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Chapter 4

General conclusions

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The expedition commanded by Nicolas Baudin to Tenerife, Mauritius, Australia, Timor and South Africa was both organised and financed by the French government between 1800 and 1804. The two ships that left France in 1800 arrived back independently: *Le Naturaliste* in 1803 and *Le Géographe* in 1804. The Institute de France and Muséum national d'histoire naturelle, Paris (hereafter the MNHN) gave the expedition instructions which included two main aims: the first was to map the unexplored southern, western and northern coastlines of Australia and the second was to collect natural history items. The main goals of this dissertation are: 1) to establish the documentation of specimens; 2) to trace the whereabouts of the expedition's specimens; 3) to catalogue the birds found on the expedition and 4) to establish the ornithological heritage of the 1800-1804 Baudin expedition. The data that have been brought together for these purposes have been discussed in 11 articles included in this dissertation (see chapter 3); the catalogue of birds can be found in Appendix 1.

Documentation of specimens

With regard to the instructions given to the expedition, it becomes clear that the question of which bird species dominated in particular regions was not answered, as no such documents were found in the archives. The instructions were very brief, possibly because the MNHN and the Institute de France relied heavily on the expertise of René Maugé, who had gained a lot of experience on an expedition to the Caribbean in 1796 and 1798.

Primary research for this dissertation in various collections yielded qualitative and quantitative data that were combined with existing secondary sources to get as complete a view of the ornithological documentation of the Baudin expedition as possible. There are few notes available for the ornithological side of the expedition up to Port Jackson (chapter 3.11). This is very different from the other fields of expertise, such as the flora, about which many more details were gathered from other locations. For the second leg of the expedition, from Port Jackson onwards, however, a fair number of notes made by François Péron are held in Le Havre.

Bird-specimens from the Baudin expedition do not contain original labels, nor are there any lists found in the archives that document the collected specimens. However, with a large amount of information originating from acquisition books drafted in \pm 1854, pedestal undersides to which information was added after mounting, taxidermy reports after the specimens' arrival, and archival documents some of which were written on the spot, the specimen labels could be amended. This demonstrates the potential for bringing clarity to other such expeditions where no data for the specimens is currently available. With the same information (see chapter 3.11), 56 % of the 1,055 collected specimens could be identified at species level. While 1,055 specimens from 314 species were brought to France, the original number of specimens was much higher. The original number was drastically reduced due to the presence of rats, cockroaches and other hazards during the voyage. Of those which survived, 389 specimens (36,8 %) still exist in European museums.

The whereabouts of the expedition's specimens

After their arrival in France, specimens became dispersed, due to the two crew members, Péron and Lesueur, but also through the taxidermists working at the MNHN. At least four taxidermists sold or exchanged specimens from the Baudin expedition. The most notable of these was Dufresne, who not only sold birds to NMW but also sold his private collection, containing many Baudin birds, to NMS. Specimens also ended up in collections such as NMW, Naturalis and Musée Boucher-de-Perthes. The lack of a skilled ornithological curator at the MNHN at the time of arrival facilitated the spread of specimens due to insufficient knowledge of their importance. It also meant that the description of any new species was left to visitors such as Louis-Jean Vieillot and Coenraad Jacob Temminck.

The catalogue of the Baudin expedition specimens

Of the two ships, *Le Naturaliste* contained the most important and numerous surviving specimens, which were mostly collected by the expedition members themselves. The opposite is true for *Le Géographe*, from which few specimens survive to date because they were mostly extra specimens and were therefore often traded or exchanged. From this shipment, the majority of specimens were either donations or were purchased. This discovery contradicts what Péron stated in a letter on 25 March 1804, when he wrote that the collections that arrived

with *Le Géographe* where much more interesting than those from *Le Naturaliste* (Jangoux 2018b).

The most prolific bird collectors among the crew members were Charles-Alexandre Lesueur (370 specimens), René Maugé (187), Jean-Baptiste-Désiré Dumont (38), and Stanislaus Levillain (11). Many other people were involved in collecting birds (see chapter 3.2), with no less than 32 people figuring as either collector or donor (Appendix 3). Birds were collected at most ports of call, with the largest numbers originating from the Port Jackson region and Timor (see chapter 3.4 and 3.5). All collecting localities could be reconstructed using morphometrical data, archival documents and actual specimens (see Appendix 1 and chapter 3.4).

A potentially new taxon has been traced (see chapter 3.8) and the information gathered also helps to paint a picture of where the collecting localities could have been (see chapter 3.11).

Research shows that from 52 species type descriptions were made using specimens collected on Timor, up to 115 from Australia and 13 from elsewhere (up to 180 in total) (see chapter 3.4 and Appendix 1); not all of the birds have survived. Roughly, they consist today in 79 valid species, the remainder are synonyms. There is no similar expedition before 1804 with such a high number of surviving type specimens.

Using the status list on the BirdLife International website (examined on 27 May 2017), these particular birds stand out from the specimens listed in Appendix 1:

- 2 extinct species: King Island Emu and Kangaroo Island Emu;
- 3 critically endangered species: Regent Honeyeater, Swift Parrot and Mauritius Olive White-eye;
- 8 endangered species: Sooty Albatross, Australian Bittern, Australian Painted Snipe, Short-billed Cockatoo, Timor Green Pigeon and Mauritius Kestrel;
- 4 vulnerable species: Southern Cassowary, Cape Gannet, Hooded Plover and Mauritius Cuckooshrike.

With the exception of the specimens of the Southern Cassowary, Sooty Albatross, Cape Gannet and Australian Bittern, all other specimens survive to date. The Baudin expedition was the sole collector of both King Island and Kangaroo Island Emus, Galah in Shark Bay and possibly also of Mangrove Honeyeater in Port Jackson.

Historical and scientific heritage of the Baudin expedition

The true value for ornithology of the expedition has long gone unnoticed as a result of a string of misfortunes: 1) Baudin died before he returned to France; 2) he had an unwieldy contingent of 22 experts on board - at least three times as many as he would have preferred - and over 200 crew members to manage; 3) the recording of the expedition's official narrative was laid in the hands of Baudin's most notorious enemies, François Péron and Louis de Freycinet; 4) Baudin's most loyal companions Maugé, Riedlé and Levillain all died during the expedition; 5) slander by crew members such as Bory Saint-Vincent, Gicquel, and de Bougainville, who left the expedition in Mauritius; 6) the replacement of the supportive minister Forfait, who knew Baudin well, by the biased Decrés, and 7) the shift in national priorities from an interest in natural history discovery to military and geopolitical issues. To add to these misfortunes, there is a complete lack of original specimen labels, no systematic lists are available, no ornithological narrative was written, the MNHN had no specific ornithological curator and finally, the disbursement of the specimens. Until now, few publications have appeared which were based on the official expedition's narrative and mostly only described individual specimens. An exception to this is the research into the Timorese specimens by Hellmayr (1914, 1916). However, large gaps remained in the expedition's overall narrative and it was not clear which specimens were collected, which specimens were sighted and only a few specimens were actually discussed.

This dissertation proves that the Baudin Caribbean expedition (1796-98) brought back the most successful collection prior to 1800, in terms of surviving specimens, with 140+ specimens being traced (see chapter 3.1). Baudin's crew was even more successful during the 1800-1804 expedition (see chapter 3.4). The author located 389 surviving specimens, more than twice as many as survived from the Caribbean expedition. This total was only surpassed in number and in surviving specimens during the following decade. Compared to other known specimens collected in Australia prior to 1804, the 227 Baudin specimens form 50.2 % of the 452 known specimens collected there by anyone (see chapter 3.4) (later 1 more specimen was found, see table 001 in chapter 2). Baudin's original collection for Australia was only

surpassed three decades later. For Timor, the Baudin collection represents the single most important expedition until that time, with subsequent collections only being made in 1828-1829 (see chapter 3.5).

An inventory of the 1800-1804 Baudin collection dated 12 January 1809, noted that 16.4 % of all specimens in the MNHN at that time originated from this expedition. The Caribbean expedition specimens made up another 8.7 %, so nearly a quarter of all specimens present in 1809 were from the two expeditions commanded by Baudin (see chapter 3.9). The large percentage of Baudin specimens could not have been ignored by anyone studying at the MNHN at that time. Buffon (1770-1783) stipulated that to adequately describe a species one would need a male, a female and two juveniles (Walters 2003: 57). If the experts of the Baudin expedition shared this view, this would provide an explanation for the fact that there are no large series of individual species to be found in the collections and no anatomical bird specimens were brought back as eggs.

The relatively large number of surviving specimens from both expeditions is certainly primarily due to the taxidermy skills of René Maugé. He subsequently passed on these skills to Charles-Alexandre Lesueur. The author also discovered that the role of the taxidermists was not one to be underestimated, as it was hugely important for the ultimate survival of the collected specimens (see chapter 3.10). Specimens of high quality and quantity from the Baudin expedition still survive, putting Maugé and Lesueur among the most successful collectors up to the first decade of the 19th century. They also secured Louis Dufresne's reputation as a very influential and successful taxidermist.

DNA testing of a surviving specimen from the Caribbean voyage and research on actual specimens proved that the expedition actively purchased and traded specimens. They continued this practice on the 1800-1804 expedition, with many contributions being made by Jean Macé, whose birds were included in the totals for the expedition. However, it could not be established which of the 135 specimens brought back with *Le Géographe* (see chapter 3.6) were from Macé as a load was received from 'Bengal' in 1801 and no distinction is visible on the specimens. The specimens collected and donated to the Baudin expedition by George Bass from his 1801-1802 journey into the Pacific, were brought back on both ships. This donation proves that more specimens from the Pacific were present in European collections than initially thought (see chapter 3.7). It was the first expedition that used non-native (e.g. tribal) donors to extend the expedition's collection on a large scale and it ranked amongst the most important collections in the early years of the MNHN (see chapter 3.9). This research also shows that future researchers should take into account that specimens were not only obtained from the collecting localities but also procured at markets or exchanged and bought from private individuals they met on their travels.

Suggestions for further research

The two expeditions commanded by Baudin deserve to be included in the list of great natural history expeditions such as the voyages commanded by James Cook, Matthew Flinders and Robert FitzRoy. The collections have been used for identification work, determining distribution, and describing new species. Many specimens are still available today. The present specimens can be used for systematics, morphometrical data, x-ray examinations, DNA, forensics, isotopes and other identification techniques which may be developed in the future. Baudin's material is undoubtedly among the best 19th century collections: not only is it well preserved, but with this research the collection is supported by collecting localities and collecting data, making it valuable for future researchers and exhibitions. It is now possible, with the collecting locality firmly in place, to establish which species occurred in those localities which were then largely unspoiled. Surprisingly, very little research has been undertaken in tracing the early specimens collected in Australia and Timor. This is particularly remarkable as voyages to Australia are generally very well documented and relatively easy to research (see chapter 3.4 and 3.5).

The author strongly recommends that future researchers interpret the data from the collecting localities supplied here and compare it with modern data. Many habitats are no longer available for some species at their original collecting localities and the fact that certain species were encountered here in the past could help in reconstructing an image of the original environment. The first data, for instance for the Greater Sydney area, was gathered

when the 'Watling set' was created between 1788-1794. The Baudin expedition subsequently created a larger and more precise dataset which, with the data compiled by the numerous collectors visiting the Greater Sydney area in the years that followed, forms a comprehensive body of information.

The mammals collected during the Baudin expedition had the same collectors and taxidermists. It would be interesting to research the connections, donors, specimens and descriptions of this group of animals in relation to this dissertation, which has primarily concentrated on the ornithological side.

Péron was clearly aware of Linnaeus' systematics and new species were often described using his binomial nomenclature. However, more research into the systematic thought processes of the experts, or lack thereof, could reveal new insights.

Lastly, a type-catalogue of the specimens collected in Australia should be compiled and made available online (this was already started by Schodde & Mason 1997, but it is not available online yet). Now that most of the specimens are identified, so much more research can be done and hopefully the 'missing' specimens will come to light so that more pieces of the Baudin puzzle can be put into place.



Fig. 4-001 | EMU SSP *Dromaius ssp*
(© Le Havre, Muséum d'histoire naturelle, Lesueur 79001-1).