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Pandora Project Stage 2: four more seasons of excavation at the Pandora historic shipwreck

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CHAPTER 7

INTERPRETATION OF SELECTED ARTEFACTS FROM THE *PANDORA* HISTORIC SHIPWRECK (1791)

In this chapter, preliminary artefact analysis and research on specific artefact groups is presented. Artefacts groups considered include cream-ware crockery, food and drink containers, glazing, officers' possessions, and Polynesian material culture. These analyses are regarded as exercises in preliminary interpretation that can be practiced on elements of the archaeological assemblage recovered from the *Pandora* wreck. Additional already identified opportunities for further interpretative practice include demonstration of social class divisions among the officers and further investigation into the practice of accumulating "curiosities" on voyages. Other elements of the assemblage have yet to undergo more detailed analysis.

CREAM- OR CREAM COLOURED WARE

A considerable proportion of the artefacts recovered from the *Pandora* relate to ceramics – in total 15.3% of the *Pandora* collection records (i.e. 853 of 5557 records).[1] Of the 853 records for ceramic objects, 401 (46%) can be classified as 'cream ware' – the refined earthenware produced in great quantities from ca 1765 onwards by British potters as a 'China-like' ware (i.e. as an imitation and substitute for imported, expensive porcelain).

Proportionally creamware – or 'cream-coloured ware' – constitutes the largest group, i.e. 46% of ceramic wares from the wreck. However, plain earthenware (i.e. unrefined, low-fired clay) such as the 'essence of spruce' jars, as well as stoneware objects and real 'China' (or porcelain) are represented as well, in approximately the following proportions: 24% plain earthenware; 18% stone ware; and 12% porcelain.[2]

CERAMICS ANALYSIS

The analysis of the *Pandora's* ceramic assemblage should include consideration of the following questions or aspects:

- Identification of the category: *ergo* a 'ware' (earthen-ware, stone-ware, cream-ware, glass ware)
- Form: description in terms of shape, form, external appearance and decoration (slip trailing, or a treatment, e.g. beaded edging).
- Function: how was it used? E.g. for food storage, as tea ware, dinner ware, toilet ware etc.

Further analysis should address a number of questions such as: Market?, availability at home, abroad? Who could afford them, who purchased them, who decided they should be purchased? For what reasons (to underscore status, position in society, wealth, authority?

With the above analysis, the following types of ceramics are represented in the assemblage from the *Pandora* (Tables 120-123).

TABLE 120: Earthenware (plain)

Technique	Forms	Shape	Decoration	Function
lead glazed (coarse)	jar	Pot	None	Essence of spruce Container
dº	custard cup	bellied	slip trailed	Beverage receptacle
Unglazed	jar		stamped plaque	Olive oil storage

TABLE 121: Stoneware

Technique	Forms	Shape	Decoration	Function
semi-glazed	Jar		None	Miscellaneous
dº	Demi-johns		None	Miscellaneous

TABLE 122: Refined Earthenwares – Cream-ware

Technique	Forms	Shape	Decoration	Function
Glazed	Pots Tureens	Royal Royal	None	Dining Dining
Glazed	Plates, 'Twiffers' Soup plates, Platters, Dishes: oval d. serving d. Platters: 9½″ 10¼″ 12½″ Plates: 9¾″ dinner plate 9½″ soup plate 8 ″ bread & butter plate (or 'twiffers') Chamber pot	Royal ?	None None	None Serving Toilet ware
Under glaze (blue) Printing	SaucersTea bowls	Shell edged	Transfer printed, Hand-painted	Hot beverages

TABLE 123: Porcelain (figure 446)

Technique	Forms	Shape	Decoration	Function
	Bowls		Chi'ing blue & white powder blue Canton	Dining
	Saucers		Chi'ing blue & white powder blue Canton	Dining

LOCATION OF CREAM WARE IN THE WRECK

The *Pandora's* cream ware consists mainly of table – and toilet (utilitarian) wares. Except for a few fragments and sherds (MA8038 and MA8079/1-10) found in the bow area in grid 166, all of the *Pandora's* cream ware – complete items, fragments and sherds alike – was recovered from the stern area of the wreck; in particular from the grids that span areas of the wreck corresponding to the remains of the aft lower – and platform decks (grids 68, 70, 89-92, 109 and 111).

From this deposition it is likely that they were being used by the commissioned officers – the three lieutenants – as well as by the warrant officers, who shared the wardroom mess area on the aft section of the lower deck (cf McKay 1992:54 dwg D2/6). An additional indication that they were used by the officers are the many examples of the letters C or W crudely scratched on the undersides of plates; therefore most probably indicating crockery used by, respectively, the commissioned officers and the warrant officers (figures 447 and 448).[3]

A significant proportion – approximately 28% – of this cream ware was clearly in use at the time of the wrecking, witness the wear marks made by cutlery on surfaces, as well as the letters (C or W) scratched on the base of some plates and platters.

However, other cream-coloured items (approximately 72%) appear to have been in storage at the time of the wrecking. Evidently largely unused, these were most likely intended to be brought into use when breakage during the voyage called for it. Presumably the steward immediately disposed of broken crockery (over-board) and replenished, when required, from the stores the number of pieces needed for daily use. Most probably therefore the stored pieces were carried in reserve.

FIG. 446. Bowls and saucers of Chi'ing blue & white, Chi'ing powder blue and Canton porcelain.

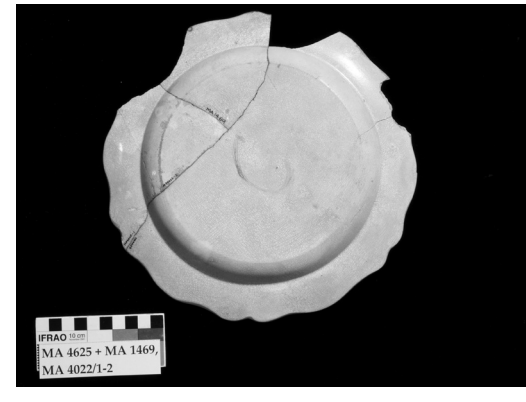

FIG. 447. Creamware plate, C letter scratch (MA4625).

FIG. 448. Creamware plate W letter scratch (MA MA4030/1-3).

Another consideration with regard to the relatively large number of stored (i.e. un-used) cream ware pieces, is that some of them may have been kept for use only during special or formal occasions, e.g. when guests had been invited to dinner. Alternatively

they were only used when the day's menu required particular pieces to be used – e.g. when soup or broth was being served (hence the tureen) or when platters were required for particular menu items (such as *hors d'oeuvre* for instance or fruit). In this respect it is also reasonable to suggest that menus were different on special occasions, e.g. celebration of the monarch's birthday. Thus, some pieces may have only been used sporadically when a special occasion called for their use.

It is interesting to note that the soup tureen (MA 6485) was found containing a number of oval platters stacked inside the tureen. This may indicate that the tureen was not used very often and/or that the platters found inside the tureen were only used to serve food that was presented in combination with soup or broth. Alternatively the steward was optimising use of space by keeping smaller platters snugly stowed.

The bulk of the objects in use – i.e. objects or fragments with use wear or the scratched letters C or W – were recovered from relatively shallow seabed strata, i.e. <50cm, while the bulk of the stored objects came from deeper layers of the wreck, i.e. from seabed depths >50 cm. More significantly, it appears that the 'in-use' cream ware was recovered from seabed strata clearly overlying the structural remains of the lower deck planking; it is therefore likely that they had been located on the lower deck at the time of the wrecking.

However, the stored cream ware – i.e. not 'in use' items – were recovered from deeper strata; in particular, from the officers' storeroom which was physically located on the aft, starboard side of the platform deck, under the preserved remains of the lower deck (McKay 1992: 57-58 dwg. D2/9). Clearly then, a significant proportion of these stored items had not been brought into daily use, given that they were recovered from shelving (under the lower deck) and from specially constructed, saw-dust filled 'bins' (i.e. sectioned off casing) found constructed on the floor (the platform deck-planking) of the storeroom. It is therefore assumed this is where they had been put at the beginning of the voyage; securely packed in saw-dust to prevent breakage (Figure 40).

Except for some staining caused by the proximity of gunpowder leaching from the adjacent magazine (gun powder store) aft of the officers' stores area, the packed cream ware objects show no use-wear marks, nor scratched lettering on their bases. Packed items include dinner plates and oval dishes, useful wares such as a soup tureen and bowls (MA6485, MA6476 and MA6500) as well as wine glasses.

As yet it is not possible to draw definitive conclusions about use of cream ware crockery by all of the commissioned officers – in particular it is not certain where the captain's crockery was kept, if indeed the captain had separate crockery wares. This may have been elsewhere in the ship, given that he usually dined alone or with guests in the Great Cabin on the upper-deck. It is quite probable that Edwards had his own daily tableware, which may have been of a different form or design to the 'Royal pattern' (cream ware) forms used daily by the other officers.[4] This may explain the 'anomalous' occurrence among the cream ware of the 'beaded edge

FIG. 449. Creamware beaded edge octagon (MA MA6305)

octagon' form plate sherd (MA6305) which was found in a relatively shallow seabed stratum in grid 107 – at X 20.25, Y 7.26, Z 100.24. Unfortunately this grid could not be excavated to any greater depth because of an obstruction that was encountered there formed by a large coil of hawser that had been nailed to the lower deck planking. Clearly, this obstruction had served as a definite delineation and a physical barrier between the lower deck and the underlying store on the platform deck, which lies in a deeper seabed stratum. Anything lying in shallower strata on top of the hawser and/or lower deck planks therefore must have been deposited from either a space on the lower deck – i.e. a cabin, pantry or cupboard erected there – or a space on the upper deck (i.e. the Great Cabin).

Analysis of other finds from grid 107 supports this observation by demonstrating that there had been no cabin in this area, specifically that the third lieutenant's cabin had been dismantled prior to the voyage. The expected cluster of possessions reflecting his occupation of the cabin was therefore not present. Significantly, the anomalous (octagonal) sherd (MA6305) was found there together with a fragment of roofing slate (MA6371) and two window pane fragments (MA6370 and MA8510) but very little else. The roofing slate and pane sherds can arguably be associated with the quarter gallery, which is definitely an upper deck level feature of the hull (cf McKay 1992:41, dwg C3/2).

Further excavation in grids 86 and 105 – in directly adjacent grids that do not span the inner starboard edge of the preserved lower deck – may in future provide more evidence to substantiate this observation. After all, grids 86 and 105 take in an area just outside the preserved edge of the starboard hull that has been hypothesised as likely to contain a preponderance of upper deck level material that toppled out of the disintegrating hull during its second and third disintegration cycles (Figure 7).

If in future more beaded edged, octagonal form cream ware is located in grids 86 and 105 or elsewhere in association with gallery window panes and roofing slate and other unmistakable material from the upper deck, this will enhance the probability that the captain's cream ware dinner service was not only distinct from the lieutenants' and senior warrant officers' dinnerware, but also was kept elsewhere in the ship.

Be that as it may, it should also perhaps be remarked on as somewhat surprising that delicate earthenware (and porcelain) was taken on board ship by the officers in the first place. This type of ware is fragile and would have required special handling so as not to be broken at the slightest bump – for instance during rough seas. In this regard pewter ware is much more robust and would not require as much additional handling (and extra packing) to prevent it from being broken when not in use. Yet, the evidence is overwhelming – also from other wrecks of Royal Navy vessels of the period [e.g. HMS *Swift* (Elkin *et al* 2007:46; Murray 1993)] – that crockery, be it of a coarse or refined manufacture, was taken to sea in large quantities.

CREAM WARE AS A STATUS SYMBOL

Cream ware was manufactured in Britain from the mid-1750s to well into the nineteenth century (ca.1820) when finally it was supplanted by other, more popular table or dinner wares and utilitarian wares, referred to as 'white ware'.

Cream ware was the first mass-produced English table ware made specifically to resemble and approximate the appearance and quality of porcelain (i.e. it was specifically manufactured for its' 'China-like' qualities);

and to be affordable to the burgeoning, mid/late eighteenth century 'middling' classes who, not only had more disposable income, but also a propensity to spend it on 'luxury' goods as a marker of a more genteel way of life (Berg, 2005:126). By 1790 English cream ware apparently dominated the world ceramic table ware trade (Miller 1980:1). This is borne out by George Hamilton's remark that it was pleasing for an Englishman to see that even in this "remotest corner of the globe (Timor)… Wedgewood's [sic] stoneware, and Birmingham goods, have found their way into the shops of Coupang" (Hamilton 1793:142).

Before the 1770s, use of wooden or pewter plates and bowls was more usual at 'middling' class dining tables, while expensive ceramics, such as European made white, salt-glazed stoneware, Delft, or real, imported, Chinese porcelain, was still almost wholly the preserve of the aristocracy and wealthiest upper – or upper 'middling' classes (Berg, 2005).

Cream ware was popularized in the late 1760s by the well-known potter – and marketing mastermind – Josiah Wedgwood, who had presented a set of his finest cream ware to Queen Charlotte. From that time onwards (1766) Wedgwood marketed his cream ware as "Queens-ware" giving its' appeal an extra dimension. Wedgwood was the largest and most innovative manufacturer of cream ware, although it was manufactured by other Staffordshire potters as well to satisfy the huge, ever-growing demand for a ware approximating the valued, but still by and large unaffordable porcelain. The generic term 'cream-coloured' ware (or cream ware) covers the ware and other refined earthen-wares would come to be known by their decoration, e.g. blue and white transfer-printed ware (Reilly, 1995:122-23).

Prices of cream ware depended on how they were decorated. At the cheaper end of the scale were unadorned – i.e. unpainted or decorated pieces, such as those found in the Pandora's cream ware assemblage. Prices were fixed by Staffordshire potters [price lists are available for 1770, 1783, 1795 (Miller, 1980)].

Cream ware is the only type appearing on these lists. The term 'cream-coloured' ware is generally used for undecorated vessels. In the 1770s a number of Staffordshire potters began to add cobalt to the glaze and used cobalt blue *chinoiserie* decoration in imitation of porcelain designs (see so-called 'blue and white transfer printed' and 'hand-painted' tea wares in Tables 63, 34 and 85 for examples from the *Pandora*).

The most imitated tableware shapes have come to be referred to as "Old Wedgwood"; i.e. wares manufactured by Wedgwood and other potters in the period 1760-95 (Reilly 1995: 411-14). The occurrences of these in the *Pandora* wreck assemblage are detailed in table 124.

The 'round' plate forms from the *Pandora* are referred to as a 'shallow' dinner plates if their height to the rim is to approx 26mm; as distinct from a deeper 'soup plate' where the height to the rim is >36mm. The shallow dinner plate is present in the *Pandora* assemblage in two diameters: either 'regular' (or 'dinner') plates of between 9–10" diameter (approx 235-258mm) or (smaller) 'side' plates, also referred to as 'bread and butter' plates or 'twiffers' (Reilly, 1995), with diameters of approximately 8" (200mm).

As already mentioned, all but one of the (round) plates from the *Pandora* are so-called 'Royal pattern'; only one example is anomalous, i.e. MA6305, the fragment of an octagonal shape plate with a beaded edge. Another feature of differentiation is that some examples have a foot ring around their base. Clearly then it would seem that there were at least two 'dining sets' (dinner services) on board – one with and one without a foot ring. The 'sets' (or services) were likely made by different manufacturers

TABLE 124: 'Old Wedgwood' table ware forms

Pandora examples	Plate forms	Oval shape dish	Function
MA6469, MA6477/1		Plain dish (platter)	Dish (or platter) 11-20″
MA6393		Deep dish	
None		Beaded edge dish	
None	Old feather edge (round*)		
None	New feather edge (round)		
None	Queens' pattern(round)		
MA8646, MA8257, MA8714, MA6489/1	Royal pattern (round)		Dinner plates, 9-10″ Soup plates 9-10″ Side plates 8″ (a k a 'twiffers' or 'bread and butter' plate)
None (round)	Beaded edge		
MA6305	Octagon Beaded edge		
None	Shell lip		
None	Flat rim		
None	Concave		

and probably purchased from different retailers. If so, it follows that the dining 'sets' were owned and/ used by different (groups of) individuals. This probably reflects their use at the various tables (or 'messes') on board (i.e. wardroom, gunroom etc).

A third 'set' is possibly represented by the octagonal, beaded-edge plate (MA6305); although it is a little puzzling that only one sherd of this type has been recovered to date. As already mentioned, a number of shallow dinner plates, soup plates and serving platters have the letters C or W crudely scratched onto their base. These scratched letters probably reflect how the steward (or his mate) kept track of their intended use, i.e. the ones with a C were possibly intended for use at the captain's table and the ones with a W for use in the wardroom. Alternatively, the pieces scratched with a letter C may have been intended for use in the wardroom by the lieutenants (i.e. the commissioned officers) and the ones scratched with a W for use by the warrant officers. If the latter case applied, the captain may have used another dining set – e.g. the octagonal-shaped, beaded-edge type – which would have been in use on the upper deck (the Great Cabin) and should therefore be found in another, as yet unexcavated part of the wreck – e.g. under the stern / transom remains.

In addition to having the tell-tale, deliberately scratched letter marks on their base, many pieces were obviously in use at the time of the *Pandora's* sinking; as evidenced also by the use (wear) marks made by metal cutlery on the surfaces of plates, platters and dishes. Some examples are extensively scratched while others bear only a few, light scratches; this no doubt reflects the number of times they had been in use before the wrecking.

By contrast, a substantial number of the examples recovered from the wreck (approximately 72%) are virtually pristine, i.e. bear no use wear marks, nor letter scratches. These were recovered from the specially constructed storage bins which were found in the commissioned officers' storerooms on the platform deck, where they had obviously been kept in storage –protected by sawdust – until breakage of crockery in daily use required replacement; in which case the steward replenished the ones in daily use from the stored pieces (Figure 40).

OLIVE OIL JAR (MA8719)

Object record no. MA8719 (see figure 450) – an earthenware olive-oil jar with a narrow base, wide shoulders and a small rolled collar-like neck – was located in grid square 208. This is the fourth olive oil jar recovered from the bow area of the wreck to date. It is thought that at least six such jars were on board at the time of the voyage. This jar is identical to MA138 and MA139, the two jars recovered from the wreck during the museum's expeditions in the 1980s (Campbell and Gesner, 2000: 109) and it is also very similar to MA3, which was raised by the wreck's finders in 1977.

All of them are stamped with the initials 'TMF'. They are unglazed and are wheel-thrown in two parts and have a flat base, with the sides flaring out upwards to a rounded shoulder. The neck is topped by an everted rim which has an internal, recessed ledge to accommodate a lid.

The 'TMF' stamp (see figure 451) – placed between a three-barred cross motif above and an olive tree twig below – is on plaques placed under two arched ridges on opposite sides of the shoulder. The stamp is regarded as the mark of the primary oil producer rather than the maker of the jar. The identity of the producer has yet to be established; however it has been convincingly argued that the jars originated in the Italian province of Tuscany, in the vicinity of Lucca or Montelupo (Coleman, 2004:6).

Similar jars have been recovered from other eigthteenth century Royal Navy wrecks; for instance from the wreck of HM Sloop *Swift* lost off Patagonia in 1770. However the jar from the *Swift* was stamped with the initials 'IF' (Murray, 1993:52).

These (wheel-thrown) containers are on average 775mm high and 556mm wide at the shoulder. The jars were made in two parts; both are joined

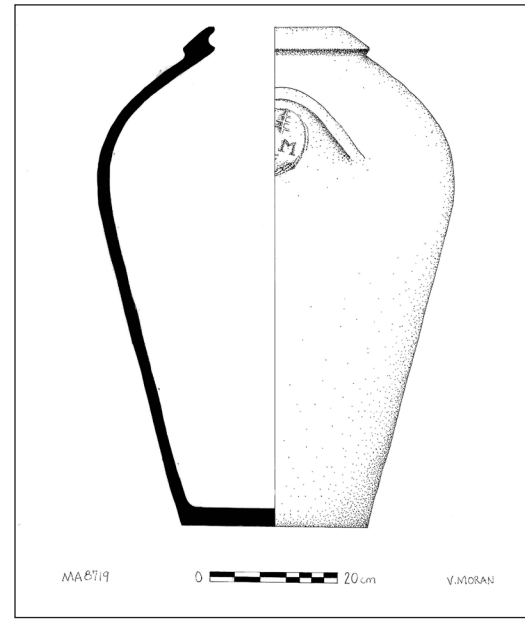

FIG. 450. Artefact drawing of olive oil jar MA8719/1 Drawing by Viv Moran. Queensland Museum.

FIG. 451. 'TMF'Producer's stamp

at the shoulder. They have a flat base with an average diameter of approximately 282 mm and outward tending sides towards the shoulder. The shoulders are capped by two rudimentary, crescent shaped 'ridges'. The neck of the jar is truncated and topped with a rolled rim with an internal ledge to receive a lid. The lid was also made of terracotta, and had three finger holes arranged in a triangle to facilitate its removal. To avoid spillage, it is possible that the lids were sealed with wax or similar material before being tied down. However, no lids belonging to, nor any traces of wax have been found on any of the four jars recovered from the *Pandora* to date.

Capping the shoulder on two (opposite) sides are crescent-shaped vestigial ridges which were initially identified (erroneously) as 'handles' (Campbell & Gesner, 2000: 109). Upon further consideration however, 'handles' of this kind have been regarded as unsuitable to function as a grip. It was found that the jar was encased in a wicker base, for stability, which had two loops to provide a means for two or more men to lift a full jar – containing a 265 lb jar of oil – with a wooden bar placed through lifting loops; the basketry also served as cushioning or protection against possible impacts in a ship's hold. The arched vestigial ridges were primarily to protect the producer's stamp against damage during handling or shipping (Coleman, 2004: 138).

An Admiralty document in the National Archives in Kew (UK) describes the following alterations to the *Pandora* prior to her departure for the South Seas: "A small place to be berthed in with thin slats, close forward between decks for the stowage of oil jars, and such irregular formed things, as would occasion considerable breakage if stored in the hold" (TNA: Adm: A/2831).

Although identical in material, form and function and all stamped with 'T M F', there are minor size variations between the jars recovered from the *Pandora* to date. These variations are to be expected for wheel-thrown pottery (table 125).

This jar 'exploded' during its ascent from the wreck; i.e. a gaseous bubble, from corroding ironware, that had formed under 4.3 ATA inside the jar, expanded during reduction of ambient pressure as the jar was being lifted from the seabed at 33msw depth. The explosion happened at a depth of approx. 5msw (=1.5 ATA). The base of the jar and a portion of its side was fractured so it came away completely from the main body of the jar; revealing the jar's contents. Thankfully the jar was encased in a strong protective polypropylene bag in a sturdy cargo net, which would prevent any of its contents spilling out back onto the sea floor.

The contents were found to consist of an assortment of iron fastenings, ranging from leather or canvas bags of small tacks to large ring bolts (MA8719/54), and various tools (e.g. a maul-head hammer MA8179/90) and copper alloy door furnishings, e.g. locks and door knobs (MA8719/130) (Illidge et al, 2014). This indicated that the space inside the (by then presumably empty) oil jar had been purloined by one or more of the crew

TABLE 125: Dimensions of four olive oil jars from the *Pandora*

MA	Height mm	Shoulder Ø mm	Outer rim Ø mm	Inner rim Ø mm	Base Ø mm
003	775	528	301	200	274
138	770	560	315	216	272
139	785	554	290	194	281
8719	780	557	299	200	286

to keep a stash of odds and ends; it has been suggested that he may have been either the sail-maker, the bosun's mate and/or one of the carpenter's crew.

Although no lid has been found in association with any of the jars, they were known to have been sealed with lids made of the same clay as the body of the jar. Each lid apparently had three small ovoid depressions as finger grips on the upper surface (Ashdown, 1972:148).

Their capacity is approximately 22 gallons (approx. 96 litres). Consequently, it is thought that there were at least six such jars in the *Pandora's* hold, as the log mentions that 134½ gallons of 'oyl' were loaded while the *Pandora* was preparing for her South Pacific voyage (Logbook, 17 Sept 1790). In the eighteenth century Royal Navy, when voyaging to tropical latitudes, olive oil was taken on board to be issued to crews after butter stocks were depleted, there being no reliable means to prevent butter from going rancid in the long term, not in the least because of hot weather. As Morrison of the *Bounty* commented:

> The butter and cheese being expended, oil and sugar was served in lieu, in the proportion of half a jill [sic] of Oil, & one ounce of sugar per man each banyan day (Rutter 1935:20).

Since their recovery from the *Pandora*, these (and other) oil jars have been the subject of extensive research regarding their manufacture, use and subsequent re-use (Coleman, 2004; Coleman and Porter, 2007:53).

ON BOARD GLAZING

Glass panes were fitted as 'lights' into various parts of the ship. The 'lights' consisted of glass panes (glazing) fixed with putty into wooden frames. The frames or sashes – as they were referred to if they could be opened by sliding them up or down – were made by the carpenters to fill the spaces that required fitting with 'lights' (McKay, 1992: 40-1). The panes were either rectangular or rhomboidal; although exceptional forms – resembling 'fan' shaped lights – needed to be made for some of the 'lights' of the stern gallery. The specifications in respect of the 'Glass' for a 24 gun ship (1782) called for:

> all the stone-ground glass for the stern, galleries, bulkheads and scuttles to be 3/16th of an inch thick[5], clear and well polished, and the raking[6] panes nowhere to exceed 16 inches in length measured on the square (Adm. 168/147).

The 'lights' were fitted into a door or a bulkhead or fitted as a sash into three main areas of the ship:

1. The stern and gallery glazing were fixed frames or sashes which were set into the transom ('stern glazing') and quarter galleries (McKay, 1992: 40-1);
2. Frames – with 4 or 6 glass rectangular panes – fitted into doors or into bulkheads and/or partitions (McKay 1992: 52, 56); and
3. A frame fixed into the bulkhead between the light room and the fillim (McKay 1992: 58).

The shape and dimensions of the individual panes varied according to the geometry of the space being filled; thus, if intended for a doorway, the frame was generally rectangular, subdivided to accommodate four or six individual (rectangular) panes per frame, HMS *Swift* example below figure 452) or panes were cut as rhomboids (i.e. 'raking panes'), depending on which stern or quarter gallery 'light' the frames were intended for (McKay 1992:40-1).

According to one reference, doors on the upper deck featured frames with six panes, while cabin doors on the lower deck only featured four panes. Assuming this

interpretation is accurate, there would have been eight doors (i.e. 48 panes) on the upper deck and 8 doors (i.e. 32 panes) on the lower deck (McKay, 1992: 52, 56). Doors leading to closed or locked spaces or to storerooms on the platform deck had no 'lights' as daylight did not penetrate into these below-the-waterline areas to warrant them.

In total, 190 complete, near complete and fragments of panes were recovered in the 1996-1999 excavations These were both rectangular and rhomboidal and many were marked with a scratched broad arrow (see Table 126).

LOCATION OF GLAZING IN THE WRECK

Among the range of glass panes recovered from the *Pandora* to date, eighteen are more or less complete, i.e. wholly intact panes which are either rectangular or rhomboidal (Table 127), while a further eight registration numbers comprise 'near' complete ones, i.e. where the fragment has retained its original form (a rectangle, rhomboid) and more than 75% of the pane's area is represented by that fragment (e.g. MA1694) (Table 128). It is remarkable that none of the complete rectangular panes have the same dimensions (Table 129) and that complete rhomboids have been deposited interspersed with rectangles.

FIG. 452. A square frame from HM Sloop *Swift* (1770– four pane configuration – possibly for a cabin door). The 'rebates' within which the pane were set is clear in the spaces without panes; it is evident the panes had been installed as the putty holding the pane in place within the 'rebate' is evident (Swift #06/439) (Photo: Courtesy Dolores Elkin, PROAS , *Instituto Nacional de Antropología y Pensamiento Latinoamericano*, Buenos Aires).

The bulk of the pane fragments include a range of sizes from small sliver-like sherds to substantial fragments; they have not (yet) been pieced together to determine their original dimensions, nor to determine whether they were rectangular or rhomboidal before they broke. It is assumed breakage occurred during the sinking event.

As a general rule, the pane fragments are more likely to have come from glazing used in 'internal' doors or bulkheads if they are rectangular; while rhomboidal panes were most likely used in the stern and quarter galleries (McKay, 1992: 40-1). The sherds – as well as the (near) complete panes – have been recovered mainly from the stern area, although several are from grids in the wreck's bow area[7].

Thicknesses of the panes vary between 3-4.5½ mm. It is possible that this anomalous variation reflects a different use: i.e. 'outboard' use (7 mm thickness for outboard use, e.g. from one of the stern lanterns?) as opposed to an 'inboard' use as a door 'light'. The 3- 4½ mm thicknesses for panes fitted as 'lights' into internal doors would aid below decks lighting in for instance the lower deck cabin doors or the doors allowing access from midships on the lower deck to the officers' mess (McKay 1992:54) or panes fitted into the doors on upper deck level giving access from the under half deck area, through the coach and captain's bed place to the Great Cabin (McKay 1992: 50).

Most likely however, the thickness variations are attributable to the method of glass

Table 126: Glazing recovered (1996-1999)

Completeness	Rectangular	Rhomboidal	Broad Arrow marking	Total No.
Complete pane	12	6	17	18
Near complete pane	9	-	8	9
Pane fragment	(5)		34	163

Table 127: Glazing recovered (1996-1999)

MA	Reg Description:	Dimensions (mm) (Length x width x thickness)	Artefact Notes:	Grid
0030	Complete pane	178 x 142 x 3	Rectangular, scratched broad arrow mark, colourless, frosted?	75
0619	[1] Complete pane [2] Fragment	[1] 195 x 185 x 6-7 [2] 200 x 190	1) Rectangular pane	50
1006	Complete pane	401 x 215 x 4	Rectangular, with a scratched broad arrow mark	63
1306	Complete pane	246 x 199 x 4	Rectangular, with a scratched broad arrow mark; colourless,	70
1579	Complete pane	265 x 201 x 3-4	Rectangular, scratched broad arrow mark	72
4000	Complete pane	245 x 210 x 4	Rectangular, with a scratched broad arrow mark	70
4725	[1] Complete pane [2] Pane fragment	[1] 300 x 150 x 3-4 [2] 199 x 190 x 3	1) Rectangular, with a scratched broad arrow mark. 2) Rhomboid?	87
4828	Complete pane	248 x 210 x 4	Rectangular; with a scratched broad arrow mark	87
4896	Complete pane	250 x 200 x 4	Rectangular; with a scratched broad arrow mark	89
6202	Complete pane	250 x 210 x 3	Rectangular; with a scratched broad arrow mark	88
6313	Complete pane	190 x 150 x 4	Rectangular; with two scratched broad arrow marks; rectangular	88
8188	Complete pane	193 x 168	Rectangular; with a scratched broad arrow mark; half pane? Deliberately halved? Bow section	183
1085	Complete pane	241 x 205 x 4	Rhomboidal, with a scratched broad arrow mark, colourless, frosted appearance, nipped edge	70
1129	Complete pane	231 x 185 x 3-4	Rhomboidal, with a scratched broad arrow mark, colourless	70
1283	Complete pane	246 x 214 x 3-4	Rhomboidal, with a scratched broad arrow mark, colourless	68
1305	Complete pane	230 x 200 x 4	Rhomboidal, with a scratched broad arrow mark, colourless	70
4732	Complete pane	246 x 200 x 4	Rhomboidal, with a scratched broad arrow mark.	87
4895	Complete pane	240 x 200 x 4	Rhomboidal; with a scratched broad arrow mark	89

Table 128: Near complete rectangular panes

MA	Reg Description	Dimensions (mm)	Artefact Notes:	Grid
60	Pane fragments (2)	212 x 114, 205 x 107, Th.4	Near-complete pane	111
143	Pane fragment	322 x 171 x 4	Near complete pane with a scratched broad arrow mark; located in association with the cabin fireplace ash pan	55
748	Pane fragments (8)	Th. 4	These fragments make up a near complete pane, only 2 pieces missing; one fragment has a scratched broad arrow mark	71
4068	Pane fragment	268 x 198 x 5	Near complete pane, with a scratched broad arrow mark, loss from one corner	70
4626	Pane fragments	1) 200 x 183 x 4 2) 200 x 70 x 4	Near complete; scratched broad arrow mark	87
4630	Pane fragment	171 x 136 x 3	Scratched broad arrow mark. Near complete	89
6323	Pane fragment	190 x 150 x 4	Near complete, with a scratched broad arrow mark; loss from one corner; speckled appearance	88
7850	Pane fragment	220 x 108 x 3	Near complete pane with a scratched broad arrow mark	94
8621	Pane fragment	340 x 240 x 3-4	Near complete rectangular pane with scratched broad arrow	110

manufacture. Eighteenth century pane glassmaking techniques produced a circular sheet (also referred to as a 'table') of glass with a diameter of approximately four feet (48") and a 'knob' at its' centre, where it had been attached to a rod, whilst being hand-spun by the glassmaker (Cooper, 1835). Although an intact one has yet to be found inside the wreck, it is likely that a number of such 'tables' were part of the ship's stores, as the need to immediately replace broken 'lights' could occur at any time during a voyage. The challenge for the shipboard glazier – probably the carpenter or one of the carpenter's mates – was to know how to sub-divide the 'table' as economically as practicable, i.e. without wasting too much of the round edge. Being circular, this most likely required cutting several long rectangles from either side of the central knob of the sheet; with the curved pieces remaining as off-cuts. The carpenter/glazier used a square, dividers and a straight edge rule for cutting against; as well as pincers for breaking off the edges of glass that had been partially cut through with a diamond.[8] The glazier subsequently sub-divided the long rectangles according to the shape requirements of the frame or sash to hand. The long rectangles, or the entire circular sheet, could be cut into smaller rectangles, or rhomboids or other required see Grid matrix A: 'Patterned deposition' of MA nos (window panes/-sherds) in each stern area grid square

An intact, i.e. complete or near-complete, 'table' has not yet been encountered in the wreck. However, partially used-up sheets may be among the pane fragments recovered to date. Some evidence, documentary as well as archaeological, of running repairs to lights during the voyage is to hand.[9] Sherds under MA1650 and MA1698 clearly have evidence of the application of a diamond cutter and straight-edge rule.

Further archaeological evidence may also be provided by the scratched broad arrows on a substantial number of panes

and pane fragments, which clearly show neat examples of arrows as well as cruder attempts suggesting application by more than one person. It is assumed the neat broad arrows are from panes that were installed when the vessel was being built or re-fitted in a dry-dock; cruder examples may reveal panes that were fitted as part of running repairs, i.e. while the vessel was at sea, the broad arrow possibly being scratched into the panes just before it was repaired, with the carpenter/glazier probably using a piece of gun flint to scratch the required broad arrow mark (see figure 453).

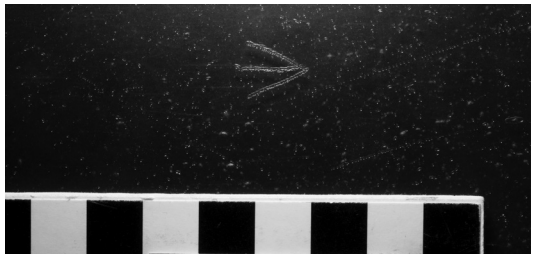

FIG. 453. Example of 'neat' broad arrow.

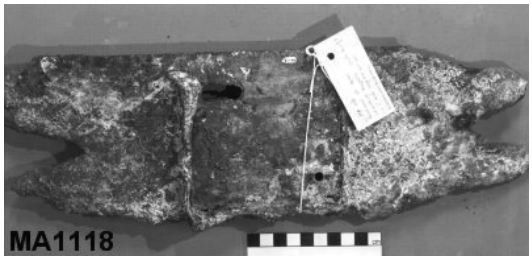

FIG. 454. Door stile fragment with outline of latch lock

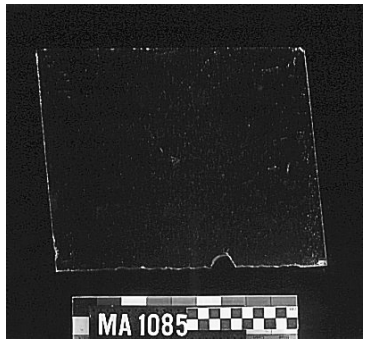

FIG. 455. Rhomboid pane.

PRELIMINARY ANALYSIS OF THE PANES

In the following analysis special attention has been paid to the deposition of the sherds and the (near) complete panes; it is evident from their distribution in the stern area that their deposition appears to be 'patterned' – i.e. there are several clusters of them, especially in the grids spanning the lower deck areas (grids 68, 70, 72 and 87-90) (Grid matrix A and B). This has been interpreted as suggesting that, as the corresponding doors disintegrated, their panes were deposited on deck in clusters and, more importantly, in close proximity to other door fittings (e.g. a lock or latch mechanism or a door handle/knob). One such cluster was found in grid 70 where rectangular pane (MA1006) was found in close proximity to a fragment of a door-stile that had been fitted with a lock (MA1118) (see figure 454).

For the purposes of this analysis, the assumption has been made that the cabin doors in question are to the officers' cabins – in particular the second and first lieutenants' cabins – on the starboard side of the lower deck as per specifications, and to the warrant officers' cabins on the port side of the lower deck, and that these particular doors were fitted with a lights consisting of four rectangular panes (cf McKay 1992: 56, dwg D2/8). However, flying in the face of this suggestion are the deposition of two intact rhomboidal panes (MA1085 + MA1129) in grid 70, which most likely had been fitted to quarter gallery frames or sashes (figure 455); also the presence of MA1006 is puzzling, it being a rectangular pane with what appears to be anomalous dimensions.

This deposition is most clearly seen in a plot of a clustered assemblage (grids 68, 70, 72 and 87, 88, 89, 90 (in Grid matrix A) that was found in the 8 grids around grid 89 (i.e. the central stern area) during the 1986 season and

Grid matrix A: 'Patterned deposition' of MA nos (window panes/-sherds) in each stern area grid square

55	**56** 22	**75** 30	**76**	**95** 8050,	**96**	**115**	**116**
53 #?	**54**	**73** 1374-76, 1417, 1427, 1445, 1605	**74** 1574	**93**	**94** 7780, 78507998, 8133	**113**	**114**
51	**52** 27, 611 655, 668	**71** 704, 732, 748, 1301	**72** 713, 1258, 1323, 1349, 1385, 1402, 1452, 1496, 1507, 1521, 1528, 1556, 1579, 1615, 1650, 1694, 1698, 1702, 4119, 7601, 7629	**91** 7664	**92** 82128, 7802, 8102	**111** 4660	**112**
49 699, 721	**50**	**69** 1133, 1253	**70** 1082, 1085, 089, 1107, 1129, 1305-06, 1390, 1633, 1679, 1736, 17691771, 4000, 4009, 40234026, 4037, 4061-2, 4068, 4070, 4080, 4088, 4108-10, 4127, 4135-6, 4152, 4169, 4174-5, 4191, 4865, 7621	**89** 4502, 4530, 4585, 45914630, 4643, 4650, 46524666, 4683, 4690, 47554776, 4820, 4848, 48844895-96, 4913, 49214923, 7662,	**90** 4807, 6399, 64096495, 6509, 7759	**109** 8506, 8555, 8761	**110** 8621
47 576	**48**	**67** 1026, 10511058	**68** 1105, 1134, 1141, 1282, 1283	**87** 4617, 4626, 4661, 47254732-34, 4740, 4745, 4748, 4752, 4801, 4804, 4828, 4833, 4843, 6234, 6302	**88** 4814, 6202, 63136323	**107** 6370	**108**
45	**46**	**65**	**66** 1057, 1177	**85**	**86**	**105**	**106**
43	**44**	**63** 1006	**64**	**83**	**84**	**103**	**104**

Grid matrix B: Showing 'patterned deposition'

Gr72 713, 1258, 1323, 1349, 1385, 1402, 1452, 1496, 1507, 1521, 1528, 1556, 1579, 1615, 1650, 1694, 1698, 1702, 4119, 7601, 7629	**Gr91** 7664,	**Gr92** 82, 128, 7802, 8102
Gr70 1082, 1085, 1089, 1107, 1129, 1305- 06, 1390, 1633, 1679, 1736, 1769, 1771, 4000, 4009, 4023, 4026, 4037, 4061-2, 4068, 4070, 4080, 4088, 4108-10, 4127, 4135-6, 4152, 4169, 4174-5, 4191, 4865, 7621	**Gr89** 4502, 4530, 4585, 4591, 4630, 4643, 4650, 4652, 4666, 4683, 4690, 4755, 4776, 4 820, 4848, 4884, 4895-96, 4913, 4921, 4923, 7662	**Gr90** 4807, 6399, 6409, 6495, 6509, 7759
Gr68 1105, 1134, 1141, 1282, 1283	**Gr87** 4617, 4626, 4661, 4725, 4732- 34, 4740, 4745, 4748, 4752, 4801, 4804, 4828, 4833, 4843, 6234, 6302	**Gr88** 4814, 6202, 6313, 6323

[MA nos found in central stern area (adjacent to grid 89)][Each grid square is 2 x 2 m; the square formed by the 9 grid squares measures 6 x 6 m].

the 1995 and 1996 seasons, when excavation continued in grid 70, after a large concretion (a carronade) had been removed from the grid square, and expanded into grids 87 and 89 in 1996-99.

OFFICERS' PERSONAL POSSESSIONS FROM THE *PANDORA* WRECK

Clusters of personal possessions were discovered in grids 68 and 70, and in the adjacent grids 87-90. They were concentrated in two areas, each of approximately one square meter – mostly on top of deck planking thought to coincide with the spaces taken up by the two (aft most) cabins on the starboard side of the lower deck and partially by the starboard side of the 'ward room' space adjacent to these cabins. According to Admiralty 'Establishments' (1745), these cabins were assigned to the first and second lieutenants. The wardroom was, however, also used by the senior warrant officers; notably the master, purser and surgeon, who occupied the lower deck cabins arranged along the port side of the vessel, opposite the lieutenants' cabins.

A lower deck cabin was barely large enough to move around in, being approximately 1.81m by 1.81m (6′ by 6′) on deck and 1.72m (5′ 8″ inches) high between the upper deck beams. Cabin furniture is likely to have been simple, sparse and functional; probably consisting of a sleeping cot suspended from the upper deck beams and possibly a small table and a stool or a simple chair. Most personal possessions would have been kept in a sea chest, also kept in the cabin. Any writing implements, associated paraphernalia (for instance, an ink bottle or a stick of sealing wax) and sheets of paper would have been kept in a portable writing desk.

What do the artefacts recovered from the area in the wreck that corresponds to Larkan's and Corner's cabins[10] indicate about Larkan and about Corner, and possibly about the other warrant officers who also frequented the ward room? How 'typical' were Larkan and Corner of fellow late eigthteenth century naval officers?

Obviously, because of their status as commissioned naval officers, they should be considered gentlemen (Rodger, 1986: 19). But should they also be considered as men with refined manners, for instance, because when at sea they apparently also used fine earthenware and porcelain bowls (tea-ware?) and cream-coloured dinner-ware and also kept their port in a decanter (MA4672) and used delicate glassware to drink from?

It seems that the table (in the ward room) which Larkan sat down to dine at with his fellow officers had all the trappings of any 'middling' class table in Britain at the time, with brass candlesticks (MA7756 and

FIG. 456. Larkan's name stamp (MA 4694) recovered from grid nos. 87/89 during the 1996 expedition.

FIG. 457. Associated chamber pot (MA 4578) recovered from grid nos. 87/89 during the 1996 expedition.

MA7863) and Chinese porcelain tea bowls and saucers as well as transfer-printed, refined earthenware crockery (MA4557, MA4854 and MA8781-88) which was found in the lieutenants' storage area. According to Hamilton, the *Pandora* was the first naval vessel to be supplied with tea by the Victualling Department (Hamilton 1998:9).

Decanters and carafes were serving containers used for wine, port and other liquors, or water. They were often kept in shallow stands. Two carafes were found close together in this area of the wreck.

Finding Larkan's name stamp (figure 456) in grid 89 appears to confirm that the second of the three starboard cabins on the lower deck was in fact his during the voyage; many of the objects, especially the personal and professional items (figure 457), recovered from this area are therefore directly attributable to John Larkan.

FIG. 458. Examples imitation 'china': a blue & white transfer printed refined earthenware saucer (MA 6499)

FIG. 459. Example of 'powder blue' porcelain saucer (MA4859).

Documentary evidence has not yet been found to indicate that name stamps of this type were officially issued to naval officers – this would provide an unambiguous explanation that Larkan had the stamp for official use, i.e. it was associated with his professional responsibilities as the first lieutenant. Most probably then, it was for private use and he therefore kept it in a portable desk. Unfortunately none of Larkan's private correspondence appears to be extant.

Chinese porcelain was much in demand in mid/late eighteenth century Britain. At the time of the *Pandora*'s voyage, it was still being imported in appreciable quantities from the Far East, even though by 1780 British potters, especially in Staffordshire, were manufacturing imitation 'bone China', transfer-printing refined local earthenware and manufacturing 'China-like' cream-wares and blue transfer-printed wares (Miller 1980: 3-4). Examples of real Chinese porcelain (MA4854-9) have however also been recovered from the lieutenants' store area indicating the *Pandora*'s lieutenants also used finer (presumably more expensive) crockery in addition to British imitations of 'china' and refined earthen-wares such as blue transfer printed ware, as well as 'cream-coloured' ware (See figures 458 and 459 both from wardroom area/lieutenants' cabins (Grids 87+70)).

POLYNESIAN ARTEFACTS – PRELIMINARY INTERPRETATION

When it came to attitudes towards indigenous peoples encountered during a voyage to the South Pacific, the crew of the *Pandora* were most probably no different from other crews of eighteenth century European ships voyaging in the Pacific Ocean. Among the activities the

crews engaged upon when ashore in the 'South Seas', 'curiosity' collecting rated highly; it was an activity that was well established and eagerly carried out; by the 'tars' (common sailors) and officers alike. In fact collecting was undertaken to such an extent,[11] that private (i.e. individual) trading came to be prohibited by standing orders issued by the captain, which remained in force until the ship's trade had been completed. These standing orders were only temporarily rescinded at each island upon completion of the purchase of necessary victuals and supplies such as fresh vegetables, fruit, live hogs etc. The ban on private trading usually also applied until the so-called 'watering and wooding' of the ship was finished.

For instance, upon arrival in Tahiti in April 1769 James Cook had promulgated special written orders stipulating that certain rules and procedures were to be observed to ensure "*regular and uniform trafficking*" with the Islanders; this amounted to the appointment of one or two officers only who were empowered to negotiate with the Islanders a reasonable price – from the European perspective – for fresh provisions, water and wood to replenish the ship's stocks (Cook's *Endeavour* Journal entry for 13 April 1769 in Beaglehole, 1968:75).

This apparently set a standard for Royal Navy crews who came into the South Pacific at a later date. William Bligh's order 'prohibiting the purchase of curiosities or anything except provisions' was issued (nailed to a mast) just prior to the *Bounty*'s arrival at Tahiti in October 1788 (Morrison in Rutter, 1935: 28). George Vancouver's orders for the crews of the *Discovery* and the *Chatham*, when they arrived in Tahiti in December 1791 were very similar to Cook's (Vancouver in Kaye Lamb, 1984:377).

Indeed Bligh's and Vancouver's orders were possibly based on Cook's, having likely been accepted by the Admiralty as sound practice, if not actually promulgated as standard procedure and copied verbatim as a prescribed example. It is not clear whether Captain Edwards issued the same or similar orders for the Pandoras. The available sources do not mention any rules or standing orders that may have been in force in the *Pandora*.

A distinction was made between an 'artificial' and a natural curiosity. Broadly defined, an 'artificial' curiosity was anything man-made or man-modified[12], whereas a natural curiosity referred to a specimen of natural history e.g. a sea shell.

On the European side, mainly metal objects, such as nails or spikes or sometimes iron tools, such as adze blades, knives and hatchets, were exchanged for a curiosity. During the voyage out to Tahiti in the *Pandora* the forge was actually in use for a period to make 'knives and other iron work' for trading purposes (Hamilton, 1793:23).[13]

Any 'curiosity' was much in demand as a souvenir or because it could be sold at home for a handsome profit to gentlemen-collectors. Many European collectors had impressive private collections, referred to as a curiosity cabinet. Bequeathed by their collectors, many of the private 'curiosity cabinets' became the first collections of early Anthropology or Ethnology Departments in later nineteenth century British and European museums and universities. Weapons, tools, apparel and sea shells were popular collectables. In the course of the eigthteenth century were many were opened for public viewing (Brears, 1992: 107).

The largest and best-known eigthteenth century collections from the Pacific were acquired during Cook's three voyages in the 1770s (Kaeppler, 1978) Subsequently, by the 1790s, there was a buoyant market for South Seas 'curiosities' in Britain and continental Europe.

WAR CLUBS

Tongan war clubs were an especially favoured item, avidly sought after, well into the nineteenth century (Van Duuren & Mostert, 2007:12). According to one authority, war clubs had also been the most collected object on James Cook's ships (Kaeppler 1978:238).

This also appears to have been the case in the *Bounty*. Morrison mentions that just prior to the mutiny, upon departure from Anamooka on 26 April 1789; their ship was 'fairly lumbered with them, there being scarcely room to stir in any part … what with yams and clubs in all quarters'. This was the result of the two hours leave that Bligh had given to the crew to trade for curiosities as well as for private stocks of yams and coconuts (Morrison in Rutter, 1935:39). However, Morrison describes the Tongan clubs in the *Bounty* as being 'inlaid with bone and pearl' (Morrison in Rutter, 1935:38).

George Forster, one of scientists on Cook's first *Resolution* voyage, mentioned that Tongan clubs existed in a great variety of shapes and sizes:

> The clubs of the people of this isle [Eua, one of the Tonga Group] were of an infinite variety of shapes, and many so ponderous [heavy] that we could scarce manage them with one hand; the most common form was quadrangular, so as to make a rhomboid at the broad end, and gradually tapering into a round handle at the other. But many were spatulated, flattish and pointed; some had long handles…by far the greatest part were carved all over in many chequered patterns… (Thomas & Berghof 2000:238)

FIG. 460. A collection of war clubs from the Pandora shipwreck.

It would seem Forster was describing an '*apa apai*'.

A typology for the various Tongan shapes and sizes has been proposed, distinguishing at least ten types (I – X) (St Cartmail, 1997:128). Five of these types are represented in the *Pandora*'s assemblage (St Cartmail: types II, III, IV, V and VI) see figure 460 and table 104.

- Type II is the 'povai', a two-handed pole club shaped like a baseball bat, with a round head;
- Type III is a 'povai' with a flattened head;
- Type IV the 'apa apai' (coconut stalk club;
- Type V the modified 'apa apai' (coconut stalk club); and
- Type VI, the 'mounga-laulau' (paddle club) (St Cartmail 1997:128)

All of the clubs described in Chapter 6 were most probably traded in July 1791 during the *Pandora*'s visits to the Tongan Islands – especially to Anamooka (Nomuka); except perhaps MA 4821, which may have been acquired several weeks earlier when the *Pandora* was in Samoan waters.

Except for MA 7946 and MA 7947, all of the clubs recovered from the wreck to date are from an area that corresponds to the commissioned officers' living quarters, aft on the lower deck in the stern area; they were therefore most likely part of a collection made by first lieutenant John Larkan or by second lieutenant Robert Corner.

Although the bow section has not been as extensively excavated to date as the *Pandora*'s stern section, it is evident never-the-less that 'curiosity' collecting was also engaged upon by other members of the crew; MA 7946 and MA 7947 were recovered from the bow section of the wreck. These two clubs should therefore be considered as part of a collection made by one of the lower-ranking crew whose personal belongings were stowed 'before-the-mast' – who ever he was, he was quite certainly not one of the commissioned officers, nor one of the senior warrant officers, i.e. sailing master, purser or surgeon, whose cabins were opposite the lieutenants' in the stern section of the vessel.

The following incident throws light on a (war club) collecting episode during the *Pandora's* voyage. In addition to Hamilton's specific reference to Polynesian weapons during an earlier part of the voyage[14], this description is one of the very few direct, primary sources referring to 'curiosity' collecting during the *Pandora's* voyage.[15]

A shooting incident at Anamooka

When the *Pandora* returned to Anamooka on 28th July 1791, they found a young chief in charge. Captain Edwards had not seen or dealt with this chief before. Unlike Fattahfahe and Toobou – the paramount Tongan chiefs – with whom he had negotiated during their first visit to Anamooka three weeks earlier, Captain Edwards does not mention the young chief's name in his journal:

> Neither Fattahfahe nor Toobou were now in the islands and the natives were now more daring in their thefts and would sometimes endeavour to take things by force, and robbed and stripped some of our people that were separated from their party… On 29th we began to water the ship – the usual road to the watering place was stopped – but upon application to a chief it was removed and the business of watering went on very well the remainder of the day and to the morning of the next – when Mr C the 2nd Lt received a blow on the back of the head and a pahpah mowee which he had in his hand was snatched from him and the thief run away with it, but he having a loaded pistol in his belt fired at the thief and

> shot him in the back and brought him to the ground…the Chief told me that our people had killed a man and when I found that the Lieutenant was struck I told him it was very well & that I was very glad the thief was shot, and that I should shoot every person who attempted to rob us. I took this opportunity of shewing him what our great guns & carronades would do by firing a six pounder shot on shore and an 18 pdr carr. I loaded with grapeshot into the sea. (Adm. MS 180, Bundle 11 – Miscellaneous papers, Capt. Edw. Edwards RN)

Violence between the Pandoras and the Tongans was not unprecedented; confrontations had occurred during the *Pandora*'s first visit to Anamooka earlier that month (July 1791) George Hamilton mentioned this earlier incident, involving Captain Edwards' servant, Edmonds:

> Two or three of the officers were taking a walk on shore one evening…the Captain soon joined us and brought his servant with him, carrying a bag of nails…which he [the Captain] meant to distribute… he took the bag… and sent him [the servant] with a message back to the boat, on which the crowd followed him. As soon as he got out of sight, they stripped him naked and robbed him of his cloaths and every article he had, but one shoe, which he used to conceal his nakedness. At this juncture Lt Hayward arrived from his expedition, and called for the assistance of the guard in searching for the robbers…but we soon discovered the great Irishman, with his shoe full in one hand, and a bayonet in the other, naked and foaming mad with revenge for the treatment he had received. Night coming on, we went back on board without recovering the poor fellow's cloaths. (Hamilton, 1793:84)[16]

This shooting incident raises a range of questions and issues; there also are many ways to interpret and account for it, for instance

- Perhaps Nomukans thought it was not right that permission had been given to the Pandoras to replenish their stock of water. Or, some locals may have thought they had not received sufficient payment for their water. Or they thought that the wrong people were receiving payment.
- Perhaps Nomukans were only inclined to obey the directions of some (senior) especially venerated chiefs and not others (lesser chiefs, 'juniors' who still had to 'prove' themselves?) Or perhaps they were trying out how far they could go under the authority of the young chief before they would be told to stop?
- Lieutenant Corner had perhaps traded for it unfairly?
- Lieutenant Corner had perhaps acted arrogantly or insensitively after he had acquired the '*pahpah mowee*', thereby provoking the Nomukan attack?
- As Captain Edwards suggests, the Nomukan who 'stole' the '*pahpah mowee*' from Lieutenant Corner was just a thief; but, did he 'steal it' back because he was indignant and outraged that Lieutenant Corner had acquired it? Perhaps because this '*pahpah mowee*' was of special significance?
- Perhaps some Nomukans thought it was sacrilege that the '*pahpah mowee*' had been traded away to a European?
- Captain Edwards was perhaps using stand-over tactics by demonstrating the firepower at his command; or, was he just being realistic? Could he have been trying to avoid further bloodshed by showing this young (possibly untried?) chief that he should direct his people to stop taking things by force from the

Pandoras. After all, from a European perspective this was blatant robbery. Edwards therefore tried to impress upon the chief that if he did not do so, that if the carronade was used against them[17], the consequences would be far worse than just one man shot dead.

- Consider the European perspective on being stripped naked in public. Was Lieutenant Corner concerned that the same would also happen to him? Like had happened a few weeks earlier to Edmonds, the captain's servant. Did he shoot his Nomukan assailant to avoid what he would have regarded as extreme humiliation? Something he – an officer in the Royal Navy - would never be able to live down in the officers' mess?[18]
- Or, had Lieutenant Corner recognised his assailant as one of the Nomukans who had stripped and humiliated Edmonds? So, perhaps it was a revenge shooting?
- Can other ways to interpret this incident be suggested? What would the Tongan perspective have been?

Among seventeenth and eighteenth century European explorers, Anamooka was well-known as a South Seas' island where 'thievery' was particularly rampant and daring (cf. Hamilton's remark about Cook's misnomer: he felt Murderer's Cove was more apposite than Friendly Islands) [Hamilton 1793:83] – or George Forster's account of a similar incident of theft when a crew member had been stripped of his clothing, and everything he carried taken from him, in 1773 during Cook's second voyage (Forster, 1777 Book II, chapter 1, S.v. 6th Oct 1773).

Compare this shooting incident to other contact events (e.g. nearly 150 years earlier during Abel Tasman's visit to Tonga in 1644) Other explorers' had also experienced hostile encounters with Nomukans. and with Polynesians generally (e.g. Cook's first encounters with Maori).

Further analysis of the range of Polynesian artefacts retrieved to date is required; in particular to determine whether there is a preponderance of Tongan material and, if so, the reason for this.

❑ ENDNOTES

1. Ceramics are defined here as comprising earthenware, stoneware and porcelain.
2. The author acknowledges the initial cataloguing work carried out on the cream-ware assemblage by James Cook University undergraduate student Ms Rikke Hammer.
3. This supports an observation in a discussion regarding the presence of cream ware crockery in shipwreck assemblages and from other archaeological sites as being reflections of "higher status occupations" (Hunter 2004:75).
4. The list found in Edwards papers with estimates of the monetary value (£200) of private property he lost when the *Pandora* sank, includes '*body-, table- and bed linen, books, charts and instruments, cab[b]in furniture, kitchen and table utensils and necessaries*…' (Adm. MS 180 Edwards' papers).
5. Approx 4mm.
6. The rhomboidal panes.
7. MA numbers 7849-50, 7968,8188, 8210, 8229, 8635 and 8705 from the bow area.
8. The diamond was set into a lead base, fixed to a hard wood handle.
9. For instance, the logbook records repair to one of the quarter gallery lights which had been 'stove in' by a following sea (Logbook entry 10th Nov 1790).
10. It is clear from the archaeological record that these cabins were the only two along the starboard side of the lower deck that apparently had not been taken down at the beginning of the voyage. As was the case as far as Lieutenant Hayward's cabin was concerned; according to the so-called Admiralty's "Establishments" for accommodation on a vessel's lower deck it should have been the third one along – counting from aft; Morrison mentions that Hayward's cabin was on the upper deck "under the half deck" (Rutter, 1935: 125).
11. For a French example, see a collection of 'curiosities' made during Bruny d'Entrecasteaux's expedition in search of La Pérouse in 1793, which is among a recently described, 'rediscovered' ethnological collection – including war clubs – in the 'Tropenmuseum' in Amsterdam (Van Duuren & Mostert, 2007).
12. For instance, a shark's tooth with a drilled hole, so it could be threaded onto a neck-cord to be worn as an adornment, is considered an 'artificial' curiosity.
13. This practice was also suggested for George Vancouver's Pacific voyage; the ship's surgeon Archibald Menzies advising that the expedition's ships should each carry a forge and tools to manufacture from iron, copper and brass "*forms that will best suit the fickle disposition of the natives*" (Menzies to Banks 4 Apr 1790, SLNSW, Mitchell Library microfilms FM4 23).
14. Hamilton mentions the purchase of a 9 foot long spear that resembled a Gothic spire at Whytootakkee; and also that at Tonga, Islanders came on board on several occasions, seeking treatment for 'fractured skulls' after they had been in affrays with rival suitors about a woman. Apparently these disputes were settled by a fight or duel using clubs (Hamilton, 1793:48).
15. Hamilton also refers to the 'brisk trade' that went on at Anamooka in spite of the shooting incident (Hamilton 1793:86).
16. Many violent incidents have been recorded throughout early contact history – cf. Cook's *Endeavour* Journal entry 15 April 1769 describing the shooting of a Tahitian for stealing a musket from the shore party's tent at Point Venus.
17. In this regard Captain Edwards was following practices established by Captain Wallis (HMS *Dolphin*) in 1767; and also followed by Cook in the *Endeavour* and by Bligh when he first arrived in Tahiti in the *Bounty*, all of whom, upon their arrival in Tahiti, had demonstrated to the locals the potential devastation that could be caused by the fire power at their command. (Cf. Morrison in Rutter, 1935:32).
18. Compare the *Bounty*s' experience at Anamooka in April 1789 several days prior to the mutiny; William Bligh had in fact berated Fletcher Christian, implying he was a sissy, i.e. for not responding with armed force when provoked by Islanders, who had taken tools and equipment from Christian's shore party (Morrison in Rutter, 1935:37). In this regard also, as far as the Pandoras' perceptions were concerned, there seems to be a hint of jocularity (at Edmonds' expense) in Hamilton's tone.