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The ornithology of the Baudin expedition (1800-1804)

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Chapter 3.10

The Taxidermy of the Birds of Baudin's Expedition

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Part of the oral presentation given on 5 April 2017 at the 55 *Internationale Arbeitstagung des Verbandes Deutscher Präparatoren* in Erfurt, Germany.

Issues surrounding early bird taxidermy have already been discussed in several papers (e.g. Steinheimer 2006a, Morris 2012), but no extensive datasets have yet been used to compare the different preparation styles of the late 18th century and the first decade of the 19th century. This period of history has been focussed on as the specimens from the Baudin expeditions (Tenerife, Puerto Rico, St. Thomas and St. Croix between 1796-1798 and Tenerife, Australia, Timor, Mauritius and South-Africa between 1800-1804) are well documented and are therefore useful for comparison (Jansen 2014c). Not only were specimens secured from the locations mentioned above, but were also purchased or exchanged from other locations such as Tonga, New Zealand, Madagascar, Sierra Leone, Java, New Guinea and Sumatra (Jansen 2014c) which were not visited by the expeditions. Furthermore, birds from the Pacific from the Baudin expedition could be mistaken for specimens collected on one of the three circum-navigations by James Cook (Banko 1979, Medway 1979, 1981, 2009, Olson 1989, 1992, Olson & James 1994, Olson & Hume 2009). Therefore, the x-ray identification of certain taxidermical 'schools' (Jansen & Steinheimer *in prep.*) seemed a sensible project. We publish in this note the results on the preparation style of Baudin's birds collected in the Caribbean and Australia.

MATERIALS AND METHODS

The research has two goals: To identify the possible application of arsenic soap to Baudin's specimens and to determine the preparation style (mounting process) compared to those of other taxidermists of the same decades. The following institutions cooperated in this project: Ethnologische Sammlung der Universität Göttingen, Germany, Niedersächsisches Landesmuseum Hannover, Germany; Liverpool Museum, United Kingdom (LIVCM); Muséum nationale d'histoire Naturelle, Paris, France (MNHN); Museo di Zoologia Instituto di Zoologia e Anatomia Comparata Università di Torino, Italy (MZUT); Musée Vert, Muséum d'histoire naturelle du Mans, Le Mans, France; Naturalis Biodiversity Center, Leiden, The Netherlands (RMNH); Naturhistoriska Riksmuseet, Stockholm, Sweden (NHRM); Natural History Museum, Tring, United Kingdom (NHMUK); National Museum of Scotland, Edinburgh, Scotland (NMS); Naturhistorisches Museum, Vienna, Austria (NMW) and Museum für Naturkunde, Berlin, Germany (ZMB). For this research, 104 specimens (cf. table 3-007) were examined.

RESULTS

During the first stage of the research, literature was examined which discussed the use of arsenic soap in the late 18th and the first decade of the 19th century. However, no specific attention was paid therein to the Baudin expedition (Péquignot 2002, Marte *et al.* 2006, Péquignot *et al.* 2006a, Dangeon 2016, Desjardins 2016). During the second phase, published sources on the preservation of specimens on board the Baudin expedition were considered.

Table 3-007 | Birds examined with X-radiation. The registration number or publication is mentioned in reg. number / origin.

Species	Reg. Number / origin
African Grey Parrot <i>Psittacus erithacus</i>	Morris 2012
African Pitta <i>Pitta angolensis</i>	MNHN-ZO-2001-1116
Amazon Parrot <i>Amazona ssp.</i>	Morris 2012
Apapane <i>Himatione sanguinea</i>	RMNH.AVES.148558
Australian Ringneck <i>Bernardius zonarius</i>	BMNH 1863.7.6.5
Azure Tit <i>Cyanistes cyanus</i>	NHRM A568600
Beautiful Firetail <i>Stagonopleura bella</i>	NMW 52.400
Black-faced Waxbill <i>Estrilda erythronota</i>	MNHN-ZO-2013-1318
Blue Lorikeet <i>Vini peruviana</i>	RMNH.AVES.207179
Blue Lorikeet <i>Vini peruviana</i>	RMNH.AVES.207180
Blue Lorikeet <i>Vini peruviana</i>	BMNH 1845.2.21.329
Blue Lorikeet <i>Vini peruviana</i>	NMW 49.840
Blue Lorikeet <i>Vini peruviana</i>	NHRM A533282
Blue Lorikeet <i>Vini peruviana</i>	NHRM A569914
Blue-cheeked Bee-eater <i>Merops persicus</i>	MNHN-ZO-MO-1999-1494
Blue-crowned Lorikeet <i>Vini australis</i>	RMNH.AVES.207171
Blue-crowned Lorikeet <i>Vini australis</i>	NMW 49.840
Blue-throated Bee-eater <i>Merops viridis</i>	MNHN-ZO-2007-44
Brown Shrike <i>Lanius cristatus</i>	NHRM A533579
Brown Treecreeper <i>Climacteris picumnus</i>	NMW 51.904
Canary Blue Tit <i>Cyanistes teneriffae</i>	MNHN-ZO-2012-671
Cape Cormorant <i>Phalacrocorax capensis</i>	NHRM A558970
Channel-billed Toucan <i>Ramphastos vitellinus</i>	Le Mans 2003.9.952 a
Citrine Wagtail <i>Motacilla citrinella</i>	NHRM A533537
Crimson Rosella <i>Platycercus elegans</i>	NHRM A533285
Eastern Bristlebird <i>Dasyornis brachypterus</i>	MZUT Av924
Ground Parrot <i>Pezoporus wallicus</i>	NHRM A533224
Emu <i>Dromaius novaehollandiae</i>	NMW 48.097
Fan-tailed Cuckoo <i>Cacomantis flabelliformis</i>	RMNH.AVES.214388
Fan-tailed Cuckoo <i>Cacomantis flabelliformis</i>	RMNH.AVES.214390
Great Auk <i>Alca impennis</i>	Abbeville
Hawaii Oo <i>Moho nobilis</i>	Hannover
Hawaii Rail <i>Porzana sandwichensis</i>	NMW 50.728
Hawfinch <i>Coccothraustes coccothraustes</i>	Morris 2012

Species	Reg. Number / origin
Hottentot Buttonquail <i>Turnix hottentotus</i>	ZMB
'I'iwi <i>Drepanis coccinea</i>	GAU 345
'I'iwi <i>Drepanis coccinea</i>	LIVCM D511a
'I'iwi <i>Drepanis coccinea</i>	LIVCM D511b
'I'iwi <i>Drepanis coccinea</i>	RMNH.AVES.148551
'I'iwi <i>Drepanis coccinea</i>	BMNH 1845.2.21.295
'I'iwi <i>Drepanis coccinea</i>	BMNH 1845.2.21.297
'I'iwi <i>Drepanis coccinea</i>	MRSN 2240
'I'iwi <i>Drepanis coccinea</i>	MRSN 2241
'I'iwi <i>Drepanis coccinea</i>	SMNH A 533669
'I'iwi <i>Drepanis coccinea</i>	SMNH A 533670
Kaka <i>Nestor meridionalis</i>	BMNH 1837.6.10.379
Kaka <i>Nestor meridionalis</i>	BMNH VEL.43a
Little Woodswallow <i>Artamus minor</i>	MNHN-ZO-2013-1012
Mamo <i>Drepanis pacifica</i>	NMW 50.735
Maned Duck <i>Chenonetta jubata</i>	BMNH VEL.42.20a
Marbled Auk <i>Brachyramphus marmoratus</i>	NMW 53.422
Maroon-shining Parrot <i>Prosopeia tabuensis</i>	RMNH.AVES.211635
Maroon-shining Parrot <i>Prosopeia tabuensis</i>	NMW 50.248
Mongolian Lark <i>Melanocorypha mongolica</i>	NHRM A533557
Moorea Kingfisher <i>Todiramphus youngi</i>	LIVCM D2366
Moorea Kingfisher <i>Todiramphus youngi</i>	NMW 50.633
Musk Lorikeet <i>Glossopsitta concinna</i>	MNHN-ZO-MO-2003-3649
Musk Lorikeet <i>Glossopsitta concinna</i>	NHRM A533293
New-holland Honeyeater <i>Phylidonyris novaehollandiae</i>	NHRM A533745
Noisy Friarbird <i>Philemon corniculatus</i>	NHRM A533746
Noisy Miner <i>Manorina melanocephala</i>	NMW 52.279
Northern Fantail <i>Rhipidura rufiventris</i>	MNHN-ZO-2013-1149
Northern Shoveler <i>Anas clypeata</i>	ZMB
O'u <i>Psittirostra psittacea</i>	LIVCM 1829a
O'u <i>Psittirostra psittacea</i>	NMW 50.732
O'u <i>Psittirostra psittacea</i>	ZMB 6946
Oriental Magpie-robin <i>Copsychus saularis</i>	MNHN-ZO-2013-1129
Ouvea Parakeet <i>Eunymphicus uvaeensis</i>	RMNH.AVES.212563

Species	Reg. Number / origin
Pallas Rosefinch <i>Carpodacus roseus</i>	NHRM A533692
Pallid Cuckoo <i>Cuculus pallidus</i>	BMNH 1863.7.7.58
Parakeet Auklet <i>Aethia psittacula</i>	NHRM A533196
Pied Wheatear <i>Oenanthe pleschanka</i>	NHRM A533611
Pine Bunting <i>Emberiza leucocephalos</i>	NHRM A533644
Piopia <i>Turnagra capensis</i>	NHRM A568806
Puerto Rican Lizard-cuckoo <i>Coccyzus vieilloti</i>	MNHN AC 1838
Puerto Rican Lizard-cuckoo <i>Coccyzus vieilloti</i>	MNHN AC 1839
Puerto Rican Lizard-cuckoo <i>Coccyzus vieilloti</i>	NMW 44.637
Puerto Rican Woodpecker <i>Melanerpes portoricensis</i>	MNHN-ZO-2009-930
Raiatea Parakeet <i>Cyanoramphus ulietanus</i>	BMNH VEL.22.31a
Raiatea Parakeet <i>Cyanoramphus ulietanus</i>	NMW 50.687
Rainbow Lorikeet <i>Trichoglossus moluccanus</i>	MNHN-ZO-2004-109
Rainbow Lorikeet <i>Trichoglossus moluccanus</i>	BMNH 1909.3.23.3
Red-crowned Parakeet <i>Cyanoramphus novaezeelandiae</i>	NHRM A569923
Red-crowned Parakeet <i>Cyanoramphus novaezeelandiae</i>	BMNH VEL.22.30a
Red-crowned Parakeet <i>Cyanoramphus novaezeelandiae</i>	BMNH VEL.30a
Rosy Minivet <i>Pericrocotus roseus</i>	MNHN-ZO-2012-684
Saddleback <i>Philesturnus carunculatus</i>	ZMB
Saunders Tern <i>Sterna saundersi</i>	NHRM A533200
Scarlet Ibis <i>Eudocimus ruber</i>	Le Mans 2003.9.1005
Sociable Lapwing <i>Vanellus gregarius</i>	NHRM A533181
Tahiti Flycatcher <i>Pomarea nigra</i>	NHRM A569917
Tahiti Reed-warbler <i>Acrocephalus caffer</i>	NMW 58.499
Tahiti Reed-warbler <i>Acrocephalus caffer</i>	NHRM A569913
Tawny-crowned Honeyeater <i>Gliciphila melanops</i>	NMW 57.940
Tongan Fruit-dove <i>Ptilinopus porphyreus</i>	MNHN-ZO-2005-2563
Tui <i>Prosthemadera novaeseelandiae</i>	MNHN-ZO-2014-431
Tui <i>Prosthemadera novaeseelandiae</i>	NHRM A533743
White Tern <i>Gygis alba</i>	NHRM A569927
White-chested White-eye <i>Zosterops albogularis</i>	NMW 57.940
White-collared foliage-gleaner <i>Anabazenops fuscus</i>	MNHN-ZO-2004-681
White-shouldered Triller <i>Lalage sueurii</i>	MNHN-ZO-2012-683
White-winged Grosbeak <i>Mycerobas carnipes</i>	NHRM A533784
Yellow-Tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>	MNHN-ZO-MO-2003-3537
Yellow-tufted Honeyeater <i>Lichenostomus melanops</i>	MNHN-ZO-2013-174



Fig. 3-068 | EMU *Dromaius n. novaehollandiae*, 28 September 2015, NMW 48.097 (© NMW).

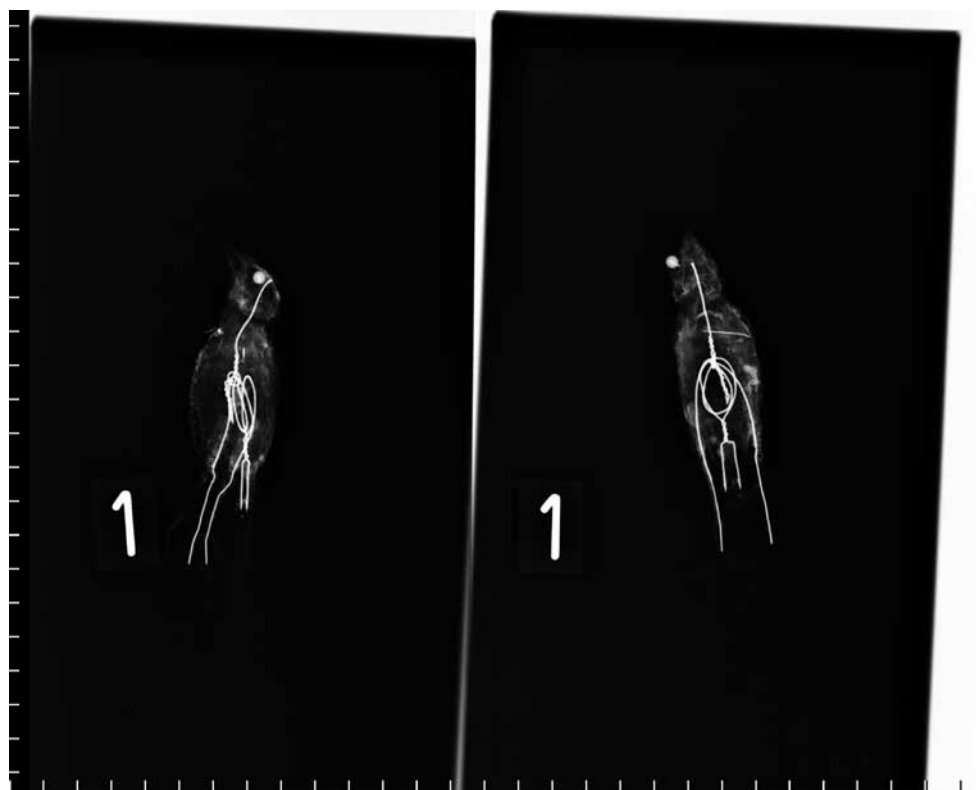


Fig. 3-069 | BEAUTIFUL FIRETAIL *Stagonopleura bella*,
28 September 2015, NMW 52400 (© NMW).

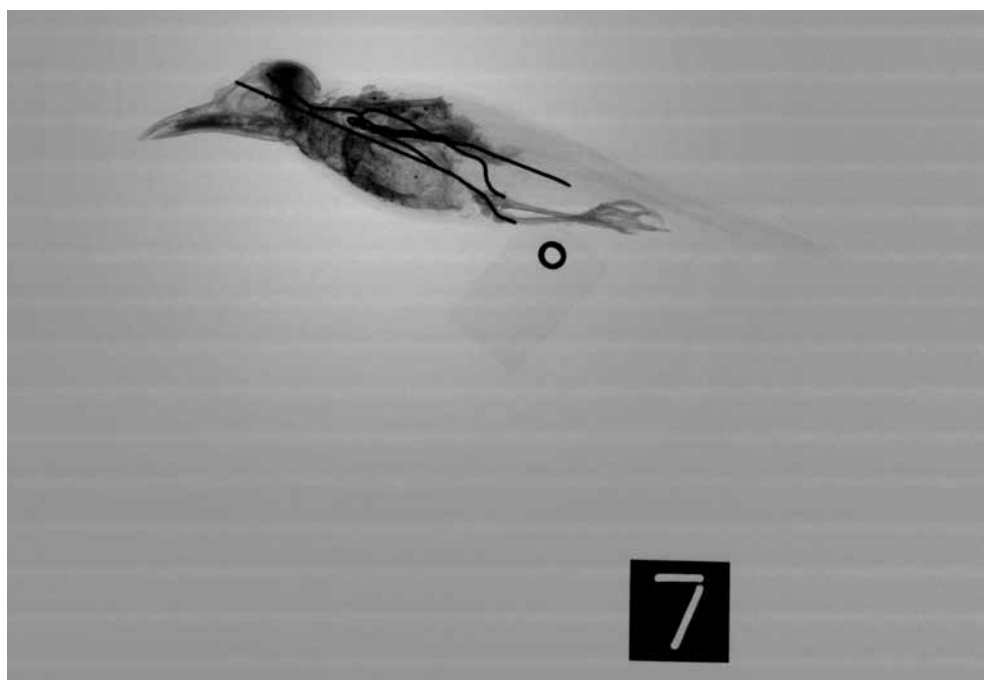


Fig. 3-070 | WHITE-SHOULDERED TRILLER *Lalage sueurii*,
8 February 2016, MNHN-ZO-2012-683 (Justin JFJ Jansen / © MNHN).

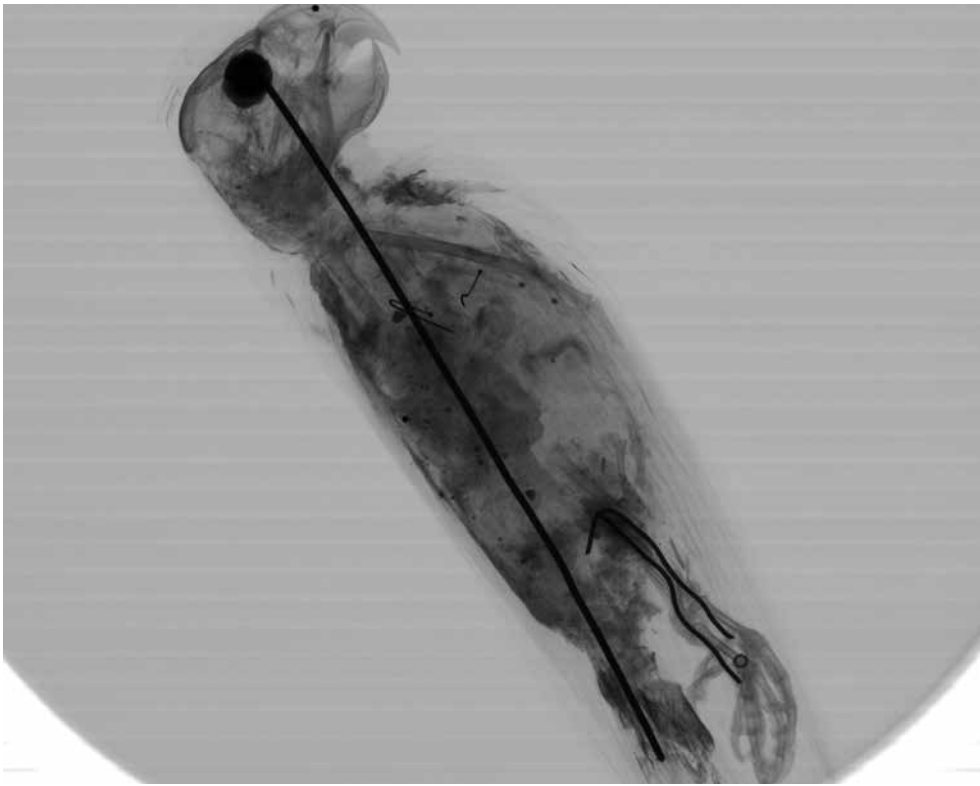


Fig. 3-071 | YELLOW-TAILED BLACK-COCKATOO *Calyptorhynchus funereus*, 8 February 2016, MNHN-ZO-MO-2003-3537 (Justin JFJ Jansen / © MNHN).

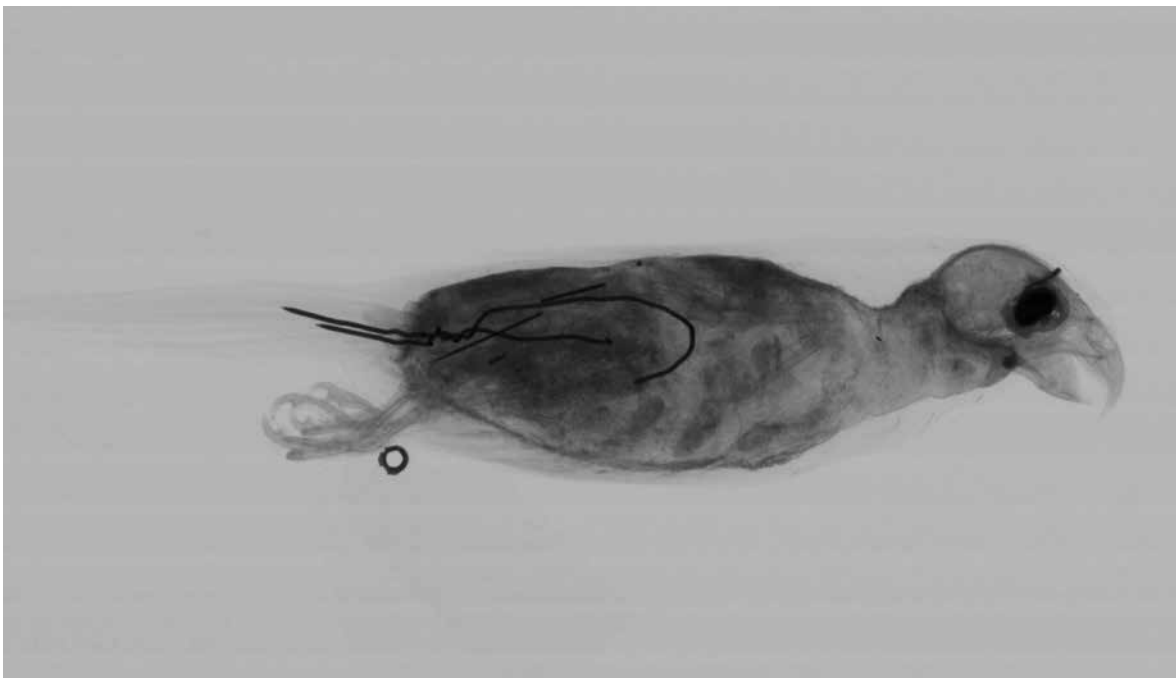


Fig. 3-072 | MUSK LORIKEET *Glossopsitta concinna*, 8 February 2016, MNHN-ZO-MO-2003-3649 (Justin JFJ Jansen / © MNHN).

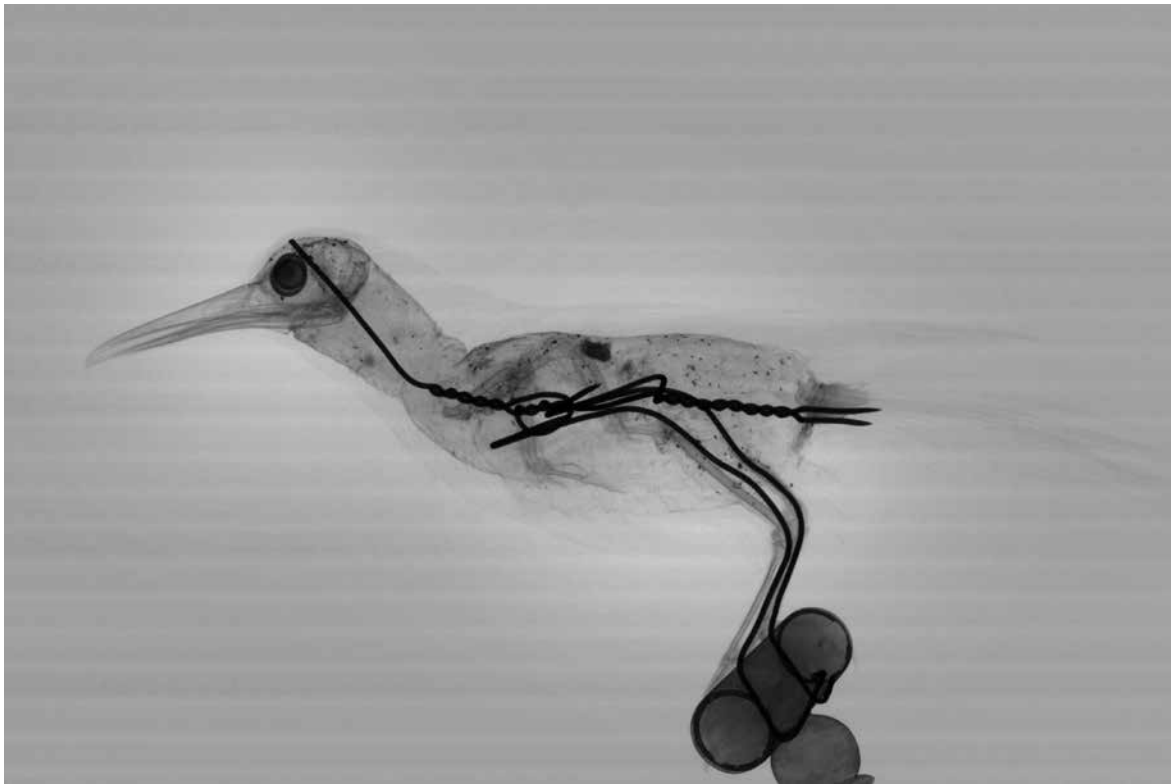


Fig. 3-073 | PUERTO RICAN LIZARD CUCKOO *Coccyzus vieilloti*,
8 February 2016, MNHN A.C. 1838 (Justin JFJ Jansen / © MNHN).

Two persons have an enormous impact on the birds, the original collector (and the person that skins the fresh specimen) and secondly the taxidermist who mounts the birds. All birds were preserved as unmounted skins (Horner 1987: 31) and not in spirits (Péron & Lesueur 1810a). The skins were prepared without any metal inside (in the legacy of Maugé drafted on 26 March 1802 no metal items are listed). Maugé was, until his sudden death, the expedition's main taxidermist (MNHN, Bibliothèque centrale, Ms 1686). All Baudin expedition birds known by JJFJJ were mounted after arrival (some were later transformed to skins, but all have metal wires inside). New x-rays were compared with photos of other x-rays from birds collected before 1810 (few with no metal inside were not mounted), in particular those from the Cook expeditions (Steinheimer 2006a, Morris 2012).

Of the 105 birds examined, only seven, (NMNH VEL.22.30a, NMW 50.735, SMNH A 569914, NMW 50.732, ZMB 6946 and the birds pictured in Morris 2012: pp. 41/42) are partly or totally mummified.

Preparation Style

Five birds were x-rayed from Baudin's Caribbean expedition between 1796 and 1798, as were ten birds from Australia and Timor (1800-1804). Nine of these are kept in the MNHN, two in the RMNH and four in the NMW. From reports in the MNHN, it is known that several taxidermists were involved in the processing of the specimens after arrival (Jansen 2016b: 8). One of these taxidermists was Louis Dufresne, as the senior taxidermist of the institute he passed on his skills to the other museums taxidermist like M. Bécoeur, M. Desmoulin, Michel-Adrie Lalande, M. Perefile, M. Le Roy and Mrs. Charpentier, all of them were involved with Baudin's birds (Jansen 2016b). This is reflected in the analysis of the preparation style: seven birds (six held by the MNHN as: MNHN A.C. 1838, MNHN A.C. 1839, MNHN-ZO-2009-930, MNHN-ZO-2012-671, MNHN-ZO-2012-683, MNHN-ZO-2013-1149 and RMNH.AVES.214390 in Leiden, the Netherlands)

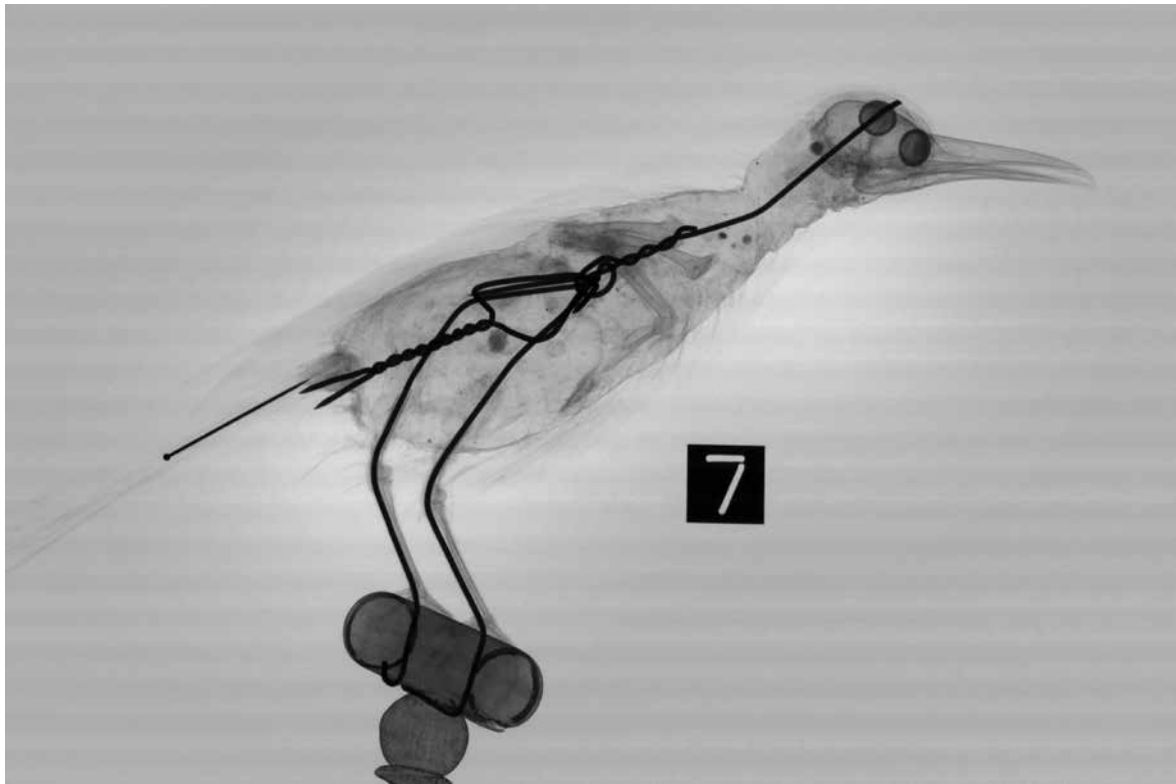


Fig. 3-074 | PUERTO RICAN LIZARD CUCKOO *Coccyzus vieilloti*,
8 February 2016, MNHN A.C. 1839 (Justin JFJ Jansen / © MNHN).

have a very similar style. These may be mounted birds from Dufresne's workshop (Jansen 2016b). The remaining three birds show three different styles. There was probably an external workshop or one of MNHN taxidermist that had a different style than his colleagues involved as there is another preparation style, shared by specimens now housed at both RMNH and NMW (RMNH.AVES.214390, NMW 48.097). The typical design of the wiring of Baudin's specimens includes a head wire going towards the centre of the body, where it is then twisted with the two leg wires and a major body wire to form a triangle. This triangle ends towards the pygostyle, again with the ends twisted together, but leaving the two pointed ends supporting the outer vertebrae of the tail column (see for example Morris 2012: 46).

Skeleton Remains

Of the 15 specimens, only two had their skulls opened (MNHN-ZO-MO-2003-3537, NMW 44.637) and the brain removed. Most of the following skeleton parts stayed in the mounted bird specimens: cranium, upper and lower mandible, humerus, ulna, radius, carpometacarpus, tibiotarsus, tarsometatarsus and digits of the wings and feet. In one specimen (MNHN-ZO-2012-683), the x-rays revealed additional skeleton parts, but the poor quality of the x-rays prevented naming them exactly. All specimens, except one (MNHN-ZO-MO-2003-3537), had a soft body preparation as explained in Morris (2012: 46), with the one exception showing a hard body as illustrated by Morris (2012: 47).

Use of Arsenic Soap

All x-rays show an unclear picture mainly due to the machine settings. Specimens such as MNHN A.C. 1838, MNHN-ZO-MO-2003-3537, MNHN-ZO-2009-930, RMNH.AVES.214388, NMW 51.904 have x-ray reflections which might indicate an external treatment with arsenic dust; five birds have an accumulation of dense material along the skin, which can be picked up by x-rays, (MNHN-ZO-2012-671, MNHN-ZO-2012-683, MNHN-ZO-2013-1149, RMNH.AVES.214390,

NMW 44.637) which could be caused either by the artificial body mass or arsenic. Summarizing the results, arsenic treatment cannot be detected on x-rays and different methods, such as the Merck detection kits, might be used instead for identifying arsenic. It is generally stated that arsenic was used on skins and mounts by Louis Dufresne and the French school ever since the recipe became published (e.g. Dufresne 1803, Farber 1997: 53-54, Steinheimer 2005a: 46, Jansen & Steinheimer 2017).

CONCLUSION

All avian specimens were mounted back in France, probably in workshops in Paris. Contrary to other papers (Finsch 1898, Steinheimer 2006a, Olson & Hume 2009: 207), mummification was not the method of choice. Workshops had typical styles, especially in wiring, which is still visible today and the two general techniques of soft- or hard-body preparation were equally applied.

The visibility of arsenic in x-rays could not be solved in this research, settings of the equipment and clear reference material (e.g. specimens stuffed with arsenic inside and one with dust on the outside, and this tested with the various settings) failed to give a decent solution. As no qualitative decision can be made yet as to whether arsenic has been used or not with normal x-rays, chemical analyses seems to be the better method.

No less than 17 x-rayed birds were prepared by a single taxidermist or workshop that carried the main responsibility for much of the bird preparation from Baudin's expeditions. This includes all the specimens in the MNHN except for MZUT Av924, NMW 49.840, NMW 52.400.

More research into arsenic in and outside specimens is needed, as in workshops that were responsible for taxidermy in the late 1800's and early 1900's.

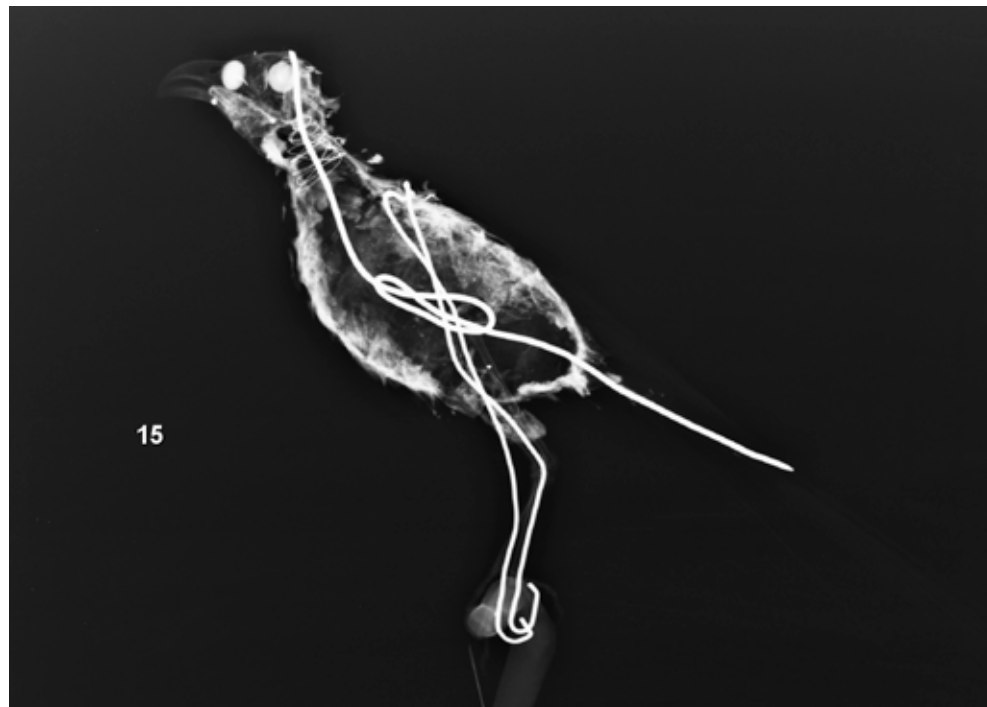


Fig. 3-075 | PUERTO RICAN LIZARD CUCKOO *Coccyzus vieilloti*, 28 September 2015, NMW 44637 (© NMW).