

LAPÉROUSE AND THE IDENTITY OF THE UNKNOWN MARINER OF VANIKORO

WILLIAM LAND

This is an unusual subject for an article: an account of a successful doctoral thesis¹ from the *Unité de Formation et de Recherche d'Odontologie*² of the University of Nantes. The author discusses the contribution that forensic dental examination and analysis can bring to archeological excavations and the investigation of the skeletons that may be found there. She uses as her subject the skeleton, that was 'miraculously preserved', found at the site of the wreck of the ships of the Lapérouse expedition at Vanikoro (Solomon Islands).

The expedition which Lapérouse led was, in some ways, the French equivalent of Cook's voyages of exploration. However, unlike Cook, Lapérouse had a significant number of scientists, in a variety of disciplines, on board both his vessels to record a variety of astronomical, geological, botanical and other scientific findings. Even the chaplains—Mongez on board *La Boussole* and Receveur on board *L'Astrolabe*—had secondary appointments as scientists. Louis XVI, who commissioned the voyage, was interested in scientific matters, particularly geography, hydrography and cartography.

The expedition sailed from Brest on 12 July 1785 on its voyage of discovery around the world. After many stops, the two ships reached Botany Bay, where they stayed for about six weeks. They sailed on 10 March 1788, but were not heard from again. The story of the discovery of the wrecks of both ships many years afterwards is a fascinating one but beyond the scope of this note. Suffice it to say that Lapérouse's ships sailed on to the reefs

¹ Coranie Lutton, 'Sur les traces de La Pérouse au large de Vanikoro : apport de l'odontologie légale aux fouilles archéologiques', thèse pour le diplôme d'état de docteur en chirurgie dentaire, Université de Nantes, 2007, 308 p. ('In Lapérouse's footsteps off the coast of Vanikoro: a contribution of legal odontology to an archeological investigation', a thesis for the diploma of State Doctorate in Dental Surgery, University of Nantes, 2007.')

² Department of Training and Research in Odontology.

surrounding the island of Vanikoro, in 1788, with the loss of all hands. It is suggested therefore that the skeleton is that of a member of the expedition from one of Lapérouse's frigates, *L'Astrolabe* and *La Boussole*. It was found in November 2003, very well preserved and covered in a layer of coral sediment, and represents the first, and to date the only, human remains of one of the greatest maritime disasters of the 18th century.

It has to be borne in mind that Coranie Lutton's work is a doctoral dissertation and is not written for the lay reader. As a result, many, if not most, of the technical aspects of the various testing procedures are not here described in detail.

As the author points out, the prolonged stay of the skeleton in water had made it impossible to discover clues as to his identity by 'classical' medical testing. She has therefore employed a number of forensic dental investigations in an endeavor to identify the skeleton. A combination of special features, which may be congenital or acquired, makes the dental chart specific to an individual. Each tooth contains data highly specific to that person. Furthermore the dental system is particularly resistant to degradation over time, therefore ideally suited to such forensic identification measures. This is the justification for the forensic dental investigations employed for the identification of skeletal remains, especially very old ones, to which the standard forensic methods are inapplicable.

This thesis of 308 pages begins with a survey of Lapérouse and his family, but the description is marred by some minor errors, including his date of birth³ and the number of his siblings⁴. The author further states (p. 5) that there were no officers of the French Royal Navy or even sailors among his ancestors but, further down the same page, she notes that he had a cousin, La

³ The author gives 22 August 1741, as does the *Encyclopaedia Britannica* and the *Australian Dictionary of Biography* (Melbourne, M.U.P., vol. II, p.85). John Dunmore (*Where Fate Beckons*, Sydney, ABC Books, 2006, p.9) gives 25 August 1741. A personal communication from the Director of the Musée national de la Marine in Paris, Vice-admiral Jean-Noël Gard, dated 21 July 2009, quoting the Centre Généalogique du Finistère, gives 23 August 1741 as the date of his birth. This is further confirmed by Étienne Taillemite, *Dictionnaire des marins français*, Paris, Tallandier, 2002, p. 303.

⁴ The author states 11 children, but Dunmore gives 10, with six dying in infancy or early childhood. The letter from Vice-admiral Gard, again quoting the Centre Généalogique du Finistère, also gives 10.

Jonquière⁵, a *capitaine de vaisseau* (naval captain) and later *chef d'escadre* (squadron commander), in the French Royal Navy, who was briefly Governor of French Canada.

Then follows a section setting out the historical context (the Sun-King, the War of Austrian Succession, the Seven Years' War, etc.): the author makes the bold statement that the American War of Independence was the most costly war of the *Ancien Régime* (p. 31), without any supporting evidence or reference. One might suppose the Seven Years' War or the War of Austrian Succession, in both of which the French were heavily engaged, to have been more costly.

The author then discusses the objectives of the Lapérouse expedition, the ships engaged, and their fitting out. Other topics covered in the thesis include the Lapérouse shipwrecks (pp. 52–55), the D'Entrecasteaux expedition which sailed in search of Lapérouse (pp. 56–57) and the description of the island of Vanikoro, both the site of the wrecks and its people (pp. 67–75). The 1999 and 2003 expeditions to Vanikoro are also mentioned (pp. 85–101). The author highlights the logistical problems associated with the research efforts on the Vanikoro site in 2003: she points out that 540 hours of diving brought up 185 objects from one wreck site and 60 from the other, i.e. more than two hours of diving per object (pp. 120–121). There were fifty-three people working on the site for over a month, the costs of which are obvious.

The skeleton, found underwater, is first mentioned on p. 95; on page 100, the author raises the question whether it could be that of Lapérouse himself (for a discussion of this hypothesis, see below). In her account of the findings of Captain Peter Dillon (1826–1827), the author mentions the sword grip and guard illustrated on p. 59, which is described as an officer's, with some references in support. However, Pierre-Louis Bérard describes the sword grip and guard as relating to a 'town sword', worn by a civilian such as a scientist, for self-protection, but one which could also be worn by an officer in plain clothes.⁶ A 'town sword' is a simplified version of a military sword and is therefore a personal item that is more decorative than functional; this illustrated specimen is rather costly, being made of silver.

⁵ Pierre-Jacques Taffanel de La Jonquière (1685–1752).

⁶ Personal communication, December 2014, from Pierre-Louis Bérard, a former president of the Association Lapérouse, Albi, France.

The author then offers a history of forensic dentistry (starting on p. 102), followed by a description of the methods of dental investigations that are used in anthropology. There is a 50-page long exposé of various techniques employed to determine the age, sex and other parameters of a skeleton. However, being a thesis written for a professional audience, rather than a lay one, the discussion of the various methods employed presupposes knowledge unlikely to be in the possession of the average reader. The author states that, with these methods, it is impossible to mistake the sex of the subject (p. 136) and that the best indicator of age is the teeth (p. 139).

We know that, after being displayed in the exhibition *Le Mystère Lapérouse* at the *Musée national de la Marine* in Paris in 2009, the skeleton was buried two years later in a solemn ceremony at Brest (the starting point of the Lapérouse expedition) as the *Inconnu de Vanikoro*, the Unknown Mariner of Vanikoro, in the manner of the Unknown Soldier.

The author explains why this skeleton could not be that of an ordinary sailor. The thesis describes life at sea and the lack of simple hygiene (p. 157). It also surveys foodstuffs, such as sea biscuit⁷, and the sort of meals supplied to the crew, both officers and sailors, as well as the scientists on board.

There follows a discussion of the role of the seaman's diet—mainly salt beef or pork, dried peas, and sea biscuit, with a lack of fresh vegetables—and its effects on the teeth (pp. 160–170). Lapérouse followed Cook's dicta in the struggle against the scourge of sailors, scurvy, and the matter is treated at length (pp. 174–179). Both navigators took great pains to guard their men's health and, given that vitamin C disappears from the body after about 3 months—she gives 68 days (p. 194) (although, of course, vitamin C was not known at that time), the beneficial effects of vitamin C-containing substances, such as malt and sauerkraut, were known (pp. 178–179). After the body's vitamin C stores are depleted, the signs and symptoms of scurvy appear. The Lapérouse expedition made fourteen stops from Brest to Botany Bay, with the result that, according to Lapérouse, the crews arrived at this latter port in better health than when they left Brest (p. 178). It would appear that such ports of call, with access to fresh food, allowed crewmembers to replenish their bodies' stocks of vitamin C. The author points out that, at sea, officers and men had the same rations, and the lack of fresh vegetables affected both

⁷ The claim is made on p. 162 that the expedition carried 200 tons of sea biscuit; the figure 200 is likely to be a misprint for 20.

groups equally. However, the scientists were exposed to a seafarer's diet for only a few years, whereas the crewmembers, both officers and men, were so exposed over their whole working life. The author states that the skeleton's teeth were astonishingly healthy and well-maintained, thus suggesting superior dental hygiene (p. 256). The state of the skeleton's teeth further suggests that a simple toothbrush was used routinely, as were toothpicks: in other words, implements that are highly unlikely to be employed by crewmembers, even by the officers. The conclusion is reached that the skull was that of one of the scientists.

The author devotes considerable space to the non-dental physical investigation of the skeleton, used to determine age, sex, height, and other parameters. This has been carried out on the symphysis of the pubis (the joint between the pelvic bones in the centre of the front of the pelvis), long bones, such as the femur (thigh bone), humerus (upper bone in the arm) and the clavicle (collar bone).

The author then describes two methods of determining the biological age of a skeleton by dental methods (those of Lamendin and Johanson); she indicates a preference for the latter (pp. 250–251). The figure given for the dental age is 33 +/- 6 years. However, the radiological investigations of other bones give widely differing results: *pubis*: 22.6 – 49.1 years; *collar bone*: 30–34 years; *humerus*: 41.1 +/- 6.6 years; and *thigh bone*: 18–52 years. She finally gives a range of 29–40 years, apparently by adding these figures together and dividing by four. The wide range of 'normal' inherent in most biological parameters is well illustrated here.

Facial reconstruction was undertaken as part of the investigation (pp. 266 *sqq*), the description of which is very interesting. Élisabeth Daynès (p.271), who is an artist with a workshop in Paris, carried out this facial reconstruction, the results of which are shown on pp. 270–276. The author also has pictures of Jean André Mongez and Joseph Lepaute Dagelet (p. 292). The resemblance between the pictures of the reconstructed face and that of Lepaute Dagelet is striking, and, to the present author's eye, is much greater than the resemblance with Mongez's picture.

We also know that Lepaute Dagelet, Lapérouse's astronomer, had been attacked and seriously wounded⁸ leaving the *École militaire* in Paris;

⁸ Ivan Barko & Claude Parent, 'Dagelet, astronome de Lapérouse—Vie et carrière de Joseph Lepaute Dagelet (1751-1788)', *Neptunia*, n° 59, 2010, pp. 21–31.

a healed fracture of the unknown skeleton is consistent with this event. The author states that x-rays do not show bony callus (a build-up of bone around the fracture site) caused by a displaced fracture, so that it is, in fact, consistent with a ‘greenstick’ fracture, in spite of her statement on p.250 to the contrary. Arguably the least satisfactory feature of Coranie Lutton’s thesis is her gratuitous and sensationalist speculation on the expedition’s leader. She devotes a great deal of space to dubious and unsubstantiated theories not previously mentioned or adopted by authoritative Lapérouse scholars. She eventually admits that most of these are unfounded, although some unsupported claims are not explicitly withdrawn. The main questions she raises in relation to Lapérouse are whether the skeleton was Lapérouse’s own, whether Lapérouse was murdered by a hostile crew and whether a terra cotta jar found near the skeleton contained the murdered captain’s remains. Needless to say the answers to all these questions are negative. More importantly her references to Lapérouse are tainted with suggestions that the commander was psychologically unstable and that his authority was constantly challenged by members of the expedition, thus leading to his (hypothetical) murder.

The author eventually comes to the conclusion (p. 256) that the biological age of the skeleton, as determined by dental and radiological examination of other bones from the skeleton, is not compatible with it being Lapérouse’s. We know that Lapérouse had lost his teeth, and it is suggested that he may have suffered from some dental disease leading to loss of teeth but probably not from scurvy, given that no recorded comments were made by British officers, such as Lieutenant King RN, whom he met in Sydney, to suggest that Lapérouse was scorbutic (p. 225). Given the bleeding, swollen gums and other features of scurvy,⁹ one would expect a sufferer to be easily recognised. His teeth loss could, more probably, be explained by periodontitis.¹⁰ Given that the skeleton has a remarkably well-preserved dentition (p. 155)—the dentition of the lower jaw is missing only one incisor

⁹ These include pain in the limbs, especially the joints, reddish spots on the face, especially around hair follicles, easily bruised skin, and redness and swelling in recently healed wounds, which may break down even after having apparently healed.

¹⁰ Periodontitis is inflammation and infection of the ligaments and bones that support the teeth. It occurs when inflammation or infection of the gums is allowed to progress without treatment. Infection and inflammation spreads from the gums to the ligaments and bone that support the teeth. Loss of support causes the teeth to become loose and eventually fall out. It is the primary cause of tooth loss in adults.

tooth (p. 231)—and that, in a letter to his friend Lecoulteux de la Noraye,¹¹ Lapérouse says: ‘I have no teeth and no hair left’, it obviously could not be the skull of the great navigator, as the author eventually admits, quoting the same letter (p. 225).

Lapérouse took part in the Battle of Quiberon Bay (*Bataille des Cardinaux*) (p. 246) where he was wounded in the head and left hand while on board *Formidable*, which suffered terrible losses in the battle. The author states that Lapérouse’s wound was to the arm (p. 228), although it was, in fact, to the left hand. However, on p. 246, she claims that the literature does not say which arm was wounded. We know (p. 227) that the left humerus (the upper bone in the arm) of the skeleton shows a slight deformation consistent with a healed fracture, so that it seems inconsistent with the wound suffered by Lapérouse.

The author heads a section (IV-3) ‘Was Lapérouse murdered?’ and spends nineteen pages (pp. 210–230) to suggest that he was. She surmises that the skeleton’s fractured fibula (the outer bone of the lower leg) could have been due to the fact that the owner—in this case she postulates Lapérouse—was beaten up by a crew member before being shot in the left temple. There is no evidence for such an attack against Lapérouse—the fibula is the thin bone on the outer side of the lower leg, and is easily broken by knocking against hard objects, such as hatch covers, that are found on sailing vessels. The hole noted in the left temporal skull is ascribed by the author to a firearm wound (p. 227), although later she admits that scientists from the IRCGN (*Institut de Recherche Criminelle de la Gendarmerie Nationale*), who examined the skull in Paris, say that the hole was caused by erosion (p. 251) rather than a gunshot. This section seems overly sensationalist, especially given that the results of later examinations refute her suppositions.

The author reports the discovery of the remains of a terra cotta jar¹² close to the skeleton, and wonders if this could have contained the remains of

(Medline Plus, National Institutes of Health, <http://www.nlm.nih.gov/medlineplus/ency/article/001059.htm> accessed 11 May 2015.)

¹¹ Dated 7 February 1788, Bibliothèque nationale, N.A.F., 9424, quoted by Dunmore 2006, p. 248.

¹² A picture of such a jar is found on *Planche XXVIII*, Jean Boudriot, *Le Vaisseau de 74 canons*, Grenoble, Editions des Quatre Seigneurs, 1977, vol. II, p.89, where it is labelled ‘Jarre pour l’eau de l’État-major’.

Lapérouse. However, if one considers the size of such jars, as illustrated,¹³ it will be seen that they are barely 60–75cm high, with an aperture of approximately 20cm diameter. These jars served only as intermediate recipients for water, the main water supplies being stored in the hold in casks called *futailles*¹⁴. She postulates that Laperouse could have been killed and his body stuffed into such a jar (p. 224), likening this situation to that of Nelson's body being returned to England after the Battle of Trafalgar. However, Nelson's body¹⁵ was preserved in a cask called a leaguer¹⁶ filled with brandy, a vessel which is much larger than the shattered terra cotta jar, and it is quite fanciful to think that a jar of the size mentioned could have contained an adult body.

The author mentions, in several places, the force with which the ships struck the reef and the resulting disintegration of the vessels. Nevertheless, a pistol, whose butt plate has three engraved initials (p. 265) is postulated to have belonged to the nearby skeleton. Given the extreme forces associated with the shipwreck and the consequent destruction of the vessels, as well as marine forces in play such as undertow and wave motion, it is impossible to state, beyond reasonable doubt, that the pistol belonged to the nearby skeleton.

She mentions St Elmo's fire (pp. 83, 210) and calls it '*ce présage des malheurs à venir*'¹⁷ but, on the other hand, it may be considered a good omen, as a sign of the presence of the patron saint of seamen, St Elmo.¹⁸

No doubt it is well known that during the voyage there was occasional tension between members of the expedition, and more specifically between Lapérouse and the scientists, especially the chevalier de Lamanon, mainly due to the commander disallowing long stopovers, due to navigational priorities not fully appreciated by the scientists. Following an attempt by some of them

¹³ Jean Boudriot, *Le Vaisseau de 74 canons*, Grenoble, Éditions des Quatre Seigneurs, 1977, vol. IV, p. 342, fig. 512.

¹⁴ Personal communication from Admiral Benoît Chomel de Jarnieu, former Inspector General of the *Marine nationale*, dated 12 April 2015.

¹⁵ www.aboutnelson.co.uk/death.htm - accessed 11 May 2105

¹⁶ A *leaguer* is a cask containing 577 litres/153 US gallons; dimensions: 130cm long with a maximum diameter of 90cm.

¹⁷ P. 210. An omen of misfortunes to come.

¹⁸ Wikipedia, accessed 10 May 2015.

to have sent to Paris complaints against Lapérouse (p. 217), '*il [Lapérouse] demeura plein d'amertume et de rancœur à leur égard*'¹⁹ he placed them under close arrest for a time and, afterwards spoke to them only when required by the exigencies of the service. Had the scientists been susceptible to naval discipline, this would have been a court-martial offence. The author infers that Lapérouse was remorseful and depressed because of tensions on board (pp. 218 and 227) and that his hypothetical murder was due to resentment against him: however, we know that Lapérouse was a very experienced commander who would quite reasonably have been expected to cope with such tensions as part of his normal command responsibilities. The author's characterisation of the expedition as dysfunctional is a serious distortion of historical truth. She states that Lapérouse took his meals alone (p. 223), but this was common practice in both the French²⁰ and the British Royal Navies, where the captain would share his table with specially invited guests (two or more) from among the officers or the scientists (or the passengers) on board. Contrary to the author's repeated claims, there is no evidence adduced for significant interpersonal problems with the ships' officers.²¹

There is much interesting material in this thesis which is, of course, written for a technical audience; nonetheless, much of the technical material may be fairly easily understood by the lay reader. The sensationalist treatment of certain questions, especially those relating to Lapérouse, detracts from the value of the work when there is no real evidence to support the propositions, and especially when such questions are determined in the negative later in the thesis.

As is to be expected in such a thesis, given its title, there is considerable attention paid to the dental aspects of the examination of the skeleton, as well as to the radiological inspection of various bones that have survived. This latter provides a compelling complement to the dental investigations. These, in combination, prove conclusively that the skeleton is not that of Lapérouse

¹⁹ He remained bitter and rancorous towards them.

²⁰ Jean Boudriot, vol. IV, p.171 and personal communication, August 2015, from Pierre-Louis Bérard.

²¹ Most of Coranie Lutton's claims about Lapérouse's feelings of remorse and depressed psychological state, as well as the supposed hostility to the commander, are based on quotations from a non-authoritative biography of Lapérouse by Hans-Otto Meissner, *La Pérouse, gentilhomme des mers*, Paris, Perrin, 2006.

and, in other words, justifies the title of the thesis. The position of various artefacts (pistol, buttons) found near the skeleton may suggest, but not prove, that they belonged to its owner. The position of the skeleton itself may also suggest that the owner's station was in the after part of the vessel; however, given the immense forces consequent upon the ships' running ashore, it may be expected that bodies and metal and other artefacts could be thrown large distances, without taking into consideration the effect of undertow and other ocean forces.

Nevertheless, the author has fulfilled the aim of her thesis, namely to discuss the contribution that forensic dental examination can bring to the identification of a skeleton. The main criticism is, however, that unwarranted assumptions and unsupported deductions are made, which detract from the work. In addition, it is felt that the author strays too often away from the title of her work and includes too much extraneous material, especially as regards the family history of Lapérouse and the more general history of France in the 18th century, which, while interesting, are not relevant to a discussion of forensic dentistry and hence do not add to the value of the thesis, especially when marred by mistakes.

In closing, the facial reconstruction carried out in Paris is, in this author's opinion, capital in ascribing an identity to the skeleton. This supports the suggestion contained in the Barko and Parent article, cited in footnote 7, which is that by far the most likely identity of the skeleton is that of Lepaute Dagelet.

Sydney