

# Determination of the publication date of George Johnston's "A catalogue of the zoophytes of Berwickshire", with nomenclatural consequences for some cnidarian and bryozoan family-groups

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**ABSTRACT:** In a previous paper on the publishing history of George Johnston's *A History of the British Zoophytes*, an accurate publication-date of Johnston's earlier article, "A catalogue of the zoophytes of Berwickshire", was not ascertainable with certainty. It was published in part IV of the first (un-numbered) volume of *History of the Berwickshire Naturalists' Club*, the title-page of which is misleadingly dated 1834. The parts are not dated, but based on rather doubtful evidence, some authors have considered part IV to have been published in 1836, others in 1837. Evidence presented herein establishes the year of publication of part IV as 1837, no later than 5 February. This has consequences for the current status of five family-group names of the phyla Cnidaria and Bryozoa listed in the World Register of Marine Species. Thus, the families listed therein as Campanulariidae Johnston, 1836 and Corynidae Johnston, 1836 (Cnidaria: class Leptolida) should be dated 1837; Hydridae Dana, 1846 (Cnidaria: class Leptolida) should be attributed instead to Johnston, 1837; and Alcyonidiidae Johnston, 1838 (Bryozoa: class Gymnolaemata) and Tubuliporidae Johnston, 1838 (Bryozoa: class Stenolaemata) should be dated 1837.

**KEYWORDS:** Berwickshire, Bryozoa, Cnidaria, family-group names, Gymnolaemata, Leptolida, publication dates, Stenolaemata, zoophytes.

## INTRODUCTION

In a previous paper (Williams, 2018) on the publishing history of George Johnston's *A History of the British Zoophytes* (hereinafter *British Zoophytes*), doubt was expressed about the correct publication date of Johnston's earlier journal article, "A catalogue of the zoophytes of Berwickshire". Reiterated below is the previously available information about Johnston's catalogue (Williams, 2018: 162, footnote 42):

This paper was published in part IV of the un-numbered first volume [1] of *History of the Berwickshire Naturalists' Club*, dated 1834, which actually comprises nine undated parts for 1832–1841. The copy in the British Library (Ac.3029) lacks some parts, but most of those present bear a pencilled date of receipt by the British Museum. Each part begins with the president's annual address, delivered always during September, but the date of receipt was invariably before the end of April in the year after the address was delivered. Unfortunately, part IV is one of those lacking but, since it commences with the annual address for 1836, it seems likely that it was issued in 1837, before 20 September, when the 1837 annual address was delivered. However, Johnston repeatedly cited this paper as 1836 in *British Zoophytes*, 2nd edition, p. 29 (*passim*), perhaps because it appeared in the same part as the annual address for 1836. That year is also given in the 1831–1931 index of the *History of the Berwickshire Naturalists' Club* (Craw, 1933: 89). Nevertheless, since cogent primary evidence for publication

either in 1836 or in 1837 is still lacking, I have adopted herein the latest date in 1837 that the work could have been published.

Hence, the date that I then adopted was 20 September 1837 (Williams, 2018: 162 and Table 4), and I cited “A catalogue of the zoophytes of Berwickshire” as “Johnston (?1837)”. Cornelius (1995: 360), based on a questionable interpretation of a manuscript note by Charles Davies Sherborn (1861–1942) in a copy of the journal in the British Museum (Natural History), considered the catalogue to be dated 1837, but expressed no opinion about a more exact date within that year. In the World Register of Marine Species (WoRMS),<sup>1</sup> however, citations of two names originally published in the same paper are dated 1836. Unequivocal evidence for publication either in 1836 or 1837 has hitherto been lacking.

## THE REVISED DATING

Evidence for an accurate publication date of Johnston’s “A catalogue of the zoophytes of Berwickshire” has now been found in a most unexpected place, discovered accidentally while researching the nomenclature of British Lepidoptera in the *Transactions of the Entomological Society of London*. In that journal, the proceedings of the Entomological Society were routinely recorded, and they included accounts of donations to the society at each meeting. Fortuitously, among those donations were the transactions and proceedings of other scientific societies, many of which addressed a wider range of biological topics than just entomology.

In Volume 2 of the *Transactions of the Entomological Society of London*, for 1837–1840, is a list of “Additions to the Library, from December 31, 1836, to September 30, 1840”. Entered on page lxxvii is “Berwickshire Naturalists [sic] Club, Proceedings of, for 1836–1839”. This indubitably indicates that the annual address of the Berwickshire Club’s president for 1836 was not available until the following year. Further details (*Transactions of the Entomological Society of London*, volume 2, page xxxvi) reveal that the Berwickshire Naturalists’ Club donated an annual part of their Transactions to the Entomological Society on 5 February 1837. Although the year of that part is not stated, it was apparently part IV for 1836, since the next part, explicitly dated 1837, was donated on 7 May 1838 (*Transactions of the Entomological Society of London*, volume 2, page lxxxi). This timing of donations is consistent with the fact that the date of receipt by the British Museum Library of each part of the *Proceedings of the Berwickshire Naturalists’ Club* was invariably in the year after the president’s annual address was delivered, usually before the end of April (Williams, 2018: 162, footnote 42). The additional evidence now presented confirms the year of publication of Johnston’s “A catalogue of the zoophytes of Berwickshire” as 1837, not later than 5 February.

## DIRECT CONSEQUENCES OF THE REVISED DATING

“A catalogue of the zoophytes of Berwickshire” (Johnston, 1837) includes, among other taxa, several new family-group names. However, this minimalist catalogue comprises nothing more than a list of names of families, genera and species of biota arranged under “sections” and orders of the class Zoophyta. At first sight, therefore, all the new family-group names appear to be *nomina nuda*, since they have no descriptions, illustrations, authorities, bibliographical references or indications of any kind associated with them. However, article 12.2.4 of the *International Code of Zoological Nomenclature* (International Commission on Zoological Nomenclature, 1999) provides that “the formation of a family-

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<sup>1</sup> WoRMS (<http://www.marinespecies.org>), accessed 1 September 2018.

group name from an available generic name” constitutes an acceptable indication, which therefore does not require any explicit description or other supplementary information.

Thus, of the new family-group names in this catalogue, Campanulariadae (Cnidaria), Corynidae (Cnidaria), Hydroidae (Cnidaria), Lobulariadae<sup>2</sup> (Cnidaria) and Tubuliporidae (Bryozoa) are validly published, available names (see Table 1). However, another new family, Lymnophylli (Bryozoa), is not based on any available genus-group name<sup>3</sup> and has no associated indication, so it is a *nomen nudum*, and therefore unavailable. Furthermore, confusion surrounds the family-group name “Alcyoniadae”, which Johnston inadvertently misnamed due to an error in his spelling of its type-genus (see later), but justifiable genus- and family-name emendations maintain it as the available name Alcyonidiidae (Table 1).

Hence, following revision of the publication date of Johnston’s 1837 catalogue, it is necessary to correct the World Register of Marine Species, with regard to the authorities and dates of currently accepted family-group names originally published in the catalogue (Table 1). Accordingly, the families listed in WoRMS as Campanulariidae Johnston, 1836 and Corynidae Johnston, 1836 (Cnidaria: class Leptolida) should be dated 1837; Hydridae Dana, 1846 (Cnidaria: class Leptolida) should instead be attributed to Johnston, 1837; and Alcyonidiidae Johnston, 1838 (Bryozoa: class Gymnolaemata) and Tubuliporidae Johnston, 1838 (Bryozoa: class Stenolaemata) should be dated 1837.

## RESOLUTION OF FURTHER NOMENCLATURAL PROBLEMS

Other than the necessary actions resulting from the revised dating of Johnston’s 1837 catalogue, some more complicated nomenclatural problems remain to be addressed, with particular regard to the family “Alcyoniadae” (order Ascidiaioida) (Johnston, 1837: 108). Surprisingly (since it is included with the Bryozoa) its type-genus is apparently the cnidarian genus *Alcyonium* Lamouroux, 1813. It is immediately obvious, however, that this spelling is a *lapsus calami* for the true bryozoan genus *Alcyonidium* since the species listed under “Alcyonium” are in fact *Alcyonidium gelatinosum*, *Alcyonidium hirsutum*, *Alcyonidium echinatum*, and *Alcyonidium ? parasiticum*. This error led to the incorrect spelling of the family-name. Hence, Johnston’s “Alcyonium” is deemed herein to be “Alcyonidium”, his error being etymological rather than taxonomic. He obviously intended this new family-name Alcyoniadae<sup>4</sup> (which, following his own convention, should have been spelt “Alcyonidiadae”) to apply to bryozoans.

This interpretation is corroborated by the correct inclusion of *Alcyonidium* in the first edition of *British Zoophytes* (Johnston, 1838: 300–305), comprising the same four species as before, in the bryozoan family Alcyonidulae, although all the *Alcyonidium* species are still given in the synonymies as “Alcyonium” (presumably for the sake of bibliographical accuracy). At the same time, Johnston’s proposal of this new family Alcyonidulae caused yet more confusion because it included not only the bryozoan genus *Alcyonidium* but also a poriferan genus, *Cliona* Grant, 1826 (phylum Porifera – sponges).

<sup>2</sup> In a previous paper, I inadvertently referred the family-group name Lobulariadae Johnston, 1837 to the Bryozoa instead of to the correct phylum Cnidaria (Williams, 2018: Tables 4 and 7).

<sup>3</sup> The bryozoan family-group name Lymnophylli comprises only *Cristatella mirabilis* and *Plumatella sultana*, species not currently accepted as valid in WoRMS, but the genera are currently classified respectively in the families Cristatellidae Allman, 1856 and Plumatellidae Allman, 1856 (class Phylactolaemata; order Plumatellida).

<sup>4</sup> The valid cnidarian family-group with the type-genus *Alcyonium* Linnaeus, 1758 is Alcyoniidae Lamouroux, 1812, with which Johnston must have been familiar, since he included it in the first edition of *British Zoophytes* (Johnston, 1838: 187–191). In the second edition (Johnston, 1847 [1846–1847]: 174), it is synonymized with the junior synonym Lobulariadae Johnston, 1837.

**Table 1.** The available new family-group names published in “A catalogue of the zoophytes of Berwickshire” (Johnston, 1837), with emendations, their modern higher classifications, and current (but incorrect) inclusions in WoRMS.

New family-group	Emendation	Type-genus	Modern phylum; class; order	Inclusion in <i>British Zoophytes</i> *	Inclusion in WoRMS
Alcyoniadae (p. 108)	Alcyonidiidae	<i>Alcyonidium</i> Lamouroux, 1813	Bryozoa; Gymnolaemata; Ctenostomatida	First edition (p. 300) as Alcyonidulae	Alcyonidiidae Johnston, 1838
Campanulariadae (p. 107)	Campanulariidae	<i>Campanularia</i> Lamarck, 1816	Cnidaria; Leptolida;	Second edition (p. 101)	Campanulariidae Johnston, 1836
Corynidae (p. 107)	–	<i>Coryne</i> Gaertner, 1774	Proboscoida	Second edition (p. 29)	Corynidae Johnston, 1836
Hydroidae (p. 107)	Hydridae	<i>Hydra</i> Linnaeus, 1758	Cnidaria; Leptolida; Capitata	First edition (p. 91) as Hydridae	Hydridae Dana, 1846
Lobulariadae (p. 107)	Lobulariidae	<i>Lobularia</i> Lamarck, 1816	Cnidaria; Octocorallia; Alcyonacea	Second edition (p. 174) as a junior synonym of Alcyonidae	No family-name based on <i>Lobularia</i> is accepted
Tubuliporidae (p. 107)	–	<i>Tubulipora</i> Lamarck, 1816	Bryozoa; Stenolaemata; Cyclostomatida	First edition (p. 247)	Tubuliporidae Johnston, 1838

\* *A History of the British Zoophytes*. First edition (Johnston, 1838); second edition (Johnston, 1847 [1846–1847]).

However, in his catalogue, Johnston (1837) had clearly separated the Porifera from the Cnidaria and Bryozoa, although *Cliona* was not one of the poriferan genera listed. Nevertheless, “Alcyoniadae” Johnston, 1837 and Alcyonidulae Johnston, 1838 are objective synonyms of a bryozoan family, since both have the same type-genus *Alcyonidium*. Johnston himself synonymized the families in the second edition of *British Zoophytes* (Johnston, 1847 [1846–1847]: 358); having corrected the type-genus spelling of “*Alcyonium*” to “*Alcyonidium*”, the justifiably emended senior synonym is thus Alcyonidiidae Johnston, 1837. In WoRMS, the same family is given as Alcyonidiidae Johnston, 1838, comprising five genera, including *Alcyonidium*. Since no original bibliographical reference is provided therein, it would appear that the intended source reference is the first edition of *British Zoophytes* (Johnston, 1838), but that would be incorrect, as shown herein (see Table 1).

Of the remaining new family-names in Johnston’s catalogue, Lobulariadae Johnston, 1837 does not appear in WoRMS because it is a junior synonym of Alcyoniidae Lamouroux, 1812 (Cnidaria: class Octocorallia). Neither does the *nomen nudum* Lymnophylli Johnston, 1837 (Bryozoa: class Phylactolaemata), which is not an available name (Williams, 2018: 172). In the first edition of *British Zoophytes*, Johnston (1838: 308–324) inexplicably replaced the family-group name Lymnophylli with Limniades, this time including the genera *Cristatella*, *Plumatella* and *Alcyonella* (see also footnote 3 herein). The genus *Alcyonella* is not recognized in WoRMS. Furthermore, Limniades Johnston, 1838 is not based upon an available genus-group name, and is therefore itself unavailable.

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