

The mystery of the Gouldian birds: an ornithological detective story

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While compiling a computer database of the avian specimens of the E.A. Goeldi collection a considerable number of skins with original labels from John Gould were discovered. In an earlier inventory they had been registered as part of the Goeldi collection, but as there was no apparent connection with Goeldi, these skins were assumed to be part of an acquisition of birds from John Gould mentioned in the Natural History Museum Bern (NMBE) committee minutes of 1862 (Güntert et al., 1993). Subsequent investigation, however, revealed that these hummingbirds and other specimens were indeed given by the BMNH to Goeldi at the Museu Paraense in Brazil in September 1895, shortly after Goeldi had been appointed director of this institution. In addition, the proper Gould specimens acquired in 1862 could also be identified as an independent acquisition from those of Goeldi, and even a second donation of bird skins to the NMBE could be traced back to John Gould's collection. No indication of a Gouldian provenance, though, can be found on the labels or in the catalogue. The combination of different archival sources, however, unquestionably proves their acquisition from Gould. The aim of this article is to elucidate the provenance of the specimens with Gould collection labels and to give an overview over the 180 vertebrate specimens originally purchased from John Gould. Among these some Australian specimens are of special significance because they may represent type material.

Discovery of the Gouldian specimens

In the years 1900-07 the Natural History Museum Bern (NMBE) received a considerable collection of Brazilian insects, fishes, mammals and birds (14,350 specimens) from Emil August Goeldi (1859-1917) (Güntert et al., 1993). These specimens, among them 3180 avian skins and mounts, came to the NMBE partly as Goeldi's private collection and partly as a permanent depository of the Museu Paraense Emílio Goeldi (MPEG) in Belém (Pará, Brazil), where Goeldi had acted as a director from 1894 to 1907.

When the Goeldi collection was inventoried in a computer database in the late 1980s, more than 200 bird skins, mainly hummingbirds and some tanagers, with original labels from John Gould (1804-1881) and/or the British Museum of Natural History (BMNH) were discovered. In an earlier inventory, compiled on file cards around 1960 by a volunteer, these specimens had been marked as part of the Goeldi collection. Many of them were not from Brazil, but from other South, Central and even North American localities. As Goeldi had never collected outside Brazil doubts arose about their belonging to the Goeldi collection. It was then assumed that the names Gould and Goeldi might have been confounded and that some of the skins were acquired from John Gould in

1862 (Güntert et al., 1993). An acquisition of avian specimens from Gould in that year is recorded in the minutes of the NMBE committee - although without an explicit list of the species.

A new attempt to clarify the provenance of the Gouldian hummingbirds was undertaken in 2001. When every specimen was checked against its catalogue entry and compared with the information on the labels one bird was found which had the year 1873 noted on the original label, which meant that the bird had been collected or labelled 10 years after the presumed acquisition by the NMBE. The examination further revealed that most labels had a BMNH register number, many of them with an entry year after 1862. Subsequent studies of the BMNH register books then showed that almost all specimens referred to by the BMNH register numbers were indeed signed out to the museum in Pará, thus to Goeldi's collection.

In the meantime the NMBE archives were searched for an acquisition of hummingbirds. If there ever had been a purchase, the annual accounts would be the most promising source. The search through the accounts of almost 50 years (beginning with 1832, the year in which the NMBE became an independent institution) did not bring any revelation with regard to Gouldian hummingbirds. It was however a full success in two other aspects. Up to 1870 every donation to the NMBE - be it a contribution in cash or an item for the collection - was listed in the accounts. The 1862 acquisition, though without hummingbirds, was described in detail. In addition, a donation of 112 Gouldian bird skins by R.J. Shuttleworth in 1847 and even a purchase of 34 mammal skins from Gould in 1860 had been recorded.

Despite these findings the 1862 acquisition remained mysterious: there was no clue for a connection to Gould on any of the birds of this acquisition. However, the minutes give a detailed account of a public fund-raising ('subscription') to obtain a number of bird skins from 'New Holland' that Gould had sent unasked together with a shipment of Australian mammals. They even report the committee's resolution to have the donors' names written on the labels of the 'showier' specimens, thus explaining why a wide range of different names appear on the labels, but not Gould's.

The annual accounts of 1862 include two lists, one with the names of 67 bird species (but not the number of skins per taxon) acquired from Gould, the other with the names of persons that contributed to the fund-raising and the individual amounts given. With the given information and the small number of Australian birds at the NMBE it was relatively easy to locate possible specimens of the species list in the collection.

Specimens from John Gould's collection at the NMBE

Combining the information recorded in the minutes of the committee meetings, in the annual accounts and in notices in the local newspapers of 1847 and 1862 four differ-

Table 1. Summary of Gould specimens in Bern.

1. 1847	Shuttleworth donation (112 birds, some lost)	~90 specimens
2. 1860	Purchase by NMBE (34 mammals in 21 species, some lost)	~20 specimens
3. 1862	Purchase by NMBE, 'Subscription 1862' (~75 birds, few losses reported)	~70 specimens
4. 1907	Goeldi donation & MPEG permanent loan (birds)	132 specimens

ent consignments of Gouldian specimens to the NMBE can be identified. They add to a total of approximately 310 specimens still extant. The exact number is not yet known because not all specimens have been identified with certainty and 'de-accessioning' was only rarely reported (table 1).

1. Donation of bird specimens by R.J. Shuttleworth in 1847

Robert James Shuttleworth (1810-1874) spent part of his youth with his parents in Geneva. After studies in Edinburgh he returned to Switzerland, married a Swiss lady from Solothurn and lived in Bern from 1833 onwards as a scholar in botany and malacology. He accumulated a huge collection of molluscan shells and published several articles with descriptions of new species. A catalogue of Shuttleworth types has presently been published by Neubert & Gosteli (2003). His main contribution to the NMBE was a large collection of approximately 200,000 molluscan shells.

Shuttleworth was a subscriber to 'Birds of Australia' (see subscribers list in Gould, 1841-48, vol. 1) and probably of other works by Gould (letter Gould to Shuttleworth of 9 April 1852). Over years he was also corresponding with Gould about shells and possibly bought some shells from him. In a letter of 26 January 1847, he inquired about the possibility to acquire vertebrate specimens for the museum in Bern: "Should you be able to spare a few specimens of birds or mammals from your duplicates, I think you would confer a great benefit upon the Museum at Berne, & probably facilitate my endeavours". In the same year he received 112 bird skins from John Gould and donated them to the NMBE. All specimens were labelled with Shuttleworth as the donator and there is no indication of a Gouldian provenance. The donation is mentioned in the minutes and in the annual accounts of 1847 and it was acknowledged in a newspaper notice (for details see Güntert et al., 2004). A list of specimens or species does not exist.

From 1856 to 1864 Shuttleworth served as a member of the museum committee. In this function he was commissioned with a purchase of Australian mammals from Gould.

2. Acquisition of Australian mammals in 1860

In 1860 the NMBE committee ordered a number of Australian mammals from Gould. The deal was carried out by Shuttleworth and the annual accounts of 1860 list the refund of 600 francs to him. According to the accounts the museum received 34 specimens (of 21 species), but neither the species names nor the number of individuals per species are recorded. The number of specimens still extant is not known because the old catalogue gives no indication of a Gouldian origin. Only three specimens have the comment 'original Gould label' on their file cards. The labels themselves, however, are lost.

3. Subscription 1862: acquisition of birds by public fund-raising

Gould, a clever businessman as ever, had packed approximately 75 bird skins together with the mammals of the 1860 shipment and offered them for sale. The museum committee was highly interested in the deal and applied for a grant to the city council.

However, the city council denied to spend any money on it, where upon the committee decided to collect the money through a public fund-raising ('subscription'). People from various social levels pledged generously and within two weeks the amount of 630 francs was over-subscribed. Again the transaction was achieved through Shuttleworth, who had himself donated 50 francs for the purchase. The committee decided to have the skins mounted and the names of the donators written on the labels of the specimens. Therefore Shuttleworth's name again appears on some of the labels.

4. Gould specimens provided by E.A. Goeldi in 1900-07

In 1907 the Swiss zoologist Emil August Goeldi - after having spent 13 years at the Museu Paraense Emílio Goeldi in Belém - returned to Switzerland where he was appointed Professor of Zoology at the University of Bern. Prior to his move he shipped his private collection and a considerable number of zoological specimens of the Museu Paraense to the NMBE. The private collection was later donated to NMBE, whereas the other specimens were intended as a permanent and irrevocable depository of the Pará Museum, to keep them protected from the hazards of the tropical climate (Güntert et al., 1993). The Goeldi collection includes 237 specimens that were obtained in 1895 from the BMNH, and among these 132 skins with labels of the Gould collection.

Scientific and economic significance of the specimens in Bern

John Gould made his and his family's living from the revenues of his books. Therefore he had no interest to keep collections once he had used the specimens for description and for the illustrations (Tree, 1991). He even used the specimens to lure new subscribers: "I believe I informed you that whenever museums subscribe to the work I make it a rule to present them with a hundred species of Birds from my collection ..." (letter Gould to Shuttleworth, 2 December 1848). In consequence, after finishing parts of his works, he gave and, respectively, sold the material to different institutions or private persons (table 2). When there were several specimens of the same taxon, he used to divide the series among different recipients (C. Fischer, pers. comm.).

Table 2. Timing of Gould's sales of his Australian material.

1840-48	Publication of 'Birds of Australia'
1841	332 Australian birds sold to BMNH (Tree, 1991)
1847	Main part of Australian collection sold to Philadelphia (Tree, 1991)
1847	112 birds sold or presented to Shuttleworth
1849-61	Publication of 'Mammals of Australia'
1860	Mammals (and approximately 75 birds) sold to NMBE

Gould did not assign holotypes when describing new taxa. In consequence, his syntype series were split and are today dispersed in different museum collections. Therefore one may find among the Australian specimens kept in Bern some which have syntype status. One problem is that no original labels and no collecting data to these specimens exist. On the other hand, the Neotropical specimens still have their original labels, however mostly with little or no information on them. Among the hummingbirds

several specimens belong to taxa first described by Gould. But to trace any of these back to a syntype series will hardly be possible. The BMNH register data of many specimens can be determined by the register number on their labels, but not even all hummingbirds were given such a registration.

Due to special circumstances the economic value of a part of the specimens can be determined. At the time of the 1862 subscription the NMBE committee discussed about the salary of the janitor who was also the museum's taxidermist. Gould had asked 630 francs for the batch of some 75 birds, the janitor's salary was fixed at 1000 francs per year (explicitly with no extra payment for mounting animals). This means that a family in Bern could live, presumably under rather modest living conditions, for seven months on the amount paid for the bird skins.

Discussion

The following points deserve further explanation or raise new questions. There are two reasons for the interrupted link to the Gouldian provenance and for the confusion over the hummingbirds. The first is that all skins acquired directly from Gould (1847-62) were mounted in Bern and that the original labels were lost during this process. Only those from Brazil are preserved as skins with original labels. The second reason is the fact that almost all collections or specimens at the NMBE were registered only under their donators' name. Hardly ever a collector or the circumstances of the acquisition was recorded. The activities of the NMBE were always primarily oriented towards public displays. This resulted on one side in a 'Noah's Ark' collecting strategy (i.e. keep one pair of each species), and on the other side in a special emphasis to honour the donators - mostly respectable citizens of the city or from the local area - by showing their names on the labels.

A similar confusion that has not yet been solved completely is the provenance of the specimens donated by Shuttleworth, i.e. 112 skins donated in 1847 and an unknown number out of the 1862 subscription declared as sponsored by him. The problem is that the actual inventory records 250 bird specimens as donated by Shuttleworth, which is a far higher number than those birds believed to derive from Gould! For many specimens listed the non-Gouldian provenance seems quite obvious from the taxa involved or the geographic origin of the species. But the search in an old catalogue, established around 1880 (Lüps et al., 2005), has now revealed that many of the 'Shuttleworth specimens' had actually been traded against molluscan shells from the Shuttleworth collection long after his death. Still, Shuttleworth was registered as the donator (see Güntert et al., in prep.).

Although the specimens coming from the BMNH collection give themselves no indication of a link to Goeldi, there is no doubt about their origin. When they were catalogued around 1960 in Bern there must have been some clue for the connection to Goeldi. Perhaps they were kept together with other Goeldi specimens in the same boxes or drawers. But this link was definitely interrupted when the specimens were later rearranged in a systematic order.

An unsolved question is why they were sent to Pará in 1895. It is likely that Goeldi, in 1894 appointed director to the Pará museum that was in a state of almost complete decay, asked the BMNH for support in building up a reference collection of Neotropical birds, but this hypothesis has yet to be verified by a search in the BMNH archives.

Another question of interest is Gould's personal relation to Bern. In 1847 and 1860 the contact person was Shuttleworth. Unfortunately, most of Shuttleworth's correspondence may be lost, but some letters exchanged between Gould and Shuttleworth have been published by Sauer (1998). Gould must have met Shuttleworth in Bern in 1846 or shortly before (letter Gould to Shuttleworth of 27 November 1846). But Gould had contacts to Bern much earlier, when he travelled through the European continent together with Edward Lear (1812-1888) in preparation of his work on 'The Birds of Europe'. According to Lear the trip to Bern was planned for 1831 or 1832, but it had to be postponed to the summer of 1833 (see Sauer, 1998: 34, 42). Yet no clue for Gould's sojourn in Bern could be found up to present and also his former contact person in Bern previously to Shuttleworth remains unknown.

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