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THE RAY SOCIETY

150th Anniversary



George Johnston

Portrait of George Johnston, founder of the Ray Society,
engraved from a photograph taken in 1851

IN CELEBRATION OF THE RAY SOCIETY,
ESTABLISHED 1844, AND ITS FOUNDER
GEORGE JOHNSTON (1797-1855)

The Ray Society, named after John Ray (1627-1705), the most renowned of early English naturalists, is celebrating its 150th anniversary this year. It is a tribute to its far-sighted and energetic founder, George Johnston, that a society dedicated to producing scientific monographs which ordinary publishers did not consider to be commercial propositions should, in this celebration year, see its 162nd title, and be as vigorous today as in the heady days of the last century. The Ray Society has never been in business to produce dry or dusty tomes — George Johnston's aim was to launch a self-financing society that would produce well-written, scholarly texts, accurately and extensively illustrated, at a price naturalists could afford. In this aim he was supremely successful.

Before 1800 natural history books had largely been written for the rich, and had often been revered more for their illustrations than their scientific content, which was often entirely lacking. But in the early nineteenth century a new breed of naturalist emerged from the less affluent levels of society, wanting to identify the plants and animals they encountered on land and shore and with a pressing need for authoritative works that would enable them to do so. This period was a vigorous time for natural history, and nowhere more so than in the north-east of England in the border

country of Berwick-upon-Tweed, where the linch-pin for this interest was a young country surgeon, George Johnston.

Johnston was born in Berwickshire on 20th July 1797, where his father was a farmer. On leaving Berwick Grammar School he went to the High School in Edinburgh and then on to the University to study medicine. In 1817 he obtained the diploma of the College of Surgeons. After spending a short time gaining hospital experience in London he began general practice in the Northumberland town of Belford, where he met his wife-to-be, Catherine Charles. In 1818 he went back to Berwick, setting up as a physician, and returning briefly to Edinburgh in 1819 to take his degree of MD. In November of that year he married Catherine and they lived in Berwick for the rest of their lives. Later, in 1824, Johnston became a Fellow of the Royal College of Surgeons of Edinburgh.

Johnston wrote that he took up the study of natural history "as a relief from the idleness of a young practitioner". He had acquired his interest during student days when, with two fellow students William and Andrew Baird, also from Berwick, he had joined the Plinian Society of Edinburgh. This was a general scientific society that included occasional field excursions among its activities. The three men remained friends and on their return to Berwick they continued to meet for similar

excursions, encouraging others to join them. Their meetings were so successful that in 1831 Johnston was encouraged to build a formal society around them, the Berwickshire Naturalists' Club, of which he became the first president. The club was unusual for having full-day meetings, out-of-doors, and always in different localities, and for encouraging women to take part (Johnston was always insistent that "we must not forget the women"). Since the Club had no premises, and did not own collections of specimens or books, the overheads were minimal and subscriptions could easily be afforded. The success of this formula encouraged other naturalists to set up similar clubs in neighbouring counties. Before long there was a nation-wide network of them, most of which flourished throughout the rest of the century, and many have continued to the present day.

Johnston was fascinated by what he found on his excursions, but thoroughly frustrated by the lack of any reasonable or affordable books to help identify his finds. To counter this he made comprehensive lists of species and sought out anyone else who was interested or who could help with identification. He soon found himself at the centre of a group of keen field naturalists and corresponding with specialists and enthusiasts from all over the British Isles. It is through his vivid correspondence, much of it collected and published by his daughter in 1892, that we can appreciate his insatiable interest in natural history and follow his evolving thoughts on how best to make scientific information available to everyone.

Johnston's early collecting trips convinced him of the necessity to list and make notes on all the plants and animals he found, so that he could make his information available to other naturalists. With this in view he contributed to the scientific journals of the day such as Loudon's *Magazine of Natural History*, and also published his own work independently. In

1829 Volume I of his *Flora of the County of Berwick-upon-Tweed* was published, followed by Volume II in 1831. These Floras were no "mere catalogues" but contained careful descriptions of the individual plants and much extra local information, Johnston's intention being to provide a work complete in itself, not one that would send the user "to other works or museums." After the foundation of the Berwickshire Naturalists' Club Johnston took on the editing of the Club's annual *Transactions*, to which he encouraged all the naturalists of the region to contribute, and made it a regular means of communicating records. But whilst he felt "quite satisfied that clubs [such as] ours will produce more effect in forwarding natural history than learned and unwieldy societies", he continued to ponder the basic lack of competent manuals at affordable prices. He was well aware of the advantages that easy access to, or ownership of, a good library conferred and felt very keenly the absence of such facilities, both as a country doctor and as one of the naturalist fraternity. His avid collecting meant he was constantly in need of information, and he was continually thinking of the best ways of making it available. Although catalogues produced by the field clubs were one answer, they were not enough.

Johnston had great energy and an infectious enthusiasm: he must also have been a very confident and enjoyable companion. As a doctor he would visit all who needed him, and it was said that he never entered a house as a physician without leaving it as a friend. He was much loved and the whole town of Berwick closed down on the day of his funeral. As well as having a thriving practice that became the largest in the area, he was very active in the more general affairs of the town. Strongly in favour of municipal and Parliamentary reform, about which there was much agitation between 1830 and 1835, he was a member of many local com-

mittees, an alderman for many years and three times mayor. Unimpressed by social status, he appreciated the gentry if they were sensible and hard working, like his long-standing friend Sir William Jardine, an Edinburgh naturalist who joined the Berwickshire Club in 1832 and was President in 1836. He was not above having a title on a committee if it was useful, but he was not intimidated by the aristocracy. Similarly, he was not in awe of other naturalists or academics: people were judged on merit, not position.

Despite his heavy professional and political duties he gave every spare moment to natural history. It was an interest that took him into the open air and gave him, and the whole of his family, "...our very best and kindest friends". He was devoted to his wife, Catherine, and their four children, and had a very contented home life. Catherine shared his interest in natural history and throughout their marriage she made the illustrations for his books and papers. She also drew the hundreds of specimens he collected and that his many friends sent for identification or discussion. He fully appreciated her labours: "...Few ladies have drawn so much for the illustration of our native natural history". He well realised that in more conventional homes "a well ordered house is more [to] a woman's credit than pictures of Worms and Zoophytes". Although family commitments meant that she could not join in all his field trips she was absolutely essential in supporting and sustaining his work in natural history.

During the early years of the nineteenth century the high costs of printing were slowly coming down. The introduction of lithography refined the way illustrations could be reproduced, making them more scientifically accurate, and also helped to reduce costs, although the savings were not always passed on to the buyer of books. During the 1820s and 1830s Johnston saw what was involved in publishing

as a subscriber, an author and an editor. He followed the collapse of the *Magazine of Zoology and Botany* at the end of 1837 with sadness, and was relieved when the *Annals of Natural History*, arising from the ashes, began to pay. He saw text mangled by incompetent setters and suffered from poorly made illustrations. He also despaired at the turgid way in which many authors wrote.

For Johnston the problem of obtaining books and references became steadily more acute. He was writing to most of the leading British naturalists, exchanging and identifying specimens, and battling with nomenclature and taxonomy. He discussed books particularly with his close friends, William Thompson of Belfast, Joshua Alder in nearby Newcastle and Edward Forbes, who travelled widely. Books were treasured essentials, appreciated and valued for themselves, but primarily as workaday tools. His attitude was not reverential but practical. His letters are full of requests to borrow books; when Thompson or Forbes visited London, he would send them lists of requests and queries to be checked; he would ask them to look for difficult-to-come-by volumes in the British Museum or the Linnean Society or to buy journals on his behalf. He had problems with an unwilling librarian in Newcastle over a loan: "It will do the volumes a deal of good to be aired, I remember when I had them before no-one had ever looked them over, for some of the leaves were uncut." At other times he waited months for a book or journal, hoping it would solve a difficult identification, only to find when it did arrive that it was inadequately illustrated or lacked a full description. It was a particular problem for a man in a relatively isolated town and a general one for all naturalists. In 1834, when he was working on his catalogue of zoophytes, he wrote to Alder: "I have almost daily proof of the want of manuals in every department, for I am applied to, to recommend

the best book on Shells, on Zoophytes, on Worms, on Insects etc., and there are none.”

Always a man of action, Johnston began to canvass the opinion of his friends about his ideas for providing naturalists with the sort of information they so evidently needed. He suggested a series of manuals on marine invertebrate groups such as, sponges, lithophytes, zoophytes, etc: “Each volume will be copiously illustratedas useful as possiblewith descriptions of every species[with] authentic habitats and notes.” Becoming ever more serious, in June 1839 he went so far as to send a fully detailed plan for seven volumes on invertebrates to W H Lizars, his publisher in Edinburgh, assuring him they would pay. The publisher was to underwrite the venture and the author was “to have one-half of the clear profits of the publication.” He intended “to illustrate them copiously with woodcuts and copperplates. The latter will sometimes be coloured—more often plain; ...in some a figure of every speciesin others one only of every genus.” They were to be attractive, popular and useful. Nothing came of this particular plan, but he continued to search for the ideal way to provide naturalists with first-class, accurate and well-researched monographs.

Then, at the end of 1841, matters began to come to a head. Alder had sent some of the nudibranch paintings by his friend and colleague Albany Hancock to Johnston for comment, and for general discussion of the species. Johnston had a long-standing interest in sea slugs, having published several early papers about them, and knew Hancock well. But these paintings completely bowled him over: “....They surpass anything of the kind I have seen in character, and in identifying species will be most useful to future inquirers.” In a long and detailed letter to Alder, in January 1842 when he returned the paintings, he reviewed each of some 20 illustrated species in

turn, giving helpful comments and comparisons with specimens he had found. He was in absolutely no doubt that they must be published: “One naturally looks to Van Voorst as a publisher, but your figures must be coloured.” Johnston gave much thought to the best way of publishing Alder and Hancock’s nudibranchs and urged Alder to get costings from Van Voorst. However, when these were finally obtained, and sent to him by Alder in November 1843, they were too high. Effectively no-one was willing to publish such a work; but Johnston’s long simmering plan was now launched — “Why not publish by subscription? We must have the book,” he was adamant, “I have long wished to propose to establish a Ray Society, at an annual subscription of one or two sovereigns, to print works illustrative of the Natural History of Great Britain, original and old. Had we some 500 subscribers, we could do a great deal; and what a glorious beginning your naked Mollusca would make....” To Thompson he elaborates: “I would propose a double series of works; one original...; another, old works edited by an able hand. Alder and Hancock’s Mollusca Nudibranchia would make a noble beginning.”

Johnston had a very clear idea of the function and constitution of the society he proposed, and immediately set about persuading his friends and colleagues of its merits and gaining their co-operation. Nothing was to thwart his determination and a hastily produced prospectus was sent out just before Christmas 1843. The subscription was set at one guinea. Key friends were detailed to canvass their areas: Professor Babington in Cambridge; Thompson in Ireland; James Bowerbank and Forbes in London; Alder in Newcastle — the list was satisfyingly long and reads like a roll-call of all the leading natural scientists of the time. Initially it had needed all his powers of persuasion and enthusiasm to keep up the momen-

tum. Johnston also had to overcome the reservations of the Linnean, the Zoological, and other established societies, who thought it might impinge on their publications. Hugh Strickland and Professor John Phillips both claimed to have been on the point of launching similar societies to the Ray. Strickland had intended to call his the Montagu Society, but Ray was considered a more appropriate figure-head. It was felt that Montagu might give the impression of marine bias: Ray was altogether a more widely-embracing naturalist. Both Strickland and Phillips wholeheartedly threw in their lot behind Johnston, and Strickland helped him draw up the second prospectus, which was also to be in French and German. With minor setbacks, and in an amazingly short time, the Ray Society was inaugurated on February 2nd 1844, and a Council elected.

Johnston's original plan had been a small council of some fourteen "very good men." To Babington, on the 22nd December 1843, he explained that it should be "composed (not of great men), but of men of good sense and business habits, and with a sufficient knowledge of what they are about to judge of the merits of what they print." In the event there was such enthusiasm that 23 members were elected including Professor Thomas Bell, Professor of Zoology at Kings College London as the first President and James Scott Bowerbank as Treasurer. In his proposal Johnston wrote of Bowerbank: "...His residence in London, and his business habits, make him a very advisable person, and his zeal knows no bounds. Not one of us has worked like him." Bowerbank was an eminent naturalist and microscopist who helped found and support several early societies, the Microscopical, Entomological and Palaeontological as well as the Ray. Johnston and Dr Edwin Lankester, Professor of Natural History at New College, London, were elected joint Secretaries—ostensibly Lankester for

London and Johnston for the provinces. Johnston was also anxious that foreign members should be encouraged, in line with his intention that the Society would provide its members with translations of the best of European science in addition to original and other works. In future years a secretary specifically to recruit and keep in touch with foreign members was appointed.

Although Johnston was cautious, he must have been delighted at the almost immediate success of the Society. Naturalists recognised a brilliant idea when they saw it, particularly those based in London. It surprised Johnston that the "provincials" were initially more reticent. He wrote to Babington on the 1st February 1844 acknowledging that the management would be largely in the hands of the "London men, without whom we can do nothing. The provincialists have themselves to blame; had they come forward as they should have done, we might have maintained some part in the management...." In fact this did not seem to cause any real problems or regrets to Johnston. One of the remarkable things about the birth of the Society was the magnificent level of co-operation achieved and the good humour that marked not just the beginning but also the later period. The speed with which it was able to get off the ground was entirely due to Johnston's years of thoughtful planning which now paid off handsomely; he had thought matters through exceptionally well.

The primary aim of the Ray Society was to encourage and publish scholarly works of merit on natural history that were not necessarily commercially viable. The funding had to come from members' subscriptions and, without compromising the quality, particularly of the illustrations, costs were to be kept to a minimum. The following passage from the first rule of the Society explains more fully: "Its object shall be the promotion of Natural History by the print-

ing of original works in Zoology and Botany; of new editions of works of established merit; of rare Tracts and MSS; and translations and reprints of foreign works which are generally inaccessible from the language in which they are written, or from the manner in which they have been published." It was also agreed that the Society should not produce works that other established societies would normally publish.

The setting-up of the Ray Society had entailed a good deal of work and worry for Johnston, and forced him to put aside many of his other natural history activities. However, although continuing to be very much involved, he soon returned to his old pursuits. Apart from serving as one of the Secretaries, he was appointed by Council in November 1844 "to be their editor and corrector of the press." In his usual businesslike way he immediately sought precise details of the stage reached by the "volumes on hand," keen to get on with proofing. He was, he told the printer, "anxious to have the volumes out, for I receive grumbling letters almost daily." Writing to Alder at the same time, in November 1844, he delightedly told him "that at a meeting of the Ray Society at York, it was unanimously agreed that the Society should undertake the publication of your and Hancock's beautiful work. The Council have since appointed Edward Forbes, Thompson of Belfast, and myself a sub-committee to carry the resolution into effect; and I write to know in what way we shall best meet your wishes." The future of the first monograph was assured.

Within a year membership had risen to over 650. There were grumbles about the initial, and inevitable, publishing delays. Johnston pointed out that, with a subscription of one guinea, no one would be ruined, and if not satisfied with the results there was no obligation to continue as a member. Nevertheless he worried considerably about the delays, and when the Society was

accused of betraying its members begged the printer "to make arrangements to get on," promising that he would "use every effort to send the proofs by return of post." The subscription entitled a member to receive free all publications produced during the year. Although they were not ready until mid-1845, three books were designated for 1844. As well as the first part of Alder and Hancock's *British Nudibranchiate Mollusca*, members had the first of a series of books on the life and works of John Ray and a collection of papers, *Reports on the Progress of Zoology and Botany, 1841, 1842*.

Johnston received his copies of Alder and Hancock and the Reports in August 1845 and wrote to Thompson: "I am delighted with Alder and Hancock, and pleased with the neatness of the 'getting up' of the Reports. We have got our guinea's worth, and it is a proof of the value of numbers. [He had always insisted that there had to be at least 500 members for success to be certain.] I am not aware of any work of equal size and beauty as Alder's that has been published so cheap." He later drew attention to his copy of a *Fauna of Norway* ... "with ten comparatively poor lithographs uncoloured, and it sells for sixteen shillings; at the same rate Alder and Hancock's number might have been charged two pounds." There is no doubt that members certainly did get good value for their subscription.

Johnston could now begin to relax. In January 1846 plans were racing ahead for future publications: "I expect every week to receive.... number two of Alder and Hancock's work: "Memorials of Ray," and "Steenstrup on the Alternation of Generations." We have in the press, or ready for it, Burmeister "On Trilobites," a new edition by the author; Meyen "On the Geography of Plants," translated by my second daughter [Margaret, born 2nd May 1825]; Aristotle "On Animals," with notes; Linnaeus "Swedish Tours," hitherto unpub-

lished, except in Swedish [and German]; and several others of great interest; and so I hope we shall prosper.”

All Johnston’s friends, and most of the contemporary naturalists, vigorously supported the new Society. Original books were offered, translations were undertaken, and specialist editing provided. Johnston himself did not contribute a volume to the Ray Society, but several of his close friends did so. As well as Margaret’s translation of Meyen, Edward Forbes contributed to the translation of Burmeister, and in 1848 his monograph on naked-eyed medusae was published; Jardine, with Strickland, edited Agassiz’s catalogue of zoology and geology books, tracts and memoirs, 1848-1854; William Baird, Johnston’s friend since student days and an original member of the Berwickshire Naturalists’ Club, published a monograph on British Entomostraca in 1850. Thompson, Forbes and Johnston vigorously guided Alder and Hancock through the press between 1844 and 1855, though sadly all three were dead before the final part appeared in late 1855. Thompson died in February 1852, Forbes in November 1854 and Johnston in July 1855.

By 1847, 868 members had joined. This was probably the largest number in the Society’s history, but membership remained healthy until the First World War. Richard Curle, who wrote a bibliographical history of the Society in 1954, recorded that numbers fluctuated in the 200s between 1919 and 1939 only to plunge to their lowest-ever level, of 171, in 1941, in the middle of the Second World War. By 1954 they had climbed back to 450. Today the total is approximately 400 and numbers are increasing once again. Two volumes have been published during 1994, there are another two monographs approaching proof stage, two more in preparation and several others under discussion. At the present time the Society is extremely vigorous and its finances are strong.

The subscription of one guinea, with the issue of free books and the right to buy, at 20% discount, a copy of any volume still in print, continued until 1961, when it was raised to two guineas. Then in 1975, as printing costs spiralled, the subscription had to be increased to £4.00 and members no longer received free books; instead they were offered volumes at a special pre-publication concessionary price (approximately at cost). The right to a 20% discount on extra copies, however, continues. Institutions that set up standing orders are entitled to a 20% reduction on the normal retail price. Authors have always received 20 free copies of their books.

Over time the number of books published each year has fluctuated and in some years publication had to be held over while funds built up to cover printing costs. It is clear that it would not have been possible for the Society to survive on subscriptions alone, and over the years it has had considerable help from both internal and external sources. Many authors have made donations, and individual members have frequently contributed for specific purposes. The Royal Society has been particularly generous, awarding numerous grants since the 1880s. The Carnegie Trust has also supported the Society; and monies have been received annually from the Young Bequest since 1934. In 1973 and 1979 the Society undertook publication of *British Tortricoid Moths*, Vols 1 and 2. This was a monumental work, with a wealth of beautiful illustrations, and was extremely costly to produce. Fortunately the Society again had very generous support from various institutions including the Royal Society, the John Spedan Lewis Trust, Imperial Chemical Industries Ltd, the Worshipful Company of Armourers and Brasiers, the Professor Hering Memorial Fund, Shell Research Ltd and Ciba-Geigy Ltd. Very many individuals also gave financial support for these volumes or helped in other ways. As a

registered charity the Society has benefited from covenants given by ICI and Courtauld. Additional income is generated from the sale of books at commercial rates to non-members and small sums are derived from royalties. As with Johnston's Berwickshire Club, the overheads of the Society are minimal. The Ray Society is purely a publishing society, the Officers are honorary, and it owns no premises. It relies on established institutions like the Linnean (in the last century), and the Natural History Museum (today), in which to hold its half-yearly business meetings, at which the progress of new books is reported and potential volumes are discussed.

Johnston's dynamic personality captivated his friends and was an inspiration to many naturalists, young and old, long after he had gone. Although Alder and Hancock's splendid work on the "naked Mollusca" sparked the formation of the Ray Society, even without them Johnston would surely, sooner or later, have launched such a body. However it was their work that marked the beginning of a new approach to the presentation of scientific investigation and to its publishing. It was a truly "noble beginning."

To celebrate 150 years of its existence, the Society is reproducing ten illustrations from seven of the early monographs, as eight facsimile prints. All these monographs are classics of natural history. Nomenclature and taxonomy may change and new species are constantly being discovered, but nonetheless these particular books are, like so many of the Ray Society publications, still indispensable tools for both the amateur and professional naturalist.

Modern technology means that these illustrations can be reproduced in all their original beauty, colour and accuracy, and at reasonable cost. This same technology is part of the latest revolution in the publishing and dissemination of scientific information. It would have fired George Johnston with fresh delight. We now have at our disposal a range of technological innovations: for communication – fax, e-mail and internet; for structural exploration – scanning electron microscopes and sophisticated imaging techniques; for information storage and retrieval – laser disks and CD-ROMs. One can be sure that the Ray Society will adapt to these exciting developments in the years ahead.

Elizabeth Platts

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