

## In good company: an appreciation of the Scottish naturalist William Baird MD, FLS, FRS (1803–1872)

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### ABSTRACT

Born in Berwickshire (Scotland), in his youth William Baird (1803–1872) voyaged first to the West Indies and South America (1823) and then to the Far East, latterly in the employ (for a decade) of the Honourable East India Company as a surgeon (although precisely where he obtained his MD is a moot point) collecting specimens en route. Later he joined the staff of the zoological department of the British Museum (Natural History), spending 30 years there and publishing widely. He has been criticised by some, unfairly and inaccurately I am not alone in contending, for his modest contribution to science. William Stearn's derogatory comments regarding Baird's malacological output are ascribed to ignorance of the true scope of Baird's responsibility for "Mollusca and lower animals" at the British Museum. Charles Darwin's description of Baird as "indolent" provoked this reappraisal of his contribution to science. In seeking to rescue Baird's reputation I examine his life and times, set his contribution within its wider social context, and present a detailed bibliography of his publications.

### INTRODUCTION

The 19th century Scottish naturalist William Baird MD, FLS, FRS (born Eccles, Berwickshire, 1803; died London, 1872; Fig. 1) has suffered unfairly at the hands of certain commentators (except Damkaer, 2017)<sup>1</sup> (superscript numbers refer to notes in Appendix 1). Stearn (2002) was scornful of Baird's few publications on molluscs, considering that he had spent 30 years in that section of the Zoology Department of the British Museum in London<sup>1</sup>. The entry in the *Dictionary of National Biography* states he "published little on the group" (Thompson, 2004). It is true that his Cyclophorida volume (Baird, 1850a) is a slim compilation, one that John Edward Gray (1800–1875), writing in its preface, considered "prefatory to a more comprehensive catalogue". But, in stating that "his major contribution was in curation: arranging, mounting, registering and labelling, thus making the collection available for scientific study", Stearn (2002) too readily damned him with faint praise. His curatorial job was very necessary. We know that Sir William Jardine (1800–1874) had called on Baird at the Museum in 1842 and been distressed about the want of adequate labelling of the collections (Jackson & Davis, 2001). That deficiency represented a constant headache.



**Fig. 1.** William Baird MD, FLS, FRS (1803–1872). Photograph taken whilst Baird was a member of staff at the Zoology Department of the British Museum (Natural History), exact date unknown. (Natural History Museum Archives DF/PH/2/1/1/3. From the Library and Archives collections of the Natural History Museum, London)

A decade later (in 1856), the Superintendent, Richard Owen (1804–1892), still "pushed for a substantial increase in cataloguing the huge volume of specimens that was flowing into London from expeditions and colonies" (Harrison, 1997). Though Baird was never a shell collector (Dance, 1986), he attended assiduously to his conchological curatorial duties (Douglas, 1872; Gunther, 1975) but Stearn's comments convey the impression that Baird did naught else, which is manifestly untrue.

Stearn overlooked the fact that Baird's responsibility was for "molluscs and lower animals" (Gunther, 1975). As Baird's extensive publications (Hardy, 1872b; updated and corrected in Appendix 2) attest, he concentrated on the "lower animals" aspect while J.E.

Gray, and latterly E.A. Smith (1847–1916), concentrated on the molluscs (Davis, 1995; Stearn, 2002). Baird was an authority on worms (Craw, 1933). True, even there he had his faults. No less an authority on worms than W.C. M'Intosh (1838–1931), whilst being scrupulous in acknowledging Baird's pioneering achievements (Gunther, 1977), had gently chided the shortcomings of Baird's (1853a) British Museum catalogue (M'Intosh, 1869). He recognised that Baird had done "little more than emphasize the problems" (Gunther, 1977). Beddard (1895), another worm specialist, was rather more trenchant in his criticism, noting Baird's failure to give due attention to internal details of oligochaetes. Earthworm studies had been neglected (Benham, 1903). His "entomostracan" compilation, though, the first crustacean monograph published by the Ray Society (Baird, 1850b), has been described as monumental by Damkaer (2017). The catch-all term "Entomostraca" referred to the non-malacostracan Crustacea and has no formal validity these days. It is repeated herein in its historical context only.

Baird retained some publishing contact with the Mollusca at the British Museum (Baird, 1850a) as, conversely, did Gray with the worms (Sipuncula; see Rice & Stephen, 1970); and Baird still fielded departmental molluscan queries. Thus, a letter to him from 1850 exists in the Museum's archives from R. Taylor (1781–1858) discussing snails<sup>2</sup>. Another letter exists from him to Sir Charles Lyell (1797–1875), dated 20th June 1856, relating to *Helix tiarella* from Madeira<sup>3</sup>. Sheffield City Archives retain three letters from Baird to Mrs Margaret Gatty (written 12th April 1867, 30th September 1867 and 2nd August 1870), the second of which relates to identification of shells from Tripoli<sup>4</sup>. According to Bridson *et al.* (1980), Baird was also corresponding with John R. le Brockton Tomlin (1864–1955), Britain's last great private shell collector (Tomlin, 1949), with correspondence being lodged in the National Museum of Scotland (NMS) in Edinburgh; but their respective dates make this highly unlikely. The only reference that can be traced to such an unlikely correspondence in the listing of Tomlin correspondence within the NMS archives is to a "W. Baird" entry that had been scored out, with no explanatory note as to why<sup>5</sup>. Obviously, Baird's position within the British Museum entailed extensive correspondence with naturalists but Tomlin was only eight years old when Baird died. We read in Smiles (1887) that Charles Spence Bate (1819–1889) had passed on some Entomostraca collected by the Banff shoemaker and naturalist Thomas Edward (1814–1886) to "Dr Baird of the British Museum, from ... whom I hope you will hear". This correspondence no longer survives.

Charles Darwin (1809–1882), in confidential correspondence with James Dwight Dana (1813–1895), dated 6th December 1853, referred to Baird as "good-natured, but indolent" (Burkhardt & Smith, 1989). In one of his letters to Mrs Gatty (2nd August 1870)<sup>4</sup>, Baird alluded to taking a lengthy summer break from London; "I am sorry that owing to my leaving London in a day or

two for a six weeks' holiday, I shall be prevented being of use to you in the matter of your frontispiece for the *Waifs & Strays*" (Gatty, 1871). Harrison & Smith (2008) reported that "the usual vacation" at the Museum was a month. Baird, however, was in his late 60s then (though, perhaps, six weeks represented his habit). We know he re-visited Berwickshire extensively (Moore, 2005). George Johnston of Berwick-upon-Tweed referred to him in the preface to the second edition of *History of British Zoophytes*, as "my long tried friend" (Johnston, 1847). Baird made only a very minor contribution (Baird, 1855a) to the meeting of the British Association for the Advancement of Science (BAAS) (held, that year, in Glasgow against a backdrop of the Crimean War). That might not have advanced his reputation in Darwin's eyes either (although Darwin himself contributed an equally slight contribution (Darwin, 1855); and that juxtaposed to Baird's). We know that Darwin, becoming uncharacteristically peripatetic, attended that meeting in person (Burkhardt & Smith, 1989), but it is questionable if Baird did, as he does not seem to have been a BAAS member. However, could he have had a contribution published despite being absent from the meeting?

Darwin was, however, equally uncomplimentary about all English crustaceologists (Burkhardt & Smith, 1989), although his attitude towards Bate, the Swansea dentist and esteemed marine naturalist with an interest in Crustacea (see Bate & Westwood, 1863–68), improved with Bate's maturity and increasing usefulness (Stott, 2003). Darwin's verdict on Baird is, however, unjust (and I am not aware of Baird's view of Darwin). It belies his substantial contribution to our knowledge of the lower Crustacea (notably Baird, 1850b; see also Appendix 2) when such studies were still in their infancy (Damkaer, 2002). In public though, Darwin had noted his indebtedness to Dr Baird (*inter alia*) in "furnishing specimens and information" for his barnacle monograph (Darwin, 1851). Alfred Merle Norman (1831–1918), by contrast, sounded reassuringly fraternal when he stated "neither Dr Baird's figure nor my own do justice to the great beauty of form of this species [the ostracod *Cythereis jonesii*] when in a perfect state" (Norman, 1867). The Rev. Leonard Jenyns (1800–1893), Darwin's lifelong friend, who also corresponded with many of the "north country naturalists", admitted to not being personally acquainted with William Baird; though he acknowledged that his "attainments were of a high order" (Wallace, 2005).

Some later (non carcinological) authors have done Baird other, more minor, disservices in inadvertently disguising his contribution. Dawes (1947) listed his papers carelessly under "Baird, N." while Stephen & Edmonds (1972), Rice (1975) and Cutler (1994) – by inserting a spurious initial into his name and referencing him under "Baird, W.B." – created unnecessary confusion. The spurious "B." also cropped up during his lifetime<sup>6</sup>. This may have been the result of poor proof-reading by Edmonds (Stephen having died by the time their monograph emerged) and misunderstood secondary citation of their reference list by later authors.

## BIOGRAPHICAL CONSIDERATIONS

William Baird's life has been the subject of renewed biographical interest in recent years (Damkaer, 2002, 2017; Moore, 2005). He was commemorated by two of his Berwickshire contemporaries promptly after his death (Douglas, 1872; Hardy, 1872a,b). The best way to understand the twists and turns of Baird's research output is to set it against the path of his career. His family circumstances (shared sibling interests) and personal friendships left a life-long legacy (Davis, 1995). In particular, his friendship with Dr George Johnston (1797–1855), the Berwick physician, marine naturalist and founder of the Ray Society, prospered. Jenyns, mentioned above, rated Johnston's influence as a naturalist as second only to Darwin's (Wallace, 2005). Baird still presented papers to the youthful Plinian Society – an Edinburgh University student society founded in 1823 – into the late 1820s (Hardy, 1872b). Baird had attended Edinburgh High School and studied medicine and surgery at Edinburgh University (Damkaer, 2017). He remained a Plinian at least until 1829. He had been a member of the Ray Society since its inception (Egerton, 1844). Regarding its formation (Davis, 1998), Baird had written to Johnston (18th December 1843) noting:

“I am sorry to say there is such a deal of petty jealousy amongst some of our great men in London that they think every thing that they are not immediately connected with not worth encouraging. One bright luminary remarked to say today “I suppose this will be published at Berwick – that won't do for us Londoners.””

In a later letter to Johnston (29th January 1844), Baird rather exasperatedly accepted that “when a person does not wish to join a Society or speculation, he is very ingenuous [*sic*] in finding out reasons for not doing so” (Davis, 1998).

Baird attested to his “much-valued” friendship with Johnston in his entomostracan monograph (Baird, 1850b). Craw (1933) inferred that contact between Baird and Johnston took place after their return to the Borders, after completion of their education in Edinburgh. However, it seems to have begun earlier, in boyhood. George Johnston was born in 1797 on a farm in the parish of Simprim (sometimes in the past spelled Simprin; now assimilated into Swinton parish) (Davis, 1996). This is the neighbouring parish to Eccles where William Baird was born and where his father, the Reverend James Baird (?1772–1814), was minister (1797–1805) before finally moving to minister at Swinton (1805–1814) (Morrison, 2004). In 1844, Johnston spoke of William Baird as “a friend of thirty years standing” (Hardy, 1892), which would put their date of first contact as 1814, the year that William's father died and the Baird family moved to Edinburgh (Leishman, 1917). Johnston would have been 17 years old then, and Baird 11. Johnston, however, had not spent all his childhood in Berwickshire. His early years – unspecified – had been spent in Ilderton, near Wooler in Northumberland (Craw, 1933; Davis, 1995). To quote Johnston's own words (Davis, 1995) “he [Baird] served his apprenticeship with me as a junior”. Their

relationship is alluded to in a Plinian Society communication (Baird, 1829b)<sup>7</sup>. By 1818, after being for a short time in London and later in Belford (Northumberland), Johnston came to Berwick-upon-Tweed. He remained there for the rest of his life, practising so tirelessly (he had only two vacations in 35 years) as a surgeon that he judged it politic actually to hide his proficiency in natural history from his patients<sup>8</sup>. Municipal affairs also took up much of his “spare” time, for Johnston was thrice elected Mayor of Berwick. Although working so relentlessly at his Berwick medical practice, it is pleasing to recall that this modest man of great wit and charm (Davis, 1995) retained, and valued, a sense of fun (Craw, 1933). In Johnston, Baird found indeed a treasured soul mate and role model.

Baird's professional life took him away from the Scottish Borders and Edinburgh. His note on the Portuguese man-of-war (Baird, 1831a) recorded his London address at that time (10th April) as 8 Everett St., Russell Square. After eventually eschewing life as a surgeon (Davis, 1983), initially with the Honourable East India Company (HEIC; during the years 1824–1833) and then latterly in London, he changed tack abruptly to assist William Elford Leach's (1791–1836) protégé, John Edward Gray, in establishing the Department of Zoology in London's British Museum (Gunther, 1975)<sup>9</sup>. The most successful commercial venture of the HEIC, though, was in China (the tea trade) not in India (Keay, 1991). During the period that William worked for “John Company”, as the HEIC was called in common parlance, he visited India and China five times, spending nearly six years away from home during the decade 1823–1833. William Baird might have been influenced to go “a-voyaging” by his elder brother, the Rev. John Baird, who had undertaken a lengthy trip in H.M.S. *Favourite* in 1820 to recover his health after a period of overwork. During leisure hours – from tutoring the sloop's midshipmen – John had geologised and botanised at the ports he visited (Leishman, 1917). In 1843, William Baird had been in Utah, then Mexican territory, from whence he had sent “some of the fifty-eight specimens noted in Jardine's museum catalogue”, including a bird, to his friend Sir William Jardine (Jackson & Davis, 2001). His contribution to Dieffenbach's Natural History of New Zealand of that year, by contrast, had been minor and at arm's length (Baird, in Dieffenbach, 1843)<sup>10</sup>.

By the census date of 1851, William Baird was back in Britain, working as an assistant in the Zoology Department of the British Museum and residing (aged 48) with his wife Mary (aged 40) at 3 Lambton Terrace, Kensington (1861 census also).

## WILLIAM BAIRD'S SCIENTIFIC OUTPUT IN CONTEXT

Baird's earliest scientific papers stem from his time in the service of the HEIC and include observations on meteorology – the aurora borealis (Baird, 1834, 1836b) and clouds (“sea trees”) (Baird, 1836a) – and on exotic animals. Baird became fascinated by the anatomy and behaviour of a “lemur” (either the slender loris, *Loris*

*tardigradus*, or the pygmy slow loris, *Nycticebus pygmaeus* - lemurs and lorises had been zoologically separated in Baird's time) found "on the beautiful island of Pulo-penang or Prince of Wales' Island". He kept the animal alive for nine months, noting the "double-decker" [my term] tongue and shape of its faeces (Baird, 1829d,e). A note, added by "P.N."<sup>11</sup>, stated that the specimen "died at the beginning of 1828 after Mr Baird left on a second voyage to India".

In the interval between finishing his fifth voyage (6th April 1831) and beginning his sixth (24th April 1832) as sea-going surgeon (voyages, appropriately enough, on board H.C.S. *Berwickshire*), he helped his brothers establish the Berwickshire Naturalists' Club in 1831 (22nd September), a club of which its initiator, George Johnston, became "the life and soul" (Craw, 1933). Three of the Baird brothers (John, Andrew and William), together with Johnston and five others (Robert Embleton, George Henderson, John Manners, Alexander Carr and, slightly later that same year, Thomas Brown) – seven doctors and two ministers – made up the nine charter members of the Club. During his voyages (the second voyage was even accomplished under a Captain Johnston), Baird had sent specimens from India (at least) to Gray at the British Museum and had been introduced to Gray by way of a Johnston letter (24th December 1829) when Baird had wanted to use the Museum's library (Gunther, 1975; Davis, 1995).

Baird began publishing in *Annals and Magazine of Natural History* in 1846, when George Johnston was still involved with its editorship. Sir William Jardine was also one of Baird's friends: in the company of fellow cognoscenti they fished the Lochmaben vendace, *Coregonus albula*, in Dumfriesshire (Baird, 1857), an activity no longer possible, the species being extinct at that location (though now the subject of a conservation project at Scottish refuge sites (Lyle *et al.*, 2019)). Baird had published with Jardine's *Magazine of Zoology and Botany* in his early years (Baird, 1837, 1838) and Jardine had supported Baird for his FRS<sup>12</sup>. Although Johnston died in 1855, his *Catalogue of British Non-parasitical Worms*, which was published by the British Museum, did not appear until a decade afterwards (Johnston, 1865). William Baird supplied supplementary material and, with J.E. Gray (who furnished prefatory comments), saw through to fruition this posthumous contribution by his old friend. Maybe Gray experienced some pang of conscience in this, given the history between himself and Johnston concerning Johnston's plans – thwarted by Gray's indolence near 20 years previously – for a collaborative *Mollusca Britannica* volume (Davis, 1995). Had Gray not remembered that Johnston had fulsomely dedicated his (1850) *Introduction to Conchology* to him? Stearn (2002) noted, somewhat disparagingly, that in the Natural History Museum "significant studies of annelids were long delayed". Clearly, by overseeing Johnston's non-parasitic worm contribution through the press as a Museum publication, Baird would have been able to temporarily plaster over this "void" in coverage (though how prominent this service was perceived to have been

at the time is unclear). Perhaps Baird the populist understood why, for – bending a Shakespearean sturgeon-roe simile (*Hamlet* ii, 2, 430-435) maybe after William Hazlitt's essay *On criticism* (1822) – he (Baird) had admitted (my italics):

"Worms, in a popular sense, are little, if at all, desirable creatures to contemplate; they are, in fact, "*caviare*" to the multitude, and are to thousands mere objects of disgust and annoyance. Poets and romancers have agreed to render them vile."<sup>13</sup>

George Johnston's wife, Catherine, who furnished illustrations for her husband's works, was clearly one subscriber to this view: "Mrs Johnston has a great dislike to Worms" (Hardy, 1892). Perhaps that inhibited the production of Johnston's work on the group. Baird himself, of course, had published extensively on polychaetes and, to a lesser extent, on oligochaetes and hirudineans (Hardy, 1872b; also Appendix 2), though clearly not significantly enough to satisfy Stearn (were, indeed, Stearn even aware of this fact). It seems Baird could not have won his approval, whatever he had done. This is not to say that Baird never attracted criticism from near contemporaries; Baird's (1869a) new Welsh earthworm, *Megascolex diffringens*, being relegated by Beddard (1895) among *species inquirenda* (species of doubtful identity requiring further investigation).

Although Baird was by no means the discoverer of bioluminescence in the sea, he was amongst the first to identify an entomostracous component to luminosity (Baird, 1829c, 1830, 1831b, 1843a). He established that "this phenomenon is caused by numerous small insects, abounding in the sea, and possessed of a power, commandable by their will, of giving rise to this luminous appearance" (Baird, 1829c). In truth, the list is long of organisms that exhibit bioluminescence, "almost to the extent of asking if there are any planktonic organisms which are not phosphorescent!" (Fraser, 1962). This phenomenon had been known about, and remarked upon, since the time of Pliny (Forbes, 1848). The Romans had been aware of several luminous animals, e.g. jellyfish, *Pholas* spp. (piddocks – boring bivalve molluscs), and Romantic poets and travellers like Lord Byron, Sir Walter Scott and James Montgomery had waxed lyrical about phosphorescence in the 18th and 19th centuries (Harvey, 1957). Indeed, John Vaughan Thompson's (1779-1847) first use of the plankton net can be traced to his having been "provoked to curiosity by the appearance of luminous animals in the sea during his return from the Mascarene Islands in late July, or early August, 1816" (Wheeler, 1968; note also Currie, 1983). Baird's scientific interest coincided, in the early 1830s, with that of the eminent German protozoologist C.G. Ehrenberg (1795-1876), the Professor of Medicine in Berlin, who experimented on luminescence caused by dinoflagellates (*Ceratium* spp., *Peridinium* spp.) (Herdman, 1923). Ehrenberg's work on the Infusoria (an old term for microscopic freshwater organisms) probably would have been known to Baird not least via the paper by Sharpey (1833). Edward Forbes (1848) acknowledged that Baird (*inter alia*) had "published valuable observations on this interesting

subject” but he was rightly unimpressed by the inadequate figure of a medusa supplied by this young apprentice (Baird, 1830).

Baird (1859b, 1861c) also pioneered the use of mud as a transport medium for resting-stage entomostracans. He benefited from its use to examine *Branchipus* spp. (fairy shrimp) material sent on to him by his friend Mr Denny at Leeds<sup>14</sup>, who had received it from Edward Atkinson “a gentleman attached as surgeon to the consulate at Jerusalem”. This convenient facility has been widely exploited ever since (Smith, 1963), not least by that doyen of carcinologists, G.O. Sars (1837–1927) (see Damkaer, 2017).

Baird was also among the first to take an interest in the use of tusk shells, *Dentalium* spp. (Scaphopoda), as currency (wampum) by “First Nation” Americans (Baird, 1864a), even if his species attribution proved subsequently to be incorrect (Clark, 1963). His interest in the borderline between zoology and ethnology, doubtless sparked by his own voyaging experiences and contacts with oriental societies, had been stimulated earlier in his career. In a communication read to Edinburgh’s Plinian Society on 26th May 1829, after returning home from his fourth voyage (third to the Far East), he had explained (Baird, 1829a) that the so-called rice paper of China was, in fact, made from the pith of a rush (Juncaceae). He continued his ethnological considerations, later taking an interest in Africa (Baird, 1854a). The Dawada lakes of the remote Edeyan Ubari (Fezzan) district of Libya were populated until recently by people of the same name; also known rather less charmingly as “worm-eaters”. The Dawada’s main source of nourishment was a sort of crustacean cake made from the brine shrimp *Artemia salina*, the so-called Fezzan worm, worked into a “stinking caviar” or “delicious mush” depending on your point of view (or, more likely, hunger state)<sup>15</sup>. The brine shrimps in the salt pans of Lymington (Baird, 1850c, 1854a) must have seemed inconsequential by comparison. Fox (1949) pointed to some non-existent “errors” over the section relating to *Apus* in Baird’s classic monograph (Baird, 1850b): first, arising from a mistranslation from the Latin, in thinking that the first record of this rarest of British crustaceans (the tadpole shrimp, now known as *Triops cancriformis*) actually referred to London (when Linnaeus had stated “Lund”, though this was not, in fact, what Baird had said about that specimen’s provenance); second, in thinking that the second record (Montagu’s communication to Leach) regarding this critically endangered notostracan in Britain had emanated from Devonshire. Doubtless, Baird would have been thrilled to hear that *T. cancriformis*, until recently thought to be extinct in Scotland, had been recorded again (October 2004) from the Solway coast (Caerlaverock) (Morrell, 2005).

There are also interesting snippets buried in his popular articles. He noted, for instance, that the rapid increase in Victorian *papier-maché* work consumed great quantities of Channel Isles ormer (*Haliotis tuberculata*) shell material, since mother-of-pearl was in demand for its

manufacture (Baird, 1855b).

Baird published most of his specialist research output solo but “his” compendia, published in the 1850s and 1860s, were often team efforts (see Appendix 2). After the hungry 1840s, these were inspiring times in Britain, for the aspiring middle class anyway. Victorian confidence ran high. The Society for the Diffusion of Useful Knowledge, established in 1826 (at the instigation of that great Whig radical Lord Brougham, 1778–1868)<sup>16</sup> produced affordable publications like the cheap *Penny Magazine* from 1832 until the Society folded in 1848. The ostentation of the Great Exhibition (1851) had proclaimed the ascendancy of British talent and inventiveness to the world. Victorian naturalists also brimmed with optimism (Merrill, 1989). One can imagine Baird being encouraged to proselytise science (and doubtless also make money) by Britain’s “go-getting” atmosphere, where, post-1859, a Smilesian self-help ethos held sway. The popular slogan of early Victorian Britain was “Improvement” (Harrison, 1971). But, as now, Victorian science was not a well-paid profession (Meadows, 2004) and, like Thomas Henry Huxley’s, Baird’s was no privileged background, though he did leave £3,000 on his death (Thompson, 2004). In his *Dictionary of Natural History* (Baird, 1860a) he explained his philosophy, in the preface, thus: “It is intended, in fact, to serve as a familiar work of reference to Natural History, and to appear in as condensed form as could be done [613 pages!], consistently with the object I have always had in view of combining science and instruction with agreeable reading and amusement.”

I can applaud his presumption that people gain amusement from reading dictionaries, and feel less isolated in the world as a result of such reassurance.

One might have thought that Baird realised the pitfalls of spreading himself too thinly after the “curate’s-egg” reception accorded his earlier solo compilation *Cyclopædia* (1858b; see below). That he soldiered on alone to produce the weighty dictionary surely helps rebut any charges of indolence. Perhaps as a result of these experiences, however, he came to see the benefits of collaboration, in contemporaneously publishing on so wide a range of topics as biography, systematics and classification. He subscribed to our modern notion of “outreach” and was adept at “networking”. For instance, we discern that noted entomologist and Renaissance man, John Obadiah Westwood (1805–1893), referring to him as “my friend” (Westwood, 1831). The scientific community was smaller in those days and a clubby atmosphere prevailed amongst the intellectual élites on both sides of the Scottish border (Alberti, 2001; Withers & Finnegan, 2003).

Baird would certainly have been stung by the faint praise that his *Cyclopædia of the Natural Sciences* (Baird, 1858b) received from a reviewer (Anonymous, 1858) who described it as “a tolerably successful work” (which, nevertheless, figured in the citation for his Royal Society Fellowship)<sup>12</sup>. The lengthy review (my



insertions in square brackets) included the following snippets:

“Even the zoological articles, however, are hardly so good as we should have expected from a writer of Dr Baird’s acknowledged powers... a more serious, and quite unexpected, defect in the zoological portion... *would prevent* even the most laborious student from acquiring any clear idea of zoological classification from its pages [the reviewer was especially critical of the inadequate or incorrect coverage of the systematic position of the echinoderms and marsupials]... trust that should the work come to a second edition, Dr Baird will endeavour to remove all causes of these objections [a second edition was, indeed, produced in 1863].”

This 1858 *Cyclopædia* was distinguished from its predecessors by all entries being listed under scientific (instead of popular) names. A hefty tome, it was not cheap; retailing at 15 shillings (75 pence in present money but worth £80 - £120 at today’s value) compared, for instance, with Griffin’s edition of Gilbert White’s *The Natural history of Selborne* which cost 2s 6d (two shillings and six pence) at that time. It would have been selling in competition, for instance, with the zoological dictionary of that writer and publisher of books of information, Samuel Maunders (1785–1849), whose weighty *Treasury of Natural History* had first appeared a decade earlier (Maunder, 1848). Maunders’ dictionary subsequently underwent several posthumous editions through the 1860s and 70s, being revised and supplemented then by the parasitologist Thomas Spencer Cobbold (1828–1886). The *Illustrated Natural History* (Wood, 1853), by that prolific populist writer about the natural world the Reverend John George Wood (1827–1889), was also on the market at the time (Wood, 1890), yet there was sufficient demand for a second edition of Baird’s *Cyclopædia* in 1863.

With reference to the critical reviewer’s comments on Baird’s compendium (noted above), it has to be admitted that, systematically, his volume on “Mollusca and Radiata” for *The Museum of Natural History* series (Volume II, Div. VIII) (Richardson *et al.*, 1860) is also chaotically structured. That said, this was two decades before Ernst Haeckel’s famous “tree of life” appeared in print (Haeckel 1879). “Tabular views” (Bell *et al.*, 1862) represented the prevailing classificatory system. Though a term foreign to modern biologists, this appellation was widely applied and understood at the time (Leach, 1815; White, 1858; Lankester, 1867).

#### FOR A’ THAT, AND A’ THAT...

As should by now be appreciated, Baird’s natural history interests were catholic: bioluminescence, botany, entomology, meteorology, crustaceans, parasitic worms, polychaetes, oligochaetes, sipunculids, molluscs, biography, behaviour, marine and freshwater biology, and parasitology; all figured in his output. Perhaps he did spread his interests too thinly in places as a result but contributing to such a span of topics was not uncharacteristic of naturalists at the time. Over 100 publications (some quite substantial) spanning a 40-year period (Appendix 2) is a surely respectable output for

one working predominantly alone (even if several items were published in duplicate, sometimes even triplicate, mainly because the *Annals and Magazine of Natural History* routinely reported information culled from the *Proceedings of the Zoological Society*). Set against J.E. Gray’s prodigious output of 1,162 papers during his 35-year reign as Keeper of Zoology (Allen, 1976; but only 700–800 according to Hardy, 1892)<sup>17</sup>, or the 1,600 papers produced by his younger counterpart, the American malacologist William Healey Dall (1845–1927) (Lindberg, 1998), Baird’s publication list could be represented as a trifle Lilliputian. But, as even his critics allowed, he did spend much time in curating the collections, which, after all, was what a Museum officer’s job description – memorable for the absence of the word “research” (Harrison & Smith, 2008) – actually required.

Appropriately, William Baird’s name has achieved a deserved permanency in systematics, in the nomenclature of a range of both Recent and fossil taxa (see Appendix 3), even though, unlike his polymath friend George Busk (1807–1886), he never published on any palaeontological topic (unsurprisingly, for worms and copepods do not fossilise like ostracods)<sup>18</sup>.

#### ACKNOWLEDGEMENTS

This paper is dedicated to my American correspondent of long-standing, Dr David M. Damkaer, whose esteem for Baird (see Damkaer, 2017) matches my own.

Professor Peter Herring is thanked for his helpful comments on the history of bioluminescence studies. I thank Dr Alan Binnie, Librarian of the Berwickshire Naturalists’ Club, for his help with checking references in their publications. Ms Ellen Alers (Smithsonian Institution Archives) kindly made available a photocopy of Greville’s letter to Baird. Ms Sally Pagan (University of Edinburgh library) is thanked for making available Baird’s abstracts from the *Transactions of the Plinian Society*. Dr Jim Wilson (Trinity College, Dublin), Mr Bart Smith (British Library, London), Mr Clive Simmonds (Librarian, Cambridge University), the Head of Sheffield’s Libraries, Archives and Information (facilitated by Ms Judith Phillips, Archivist), Dr Maureen Watry (Liverpool University library), Drs Graham Pierce and Thelma Fletcher (Aberdeen University), Gina Douglas (Linnean Society) and Ms Elizabeth Crowley (Bodleian Library, Oxford) helped with access to other, often equally obscure, publications. Ms Julie Carrington (Librarian, Royal Geographical Society) kindly clarified an issue pertaining to J. Lamprey. Ms Rachel Perkins (Librarian, Natural History Museum, London) kindly itemised relevant material in their Sowerby collection and fielded other queries. Dr John Whittaker (Palaeontology Department, Natural History Museum) also kindly checked the provenance of ostracod taxa with a Baird derivation. A great deal of bibliographical research for this contribution was undertaken whilst the author was Visiting Library Scholar at the Zoological Society of London (2004–2005). Ms Ann Sylph (Librarian) and Mr

Michael Palmer (Archivist) greatly facilitated those researches. Mr Jamie Owen, Ms Katie Anderson and Ms Victoria Devenport (Natural History Museum, London) variously arranged permission to reproduce Baird's portrait. I thank an anonymous referee for helpful suggestions that improved the MS in draft.

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## APPENDIX 1

### Notes

1. William Saville-Kent, who worked under Baird's direction at the British Museum, apparently knew our subject as "Jim" (Harrison, 1997). "Jimmy" remains the universal male Glaswegian salutation, though "Jock" perhaps more typifies the Scot abroad. Note also the odd historical status of Berwick-upon-Tweed as an English town whereas Berwickshire is a county in Scotland.
2. DF250/21 Letter from R. Taylor to W. Baird (Archives; Natural History Museum, London).
3. GB0237 Letter from William Baird to Sir Charles Lyell, dated 20th June 1856 (Gen. 118 Lyell 2/234-236); Navigational Aids for the History of Science, Technology and the Environment (NAHSTE) archive, University of Edinburgh.
4. Three letters from W. Baird to Mrs Margaret Gatty (Sheffield City Archives, Sheffield): 12th April 1867 concerning sponges and ascidians (Sheffield Archives Miscellaneous Documents 2135/1), 30th September 1867 concerning shells (SA: MD 2135/2), 2nd August 1870 concerning Venus's flower basket (SA: MD 2135/3).
5. Sankurie Pye (Library Services, National Museum of Scotland, Edinburgh) to P.G. Moore (hereafter PGM), personal communication, 27th September 2005.
6. Letter to "W.B." Baird, undated, from Dr Robert K. Greville (the famous Edinburgh botanist) concerning the return of some of Dr Johnston's specimens (Smithsonian Institution Archives, J.O. Westwood papers, 1816–1890 Record Unit 7112, box 1 of 3, folder 12 microfilm copy in reel 1 of autograph collection).
7. It is not clear whether that "shared apprenticeship" in Edinburgh referred to by Johnston was at the University's medical school or the town's High School. Baird referred to himself as "Mr" in his first travel journal of 1823 and there is no record of his having a medical degree from Edinburgh (D. Damkaer, unpublished). He was referred to as "Esq." in his "lemur" paper that was communicated to the Plinian Society in May 1827 (Baird, 1829e). His membership entry in the report of the first meeting of the Ray Society (Egerton, 1844) though credits him as "M.D." Some decades earlier, the notable Scottish anatomist/physician brothers Hunter William (1718-1783) and John (1728-1793) Hunter received very little university education and learned their medical craft as apprentices. However, by Baird's time, the University of Edinburgh was highly regarded as providing the foremost medical teaching in the country. Charles Darwin, of course, had studied there for a year.
8. Even the great geologist Sir Charles Lyell, it may be recalled, was so aware of the disrepute with which his hobby (collecting insects) was held that he "followed it up almost by stealth" (Lyell, 1881).
9. It seems appropriate here to place on record a marginal annotation in the second-hand copy of Gunther's indifferently proof-read book (1975) belonging to PGM. Pencilled-in at the top of page 403 by its previous owner (who, subsequent enquiries with the bookseller revealed, was B.J. Clifton, the Entomology librarian at the Museum in the 1950s–1960s), is a revealing comment regarding the recruitment policy at the British Museum: "up to 1939 only Public School people and degrees from Oxford, Cambridge and Edinburgh to be accepted. Can only remember 2 exceptions."
10. German-born Dr J.K. Ernst Dieffenbach (1811–1855) had been a surgeon naturalist with the New Zealand Company. The first trained scientist to live and work in New Zealand, he made important explorations of that country beginning in 1839, returning to England in October 1841. He eventually became supernumerary professor of geology at Giessen, Germany (his birthplace). He corresponded with Charles Darwin. In the preface to volume 1 of his *Travels in New Zealand* (Dieffenbach, 1843), he pays tribute to J.E. Gray for contributing the "Fauna of New Zealand" section of his treatise, along with Adam White (1817–1879) and Edward Doubleday (1810–1849) (Gray's already established assistants). Perhaps as befits a mere newcomer to the Zoology Department then, Baird's name makes but a fleeting appearance in that listing (as "in MSS"), in connexion with *Cypris Novae Zelandiae*. This passing reference, however, was enough to warrant an inclusion in Hardy's bibliography (1872a). Quite what these MSS represented is unclear.
11. Presumably Patrick Neill, FRSE (1776–1851), the "printer, philosopher and naturalist" (Hardy, 1892).
12. EC/1867/01, The Royal Society of London, Sackler archive.
13. The National Marine Biological Library, Plymouth has this in a fragment culled from an article of unknown origin (to them) though known to be by Baird.
14. Henry Denny (1803–1871), entomologist and expert on bird parasites, was curator of the Museum of the Leeds Literary and Philosophical Society.
15. From *worldsurface.com*, a company that formerly promoted sustainable tourism for backpackers.
16. Brougham was another Edinburghian and a prominent exponent of science communication, notably in the Whiggish *Edinburgh Review* (see also Brougham, 1827).
17. John Gray "would be one of the Museum's most influential and active Keepers of Zoology, holding the post for 35 years until his death in 1875" (Harrison & Smith, 2008).
18. It seems sensible to record here that the Sowerby collection in the Library of the Natural History Museum (London) contains two original plates, engraved for Baird by James de Carle Sowerby (1787-1871) for two articles that appeared in *Annals and magazine of Natural History* (Baird, 1846 plate IX, 1848a plate VII) (Sowerby Collection Box 43 C85 and C89 respectively). Unfortunately, there is no correspondence either to, or from, Baird in that collection (C14 Box 38) (Rachel Perkins to PGM, pers. comm., 1st June 2005). Another part of Baird's legacy remains in The Linnean Society of London collections, including several hundred line drawings and tracings of Entomostraca systematically arranged, ca. 1840s–50s, done by William Baird (Bridson *et al.*, 1980).

## APPENDIX 2

### Bibliography of William Baird's contributions to science

The listing published previously by James Hardy (1872a), who was Secretary of the Berwickshire Naturalists' Club from 1871 to 1896 (Davis, 1983), contains several errors and inadequacies, and overlooks several contributions. Hardy's list also included some references under Baird's name that relate to mentions of Baird's work by others. In addition, details of those papers that were "in press" at the time of that compilation (that were published after Baird's death in 1872) are given in full herein. The following have been checked against original sources, with very few exceptions.

- Alison, A., Baird, W., Brewster, D., Bryce, J., Burton, J.H., Creasy, E.S. *et al.* (1856). *The British Empire: Historical, Biographical and Geographical. Part 2. Dictionary of British Biography*. Richard Griffin & Co., London and Glasgow.
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- Baird, W. (1829a). On the rice paper of China. *Transactions of the Plinian Society* 1829, 25. (Reprinted in *Edinburgh Journal of Natural and Geographical Sciences* 1, 299)
- Baird, W. (1829b). On *Trientalis europaea* from the Cheviots; *Rhodiola rosea*; and *Melampyrum montanum*. *Transactions of the Plinian Society* 1829, 33.
- Baird, W. (1829c). On the luminousness of the ocean. *Transactions of the Plinian Society* 1829, 34.
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- Baird, W. (1829g). The following observations of solar radiation were made in the Indian Seas by Mr Baird in the year 1828. *Edinburgh Journal of Natural and Geographical Sciences* 1, 176.
- Baird, W. (1830). On the luminousness of the sea. *The Magazine of Natural History, and Journal of Zoology, Botany, Mineralogy, Geology and Meteorology* 3, 308-321.
- Baird, W. (1831a). The Portuguese man of war. *The Magazine of Natural History, and Journal of Zoology, Botany, Mineralogy, Geology and Meteorology* 4, 475-476.
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- Baird, W. (1834). On the aurora borealis. *History of the Berwickshire Naturalists' Club* 1, 46-50.
- Baird, W. (1835). List of Entomostraca found in Berwickshire. *History of the Berwickshire Naturalists' Club* 1, 95-100.
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- Baird, W. (1837). The natural history of the British Entomostraca. *Magazine of Zoology and Botany* 1, 35-41, 309-333, 514-526.
- Baird, W. (1838). The natural history of British Entomostraca. *Magazine of Zoology and Botany* 2, 132-144, 400-412. <https://doi.org/10.1080/00222933809512287>
- Baird, W. (1843a). Note on the luminous appearance of the sea, with descriptions of some entomostracous insects by which it is occasioned. *The Zoologist* 1, 55-61.
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## APPENDIX 3

### Taxa (extant and fossil) incorporating the name of William Baird

Nomenclatural changes are included and are based on WoRMS Editorial Board (2024). Subsequent fossil ostracod taxa names below family level – many exist – with derivative “Baird” roots are excluded, as not specifically honorific of the man. \*Superfamilial ending traditionally used in the palaeontological literature, but now superseded by -oidea, following Article 29.2 of the current *International Code of Zoological Nomenclature* (International Commission for Zoological Nomenclature 1999); †fossil; <sup>a</sup>whichever of these two species names had priority, both names now lapse under synonymy.

#### Cnidaria: Hydrozoa

*Tima bairdii* (Johnston, 1833)

#### Cnidaria: Anthozoa: Scleractinia

*Flabellum bairdi* Milne Edwards & Haime, 1848; now *Truncatoflabellum spheniscus* (Dana, 1846).

#### Cnidaria: Actiniaria

*Balanophyllia bairdiana* Milne Edwards & Haime, 1848

#### Annelida: Terebellida

*Streblosoma bairdi* (Malmgren, 1866)

#### Crustacea: Ostracoda

Superfamily Bairdiacea\* G.O. Sars, 1888; now *nomen oblitum*.

Superfamily Bairdioidea G.O. Sars, 1888

Family Bairdiidae G.O. Sars, 1865

*Cypridina bairdii* Brady, 1866; now *Cypridinodes bairdii* (Brady, 1866).

†*Cythere bairdiana* Jones, 1849

†*Cythere? bairdioides* Jones & Kirkby, 1879

†*Cytheridea bairdioides* Alexander, 1929

<sup>a</sup>*Loxoconcha bairdi* G.W. Müller, 1912; now *Loxoconcha rhomboidea* (Fischer, 1855).

<sup>a</sup>*Loxoconcha bairdii* G.W. Müller, 1912

†*Mossolovela bairdiaeformis* Yegorov, 1953

†*Philomedes? bairdiana* Jones, Kirkby & Brady, 1874

#### Crustacea: Copepoda

*Lernaeonema bairdii* Salter, 1850; now *Lernaeenicus sprattae* (Sowerby, 1806).

*Pontella bairdii* Lubbock, 1853; now *Labidocera acutifrons* (Dana, 1849-1852).

*Pontellina bairdii* Lubbock, 1860; now *Labidocera acutifrons* (Dana, 1849-1852).

*Harpacticus bairdi* G.M. Thomson, 1879

#### Mollusca: Gastropoda

*Placostylus fibratus bairdi* (Reeve, 1848)

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