

## Notes on the botanical drawings in the Central National Herbarium, Botanical Survey of India, Howrah

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*A rapid, three-day, survey was made of the collection of botanical drawings in the Central National Herbarium (CNH) of the Botanical Survey of India, Howrah. The aims were to identify the major groups of work and establish their chronology, and to record the names of as many artists as possible, of which 33 were noted dating between c. 1787 and 1935.*

On 6, 7 and 10 February 2020, I was privileged to spend three days looking through the illustrations collection preserved in the archives of the Central National Herbarium (CNH) of the Acharya Jagadish Chandra Bose Indian Botanic Garden, Howrah (historically the 'Calcutta Botanic Garden', which will be used here in a historical context). In the short time available, only a rapid scan through the whole collection was possible (the Roxburgh Icones, being comparatively well known, were not examined) (note 1)<sup>1</sup>. It has recently been stated that the collection contains 3169 paintings and 476 pencil sketches (note 2), but this is probably an underestimate as in 1895, there were said to be 6–7000 (ref. 2), and in 2008 'over 10,000' (ref. 3). The family with the biggest representation, approximately 1500 drawings, is Orchidaceae<sup>4</sup>. The major aim was to try to understand how the collection was built up over a period of about 150 years, but more particularly to try to discover more about the Indian artists who made the works, at the very least their names (note 3). A further aim was to see how the collection relates to the similar one of what, until 1947, was seen as the Garden's sister organization, the Royal Botanic Gardens Kew. During 2018 and 2019, I catalogued the Kew collection of Indian drawings, which allowed me an understanding of many aspects of the Kolkata collection that would not previously have been possible.

It should be noted that whereas the Roxburgh Icones have always been valued, it was only during M. Sanjappa's tenure as Director of the Botanical Survey of India (BSI) that the much larger part of the collection was rescued from obscurity, reassembled and arranged in a usable form, with some basic and much-needed conservation undertaken. As Sanjappa pointed out, 'with the leaving of the last British Director [in 1935] ... everything went into hiding' and with the revival of the BSI, post-Independence, priorities initially lay in other directions<sup>3</sup>.

Although the following notes are merely preliminary, they seem worth making available as a framework for an in-depth study of the collection and the artists represented. The notes are arranged under the headings of the Superintendent/Director in the post when the drawings were made. It is with some regret that prominence appears to be given to the commissioners rather than to the artists, but the 'reigns' of the 'bosses' provide a useful chronology. If only more could be discovered about the artists, it would be most satisfying if the notes were to be reordered with *their* names as headings. In 2008 Sanjappa expressed the hope that by making the collection better known through the press and by publication, that information might be forthcoming from descendants of the artists who did the work, but it seems that this remains only a hope.

The drawings are attached to backing sheets and bound in portfolios, which means that any annotations on the verso are not visible (though readable by holding the sheet against the light); the recto annotations tend to be rather minimal (mainly plant names added by generations of botanists) though many of those from the late nineteenth century do bear artists' names. The non-Roxburgh drawings occupy approximately 45 portfolios, each stored in a drawer, with 10 additional drawers containing miscellaneous material including books, prints and some original drawings. Since my visit, the whole collection has been digitized and made available online (note 4).

### Drawings by the Garden's artists

#### *Francis Buchanan-Hamilton (1814–5)*

Though he had long wanted to succeed William Roxburgh as Superintendent and, since 1807, had an official appointment to do so, by the time Roxburgh left India in

1813, it came too late for Buchanan; he held the post for only 15 weeks from October 1814 to February 1815. During this time, he was still employing the artists **Vishnu-prasad** and **Haludar**, who had been with him since the start of his great Survey of Bengal in 1807, and who, during these few months, made 16 drawings of fish and six plants in the Botanic Garden. Buchanan was ordered to leave these and the rest of his Bengal Survey natural history drawings with East India Company (EIC) officials in Calcutta. Wallich, who had temporary charge of the Garden (and at whose instigation the order to retain the drawings had come), was given charge of the drawings, which he took to the Garden. On his return to Britain, Buchanan persuaded the EIC to instruct Wallich that copies be made of the drawings and that the originals be sent to London. The copying took place largely under the guidance of James Hare, who temporarily succeeded Buchanan and Wallich as Superintendent: the original drawings were received by the India Library in July 1817, and Wallich seems to have taken the set of copies to London in 1828 with the rest of the Garden's drawings. Two of the copies would be returned to the Calcutta collection in the 1880s or 90s and will be discussed later.

#### *James Hare (1816)*

James Hare had temporary charge of the Garden in 1816, and it fell to him to supervise copying the contentious Buchanan botanical drawings (note 5). It was not previously known that Hare had continued Roxburgh's example of having drawings made of plants growing in the Botanic Garden. Wallich appears not to have gotten on with Hare, which might explain why he left Hare's commissions behind when he took the rest of the Garden's drawings to London in 1828. Seventeen drawings in the CNH collection are annotated with Hare's name,

including some of the plants sent by Matthew R. Smith from Silhet. One of *Hyoscyamus* is annotated as having been given by the Countess of Loudon, wife of the Governor-General, the Earl of Moira, both of whom had serious botanical interests.

As will shortly be seen, these few drawings, with the Roxburgh Icones, mark the end of the first period of the Calcutta collection, dating between ca. 1787 and 1816.

#### *Nathaniel Wallich (1817–46)*

After a short period of temporary appointment, Wallich held the position of Superintendent from 1817 to 1846 and proved to be one of the most significant holders of the post. He greatly extended Roxburgh's programme of using the Garden as a base to explore the flora of India and SE Asia and built up the team of artists that by 1827 numbered 20. The exploration was by means of collectors employed by the Garden, his own excursions (especially to Nepal in 1820/1 and Burma in 1826/7), and with contributions from EIC employees stationed in remote parts. The result was the accumulation of an extremely large herbarium, which he took to London in 1828, along with 1200 of the Garden's drawings. During Wallich's leave, the specimens were curated in London and distributed, whereas the drawings remained in the India Museum at the EIC headquarters in Leadenhall Street. In 1879, when the museum, after many intervening moves and prunings, was finally dispersed, its botanical drawings were given to Kew (note 6).

Although Wallich is well known for having credited his artists when publishing their work in his *Tentamen Florae Nepalensis Illustratae* (1824, 1825) and *Plantae Asiaticae Rariores* (1829–32), he only ever named two: Vishnuprasad and **Gorachand**. These must have been the master painters; junior artists working under them received no credit. Vishnuprasad and Gorachand accompanied Wallich to Burma (where Gorachand, then the more senior, died), and both were almost certainly also in Nepal. However, it is known that the Garden's entire team went to Nepal (accounting for the many works that, from the plants depicted, must have been made, or at least started, there).

However, the names of some of the more junior artists can be discovered from drawings now at Kew, which date from the period when five artists were lent from Calcutta to the Saharunpore Garden during Wal-

lich's absence in London. Initially, under John Forbes Royle (who left India in 1831), the artists remained for an unknown period under his successor, Hugh Falconer. Only three names appear on drawings made for Royle: Vishnuprasad, **Lutchman Sing** and **Bhaguban** (note 7), presumably by then the most senior. However, seven names appear on drawings from Falconer's time: **Rajbullub** and **Bhoekunt** may have been the other two Calcutta artists; the Muslim artists **Kasim Ali** and **Karim Bux** may have been locally employed.

Wallich returned to the Superintendentship of Calcutta in 1832 without the herbarium or drawings assembled during his first period. It is not known when the artists returned to Calcutta, but they certainly stayed at Sharunpore for some time judging from the number of drawings they produced there under Falconer. On return, they resumed their production of drawings, but on a much smaller scale than in the period 1817–28. Some of these are inscribed 'Wall. P[raefecti]' and perhaps the last of them (*Tacca pinnatifida*) is annotated 'Wall. P. 1844–6'.

After the hiatus caused by the removal of the 1817–28 drawings, these commissions from Wallich's second period represent the start of the bulk of the present collection, which would continue for a further hundred years. Two of Wallich's artists (Lutchman Singh and Bhaguban) were still working in Griffith's time, so their names appear on works in the CNH collection, but there is no record of when Vishnuprasad retired or died.

#### *William Griffith (1842–44) and John McClelland (1846–48)*

Griffith was one of the greatest botanists ever to have worked in India. Trained in London under John Lindley, he took an interest in taxonomy and the developing fields of physiology, ecology and microscopy. The young man met Wallich during the latter's home leave and even provided microscopic drawings for one of the plates of *Plantae Asiaticae Rariores*; though sadly, the relationship would later turn sour. Griffith was initially posted to Madras but was fortunate to be appointed surgeon on a series of 'missions' that took him to areas previously unknown to Western botanists, including Afghanistan and Bhutan. Throughout these travels, Griffith wrote detailed botanical notes and made outstanding drawings, only a fraction of which were published during his lifetime. The falling out with Wallich

began on a 'deputation' to find wild tea in Assam in 1835 when their abilities (pedestrian v. genius) and outlooks (old-fashioned v. progressive) proved deeply incompatible. It all came to a head when Griffith was appointed to take over the Calcutta Garden during a sick leave of Wallich to the Cape of Good Hope between 1842 and 1844. Griffith took the opportunity to make sweeping changes, destroying picturesque elements to turn the Garden into a living textbook; when Wallich returned, he wept. Griffith was then appointed to Malacca, where he died in February 1845, aged not quite 35. Wallich's days were also over; he retired to London, and his post was given temporarily to the Scottish surgeon John McClelland. McClelland's interests were primarily geological and zoological, but he revered Griffith and wanted to preserve his friend's memory by publishing all his manuscript notes and drawings. Between 1847 and 1854, the result was six volumes of text (diaries, collecting notes and plant descriptions) and 783 plates of complex drawings in five volumes (one devoted to palms, the rest to other flowering plant families and cryptogams).

Griffith's original drawings had to be reworked prior to lithography, though three pages from his sketchbooks survive in the CNH collection (note 8). Both the redrawing and lithography were undertaken by the Garden's team of artists, with the benefit that their names are recorded on the drawings. Three of them, Rajbullub, Bhagowan and Lutchman Singh, have already been encountered, but two new names appear – **Madhub Chandra** and **Hurymohan**, who must have been appointed after Wallich's return in 1832. These drawings, some coloured, others in ink and pencil, are exquisite but were regrettably made on low-quality paper – probably not intended to last, a mere stage in the lithographic process – and are, therefore, in extremely poor condition. Furthermore, perhaps as part of the transfer process to the lithographic stone, the drawings were brushed over with an unknown liquid that has discoloured badly.

#### *Hugh Falconer (1848–55)*

Hugh Falconer, though primarily remembered as a palaeontologist, was also a considerable botanist. The neglect of his botanical work is large because his extensive herbarium collection from NW India was one of the biggest losses when stored in dreadful conditions in the basement of India House

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in the 1840s (note 9). However, recent cataloguing at Kew of the drawings he commissioned while at Saharunpore has shown how serious his botanical interests were; he was also scrupulous about crediting drawings to artists. Falconer was appointed to the Calcutta post in 1848 and continued to commission work from the Garden's artists during his seven-year stint, some of which are annotated 'Falc. P[raefecti]'. The largest number depict orchids (and also aroids) which Sanjappa<sup>4</sup> noted were among the finest in the collection. However, three drawings bear Falconer's name dating from his earlier Saharunpore period, sent by Kew in the 1880s. A fascinating drawing from the Falconer period is one of *Banisteria* signed by Lutchman Singh and dated 1855, by which time Singh had been associated with the Garden for at least 25 years, though it would not be his last work.

### Thomas Anderson (1861–68)

Despite suffering from ill health, having to deal with two cyclones that devastated the garden during his relatively short tenure, in addition to taking over the Bengal forest department, and a trip to Java concerning cinchona, Anderson seems to have been particularly active in commissioning drawings, and the standard remained extremely high. Anderson's botanical specialism was in the family Acanthaceae, of which there are many drawings; but from annotations, he also, like Falconer, took a great interest in orchids. The names of several artists are given on drawings of his period, though what must surely be the last of Lutchman Singh's (*Hedygium thyrsoforme*), dated October 1863, represents the end of a more than thirty-year career (unless there was more than one man of the same name). Also recorded from this period are names **Ramtaruk**, **Ramnauth Banerjee**, **Golam Ruhoman** and 'Ghopaul' (presumably **Gopal Chandra Das**). Anderson had to retire due to ill health in 1868, and the names of several more of his artists are to be found on drawings made under his successors.

### Charles Baron Clarke (1869–71)

Although an exceptional botanist (who would later contribute significantly to Hooker's *Flora of British India*), Clarke's job in India was as a maths lecturer at Presidency College (and later as a schools' inspector), and his appointment to the Garden was only

as a locum. Nonetheless, while there, he actively commissioned drawings from artists who must have been appointed in Anderson's time. In the CNH collection are many of the original drawings for Clarke's *Comelynaceae et Cyrtandraceae Bengalenses* (1874), a Government/Garden publication in which fine original watercolours were reproduced as very basic, uncoloured line lithographs by the Government lithographers. Gopal Chandra Das seems to have been the senior artist involved, as he is named an artist on all except two published plates. The original drawings, however, tell a different story and are signed by four other artists: **Kedarnath Dass**, **Chuni Lal Dass**, **Tulsi Das Pal** and **Kali Das Pal**. This is the first appearance of the name 'Dass' (sometimes spelt Das), a name that would continue (with various forenames) until the last days of the collection. It is not known if this represents a single family, community, or a caste.

### George King (Superintendent 1871–91, Director BSI 1891–8) and David Prain (Herbarium Curator 1887–98; Director BSI 1898–1905)

King and Prain, both originally medics from NE Scotland and graduates of Aberdeen University, can be considered jointly as their Garden careers largely overlapped and they worked closely together. Between them, under King's initial guidance, the pair oversaw a great renaissance of the Calcutta Botanic Garden – a radical reorganization of the layout of the garden itself, a state-of-the-art new herbarium building and in 1888, the launch of a lavishly illustrated scientific journal, the *Annals of the Royal Botanic Garden Calcutta*. King was also the first director of the Botanical Survey of India. The number of named artists greatly increased during this period, which might at least in part be due to the employment of students trained at the Calcutta School of Art. This establishment, founded in 1854, was taken over by the Government in 1864 (note 10).

Fortunately, these artists were allowed to sign their drawings and their names (along with the lithographers) were printed when their work was published in the *Annals*. Regrettably, other than their names, nothing is known of their lives. While much further work and detailed cataloguing is required, it seems that the most prolific of these artists were **Kali Pada Dass**, whose work is dated between 1894 and 1910, and **Anath Nath Banerjee**, between

1899 and 1918. Between 1895 and 1898, **Abdul D. Molla**, **G. Anghore**, **A. L. Singh** and **G. Chandhan** produced smaller numbers of drawings, as did **D. N. Choudhury** and **G. B. Ghose** between 1900 and 1916.

A little more is known about D. N. Choudhury, who was lent to the Singapore Botanic Garden, where he worked for a year from July 1899. The director, Henry N. Ridley, sadly reported that Choudhury 'became insane' and had to return to Calcutta<sup>5</sup>. He must, however, have recovered as there are drawings by him in the CNH collection dated as late as 1916. An exchange must also have taken place between Calcutta and Singapore as there are also drawings at the latter by G. C. Dass and K. P. Dass (note 11).

### Drawings made in the field and external contributions

Although the majority of the drawings in the collection are by the Garden artists and of plants growing in the garden, the collection contains others sent thence, the work of 'external' artists. Some may be by Garden artists but made on field excursions, such as one by **Sheik Mumoo** made in Maulmain (Burma) in 1848, and a handful made on the fateful 1835 'Assam Deputation' in search of wild tea.

Dating from Falconer's tenure is a large collection of ink drawings of orchids made in Assam in 1853 and 1854 annotated 'Ic. Simmons'. This probably refers to Charles J. Simons [sic], a Government Apothecary, who is known to have collected plants in Assam, and it is possible that he made the drawings himself.

Of those contributed by EIC employees from other parts of India, Hugh Cleghorn in 1856 sent a painting of *Spathodea campanulata*, probably by his artist **Govindoo** from Madras, and Walter Elliot sent two anonymous drawings of what he considered to be new species (*Riocreuxia bubalina* and *Jatropha suberosa*) from Vizagapatam. Some drawings were sent to Wallich by Francis Jenkins from Assam in the 1830s, one made by a Mr Hudson and two signed by **Hoossen Bux**. There is one original drawing (of *Amorphophallus bulbifer*) by Robert Pantling, one-time Curator of the Botanic Garden and later Superintendent of the Mungpoo Cinchona Plantations, who is better known for his orchid drawings, and two remarkable drawings of *Corypha umbraculifera* by Anna Maria Holmes (née Loxdale), wife of the Rev. Frederick Holmes,

a professor and bursar of Bishop's College, just upstream from the Botanic Garden.

### The Kew collaboration of the late 1880s and '90s

In 1888 Sir Joseph Hooker, although retired from the directorship of Kew, was working on orchids for his *Flora of British India*. He asked to borrow all the Calcutta drawings of the family, which George King duly despatched to Kew, where they were copied mainly by two of Hooker's daughters, the unmarried Grace Ellen Hooker, and Harriet, who was married to Hooker's successor William Thistleton-Dyer, with some by the Kew artist Matilda Smith. These copies were kept at Kew, but at the same time, copies of some Kew drawings (especially aroids) were made and sent to Calcutta as gifts.

A selection of 101 of the orchid drawings was made by Hooker for publication in the *Annals* to which he added descriptions and (for some) floral analyses of his own<sup>2</sup>. There is some confusion over the authorship of these drawings: in the introduction, Hooker stated that most of the drawings were anonymous and that the names of the artists given on the prints as 'drawn by' should read 'lithographed by' (i.e. the artist responsible for transferring the drawings to the printing stone). While this is doubtless the case for the 66 attributed on the plates to the Garden's artist G. C. Dass (active 1870–1891), there is uncertainty over the 28 attributed to 'L. Singh'. Only one plate is attributed specifically to 'Lutchman Singh', but he could not have been alive to make any transfers in around 1890. So were these based on drawings attributed to him on the originals, or, if the name does refer to the transfer artist, should this be A. L. Singh, active at this time and to whom one plate is attributed?

The drawings copied from ones in the Kew collection were not the only gifts to Calcutta at this time. Also sent in the 1880s and '90s were drawings received by Kew in 1879 from the India Museum collection and regarded as duplicates. Two of these are Bengal Survey copy drawings made under Hare at the Calcutta Garden c. 1816. There are 29 of the 'Royle, Carey and Others' collection, made by the Calcutta artists, of which 27 were commissioned by Wallich at Calcutta between 1817 and 1828 and two by J.F. Royle while the artists were at Saharunpore 1828–31. There are also three Saharunpore drawings made for

Falconer around 1832. Included in the Kew donations were some non-Indian ex-India Museum drawings: 14 of a set by Cantonese artists, of unknown date, annotated 'Chinese Plants'; and eight uncoloured drawings made for Thomas Horsfield in Java between 1801 and 1818, probably by Dutch artists.

Also donated by Kew, which had never been part of the India Museum collection, are 15 drawings made for Adam Freer in Bengal 1790–1810. This fascinating collection was acquired by William J. Hooker, possibly from Freer's brother Robert in Glasgow in the 1820s, but purchased by Kew with the rest of Hooker's collection in 1865 (hence the annotation 'Ex Bibl. Hook'). Of those in the CNH collection are six unsigned ones from the 1790s, seven by **Mogul Ian** (October 1809 to February 1810), and one each by **Beari Lal** and **Chuni Lal** (both 1809).

### Last days of the collection

*Andrew Thomas Gage (Herbarium Curator 1898–1905; Director BSI 1905–25)*

As in the case of the two previous Directors of the BSI, Gage was an Aberdeen-trained medic. He was historically minded (he would later write a history of the Linnean Society of London) and rearranged the Roxburgh Icones into Bentham & Hooker order. Gage annotated many of the drawings commissioned by his predecessors but continued to commission significant numbers of new drawings from K. P. and F. B. Dass, A. N. Banerjee and D. N. Choudhury. This, however, was to be a swansong and represents the end of the collection's golden era. From the period of the last British holder of the post, Charles Cumming Calder (Herbarium Curator 1912–23; Director BSI 1923–37), yet another man of NE Scotland with an Aberdeen science degree, only two drawings are signed and dated. But from this period comes the name of one last artist, **Bishnupada Roy Choudry**, of whom the two dated drawings are from 1934 and 1935; from the latter year also comes a final drawing by F. B. Dass.

### Notes

1. The Roxburgh drawings have been catalogued by Sanjappa *et al.*<sup>1</sup>, though a major project is required to make a detailed comparison of the Kolkata and Kew sets. Of

particular interest would be to see, from the serial numbers they bear, if it is possible to distinguish the ones made in Samulkot (between 1787 and 1793) from those made after Roxburgh's move to Calcutta. The CNH drawings, Roxburgh's own set, should be particularly informative.

2. K. Karthigeyan, pers. comm., 19 March 2023.
3. On first mention **artists' names** are given in bold.
4. www.archives.bsi.gov.in
5. Their despatch to London was under Dr Thomas Casey, another temporary Superintendent.
6. Some, including the Roxburgh Icones and Falconer drawings, had been sent to Kew earlier.
7. The names are transliterations and the Roman spellings vary; for consistency a single one is used throughout the paper. Alternatives given on drawings are as follows: for Vishnu Prasad (Bishnoopersad); Bhoekunt (Bhoocunt); Kasim Ali (Cassim Alli); Karim Bux (Kurrem Bux); Rajbullub (Rajbulup, Rajbuhul); Bharguban (Bhugoowan, Buggobun, Bhugooman, Bhuguman, Bhuggoban, Bhuguban, Bhagaman, Bhugman); Ramanath Banerjee (Ramanauth Banerjee); Dass (Das).
8. Being sketches the majority of Griffith's original drawings may not have been kept after the making of the 'worked up' versions. Two of the extant pages show floral details of the orchids *Aporum jenkinsii* (now *Dendrobium parviflorum*) and *A. micranthum* (now *D. aloifolium*) and had been published in Griffith's lifetime: *A. jenkinsii* in the *Calcutta Journal of Natural History* 4: t 17. 1844 and *A. micranthum* the following year (*CJNH* 5: t 25). The third, a palm (*Areca* sp.), seems not to have been published.
9. For this, and for many of the historical details cited in this paper, the works of Desmond<sup>6,7</sup> and Burkill<sup>8</sup> are essential.
10. It would be interesting to see if details of any of these artists can be found in the archives of the Government School of Art and Craft.
11. A few drawings by K. P. Dass and F. B. Dass are in the Sir George Watt collection at the Royal Botanic Garden Edinburgh, made in Calcutta for Watt probably in the 1890s.

1. Sanjappa, M., Thothathri, I. and Das, A., *Bull. Bot. Surv. India*, 1991, **33**, 1–232.
2. Hooker, J. D., *Ann. R. Bot. Garden Calcutta*, 1895, **5**(1), 1–170; tt. 1–101.
3. Sanjappa, M., *Vanda*, 2008, **2**, 5–6.
4. Sanjappa, M., Sathish Kumar, C. and Biju, S. D., *Indian Brushes with Orchids: Orchid Icones of Central National Herbarium*, Botanical Survey of India, BSI & TBGRI, Tiruvananthapuram, 2002.

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5. Rodda, M., *Tropical Plants in Focus: Botanical Illustration at the Singapore Botanic Gardens*, National Parks Board, Singapore, 2021.
6. Desmond, R., *The European Discovery of the Indian Flora*, Royal Botanic Gardens & OUP, Kew & Oxford, 1992.
7. Desmond, R., *Dictionary of British and Irish Botanists and Horticulturists*, Taylor & Francis and Natural History Museum, London, 1994.

8. Burkill, I. H., *Chapters on the History of Botany in India*, Botanical Survey of India, Calcutta, 1965.

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