RTF format. Even short papers should include an abstract and keywords (max. 8). Subheadings in bold type are encouraged. Footnotes are permitted; end notes are not. Use automatic footnote numbering page by page.

**References:** should not be abbreviated; pagination should be given in expanded form (e.g. not x, 500 but i-x, 1-500); italics should be used for book titles but not volume numbers, when citing periodicals use italics for the journal name not the article title. See examples below for detailed formatting:

International Commission on Zoological Nomenclature, 1999. *International Code of Zoological Nomenclature*. 4th edition. i-xxix, 1-306. – International Trust for Zoological Nomenclature, London.

Salvin, O., 1892. *Catalogue of the Birds in the British Museum*. XVI. *Catalogue of the Picariæ in the collection of the British Museum* (part). Upupæ and Trochili: i-xiii, 1-433. – Trustees of the British Museum (Nat. Hist.), London.

Schuchmann, K. L., 1999. *Damophila julie* (p. 587). In: del Hoyo, J., A. Elliott & J. Sargatal, eds. *Handbook of the birds of the world*. Vol. 5. Barn-owls to Hummingbirds. – Lynx Edicions, Barcelona.

Zimmer, J. T., 1953. Studies of Peruvian Birds. No. 63. The hummingbird genera *Orconympha*, *Schistes*, *Heliothryx*, *Loddigesia*, *Heliomaster*, *Rhodopsis*, *Thanmastura*, *Calliphlox*, *Myrtis*, *Acestrura*. – *American Museum Novitates*, 1604: 1-26.

Sherborn, C. D. & B. B. Woodward, 1906. On the dates of publication of the Natural History Portions of the 'Encylopedie Méthodique'. – *Annals and Magazine of Natural History*, 17: 577-582.

Pacheco, J. F., et al., 1996. A new genus and species of Furnariid (Aves: Furnariidae) from the cocoagrowing region of southeastern Bahia, Brazil. – *Wilson Bulletin*, 108(3): 397-433.

Scientific names: must comply with the requirements of the ICZN; original spellings should have been researched and used, with gender agreement addressed where necessary, unless an explanation is provided for using a different spelling. Changes to an original spelling mandated by Article 32.5 of the Code (ICZN, 1999) should be retained. It will be appreciated if an emendation or an Incorrect Subsequent Spelling (Art. 33) is deliberately used that this be footnoted and explained.

**Dates**: where month-dates or day-dates are used the format should be day, month, year, except in quotations, unless good cause can be shown for departing from the house style. In cases where both a correct publication date and an imprint date must be given consult the Editor.

**Tables**: should be within gridlines (which may or may not be printed). If such tables are to be inserted in the text the preferred position for each of them should be clearly indicated. Tables longer than 100 mm should be supplied as a separate file (Word ® or Excel ®) not embedded in the text.

**Author's Address**: this is to appear at the end of the article; the mention of an e-mail address is not mandatory.

## ZOOLOGICAL BIBLIOGRAPHY or Opera Zoologica

ISSN 2045-4643 (Print) ISSN 2045-4651 (Online) Acting Editor: Edward C. Dickinson Volume 2, Number 4, pages 129–172

#### **CONTENTS**

LETTER FROM THE EDITOR	129
EDITOR'S COMMENTS	130
WILLIAMS, R. B., Nomenclatural and bibliographical notes on new taxa of protozoan parasites described by Ernest Edward Tyzzer (1875–1965)	
Review.	167
Notes	171

In accordance with Article 8.6 of the *International Code of Zoological Nomenclature* printed copies of this work in its entirety are immediately deposited with the British Library; the United States Library of Congress; the Natural History Museum, London; the National Museum of Natural History (NCB Naturalis), Leiden, Netherlands; the American Museum of Natural History, New York; National Museum of Natural History Library, Smithsonian Institution Libraries, Washington, D.C.; and the Muséum National d'Histoire Naturelle, Paris.

The print edition is available on subscription from a short print run. The second volume (four issues) may be subscribed for at a cost of £40 including postage. Volume one is still available for the same price, apply through info@avespress.com. Subscriptions for subsequent volumes will be announced when costs have been reviewed, although they will inevitably be higher unless our subscriber base is tripled. It will soon be possible to subscribe on our website: www.avespress.com

Published by Aves Press Limited. © 2013