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Author(s): Fraser-Jenkins, C. R.

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**The Rediscovery of two Lost 19<sup>th</sup> Century Fern Books by Moore and Wallich**  
**- C.R. Fraser-Jenkins, e-mail: [chrisopteris@yahoo.co.uk](mailto:chrisopteris@yahoo.co.uk)**

A recent programme of taxonomic research on pteridophytes undertaken by the author at the Botany Dept., Natural History Museum, London, under the Museum's special funds Research Curatorship Bursary scheme, has coincidentally resulted in the rediscovery of two unpublished works of major importance to pteridology in Asia. Both are by the most important botanical authorities of the day working on ferns, and their discovery is of much value to help clarify concepts and details that were often subsequently confused over the next century and a half.

The first is Thomas Moore's unpublished hand-written copy continuing on from his uncompleted *Index Filicum* (1857-1862), this contained letters A-G, stopping half way through *Goniophlebium*. The unpublished part contains letters G-Z, in a near perfect state of preservation. This has been located by Mrs. K. Pickard, the archivist at the Royal Botanic Gardens, Kew, at the request of the present author, following mention of its existence by Underwood (1905), who wrote "The MSS. of the remainder is preserved at Kew". In that paper Underwood went on to say, "Many have asked, Why should this not be published now? There are many reasons, and among them either one of two should decide the question in the negative. (1) Over three thousand species of ferns have been published since Moore's publication ceased. It would therefore contain less than half of the known species of ferns and so would be notoriously incomplete. (2) In Moore's time the idea of type localities had not become so all-important in the matter of systematic study of ferns as it has at the present time. No index can be regarded adequate for modern use that does not give, in addition to its citation, the type locality, *i.e.*, the source from which the species was first described." However the main value of this manuscript at present is quite different from what it was in 1905, before the advent of Christensen's *Index Filicum* (1905-1906), when Underwood was writing and a comprehensive index was needed. He evidently did not realise the unique value of the painstaking accuracy in identification carried out by Moore, who had first-hand, authentic knowledge of most of the taxa listed. He was able to draw on authentic material of authors such as Don, Presl, Kunze, Mettenius, Fée and others whose names may have often been confused or specimens lost in modern times. Because of this his opinion is today of great value in helping to identify or confirm the identification of many names previously beset with uncertainty. Its incompleteness and frequent lack of mention of the type locality is hardly of so much importance now that Christensen's Index fulfils that need (though the less informative modern supplements to it unfortunately fail to identify names). In contrast to Underwood's claim that many botanists were aware of it, it has to be said that no other pteridologists, at least since the start of the 20<sup>th</sup> Century, seem to have known of the existence of this work, of which the author has never come across any other mention in the literature. Today the decision not to publish it seems as inappropriate as it must have been in Moore's day and given the excessive rarity of the published part it would present a useful opportunity to republish the whole work in one. The only other *Index Filicum* from that time was a small and incomprehensive work by Kunze (1850), an index of cultivated ferns from Berlin and other German botanical gardens as they were before their destruction in the two World Wars.

Moore [1821-1887] was the distinguished pteridologist and Curator of the Chelsea Physic Garden, London, from 1848-1887 (Desmond 1994, Laird 1988) and was in touch with nearly all of the contemporary pteridologists of his day. The publication of the exhaustively detailed first part of his Index was discontinued following the retirement of the editor, William Pamplin, from the publishers, Williams & Norgate, but Moore had also prepared the rest of the Index to await publication. This large bound, hand-written volume (and its published first part) contains reference to all of the names of David Don. Most, but not quite all of which were carefully identified by Moore as a result of his near contemporary knowledge of them, as of most of the species published in the early 19<sup>th</sup> century. Don [1799-1841] was the author of *Prodromus Florae Nepalensis* (1825), that contains many early fern names that have subsequently been much confused and are now often dubious and the source of considerable error and open-ended nomenclature. Moore evidently did not ignore them, unlike several of Don's contemporaries, who were upset by his work. The continuation of the Index is thereby potentially able to clarify one of the last major lacunae in Asian fern nomenclature, currently under study by the present author (Fraser-Jenkins, in prep.), which has been a perpetual source of unsolved nomenclatural error. Moore's Index is actually a

considerably more detailed work than the subsequent *magnum opus* of widespread present-day use, Carl Christensen's (1905-1906) *Index Filicum* and its modern supplements to date. It contains far more and more accurate detail of early 19<sup>th</sup> century and late 18<sup>th</sup> century works, than that does and also includes invalid and infraspecific names, but it has only been of limited use so far due to its being only a fragmentary work. The unexpected rediscovery of this work after a gap of 150 years is of major importance to pteridological research. It is hoped that it may be digitally reproduced if funds can be found, and subsequently made available in print, as Moore would doubtless have wished, as a continuation of his unfinished Index.

The second discovery is perhaps even more spectacular. The present author was kindly permitted preliminary access to two archival cupboards in the library of the Central National Herbarium at the Botanical Garden, Sibhpur, Calcutta, in July 2003. (While in the process of shipping his own botanical library from Wales to Kathmandu, as a follow-up visit on his return from his research programme in London). It turns out that unknown to any botanists, either modern or historical, Nathaniel Wallich actually wrote a complete account of his ferns under the names he had listed in his *Numerical List of Dried Specimens of Plants in the East India Company's Museum* (1828-1831). Wallich [1786-1854] was the famous Director of the Botanical Gardens, Calcutta, for the East India Company, from 1814-1846 (first as acting Director), who carried out the major early study of Indian botany, following on from William Roxburgh [1751-1815], with whom he worked. Among other places, he visited Burma (Myanmar), India (especially Bengal and N.E. Assam), Malaya and Nepal (the latter from 1820-1821) and sent many now well known collectors from Calcutta to numerous other areas. Although he produced what is probably one of the most superb botanical works ever produced, his *Plantae Asiaticae Rariores* (1829-1832), the great bulk of his far reaching botanical discoveries were never fully prepared by him. They were merely named and listed in his List, or Catalogue, where they are almost all invalid *nomina nuda*. Many later authors subsequently published and validated his species, but considerable confusion resulted due to the names quite often being taken in different senses by these and subsequent authors. This applies especially in pteridophytes and thus the discovery of Wallich's detailed work on ferns is of much importance in allowing us to know definitively what he himself actually meant by and thought about his species, with his original descriptions, localities and comments. It is a finely bound volume in a good state of preservation, though not as robust as Moore's unpublished book, due to conditions of storage and the difficult local climate. It contains in clear handwriting, ready for publication, detailed descriptions in Latin of all his species of ferns, together with details in English of exactly where and through whom they were obtained and how they relate to other species. Opening the wrapped packet labelled "Manuscript 49" revealed the totally unexpected existence of this volume, *Felices*, by Wallich, much to the present author's excitement and almost shock - so much so that he could hardly believe what he was seeing! It has the reference "WAL-M Acc. no. B-13014" and was most probably written in about the mid 1830s. On this visit the author was only able to make a brief perusal of it, immediately recognising the names and the context of many of Wallich's comments. It is hoped that he may be able to list the species and copy some of the important comments at a later stage. It is also much to be hoped that the eventual publication of the volume may be initiated by the Botanical Survey of India. Thus it is not yet known to the author whether Wallich made further comments on the species Don published from his collections, or, hopefully, made mention of some of Don's names, despite his annoyance with Don's work, in the synonymy he gives; but it is obvious that this work is highly relevant to an understanding of not only his own, but also Don's species.

The author was also able to locate there another wrapped packet containing a bound volume "Dr. Wallich's correspondence index 1794-1832" [these dates are as written on the cover, but the contents are from 1817-1832]. This lists all his inward and outward correspondence by date, with the names and usually a brief comment on the subject of the letter. Its state of preservation is fairly robust. A few of the actual packets of his letters ("Dr. Wallich's correspondence 1832-1833" in packet 18, and 1833-1834 in packet 19) are also housed in the same cupboard, but the remaining volumes from 1817-1833 and 1834-1846, with other packets, are apparently in the library of the office of the Botanical Survey of India, Brabourne Road, Calcutta, and have not been seen by the author. The letters themselves are bound in volumes and wrapped in thick, brown paper packages (to which we owe their survival) and are relatively easily legible to him. They contain many detailed accounts of Wallich's journeys and discoveries and include correspondence from the major British-Indian and international botanical etc. figures of his day, and are themselves of major interest and botanical importance. They have never been drawn on by any workers apart from Gage

& Burkill's (1916) study of his correspondence from Dr. William Jack, who reached the Nepal *terai* and lower foothills in 1815 as an army doctor to the British force during the Gorkha War, and sent a few collections to Wallich. These now in a seriously fragile state, urgently need digital photographing and conservation by experts before this unique insight into early Indian botany is lost forever. Wallich's letters and papers were returned to Calcutta as a gift from the Linnean Society in 1887 (see van Steenis-Kruseman & van Steenis (1950: 557), drawing from earlier sources at Kew). However it unfortunately resulted in their effective loss to botany for over 150 years and in the fact that their very survival is now extremely tenuous. Most workers are apparently unaware of their existence, as well as unable to decipher the old writing, nor is there any plan for their recording, conservation and publication, which should clearly be undertaken as a programme of first priority.

The Index, which itself has an index by name at the end, shows that the letters include all the remarkably abundant correspondence, written from 1817-1824, to and from Colonel the Hon. Edward Gardner [1784-v.1824]. He was a younger son of the 1st Baron Gardner of Uttoxeter, and was stationed in Nepal as the first permanent British Resident (an early equivalent of today's Ambassador), following the Treaty of Sugauli in 1815, between the British and Nepalese. Capt. Knox had been an earlier Resident, when Buchanan went there in 1802-3, but was obliged to retire in 1803, when Jung Bahadur Rana came to power in Kathmandu and could not trust British intentions in Nepal. Gardner preceded the great diplomat, zoologist, scholar of Buddhism, orientalist and antiquarian, Brian Houghton Hodgson [c. 1800-1894], who was Assistant Resident at Kathmandu from 1820, and then Resident from 1833-1846, whom he had initially trained in the rôle. Gardner soon became an accomplished amateur botanist-collector himself, recording his many new discoveries and details of excursions, routes etc., with considerable interest, as can be seen in these letters, and sending the collections down to Wallich in Calcutta between 1817 and 1819, when they became part of the Wallichian herbarium. Wallich's letters also include correspondence on Feb. 15<sup>th</sup> and 22<sup>nd</sup>. 1819 from Francis de Silva at Kathmandu, described there as "collector in Nepal", who was a Goan Indo-Portuguese assistant-botanist and collector at the Garden in Calcutta (he was later sent to collect by boat at Pundoa, Sylhet, N.E. Bangladesh), his father having been a collector for Roxburgh. Wallich had sent him from Calcutta with another collector, Bharat Singh, to collect plants in Nepal in 1817 (see Desmond 1992: 132). However, Gardner and the staff he employed, including particularly his Assistant Resident, Robert Stuart [d. 1820] evidently made the main collections in Nepal. Between 25 Sept. 1817, when Wallich's correspondence with Gardner began, and 7 Feb. 1824, when it ended (and he began to correspond with Brian Hodgson instead, as from 30 March 1824), the Index records some 135 items of correspondence with the "Hon'able E. Gardner", and from 1 April 1819 to 20 Jan. 1820, some 39 with "R. Stuart Esqre", from the "Katmandoo Residency, Nipal", both of whom wrote to him with lists and details of plants they had collected. Robert Stuart died of fever, presumably malarial, he had caught in lower Nepal, and Wallich sadly recorded the "last letter I ever had from him!" from Camp Bechiaco in the Nepal *terai*, on 8 Feb. 1820. He added the details of the inscription over his grave at the Residency, near Kathmandu, as follows "Robert Stuart, third son of Sir John Stuart Bart. of Allenbank in N. Britain [by which term they tended to refer to Scotland at that time], died 14<sup>th</sup>. March 1820". It appears from the letters that some ill feeling may have occurred at the time between Wallich and Gardner over Stuart's death, which occurred while he was on his way to meet Wallich on his arrival in Nepal.

The author has also received details of some of Wallich's letters to Sir W.J. Hooker at Kew from the Director's correspondence, Kew, vol. 52, kindly sent to him by Professor D.J. Arnold, of Imperial College, London. These and others are also cross-referenced in the Index to Wallich's correspondence at Sibpur. Thus in his letters to Hooker of 2 Sept. 1818 and 13 Oct. 1818, Wallich mentions having sent over 1,000 species from Gardner's collections, including ferns and mosses, to Hooker, and praises Gardner's "matchless" specimens. He also informed Hooker in the second letter that Gardner had recently been on an expedition to the snowy mountains of the Himalaya and sent more "invaluable treasures", while not having pretensions to be a botanist himself. A further letter from Gardner in the Wallich correspondence Index at Calcutta, of 15 Sept. 1818 may shed some light on this as it is logged as being "with list of places from Katmandoo to Gossainthan [just south of the Langtang Valley], and remarks on the route". It is unfortunate that when Wallich returned to London in 1828 with the much larger bulk of the later collections he had not already sent out, he was rather ignored. These earliest, unnumbered plants were not the ones included in Wallich's List and were not referred to by the numbers in the List. Although he named some species after him and praised his collections (for example *Coelogyne gardneriana* Wall. and *Hedychium*

*gardnerianum* Wall., in Wallich's *Plantae Asiaticae Rariores* 1: 33, t. 38; 2: 31 (1830, 1831) and mention by Hooker, *Musci Exoticae* 2: t. 146 (1820)) Gardner's name became submerged under Wallich's in subsequent work by many authors, including Don, who did not credit the collections to him. In some ways he is today the "lost botanist" of Nepal and most histories of botanical collection in the Indian subcontinent and Nepal jump from Buchanan to Wallich's visit with no mention of Gardner's important collecting work in between. It would be more accurate if future lists of collectors gave equal place to the collections of Gardner & Stuart between those of Buchanan and Wallich.

Yet, perhaps accidentally, Gardner's visit and collection in Nepal may actually be of more taxonomic importance for Nepal and India today than Wallich's visit there was, due to the intervention of Don (at the instigation of Lambert), whose work pre-empted much of Wallich's later work. It was in fact Gardner and Stuart's early Nepalese collections (and not Wallich's numbered material from his List) that became the material worked on by Don for his *Prodromus*. Wallich had sent a full set of them to Aylmer Bourke Lambert [1761-1842], a remarkable private botanist, for whom Don was librarian at his Museum in London. Don was the first author to describe many of the most distinctive and obvious species from Nepal and the specimens he quoted under the name of Wallich were entirely from Gardner and Stuart (and some from de Silva & Singh's collections). These are now preserved in the BM, labelled as *Wallich* [herbarium] without numbers, but with the years 1817, 1818, or 1819, and often with notes on their native names (? in the Newari language, of central Nepal) and uses. Some further sets also found their way via other purchasers of Lambert's herbarium material to CGE, OXF, P, FI and perhaps other herbaria.

Don's other cited material was that of Dr. Francis Buchanan [1762-1829] (later Hamilton, on succeeding to Leny Castle, near Callander, Scotland, in 1820). He was superintendent at Calcutta between Roxburgh and Wallich, from 1814-1815, who was the first to collect in Nepal, from 1802-1803 (see especially Prain 1905, van Schendel 1992, Allen 2002: 8-21 etc.). Buchanan's (1819) *An Account of the Kingdom of Nepal* is a finely detailed description of his journey to Nepal and a classic historical account of the country. His material (a second set - the other being sent to Sir J.E. Smith at the Linnean Society) was also sent to Lambert and is now at BM, following their sale in 1842, on Lambert's death. Lambert had initiated Don's work mainly in order to catalogue the Buchanan collections, as well as the remaining Nepalese collections in his herbarium. It was perhaps mostly as a result of the independence of Lambert's private work and set up that Don's *Prodromus* cut across Wallich's slower ongoing work so unfortunately. As a result Don was severely criticised by Wallich, Lindley and others (even Buchanan himself having some misgivings, see Desmond 1992: 132), and his species tended to be ignored by the established botanists of the day, who could hardly criticise the great scientific patron, Lambert, himself. But Don certainly cannot be imagined to have had such intentions and indeed soon went on to become an honoured and established figure in the botanical world revolving around mid 19<sup>th</sup> Century London.

Along with the letters etc. at Calcutta were a number of other interesting packets containing manuscripts and books, such as Wallich's *Synopsis Plantarum (Roxburgh, Colebroke, Wallich)*; Griffith's *Icones Plantarum Asiaticarum* (1851) and treatise on Plant Galls; Horsefield's *Plantae Javanicae Rariores* (1838); Roxburgh's *Plants of the Coast of Coromandel* etc.

The unexpected discovery of these missing works opens up substantial new sources for our understanding of the pteridological nomenclature of the first half of the 19<sup>th</sup> Century, and, in particular for Asian pteridology, as well as Asian botanical history. In many years of research, the present author has not come across such major new sources of important information in this field. However their discovery and the condition the letters are in, in particular, also raise various worrying concerns. The first concern is whether they can be recorded clearly, perhaps by means of digital photography, before they deteriorate any further. Due to their fragile state, the author did not wish to handle the letters (except the more robust Index) more than a very minute amount, and it is hoped that they may not be handled again except by conservation experts and for the purpose of a programme of digital photography. Their recording is to be considered a matter of near emergency, as it is much to be doubted whether they will remain in fit state for such work for any longer than another decade, or possibly two. The books, by contrast, are strong enough to be handled more frequently, as with other archive material, but again need to be recorded as soon as possible. The second concern is whether any programme could be initiated to ensure they could be typed and published within a reasonably short time frame. The informational content is obviously not merely an institutional or even national treasure, though the original documents may be considered so. It is a clear duty to science

that the information is published and made available internationally as soon as possible, and it is therefore desirable that co-operation, international or otherwise, is accepted for the purpose of disseminating this cosmopolitan heritage. It would be a seriously blameworthy tragedy if any of these documents is merely sat on and hoarded for whatever reasons now that they have come to light. It is much to be desired that the institutions concerned will rise to the challenge and do their best to set up the required funding and expertise to make them widely available to botanists and historians through recording and publication.

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