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Contents

Hugh Simms McCully, the Grays Hills Silcrete Quarries and the Missing Anvil

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Hugh Simms McCully (1878–1967) was the grandfather of the authors. He was a Canterbury farmer and amateur archaeologist who invented 11 agricultural machines. This is a personal account of his association with two Māori silcrete quarries located at Grays Hills in the lower Mackenzie Basin and an anvil described as missing in 2017 (Moore et al. 2020: 12). A recent paper that suggested James Robert Irvine was the first to write about the Grays Hills quarries (Moore et al. 2020: 5) caused us to search Hugh McCully's photographs and documents and review our grandfather's association with the Grays Hills quarries. Here we publish hitherto unpublished historical photographs of "Quarry No 1" in 1936 and 1953 and of the missing anvil stone. We also discuss references to the sites and anvil by Buick (1937) and Irvine (1943).

Keywords: anvil, Grays Hills quarry, Hugh McCully, "moa-hunters", silcrete

Location of the Grays Hills Quarries

Grays Hills Station is a high country run in the lower Mackenzie Basin, the first Pākehā occupier of which was William Arthur Gray (1837–1880) in February 1858 (Pinney 1971). Gray soon departed but left his name on Grays Hills, a low range of hills that rises to 943 metres above sea level. Two Māori silcrete quarries (New Zealand Archaeological Record Numbers I38/1 and I39/1) are located in the vicinity of Grays Hills Station homestead (Fig. 1). In his 1953 publication, Hugh McCully (1953: 410) called them "Quarry No 1" and "Quarry No 2", respectively.

Why Hugh McCully visited Quarries 1 and 2

Hugh McCully did not discover Quarry No 1 in 1930, as claimed by Simmons and Wright (1967: 73), nor was James Robert Irvine the first person to write about it (Moore et al. 2020: 5). Frederick Chapman (1884) and Lindsay Buick (1937) wrote about the quarry before Irvine (1943) did. We have in our possession, Hugh McCully's copy of Frederick Chapman's 1884 article titled "Notes on Moa Remains in the Mackenzie Country and other Localities". McCully marked up six pieces of information, one of which mentioned "an old Maori chert quarry, at Grays Hills Station" with debris thrown up at the side, and alongside were "several well-preserved fragments of bone [which] were so broken and so situated as to leave no doubt they had been left there by Maoris working at the quarry" (Chapman 1884: 175). This "old chert quarry" is Quarry No 1 (I38/1) which McCully first visited in 1913. In his own words, McCully (1953: 410) describes how he came to visit Quarry No 2 in 1953:

> *RAURU appears on a sketch map of the Waitaki River drawn by Te Ware Korari for Mantell in 1848; a copy may be seen in Johannes Andersen's Jubilee History*

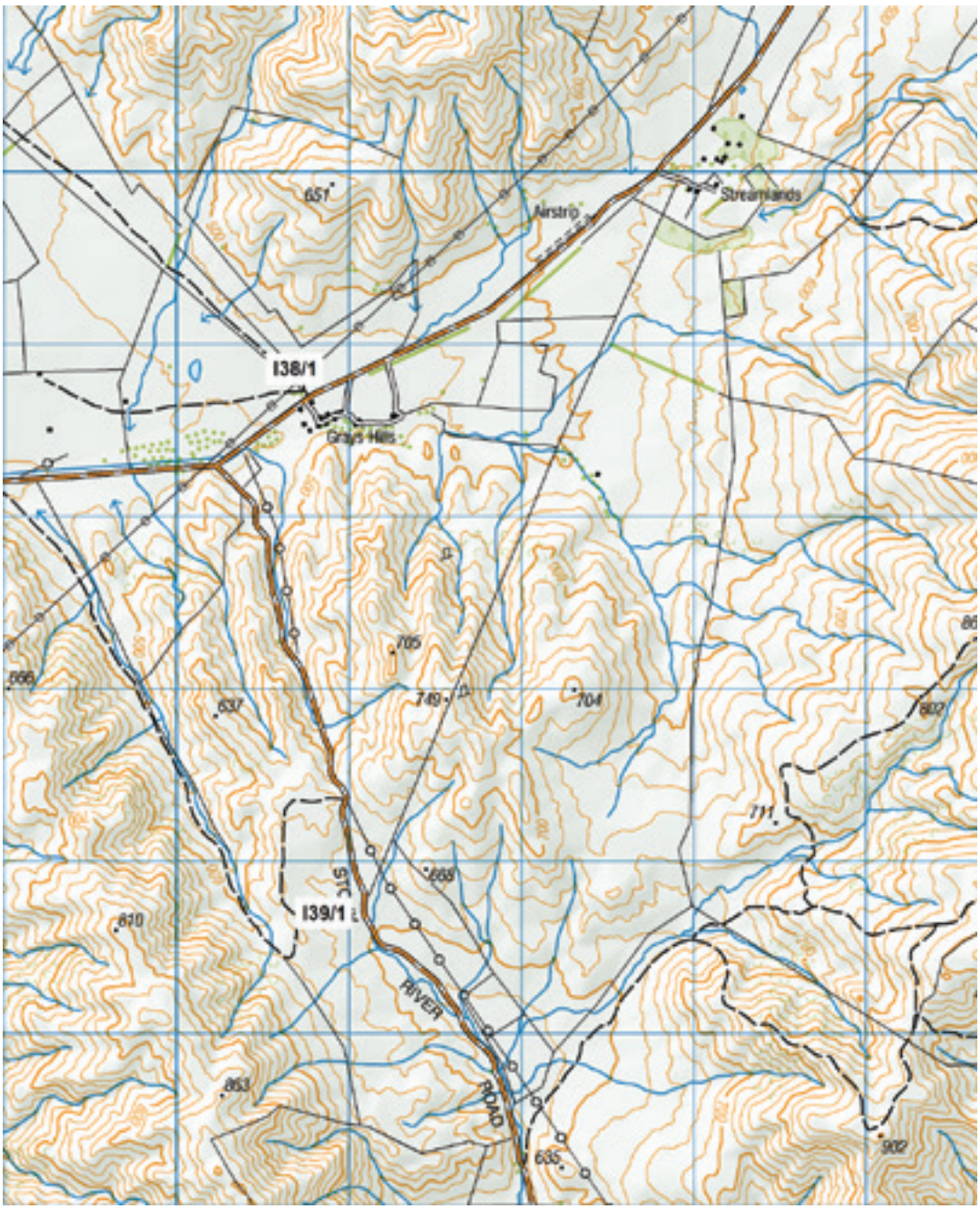

Figure 1. Location of Grays Hills quarries. Site I38/1 (Quarry No 1) is opposite Grays Hills Station homestead. Site I39/1 (Quarry No 2) is on Stony River Road. This work is based on/includes Toitū Te Whenua land Information New Zealand data which are licensed by Toitū Te Whenua Land Information New Zealand for re-use under the Creative Commons Attribution 4.0 International Licence. For more information refer to Moore et al. 2020, Fig. 1

Figure 2A. Grays Hills Quarry No 1. 1953. Hornsey collection. Standing immediately beside the small anvil is an Urquhart brother (left), Hugh McCully (centre) and Arthur Hornsey (right). Courtesy of Sue Hornsey, All Rights Reserved

> *of South Canterbury, page 39, where it is described as "an ancient settlement". For many years the writer has wished to locate Rauru, and a few weeks ago along with a friend, another exploratory journey was made.*

The trip was made with Arthur George Hornsey and here we publish for the first time a photo taken during that trip (Fig. 2A). They visited Quarry No 1 and Quarry No 2.

McCully takes Buick to Grays Hills, 1936

In April 1936, when Hugh McCully took the well-known anthropologist Lindsay Buick to Quarry No 1, an anvil stone was found alongside the silcrete pit (Fig. 2B).

In the paddock opposite the homestead, Buick (1937: 155) found:

> *… the bed of quartzite protruding in successive hummocks above the almost level ground. Beside each of these outcrops holes had been dug, suggesting that the experienced quarrymen had discovered that the stone lying beneath the surface was of better quality than the weathered material above. To secure the better stone they had excavated spaces several feet deep … lusty willow trees … have taken root in these excavations".*

Figure 3 is a photograph taken by McCully during the visit showing the scene exactly as Buick describes.

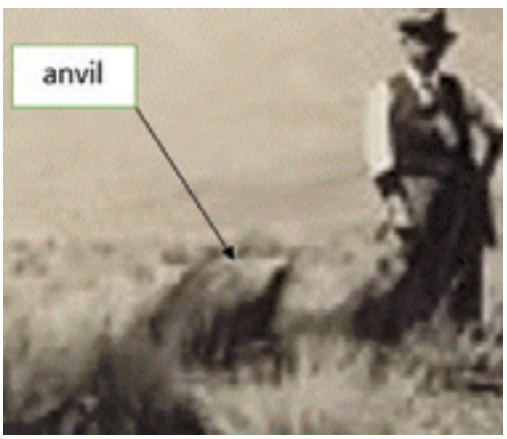

Figure 2B. Detail of Figure 2A revealing the now missing anvil at Quarry No 1

Figure 3. Hugh McCully's photo of a willow growing in one of the pits at Quarry No 1, Grays Hills. Quarried materials were still visible in the pits in the 1930s. Seymour collection. Courtesy of Marion Seymour, All Rights Reserved

McCully and Irvine at Grays Hills, 1938

Two years later, during Easter 1938, McCully took James Robert Irvine and a Mr B Beck from Southland to Grays Hills. They excavated a small shelter (which they described as a little round "moa-hunter" hut) and also examined three large trenches from which they estimated 100 tons (90.7 tonnes) of silcrete had been removed (Irvine 1943: 90). Irvine wrote:

> *Mr McCully drew our attention to a stone set in the ground … which he thought may have been used as a chipping platform or anvil; it certainly seems to have been purposefully placed in position* (Irvine 1943: 90; fig. 3)

McCully and Hornsey Pose Beside the Anvil at Quarry No 1, 1953

In 1948, McCully (1953: 410) learned from his friend James Grant, the previous owner of Grays Hills Station, about a new site on Stony River Road which "was 3½ miles [5.6 km] from the homestead, where flakes were very numerous". In 1953, Hugh McCully and his good friend Arthur George Hornsey visited Quarry No 1 at Grays Hills, posed themselves beside the anvil for a photograph (Fig. 2A), and then continued down the road to attempt to fulfil Hugh McCully's dream of locating Rauru. Disappointingly for McCully, they only found Quarry No 2 and no sign of any settlement. McCully and Hornsey were both aged 75.

Summary

Hugh McCully made frequent visits to Grays Hills Quarry No 1 (I38/1). McCully was considered by Roger Duff (1977: 102) to have established the frequent use of Quarry No 1 by "moa-hunters", but McCully did not discover this site. McCully took a number of people to the Grays Hills sites, several of whom published their findings. Despite its proximity to the fabled Rauru marked on a sketch map of the Waitaki River drawn by Te Ware Korari, Hugh McCully firmly believed Quarry No 2 was not Rauru. He believed that Rauru was an important site

that had not as yet been found and his final published words on the subject were "the quest goes on" (McCully 1953: 411).

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The Damon Collection: Canterbury Museum's Roman glass

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Among the lesser known artefacts in Canterbury Museum is a substantial assemblage of ancient glass. Some 30 objects are acquisitions made by the founding director, Sir Julius von Haast, or are later bequests. The bulk, however, comprises the Damon Collection. Purchased in 1901, this (mostly Roman) glass collection was put together by English geologist Robert Damon. The vessels, almost all in superb condition, were found in Cyprus, and at Tyre and Sidon in Lebanon around 1875–1882. Until now the origins and content of the collection have been obscure. This article reports some of the findings of recent research into the objects and their history as a collection. It will present the collector, the collection, and compare the assemblage to other material from the Levant during the Roman period. From archaeological finds and ancient literary sources we can learn the original context of the vessels now in Canterbury Museum. The collection, in turn, offers further insight into glass production and use in Tyre and Sidon, cities that played a significant role in the Roman East especially in relation to glass.

Keywords: Ancient glass, grave goods, Roman glass, Sidon, Tyre, Victorian collecting

Introduction

It would be difficult to find a museum that does not have unpublished material carefully stored away; the storehouses of museums present a largely untapped source of archaeological evidence. This article deals with such material. Among types of small finds from Roman sites, glass vessels like those in the Damon Collection are prone to subtle regional variation, as they were typically free blown and produced for local markets. This article aims to make known the content of the Damon Collection of Roman glass in context with similar material. The objects are presented in the accompanying catalogue, assigned numbers 1 to 134 by the author. The article examines trends that have emerged in analysis of the shape, colour and fabric quality, suggesting areas of further research regarding the material culture of Tyre and Sidon in the Roman period.

Robert Damon

Although originally a hosier and glover, Robert Damon made a name for himself in the field of natural science. With his son he established a prominent dealership supplying museums across the world with specimens ranging from shells and fossils to skeletons.[1] Although he does not seem to have had any formal tertiary education he produced a volume concerning the geography of Dorset. His widely published obituaries (1889) comment on collections he acquired for prominent museums, his extensive travelling and the breadth of his connections in scientific circles. Damon was well known as a geologist; only one article also named him an antiquarian (*Bath Chronicle and Weekly Gazette*, 9 May 1889: 6). Nevertheless, his museum of shells and geological specimens probably also housed his collection of ancient glass. Antiquities, and ancient glass in particular, seem to have been a personal interest. Shortly before his death Damon wrote an article concerning a Roman

amphora found in Weymouth. The article shows a sound understanding of existing archaeological methodology (Damon 1890). Its existence raises the possibility that Damon might have made notes on the discovery of his ancient glass, but if any do still exist, they remain unknown.

Articles reporting Canterbury Museum's purchase of the Damon Collection imply that it was Robert Damon himself who found the antiquities, having "spent a great deal of time investigating the tombs of the ancient cities of Sidon and Tyre" (*Star*, 1 May 1901: 3). There is likely truth at the heart of this statement, but it is improbable that Damon personally uncovered all the objects in his collection. At present there is not enough evidence available to state with certainty which objects he discovered and which he purchased. Nevertheless, a plausible picture of his acquisitions can be built on what information there is.

In 1873 Robert Damon travelled in association with the Palestine Exploration Fund. Established in 1865, the Exploration Fund was founded with the aim of researching the Holy Land.[2] Damon, a Sunday School teacher and deacon, was a perfect example of the type of Christian intellectual who might relish the idea of scientifically documenting a religiously paramount place. Archaeology was a key subject for the Exploration Fund, but geology – especially concerned with the Sea of Galilee and the Dead Sea, which were "expected to illuminate Biblical narratives" – was also among the subjects its prospectus listed (Goren 2001: 154). The time he spent with the Exploration Fund surely introduced Damon to archaeology and archaeologists, developing his interest in antiquity as well as geology.[3] This is the context in which Damon undertook travels that would lead him to form his antiquities collection.

Cyprus, from where Damon obtained 27 of his glass vessels, would have been a natural waypoint travelling to the Levant. There he probably took interest in the recent excavations of the American consul Luigi Palma di Cesnola, and likely bought from the glass already uncovered in great quantities at Idalium (near modern Dali).[4] These artefacts were displayed at a local event in Weymouth in 1879. The objects were described in a local newspaper as having been "discovered in ancient tombs and temples" of Cyprus (*Southern Times and Dorset County Herald*, 22 February 1879: 3–4), a description which continued into Canterbury Museum's records although there is no evidence of glass having been uncovered at temples.[5] It may, however, have been a generic classification for Cesnola's discoveries, as the phrase also forms the title of his 1877 publication.

The majority of Damon's collection comes from Tyre and Sidon, which he certainly first visited with the Palestine Exploration Fund. Lieutenant Conder, the leader of the expedition, made a passing comment in his reports from 1873 that they undertook the journey to Jaffa by land "partly in order to see Tyre and Sidon" (Conder 1873–1874: 17).[6] Between their departure from Beirut on 29 September and their arrival in Jaffa on 3 October there would have been little time for Damon to fossick at these sites, which were not the primary concern of the expedition and which had been abandoned by earlier French excavations. He likely returned to pursue his own interests. In any case, by February 1879 he had vessels from Tyre but not yet Sidon. No year is specified on the labels of his Tyrian vessels, but his Sidonian objects were uncovered in September of 1879 and 1881. Evidence from Damon's correspondence with a colleague suggests that Damon is unlikely to have been there in person in 1881.[7] It is also possible that his son made trips of his own and uncovered some artefacts.[8] Damon senior also had several contacts in the field of natural history. The French natural historian and archaeologist Bourguignat certainly supplied him with shell specimens from Sidon and may have been aware of Damon's personal collection (Dance 2006: 10). A small number of items were acquired in October 1882.

The provenance of these is not specified on Damon's labels, but their forms indicate that they were from the same area.

Damon sold a small number of glass vessels from Tyre and Sidon to the British Museum in 1879 along with many glass beads, but kept the vast majority of his finds.[9] His personal collection was bought by Canterbury Museum in 1901, hailed in local newspapers as an important addition to the collection (*Star*, 1 May 1901: 3; *Lyttelton Times*, 3 May 1901: 7). The Damon Collection was celebrated as being of a kind difficult to acquire, which added to its value. Because of the 1884 Ottoman Antiquities Law prohibiting the removal of antiquities from the Ottoman Empire it was, the newspapers reported, "now practically impossible to obtain further relics from those ancient localities" (*Star*, 1 May 1901: 3). While this was no doubt an exaggeration, the people of Christchurch clearly appreciated the acquisition. A portion of the collection was displayed in the Museum's Antiquity Room until the room was repurposed as the Early Colonial and Historical Room in 1946. While the Damon Collection had been described in 1901 as "one of the most remarkable collections the Museum has ever been fortunate enough to acquire", the subject of classical antiquity fell into disfavour during the post-war period (*Star*, 1 May 1901: 3). Although it is possible that the disappearance of the Antiquity Room is entirely coincidental, the timing does suggest that the Museum was responding to wider trends in public and academic opinion. The collection then fell into anonymity.

The Collection

Until 2019 the ancient glass collections of Canterbury Museum, including the Damon Collection, were unresearched, with the existing catalogue containing brief descriptions often based on the scanty nineteenth-century records. Canterbury Museum generously loaned the collection to the University of Canterbury's Teece Museum for the purpose of a master's thesis. This research involved identifying and dating the items, illustrating the vessels, and analysing the Tyrian and Sidonian finds for trends in form and manufacture. The project also included research into the value of glass in Roman antiquity and archival investigation of the value of these same artefacts to Victorian collectors and the public.

The collection consists almost entirely of vessels from the Roman period, spanning the first to fourth or early fifth centuries AD.[10] The vessel types include both table and storage ware in a variety of forms (Table 1). The Damon Collection consists of 135 vessels (Table 2), one of which cannot be identified within the remaining Roman glass collections of Canterbury Museum.[11]

Table 1.

Object Type	Quantity
Bowl	10
Plate	1
Jugs	4
Drinking vessel	5
Flask (table)	6
Stirring rod	1
Lamp	1
Jar	13
Bottle	27
Flask (storage)	66

Table 2.

Provenance	Quantity
Cyprus	27
Tyre	61
Sidon	38
Unknown	9

Grave Goods

Damon indicated on a few labels that vessels were found in tombs at Tyre (for example, number 13), but one might infer from their remarkable condition that his other finds were probably also from burials. A thorough comparative study of documented burial sites in Roman Syria was conducted by Lidewijde de Jong (2017). In the total assemblage, one fifth of the goods were pottery or glass. These were discovered in 80% of tombs dating from before the second or third century AD, at which point the distribution of goods per tomb fluctuates. As might be expected, the ratio of glass to pottery increases in favour of glass over time, and glass vessels were particularly common close to centres of manufacture like Tyre and Beirut; Sidon is not included in the study (de Jong 2017: 83–84).[12] Complete examples of glassware are usually only found in tombs, typically placed at the feet of the deceased. Such depositions perhaps resulted from the belief that physical remains of the deceased could threaten the living; it is possible that this pollution risk carried over to objects that were used for the dead (de Jong 2017: 85–86, 148). They may also be interpreted as ritual objects in funerary rites, or a means of paying respect to the deceased. Through comparison of Damon's finds with the results of de Jong's study we can determine the likely context the objects were found in, how typical they were, and note new insights the collection might offer.

The contents of vessels rather than the containers themselves were typically more closely related to the funerary ritual. Inhumation was the preferred mode of burial, with cremation unusual in Syria.[13] Interestingly, the original label that accompanied the portion of the Damon Collection on display in Canterbury Museum listed "cinerary urns" among the objects. None of the vessels are of the typical cinerary urn shape, but occasionally storage vessels were repurposed for holding ashes. If this label has any basis in fact – for example, if Damon noted finding ashes in a vessel – only one jar is a possible candidate (number 37). Other than this tentative possibility we must assume that most of the vessels were part of inhumation burials. The most common type of tomb in Roman Syria were hypogea, built underground. They were typically entered by a corridor leading to a small vestibule which opened to a central chamber. Burial niches were generally cut into the walls of this chamber, although sarcophagi and graves dug in the floor were also used (de Jong 2017: 37–86).

Maintaining the condition of the deceased's body appears to have been important in funeral ritual in Roman Syria, at least during the liminal phase between death and burial.[14] This is reflected in grave goods; by far the largest group of grave goods are the vessels that contained scented oils, perfumes, and makeup, many of which are made of glass (Fleming 1997: 27–35, 53–59). During burial rituals the body was adorned and embalmed for both practical and ritual reasons; the cosmetics used may also have served as offerings (de Jong 2017: 174). The contents of the Damon Collection are typical in this respect. Among the jars (numbers 29–41), and particularly the small, wide-mouthed examples (numbers 29–35), are likely to have been containers for cosmetic creams and powders. A double-tubed flask (number 134) belongs to a type used for kohl. Bottles (numbers 42–68) and flasks (numbers 69–134), generally the containers of oils and perfumes, constitute the largest portion of the collection.

A number of vessels in the Damon Collection may not only have had utilitarian value but also some kind of intrinsic value, possibly related to offerings. One type is the miniature flasks, which seem unlikely to have held enough scent to be practically useful (numbers 95, 111, and 124). Rather, they are more likely to have held expensive perfumes, indicating that quality was desirable. Items that indicate expense, whether in the contents or the vessels themselves, like the emerald

green flasks (numbers 121 and 122), may have also been chosen as some kind of offering. Perfume flasks that were made with aesthetic considerations in mind, like the drop-based vessels (numbers 76–78) are another example. In life, such vessels were more likely to be reused, as indicated by a fresco of a woman decanting into such a flask.[15] Less carefully made vessels that serve the same purpose equally well were easy to come by. Although we cannot discount other explanations such as immediate availability, for some people it was evidently important to use higher quality objects.

The other type of glassware in grave goods are vessels related to the preparation and consumption of food. This type of object constituted about 11% of the assemblage studied by de Jong, and most of these were ceramic. As a proportion of all glass vessels from 12 different sites for which de Jong was able to provide exact numbers, 9.2% were tableware.[16] The proportion of Roman period vessels related to dining in the Damon Collection among the Sidonian finds is 7.9%, supporting de Jong's conclusion that tableware, while typical in other parts of the Roman world, was uncommon in Levantine burial practice. By contrast however, 23.7% of the Tyrian finds appear to be tableware.[17] This number also differs from the results of Chéhab's excavations at the Al-Bass cemetery of Tyre, particularly regarding bowls, of which there were only two (Chéhab: 1986). While we unfortunately do not know the context of Damon's finds, such as proportion of tableware to storage within the specific depositions, the very fact of his having tableware from Tyre is striking compared with the dearth of exemplars uncovered by Chéhab. De Jong classes tableware with the "unusual" assemblages of early date, noting that the range of vessel types decreases in the second or third century (2017: 86). The tableware of the Damon Collection is fairly evenly distributed in date.

Among possible reasons for the higher representation of Tyrian tableware in the Damon Collection, personal taste seems unlikely, given that Damon collected many near identical utilitarian forms, apparently interested in all ancient glass. In the extensive evidence examined by de Jong there was only a single example of glass intentionally placed outside the burial space: cups found in the central chamber in a Palmyrene tomb (de Jong 2017: 86). At this point we can only speculate, but there is a possibility that in other tombs items were taken from such chambers by travellers and amateur excavators like Damon without disturbing the actual burials, thus skewing the results of later excavations. While we cannot draw any conclusions based on the evidence of the Damon Collection, its content does suggest that the paucity of tableware among documented excavations is not necessarily indicative of the original deposition of material in tombs. Another point for further investigation is the relative quantity of tableware between Tyre and Sidon. The Damon Collection suggests that glass tableware may have been more common in Tyrian tombs, indicating different trends in funerary rituals, but, particularly given the many different peoples and traditions mixing in the region, until more evidence is available nothing can be determined with certainty.

The presence of tableware in tombs suggests either banqueting or food offerings as a part of funerary rituals. De Jong considers the latter more likely (de Jong 2017: 87). Assemblages and tomb configuration do not suggest that banquets were held in the tomb, though they may have been held elsewhere. On the other hand, there is evidence of libations and incense burning in tombs of Palmyra, forms of worship also common in Palmyrene religious ritual outside funerary traditions (de Jong 2017: 152–154). Offerings could have been intended either for divinities, protective and chthonic, or for the deceased, in order to appease and ensure good will. It might also be because rituals differed between urban centres, if the prevalence of glass tableware among Damon's Tyrian finds is indeed an indication

that such vessels were more common in tomb assemblages of the area. As with cosmetics vessels the value of tableware will have been related largely to their usefulness in performing burial and commemoration rituals, but some items were probably chosen with care. Among the serving flasks recorded by Damon as found in tombs are large decorated pieces (numbers 21–22). To take something relatively costly and useful in everyday life out of use implies that the quality of vessels used as grave goods could be important in venerating the dead.[18]

Production

Glass vessels were produced foremost for daily use, becoming grave goods as a secondary function. Glass manufacture in the ancient world was divided between primary workshops, where the raw glass was produced, and secondary workshops, where vessels were formed from the imported slabs of glass. The majority of vessels in the Damon Collection are almost certainly of eastern Mediterranean production, most likely Syro-Palestinian, at both primary and secondary stages, intended for local consumption.[19] Items exported across the Empire were typically tableware, but the majority of the Damon Collection are types probably produced primarily for the local market, especially since most of the collection postdates the growth of glass working in Italy (Stern 2004: 103). Pliny refers to Sidon as "*artifex vitri*" (crafter of glass, *Naturalis Historia* 5.17), while elsewhere commenting that Sidon was "formerly" famous for its glass (Naturalis Historia 36.66). After initial Sidonian innovations, developments in glass manufacture such as furnace improvements seem to have centred in Italy rather than in the province of Syria-Palestina (Stern 2004: 82–89). It is possible that in this period the export of fine finished vessels from Syria-Palestina had declined. Almost all of Damon's glass artefacts were thus likely both made and used locally in Tyre and Sidon.

Vessels in the Damon Collection produced elsewhere were probably imported to Tyre and Sidon for their contents. Two flasks, for example, are emerald green, a colour predominately associated with Egyptian manufacture (numbers 221 and 222).[20] The examples in the Damon Collection are of a particularly deep colour, while the other two vessels in the collection, a miniature jar (number 32) and a candlestick flask (number 120), are a lighter variant. These may all have been imported as finished vessels, although we cannot discount the possibility of importing recycled, or raw coloured glass. In any case, the presence of these vessels (10% of the Sidon finds), suggests the possibility of differing trade connections and fashions between Sidon and Tyre. The remainder of the Damon Collection comes from Cyprus and contains or comprises mostly first to second-century forms. Analysis of Cypriot glass from late antiquity has shown the use of sand from both Egyptian and Syro-Palestinian origin, though largely the latter (Ceglia et al. 2015). With the island's proximity to the Levantine coast this is hardly surprising, and we can expect glass of earlier centuries, like that in the Damon Collection, to follow a similar pattern. Glass was shaped in secondary workshops in Cyprus, and the quantities of vessels discovered in tombs suggest a thriving local market. Glass was used the Empire over, but the artisans of different regions shaped it in their own ways. Regional trends in style of beaker, for example, are recorded in Rabbinic literature, noting a distinction between vessels from Alexandria, Galilee, and Judah (Israeli 2003: 159).

Differences in form may have been more noticeable in tableware, but trends in the Damon Collection open the possibility that there may have been local variations in storage vessels on the Levantine coast. Bottles make up 52.6% of Damon's Sidonian finds, in sharp contrast with 8.5% of the sample from Tyre. Flasks, on the other hand, make up about 50.8% of the vessels from Tyre and 21% of the Sidonian glass.[21] Both vessel types were used for storing liquids, though bottles generally

have a larger capacity. Unless further archival material is uncovered to provide details of context for Damon's finds, these results must be treated as idiosyncratic to the Damon Collection, but do suggest possible lines of inquiry regarding wider trends in regional variation.

The late first to second-century bottles also show stylistic differences between the two cities. Both types of bottle are cylindrical and have broad lips, but the rims are narrowly folded on the Tyrian examples, whose necks are constricted before the shoulder (numbers 48–50). The shoulder of the Tyrian bottles is also more horizontal and, on some examples, with a fairly deep impression encircling the neck. Sidonian bottles appear to have straighter sides (numbers 44–47). Differences in the first to second-century forms are, however, typically quite subtle. A variety of small flasks, for example, are common across the Roman Empire (numbers 69–74), but several new, distinctive forms of glass vessel appear among the later finds from Tyre. Some are more locally concentrated, such as the large, flattened flasks (numbers 132 and 133)[22] while others, like the long fusiform vial, appear across the Empire during the fourth century (number 131). There are also differences in the occurrence of decorative aspects. Among the vessels of the Damon Collection, features that are more decorative than practical, such as the drop-shaped bases of scent flasks (numbers 76–78), are not particularly common. Decoration, especially applied trails (numbers 38–40) or blobs (numbers 10 and 28), increases significantly among the collection's vessels from the third to fourth centuries. Decoration is also much more common among all the Tyrian finds of the collection. Again, these observations cannot be extrapolated to reflect on a wider context and must currently serve merely to suggest trends and features for further analysis that may lead to deeper understanding of regional trends over time.

Why there appears to have been more distinction in form between glass of the western and eastern Empire in the third and fourth centuries is a complex question that this article cannot fully address. Certainly, the Third Century Crisis must have had an impact on the glass industry, with the short-lived Palmyrene Empire cutting off both Egypt and Syria-Palestina – the main sources of material for glass production – from the rest of the Empire. The stability of the East under Diocletian is seen as a contributor to the flourishing of crafts such as glass making. It is also possible that the distinctive nature of vessels produced in this period was also the result of earlier regional divisions; perhaps disruption of trade slowed the spread of ideas, or objects may have been deliberately unique in order to show the place of origin, in the manner of the Egyptian emerald green glass. In any case, glassware of the late third and fourth centuries seems to attest both to growing differences across the Empire, but also the continuity of trade connections.[23]

Glass from Sidon and Tyre not only show differences in shape and style but also in the quality of fabric. In the Damon Collection there are many vessels with impurities such as bubbles and striae. These impurities can be skimmed off the surface if the glass is heated to high enough temperature; many impurities may indicate sub-standard furnaces, or simply less time spent in making a vessel (Stern 2004: 93). High demand may be a reason for such flawed vessels making the market. Certainly, poor-quality fabric does not always equate to a poorly formed vessel; in the Damon Collection a very symmetrical, neatly formed flask has some of the greatest impurities (number 107). The same is true of a small jar (number 35). The Damon Collection shows great variation in fabric quality among vessels, and the trends differ depending on origin. While all locations represented by the collection have a majority of high-quality glass, the difference in numbers of high and low-quality fabric is much more extreme in Sidon than Tyre. Vessels with mixed natural colour and burgundy streaks, typically caused by incorrect mixing of

manganese, are all from Tyre (numbers 34, 83 and 125). Another Tyrian flask (number 112) shows evidence of recycling with mixed cullet (broken remains of glassware). Tyre was the more important city, and in 194 AD was made the capital of Syria Phoenice by Septimius Severus. It was considered a main urban centre when Septimius Severus reorganised the provinces of the Near East in 193, and was granted privileges as reward for supporting him. While speculatory, it is possible that a larger urban population meant that secondary workshops were less concerned with quality and relied more on recycling to meet market demand.

Different degrees of technical skill were also involved in the manufacture of raw glass, resulting in differences in cost also based on colour. This is certainly apparent in Diocletian's *Edict of Maximum Prices*, implemented in 301 AD. While this code cannot tell us the exact prices of glass, in attempting to set a maximum cost for objects and wages for services it provides an indication of the relative value of materials and labour. All glass was more expensive than pottery, but distinctions between categories of glass show significant variation in price. The passage from the edict as translated by Dan Barag reads thus (2005: 184):

> *Alexandrian glass,*
> *one pound……24 denarii*
> *Judaean greenish glass,*
> *one pound……13 denarii*
> *Alexandrian plain*
> *glass cups and vessels,*
> *one pound……30 denarii*
> *Judaean plain glass cups*
> *and vessels, one pound……20 denarii*

Barag has suggested that the categories "Alexandrian glass" and "Judaean greenish glass" refer to types of glass rather than geographical location, with Alexandrian as the colourless glass and Judaean as the natural light-green hued glass (Barag 2005).[24] While David Whitehouse argues that Judaean glass in fact refers to the location of production, he too acknowledges this glass to be naturally coloured (Whitehouse 2004). Regardless of the true geographical origin of raw glass production, it is likely that the price distinction was based on the colour, or lack thereof.

The highly fragmentary Greek version of the edict reveals that there were a further three types of glass listed, possibly distinguished by colour. Barag suggests that one of the fragmentary categories, also priced at 30 denarii, refers to an artificially coloured, possibly purple glass (Barag 2005: 184). While fashion apparently favoured colourless glass, stronger, manufactured coloured vessels were still as valuable. Coloured glass was also applied as decoration to clear and naturally coloured vessels around this time. As both colourless and artificially coloured glass are achieved by careful addition of minerals, these types were more highly valued than the natural bluish and greenish hues resulting from iron oxide impurities in sand.

In spite of being more expensive, colourless glass was nevertheless used for several humble storage vessels in the Damon Collection, such as storage bottles (for example numbers 44, 45 and 47). The vast majority of the Damon Collection is naturally coloured, but a sizeable portion is colourless and most of these are storage vessels. A high proportion of the bottles are colourless, especially in comparison to flasks. This may be related to the place of production rather than the vessel type: most of the bottles come from Sidon, and the naturally coloured portion is largely made up by the Tyrian examples.

All vessels of intense, often quite dark, colour were from Sidon. Two of these are items made of deep blue glass, from approximately the first to second centuries (numbers 27 and 29). Fashion for artificially coloured vessels is associated with the Augustan period, but obviously there was still reason to use vividly coloured glass in later periods. Some of these second- to third-century vessels have been

described as being of low value apparently based on their small capacity (Arveiller-Dulong and Nenna 2005: 251). Stuart Fleming similarly remarks that such "chunky" flasks were "produced to satisfy simpler, rural needs" (Fleming 1999: 85). According to the *Edict of Maximum Prices*, however, these strongly coloured, heavy vessels would have had relatively high value. The small capacity could indicate that they contained luxury goods and the sturdiness would make them suitable for export.

Value of Glass

What value would the objects of the Damon Collection have had in antiquity? As we have seen, many vessels were made of material with impurities, suggesting that they were valued for utility over anything else. *The Edict of Maximum Prices* indicates that artificially coloured and de-coloured glass had greater monetary value than naturally coloured glass. While this was likely based on the labour and skill level involved, colourless glass appears to have long had high aesthetic value. Early vessels, of which there is possibly one example in the Damon Collection (number 1) were probably made to resemble rock crystal. Other examples were found in the palace of Nimrud, a possible indication of their use by the aristocracy.[25] Vessels of similarly moulded glass continued to be produced down the centuries, although their status apparently became more fraught in Republican Rome.[26] With the advent of glass blowing, colourlessness did not mimic crystal and was appreciated for the new merits it offered. Trowbridge observes that the range of attributes expressed by poets making comparisons with glass extends beyond its transparency, such as "shining, sparkling" and "bright" (1930). Essentially, the poets admire the quality of light seen in or reflecting off glass. Among the most frequent references are those describing water as glass-like.[27] Other poets describe things as brighter or more glittering than glass; glass seems to be a standard example of this glittering quality against which a comparison may be made. The phrase "*splendidior vitro*" – "brighter than glass" – is used by both Ovid, referring to Galatea (*Metamorphoses* 13.791) and Horatius, describing a spring (*Carmina* 3.13.1). The transparency of glass was also enjoyed by fresco painters. Still life images utilise colourless glass vessels through which the contents or other objects can be seen (Cool 2016).

Ancient literature otherwise provides evidence of a great range of cost in glass: while some glass was common and cheap, other objects "could be classed with precious metals" (Trowbridge 1930: 136). From Strabo we learn that a glass bowl could be purchased for the lowest denomination of currency (*Geography* 16.2.56) and in poetry of a similar period glass appears to be associated with poverty.[28] It is certainly likely that small vessels were cheap around glass producing centres such as Sidon and Tyre. There are also references to: "costly" glass, and glass vessels valued equally with gold and silver (Petronius *Satyricon* 55. Apuleius *Metamorphoses* 2.21.9), which appear to refer to items requiring more complex technique, such as painted or mould-blown vessels with intricate friezes like circus beakers (rare among extant finds) or even cameo glass.[29] The Damon Collection does not contain such vessels, and we can assume that most of this collection was, in antiquity, on the cheaper end of available vessels.

The practicality of glass had bearing on its status-value. Thus we hear from Petronius' Trimalchio in the *Satyricon* of c. 54-69 AD:

> *You will forgive me, what I will have said: I myself prefer glasses, they certainly do not taste. If it were not breakable I'd prefer it to gold…(50)*

Trimalchio would prefer glass, but gives an excuse for choosing gold. The fragility of glass was certainly so renowned it found its way into poetic metaphors; "glass-like" could

thus be used to describe the ephemeral nature of life and fortune (Trowbridge 1930: 75–76). This also manifests in the myth of flexible glass; a craftsman presents a glass object to the emperor, letting it fall and become damaged before promptly beating it back into shape. His work is then destroyed, or he himself killed to prevent the knowledge from being handed down, because flexible glass would lead to the depreciation of precious metals (Pliny the Elder *Naturalis Historia* 36.67). "Gold would be regarded as mud!" exclaims the Caesar of Petronius' version (Satyricon 51).[30] It seems incredible that even an unbreakable glass would be more highly valued than gold, but glass does have an important feature that no other material had until the advent of porcelain; it does not affect the flavour of its contents. There is perhaps another element behind Trimalchio's comment, however; when a material becomes common due to its utility, it loses value as a marker of status.

Trimalchio, however, as a caricature of a vulgar *nouveau-riche* freedman, does not necessarily reflect culturally elite opinion. From Pliny the Elder we learn that glass has replaced gold and silver for drinking vessels (*Naturalis Historia* 36.67). Vessels requiring greater craftsmanship were no doubt preferable to the elite, but some change may have been prompted by a general culture shift in Pliny's time, with the pragmatic Vespasian presenting a pointedly different persona to the flamboyant Nero. The fourth-century AD work *Scriptores Historia Augustae* tells us that the emperor Gallienus always drank from gold cups, "disdaining glass", while a later emperor admired finely crafted glass cups. Trowbridge cites these examples as demonstrating that the favoured glassware held among the wealthy was subject to the "whims of fashion or individual taste" (1930: 137). While this is certainly true, the status of glass tableware was perhaps not quite so dire. The comment regarding Gallienus' taste in drinking vessels is among examples illustrating luxury and depravity of lifestyle (*Historia Augusta* 17.5). While we cannot know if this was indeed true of Gallienus, the passage implies that although it was often humble, glass was in fact not vulgar. Rather, in scorning glass for its cheapness, figures like Gallienus reveal their favour of luxury over practicality, and thus moral baseness. While at the cheaper end of glassware, the tableware in the Damon Collection could thus have been used in a variety of households by many people for a wide range of purposes.

As an industry, glass production connected several different trades and crafts, and was even of some value to the state for its dependence on the tightly controlled natron supply. Stern has calculated from the *Edict of Maximum Prices* that an unskilled labourer would have been able to afford one or two small vessels of the cheapest glass (Stern 2007: 384). Such a person might have opted for the even cheaper, and sturdier, pottery instead. Nevertheless, we do not have to look much further up the social ladder to find glass in use in daily life. Glass tableware may have been less common among the wealthy due to its more humble status compared to precious metal, though highly crafted objects were still desirable. The versatility of glass meant that it could be both extremely cheap and very costly. Being non-porous and transparent, so that the contents were visible, glass was used daily at all levels of society. It was valued for its practicality in storage vessels and dinnerware and aesthetically for its beautiful transparency that no other material could produce. Glassware was also subject to tastes and styles that could be similar across the Empire or differ on a very local level. Determining the value of a particular item requires negotiating all the different aspects of value. While this may be complicated and often subjective, considering each facet of monetary, utilitarian, and intrinsic value gives a richer view of the links a single vessel could have to many ideas and aspects of society in the ancient Roman world.

Summary

Robert Damon appears to have collected whatever was readily accessible to him from the graves of Tyre and Sidon. Recent excavation on Cyprus by Cesnola likely resulted in a flourishing local market where Damon acquired material. The greater part of the collection consists of vessel types typically used in burial rituals: jars, bottles and flasks, which usually contained oils, perfumes and cosmetics. Although also probably from burials, the percentage of tableware, including bowls, drinking vessels and serving flasks, is unusually high in the collection.

The homogeneity of much Roman glass is often so astonishing that differences can be hard to spot. Trends in the Tyrian and Sidonian vessels of the Damon Collection suggest anomalies that research on other finds, particularly from controlled excavations, could explain. Damon's artefacts give an image of Sidon as a city that maintained a high quality of glassware no matter how humble the object, perhaps out of skill and pride in their reputation as the inventors of the craft. The former *artifex vitri* may have also imported coloured wares from Egypt, holding trade connections and fashions that Tyre did not have. The same first-century beakers were used in both cities, but Tyre may have favoured flasks as storage vessels over the bottles dominant in Sidon. The Tyre that Damon's glass reflects was a city with great local demand for glassware, content to sell wares with significant impurities to meet the needs of a large populace. While decorative wares increase in both cities around the third to fourth centuries, they were consistently more favoured by Tyrian fashion. The relatively high percentage of tableware among the Tyrian sample also hints at the possibility of differing funerary practices between these Levantine centres. All together the impression Damon's glass gives of these cities is one of both trade and localised fashions and traditions, tastes and craft, that give a richer image of Sidon and Tyre in the Roman period. This image may be a mirage. The possibilities, however, must be investigated further.

In time, further excavations from the sites of Tyre and Sidon will, hopefully, provide more information on vessels like those in the Damon Collection, and will correct any inaccuracies presented here. Robert Damon did not conduct controlled excavations, and if he bought from local dealers there are further problems to consider. Given what is known of his work and character, it is likely his artefacts were serendipitous finds encountered in the process of seeking geological specimens. Nevertheless, thanks to his proclivity for labelling, we have some indication of their provenance. This collection thus builds on existing knowledge of Roman glass from the Levantine coast and extends the foundations for future study.

Catalogue

Entries are formatted with my own catalogue number, the Canterbury Museum catalogue number, object type and date. The dimensions given are the height, maximum body diameter and maximum rim diameter, in millimetres. If the body and rim or mouth diameter is the same, this measurement is simply referred to as 'Max. D'. The weight is given in grams. Damon's penchant for labelling has provided the place of discovery for most objects. On most of the vessels from Sidon and Cyprus he noted a year and sometimes a month, presumably of excavation. This is given in brackets. The catalogue entries otherwise contain a physical description, including production related damage and impurities. This is followed by a brief condition report, and parallels are given where another example is particularly similar. Both the author's catalogue number and the Canterbury Museum catalogue number are given; see table 3 for comparative numbers. It is the author's hope that publication will lead to any necessary emendations and corrections to the identification.

Table 3. Author's catalogue numbers and corresponding Canterbury Museum catalogue numbers

Author's Catalogue Number	Canterbury Museum Catalogue Number	Author's Catalogue Number	Canterbury Museum Catalogue Number	Author's Catalogue Number	Canterbury Museum Catalogue Number
1	C1956.134.1	34	EA1979.633	67	EA1979.608
2	C1956.134.2	35	EA1979.599	68	EA1979.581
3	C1956.135	36	EA1979.534	69	EA1979.557
4	C1956.137	37	EA1979.521	70	EA1979.622
5	C1956.136	38	EA1979.515	71	EA1979.572
6	EA1979.551	39	EA1979.514	72	EA1979.523
7	EA1979.604	40	EA1979.516	73	EA1979.619
8	EA1979.603	41	EA1979.549	74	EA1979.594
9	EA1979.601	42	EA1979.517	75	EA1979.535
10	EA1979.602	43	EA1979.584	76	EA1979.556
11	EA1979.550	44	EA1979.504	77	EA1979.544
12	EA1979.605	45	EA1979.503	78	EA1979.546
13	EA1979.606	46	EA1979.502	79	EA1979.560
14	EA1979.519	47	EA1979.505	80	EA1979.569
15	EA1979.520	48	EA1979.610	81	EA1979.506
16	EA1979.598	49	EA1979.573a	82	EA1979.533
17	EA1979.558	50	EA1979.574a	83	EA1979.541
18	EA1979.559	51	EA1979.586	84	EA1979.529
19	EA1979.637	52	EA1979.579	85	EA1979.530
20	EA1979.600	53	EA1979.585	86	EA1979.518
21	EA1979.596	54	EA1979.582	87	EA1979.589
22	EA1979.620	55	EA1979.575a	88	EA1979.528
23	EA1979.597	56	EA1979.613	89	EA1979.526
24	EA1979.570	57	EA1979.612	90	EA1979.525
25	EA1979.522	58	EA1979.614	91	EA1979.527
26	EA1979.629	59	EA1979.611	92	EA1979.524
27	EA1979.547	60	EA1979.578	93	EA1979.510
28	EA1979.501	61	EA1979.588	94	EA1979.627
29	EA1979.513	62	EA1979.583	95	EA1979.536
30	EA1979.634	63	EA1979.577	96	EA1979.621
31	EA1979.635	64	EA1979.609	97	EA1979.568
32	EA1979.631	65	EA1979.576	98	EA1979.593
33	EA1979.632	66	EA1979.580	99	EA1979.553

Table 3. Author's catalogue numbers and corresponding Canterbury Museum catalogue numbers (continued)

Author's Catalogue Number	Canterbury Museum Catalogue Number	Author's Catalogue Number	Canterbury Museum Catalogue Number	Author's Catalogue Number	Canterbury Museum Catalogue Number
100	EA1979.591	112	EA1979.628	124	EA1979.630
101	EA1979.567	113	EA1979.531	125	EA1979.626
102	EA1979.615	114	EA1979.512	126	EA1979.623
103	EA1979.565	115	EA1979.590	127	EA1979.624
104	EA1979.563	116	EA1979.561	128	EA1979.625
105	EA1979.562	117	EA1979.618	129	EA1979.587
106	EA1979.564	118	EA1979.555	130	EA1979.636
107	EA1979.552	119	EA1979.554	131	EA1979.538
108	EA1979.616	120	EA1979.507	132	C1956.133.1
109	EA1979.617	121	EA1979.607	133	C1951.133.2
110	EA1979.566	122	EA1979.595	134	EA1979.542
111	EA1979.537	123	EA1979.508		

Each catalogue entry includes an illustration of the vessel, useful for noting features that may be obscured in photography. The right view shows the exterior, including any decorative details, whilst the left interior cross-section reveals greater detail of the method of crafting and the variation in glass thickness at different points of the vessel. Due to printing requirements the scale varies in the illustrations here featured.

Bowls

The distinction between bowls and cups can be difficult to determine, and bowls may have been used by the Romans both for serving food and as drinking vessels. One bowl in the Damon Collection is possibly Phoenician (number 1), similar to examples found at Nimrud (British Museum accession numbers 91534 and 91523). As this would be an extremely rare item, further, more specialist, identification is necessary. Moulded bowls with wheel-cut grooves (number 2) were very common in the Hellenistic to early Roman period and were produced in the eastern Mediterranean (Weinberg 1970; Dussart type A.II.11. 1998: 51). Glass moulding continued in the first century AD with ribbed bowls (number 3), produced throughout the Roman Empire (Isings form 3a. 1957: 18). Bowls with a tubular ridge (number 4) are also found throughout the Empire, and the example here is perhaps the smallest documented (Isings form 69a. 1957: 89; Israeli 116. 2003: 120; Arveiller-Dulong and Nenna 5. 2005: 36). A deceptively simple bowl (number 5) does not have any parallels known to the author. The fire-rounded rim may indicate a second to third-century date, although this is very tentative. Bowls with tubular rim and foot appear to have been made throughout the Empire, but the example here (number 6) is probably of eastern Mediterranean, and perhaps specifically Syro-Palestinian production (Arveiller-Dulong and Nenna 521. 2005: 190; Lightfoot 99–101. 2017: 106–107). Similar examples also come from Cyprus. Hemispherical bowls (numbers 7–10) are also common across the Empire and are typically dated to the third or fourth centuries. Those with wheel-cut lines (numbers 7 and 8) already appear in the second century, generally with polished rims and quality fabric in contrast to later examples (numbers 9 and 10). Applied blobs (number 10) are a later form

of decoration (Isings form 96. 1957: 113–116; Jennings and Abdallah 2001: 255; Jennings 2004–2005: 260). These bowls have also been found in an early fifth-century context.

Plate

There is one plate (number 11) in the Damon Collection, of a well-documented type attributed to Syro-Palestinian production (Arveiller-Dulong and Nenna 2005: 356).

Drinking vessels

Beakers with wheel-cut grooves (number 12) are a common type dated to the first half of the first century AD. Production has been attributed to Italy and the northwestern provinces, and eastern examples may be considered imports (Isings form 29. 1957: 44; Stern 20. 2001: 46 is closest in shape). An example in the Louvre, however, has been attributed to eastern Mediterranean manufacture (Arveiller-Dulong and Nenna 528. 2005: 192). Carinated beakers (number 13) have been found at Cyprus, Israel, and Jordan; they were probably produced around the eastern Mediterranean (Israeli 161. 2003: 160; Lightfoot 70. 2017: 88). Indented beakers (numbers 14 and 15) are common throughout the Empire from the second half of the first century, particularly in Italy and southern France. There are variations in the form; the examples here are like those from Cyprus, possibly produced in the eastern Mediterranean (Arveiller-Dulong and Nenna 26. 2005: 28; Lightfoot 82. 2017: 96). The small goblet (number 16) appears to be an unusual form. The method of shaping the foot is found on eastern Mediterranean beakers that appear to have been a precursor to the stemmed goblet popular in the late fourth century (Weinberg 1988: 62–63; Israeli 2003: 162–163).

Jugs

Jugs were for serving wine and perhaps sauces, but also for decanting perfumes. There is a lot of variation within each broad type. Small globular jugs with folded rims (number 17) are very common in Cyprus and are believed to have been produced there (A variant on Isings form 14. 1957: 31; Arveiller-Dulong and Nenna 2005: 184). A larger jug (number 18) has a close parallel for body shape in an example from the Louvre, but a completely different rim (Arveiller-Dulong and Nenna 39. 2005: 44). The collar rim is found on first to second-century vessels. Jugs with a pear-shaped body (number 19) were identified by Vessberg as a possibly Cypriot type (Vessberg 1952: 125, 128). The rim is a type common on second-century bottles. The most common form of late Roman jug among fragmentary Beirut finds has a fire-rounded rim with a thick trail applied below (Jennings and Abdallah 2001: 242. Fig. 3.19, 5). A jug in the Damon Collection with identical features (number 20) may provide an example for the complete vessel shape.

Flasks (serving)

A number of large flasks were probably intended for serving as well as storage and could perhaps be classed as decanters or carafes. A large spherical flask of quality glass (number 21) seems a probable decanter. These flasks, with either wheel-cut or abraded decoration, were produced in the eastern Mediterranean. They are rarer in the western Empire, where they were probably imported in small numbers (Isings form 70. 1957: 90; Stern 37, 38. 2001: 101–103; Arveiller-Dulong and Nenna 885. 2005: 291 where it is classed among vessels for serving). The globular body and wheel-abraded lines remained popular on a later type (number 22) found across the Empire with varying types of decoration (Isings form 103. 1957: 121–122). Some examples have been attributed to Syro-Palestinian manufacture, as is probable for the one here (Arveiller-Dulong and Nenna 1113–1114. 2005). The fourth-century vessels with funnel-like mouths or necks are more obviously suited to pouring relatively large quantities of liquid (numbers 23–26). Most of their features are found on vessels across the Empire, but the worked rims are more typical of eastern examples

(Isings form 104b. 1957: 123–125). Number 24 appears to be an undecorated example of a type attributed to Palestinian manufacture, or more general eastern Mediterranean production (Stern 104. 2001: 215; Israeli 179. 2003: 168). From the same period are optic blown globular flasks (number 25) and flasks with pinched ribs (number 26) (Israeli 177. 2003: 167). The latter is decorated similarly to flasks of the same type as number 24, but is a shape that continues into the Byzantine period with applied decoration (Dussart type BX.322. 1998: 143–144).

Stirring rod

These rods (number 27) appear across the Roman Empire, with the twisted form the most common. Their use is still conjectural, but it is generally supposed that they were used for mixing and applying cosmetics and medicines, or stirring wine (Vessberg 1952: 152; Isings form 79. 1957: 945). A second to third-century letter among the Oxyrhynchus papyri refers to a delivery of four glass πλευρά and four glass flagons (λάγυνοι) delivered together in a breadbasket (Trowbridge 1930: 170–171). The standard meaning of πλευρόν is 'rib', and it is tempting to identify it as a reference to these thin rods. This is purely conjecture, but if ever verified could add evidence for the use of such implements in stirring wine.

Lamp

Conical vessels are variously lamps and beakers. Examples from Karanis had an oily residue in the interior while others are inscribed with "Drink, Live" (Israeli 2003: 193). The Damon Collection example (number 28) is almost certainly a lamp on account of its proportions. The exact same pattern of decoration appears on another example, and also on fine tableware found at Cyprus (Israeli 229. 2003: 195; British Museum dish and bowl/beaker: accession number 1871.1004.2–3).

Jars

Jars do not appear to have been common in the eastern Empire until around the third century. One unusual example is a miniature of an artificial blue associated with Egyptian glass that may have been an import, very tentatively given an early date based on colour. Further investigation is required (number 29). An unusual miniature jar is conical (number 30), but most follow a common globular pattern (numbers 31–34) attributed to Syro-Palestinian manufacture (Chéhab 1986: 228–231. pl. 35.2–5; Israeli 297, 298. 2003: 235–236; Arveiller-Dulong and Nenna 1163–1166. 2005: 362). Globular jars with funnel mouths (number 35) have been found at both third and fourth-century sites (Arveiller-Dulong and Nenna 1167–1168. 2005: 362). A sack-shaped miniature jar (number 36) is so simple a form that it appears throughout the Roman period, more commonly attested on western sites. Another example without a base was found in a Claudian era grave at Trier (Isings form 68. 1957: 88–89; Goethert-Polaschek 1977: 242). Mould-blown square jars (number 37) are relatively uncommon among documented finds. Other examples, from the end of the third to the fifth century, are believed to be of Syrian production (Dussart type BVII 2425. 1998: 92). During the fourth century, jars with zigzag trailing (numbers 38–41) were very popular throughout the Near East (Arveiller-Dulong and Nenna 1181–1183. 2005: 362).

Bottles

Square handled bottles (number 42) are generally a western form, frequently bearing maker's marks. Arveiller-Dulong and Nenna do not exclude the possibility of an eastern variant, however (2005: 184). The lack of a maker's mark and the broad, flattened lip of the example here are more typically eastern features. Cylindrical bottles are an eastern form spanning the end of the first century until the fourth century. The collar rim (number 43) or broad, hollow rim, sometimes described as a disc (numbers 44–47), are characteristic of the earlier examples (Arveiller-Dulong and Nenna 2005: 185). The lip is believed to

have facilitated slow, drop-by-drop pouring (Stern 1977: 76). A variant of cylindrical bottle are the thinner-walled bottles with broadly splayed but only slightly folded rim (numbers 48–50), a feature similar to second to third-century flasks (numbers 116 and 117). Stern plots a development of bottle rims, the fold becoming narrower and tighter in the third century, although rim types no doubt overlap in use (Stern 1977: fig 1B). Israeli dates a bottle with a broad hollow rim to the third to fourth centuries (2003: 245). A group of smaller bottles with varying rims (numbers 51–55) all have a more steeply sloping shoulder. Another eastern Mediterranean form is that of the pointed bottles (numbers 56–58). They appear to have been developed before the mid-third century, produced in Syrian workshops (Stern 1977: 80–82). A more unusual variant (number 59) has a flattened base (Stern 22A. 1977: 80). Pointed bottles with similar rim but rounded base are Arveiller-Dulong and Nenna 1150 (2005), and Stern 127 (2001). Funnel mouthed bottles with cylindrical body were introduced in the fourth century (Stern 1977: 79; Arveiller-Dulong and Nenna 2005: 360). Variants are folded rims (numbers 60 and 61) or rounded (numbers 62–66) (Dussart type BXI 3211a-b. 1998: 160–161). Bottles with an impression in the middle of the rim, creating a lower ridge (numbers 67 and 68), are a type produced across the Empire (Isings form 102. 1957: 120; Goethert-Polaschek form 110a, 110b. 1977: 187; Dussart type BXI 3212. 1998).

Flasks

Isings describes tubular vials with constriction between neck and body (number 69) as one of the most common first-century perfume bottles. They tend to be naturally coloured and are found across the western Roman Empire (Isings form 8. 1957: 24). Other common flasks (numbers 70–73) have wider bodies (Arveiller-Dulong and Nenna 2005: 30–31 class these as variations of Isings form 8). The necks tend to be very short relative to the body, which tapers outwards with contour varying between rounded and steep. Although they are found across the Empire, folded rims are much more common on eastern examples. Less common are small globular flasks (number 74), also an Empire-wide type (Arveiller-Dulong and Nenna 573–576. 2005: 185). Flasks with a double bulge (number 75) are mostly found in the Near East and are attributed to Syro-Palestinian workshops. All examples in the Louvre have a long neck (Arveiller-Dulong and Nenna 619–634. 2005: 185). The small necked variation has been found on Cyprus (Lightfoot 2017: 203–206). Unlike this example, they tend to have a flattened bottom. Fusiform flasks with a drop-shaped base (numbers 76 and 77) are particularly common in Cyprus and the southeast coast of Turkey. The general form is known throughout the Empire, with several variations in specific shape and rim technique. Among the frescoes of the early first century AD Villa Farnesina is an image of a seated woman decanting perfume from a jug into a small flask that may be of this type (Isings form 9. 1957: 24–25; Arveiller-Dulong and Nenna 617–618. 2005: 185). Number 78 may be a miniature version. Flasks with long necks and flattened globular bodies (numbers 79 and 80) are a less common type. The form appears in jugs catalogued by Vessberg, dated as Antonine–Severan. Vessberg remarks that they may be a "special Cypriote type", as they have not been found elsewhere (Vessberg 1952: 215–216. Type AIα, pl. XV, 2. Vessberg's dates have often been revised). Flasks with a long neck and short conical body (numbers 81 and 82) are common in the western Empire. These have somewhat shorter necks and folded rims, features that may indicate eastern production (Arveiller-Dulong and Nenna 2005: 31). Number 83 may the body of a similar flask.

A common type of second-century Syro-Palestinian flask (numbers 84–87) is distinctive for the rounding of the body towards the base (Arveiller-Dulong and Nenna 557–605. 2005: 185). A variant has a narrow, elongated body (numbers 88–94). Two examples in the Louvre were acquired by Renan, and another comes

from Sidon (Arveiller-Dulong and Nenna 601–605. 2005: 210-211). Number 95 appears to be a miniature version of the same form. Flasks with a broader high conical body (numbers 96 and 97) are especially common on the Levantine coast. They are attributed to Syro-Palestinian or Cypriot workshops (Arveiller-Dulong and Nenna 672–684. 2005: 230-233). A flask with an ovoid body (number 98) is an unusual type. Other examples are unknown to the author. The thick, hollow rim is common on second-century bottles.

Flasks with long necks and bulbous bodies (numbers 99–110) are typically attributed to Cypriot or Syro-Palestinian workshops (Arveiller-Dulong and Nenna 685–703. 2005: 233-237). The examples in the Damon Collection are all from Cyprus. The bulbous body shape ranges in contour from somewhat globular (numbers 99–101) to more conical (numbers 102–110). Number 111 may be a miniature version. A variation on smaller scale is made of very thin glass (numbers 112–114). It does not seem to occur among Cypriot finds and may be a more exclusively Levantine type.

Flasks with wheel-cut grooves (numbers 115 and 116) also appear to be a specifically Near Eastern type that was exported to the West. One example in the Louvre is from Sidon, others less specifically from the area of Phoenicia, acquired by Renan (Arveiller-Dulong and Nenna 733–742. 2005: 245–247).

A bulbous flask with funnel mouth (number 117) appears to be the same type as others found at the Al-Bass cemetery of Tyre. A similar flask, but with folded rim, is dated by Arveiller-Dulong and Nenna to the second to third centuries (729. 2005: 244), while those discovered by Chéhab came from contexts with third and fourth-century coins (1986: 217–218. pl XII 1–2). On bottles, funnel mouths occur in the third to fourth centuries.

Certain second to third-century flasks with short conical bodies are often referred to as "candlestick unguentaria". They were produced across the Empire. The eastern examples, unlike their western counterparts, never have maker's marks and are often of small capacity (Arveiller-Dulong and Nenna 2005: 186). Numbers 118 and 119 are relatively short, broad type (Isings form 82 A2. 1957: 97–98), while number 120 is a quite different variation, in dark green glass often attributed to Egyptian manufacture (Isings form 82 B2. 1957: 99). Another example was found on Cyprus (Lightfoot 361. 2017: 248). The vessel itself may have been fashioned elsewhere from imported glass.

Thick walled, emerald green-flasks (numbers 121 and 122) are extremely common in the Egyptian region but very rare elsewhere; these may be imports (Arveiller-Dulong and Nenna 2005: 251). Some examples of this type have been identified as kohl containers. Number 123 has a similar rim, thickness, and capacity, but is more roughly made of lower quality glass, and has a high conical body. It may have served a similar purpose, but been a cheaper, locally produced variant. Flasks without distinction between neck and body (number 124) are generally dated to the third century. The type was common among finds at Karanis, Egypt (Harden 1936: 276–277; Matheson 175. 1980: 67–68). Number 124 is a miniature version.

Indented globular flasks (numbers 125–129) seem to be Syro-Palestinian. Examples appear to have been found in the Al-Bass Cemetery of Tyre (Chéhab pl V, VI.1–6. 1986: 206). Spouted flasks (number 130) were produced in both the western and eastern Empire. Examples have been found on a number of coastal and inland sites of the Near East from third and fourth-century contexts (Arveiller-Dulong and Nenna 2005: 359). Long fusiform flasks (number 131) are common throughout the Roman Empire in the fourth century. These vessels are associated with a funerary context (Arveiller-Dulong and Nenna 2005: 362). This type of vessel has been found at sites in modern-day Israel, Syria and Jordan (Isings form 105. 1957: 126; Chéhab 1986: 255. pl. 69, 2). Flattened globular flasks (numbers 132 and 133) are of another Syro-Palestinian form that appears in the third

century and have been found in contexts from the third until the beginning of the fifth centuries. Other examples of the extremely flat type are attested at Tyre, from a third-century context (Arveiller-Dulong and Nenna 1065–1067. 2005: 360). Double-tube flasks (number 134) are concentrated in the Levant and are believed to be a local type. Examples have been found with instruments for applying make-up, and occasionally traces of the contents (Dussart type BXIII.212. 1998: 173–174; Israeli 2003: 227). Interestingly they are extremely rare on nearby Cyprus. They continue into the Byzantine period with decoration growing evermore elaborate and bulky. The very fine trail on this one places it as an early example.

Acknowledgements

Thank you to the reviewers for their helpful suggestions. Any remaining errors are my own.

Endnotes

1 His success is evident in his position of sole British agent for the Blaschkas, creators of exquisite glass models of natural specimens traded across the world – including to Canterbury Museum.

2 "No country should be of so much interest to us as that in which the documents of our faith are written"; the opening of the Palestine Exploration Fund's prospectus, quoted in Goren 2001: 154.

3 Damon later sought out shell specimens specifically from sites important in antiquity. Dance 2006: 10.

4 Cesnola reports having excavated "from 1867 till the end of 1875 at different intervals"; although Damon probably never crossed paths with Cesnola, he must have been aware of the excavation sites. Cesnola 1878: 83.

5 Author(s) unknown. 1977–1980, entry(?) 164. Accession number 2010.189.1, Box 6/10, file B11/F20. Canterbury Museum Archives.

6 Damon gave a public lecture in 1876 on his travels with the Palestine Exploration Fund. Author unknown. Travels in the Holy Land. *Southern Times and Dorset County Herald*, 5 February 1879: 4.

7 A letter to ALCG Günther in 1881 places him along the Volga in late August and in London in October, with some suggestion that he intended to be back in England already in September. Damon 1881. DFZOO_200_20_106-108, Natural History Museum Archives.

8 Among the collections that Damon dealt in were cretaceous fish fossils from Lebanon; the name of his son is also linked to these collections. Smith 2016: 64.

9 British Museum accession numbers 1879,1108.1–85. The glass vessels contain two bottles from Sidon and nine items from Tyre: six bottles of varying shapes, a jug, beaker, and jar. Photography and descriptions of these vessels is in the process of being updated; among the more fully documented is 1879,1108.7, a bottle (flask) closely resembling number 115 (EA1979.590) in the Damon Collection at Canterbury Museum.

10 There are two exceptions: a cast bowl possibly predating Roman rule in the Levant, and another bowl possibly from the eighth or seventh centuries BC, during the Phoenician period. A third cast bowl is a Roman ribbed bowl. 134 objects out of the total collection of 135 have been securely identified as Damon's; numerous possible candidates for the final object exist.

11 More than 135 objects are listed as being part of the Damon Collection. If we accept that the reported total of 135 is indeed accurate, multiple objects have unknown provenance. Several items do stand out as unlikely to have been collected by Damon; four of these are in the mis-identified section. Labels in Damon's writing were on 132 objects; another two are of types well represented among the labelled examples. This leaves one object unaccounted for. The possible candidates are a slender first century flask, recorded as being from Sidon (EA1979.511. Isings type 8. 1957: 24). The Sidon identification does not occur in the Museum's 1977–1980 catalogue. A fragmentary flask (EA1979.540), probably similar to n. 73, is apparently from Tyre, although only the accession number is written on the object and no other label remains. The same is the case for the neck of a flask (EA1979.539). A more unusual flask (EA1979.532) is also said to be from Tyre. 'Tyre' is written on the object with the 1979 accession number, but this information is not given in the

1977–1980 catalogue. Chéhab documents a few flasks with ovoid body from the Al-Bass cemetery, found with third and fourth-century coins, which may be similar (Chéhab, pl. XVII. 1986: 211).

12 Due to the incomplete nature of many early excavation reports, de Jong's analysis of grave goods uses only those objects from reliably documented tombs, and the investigation of the original context focuses on a smaller group of "relatively undisturbed" tombs.

13 de Jong suggests that cremation burials may have been "restricted to the Roman military" in Syria, 2017: 150.

14 Families do not appear to have had reluctance about reusing the burial spots of past generations, de Jong 2017: 158–159.

15 Villa Farnesina, early first century AD, now in the Museo Nazionale Romano di Palazzo Massimo. See Olthof and Teunissen 2018, 110–11.

16 de Jong 2017, 235–334. I have left out the results from Hama as it was too difficult to determine exact numbers from the graph. The glass vessels from that site were only bottles and small jars; including this data would lower the percentage of tableware further.

17 Due to the different identifying terminology it is difficult to determine whether a "flask" refers to a storage or serving vessel. Nevertheless, if serving flasks are removed from Damon's finds the percentage of tableware remains relatively high, at around 17%.

18 Suggestions have also been made that quality goods may indicate the wealth and social status of the deceased or their relatives (Lightfoot 2017: 187). The items in the Damon Collection are generally of the quality deemed to be "not used as status symbol" for the deceased (Lightfoot 2017: 69).

19 General opinion long held that there were few primary workshops in the Roman period, almost all exclusively in the eastern Empire (see summary in Stern 2004: 96). Although the Levant still appears to be the most common source for glass-making sand, increasingly refined analysis of raw sand materials have suggested the possibility of primary production factories in the western Empire (Gaino et al. 2012). For more on composition of ancient glass see Rehren and Freestone 2015.

20 For more on emerald green glass see Rosenow and Rehren 2014.

21 There are 11 additional items discovered by Damon so11he British Museum in 1879; two of the nine Tyrian vessels appear to be third-century "pointed" bottles (see catalogue numbers 56 –58). He also sold two Sidonian cylindrical bottles. Including these in the analysis of forms results in negligible difference, however.

22 Examples are also found on Cyprus. Lightfoot 2017: 290.

23 For further speculation on the effect of political and other events – such as plague – on glass industry see Fleming 1999.

24 This theory is supported by Stern (2007). I am inclined to agree with them. In addition to their arguments, the interpretation that these are types of glass makes sense given that there were other sources of raw glass, and broken glass from potentially several sources was recycled to create new vessels, none of which would be accounted for if "Alexandrian" and "Judaean" only refer to glass from those localities.

25 These are now in the British Museum (accession numbers 91534 and 91523). Barag numbers 20–30.1985: 63.

26 Cicero (Pro *Rabirio* 14.40) in 54 BC referred to glass as "fucosus" – beautified or counterfeit – and "fallax" – deceitful. Glass imitation rock crystal was perhaps scorned by some as mimicry.

27 For example Ovid, *Metamorphoses* 4.355–6 and *Heroides* 15.157–6.

28 Propertius Elegies 4.8 mentions a glass service described as "summery", an idiomatic way of referring to poverty, possibly deriving from association of lighter, inexpensive clothing with warmer months. Lewis and Short, 1927, 62.

29 See also Martial's epigram 14.49. For the changing value of glass in the ancient world: Stern 2012. Circus beakers: Stern 1995: 96.

30 In Petronius' version the emperor is unnamed. Pliny simply relates that this is rumoured to have happened "in the reign of Tiberius", and dismisses the story as fiction. Cassius Dio associates the craftsman with an architect from another story, who suffers death at the hands of Tiberius, though the exact reason is not specified (57.21).

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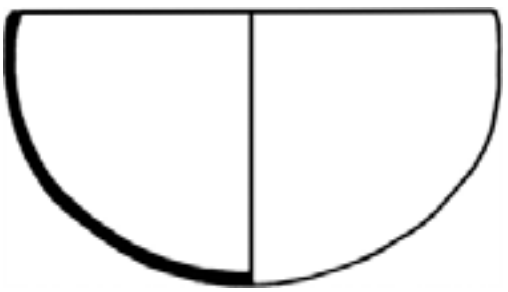
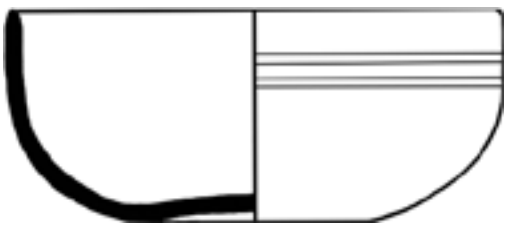
Catalogue



Author Number 1. C1956.134.1
Bowl, circa eighth–seventh century BC
H: 4.7 cm. Max. D: 8.3 cm. W: 5 g
Damon Collection (October 1882)

Possibly Phoenician cast glass, colourless, translucent. Vertical rim, ground lip. Hemispherical body, rounded base. Pinprick bubbles.

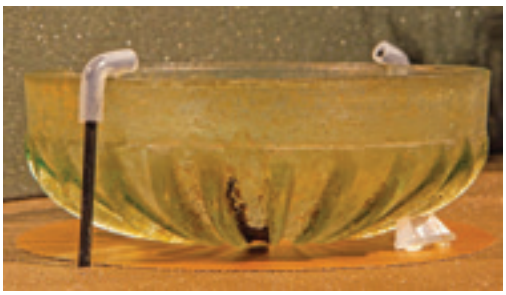
Two small surface accretions on the exterior near the rim. Small abrasion on body, some soiling. Iridescence on interior and rim appearing bright violet. Complete.



Author Number 2. C1956.134.2
Bowl, circa second–first century BC
H: 4.3 cm. Max. D: 10.5 cm. W: 9 g
Said to be from a tomb in Tyre
Damon Collection

Moulded glass bowl, green hue, translucent. Vertical rim, ground lip. Two horizontal wheel-cut grooves on interior. Body curving to slightly concave base. Pinprick bubbles.

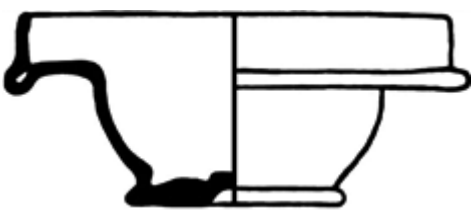
Interior iridescence, surface soiling. Circular marks on base, probably from production. Complete.



Author Number 3. C1956.135
Ribbed bowl, first century AD
H: 3.9 cm. Max. D: 10.65 cm
Said to be from Tyre
Damon Collection

Moulded and tooled glass bowl, blue-green hue, translucent. Vertical rim, ground lip. Wheel-cut ridge on interior beneath rim. Convex body with 27 ribs, concave base. Pinprick bubbles, tooling marks.

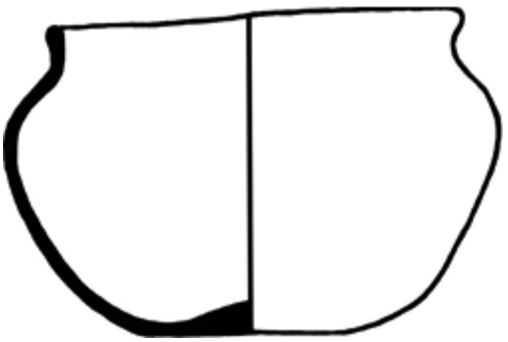
Minor surface soiling exterior and interior, some surface accretion on exterior between ribs. Chip from rim, otherwise complete.



Author Number 4. C1956.137
Bowl, circa first–second century AD
H: 2.5 cm. Max. D: 6.2 cm. W: 2 g
Said to be from a tomb at Tyre
Damon Collection

Free-blown bowl, blue-green hue, translucent. Rounded rim, slightly splayed, tubular ridge beneath rim, short hemispherical body. Largely flat base, small concave circle in the centre. Pinprick bubbles.

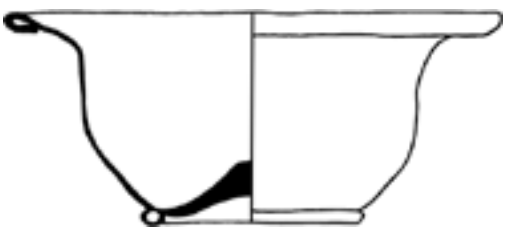
Surface accretions under rim, iridescence mostly on interior, appearing bronze coloured in some places. Pitting. Complete.



Author Number 5. C1956.136
Bowl, possibly second–third century AD
H: 4.4 cm. Body: 6.6 cm. Rim: 5.6 cm. W: 4 g
Said to be from Tyre
Damon Collection

Free-blown bowl, blue hue, translucent. Fire-rounded rim, splayed so that it almost appears to have a neck. The widest point is quite high, and the body then curves downward with a relatively steep contour. Flat base with protruding pontil scar. Bubbles, striae.

Cracks in body and base. Surface soiling and iridescence on interior. Exterior iridescence on base. Complete.



Author Number 6. EA1979.551
Bowl, second–third century AD
H: 5.9 cm. Body: 9.5 cm. Rim: 13.95 cm. W: 9 g
Said to be from Cyprus
Damon Collection

Free-blown bowl, colourless, transparent. Splayed tubular rim, interior shoulder. Convex body, slightly misshapen. Integral tubular base ring. Concave base with pontil scar. Pinprick bubbles.

Minor interior and exterior surface soiling, scratches. Iridescence on interior and exterior at base. Complete.

Author Number 7. EA1979.604
Bowl, third–fourth century AD
H: 4.7 cm. Body: 8.2 cm. Rim: 8.8 cm. W: 4 g
Said to be from Tyre
Damon Collection

Free-blown bowl, colourless, transparent. Splayed rim, cracked off and unworked. Hemispherical body, flat base. Band of lightly abraded lines under rim, on upper and lower body. Pinprick bubbles, and some larger bubbles.

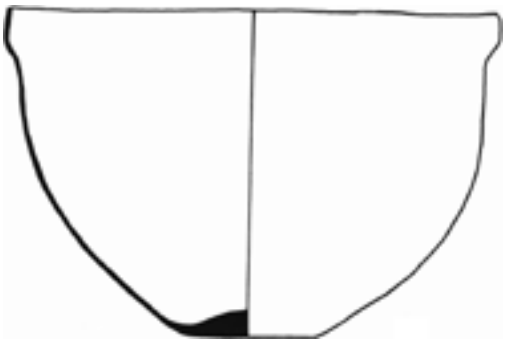
Surface accretions, exterior and interior, particularly at the rim. Interior iridescence. Chip from rim, otherwise complete.

Parallel: Arveiller-Dulong and Nenna, 2005. Number 1209

Author Number 8. EA1979.603
Bowl, third–fourth century AD
H: 8.3 cm. Body: 11.3 cm. Rim: 12 cm. W: 21 g
Said to be from a tomb at Tyre
Damon Collection

Free-blown bowl, green hue, transparent. Cracked off and polished rim, everted. Convex body, almost hemispherical, concave base. Three bands of very faintly abraded lines, one below the rim and two on the body. Very few pinprick bubbles and one larger bubble.

Weathering and iridescence on exterior and interior. Minor cracks near rim, one crack possibly associated with stress lines from production. Complete.

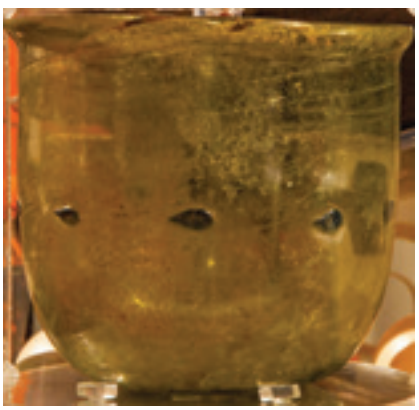


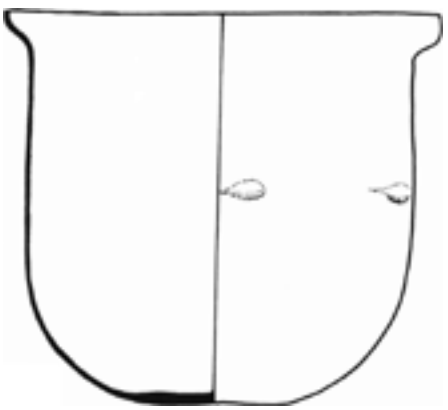
Author Number 9. EA1979.601
Bowl, fourth–early fifth century AD
H: 8 cm. Max. D: 12.2 cm. W: 12 g
Said to be from Tyre
Damon Collection

Free-blown bowl, blue hue, transparent. Everted rim, cracked-off, uneven and unworked. Hemispherical body, slightly concave base. Extensive pinprick bubbles and some larger bubbles in body. Tooling marks.

Some surface soiling, iridescence on body, several minor abrasions. Complete.

Parallel: Jennings and Abdallah, 2001. Fig 11.13.1





Author Number 10. EA1979.602
Bowl, fourth–early fifth century AD
H: 9.4 cm. Body: 9.2 cm. Rim: 10.4 cm
Said to be from Tyre
Damon Collection

Free-blown bowl, green hue, dark green tinted blobs, transparent. Everted rim, cracked-off, unworked. Cylindrical body, curving inwards towards flat base. Eleven applied blobs, uneven, irregular spacing. Tooling marks on lip and body. Bubbles.

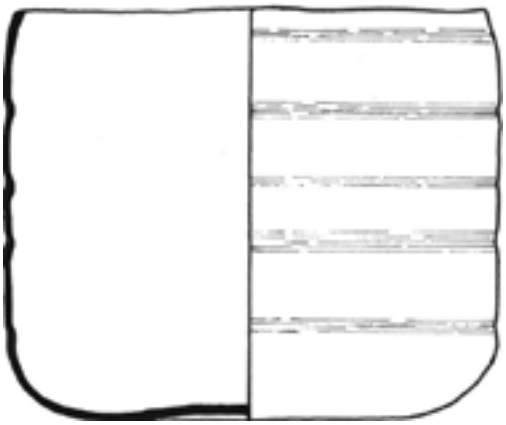
Dulling, minor surface soiling, some flecks of iridescence, crack and chip in rim, otherwise complete.

Parallel: Jennings and Abdallah, 2001. Fig 6.2

Author Number 11. EA1979.550
Plate, fourth century AD
H: 4 cm. Max. D: 21.1 cm
Damon Collection (October 1882)

Free-blown plate, blue hue, transparent. Tubular rim, tubular ring on body, tapers down to folded base ring. Bubbles, some fairly large.

Minor surface soiling and iridescence. Broken rim, otherwise complete.



Author Number 12. EA1979.605
Beaker, first century AD
H: 6.35 cm. Body: 7.6 cm. Rim: 7.3 cm. W: 6 g
Damon Collection (October 1882)

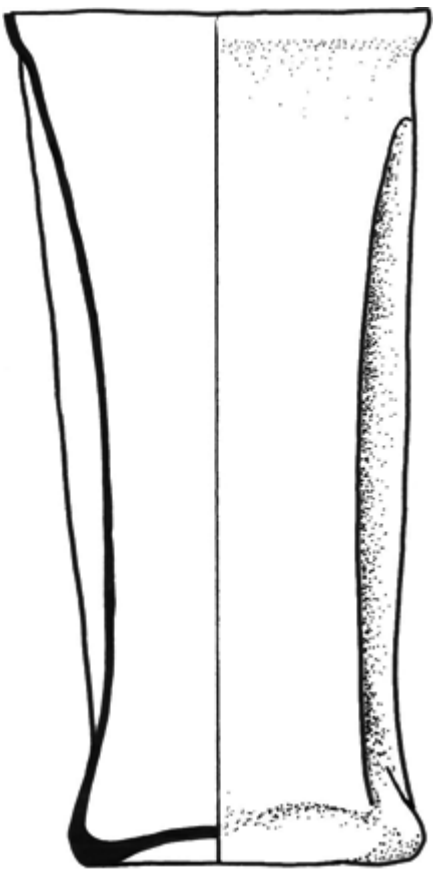
Free-blown beaker, yellowish hue, transparent. Cracked off unworked rim, uneven, curved slightly inwards. Cylindrical body, slight outward taper, curving towards base. Almost flat base, very slightly concave. Five bands of wheel-cut lines, with outer two thinner than inner three. Most are shallow, two are deeper grooves. Pinprick bubbles.

Exterior and interior surface soiling, exterior iridescence in patches at rim and base. Surface accretions interior base. Small cracks in body near abraded bands. Complete.

Author Number 13. EA1979.606
Beaker, first–second century AD
H: 8.2 cm. Body: 6.9 cm. Rim: 8.2 cm. W: 8 g
Said to be from a tomb at Tyre
Damon Collection

Free-blown beaker, green hue, translucent. Splayed rim, cracked-off. Very slight interior shoulder. Carinated body, concave base. Two abraded bands with space in between on body before it tapers down. Possibly abraded band below rim (difficult to discern beneath accretion). Small number of bubbles.

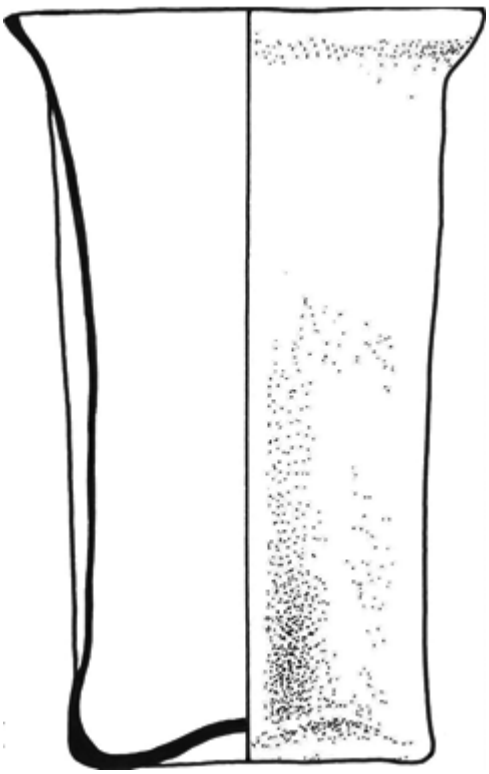
Large area of surface accretion on exterior body, with smaller patches of milky accretion and flakes of iridescence. Interior surface accretions particularly around rim. Repaired crack on lower body. Complete.



Author Number 14. EA1979.519
Beaker, late first–second century AD
H: 11.2 cm. Body: 5 cm. Rim: 5.7 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown beaker, slight greenish hue where thicker, otherwise colourless, transparent. Cracked-off rim, splayed, unworked. Roughly squared body with deep ovoid impressions, slight inward taper, misshapen, roughly square concave base.

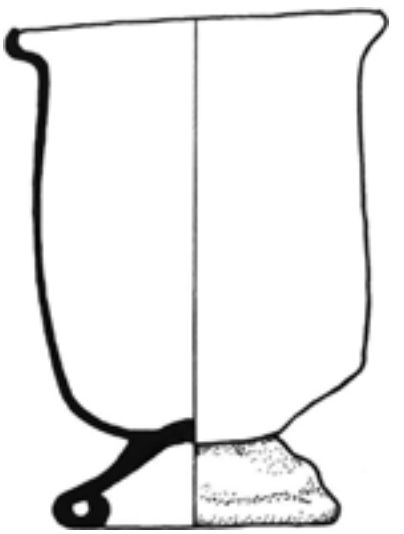
Surface accretions exterior and interior lip, some interior and exterior iridescence. Minor chipping at rim, otherwise complete.



Author Number 15. EA1979.520
Beaker, late first–second century AD
H. 10.3 cm. Body: 5.1 cm. Rim: 6.4 cm. W: 4 g
Said to be from Tyre
Damon Collection

Free-blown beaker, slight greenish hue where thicker, otherwise colourless, transparent. Cracked-off rim, splayed, unworked. Roughly square body, with a fairly deep ovoid impression on each side. Concave base, roughly circular. Pinprick bubbles, tooling marks below rim.

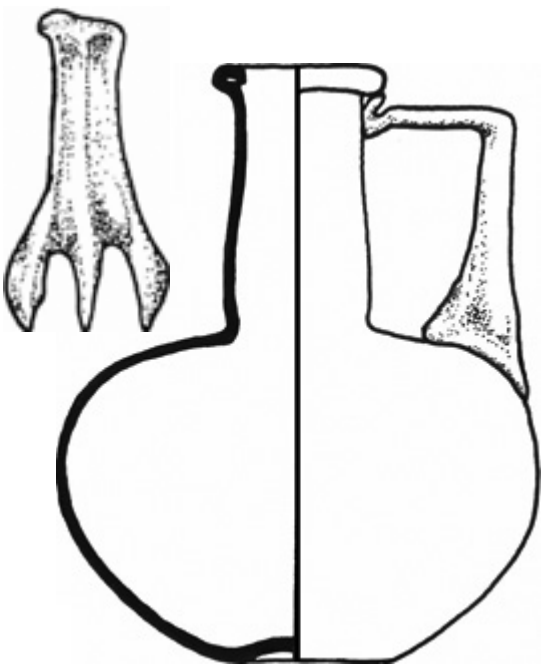
Extensive surface accretions exterior and interior, iridescence appearing silver in some places. Complete.



Author Number 16. EA1979.598
Goblet, circa fourth century AD
H: 6.7 cm. Body: 4.3 cm. Rim: 5.1 cm. W: 3 g
Said to be from Sidon
Damon Collection (1881)

Free-blown goblet, green hue, transparent. Fire-rounded rim, splayed. Cylindrical body, fairly straight, curving before foot. Pushed in foot with misshapen tubular ring, pontil scar. Stands aslant. Very few pinprick bubbles.

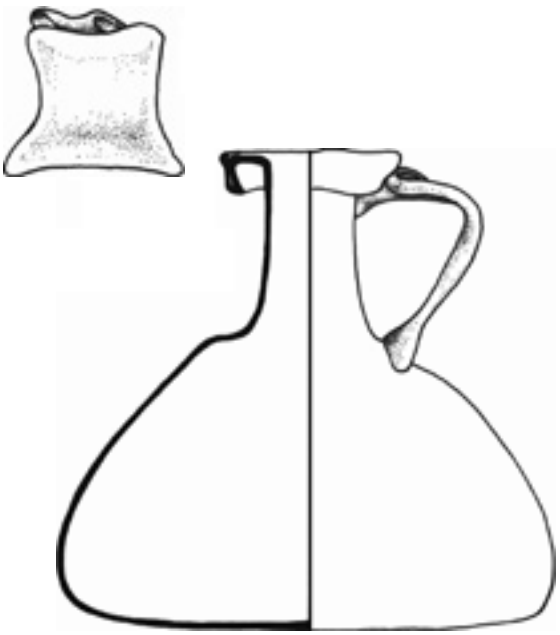
Slight abrasions. Minor surface soiling, dulling, slight accretions on interior. Some iridescence, mostly on interior. Complete.



Author Number 17. EA1979.558
Jug, first century AD
H: 7.9 cm. Body: 6.4 cm. Rim: 2.3 cm. W: 5 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown juglet, blue hue, transparent. Folded rim, horizontal lip, splayed. Cylindrical neck, broad sloping shoulder, squat globular body, concave base. Handle applied at shoulder, reeded with three rather evenly spaced ridges and claws at shoulder, drawn up, applied at neck, drawn up slightly under rim. Chill marks on lip.

White surface accretions exterior and interior, minor abrasions. Complete.



Author Number 18. EA1979.559
Jug, first–second century AD
H: 11 cm. Body: 11.5 cm. Rim: 4.1 cm
Said to be from Cyprus
Damon Collection (1873)

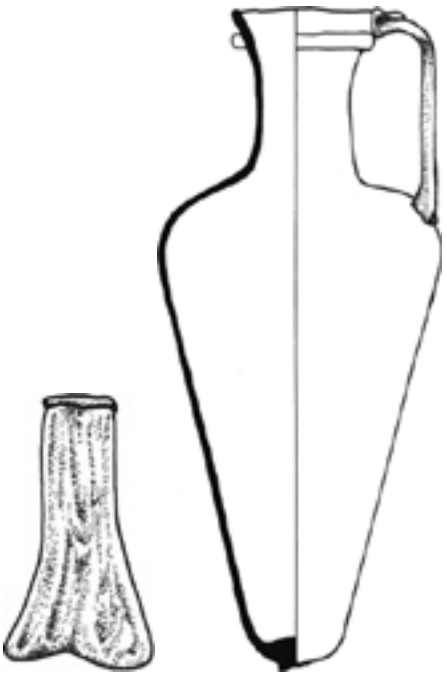
Free-blown jug, blue hue, transparent. Pale blue handle with streak of green. Collar rim. Cylindrical neck, tapering out to slight shoulder sloping conical body, flat base. Broad ribbon handle, applied at shoulder, drawn up and folded under the lip.

Extensive shallow abrasions to exterior, minor soiling exterior and interior, slight surface accretions, some iridescence particularly at lower body. Surface accretions thicker on interior base. Complete.

Author Number 19. EA1979.637
Jug, circa second–early third century AD
H: 7.8 cm. Body: 5 cm. Rim: 2.7 cm. W: 3 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown juglet, green hue, transparent. Thick folded and flattened rim, splayed. Cylindrical neck, inward taper, tooled at junction with body. Conical body, outward taper, roughly flat base. Handle applied to body with two pads, one much larger than the other. Handle drawn up, folded above rim to form a thumb rest, applied to rim, folded under. Some striae and pinprick bubbles.

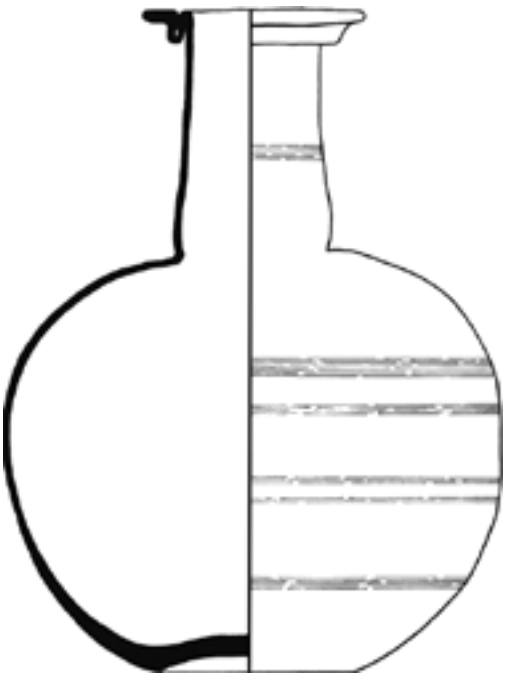
Thin flakes of iridescence and weathering exterior and interior. Complete.



Author Number 20. EA1979.600
Conical jug, fourth century AD
H: 15.8 cm. Body: 6.9 cm. Rim: 3.5 cm
Said to be from Tyre
Damon Collection

Free-blown jug, olive-green hue, transparent. Fire-rounded rim. Trail applied unevenly below rim, overlapping at ends. Concave neck, sloping shoulder, conical body tapering in to rounded base, protruding pontil scar. Reeded ribbon handle, applied at shoulder, drawn up and applied at rim, folded back. Pinprick bubbles.

Minor surface soiling, iridescence and soiling on interior. Hairline cracks on body and neck. Complete.



Author Number 21. EA1979.596
Flask, late first–early second century AD
H: 18.5 cm. Body: 13.5 cm. Rim: 6.25 cm. W: 20 g
Said to be from a tomb at Tyre
Damon Collection

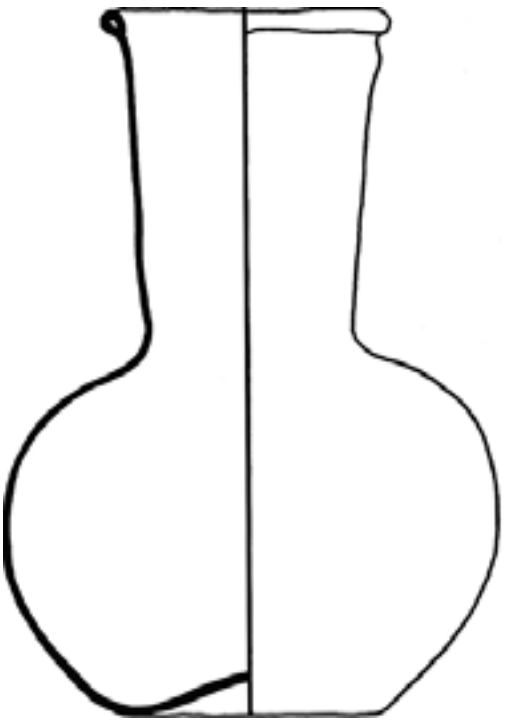
Free-blown serving flask, green hue, translucent. Collar rim with splayed edge. Cylindrical neck tapering outward, constricted before shoulder. Horizontal shoulder, globular body, concave base. Lightly wheel-abraded bands of decoration: one mid neck, five of varying width on the body. Tooling marks at the base of the neck. Quality glass with negligible impurities.

Exterior accretions, particularly on the neck and the underside of the rim, black accretions on the interior base. Exterior weathering and iridescence, loose flakes. Complete.

Author Number 22. EA1979.620
Flask, late third–fourth century AD
H: 16.5 cm. Body: 11.1 cm. Rim: 2.3 cm. W: 9 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown serving flask, very slightly green hue, transparent. Cracked off and polished rim. Cylindrical neck, narrow relative to body, constricted, then sloping outward. Horizontal shoulder, globular body, slightly concave base. Light wheel-abraded lines below rim, mid neck, and five or six bands around the body; one seems to have slipped, and crosses between other bands. Few bubbles.

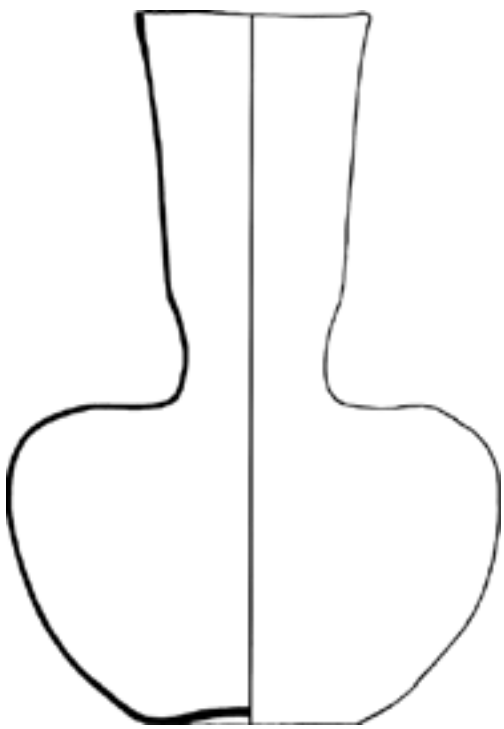
Minor exterior surface soiling, interior weathering and iridescence, flaking off, small accretions. Complete.



Author Number 23. EA1979.597
Flask, late third–fourth century AD
H: 12.6 cm. Body: 8.75 cm. Rim: 5.05 cm. W: 7 g
Said to be from a tomb at Tyre
Damon Collection

Free-blown serving flask, green hue, transparent. Steeply folded rim, uneven. Conical neck tapering inward, bulge below rim on one side (misshapen). Bulbous, almost globular body. Concave base, fairly high kick. A lot of bubbles, several of them large and elongated on the neck.

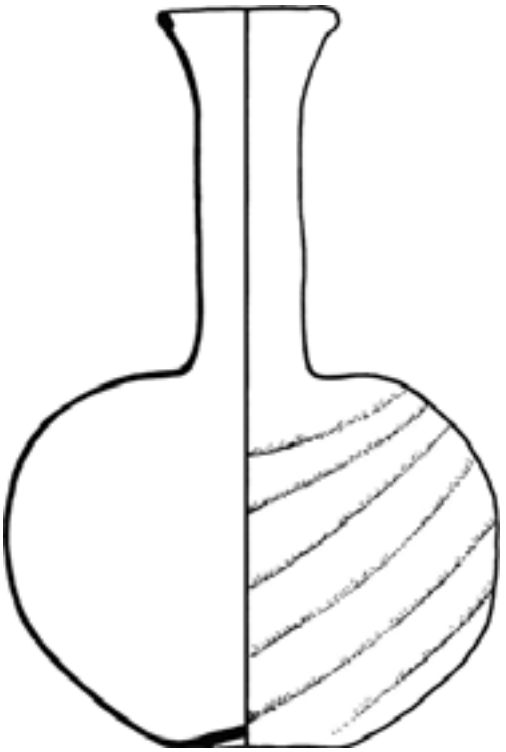
Minor interior weathering and iridescence. Complete.



Author Number 24. EA1979.570
Flask, late third–fourth century AD
H: 18.6 cm. Body: 12.7 cm. Rim: 6.2 cm. W: 13 g
Damon Collection (October 1882)

Free-blown serving flask, green hue, transparent. Ground rim, uneven. Conical neck tapering inward, sloping outward to horizontal shoulder, globular body, concave base. Some slight striae and pinprick bubbles.

Thin weathering and iridescence on exterior and interior, loose on the interior, dulling. Complete.

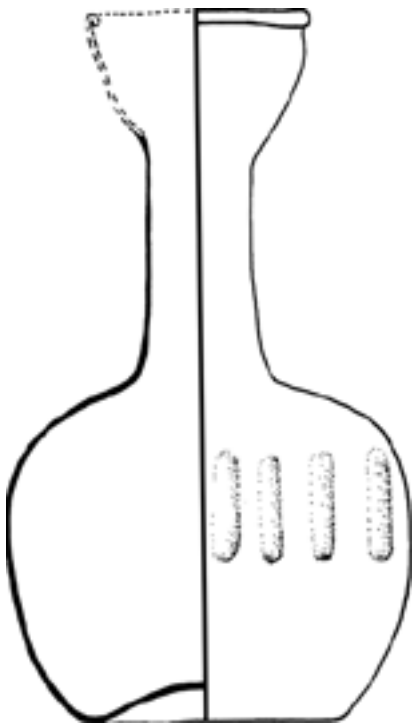


Author Number 25. EA1979.522
Flask, fourth century AD
H: 13.75 cm. Body: 9.1 cm. Rim: 3.3 cm. W: 6 g
Said to be from a tomb at Tyre
Damon Collection (1876)

Optic blown flask, green hue, transparent. Narrow folded rim, funnel mouth. Straight cylindrical neck. Horizontal shoulder, squat globular body, slightly concave base. Thin ribs diagonally across body, closely together at shoulder and flaring out to vanish at lower body. Narrow elongated bubbles in the neck, otherwise clear.

Thin creamy and black weathering exterior and interior. Interior iridescence. Contains some fine sediment. Complete.

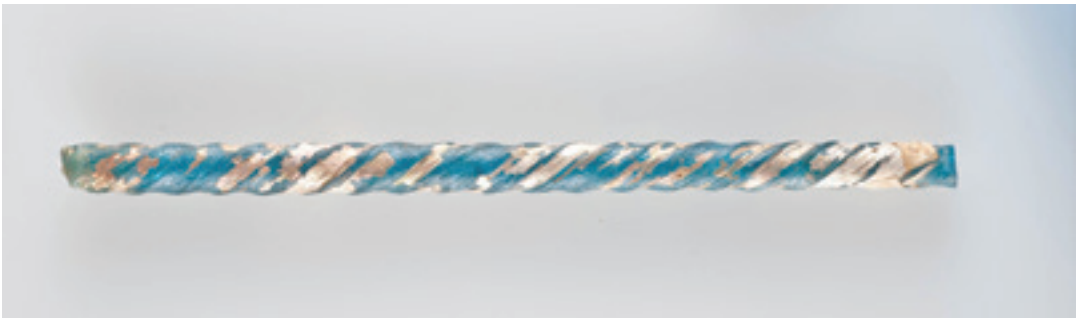
Parallel: Israeli, 2003. Number 177



Author Number 26. EA1979.629
Flask, fourth century AD
H: 15.1 cm. Body: 8.2 cm. Rim: circa 4.6 cm. W: 5 g
Said to be from a tomb at Tyre
Damon Collection

Free-blown serving flask, blue-green hue, transparent. Narrow folded rim, convex funnel mouth, cylindrical neck with outward taper. Sloping shoulder, globular body, concave base with high kick. Band of short, pinched ribs in shallow relief around the middle of the body, unevenly spaced. They were pinched before the final blowing. Negligible impurities.

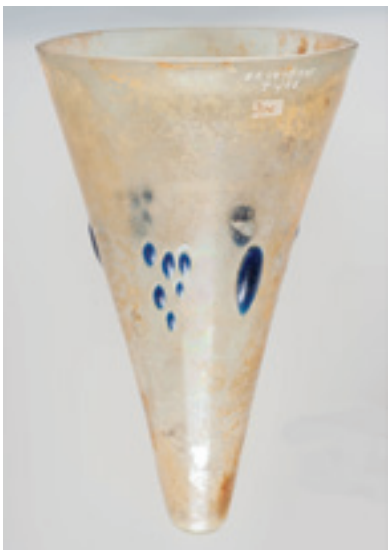
Majority of rim and mouth missing. Weathering on interior and exterior, iridescence interior and exterior.

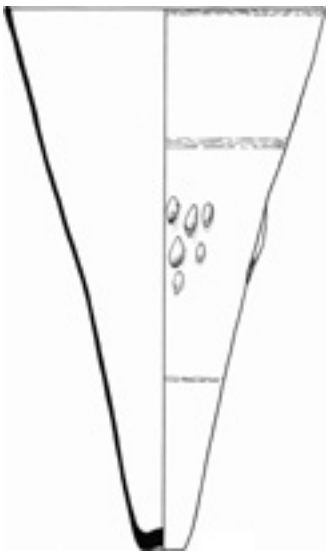


Author Number 27. EA1979.547
"Stirring rod", first–second century AD
Max. D: 0.75 cm. Length: 13.9 cm. W: 2 g
Said to be from Sidon
Damon Collection (1881)

Dark blue rod, translucent. Twisted, tapering slightly inwards.

This is a section of a longer rod, with a piece missing from at least one end if not both. Iridescence, appearing mostly rose-gold in colour, sitting between the raised ridges.

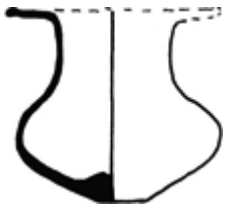




Author Number 28. EA1979.501
Lamp, fourth century AD
H: 21.6 cm. Max. D: 12.75 cm. W: 27 g
Said to be from Tyre
Damon Collection

Free-blown lamp, colourless, applied dark blue blobs, transparent. Ground rim. Slight constriction below rim. Conical body tapering inward. Slightly concave base. Applied blobs: three large, interspersed with groups of six smaller blobs, arranged roughly in an inverted triangle shape. Band of lightly wheel-abraded lines below rim on exterior and interior, on upper body, smaller band on lower body. Negligible impurities.

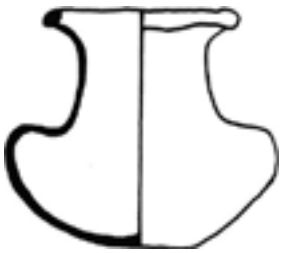
Minor exterior and interior surface soiling, interior weathering and iridescence. Shallow scratching. Complete.



Author Number 29. EA1979.513
Miniature jar, possibly circa first century AD
H: 2.8 cm. Body: 2.85 cm. Rim: circa 3.1 cm. W: 1 g
Said to be from Sidon
Damon Collection

Free-blown jar, dark blue tint, translucent. Polished rim, splayed. Concave neck. Sloping shoulder, conical body tapering sharply inward. Flattened base. Bubbles, one large, some striae.

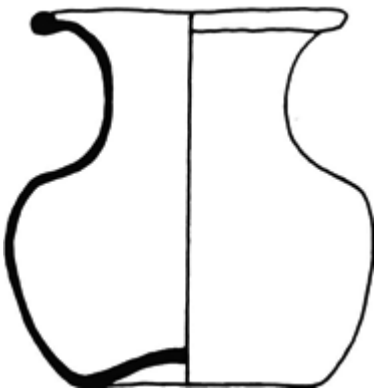
Most of the rim missing, and section of the upper neck. Some exterior accretion. Interior accretions and iridescence. Pitting.



Author Number 30. EA1979.634
Miniature jar, circa third century AD
H: 3.2 cm. Body: 3.6 cm. Rim: 2.55 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown jar, colourless, transparent. Folded rim, splayed. Concave neck, horizontal shoulder with impression around neck. Conical body tapering inward, flattened base.

Missing section in shoulder, otherwise complete. Interior and exterior weathering and iridescence.



Author Number 31. EA1979.635
Miniature jar, third century AD
H: 4.9 cm. Body: 4.9 cm. Rim: 4.15 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown jar, colourless, transparent. Folded rim, splayed. Concave neck, sloping shoulder, bulbous body. Concave base, fairly high kick. Pinprick bubbles.

Minor exterior soiling, some interior accretions and iridescence. Complete.

Author Number 32. EA1979.631
Miniature jar, third century AD
H: 4.1 cm. Body: 4 cm. Rim: 3.5 cm. W: 2 g
Said to be from Sidon
Damon Collection (1881)

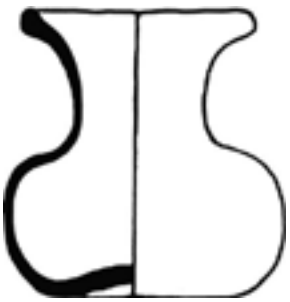
Free-blown jar, emerald green tint, translucent. Steeply folded rim, short concave neck, bulbous body, concave base.

Thick exterior and interior accretions. Exterior iridescence. Complete.

Author Number 33. EA1979.632
Miniature jar, third century AD
H: 4.05 cm. Body: 3.8 cm. Rim: 3.1 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown jar, burgundy tint, transparent. Steeply folded rim, somewhat uneven, splayed. Slightly concave neck, misshapen. Narrow horizontal shoulder, squat bulbous body, roughly flattened base with pontil scar. Impression on interior neck, possibly from a bubble. Bubbles, large in neck, some striae, spot on body.

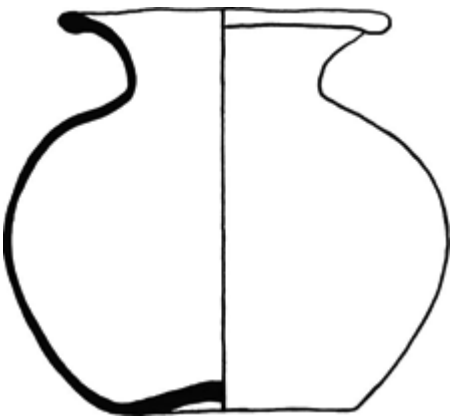
Minor exterior soiling. Interior weathering and iridescence. Complete.



Author Number 34. EA1979.633
Miniature jar, third century AD
H: 3.85 cm. Body: 3.6 cm. Rim: 3 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown jar, green hue, burgundy coloured streaks, transparent. Fire-rounded rim, slightly splayed. Concave neck, sloping shoulder, squat bulbous body, concave base. Pinprick bubbles, some striae.

Chip from rim, otherwise complete. Interior weathering, iridescence, some iridescence on exterior base.



Author Number 35. EA1979.599
Miniature jar, third–fourth century AD
H: 5.35 cm. Body: 5.9 cm. Rim: 4.5 cm. W: 2 g
Said to be from Tyre
Damon Collection

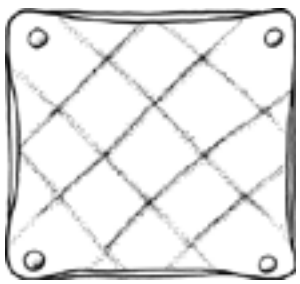
Free-blown jar, slight blue hue, transparent. Fire-rounded rim, splayed. Short concave neck, globular body. Very lightly concave base with pontil scar. Slightly misshapen on one side. Pinprick bubbles, striae, dark spots in rim.

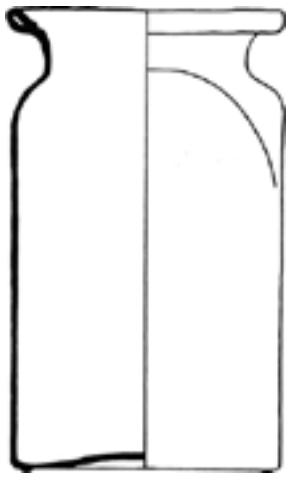
Minor soiling, interior iridescence and weathering. Complete.

Author Number 36. EA1979.534
Miniature jar, first–fourth century AD
H: 4.2 cm. B0dy: 2.4 cm. Rim: 2 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown jar, green hue, transparent. Folded rim, horizontal lip, splayed. Piriform body. Bubbles, striae.

Interior surface soiling and iridescence. Crack in body. Complete.

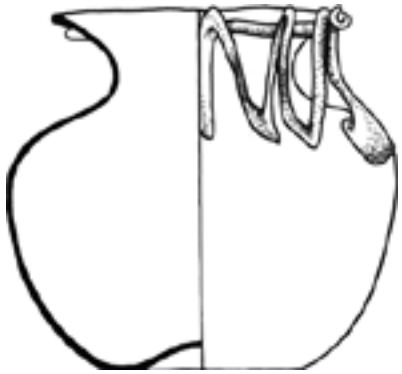




Author Number 37. EA1979.521
Square jar, late third–early fourth century AD
H: 12 cm. Body: 7.1 cm. Rim: 7.3 cm. W: 16 g
Said to be from an ancient tomb at Tyre
Damon Collection

Mould-blown jar, greenish hue where thick, otherwise colourless, transparent. Folded rim. Short concave neck, narrow shoulder sloping to squared body. Concave base with cross-hatching pattern, tiny rounded feet in corners. Very few pinprick bubbles.

Exterior and interior surface soiling. Iridescence on body and base. Complete.

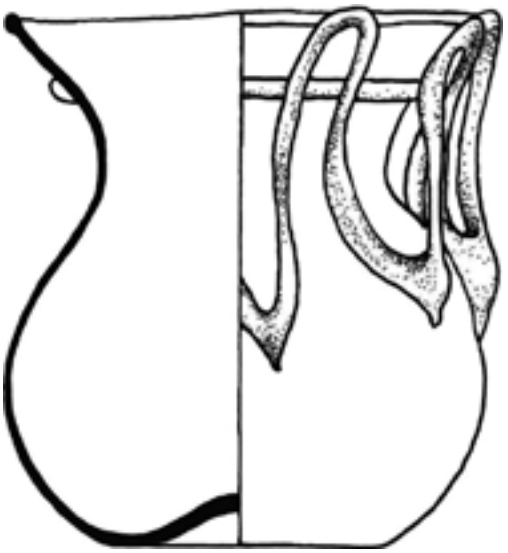


Author Number 38. EA1979.515
Trailed jar, fourth century AD
H: 7.7 cm. Body: 8.7 cm. Rim: 6.2 cm. W: 9 g
Damon Collection

Free-blown jar, blue hue, transparent. Fire-rounded rim, splayed. Short concave neck, sloping shoulder, bulbous body tapering inward. Concave base with high central kick. Trail applied beneath rim, overlapping at edges. Trailing applied at shoulder and rim in twelve zigzags. Large application point on shoulder where the trail begins. Pinprick bubbles.

One section of trail missing, otherwise complete. Minor exterior surface soiling, accretions at neck and base, interior surface soiling and iridescence.

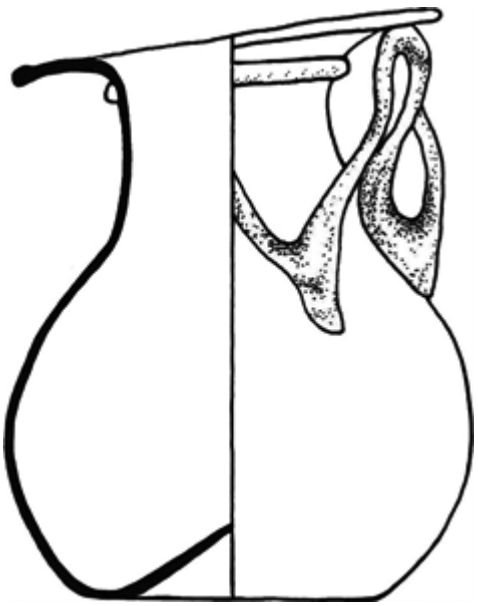
Damon's label is missing.



Author Number 39. EA1979.514
Trailed jar, fourth century AD
H: 7.3 cm. Body: 6.5 cm. Rim: 6.45 cm. W: 6 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown jar, blue-green hue where thick, otherwise colourless, transparent. Fire-rounded rim, uneven, splayed. Concave neck, globular body, concave base with high central kick, pontil scar. Trail below rim, uneven thickness, large overlap at edges. Zigzag trail unevenly applied at shoulder and rim, passing across the rim at one point. Applied at twelve points on the rim and eleven at the shoulder. Pinprick bubbles.

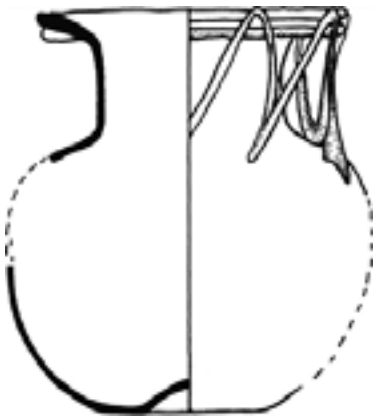
Missing piece from rim, associated crack. Two sections of trail missing. Exterior and interior surface soiling and iridescence, minor accretions.



Author Number 40. EA1979.516
Trailed jar, fourth century AD
H: 7.8 cm. Body: 6.2 cm. Rim: 5.4 cm. W: 4 g
Said to be from Tyre
Damon Collection

Free-blown jar, olive-green hue, transparent. Fire-rounded rim, splayed, cylindrical neck sloping seamlessly to body. Globular body, concave base, prominent central kick. Zigzag trail applied at body and drawn up to rim, applied at the body seven times and nine times at the rim. Some overlap in tendrils, one going across the lip. Irregularly spaced. Very slight striae, pinprick bubbles.

Patch of surface accretion on exterior body, exterior and interior surface soiling. One missing section of trail, otherwise complete.



Author Number 41. EA1979.549
Trailed jar, fourth century AD
H: at least 6.6 cm. Body: 6.5 cm. Rim: 5.7 cm
Said to be from Tyre
Damon Collection

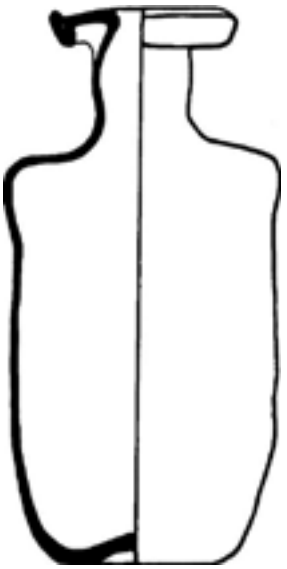
Free-blown jar, green hue, transparent. Fire-rounded rim, splayed. Concave neck, sloping shoulder, bulbous body, concave base with central kick. Trail applied beneath rim, overlapping at edges. Trail applied at shoulder, drawn up and applied at rim, repeated in zigzag pattern. A few pinprick bubbles.

Broken into nine fragments; it was probably whole when Damon found it. Interior weathering and iridescence, exterior soiling. Exterior accretions below rim and at shoulder.

Author Number 42. EA1979.517
Bottle, late first–second century AD
H: 8.6 cm. Body: 4.2 cm. Rim: 3.2 cm. W: 4 g
Said to be from Sidon
Damon Collection (September 1881)

Mould-blown bottle, green hue, transparent. Folded and flattened rim, broad lip. Cylindrical neck tooled before shoulder. Sloping shoulder with rounded corners, squared body, depressed sides. Thick concave base. Ribbon handle, applied with two claw pads at shoulder, drawn up, applied to neck, drawn up to rim. Pinprick bubbles.

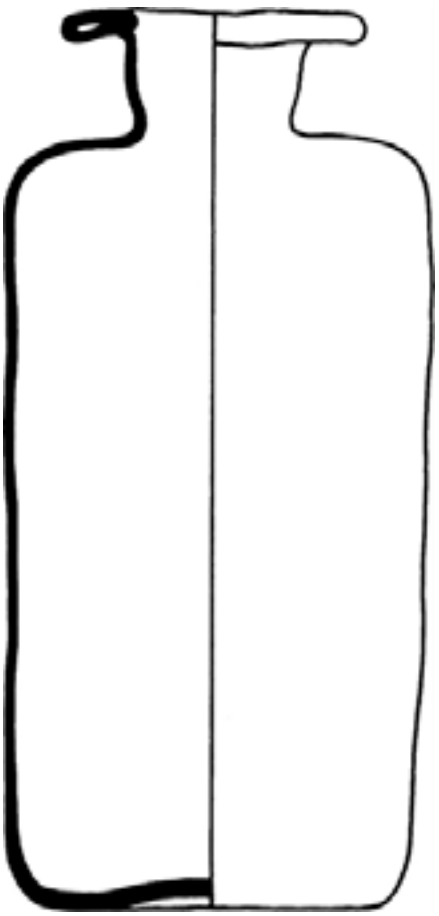
Some pitting to base. Soiling mostly on interior and underside of handle. Trace of iridescence on interior of one shoulder corner, very slight flake at base of handle near claw pad. Complete.



Author Number 43. EA1979.584
Bottle, second century AD
H: 7.4 cm. Body: 3.65 cm. Rim: 2.45 cm. W: 2 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Collar rim, broad lip. Convex neck sloping out to horizontal shoulder. Slight bulge at shoulder. Cylindrical body tapering inward, concave base. A few bubbles.

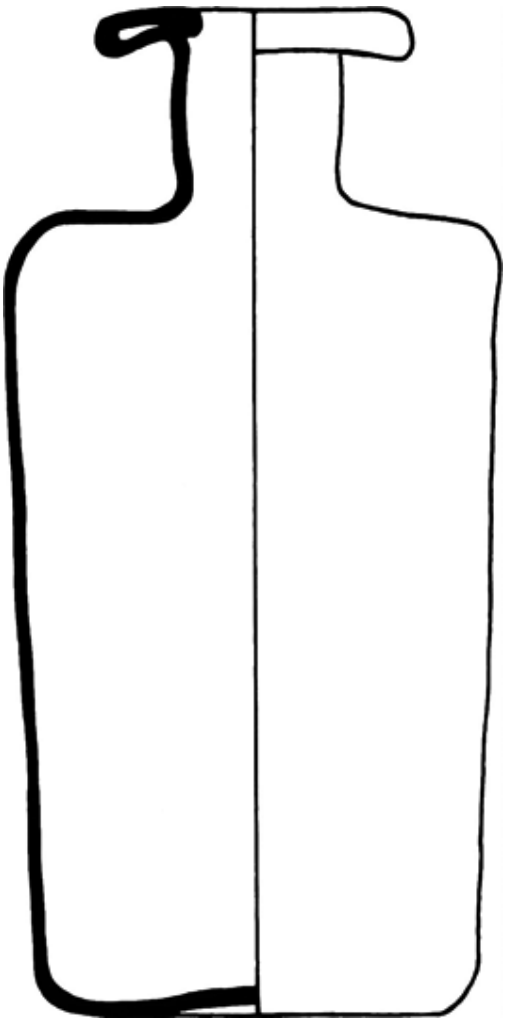
Interior and exterior surface soiling, extensive interior iridescence. Complete.



Author Number 44. EA1979.504
Bottle, end first–second century AD
H: 15.1 cm. Body: 7.1 cm. Rim: 5.8 cm. W: 11 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Folded and flattened rim, broad lip. Misshapen cylindrical neck, horizontal shoulder, cylindrical body, slightly convex, rounding before concave base.

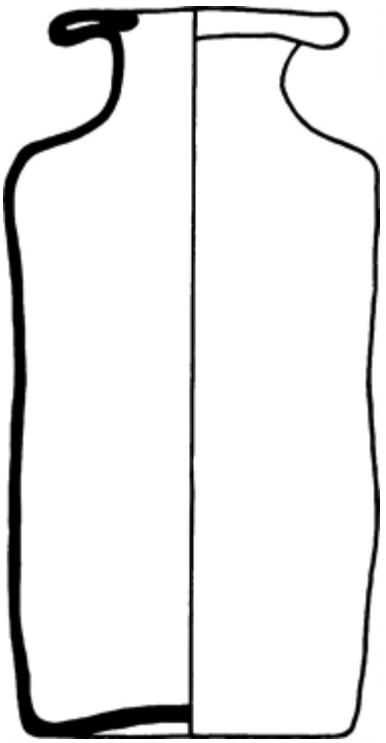
Surface accretions exterior and interior, exterior iridescence. Loose iridescence flakes of interior collected in bottom. Complete.



Author Number 45. EA1979.503
Bottle, end first–second century AD
H: 14.2 cm. Body: 6.9 cm. Rim: 4.4 cm. W: 12 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Folded and flattened rim, broad lip. Short convex neck sloping outward to horizontal shoulder. Cylindrical body tapering slightly inward. Concave base.

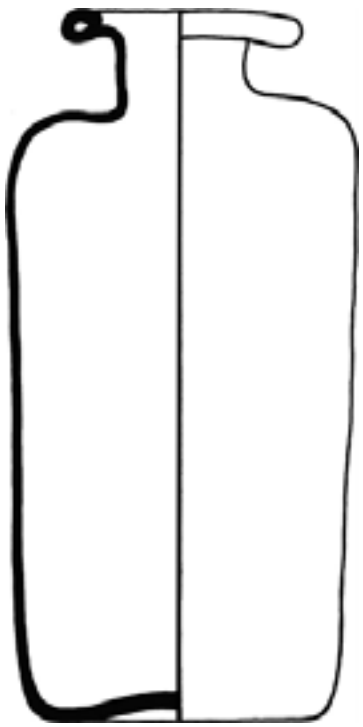
Extensive surface accretions, slight iridescence on exterior, more on interior, dulling. Complete.



Author Number 46. EA1979.502
Bottle, end first–second century AD
H: 9.7 cm. Body: 4.9 cm. Rim: 3.6 cm. W: 6 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, blue hue, transparent. Folded and flattened rim, broad lip. Short concave neck, narrow shoulder sloping down to cylindrical body with slight bulge in lower half. Concave base. Some bubbles in interior lip as it folds down, some bubbles in body.

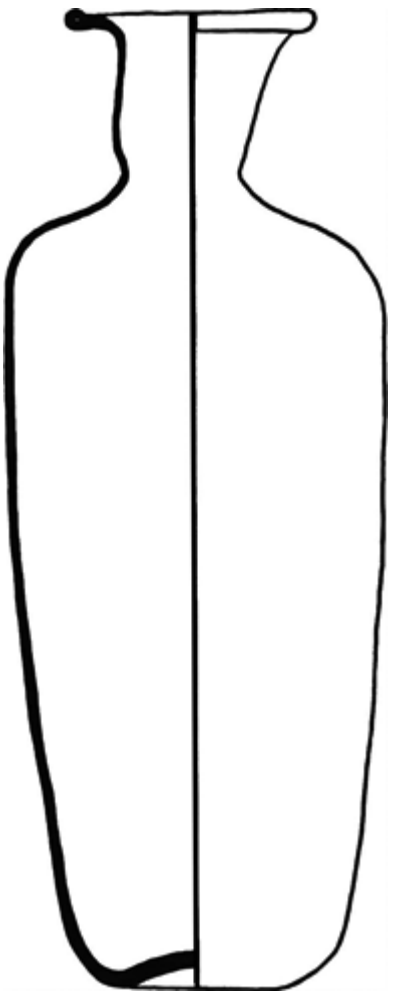
Surface accretions, particularly on base coming up one side. Soiling and iridescence most extensive on interior. Complete.



Author Number 47. EA1979.505
Bottle, second–third century AD
H: 12.8 cm. Body: 6.3 cm. Rim: 4.2 cm. W: 7 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Folded and flattened rim. Slightly misshapen cylindrical neck. Shoulder horizontal on one side, more sloping on the other. Cylindrical body tapering inwards. Concave base. Very few pinprick bubbles, bubble on shoulder.

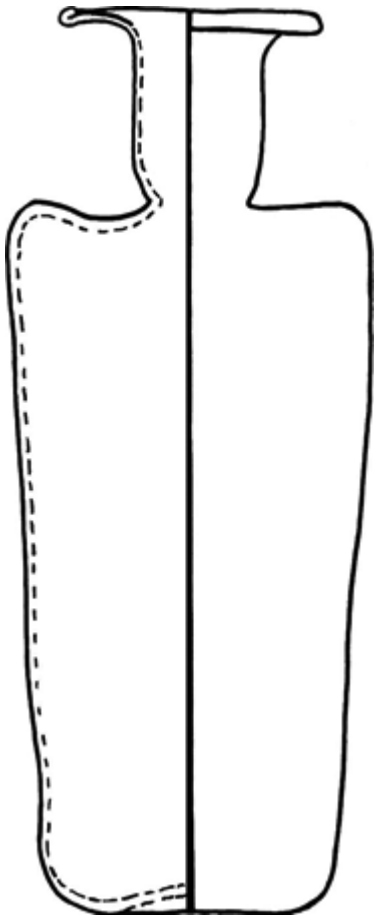
Surface accretions interior and exterior, iridescence on body exterior, mostly on interior. Complete.



Author Number 48. EA1979.610
Bottle, second–third century AD
H: 13 cm. Body: 5 cm. Rim: 3.3 cm. W: 5 g
Said to be from Tyre
Damon Collection

Free-blown bottle, slight greenish hue, transparent. Splayed rim, narrow folded edge. Convex neck, tooled before shoulder. Horizontal shoulder, misshapen with large impression on one side. Cylindrical body tapering inward, concave base. Tooling marks base of neck. A few bubbles on body.

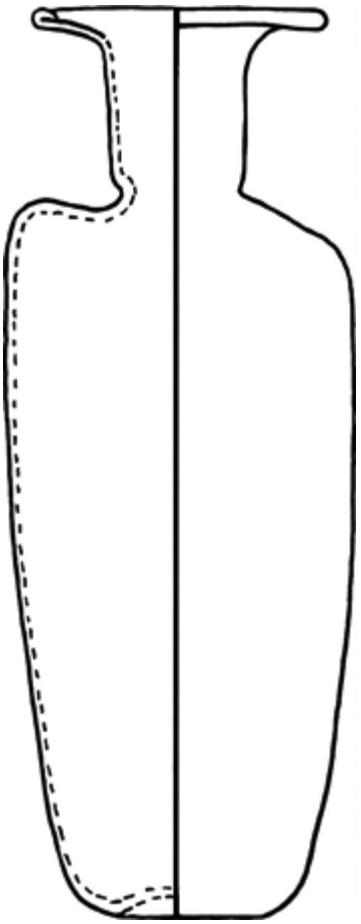
Exterior and interior surface accretions, extensive interior iridescence. Complete.



Author Number 49. EA1979.573a
Bottle, second–third century AD
H: 12 cm. Body: 4.7 cm. Rim: 3.5 cm
Said to be from Tyre
Damon Collection

Free-blown bottle, slight greenish hue, transparent. Splayed rim, narrow folded edge. Convex neck, tooled before shoulder. Horizontal shoulder, impression around neck. Cylindrical body, tapering inward, concave base. Extensive striae, bubbles.

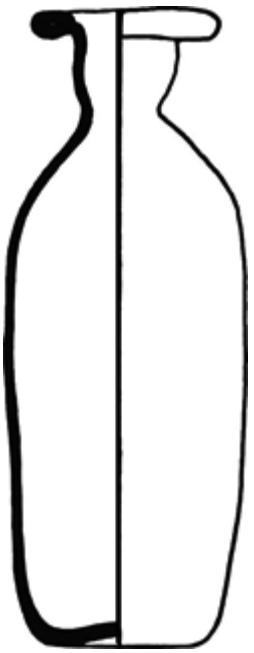
Surface accretions exterior, iridescence on interior. Filled with sediment. Complete.



Author Number 50. EA1979.574a
Bottle, second–third century AD
H: 12.1 cm. Body: 4.55 cm. Rim: 3.85 cm
Said to be from Tyre
Damon Collection

Free-blown bottle, slight greenish hue, transparent. Splayed rim, narrow folded edge. Concave neck, tooled before shoulder, off-centre. Horizontal shoulder, impression around neck, misshapen. Cylindrical body tapering inwards, slight bulge on one side, concave base. Extensive striae, minor bubbles.

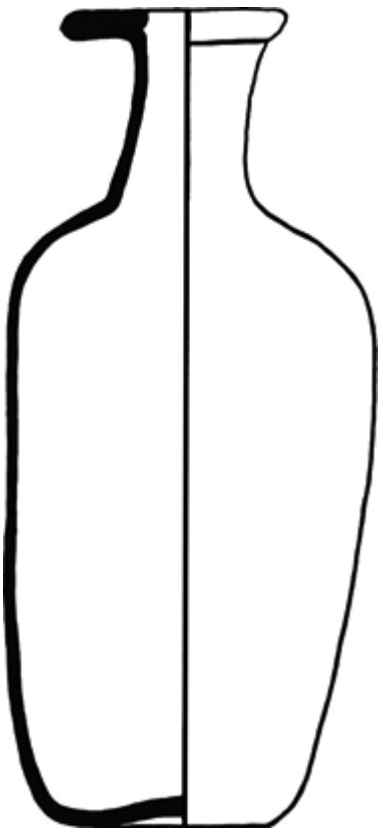
Minor exterior surface accretions, interior iridescence. Filled with sediment. Complete.



Author Number 51. EA1979.586
Bottle, second–third century AD
H: 8.5 cm. Body: 3.2 cm. Rim: 2.55 cm. W: 1 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, green hue, transparent. Folded and flattened rim, splayed. Very short concave neck tooled before steeply sloping shoulder. Cylindrical body tapering inwards, concave base.

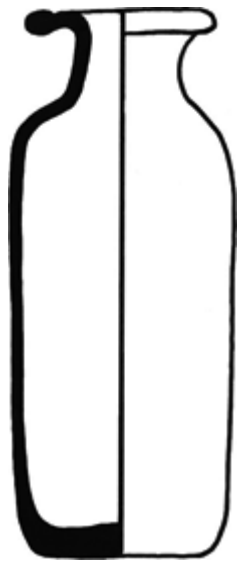
Extensive accretions and iridescence exterior and interior. Complete.



Author Number 52. EA1979.579
Bottle, second–third century AD.
H: 10.85 cm. Body: 4.8 cm. Rim: 2.9 cm. W: 5 g
Said to be from Sidon.
Damon Collection (1879)

Free-blown bottle, green hue, transparent. Folded and flattened rim, splayed. Lip is broad on one side, narrow on the other. Cylindrical neck, broad sloping shoulder, cylindrical body tapering inward, concave base. Bubbles, some striae.

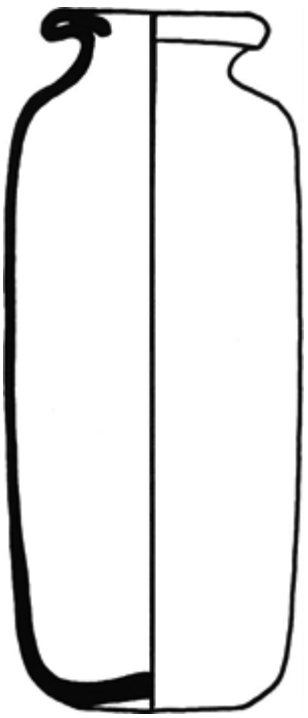
Extensive interior surface accretions and iridescence, some exterior soiling. Complete.



Author Number 53. EA1979.585
Bottle, second–third century AD.
H: 7.3 cm. Body: 3 cm. Rim: 2.5 cm. W: 4 g
Said to be from Sidon.
Damon Collection. (September 1879)

Free-blown bottle, slight greenish hue where thicker, otherwise colourless, transparent. Folded and flattened rim, splayed, short concave neck, sloping shoulder, cylindrical body, roughly flat base. Bubbles at base.

Interior iridescence, surface soiling and accretions. Complete.



Author Number 54. EA1979.582
Bottle, second–third century AD
H: 9.35 cm. Body: 3.95 cm. Rim: 2.95 cm. W: 4 g
Damon Collection (October 1882)

Free-blown bottle, slight greenish hue where thick, otherwise colourless, transparent. Folded and flattened rim sloping slightly toward interior, splayed, very short concave neck, cylindrical body, concave base.

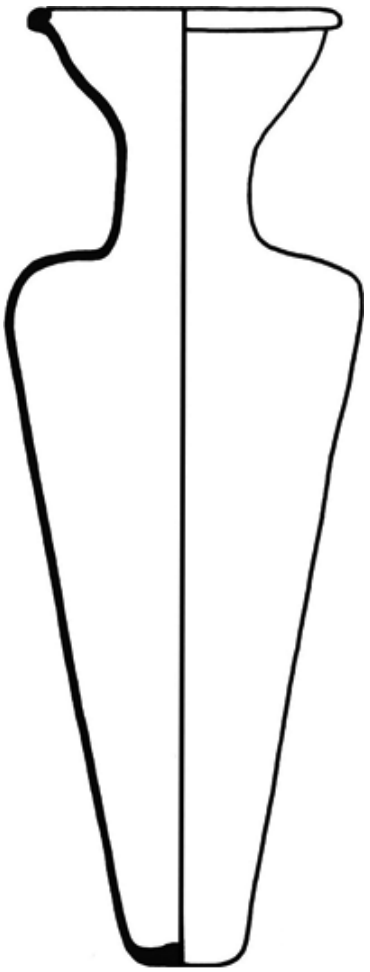
Interior and exterior surface soiling, iridescence exterior lip and interior. Complete.

Parallel: Verlaeckt 1997. Number 15 (Lokeren Museum).

Author Number 55. EA1979.575a
Bottle, third–fourth century AD
H: 7.35 cm. Body: 2.8 cm. Rim: 3 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown bottle, colourless, transparent. Folded rim, splayed, misshapen. Short concave neck. Cylindrical body tapering inwards, flat base. Extensive striae.

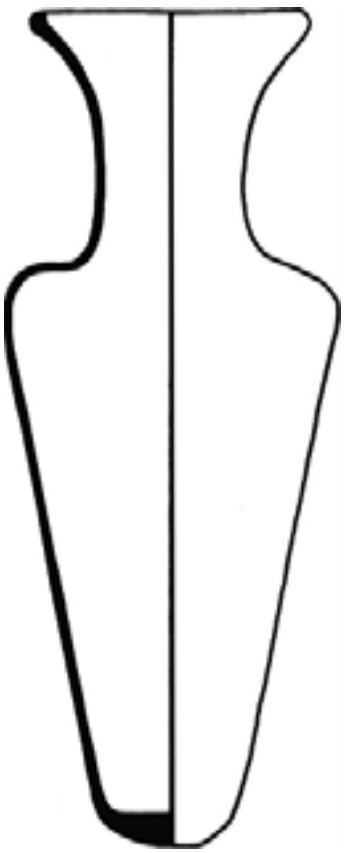
Soiling, surface accretions and iridescence on interior. Complete.



Author Number 56. EA1979.613
Bottle, third century AD
H: 14.1 cm. Body: 4.5 cm. Rim: 4.25 cm. W: 3 g
Damon Collection (October 1882)

Free-blown bottle, blue hue, transparent. Burgundy streaks about mouth, neck, shoulder and upper body. Folded rim, funnel mouth, concave neck, horizontal shoulder. Conical body tapering inwards, small roughly flat base very slightly protruding pontil scar. Pinprick bubbles, striae.

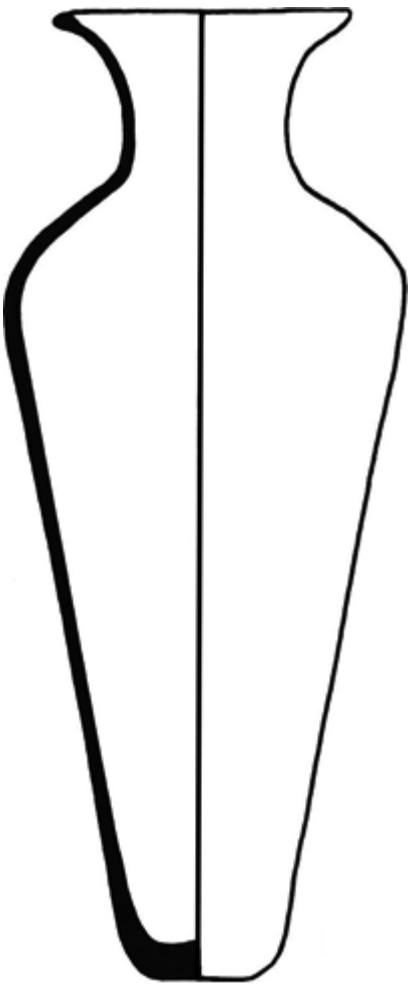
Exterior and interior surface soiling, interior iridescence. Complete.



Author Number 57. EA1979.612
Bottle, third century AD
H: 12.9 cm. Body: 5.1 cm. Rim: 4.25 cm. W: 3 g
Said to be from Sidon
Damon Collection (1881)

Free-blown bottle, colourless, transparent. Fire-rounded rim, funnel mouth. Concave neck, horizontal shoulder, conical body tapering inwards, roughly flat base.

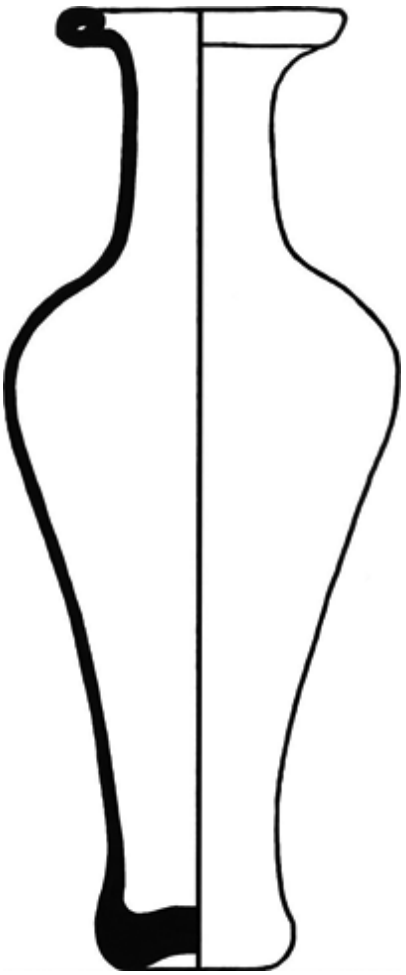
Interior and exterior surface soiling and accretions, interior iridescence. Complete.



Author Number 58. EA1979.614
Bottle, third century AD
H: 12.9 cm. Body: 5.25 cm. Rim: 3.9 cm. W: 4 g
Said to be from Sidon
Damon Collection (1881)

Free-blown bottle, slight greenish hue where thicker, otherwise colourless, transparent. Polished rim, splayed, slightly concave neck. Sloping shoulder, conical body tapering inwards, roughly flat base. Two small impressions just below shoulder. Extensive striae.

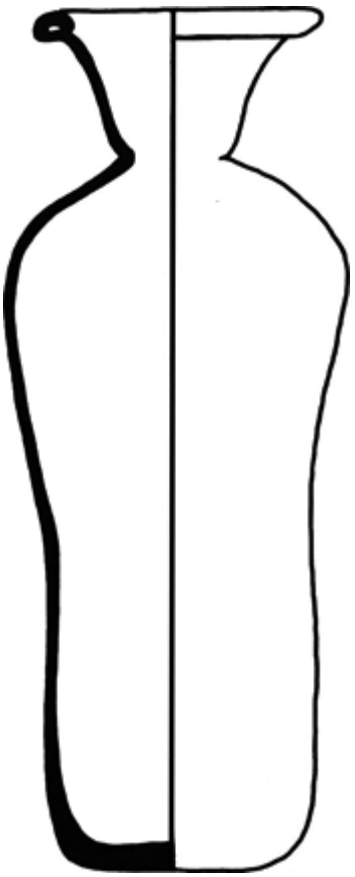
Major surface accretions exterior and interior, iridescence and minor pitting. Missing section in rim, otherwise complete.



Author Number 59. EA1979.611
Bottle, third century AD
H: 12.85 cm. Body: 5.1 cm. Rim: 3.8 cm. W: 5 g
Said to be from Sidon
Damon Collection (1881)

Free-blown bottle, green hue, transparent. Folded and flattened rim, neck, sloping shoulder. Conical body tapering inward, widening out slightly and flattening before concave base. Some striae and pinprick bubbles.

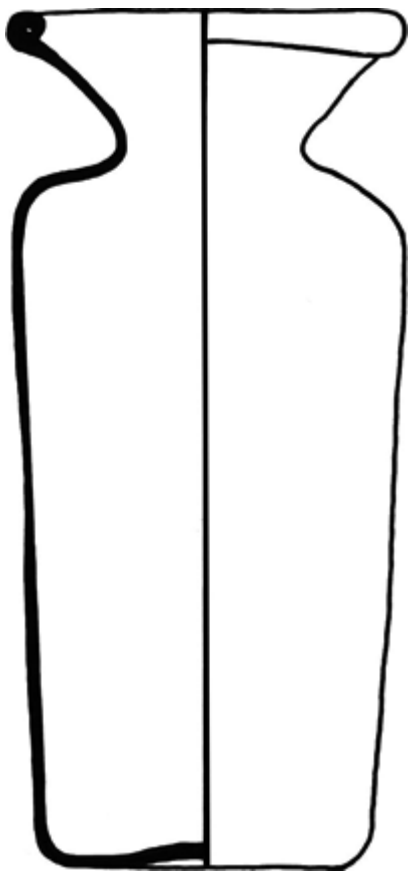
Surface accretions interior and exterior neck, iridescence on interior appearing silver. Complete.



Author Number 60. EA1979.578
Bottle, fourth century AD
H: 11.45 cm. Body: 4.4 cm. Rim: 3.7 cm. W: 5 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown bottle, green hue, transparent. Folded rim, splayed, constricted before sloping shoulder. Cylindrical body tapering inwards, slightly concave at middle, flat base. Possible pontil scar; a slight protrusion is visible under the label. Bubbles in rim.

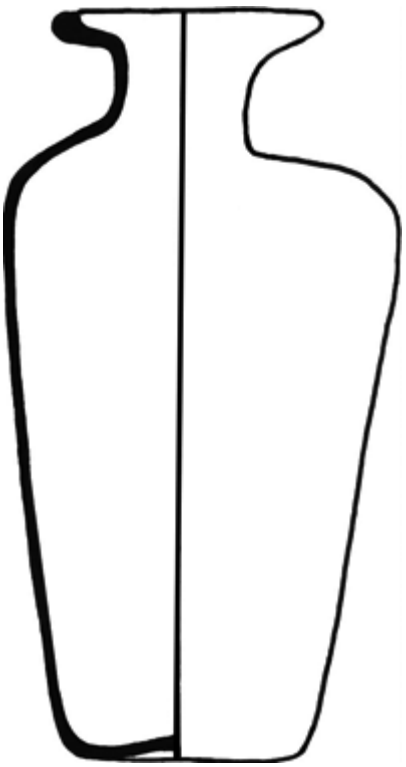
Exterior and interior surface soiling, extensive interior iridescence, interior surface accretions. Complete.



Author Number 61. EA1979.588
Bottle, fourth century AD
H: 11.4 cm. Body: 5.2 cm. Rim: 5.25 cm. W: 5 g
Said to be from Tyre
Damon Collection

Free-blown bottle, green hue, transparent. Folded rim, wide funnel mouth, very short concave neck. Sloping shoulder, cylindrical body tapering inward, concave base. Bubbles, particularly in rim.

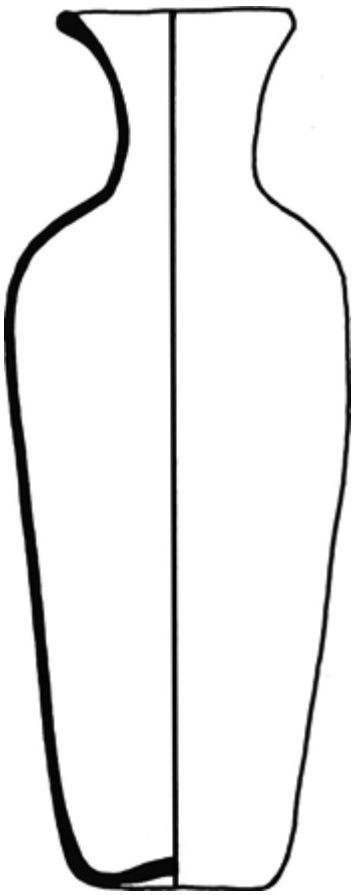
Interior surface soiling, accretions, and iridescence. Complete.



Author Number 62. EA1979.583
Bottle, fourth century AD
H: 9.8 cm. Body: 5.3 cm. Rim: 3.4 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown, blue hue, transparent. Fire-rounded rim, splayed, neck concave on one side, shoulder sloping on one side. Cylindrical body tapering inward, slightly concave base with pontil scar.

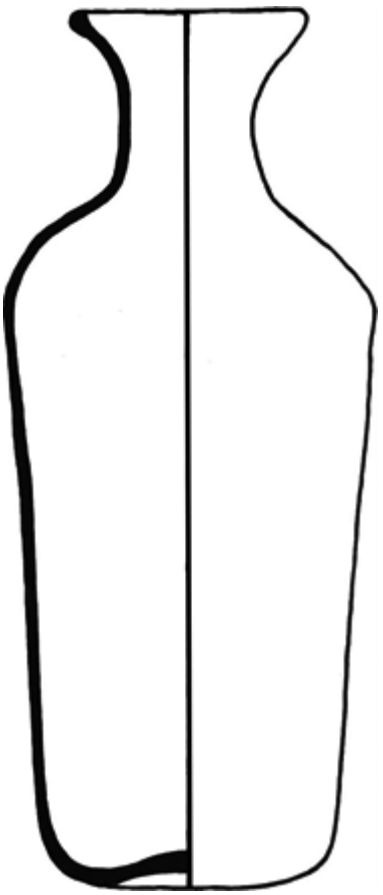
Surface accretions exterior and interior, mostly exterior, interior iridescence, particularly in neck and shoulder. Missing section in rim, otherwise complete.



Author Number 63. EA1979.577
Bottle, fourth century AD
H: 11.7 cm. Body: 4.5 cm. Rim: 3.15 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown, green hue, translucent. Fire-rounded rim, splayed, concave neck. Sloping shoulder, cylindrical body tapering inward, concave base. Slightly protruding pontil scar.

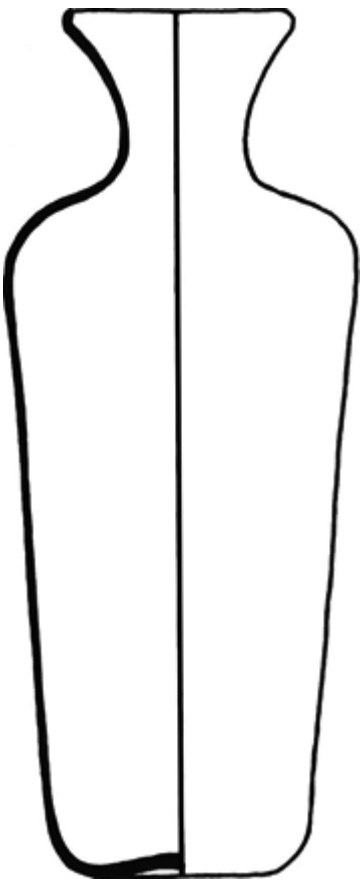
Surface accretions exterior and interior, significant iridescence on interior. Complete.



Author Number 64. EA1979.609
Bottle, fourth century AD
H: 11.7 cm. Body: 4.75 cm. Rim: 3.1 cm. W: 3 g
Said to be from Sidon
Damon Collection (1881)

Free-blown bottle, greenish hue, transparent. Fire-rounded rim, funnel mouth, concave neck, sloping shoulder. Cylindrical body tapering inwards, concave base with traces of pontil scar.

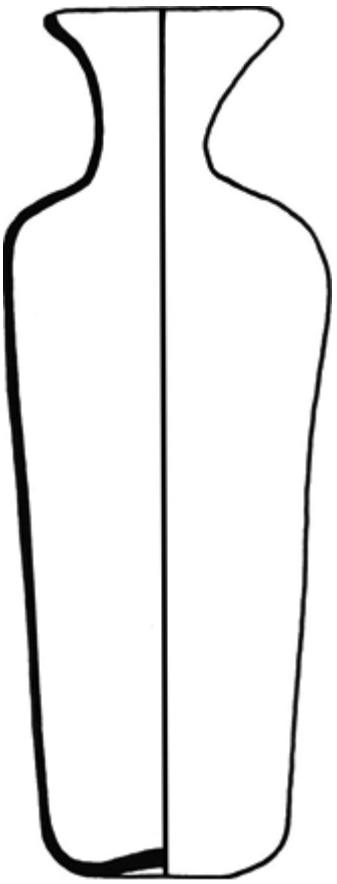
Exterior and interior surface accretions, interior iridescence, flaking off. Complete.



Author Number 65. EA1979.576
Bottle, fourth century AD
H: 11.5 cm. Body: 4.7 cm. Rim: 3 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Fire-rounded rim, funnel mouth, short concave neck, horizontal shoulder, cylindrical body tapering inward, concave base.

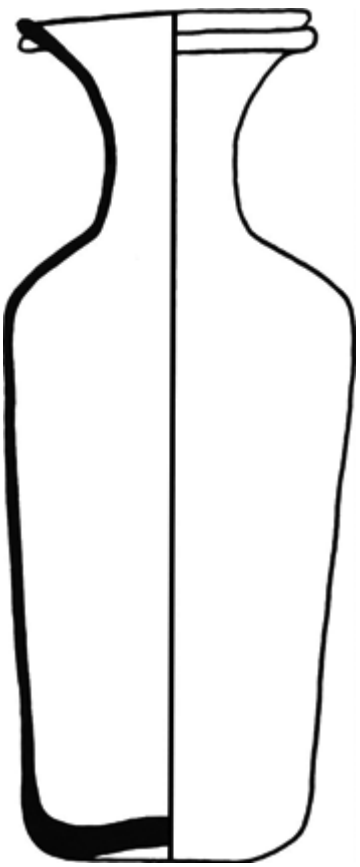
Extensive brown weathering, exterior and interior surface accretions, interior iridescence. Complete.



Author Number 66. EA1979.580
Bottle, fourth century AD
H: 11.5 cm. Body: 4.7 cm. Rim: 3 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Fire-rounded rim, funnel mouth, short concave neck, horizontal shoulder, cylindrical body tapering inward, concave base.

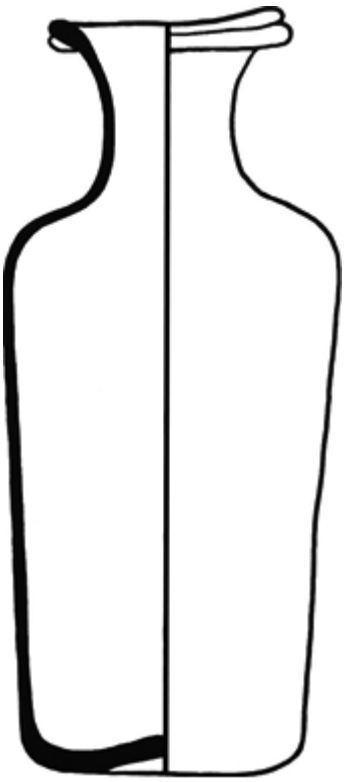
Extensive brown weathering, exterior and interior surface accretions, interior iridescence. Complete.



Author Number 67. EA1979.608
Bottle, fourth century AD
H: 11.3 cm. Body: 4.5 cm. Rim: 3.8 cm. W: 5 g
Said to be from Sidon
Damon Collection (1881)

Free-blown bottle, greenish hue where thick, otherwise colourless, transparent. Folded rim with impression in centre, uneven. Funnel mouth, concave neck, sloping shoulder. Cylindrical body tapering inward, concave base.

Minor exterior surface abrasions. Interior surface accretions and iridescence. Complete.



Author Number 68. EA1979.581
Bottle, fourth century AD
H: 10.2 cm. Body: 4.4 cm. Rim: 3.2 cm. W: 5 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown bottle, colourless, transparent. Uneven folded rim, concave neck. Sloping shoulder, cylindrical body tapering inwards, concave base. Some bubbles.

Exterior and interior surface soiling and accretions, extensive interior iridescence. Complete.

Author Number 69. EA1979.557
Flask, first–second century AD
H: 10.7 cm. Body: 2.5 cm. Rim: 1.8 cm. W: 3 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, green hue, transparent. Polished rim, flared. Long cylindrical neck constricted before body. Narrow conical body tapering outward, flat base. Bubbles.

Minor interior surface soiling, accretions and iridescence. Complete.

Author Number 70. EA1979.622
Flask, first century AD
H: 9.7 cm. Body: 4.5 cm. Rim: 2.1 cm. W: 1 g
Said to be from Cyprus
Damon Collection (1873)

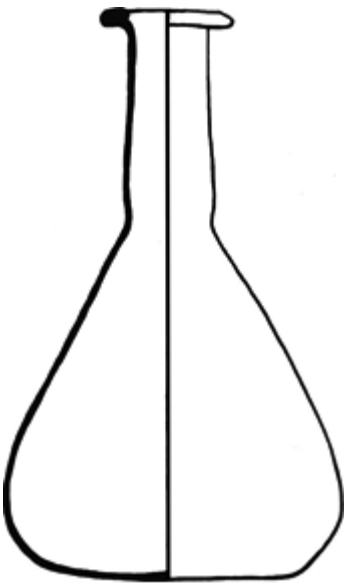
Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed, lopsided. Cylindrical neck tapering outward, tooled before body. Piriform body, very slightly concave base. Bubbles, one particularly large on the body.

Minor exterior and interior surface soiling. Repaired cracks, missing section upper neck and rim, otherwise complete.

Author Number 71. EA1979.572
Flask, first century AD
H: 8.5 cm. Body: 3.7 cm. Rim: 1.8 cm. W: 2 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed. Cylindrical neck tapering outward, constricted before body. Piriform body. Flat base.

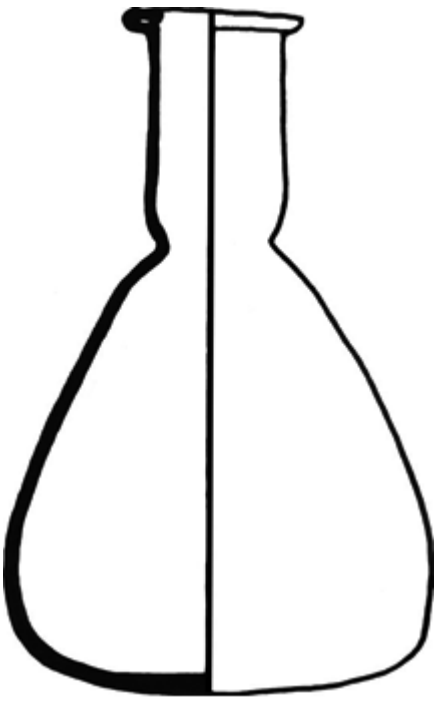
Large hole at base of neck, smaller hole below, associated cracks in neck and body, otherwise complete. Exterior and interior accretions. Flakes of iridescence around smaller hole.



Author Number 72. EA1979.609
Flask, first century AD
H: 7.6 cm. Body: 4.5 cm. Rim: 1.9 cm. W: 3 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed, lopsided. Cylindrical neck, constricted before body. Conical body, flat base. Some pinprick bubbles.

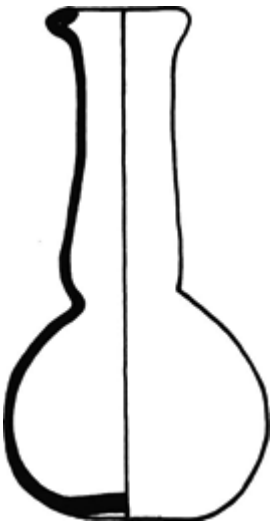
White surface accretions exterior, interior accretions, some exterior iridescence. Complete.



Author Number 73. EA1979.619
Flask, first century AD
H: 9.1 cm. Body: 5.7 cm. Rim: 2.2 cm. W: 3 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue-green hue, transparent. Folded and flattened rim, splayed. Cylindrical neck, tooled before body. Wide conical body, roughly flat base. Slight striae, some pinprick bubbles.

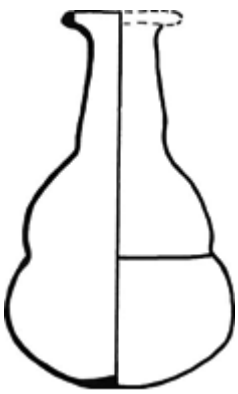
Crack in neck and upper body. Some exterior weathering and iridescence, interior accretions, iridescence and white weathering. Complete.



Author Number 74. EA1979.594
Flask, first–second century AD
H: 6.8 cm. Body: 3.5 cm. Rim: 2 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Rounded rim, turned in but not folded, splayed. Straight neck, bulging on one side, constricted before body. Globular body, flat base. Pinprick bubbles.

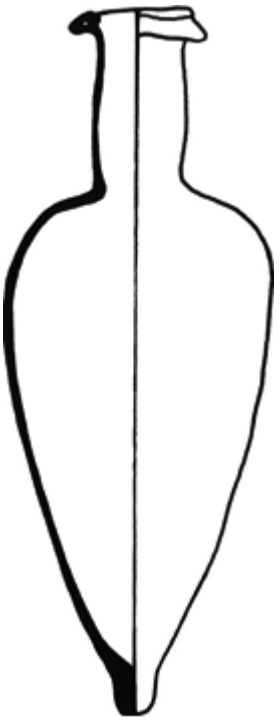
Surface soiling and interior iridescence on interior body. Complete.



Author Number 75. EA1979.535
Flask, first–second century AD
H: 5 cm. Body: 3 cm. Rim: circa 1.6 cm
Said to be from Tyre
Damon Collection

Free-blown flask, bluish hue, transparent. Cracked off and polished rim, splayed, cylindrical neck. Piriform body with constriction approximately one third of the way down from the neck. Twisting impression at base of neck. Striae.

Surface accretion exterior at base of neck, entirely filled with sediment. Small iridescence flakes on upper neck. Missing section from rim and upper neck.

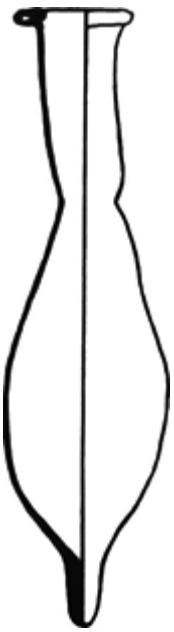


Author Number 76. EA1979.556
Flask, first century AD
H: 9.4 cm. Body: 3.5 cm. Rim: 1.8 cm. W: 3 g
Said to be from Cyprus
Damon Collection

Free-blown perfume flask, blue hue, transparent. Folded rim, splayed, sloping upward toward the interior edge, higher on one side. Cylindrical neck, constricted at base. Sloping shoulder, fusiform body with drop-shaped base. Tooling at constriction, tooling marks midway on the neck. Shallow chill marks on the lip.

Weathering and minor accretions exterior and interior, small patches of iridescence on exterior. Complete.

Parallel: Vessberg, 1952. Pl. VII, 44, also from Cyprus



Author Number 77. EA1979.544
Flask, first century AD
H: 8.2 cm. Body: 2.2 cm. Rim: 1.55 cm. W: 1 g
Said to be from a tomb at Tyre
Damon Collection

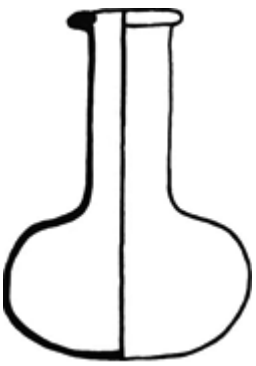
Free-blown perfume flask, colourless, transparent. Folded and roughly flattened rim sloping inwards on one side. Splayed, more on one side than the other. Cylindrical neck tapering inward, fusiform body with drop-shaped base. Striae and elongated bubbles, one large.

Interior and exterior weathering. Interior white weathering, accretions, iridescence. Complete.

Author Number 78. EA1979.546
Miniature flask, first century AD
H: 4.2 cm. Body: 1.7 cm. Rim: 1.2 cm. W: under a gram
Said to be from Tyre
Damon Collection

Free-blown flask, very slightly greenish hue, transparent. Folded and roughly flattened rim, sloping slightly inward. Cylindrical neck tapering inward, constricted before body. Fusiform body. The shape of the body, point of break and thickening of glass towards the break suggest it may have had a drop base. Tooling marks at constriction.

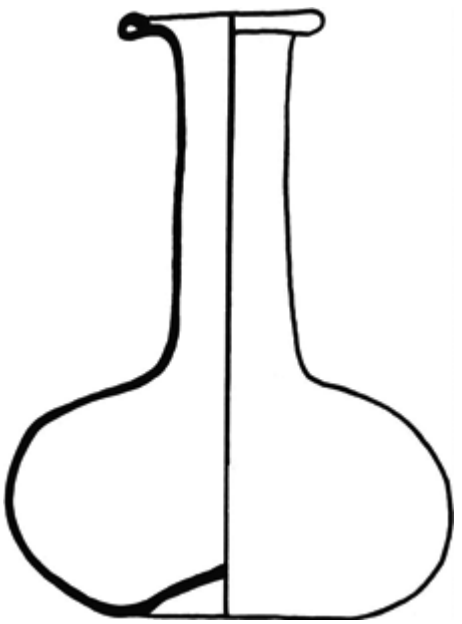
Crack in rim and neck. Base missing. Interior weathering and iridescence.



Author Number 79. EA1979.560
Miniature flask, circa first–second century AD
H: 4.65 cm. Body: 3.25 cm. Rim: 1.55 cm. W: 1 g
Said to be from Cyprus
Damon Collection

Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed. Cylindrical neck, slight outward taper, constricted at junction with body. Sloping shoulder, flattened globular body, roughly flat base.

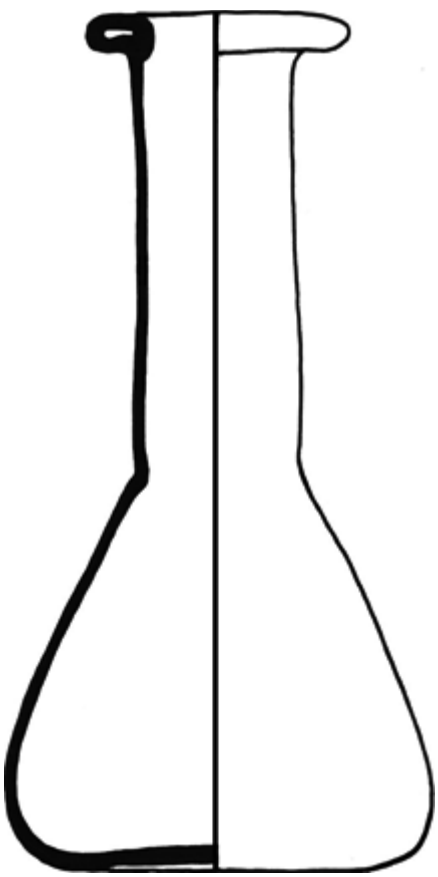
Soiling exterior and interior, interior accretions. Complete.



Author Number 80. EA1979.569
Flask, circa second–early third century AD
H: 8.1 cm. Body: 5.85 cm. Rim: 2.6 cm. W: 2 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, very slight blue hue, transparent. Unevenly folded rim, rounded, splayed. Slightly concave neck, flattened globular body, concave base, fairly high kick. Bubbles, smaller in neck than in body.

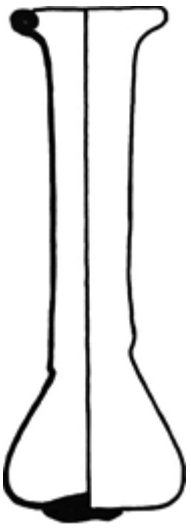
Minor abrasions and surface soiling. Small patches of exterior iridescence. Complete.



Author Number 81. EA1979.506
Flask, late first–second century AD
H: 11.4 cm. Body: 5.7 cm. Rim: 3.5 cm. W: 6 g
Said to be from Sidon
Damon Collection (1879)

Free-blown, blue-green hue, transparent. Folded and flattened rim, splayed. Cylindrical neck, tooled before body. Conical body, slightly concave base.

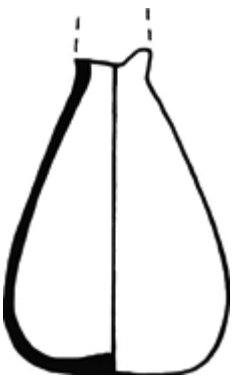
Extremely heavy decay: the outer layer is grey, cracked off around the body, and the exposed layer is vividly iridescent, with a mottled texture to the surface. Only one fairly clear patch remains near the base.



Author Number 82. EA1979.533
Flask, first–second century AD
H: 6.6 cm. Body: 2.4 cm. Rim: 2 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Folded rim, slightly splayed. Cylindrical neck, constriction before body, misshapen. Squat conical body tapering outwards, concave base. Protruding pontil scar. Bubbles, extensive striae.

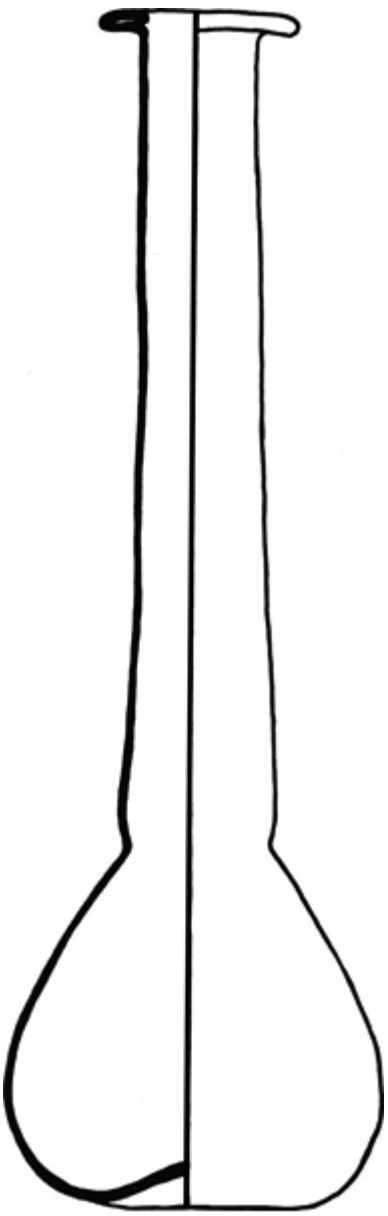
Minor surface soiling, interior iridescence and accretions. Complete.



Author Number 83. EA1979.541
Flask, probably first–second century AD
H: 4.35 cm. Body: 3 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, burgundy streaks, transparent. Conical body rounding before flat base. Striae.

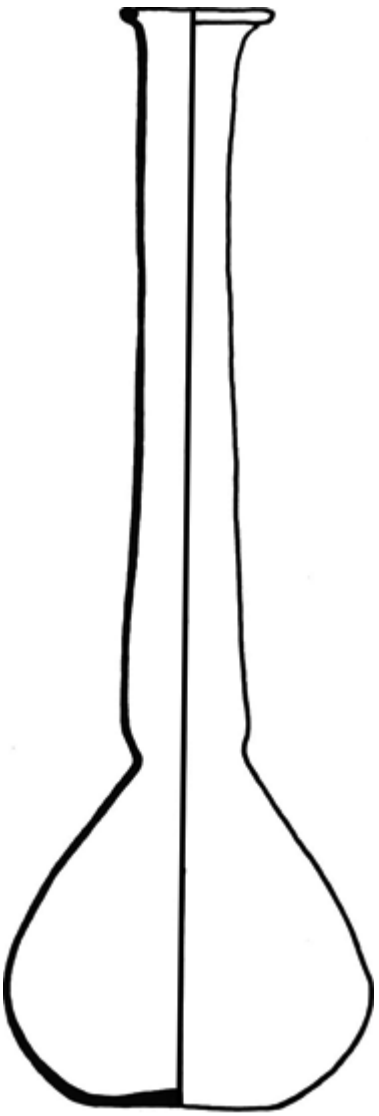
Neck and rim missing. Interior soiling and iridescence.



Author Number 84. EA1979.529
Flask, first–second century AD
H: 15.9 cm. Body: 4.9 cm. Rim: 2.6 cm. W: 3 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Folded and flattened rim, splayed. Cylindrical neck tapering outwards, constricted before body. Conical body rounding before concave base. Slight striae, minor bubbles.

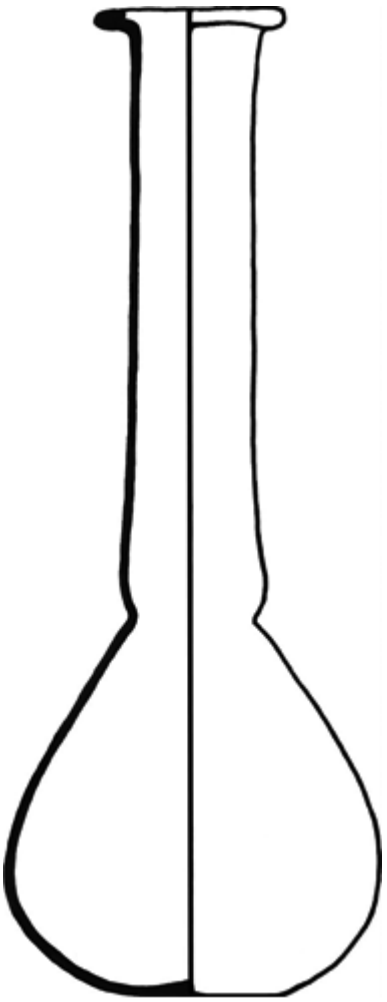
Surface soiling exterior and interior, interior iridescence. Cracks in neck. Missing piece in rim, otherwise complete.



Author Number 85. EA1979.530
Flask, first–second century AD
H: 14.5 cm. Body: 4.9 cm. Rim: 1.9 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown flask, yellow-green hue. Folded rim, splayed. Narrow cylindrical neck tapering outward, constricted before body. Conical body rounding before flat base. Striae, bubbles, two opaque white lumps on upper neck.

Interior surface soiling and iridescence. Broken section with associated cracks in body, fragments maintained. An entry in the Museum's 1977–1980 catalogue notes that it was broken on 3 February 1984.

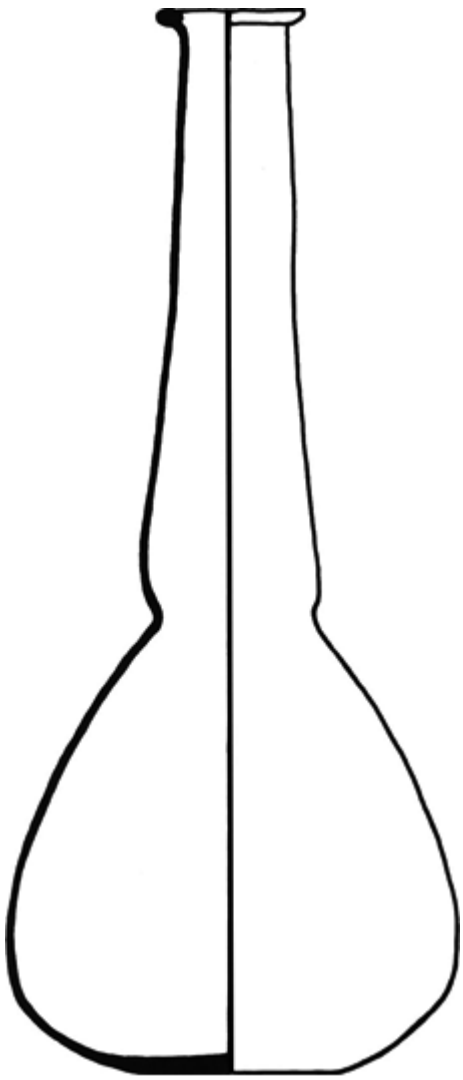


Author Number 86. EA1979.518
Flask, first–second century AD
H: 13.1 cm. Body: 5 cm. Rim: 2.55 cm. W: 5 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown flask, yellow to yellow-green hue, transparent. Folded rim, splayed. Cylindrical neck tapering outwards, constricted before body. Conical body rounding towards flat base. Striae, pinprick bubbles.

Surface soiling exterior and interior, iridescence exterior and interior neck, milky weathering. Complete.

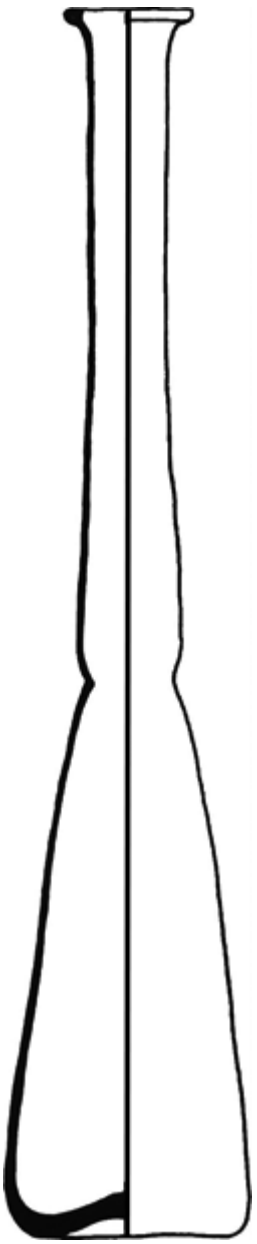
Parallel: Arveiller-Dulong and Nenna, 2005. Number 597, almost identical in dimensions and colour, acquired Renan



Author Number 87. EA1979.589
Flask, first–second century AD
H: 14.1 cm. Body: 6 cm. Rim: 2 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown flask, blue hue, translucent. Folded rim, splayed. Cylindrical neck tapering outward, constricted before body. Bulbous body rounding before flat base, some protruding traces of pontil scar. Pinprick bubbles, some striae.

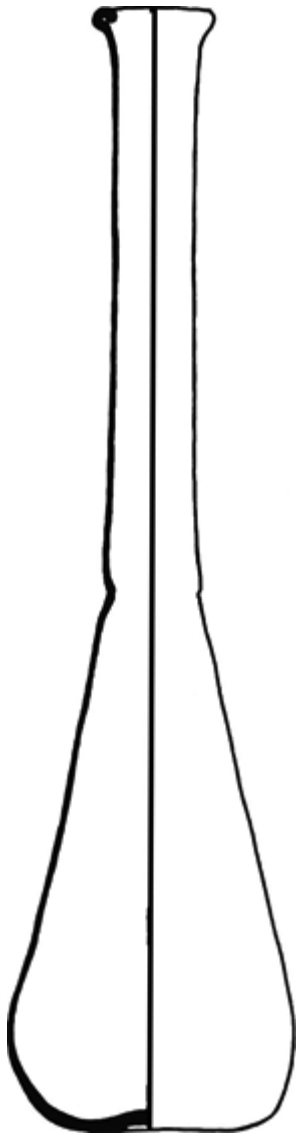
Pitting, interior surface soiling, extensive iridescence. Complete.



Author Number 88. EA1979.528
Flask, first–second century AD
H: 16.3 cm. Body: 3.25 cm. Rim: 1.7 cm. W. 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, slight greenish hue, transparent. Folded rim, splayed. Slightly concave neck, tooled before narrow conical body. Slightly concave base. Bubbles, striae.

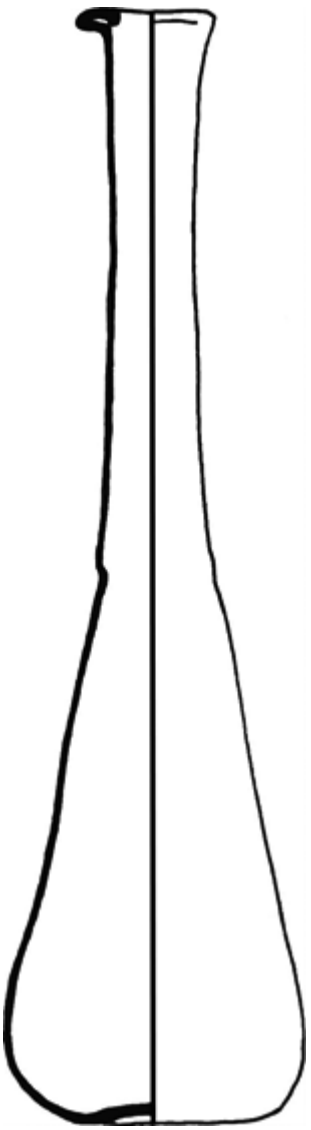
Hairline cracks on neck and body. Interior iridescence and minor surface soiling. Complete.



Author Number 89. EA1979.526
Flask, first–second century AD
H: 14.9 cm. Body: 3.8 cm. Rim: 1.6 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown flask, green hue, transparent. Folded and flattened rim, splayed. Narrow cylindrical neck, slightly concave, constricted before body. Elongated conical body, rounding to flat base with pontil scar. Striae and narrow elongated bubbles.

Interior soiling and iridescence. Minor exterior soiling. Complete.



Author Number 90. EA1979.525
Flask, first–second century AD
H: 14.8 cm. Body: 4 cm. Rim: 1.8 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue-green hue, transparent. Folded and flattened rim, slightly splayed. Slightly concave neck, narrow elongated conical body, slightly concave in upper section, curves to subtly concave base. Slight striae and pinprick bubbles.

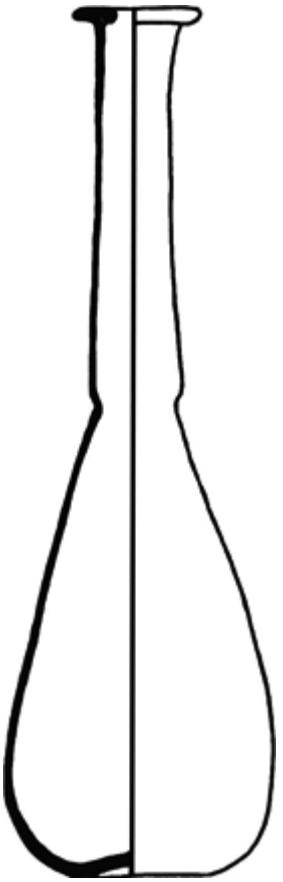
Missing section in lower body, associated cracks, repairs visible. Interior soiling and iridescence, minor exterior soiling.

Author Number 91. EA1979.527
Flask, first–second century AD
H: 14.8 cm. Body: 3.6 cm. Rim: 1.55 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown flask, green hue, translucent. Folded rim, splayed on one side. Long cylindrical neck tapering outward, tooled before narrow conical body. Slightly concave base with trace of protruding pontil scar. Bubbles, striae.

Surface soiling and iridescence exterior and interior. Complete.

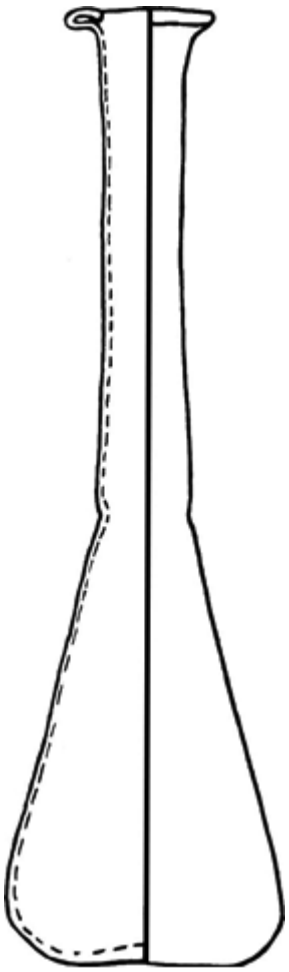
Parallel: Arveiller-Dulong and Nenna, 2005. Number 601



Author Number 92. EA1979.524
Flask, first–second century AD
H: 11.55 cm. Body: 3.6 cm. Rim: 1.8 cm
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Uneven flattened and folded rim, splayed. Slightly concave cylindrical neck, constricted before body. Conical body, flattened base. Extensive striae, thin elongated bubbles.

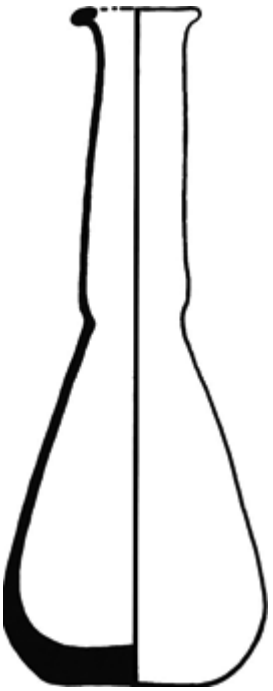
Interior weathering, accretions, and iridescence. Minor exterior soiling. Filled with sediment. Complete.



Author Number 93. EA1979.510
Flask, first–second century AD
H: 12.7 cm. Body: 3.7 cm. Rim: 1.9 cm. W: 3 g
Said to be from Sidon
Damon Collection (September 1879)

Free-blown flask, green hue, transparent. Folded and flattened rim, splayed. Cylindrical neck tapering outward, constricted before body. Elongated conical body, rounding before slightly concave base. Striae.

Exterior surface soiling, more extensive on the interior, some interior iridescence. Complete.



Author Number 94. EA1979.627
Flask, first–second century AD
H: 9 cm. Body: 3.5 cm. Rim: 1.5 cm. W: 3 g
Said to be from Tyre
Damon Collection

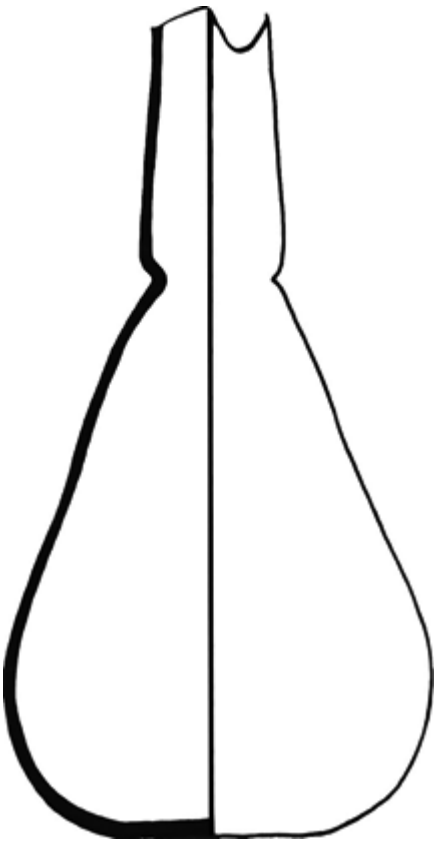
Free-blown flask, blue hue, transparent. Rounded rim, slightly splayed. Cylindrical neck tapering outward, constricted before body. Conical body tapering outward, roughly flattened base. Protruding ridge at rim and inner neck. Pinprick bubbles, notable striae. Tooling at constriction.

Sections of rim and upper neck missing. Extensive interior weathering, iridescence and accretions. Scaly black weathering with bright silver layer underneath. Cracks in body.

Author Number 95. EA1979.536
Miniature flask, circa first–second century AD
H: 4.6 cm. Body: 1.1 cm. Rim: 1.4 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown miniature flask, green hue, transparent. Folded rim, splayed on one side. Cylindrical neck, constricted before body. Conical body tapering outward, roughly flat base. Slight striae.

Interior accretions and iridescence. Minor exterior surface soiling. Shallow chip from base. Complete.

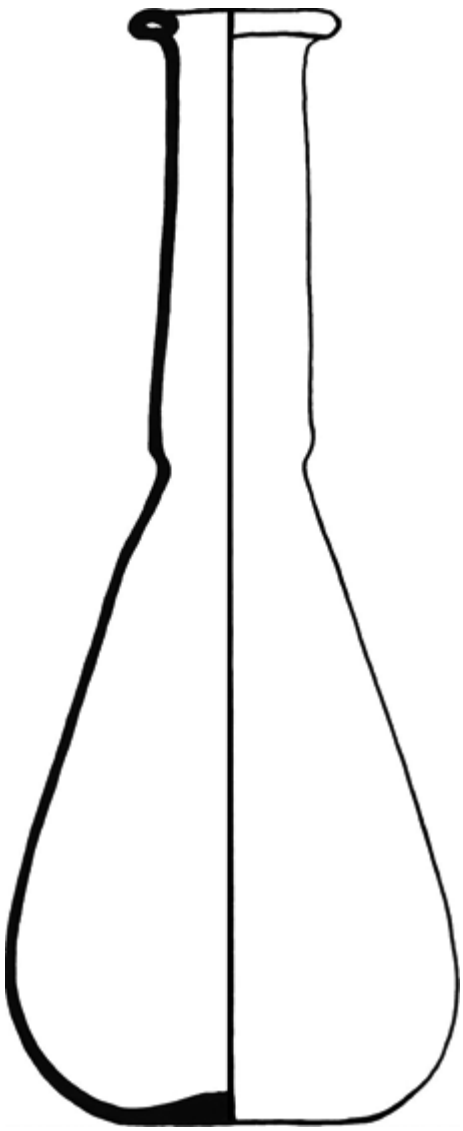


Author Number 96. EA1979.621
Flask, late first–second century AD
H: 11 cm. Body: 5.7 cm. W: 6 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, green hue, transparent. Cylindrical neck tapering outwards, tooled before body. Piriform body rounding before flat base.

Surface soiling, largely on interior, slight iridescence on interior. Dulling, minor abrasions and pitting. Neck broken, probably about mid-way.

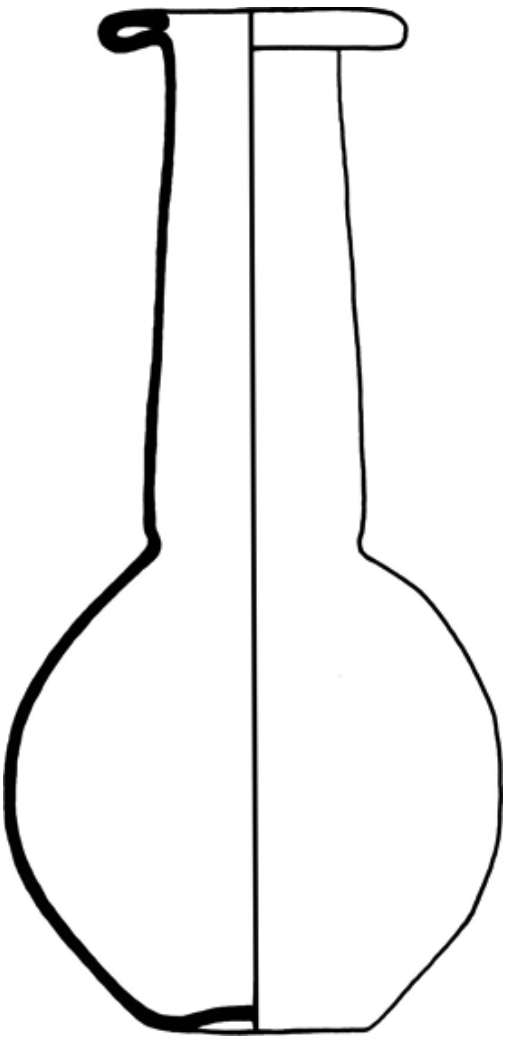
Parallel: Arveiller-Dulong and Nenna, 2005. Number 591



Author Number 97. EA1979.568
Flask, late first–second century AD
H: 14.8 cm. Body: 6 cm. Rim: 2.25 cm. W: 6 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, slight greenish hue where thicker, otherwise colourless, transparent. Folded rim, splayed. Cylindrical neck, constricted before body. Conical body, flat base with pontil scar. Pinprick bubbles, some striae, tooling at constriction.

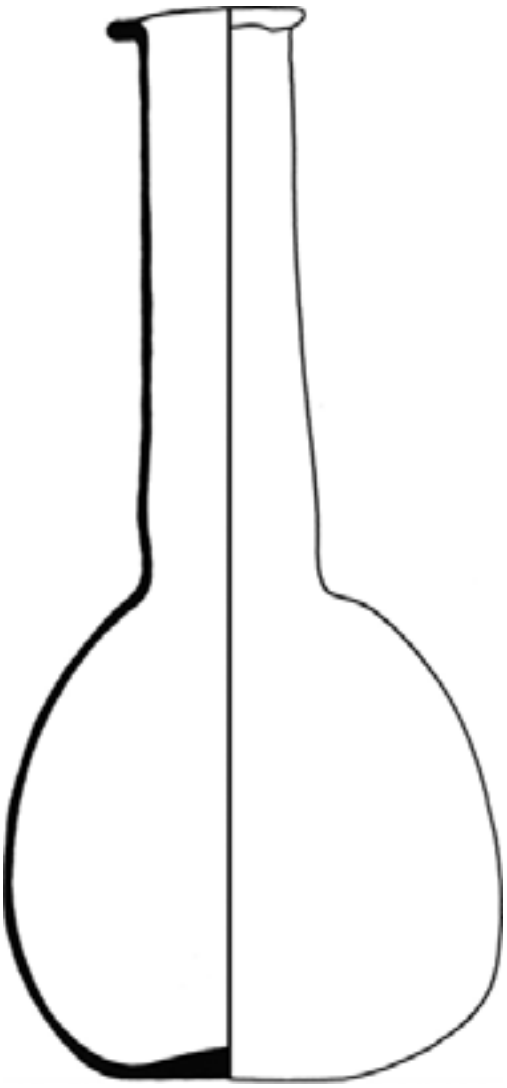
Surface soiling exterior and interior, slight exterior iridescence on body. Complete.



Author Number 98. EA1979.593
Flask, circa second century AD
H: 15.05 cm. Body: 7.3 cm. Rim: 4.3 cm. W: 8 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown flask, blue hue, transparent. Folded and flattened rim, very thick, fairly broad lip. Cylindrical neck tapering outward, constricted before body. Ovoid body, concave base. Very minor striae.

Interior surface soiling and iridescence. Complete.

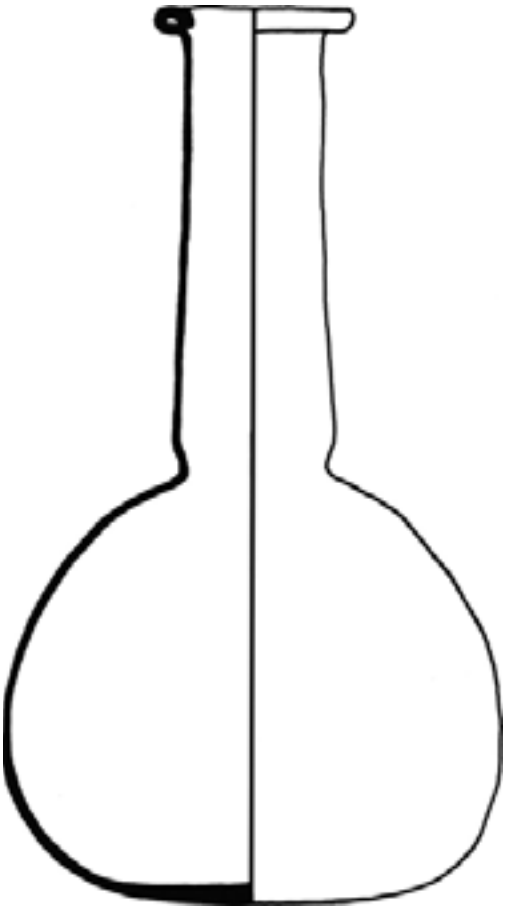


Author Number 99. EA1979.553
Flask, second century AD
H: 17.8 cm. Body: 8.2 cm. Rim: 3.3 cm
Damon Collection

Free-blown flask, yellow-green hue, transparent. Uneven rim, splayed. Cylindrical neck tapering outwards, bulbous body, flat base. Extensive striae. Pinprick bubbles.

Surface soiling exterior, soiling and iridescence interior, contains sediment. Complete.

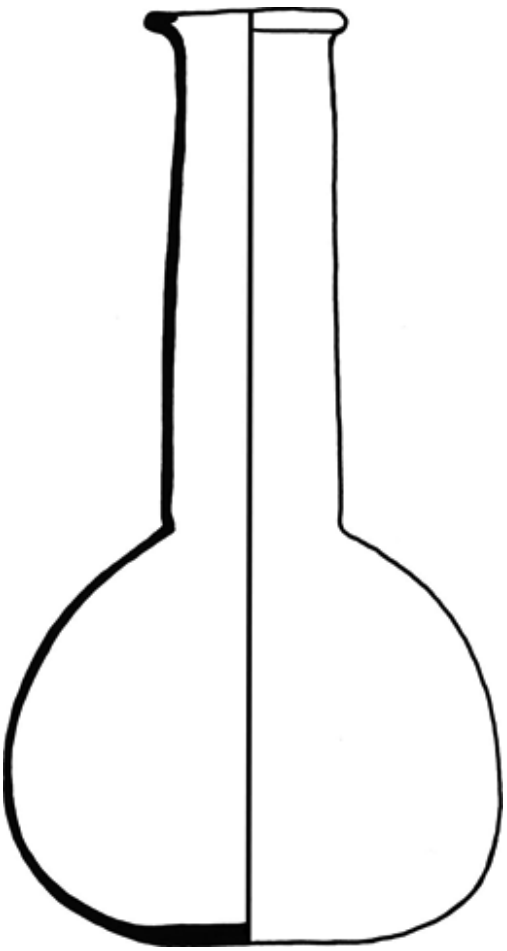
This vessel is missing a label from Damon.



Author Number 100. EA1979.591
Flask, second century AD
H: 14.6 cm. Body: 8.25 cm. Rim: 3.25 cm. W: 11 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue-green hue, transparent. Folded and flattened rim, cylindrical neck tapering outward, constricted before body. Bulbous body, roughly flat base.

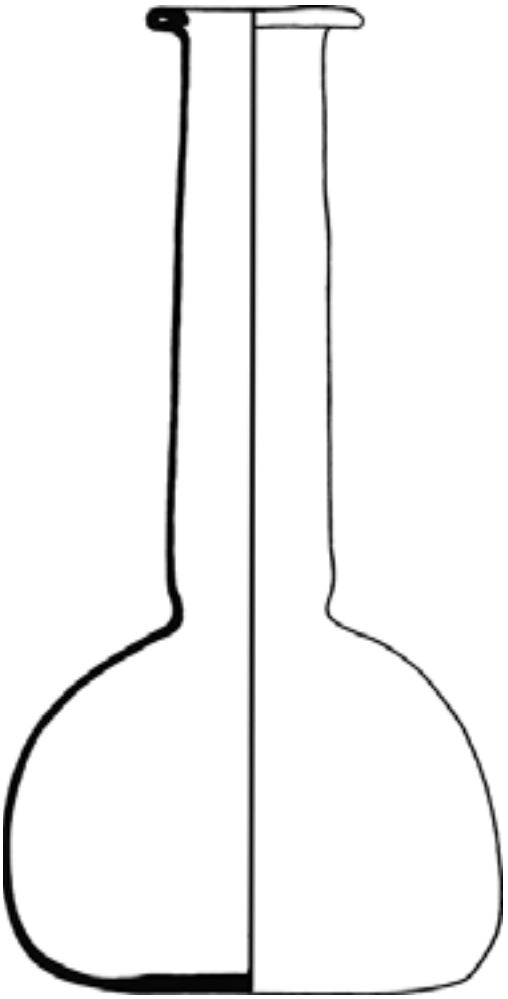
Weathering and iridescence on exterior and interior. Accretions below rim. Complete.



Author Number 101. EA1979.567
Flask, second century AD
H: 12.8 cm. Body: 6.8 cm. Rim: 2.7 cm. W: 6 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, green hue, transparent. Folded and flattened rim, slightly splayed. Cylindrical neck tapering outwards, constricted before body. Bulbous, almost globular body. Flat base. Tooling at constriction. Elongated bubbles in neck, some pinprick bubbles.

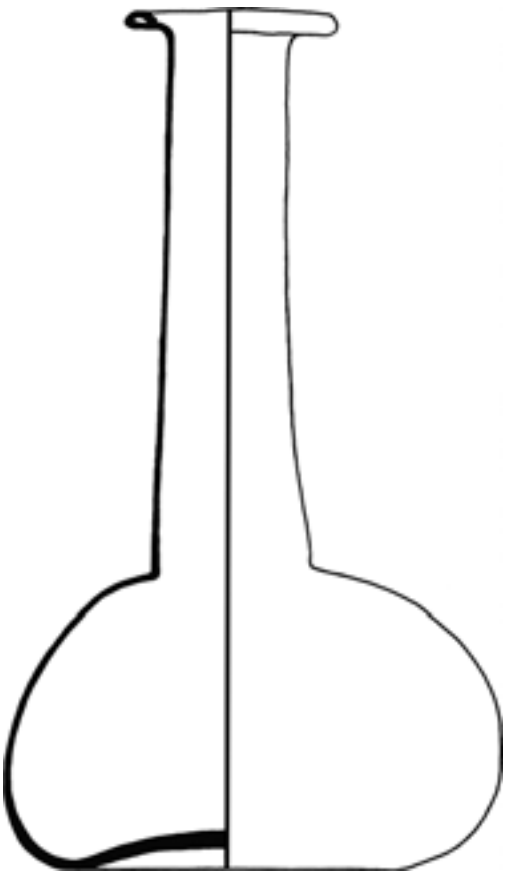
Creamy weathering on exterior. Surface soiling and some iridescence exterior and interior. Complete.



Author Number 102. EA1979.615
Flask, second century AD
H: 17.4 cm. Body: 8.8 cm. Rim: 3.8 cm. W: 10 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, green hue, transparent. Folded and flattened rim, splayed. Cylindrical neck tapering outward, constricted before body. Bulbous body, roughly flat base. Some striae.

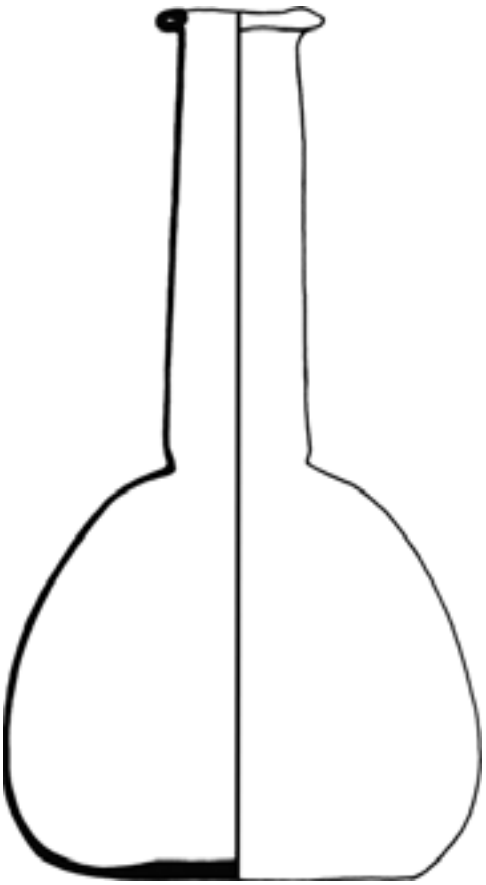
Surface accretion and iridescence exterior and interior, particularly interior base. Complete.



Author Number 103. EA1979.565
Flask, second century AD
H: 17 cm. Body: 9.85 cm. Rim: 4.15 cm. W: 8 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, green hue, transparent. Folded rim, splayed. Cylindrical neck tapering outward, constricted before body on one side (misshapen). Bulbous body, wide concave base, trace of very slightly protruding pontil scar. Neck offline with body. Tooling marks at constriction, pinprick bubbles.

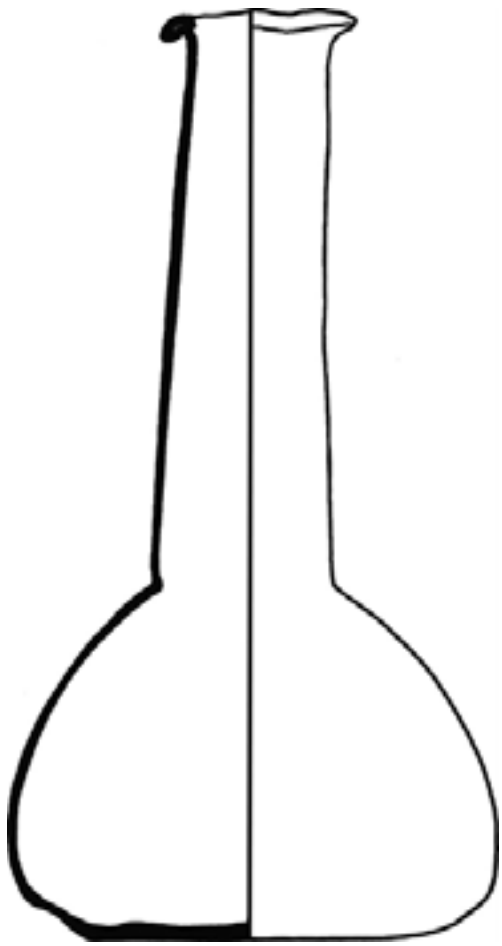
Surface soiling exterior and interior, exterior iridescence. Surface accretions interior neck. Minor pitting. Complete.



Author Number 104. EA1979.563
Flask, second century AD
H: 16.8 cm. Body: 9.2 cm. Rim: 3.2 cm. W: 12 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue-green hue, transparent. Unevenly folded and roughly flattened rim. Cylindrical neck tapering outward, constricted before body. Bulbous body, flat base. Some chill marks on rim. Tooling at constriction. Pinprick bubbles, elongated bubbles in neck.

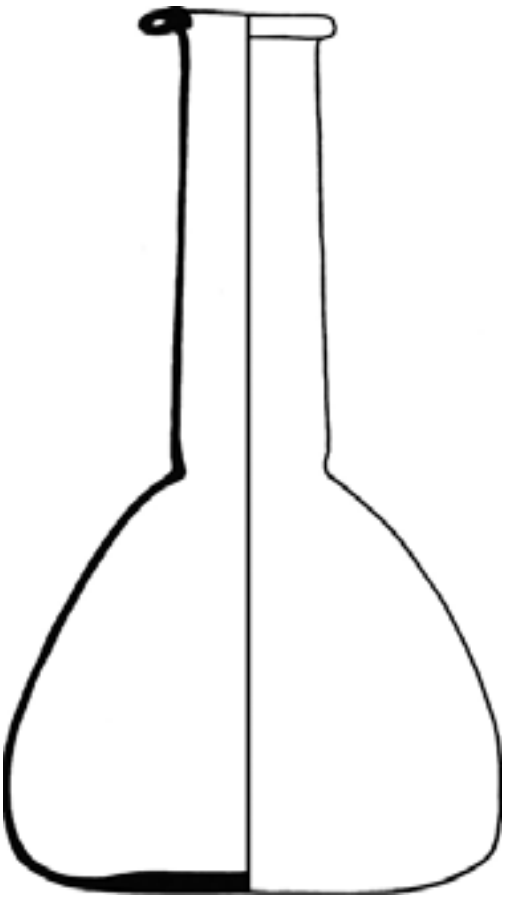
Minor exterior and interior surface soiling, minor accretions exterior neck, accretions below interior rim. Some exterior and interior iridescence. Complete.



Author Number 105. EA1979.562
Flask, second century AD
H: 15.45 cm. Body: 8.1 cm. Rim: 3.1 cm. W: 7 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue-green hue, transparent. Lopsided rim, unevenly folded and roughly flattened. Roughly straight cylindrical neck, bulbous body, flat base. Very few bubbles.

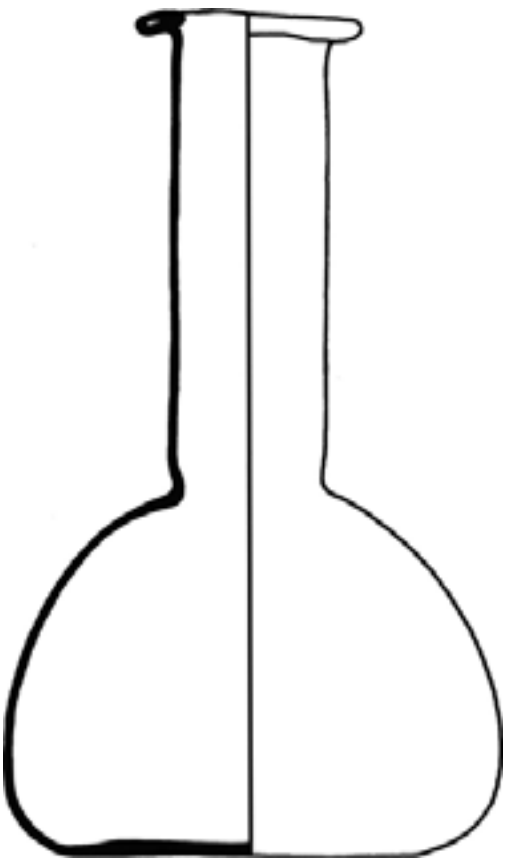
Minor exterior soiling, extensive interior accretions. Interior iridescence. Complete.



Author Number 106. EA1979.564
Flask, second century AD
H: 15.3 cm. Body: 8.7 cm. Rim: 3.5 cm. W: 9 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue-green hue, transparent. Folded and roughly flattened rim, sloping on one side, misshapen. Cylindrical neck tapering outward, constricted before body. Bulbous body, roughly flat base. Tooling at constriction. Striae and elongated bubbles in neck, body clear. Tooling marks mid body.

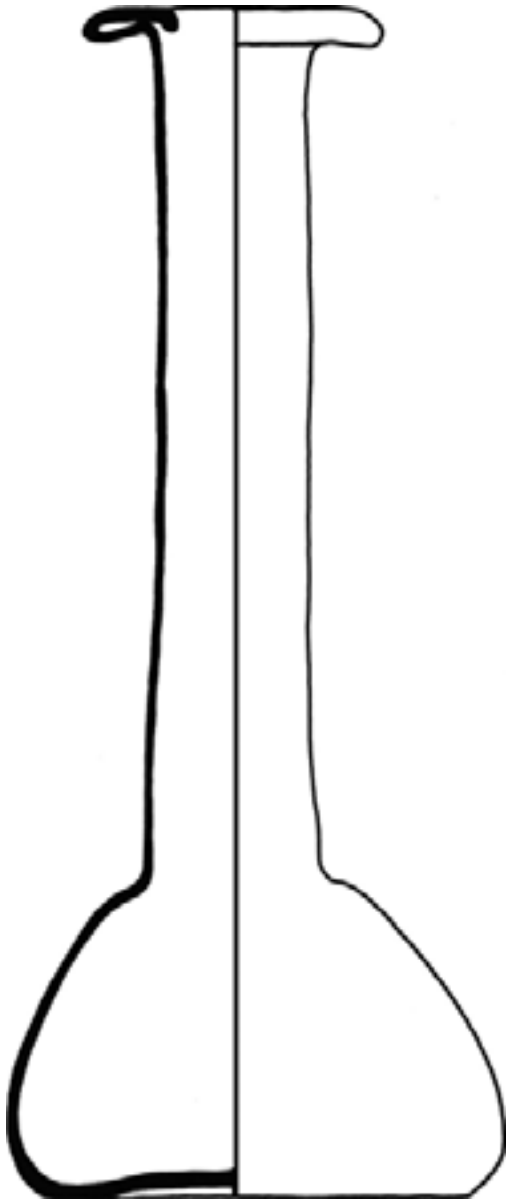
Minor exterior surface soiling, interior iridescence and accretions. Complete.



Author Number 107. EA1979.552
Flask, second century AD
H: 14.6 cm. Body: 8.6 cm. Rim: 3.9 cm. W: 11 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed and slightly lopsided. Cylindrical neck, constricted before body. Bulbous body, roughly flat base. Many bubbles, several large, elongated in the neck.

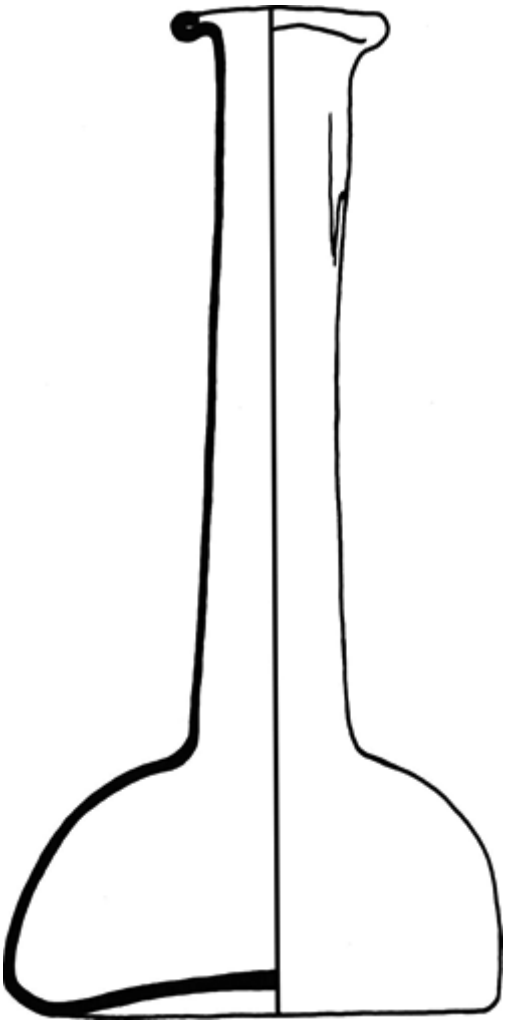
Interior accretions, particularly at the base. Some exterior iridescence, more on the interior. Complete.



Author Number 108. EA1979.616
Flask, second century AD
H: 18.6 cm. Body: 7.8 cm. Rim: 4.7 cm. W: 10 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue hue, transparent. Folded and flattened rim, very broad lip of uneven width. Cylindrical neck tapering outward, constricted before body. Squat bulbous body, fairly steep sides. Thick base, very slightly concave. Pinprick and elongated bubbles, minor striae.

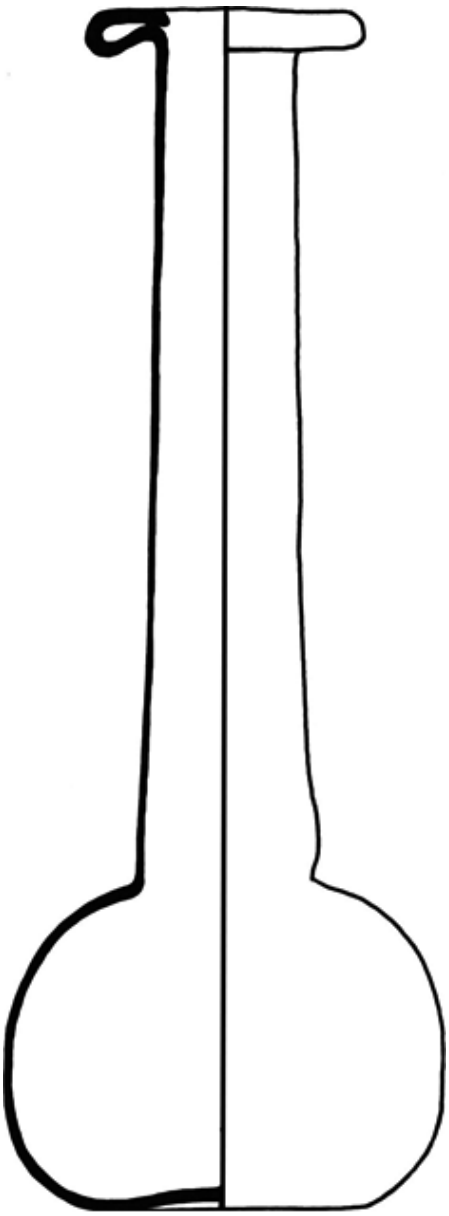
Minor surface soiling exterior and interior. Complete.



Author Number 109. EA1979.617
Flask, second century AD
H: 13.4 cm. Body: 6.6 cm. Rim: 3.2 cm. W: 4 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, largely colourless, some blue in the rim, transparent. Folded rim, splayed, misshapen. The glass is thickened on one side, stretching down the neck in a blue strip. Cylindrical neck, slightly concave and misshapen. Squat bulbous body, concave base. Some striae, very few pinprick bubbles, one large bubble.

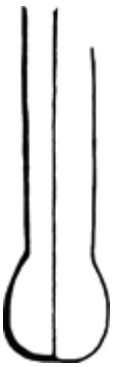
Surface soiling interior and exterior. Weathering and iridescence largely on the interior, patches on the exterior neck. Complete.



Author Number 110. EA1979.566
Flask, second century AD
H: 16.8 cm. Body: 6.1 cm. Rim: 3.9 cm. W: 10 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue hue, transparent. Thick folded and flattened rim. Cylindrical neck, outward taper, constricted at junction with body on one side (misshapen). Squat bulbous body, slightly concave base. Elongated bubbles in neck and body, some striae.

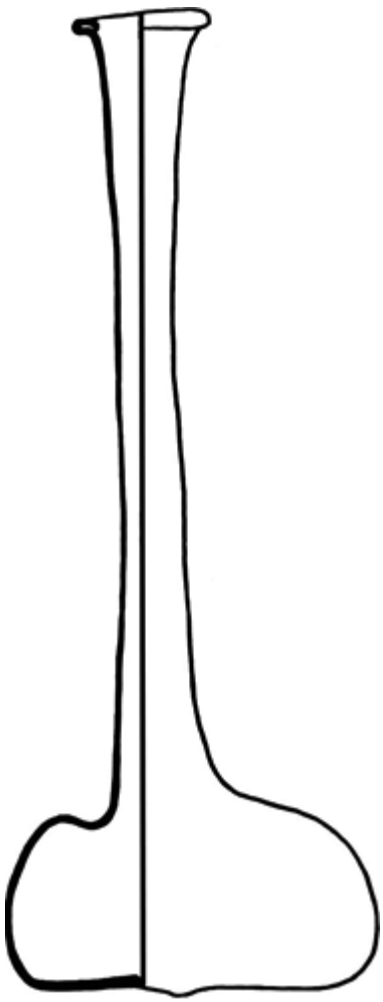
Brown weathering on exterior, especially the rim and upper neck. Contains very small pieces of sediment. Surface accretions on interior neck. Iridescence on interior, especially the neck. Complete.



Author Number 111. EA1979.537
Miniature flask, circa second century AD
H: 4.7 cm. Body: 1.4 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown miniature flask, colourless, transparent. Cylindrical neck tapering slightly outward, constricted before body. Bulbous body, flat base. Pinprick bubbles, slight striae.

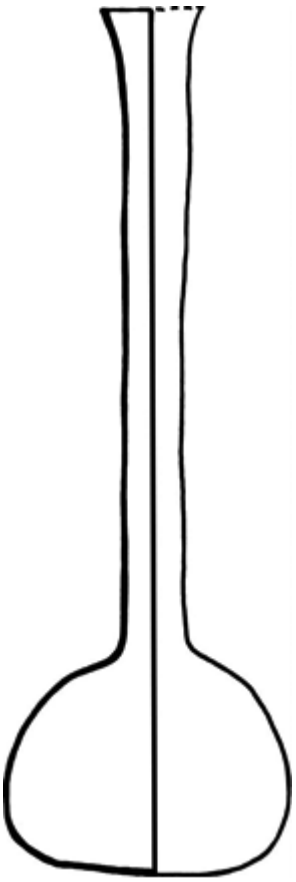
Rim missing, missing section at the top of the neck. Weathering and iridescence.



Author Number 112. EA1979.628
Flask, circa second century AD
H: 13.1 cm. Body: 4.8 cm. Rim: 1.7 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, mostly colourless; bluish hue and slight green streaks in rim, transparent. Folded and flattened rim, splayed. Slender slightly concave neck, impression in horizontal shoulder, misshapen. Short squat body, rounded sides, roughly flat base with slight outward central bulge. Bubbles, striae. A few dark specks of other material in the body.

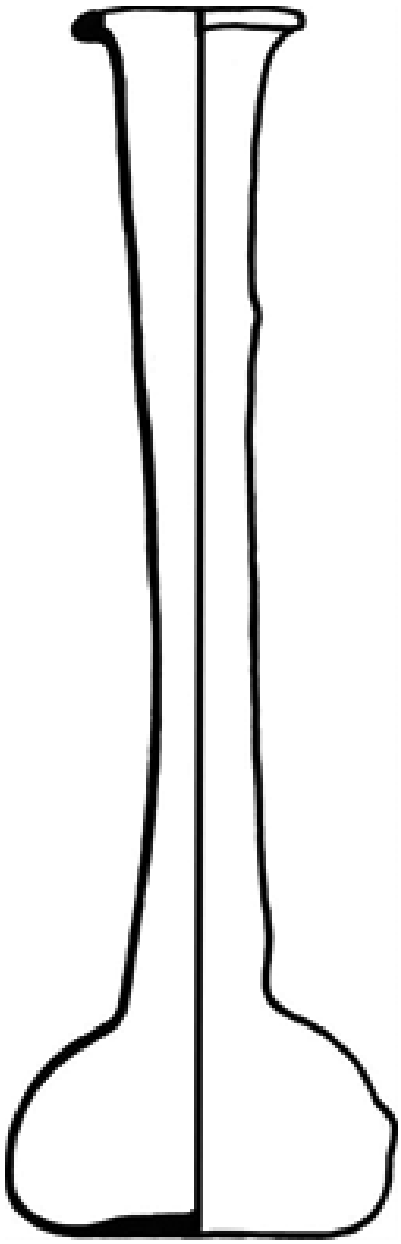
Surface soiling, interior accretions and iridescence. Complete.



Author Number 113. EA1979.531
Flask, circa second century AD
H: 11.5 cm. Body: 3.8 cm. Rim: 1.3 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Rounded rim, very slightly splayed. Slender, slightly concave neck, off-centre to body. Squat globular body, roughly flat base. Does not stand upright.

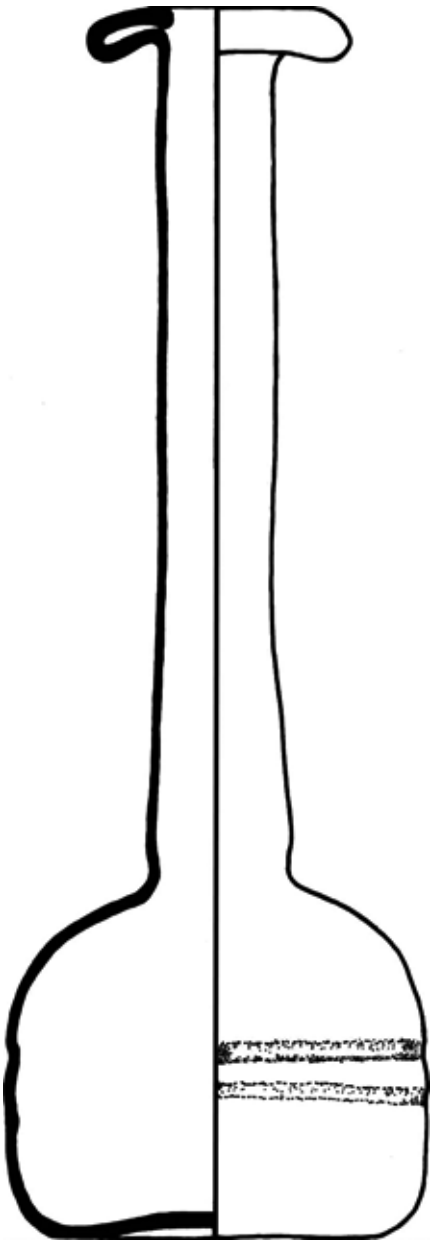
Rim and top of neck missing a fragment, otherwise complete. Surface accretions neck and body exterior and interior, iridescence mostly on interior.



Author Number 114. EA1979.512
Flask, circa second century AD
H: 10.4 cm. Body: 3.3 cm. Rim: 1.95 cm. W: 1 g
Said to be from Sidon
Damon Collection (1881)

Free-blown flask, colourless, transparent. Folded and flattened rim, slightly sloping, splayed. Slender concave neck, tooled before body. Squat bulbous body, flat base. Protruding ridge on body. Slight pontil scar. Extensive striae, pinprick bubbles.

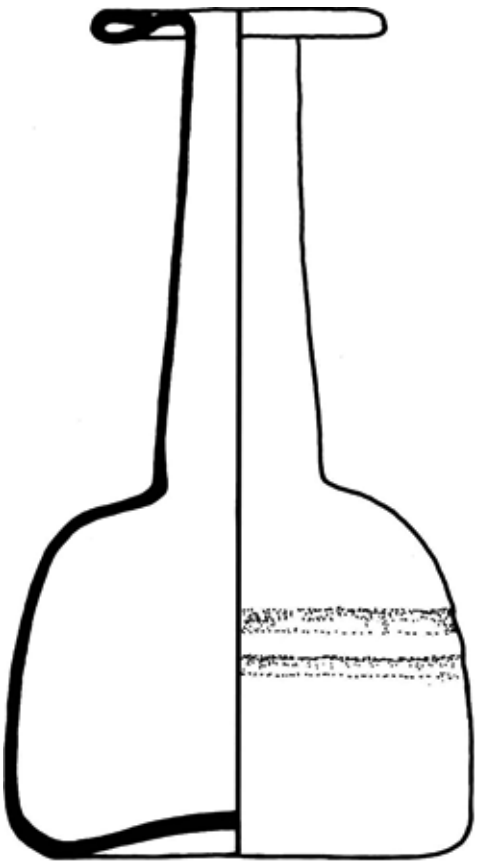
Two holes in body, otherwise complete. Interior weathering and iridescence, minor accretions. Exterior soiling.



Author Number 115. EA1979.590
Flask, second–third century AD
H: 17 cm. Body: 5.8 cm. Rim: 3.6 cm. W: 9 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Folded and roughly flattened rim with slight upward slope towards interior edge. Concave neck, long and narrow, tooled before body. Bulbous body, concave base. Two wheel cut grooves on mid body. Slight striae, very narrow elongated bubbles.

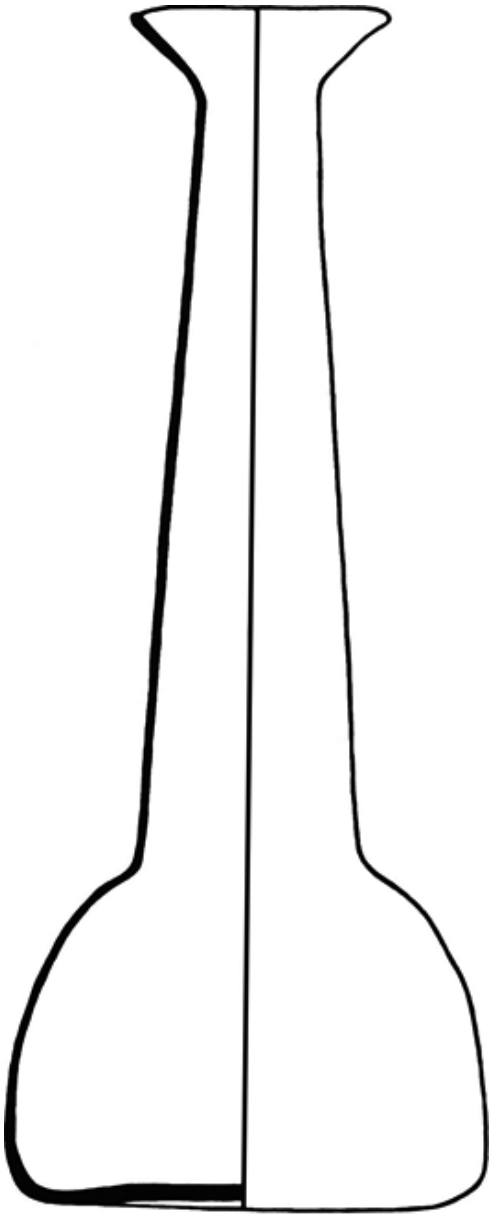
Dulling, minor surface soiling. Interior iridescence and accretions. Complete.



Author Number 116. EA1979.561
Flask, second–third century AD
H: 11.6 cm. Body: 6.5 cm. Rim: 4.05 cm. W: 8 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Folded and flattened rim, splayed, broad lip. Narrow cylindrical neck tapering outwards, constricted before body. Bulbous, almost cylindrical body, concave base. Two shallow, wheel cut grooves at mid body. Pinprick bubbles, thin elongated bubbles in neck, extensive striae.

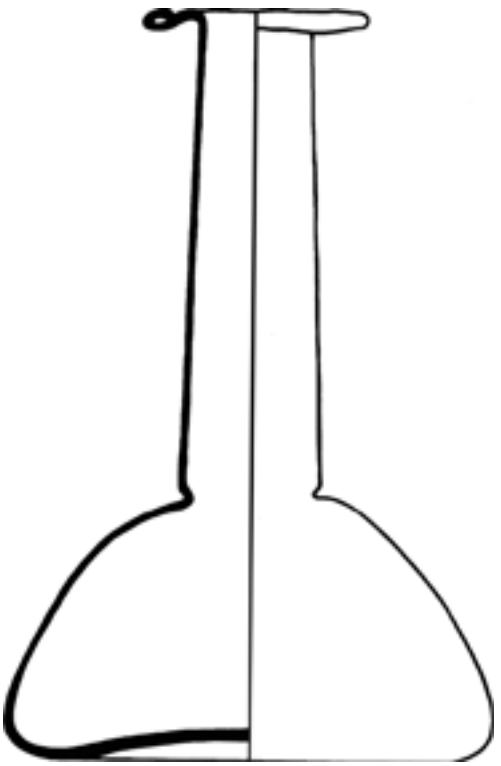
Interior weathering and iridescence. Minor exterior surface soiling. Complete.



Author Number 117. EA1979.618
Flask, third–fourth century AD
H: 17.4 cm. Body: 7 cm. Rim: 3.7 cm. W: 6 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, blue hue where thicker, otherwise colourless, transparent. Funnel mouth, cracked off and polished rim. Cylindrical neck tapering outwards, squat bulbous body, very slightly concave base. Some slight striae.

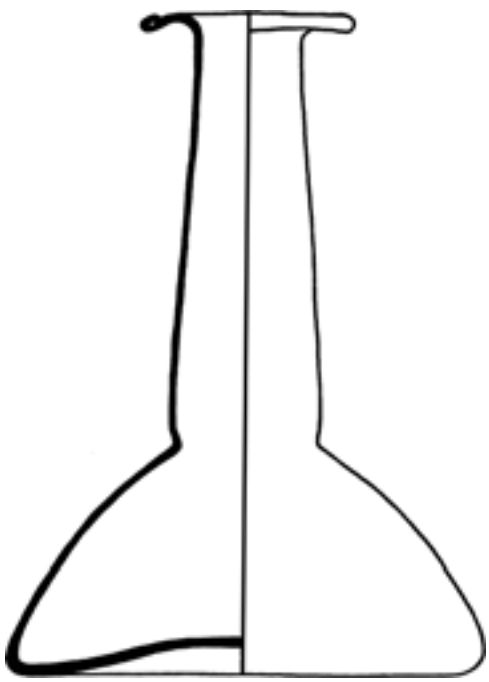
Weathering and iridescence exterior and interior. Complete.



Author Number 118. EA1979.555
Flask, second–third century AD
H: 15 cm. Body: 9.8 cm. Rim: 4.55 cm. W: 6 g
Said to be from Cyprus
Damon Collection (1873)

Free-blown flask, colourless, transparent. Folded rim, splayed. Cylindrical neck tapering outwards, constricted before body. Squat conical body, broad concave base. Some bubbles in neck, few striae. Tooling at constriction.

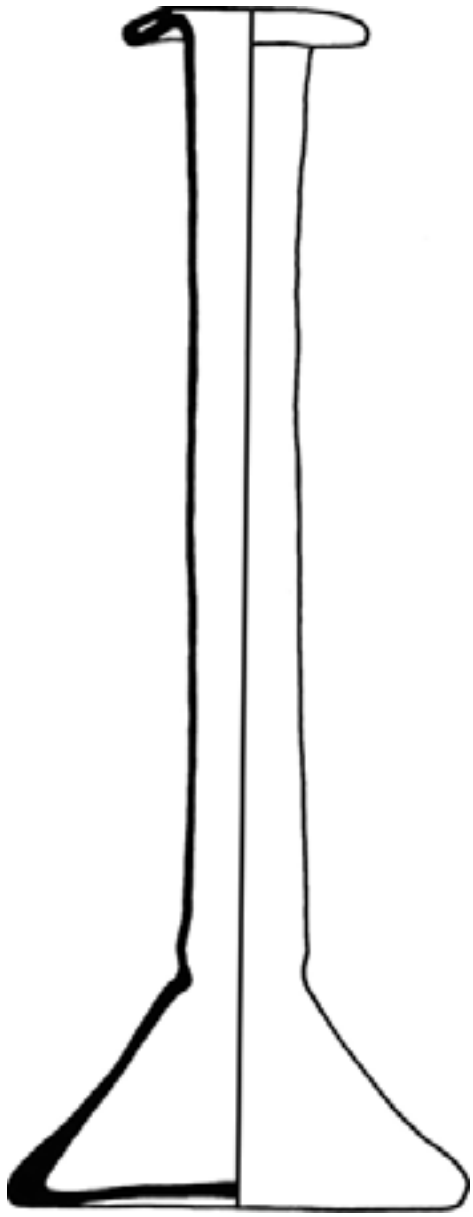
Exterior and interior surface accretions. Interior iridescence, particularly on base and body. Complete.



Author Number 119. EA1979.554
Flask, second–third century AD
H: 13 cm. Body: 9.5 cm. Rim: 4.1 cm. W: 6 g
Said to be from Cyprus
Damon Collection

Free-blown flask, colourless, transparent. Folded rim, splayed. Cylindrical neck tapering outwards, constricted before squat, conical body. Concave base. Striae, pinprick bubbles.

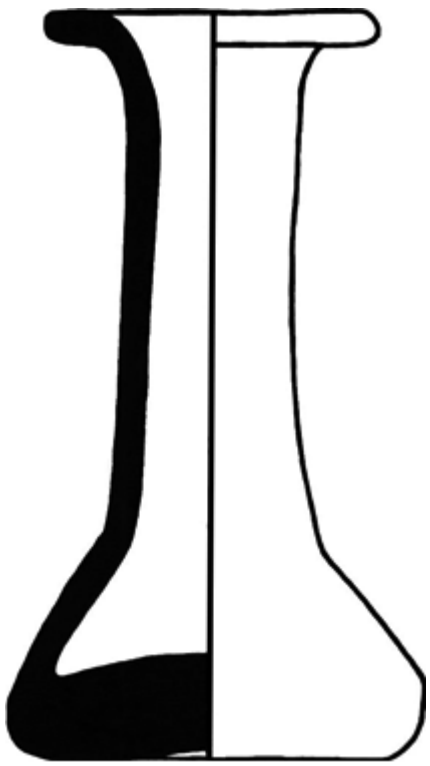
Surface accretions exterior and interior. Small patches of iridescence on lower body and neck, more extensive on interior base. Dulling, brown weathering, flaking off. Complete.



Author Number 120. EA1979.507
Flask, second–third century AD
H: 19.3 cm. Body: 7.4 cm. Rim: 3.7 cm. W: 12 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown, emerald green tint, translucent. Folded rim, slightly sloping. Fairly broad lip. Cylindrical neck, long and narrow, subtly concave. Steeply sloping, squat, conical body, concave base. Pontil scar with some protrusion. Elongated bubbles, striae, tooling marks at constriction.

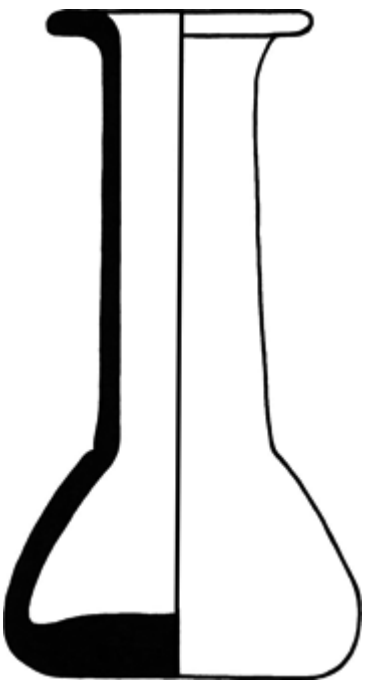
Surface soiling exterior and interior, extensive iridescence appearing silver on interior, some patches on exterior body and base. Some pitting. Complete.



Author Number 121. EA1979.607
Flask, second–third century AD
H: 9.9 cm. Body: 5.55 cm. Rim: 4.2 cm. W: 19 g
Said to be from Sidon
Damon Collection (1879)

Blown flask (possibly mould blown), emerald green tint, translucent. Rounded rim, flattened, splayed. Slightly concave neck, squat conical body, roughly flat base with pontil scar. Striae.

Minor surface soiling exterior and interior, iridescence interior neck, some on body. Complete.



Author Number 122. EA1979.595
Flask, second–third century AD
H: 8.85 cm. Body: 4.75 cm. Rim: 3.85 cm. W: 13 g
Said to be from Sidon
Damon Collection (1881)

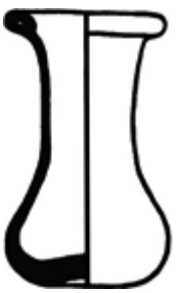
Blown flask (possibly mould-blown), emerald green tint, translucent. Slightly concave neck, squat conical body. Slightly concave base with pontil scar, deeper impression about it. Pinprick bubbles. Entirely covered in striae, creating rippling surface.

Hole in one layer of the base, shallow pitting, Minor surface soiling, mainly interior. Possibly some iridescence on interior neck. Complete.

Author Number 123. EA1979.508
Flask, circa second–third century AD
H: 6.5 cm. Body: 2.5 cm. Rim: 2.6 cm. W: 3 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Fire-rounded rim, splayed. Cylindrical neck, slightly concave, tooled before body. High conical body, thick flattened base. Striae, bubbles in rim.

Creamy weathering on interior neck and both sides of rim. Weathering and accretions on exterior base. Interior iridescence. Cracks in body, otherwise complete.



Author Number 124. EA1979.630
Miniature flask, circa second–third century AD
H: 3.7 cm. Body: 2.2 cm. Rim: 2.2 cm. W: 1 g
Said to be from Sidon
Damon Collection (1881)

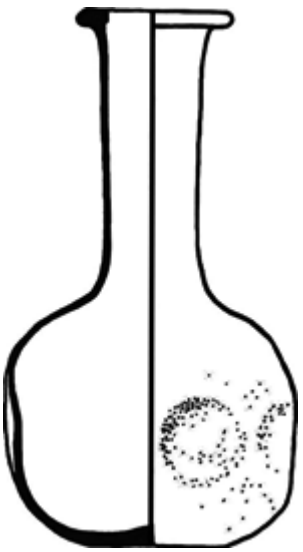
Free-blown miniature flask, blue hue, transparent. Unevenly folded rim, quite steep. Cylindrical neck, roughly straight, tapers seamlessly to bulbous body, rounding before concave base with pontil scar.

Minor exterior weathering and iridescence. Interior weathering, iridescence, and accretions. Dulling. Complete.

Author Number 125. EA1979.626
Flask, circa third–fourth century AD
H: 7.4 cm. Body: 3.7 cm. Rim: 2.25 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless with burgundy streaks, transparent. Folded and flattened rim, splayed, misshapen. Constricted below the rim more on one side than the other. Cylindrical neck, slightly concave. Bulbous body with five deep impressions midway. Small roughly flattened base. Extensive striae, several bubbles, many very large.

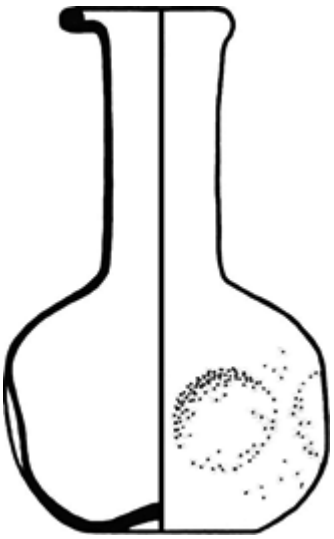
Large holes in the centre of two impressions, one hole on the edge of an impression, another hole related to a bubble. Otherwise complete. Interior weathering, accretions, and iridescence.



Author Number 126. EA1979.623
Flask, circa third–fourth century AD
H: 7.15 cm. Body: 3.85 cm. Rim: 2.1 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Folded and flattened rim, sloping slightly downward toward the interior, splayed. Long cylindrical neck, slightly concave. Globular body, concave base. Band of eight roughly circular impressions at the middle of the body, unevenly spaced. Very few pinprick bubbles.

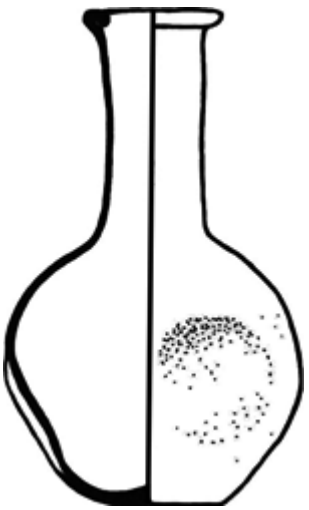
Surface soiling exterior and interior, interior weathering, iridescence, some accretions. Complete.



Author Number 127. EA1979.624
Flask, circa third–fourth century AD
H: 7 cm. Body: 4.3 cm. Rim: 2.2 cm. W: 2 g
Said to be from Sidon
Damon Collection (September 1881)

Free-blown flask, green hue, transparent. Unevenly folded rim, splayed on one side. Cylindrical neck, very slightly concave. Globular body with roughly circular impressions in band midway. Very slightly concave base. Bubbles, several large.

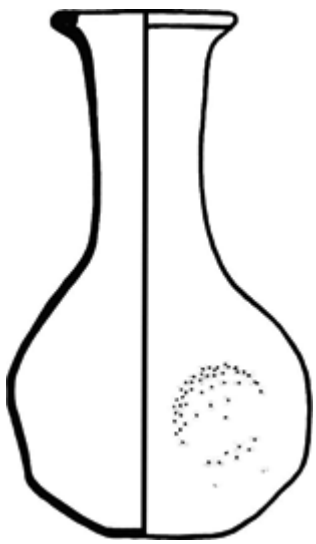
Exterior and interior accretions, exterior weathering and iridescence. Dulling, shallow pitting. Complete.



Author Number 128. EA1979.625
Flask, circa third–fourth century AD
H: 7 cm. Body: 4 cm. Rim: 2.4 cm. W: 1 g
Said to be from Tyre
Damon Collection

Free-blown flask, colourless, transparent. Folded rim, slightly splayed. Cylindrical neck, roughly straight. Globular body with very shallow circular impressions in band across body, unevenly spaced. Flat base. Pinprick bubbles.

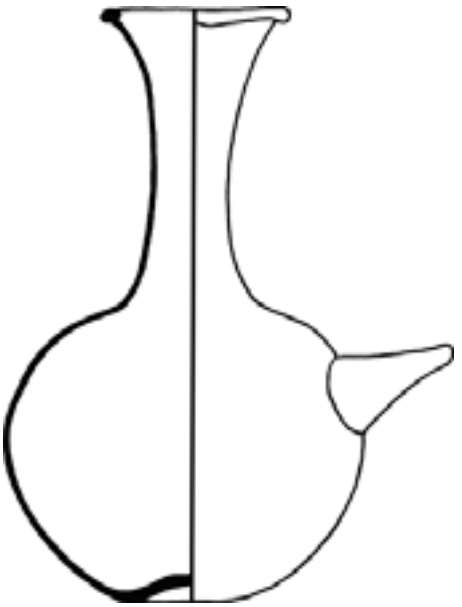
Extensive surface soiling exterior and interior, significant iridescence, largely on interior and exterior neck. Crack in rim, otherwise complete.



Author Number 129. EA1979.587
Flask, circa third–fourth century AD
H: 6.6 cm. Body: 3.9 cm. Rim: 1.85 cm. W: 1 g
Said to be from Tyre.
Damon Collection

Free-blown flask, colourless or very slightly bluish hue, transparent. Folded and roughly flattened rim with inward slope, slightly splayed. Slightly concave cylindrical neck. Bulbous body with band of roughly circular impressions midway, roughly flattened base. Pinprick bubbles, slight striae.

Interior and exterior weathering and soiling. Interior iridescence. Small hole in body, otherwise complete.



Author Number 130. EA1979.636
Pourer flask, third–fourth century AD
H: 10.6 cm. Body: 6.85 cm. Rim: 3.3 cm. W: 4 g
Said to be from a tomb at Tyre
Damon Collection

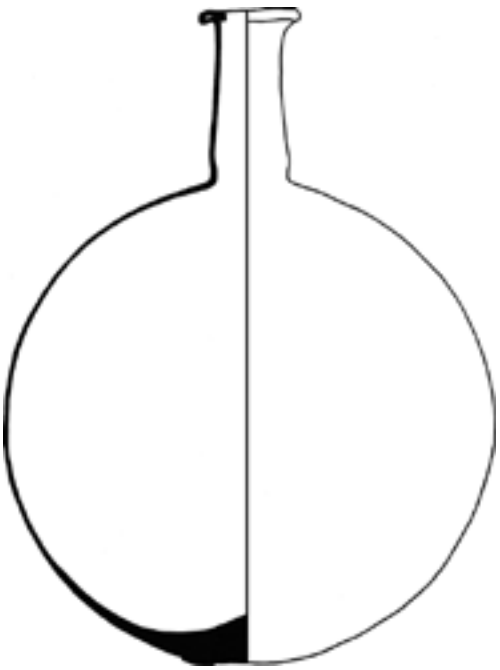
Free-blown flask, green hue, transparent. Folded rim, funnel mouth. Cylindrical neck, roughly straight on one side, concave on side with spout. Narrow shoulder, globular body, concave base. Short spout applied to body just above midway point. Bubbles, pinprick bubbles, striae.

Surface soiling, surface accretions exterior and interior, iridescence on interior, particularly neck. Repaired cracks at top of body around neck, over shoulder. Edge of spout chipped, soiling and iridescence on interior, accretions. Otherwise complete.

Author Number 131. EA1979.538
Flask, third–fourth century AD
H: 23.8 cm. Body: 2 cm. Rim: 1.7 cm. W: 2 g
Said to be from Tyre
Damon Collection

Free-blown vial, green hue, transparent. Misshapen folded rim, splayed on one side. Fusiform: narrow concave neck, small piriform body, long concave extension, broadening and rounding to thick base with pontil scar. Striae and narrow elongated bubbles.

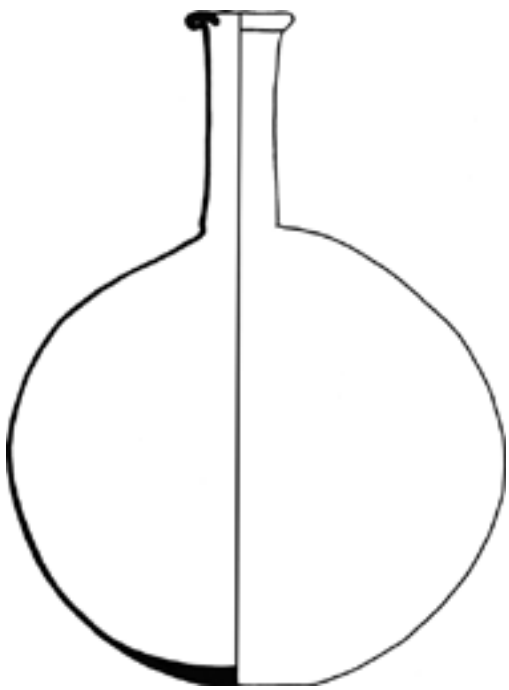
Surface soiling and iridescence exterior and interior. Chips around base associated with pontil scar. Complete.



Author Number 132. C1956.133.1
Flask, third–fourth century AD
H: 21.4 cm. Body: 16 cm. Rim: 3.25 cm. W: 18 g
Said to be from Tyre
Damon Collection

Free-blown flask, green hue, transparent. Folded and flattened rim, splayed. Cylindrical neck, outward taper, constricted at body. Flattened globular body. Protruding pontil scar, clearly separate glass wrapped around bottom edge to avoid pontil damage to the vessel. Not evenly flattened. Slight striae.

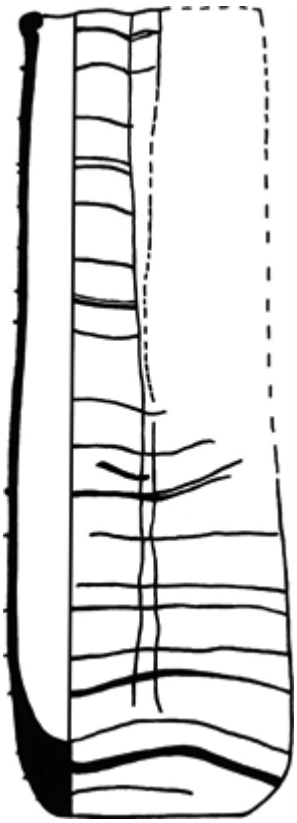
Chip in base, otherwise complete. Minor exterior surface soiling on one side, other covered in accretions on body, neck and lip. Interior iridescence and accretions. Minor pitting on body near base, some deeper pits.



Author Number 133. C1951.133.2
Flask, third–fourth century AD
H: 18.3 cm. Body: 13 cm. Rim: 2.95 cm. W: 14 g
Said to be from Tyre
Damon Collection

Free-blown flask, blue hue, transparent. Folded and flattened rim, fairly broad lip, splayed. Cylindrical neck, roughly straight. Globular body, flattened (15 mm thick). Striae, bubbles, some large.

Missing section from lower side of body. Crack in shoulder, chip in base. Surface soiling, some exterior, largely on interior. Interior iridescence.



Author Number 134. EA1979.542
Double kohl flask, fourth century AD
H: 11.3 cm. Body: 3.85 cm. Rim: 1.5 cm. W: 5 g
Said to be from Tyre
Damon Collection

Free-blown kohl flask, green hue, transparent. Narrow flattened and folded rim. Cylindrical body, slightly concave, rounded at the base on the interior. Exterior base is thick, with a flattened and polished bottom. A very fine trail was wound around both tubes. Some striae and pinprick bubbles.

Half of one tube is missing, as are several sections of the trail. There is a hole at the seam of the remaining tube, where it joined the other. Minor exterior soiling, interior weathering and iridescence.

Who was New Zealand's First Female Photographer?

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Women's contributions to photography in New Zealand have largely been overlooked by historians. When women are considered, it is often to find the first female photographer. However, what a photographer is can be open to definitions ranging from camera operator to studio owner. This article investigates three women who have been put forward by photo historians for the distinction of being the first: Elizabeth Pulman, Eliza Leaf and Jane Smith. A previously unknown photographer, Emma Meluish in Dunedin, offers a fourth candidate. When thinking beyond conventional definitions of what a photographer is, Eliza Grey offers yet another possibility. However, focusing on the search for the first female photographer overlooks the myriad of other roles women had within photography studios and the impact they had on the development of photography in New Zealand.

Keywords: Auckland, Christchurch, Dunedin, Eliza Grey, Eliza Leaf, Elizabeth Pulman, Emma Meluish, Jane Smith, New Zealand, nineteenth century, photographer, photography, women

Introduction

Historians like the challenge of finding "firsts" (and the credit for being the first to find one) and indeed humans place great significance on this concept. Our first step, our first word, our first birthday, our first kiss – all these firsts become milestones in our personal history. We then apply this concept of firsts more broadly to historical events to ascribe significance. The Ministry for Culture and Heritage's website, nzhistory.net, features a page titled "Famous Firsts" that lists milestones such as the first female Māori MP, the first flight across Cook Strait and even the first movie to be shot in New Zealand. Prominently displayed at the top of this page is an image of Elizabeth Pulman who is described as "quite possibly New Zealand's first female professional photographer." On a list filled with provable firsts, why is the wording for this one so ambiguous? Was Pulman New Zealand's first female photographer? The answer to this simple question is quite complex. This paper seeks to explore this complexity and suggests that there is no single answer to this question.

The starting point for this discussion is a definition of the word photographer. The simple dictionary definition is a person who takes photographs and several dictionaries add that this is usually done as a job or profession. Most people will find this description satisfactory and not question it. However, this needs further clarification. It assumes that a single individual is responsible for taking a photograph. While this might be correct in some situations such as when I take a photograph of my dog on my phone, what about large professional studios where a number of people are involved with the production of a photograph? The person who operates the camera is customarily called the photographer, but there might be someone who controls the lights and someone else who develops the film or manipulates the digital image. What if there is an artistic director who manages the photo shoot? If many people are responsible for the finished photograph, is it only the individual who operates the camera who is the photographer? Or can it be argued that it is in fact the studio? If it can be agreed that the camera operator is the photographer, what

Figure 1. Elizabeth Pulman. Unknown studio. Alexander Turnbull Library 1/2-057611-F

about selfies taken by animals? In 2008, British nature photographer David Slater set up cameras that enabled macaques to take photographs of themselves. Are the macaques who pressed the camera buttons the photographers or was the photographer Slater who set up the camera and engineered the situation?[1] Is the photographer the camera operator or the creativity behind the photograph? When closely examined, the definition of photographer is actually quite muddy and makes the identification of New Zealand's first female photographer a complicated exercise. Taking into account these definitions, several women could be considered the first.

Elizabeth Pulman

Who is Elizabeth Pulman and why does nzhistory.net consider her to "quite possibly" be New Zealand's first female professional photographer (Fig.1)? The website cites the entry on Pulman written by Phillip D Jackson from the *Dictionary of New Zealand Biography*, now accessible through Te Ara – the Encyclopedia of New Zealand. Te Ara states, "She was among New Zealand's early photographers, and was possibly the first woman professional" (Jackson 1993). This entry cites a short piece printed in the *New Zealand Herald* when Elizabeth Pulman died in 1900, presumably written with information supplied by her son Frederick, which describes her as having been a photographer for 39 years (*New Zealand Herald*, 5 February 1900: 5). Elizabeth and her husband George arrived in Auckland from England in 1861. George, who trained as a draughtsman, turned his hand to photography, first working as an agent for the Fairs and Steel studio and then establishing his own commercial studio, probably after a fire in May 1866 that resulted in the destruction of his offices (Giles 2007). When George died in 1871, Elizabeth retained control of the business and ran it under her own name. When she married John Blackman in 1875, he became involved in the studio, but it continued to operate under the name E Pulman, later Pulman and Son when Frederick joined the studio (Fig. 2). George Steel, who was a friend of Elizabeth's first husband, was employed as a photographer (Giles 2007).

The Pulman studio was one of a large number of professional studios operating throughout New Zealand in the nineteenth century. In the appendix to *New Zealand Photographers: A Selection*, Hardwicke Knight lists over 1,100 studio names and their variants (Knight 1981). Elizabeth's name was one of several listed female photographers or studio owners that include Emily Cazneau, Harriet Cobb and Priscilla Bartlett. So why has Elizabeth's name become so familiar to make her a contender for possible first female photographer? Most general histories of New Zealand photography

Figure 2. Rewi Manga Maniapoto. E Pulman studio, 1879. Canterbury Museum 19xx.2.3828

include examples of the Pulman studio's work (Main and Turner 1993: 12; Eggleton 2006: 17; McCredie 2015: 33, 174).[2] It might be because her name is associated with a significant event in New Zealand's photographic history – the first court case related to a breach of New Zealand's Fine Arts Copyright Act 1877 with regard to photographs (Haley 2021). On 23 August 1882, Charles Henry Monkton was charged with illegally copying and selling a photograph of the Māori King Tāwhiao, *Tūkaroto Matutaera Pōtatau Te Wherowhero* that had been registered for copyright by the Pulman studio. The case was reported extensively in the newspapers. This wasn't the first time that Elizabeth had fought photographic piracy in the public arena. Shortly after her first husband's death in 1871, Elizabeth found that a photograph of a map produced by him was being copied and sold by a third person without her permission. This event pre-dated New Zealand's photograph copyright legislation, so her only recourse was the court of public opinion. She wrote to Auckland's *Daily Southern Cross* newspaper and begged the public not to buy a copy, which was one of her principal sources of income for supporting herself and her six young children (*Daily Southern Cross*, 9 June 1871: 2).

Clearly, Elizabeth Pulman was involved with studio photography, but to what extent was she a photographer? The branding on photographs produced by the studio read "Photographed by E. Pulman" (Fig. 2). But does this indicate that she was a photographer in the strict definition of a person who takes a photograph? Catherine Bishop has shown how many colonial wives assisted their husbands with their business (Bishop 2019) and it is likely that Elizabeth assisted George in his studio. She probably learned a great deal about photography from him and could operate a camera. However, having her name on the studio branding with the wording "Photographed by" did not necessarily mean that she was the photographer of the image. Although the photograph of Tāwhiao that Monkton illegally copied bears the E Pulman branding, we know from the copyright court case that George Steel, who worked in the Pulman studio, took the photograph. In fact, there is no guarantee that a photograph was taken by the studio whose name is printed on it. Before photographic copyright legislation was passed, it was common practice for photographers to copy the work of other photographers and apply their own branding. Monkton had done this and with the profits that the sale of popular photographs such as Tāwhiao's and other Māori "celebrities" could earn studios, the practice was incredibly lucrative. Canterbury Museum holds an example of this copying practice with two photographs of Tomika Te Mutu, the original one attributed to John Nicol Crombie's studio in Auckland (Fig. 3) and the other a copy by the Hamburg studio C Dammann (Fig. 4).

For photographic historians, the fact that the name printed on a photograph is not a

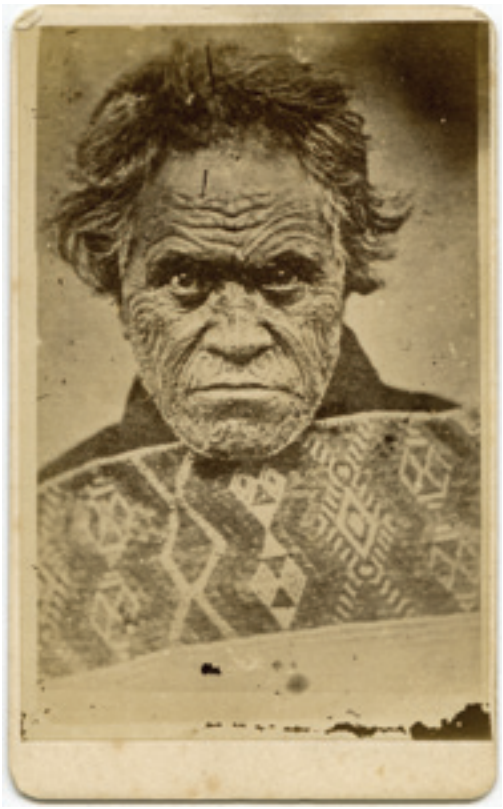


Figure 3. Tomika Te Mutu. John Nicol Crombie (attributed), c1860. Canterbury Museum E161.50

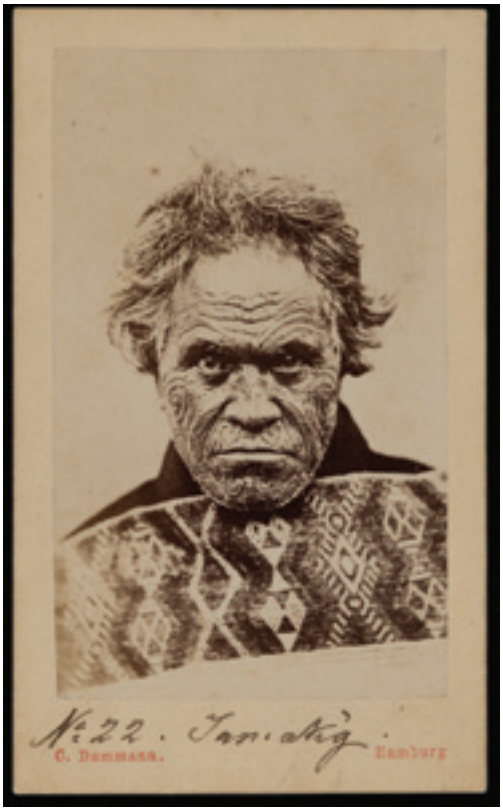


Figure 4. Tomika Te Mutu. C Dammann studio. Canterbury Museum PIC88/48.3

reliable indicator of the person who took the photograph, and finding out who the person was is an almost impossible task, has meant that "photographer" has generally been defined as the studio business rather than an individual. Photographic historians such as William Main, John B Turner and David Eggleton have asserted that Elizabeth Pulman was a photographer on this basis (Main and Turner 1993: 12; Eggleton 2006: 17). Although George Steel testified in the case against Monkton that he was the photographer, his name is usually not credited to that photograph and the Pulman studio or Elizabeth Pulman as the owner of the studio is applied instead. One exception is the Christchurch Art Gallery Te Puna o Wai Whetū which credits George Steel as the photographer and Elizabeth Pulman as the studio proprietor and publisher (Hall and Pōhio).

Eliza Leaf and Jane Smith

If we accept that Elizabeth Pulman was at times a camera operator or define her as a photographer based on the studio carrying her name, was she New Zealand's first female photographer? The answer is no. If she had been a photographer for 39 years as the newspaper report at the time of her death indicated, she would have started in 1861, the year she and George immigrated. This seems unlikely as evidence suggests that George did not set up a photography studio until about 1866 and it is doubtful that Elizabeth would have had her own independent photography business. The latter half of the 1860s is a more likely point for her to possibly have begun taking professional photographs as his assistant. The earliest year the studio bore her name was after George's death in 1871. There are other earlier

Figure 5. Unidentified Man. R Leaf studio. Canterbury Museum 19xx.2.2683

examples of female photographers, both in terms of operating a camera or running a studio bearing their name.

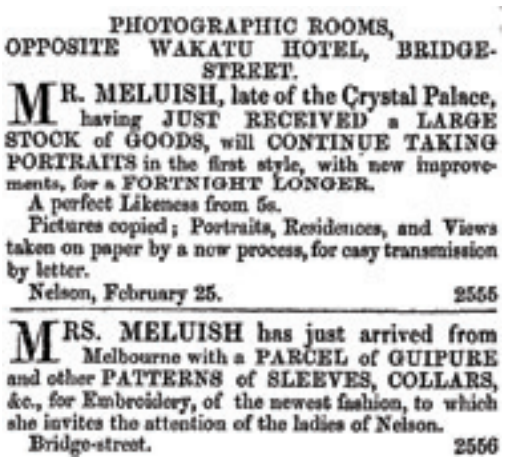
Keith Giles argues that Eliza E Leaf should be considered a candidate for New Zealand's first female photographer (Giles 2004). Eliza was listed as a professional photographer in England in the 1861 census along with her 18-year-old son Robert. The Leaf family immigrated to Auckland in 1862 and at some point between that year and 1866 Robert had established a photography studio (Fig. 5). Given the level of support that family members gave to family businesses, it is reasonable to assume that Eliza Leaf contributed her photographic skills to her young son's studio. What is certain is that in 1862 Eliza arrived in New Zealand with professional photography experience.

Mrs R Smith in Christchurch, identified by Joan Woodward, is another contender for New Zealand's first female photographer (Woodward 1987). "Mrs R Smith" is listed as a photographer on High Street in the 1865 Southern Provinces Almanac (published in 1864).

Ken Hall has identified her as Jane Smith, wife of Richard Smith (Hall 2019: 30). Jane and Richard emigrated from England in July 1859 and by May 1860 Richard had established the New American Portrait Gallery (*Lyttelton Times*, 26 May 1869: 5). As with Elizabeth Pulman and Eliza Leaf, Jane likely assisted Richard in the business. Hall speculates that when Richard joined the partnership of Jones and Smith (painters and paperhangers), Jane ran the studio. Whatever the situation, "Mrs R Smith" is the earliest directory listing for a female photographer or studio operator in New Zealand.

Emma Meluish

In my own research on women and photography, I have found evidence of a professional female photographer who was a camera operator in Dunedin in 1861, Emma Meluish (also Melhuish). Emma and William Meluish arrived in Wellington from England on 12 October 1858 on the *Robert Small* (*Wellington Independent*, 23 October 1858: 2) and settled in Nelson. By 3 November, less than one month after arriving, William advertised that "For a few days only" he would be taking likenesses from premises on Bridge Street (*Nelson Examiner and New Zealand Chronicle*, 3 November 1858: 2). William went from arrival to working photographer in such a short time indicating that he was already trained in the trade and, not knowing what would be available in the colony, had probably brought photographic equipment with him. In the United Kingdom's 1851 census, the Meluishes were listed as living in Bristol with William employed as a trunk maker and Emma as a carpet bag maker. Given their two similar professions and the fact that Emma was a married woman working in a trade suggests that they ran a business together. The Meluishes disappear from the record between the census in 1851 and their arrival



PHOTOGRAPHIC ROOMS,
OPPOSITE WAKATU HOTEL, BRIDGE-STREET.

MR. MELUISH, late of the Crystal Palace, having JUST RECEIVED a LARGE STOCK of GOODS, will CONTINUE TAKING PORTRAITS in the first style, with new improvements, for a FORTNIGHT LONGER.

A perfect Likeness from 5s.

Pictures copied; Portraits, Residences, and Views taken on paper by a new process, for easy transmission by letter.

Nelson, February 25. 2555

MRS. MELUISH has just arrived from Melbourne with a PARCEL of GUIPURE and other PATTERNS of SLEEVES, COLLARS, &c., for Embroidery, of the newest fashion, to which she invites the attention of the ladies of Nelson.

Bridge-street. 2556

Figure 6. Advertisements by William and Emma Meluish. *Nelson Examiner and New Zealand Chronicle*, 26 February 1859: 2. National Library of New Zealand (Papers Past)

in New Zealand in 1858. In one of the Nelson studio advertisements, William states he is "late of Crystal Palace" (*Nelson Examiner and New Zealand Chronicle*, 26 February 1858: 2), but this could be a marketing ruse to imply he was a London-trained photographer. Photographer Arthur J Meluish was working in London during the 1850s, but no connection between him and William has been found. Information on where and when William became a photographer remains elusive.

In 1859, Emma and William placed adjacent advertisements in the newspaper (Fig. 6). Emma advertised that she had just arrived from Melbourne with guipure (lace) and patterns that could be purchased from Bridge Street, the same location as the Meluish studio (*Nelson Examiner and New Zealand Chronicle*, 26 February 1859: 2). It is possible that Emma assisted William in the studio and, as a side venture, sold haberdashery from there. One of the jobs that Emma might have done is hand colouring portraits, which the studio advertised that it did (*Nelson Examiner and New Zealand Chronicle*, 17 November 1858: 2). Colouring, along with retouching and finishing, was common and respectable work for women and many studios specifically advertised for female help (*Evening Post*, 13 March 1873: 3; *Evening Post*, 16 December 1876: 2; *Auckland Star*, 28 April 1879: 3; Skidmore 1996: 127). The Dunedin studio Clifford, Morris and Co advertised that Mrs Clifford (Janet, wife of one of the studio's owners Robert Clifford) and an assistant did the studio's tinting and hand colouring (*Evening Star*, 9 August 1873: 3) and Josiah Martin employed Miss Helen Stuart who earned a reputation for her photograph hand colouring in arts society exhibitions (*Observer*, 22 October 1881: 89; *New Zealand Herald*, 14 April 1886: 5).

In 1860, the Meluishes moved to Dunedin where William became one of the earliest professional photographers in the settlement, operating a studio on Princes Street. Photographic historian Hardwicke Knight described him as the "father of Dunedin photography" because of his important body of photographic views that record Dunedin's growth in the early 1860s (Knight 1981). William's negatives were taken over by Daniel Mundy when he purchased the studio in 1864. Frank A Coxhead then acquired the negatives and reprinted them as a series titled "Dunedin 1860". Other later studios that reprinted William's images include R Clifford, Burton Bros and Muir and Moodie.

There are clues in the Meluish studio's photographs of Dunedin that Emma had a role in the business. In one photograph that captures Princes Street looking south in 1863, Emma can be seen leaning out from the Meluish studio building off to the left side, shielding her eyes from the early afternoon sun to look at the photographer, presumably William (Figs 7A and 7B). In another Meluish photograph of Princes Street, Emma stands in the studio doorway on the left, gazing out. "PHOTOGRAPHIC PORTRAITS TAKEN DAILY" is written on the building to her left (Figs 8A and 8B). In a third photograph of the same view, a woman stands in the middle of Princes Street (in the middle of the image) with no one close by. Since there is no blurring suggesting movement, this isn't a woman crossing the street – she is standing still. Her dark dress with white collar is similar to the outfits worn by Emma in the other two

Figure 7. Princes Street, Dunedin. Meluish studio, 1863. Toitū Otago Settlers Museum Box 57 No 157. **A**, View down Princes Street with Meluish studio on the left. Reprint by the Burton Bros. studio **B**, Detail of Figure 7A showing Emma Meluish

photographs, suggesting that this is Emma again posing for her husband (Figs 9A and 9B).

There is no mention of Emma's contribution to William's business in newspapers or directories and if contemporary sources were relied upon, it would be easy to conclude that she might have had a minor role as an assistant to her husband, serving customers or possibly retouching photographs like Janet Clifford. However, newspaper articles reporting William's death in England in December 1888 reveal that Emma had an active role in the studio and took photographs. A write-up in the *Otago Daily Times* mentions that "Mrs Meluish was a most able assistant to her husband in his business, and took a very active part in it. They took many 'Old Dunedin' views, numbers of which are still great

Figure 8. Princes Street, Dunedin. Meluish studio, undated. Toitū Otago Settlers Museum Box 57 No 146. **A**, View down Princes Street with Meluish studio on the left. **B**, Detail of Figure 8A showing Emma Meluish.

favourites of the public." (*Otago Daily Times*, 30 January 1889: 2). Similarly, the *Tuapeka Times* newspaper noted Emma's contribution: "To Mr and Mrs Meluish we are indebted to scenes of Dunedin in the days of the Gabriels Gully rush." (*Tuapeka Times*, 30 January 1889: 3). A third, lengthier article published in Dunedin's *Evening Star* repeated the sentiment of indebtedness to both William and Emma, but it went on to mention one of Emma's own photographic exploits:

> *Mrs Meluish, an active, business-like woman, assisted in the taking of photographs, and occasionally took a share of the outside work, one of her exploits being to tramp along the bullock track that led to Wickliffe Bay to photograph the remains of the Victory after the wreck had been purchased by Mr R B Martin* (*Evening Star*, 29 January 1889: 2).

Figure 9. Princes Street, Dunedin. Meluish studio, undated. Toitū Otago Settlers Museum Box 57 No 179. **A**, View down Princes Street with Meluish studio on the left. **B**, Detail of Figure 9A, showing a woman who is likely to be Emma Meluish.

The steamer *SS Victory* ran ashore on the beach in Wickliffe Bay north of Dunedin on the night of 3 July 1861 and Martin purchased the wreck at the auction held on the 24th and 25th of that month (*Otago Witness*, 6 July 1861: 4; *Otago Witness*, 27 July 1861: 5). Emma probably took her photographs as soon as she could after Martin purchased it, probably in late July or early August, in order to take advantage of the commercial value of the photographs as a popular current event. Taking the photographs months later, once the shipwreck had passed from memory, would have been risky and not financially sound.

The article states that Emma journeyed out to Wickliffe Bay on the bullock track with no mention of William accompanying her. Wickliffe Bay is located towards the end of the Otago Peninsula, about 30 kilometres from central Dunedin. It is not known exactly how Emma made the journey other than tramping

Figure 10. Alfred Charles Barker and his photography trap. Canterbury Museum 1944.78.220

along a track that led to Wickliffe Bay. A likely route and the quickest would have been by water from Dunedin to somewhere on the western side of the peninsula, possibly Portobello, then a bullock track over to the east side where the bay is located.[3] Or it could have been a bullock track from Dunedin, travelling either along the top ridge of the peninsula (with a climb of 300 metres) or along the western coastline. No matter the route, in 1861 the peninsula was remote, rough terrain and whatever track she took would have been poorly developed. Travelling in winter had the advantage of being the driest time of the year and Emma possibly avoided the mud that plagued Dunedin (which was nicknamed "Mudedin"), but snow on the peninsula is always a possibility in late July and August.

Emma used the wet-plate collodion process to create negatives, which meant that as well as a large camera, lens and tripod, she had to transport fragile glass plates and bottles of chemicals to the site. The collodion process was labour intensive, requiring Emma to prepare a plate shortly before taking a photograph by coating it with collodion, then sensitising it in a silver nitrate bath. Once sensitised, the plate would need to be kept out of the light until the scene was composed. After exposure and before the collodion dried (usually within about 15 minutes), developer had to be poured on the plate, then the negative fixed, washed and dried (Lavédrine 2009: 242). To do all of this, Emma had to set up a darkroom on or very near the beach. Many nineteenth-century photographers who worked away from

Figure 11. Detail of a photograph of Port Chalmers. Henry Frith's portable darkroom is the black box in the centre. Henry Frith (attributed). Toitū Otago Settlers Museum Box 83 No 130

their studios had specially-designed darkroom wagons that transported the required equipment plus a tent. Amateur photographer Alfred Charles Barker in Christchurch had one that became a familiar sight on the streets and was known as "The Travelling Medium" (Knight 1971: 30) (Fig. 10). Other photographers such as Henry Frith in Dunedin had square dark room tents (Tozer 2018: 238) (Fig. 11). Some portable darkrooms were more modest still and comprised a folding table with a large bag attached that the photographer could insert their upper torso into to work (Woodward 1987: 11). Given the number of views of Dunedin and environs that the Meluish studio produced, it would have had some sort of portable darkroom

Figure 12. William Meluish. Toitū Otago Settlers Museum Meluish folio

for Emma to use.

The fact that Emma took the photographs at Wickliffe Bay by herself indicates that she was already a competent photographer in 1861, accustomed to working in difficult conditions such as on a remote beach in winter and away from the more controlled and comfortable setting of the studio on Princes Street.

This suggests that she was probably taking photographs for quite some time and offers support to the suggestion that she assisted in the studio in Nelson or possibly back in England. Unfortunately, no photographs of the wreck of *SS Victory* from that period have been located.

Because photographs produced by the Meluish studio have been attributed to William (and no example of Emma's *SS Victory* photography has been found), it is impossible to pinpoint Emma's work. However, in a folio of Meluish photographs in the collection of Toitū Otago Settlers Museum, there is a portrait of William that Emma might have taken (Fig. 12). Any number of other Dunedin photographers could have taken the photograph, including William himself, but the carefully staged portrayal of William as a gold digger replete with loyal dog at his feet, was a complex composition requiring a competent photographer. Emma was an obvious and ideal choice.

In 1864, Daniel Mundy took over the studio and William established a business selling photographic goods and chemicals (*Otago Daily Times*, 27 April 1866). Emma and William left Dunedin to return to England in 1870. William died in London in 1888 and Emma in Bournemouth in 1915 (*Otago Witness*, 2 February 1916: 47).

Eliza Grey

So far, this paper has been concerned with defining a photographer as either an individual who operates a camera or a studio that produces photographs. Getting back to David Slater and the macaques and the muddy question of who is the photographer in that situation, a less conventional definition is that the photographer can be the author of a photograph rather than the camera operator. When photographic copyright laws emerged in the nineteenth century, the definition of a photograph's authorship – and therefore who owned the copyright – needed to be clarified. While the consensus was that the author was the photographer, alternative ideas emerged tied to widespread debates about the nature of photography. Was it a mechanical process where no creativity existed (so no author), or was the person operating the camera akin to the author of a book? If it was an authorless, mechanical process, who then owned the copyright? Copyright historian Elena Cooper has found cases in England that appeared before the courts in the 1860s arguing that for portraits, the owner of the face was the author entitled to the copyright, especially for photographs of actors and actresses dressed in character (Cooper 2018: 183–189). If an accepted definition of a photographer is the author of an image, and in the nineteenth century the idea was entertained that the author and copyright holder of a portrait was the sitter, could New Zealand's first female photographer be Eliza Grey, who sat for one of the first recorded daguerreotypes taken in New Zealand?[4] In September 1848, Lieutenant Edward Eyre made a failed attempt to take a daguerreotype of Eliza, the wife of Governor George Grey. Eyre's effort was recorded in a letter sent back to England, now in the Chapman Papers at the Alexander Turnbull Library (Ireland 2014). This definition of the sitter as author and therefore a type of photographer is tangential at best, but the suggestion that Eliza Grey was New Zealand's first female photographer opens up a new way of thinking about women and photography in New Zealand.

Conclusion

Was Elizabeth Pulman "quite possibly" New Zealand's first female professional photographer? No matter how you define photographer, the answer is no. The evidence shows that a number of other women can claim that title depending on the definition. Eliza Leaf was quite possibly the first professionally trained female photographer to immigrate to New Zealand (1862). Jane Smith was quite possibly the first woman to lend her name to a photographic studio (1864). Emma Melhuish was quite possibly the first female camera operator (1861). Eliza Grey was quite possibly the first author of a photograph (1848).

There might be other female photographers in New Zealand whose names have been lost or subsumed by a male family member known to be a photographer. The best that can be said about Elizabeth Pulman is that she was New Zealand's most well-known nineteenth-century female studio owner and possible photographer. Unfortunately, none of these "firsts" signify watershed moments that indicate a shift towards more women becoming photographers, and photography remained the purview of men throughout the nineteenth century. It wasn't until the end of the century and the arrival of technology by Kodak and others that enabled women as amateurs to take up photography in significant numbers. Chasing the "first" ignores the complexities of image making in the nineteenth century and the numerous roles women performed within professional studios. Moving away from a photographer or studio-focused approach will enable a richer history of New Zealand photography to be explored that will ultimately enable women's hidden contributions to be revealed.

Endnotes

1 The macaque selfie dispute has centred specifically on the issue of who owns the copyright, not who was the photographer. Because the role of photographer is profoundly tied to copyright law, it is relevant to this argument.

2 One of the earliest and most important histories of New Zealand Photography, *Hardwicke Knight's Photography in New Zealand: A Social and Technical History*, does not include any mention of the Pulman studio.

3 Correspondence with Seán Brosnahan, Toitū Otago Settlers Museum, 29 March 2021.

4 Not to be confused with Eliza Grey, a photographer in Thames in the 1870s. *Thames Advertiser*, 7 April 1867.

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"Mr Lyall's boy": the Lyall family and the Stephens Island Wren

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David Lyall (1849–1911) is credited with the discovery of the world's only flightless songbird, the extinct Lyall's Wren (*Traversia lyalli*). The hitherto undocumented lives of David Lyall and his family are investigated and the roles of David Lyall's sons, Andrew Lyall (b. 1879) and William Mail Lyall (b. 1882) are discussed. Andrew Lyall, who died in 1972, is here credited with being the last person to have seen Lyall's Wren alive.

Keywords: Andrew Lyall, David Lyall, extinct birds, lighthouses, Lyall's Wren, mammalian predators, Stephens Island/Takapourewa, *Traversia lyalli*

Introduction

The apocryphal story of 'Tibbles', the killer domestic cat (*Felis catus*) that single-handedly wiped out the only known flightless songbird Lyall's Wren (or the Stephens Island Wren) on Stephens Island (Takapourewa), is well known (Galbreath and Brown 2004; Medway 2004). The collection of the corpses killed by this cat and their subsequent gifting to Walter Lawry Buller, or sale to Henry H Travers who on-sold them to the famous British naturalist Lord Rothschild, earnt the lighthouse keeper David Lyall the distinction of being forever honoured with the little extinct bird's species name, *Traversia lyalli* (Fig. 1). However, due to several unsubstantiated stories, the reputation of the lighthouse keeper and his family have taken quite a hit in the intervening 130 years.

In recent years historians (i.e. Medway 2004, Galbreath and Brown 2004) have concluded that the cat probably did not have a name, or if it did it is not recorded. These researchers also concluded that a wild population of cats became established during the building of the light and thus a lighthouse keeper's cat did not single-handedly wipe out the world's last population of Lyall's Wren. Nor was it solely responsible for the extinction of the island's unique subspecies of the Piopio (*Turnagra capensis minor*), and exterminated the island's South Island Saddleback (*Philesturnus carunculatus*) population.

However, the point of this article is not to rehash the facts about Lyall's Wren but to examine what we know about the Lyall family who are honoured with not just the scientific name for this extinct bird but, in recent years, its English name.

The Lyall Family: Lighthouse Keepers 'through and through'

David Lyall was born at Kinnaird Head Lighthouse station (Fig. 2) in Fraserburgh, Aberdeenshire, Scotland on 7 March 1849. His father Andrew (1821–1903) was the son of a lighthouse keeper and was born at Start Point Lighthouse on Sanday Island in the Orkney Islands.[1] David's mother, Agnes Souter (1829–1861) was also the child of a lighthouse keeper and was born and raised on the Isle of Man.[2] Andrew and Agnes married and had David whilst Andrew was keeping at the Kinnaird Head Lighthouse but by 1851 the family were stationed on the west coast of Scotland at the

Figure 1. Lyall's Wren as engraved by John Gerrard Keulemans. Labels 2 and 2a on the image are from the original publication and refer to adult and juvenile plumages respectively. Source Buller 1906. Reproduced from https://www.biodiversitylibrary.org/bibliography/54726

Cairn Point Lighthouse on the shores of Loch Ryan.[3] David Lyall's life was governed by his father's postings. During his childhood, his father was also stationed at Cantick Head Lighthouse on Hoy in Orkney;[4] Girdle Ness Lighthouse in Aberdeenshire;[5] The Mull of Kintyre Lighthouse in Argyllshire;[6] Skervuile Lighthouse on the Island of Jura, Argyllshire[7] and the Rhinns of Islay Lighthouse, Portnahaven in Argyllshire.[8] Such was the attraction to islands and isolated places that Andrew retired to and died on the tiny Isle of Great Cumbrae in the Firth of Clyde.[9]

David Lyall: Adulthood and Immigration

David did not apparently train or aspire to be a lighthouse keeper. In the 1871 Scottish census he is listed as a "ships carpenter (apprentice)" and as living in Peterhead, Aberdeenshire with his aunt and uncle and his cousin William Lyall Birnie who is also listed as a ship's carpenter (apprentice).[10] Throughout his life, when stating his profession, David generally was called a shipwright rather than a lighthouse keeper (for example on his son's birth certificate and even his own death certificate). In September 1878 he married Orkney-born Martha Mail (1855–1922) in Bristol.[11] Remarkably Martha was herself the daughter of a lighthouse keeper and this fact may have determined their future profession. David may have got a temporary lighthouse position to be near his family when his father was stationed as principal keeper-at-large at the nearby Rhinns of Islay Lighthouse. David and Martha's first son Andrew was born at the small Loch Indaal Lighthouse on 27 July 1879, 31 km by road from the Rhinns of Islay.

David and his family took passage for

Figure 2. A contemporary image of David Lyall's birthplace, Kinnaird Head Light. Drawn and engraved by William Daniell. Reproduced from Daniell and Ayton (1814)

Table 1. A list of David Lyall's appointments whilst working for the New Zealand Marine Department (Source: New Zealand Government archive File ADOE 16618 4/4: David Lyall Employment summary).

Station	**Coastline**	**Role**	**Appointment**
Puysegur Point	Fiordland	Probationary	25 August 1881
Puysegur Point	Fiordland	Assistant	1 March 1882
Godley Head	Canterbury	Assistant	1 January 1885
Brothers Island	Cook Strait	Assistant	1 May 1890
Stephens Island	Cook Strait	Assistant	12 December 1893
Cuvier Island	Outer Hauraki Gulf	Principal	9 June 1896
Cape Saunders	Otago	Principal	1 November 1900
Waipapa Point	Foveaux Strait	Principal	29 November 1903
Taiaroa Head	Otago	Principal	16 April 1907

Figure 3. The only known photograph of David and Martha Lyall and their children (one son absent). The boy in this photo is likely to be William Lyall, only 6 years older than Elizabeth, as the older brother, Andrew, was 9 years her senior. Reproduced from https://www.ancestry.com

New Zealand in the Autumn of 1879 and by 25 December 1879, a David Lyall and family are found boarding a coastal steamer in Port Chalmers bound for Bluff.[12] Despite David's aversion to calling himself a lighthouse keeper, on 25 August 1881 he was employed as Assistant Lighthouse Keeper at Puysegur Point in Fiordland – probably the most remote lighthouse in New Zealand and at the time one of the most remote lights in the world. His salary was £90.[13]

Over the next 30 years David was a full-time employee of the New Zealand Marine Board (later the Marine Department) and his list of appointments is given in Table 1.

The couple stayed at Puysegur Point until 31 December 1884 (Bain 2010: 11) and their second son William Mail Lyall was born in Invercargill on 13 November 1882 during a leave of absence from Puysegur. In 1885 the family moved to the Godley Head Lighthouse Station near Christchurch City where their daughter Elizabeth Sandison Lyall was born on 18 May 1888 (Fig. 3). Marine Board records show they remained there until April 1890.

Stephens Island

David Lyall's fame is defined by his stay on Stephens Island which sits at the western edge of the notorious Cook Strait. It had long been a goal of the New Zealand Government to establish a light there. David had been stationed at the smaller light on the nearby Brothers Island from May 1890 and he was appointed to the larger staff on Stephens Island in December 1893. The Stephens Island light began operating on 29 January 1894, with a staff of three keepers (Fig. 4). With their families and a teacher for the children there were 17 people living on the island and bush was cleared and sheep and cattle brought in to establish a farm (Lukins 1894). At this time one or more cats were also brought to the island (Galbreath and Brown 2004). We know that David was accompanied by his wife and their three children (Medway 2004). Although David Lyall is credited with having the foresight to collect the specimens brought in by cats and to forward them to Walter Buller, it is clear from Travers's account that it was in fact one of Lyall's boys (Andrew or William, see below) who took the greatest interest in this. Travers states in a letter to Rothschild:

> *I did not get any specimens of the bird I went specifically for, although Mr Lyall's boy gave me a specimen that had been found just alive by the owner of the cat that had caught the others, and this his father had put into spirit.* (Correspondence: Travers, 1895, Natural History Museum Archives TM/1/16/21; United Kingdom)

This paragraph identifies another interesting issue that was pointed out by Medway (2004); it was not Lyall's cat which caught the birds but a cat belonging to one of the other families on the island.

David Lyall: the Final Chapter

David and family left Stephens Island on 16 January 1896. As far as we are aware David did

not collect any further natural history specimens in any of his other postings. After more than 15 years of service, David was promoted to Principal Lighthouse Keeper and he began his first senior post in the warm climes of Cuvier Island in the outer Hauraki Gulf of Auckland Province in June 1896. Cuvier also had a feral cat population introduced by lighthouse keepers. However, unlike Stephens Island, the cats were introduced for a purpose, namely to control the Pacific rats (*Rattus exulans*) introduced hundreds of years earlier. Cats on Cuvier wiped out North Island Saddleback (*Philesturnus rufusater*), Tomtit (*Petroica macrocephala*), Tui (*Prosthemadera novaeseelandiae*) and Red-crowned Parakeet (*Cyanoramphus novaezelandiae*) (Merton 1972) before they were removed in September 1993 (Towns and Broome 2003). Lyall subsequently held Principal Keeper roles at two other sites (Cape Saunders and Waipapa Point in the deep-south) before he began his role as Principal Lighthouse keeper at Taiaroa Head on the Otago Peninsula near Dunedin (Fig. 5). It is intriguing to think that Lyall may have witnessed the first arrivals of Northern Royal Albatross (*Diomedea sanfordi*) that, in later years, began to breed and thrive due to protection afforded to them by the lighthouse surrounds. However, during his tenure at Taiaroa Head his health deteriorated. He was forced to take sick leave from 14 November 1910 and took up lodgings in Port Chalmers.

On the evening of 26 January 1911, David Lyall suffered a heart attack. Although he lasted the night he died the following morning. He was buried at 3:15 pm at Port Chalmers New Cemetery on 29 January 1911.[14] He was 61 years old and had served as a New Zealand Marine Service lighthouse keeper for more than 30 years. On 15 March and 29 August 1911 the House of Representatives of New Zealand, through an Order in Council, granted a gratuity of £180 (the equivalent of one year's salary) to Martha Lyall in lieu of a pension. Martha went to live with her son Andrew and his wife in Invercargill and she died there in May 1922. She is buried beside her husband in Port Chalmers New Cemetery.[15]

Figure 4. Stephens Island lighthouse at the time David Lyall was assistant keeper. The man on the right appears similar to the only existing photo of David Lyall. Thus the boy in the photograph may be either Andrew or William Lyall. Photographer unknown. Hocken Library. Hocken Snapshop; Stephens Island lighthouse. Reproduced 21 June 2021 from https://hocken.recollect.co.nz/nodes/view/14646. CC BY 4.0

David Lyall's Children

The two younger Lyalls, Elizabeth and William, died in 1930. William Mail Lyall was an engineer who lived in Dunedin all his life. He married Agnes Lawrie Kinnaird (1880–1953) in 1906 and had two girls (Iris May and Edna Melva). To his second wife, Gertrude Margaret Medlin (1892–1959), he had a son David James Lyall (1925–2017). Elizabeth Sandison Lyall also lived in Dunedin and married William Andrew Fraser (1888–1974) in 1920. They had one son Leslie. The eldest of David's sons, Andrew Lyall, lived in Invercargill all his life. In 1908 he married Rachel Elizabeth Nichol Wilson (1880–1961)[16] and they had no children. In 1933 he donated a weta

Figure 5. Taiaroa Head lighthouse and houses, c 1910, at the time David Lyall was head keeper. Photographer: Edgar Richard Williams (1891–1983). Ref: 1/4-055534-G. Alexander Turnbull Library, Wellington, New Zealand. https://natlib.govt.nz/records/30662216

specimen and some tuatara eggs from Stephens Island to Southland Museum.[17] He presumably had collected these during his childhood years on the island, showing that he had been a keen naturalist in his youth. This makes it likely that he was Travers's informant, "Mr Lyall's boy". Andrew was a crack shot winning many national competitions and was a long-time member of the Southland Rifle Association. He seems to have had several jobs including being a foreman in an engine-fitting business, but for the later part of his life was a garage proprietor. On 8 March 1972 he died peacefully at his home in Invercargill. He is buried in the Eastern Invercargill Cemetery.[18] With his passing probably went the last person to have seen Lyall's Wren alive.

Acknowledgements

I thank the National Library of New Zealand for permission to publish photos from their collections and the Hocken Library, Southland Museum and Archives, the Hocken Museum at the University of Otago and Toitū Otago Settlers Museum for searching their archives for records of the Lyall family.

Endnotes

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Pounamu Speculation in 1840s New Zealand

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The first large-scale export of unworked jade (pounamu or greenstone) from New Zealand occurred during the early 1840s when pounamu was taken from the southern end of Te Tai o Poutini, the West Coast of the South Island, to China. This venture is likely to be the first sizeable export of New Zealand minerals by Europeans. The venture combined the skills and knowledge of local Māori and newly resident Pākehā mariners with capital from Sydney. In the mid-1840s pounamu was taken directly to the North Island, further disrupting the pounamu trade network that had been controlled by Ngāi Tahu until the destruction of Kaiapoi Pā in 1831. The supply of several tons of pounamu to the North Island prior to the commercialisation of the central Westland source in the late-1860s is likely to have influenced the number of taonga made during the contact period.

Keywords: Barn Bay, China, economics, jade, Milford Sound, mining, nephrite, New Zealand, Ngāi Tahu, Sydney

Introduction

Jade is valued throughout the world as a stone of great beauty and utility. Pounamu or New Zealand jade is nephrite, one of the world's two types of jade (the other is jadeite). Nephrite was, and still is, extremely important to Māori because of its incredible toughness, its ability to hold a sharp edge, its stunning appearance and its spiritual significance. It has been utilised since the earliest days of settlement in New Zealand (Anderson 1998: 208) and has driven waves of migration to Te Wai Pounamu, the waters of pounamu (South Island).

Pounamu was one of the most important components of the trade networks that spanned New Zealand before European settlement (Rout and Reid 2019: 69) and it has been found in archaeological sites throughout the country. The pounamu trade to the North Island was controlled by hapū (sub-tribes) of Ngāi Tahu (Gibbs 2001: 219), the iwi (tribe) whose tribal territory covered most of Te Wai Pounamu from the eighteenth century (Stevens 2017: 12).

After the introduction of metal by early European visitors from the late 1700s, pounamu decreased in value as a tool (Anderson 1998: 75) although its symbolic and ornamental value remained high. When the Crown extinguished native title in Southland in 1853 and Te Tai o Poutini (the West Coast) in 1860 it assumed that it now owned the pounamu found there, a fallacy which Ngāi Tahu spent many years trying to rectify. In 1997 The Ngai Tahu (Pounamu Vesting) Act returned rights and control of pounamu to Ngāi Tahu.

All New Zealand jade is found in Te Wai Pounamu (South Island), most of it in three districts: South Westland, Central West Coast and Whakatipu (see Fig. 1).

As well as being a source of nephrite, South Westland is the only source of bowenite (tangiwai) in New Zealand. Both of which are collectively known as pounamu by Māori and greenstone by Pākehā (non-Māori New Zealanders). Bowenite is found in the vicinity of Piopiotahi (Milford Sound) and nephrite from north of Whakatipu Waitai (Martins Bay) to Awarua (Haast River) (Beck et al 2010: 61) as shown in Figure 2.

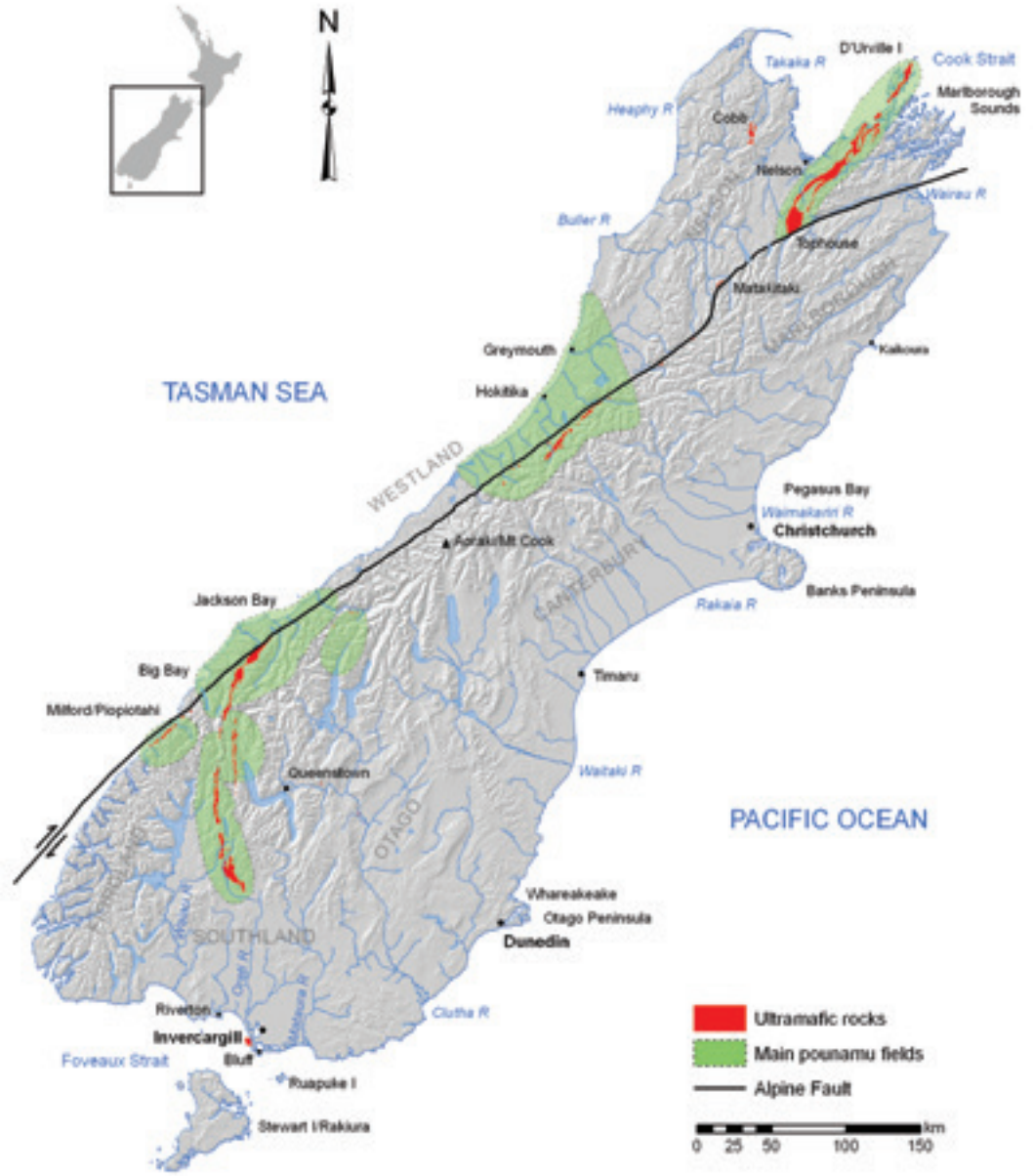

Figure 1. Map of Te Wai Pounamu (South Island), New Zealand showing main pounamu fields. Map drafted by Simon Cox and provided courtesy of GNS Science 2021.

The Whakatipu district was another important source for southern Māori in pre-European times. Both the Whakatipu and the South Westland sources were little utilised after the introduction of metal by sealers and whalers and were entirely forgotten by Pākehā after the 1840s (Beck et al 2010: 70) although Kāti Māhaki (the South Westland hapū) still knew of and collected the stone.[1]

The other important source of nephrite is Te Tai o Poutini (the central part of the West Coast). This was the primary source for Ngāi Tahu during the pre-contact period (Anderson 1998: 208). The discovery of a goldfield in Te Tai o Poutini in late 1864 led to a gold-rush and the development of ports. This, along with the recognition from the late 1860s by Pākehā lapidarists of the value of "greenstone" (Beck and Mason 2002: 122, 130) and the assumption that the Crown owned all minerals led to the almost complete disruption of Ngāi Tahu's traditional pounamu trade network from the mid-1860s. This article is about an earlier phase of Pākehā commercial interest in pounamu which resulted from partnerships that allowed access to Ngāi Tahu knowledge and skills.

The importance of pounamu to Māori was not lost on Europeans during the contact period and ultimately led to attempts to trade unworked stone. The first of these attempts occurred in South Westland but the story of the venture is virtually unknown, partly due to the area's remoteness but also because of the lack of written accounts of the project.

Each pounamu source has distinctive characteristics and experienced eyes can often tell which field stone comes from. What makes South Westland nephrite identifiable is the accessory minerals, which show as numerous black flecks and tiny ragged brassy sulphide crystals as shown in Figure 3 (Beck and Mason 2002: 50).

Noted jade expert Russell Beck (1941–2018) undertook an inventory of pounamu taonga (treasured items) held in New Zealand museums and noted over 70 mere (club-like weapons) and other items, particularly in the North Island, produced between the 1840s and 1860s that were made from South Westland nephrite, perhaps even from one stone from Papaki (Barn Bay) (Beck et al 2010: 93). Beck wrote a preliminary account of the retrieval of pounamu from Papaki during the 1840s including the breaking up of a large boulder that he dubbed the Anglem stone (Beck et al 2010: 91–93) and was planning to expand the story.

This paper is a continuation and expansion of aspects of Beck's work and tracks the exploitation of the South Westland pounamu resource during the 1840s by Māori-Pākehā families and their international partners and considers the significance of the venture. Journalist Robert Carrick wrote about "New Zealand's First Mining Speculation" in a general way in 1900 and made the point that more work needs to be done "before southern New Zealand history approximates reliability" (Carrick 1900: 234).

This paper is not a review of traditional Ngāi Tahu trade but a contribution to the conversation about Ngāi Tahu adoption and adaptation of European ideas and practices as discussed by Anderson (1998), Stevens (2015) and others.

Pounamu in Southwest New Zealand

Utilisation of the South Westland source is long-standing. Archaeologist Ray Hooker reported that adzes found in South Westland were overwhelmingly of early manufacturing methods (Hooker 1986: 22). Beck also noted that adzes and other tools found in the area all show evidence of oxidisation (caused by exposure to oxygen and soil acids) on their surfaces (Beck et al 2010: 61), some advanced as in Figure 4.

Until at least the 1840s Ngāi Tahu from southern Te Wai Pounamu and Te Tai o Poutini were still retrieving bowenite from Piopiotahi and knew of and occasionally utilised the South Westland nephrite source. Reverend Johann Wohlers, the Lutheran Missionary based on

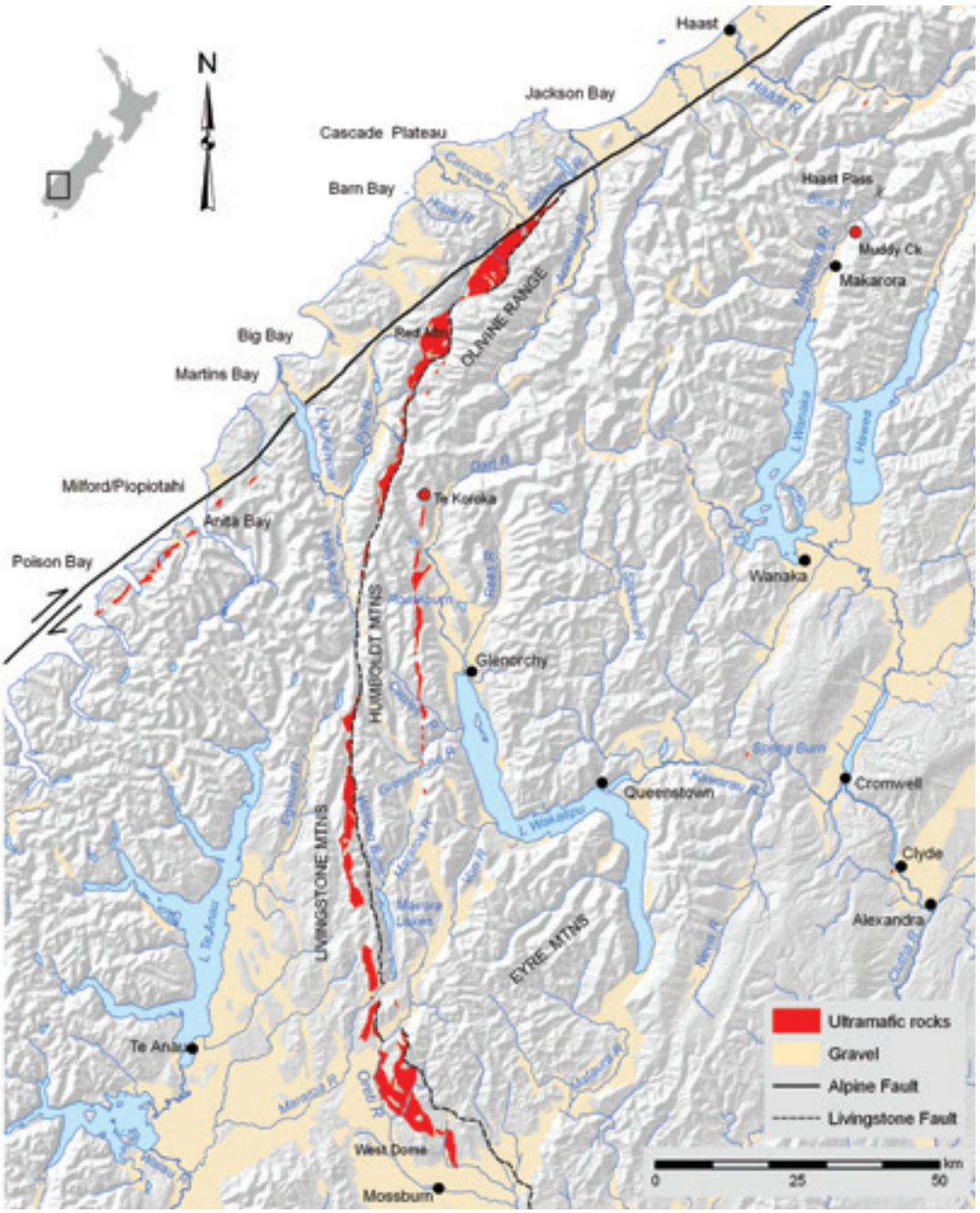

Figure 2. Map showing the sources of pounamu in South Westland and the Whakatipu district which is found around ultramafic rocks indicated. Map drafted by Simon Cox and provided courtesy of GNS Science 2021.

Ruapuke Island at the eastern entrance to Foveaux Strait, wrote that in the 1830s pieces of pounamu, "broken out of the rocks" were brought to the island from the West Coast by young Māori who went there in European vessels (Chapman 1891: 591). At Arahura, Te Tai o Poutini, in 1846 Charles Heaphy saw mere being made from locally sourced stone but was told that pounamu was also found at "Wakatipo" (Whakatipu Waitai in South Westland) and that tangiwai (bowenite), used for ear ornaments, was found near Milford Sound (Taylor 1959: 241).

Early Pākehā in South Westland

Captain Cook's visit to southwest New Zealand in 1773 publicised the existence of large numbers of fur seals there. Sealing was established by 1792 but by the mid-1820s indiscriminate slaughter had seen seal numbers collapse (Begg and Begg 1973: 112, 122). Whalers followed, most of them operating from New South Wales, Tasmania and the United States of America but in 1829 a shore-based whaling station was established at Preservation Inlet in Southern Fiordland (Begg and Begg 1973: 168). By the late 1830s there were at least another four stations in southwest New Zealand (Shortland 1851: 300).

The development of these whaling stations was significant because these semi-permanent bases generated a "sustained period of cross-cultural interaction" (Stevens and Wanhalla 2017: 136) and relationships between Māori women and Pākehā men. An alliance crucial to this story is the one made between Te Anau (later Maria Te Anau) and William Anglem. Te Anau was described by Reverend Wohlers as being "from a very noble family" and a close relative of Ngāi Tahu leader Topi Pātuki (Richards 1995: 95).

William Anglem (also Anglim, Anglin, Hughlin)[2] was Captain of one of the ships associated with the whaling station at Preservation Inlet. According to his friend William Thomas, Anglem was born in Limerick, Ireland, in about 1804. He had been placed in a

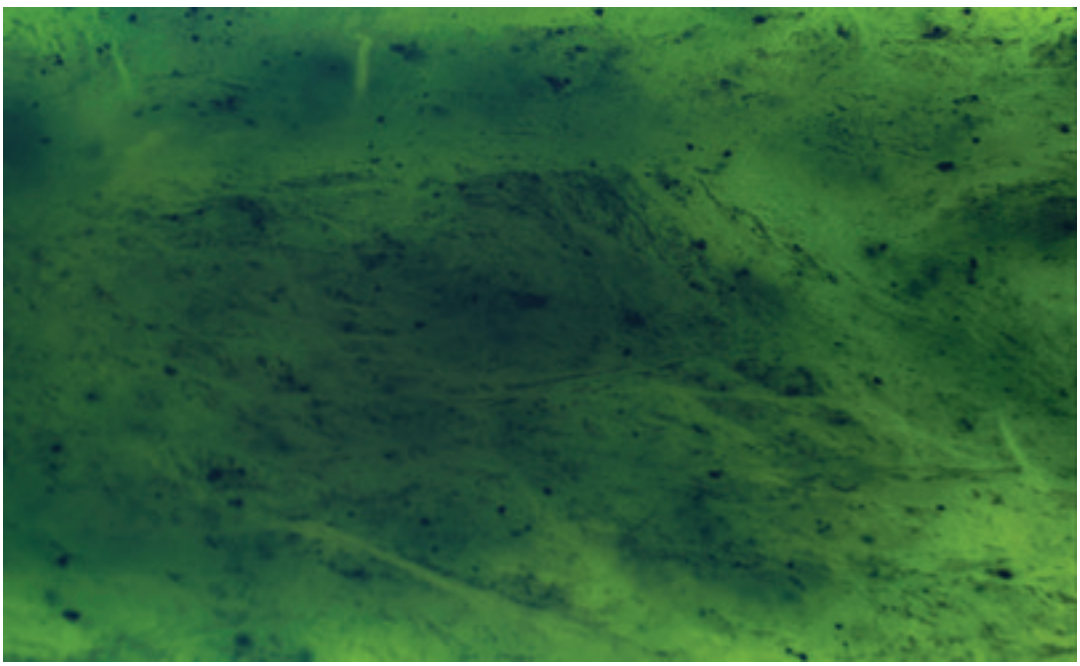

Figure 3. Close-up of pounamu mere identified as being made from the South Westland source showing the characteristic black inclusions. Canterbury Museum E149.690

monastery as a child where he received a very good education and could speak at least four languages, later adding Te Reo Māori to this list (Anglem, not dated). He was expected to become a priest but instead left for a life on the sea (Dudfield 2011: 82). Anglem had arrived in Hobart by 1821 when he shipped as crew on the *Campbell Macquarie* (Tasmania Outwards Shipping Lists 1821) and had risen to the position of Captain by 1829.

Anglem and Maria Te Anau's first child, Ellen, was born at Puysegur Point at the entrance to Preservation Inlet in about 1830[3] (Beattie 1920: 50). The family were subsequently based at The Neck, Rakiura (Stewart Island) (Howard 1940: 92–93) but lived in Sydney for a time where Ellen was baptised in 1834.[4] Captain Anglem had an important role in the pounamu speculation, as the person on the ground, and his relationship with Maria Te Anau and her whānau (family) was a crucial part of this.

The Pounamu Speculation

During the 1830s the Pacific Ocean was busy with maritime traffic. Ships came from the United Kingdom to the Australian continent via the Cape of Good Hope and on their return journey sailed north to Canton and Manila to pick up cargoes of tea and silk for the European market. Ships often travelled empty from Australia (having delivered convicts or supplies) and merchants looked for products to fill them. To do this they began exploiting resources in the Pacific such as sealskins, kauri spars, harakeke, sea cucumbers, sandalwood and mother-of-pearl (Tyron 2009: 40). Pounamu is another resource that was tried.

There were two main speculators behind the South Westland pounamu venture. Captain Ranulph Dacre (1797–1884) (Fig. 5), was a trader based in Sydney, who had been trading in northern Aotearoa New Zealand since the mid-1820s (Rogers 1995: 14). Henry Elgar

Figure 4. This adze is one of a cache found in the dunes at Barn Bay by James Nolan probably during the 1950s. It was made by hammer-dressing and grinding, an early technique. The orange surface is the result of oxidisation, confirming that it was made hundreds of years ago. Canterbury Museum E164.285

(1816–1852) was the son of an English banker. He was listed as a foreign resident of China in 1836 and was based either at Canton or Macao (The Chinese Repository 1837: 427). In June 1840 Elgar travelled to Sydney where he was involved in speculations with Dacre (Kerr 2018).

During the late 1830s and early 1840s speculators in Australia and further afield were extending their search for new opportunities to southern Te Wai Pounamu (Fig. 6). At the same time, with sealing at a virtual standstill, interdependent Māori and Pākehā whānau in the Foveaux Strait region were looking for new sources of income (Smith 2002: 10, 17). It is impossible to confirm who approached who about the potential of pounamu but Shortland records that a sealer who had seen a large block of greenstone at Piopiotahi heard in Sydney that this sort of stone was valuable in China and thought that "he had a mine of wealth within his reach" (Shortland 1851: 35). This sealer could have been William Anglem who regularly visited Sydney.

By whatever means, eventually the connection was made between pounamu and the demand for jade in China and a venture was born.

Captain Anglem travelled to Sydney in late 1841 and it is safe to say that, with all of the main players gathered together (Dacre, Elgar and Anglem), this is when the venture started. On 3 January 1842 Henry Elgar's ship *Anita* (a newly-built 26 metre clipper schooner) left Sydney with Elgar, his wife Anna Maria (also known as Anita) and Captain Anglem on board (*The Sydney Herald*, 4 January 1842: 2). The *Anita* arrived at Wellington on 19 January 1842 and 12 days later was reported as having sailed for Manila (*New Zealand Gazette and Wellington Spectator*, 22 January 1842: 2; 2 February 1842: 2).

This was the first of several instances of subterfuge. The *Anita* was actually heading south. Two and a half months later the *Anita* arrived back at Wellington from the "South Island" (rather than Manila) (*New Zealand Gazette and Wellington Spectator*, 16 April 1842: 2) and it seems likely that it had on board the first cargo of pounamu. My view is that the *Anita* had collected a load of bowenite (tangiwai) from Anita Bay, Piopiotahi. This source was well used by Māori, was reasonably accessible and, as the stone is a type of serpentine rather than nephrite, it is relatively easy to split into smaller pieces for transport.

Figure 5. Speculator Ranulph Dacre. Reproduced from The Cyclopedia of New Zealand, 1902.

Meanwhile, in Sydney, Dacre had bought the *Royal Mail*, a 19 metre long schooner, and sent it to Wellington where it arrived about 10 days after the *Anita* (*New Zealand Gazette and Wellington Spectator*, 27 April 1842: 3). The *Royal Mail* was refitted for transporting pounamu and Anglem took over as Captain (*Colonist* in *Sydney Morning Herald*, 2 November 1842: 4).

On 6 May 1842 both the *Anita* and *Royal Mail* were reported as leaving Wellington for Manila (*New Zealand Gazette and Wellington Spectator*, 7 May 1842: 2). While the *Anita* did

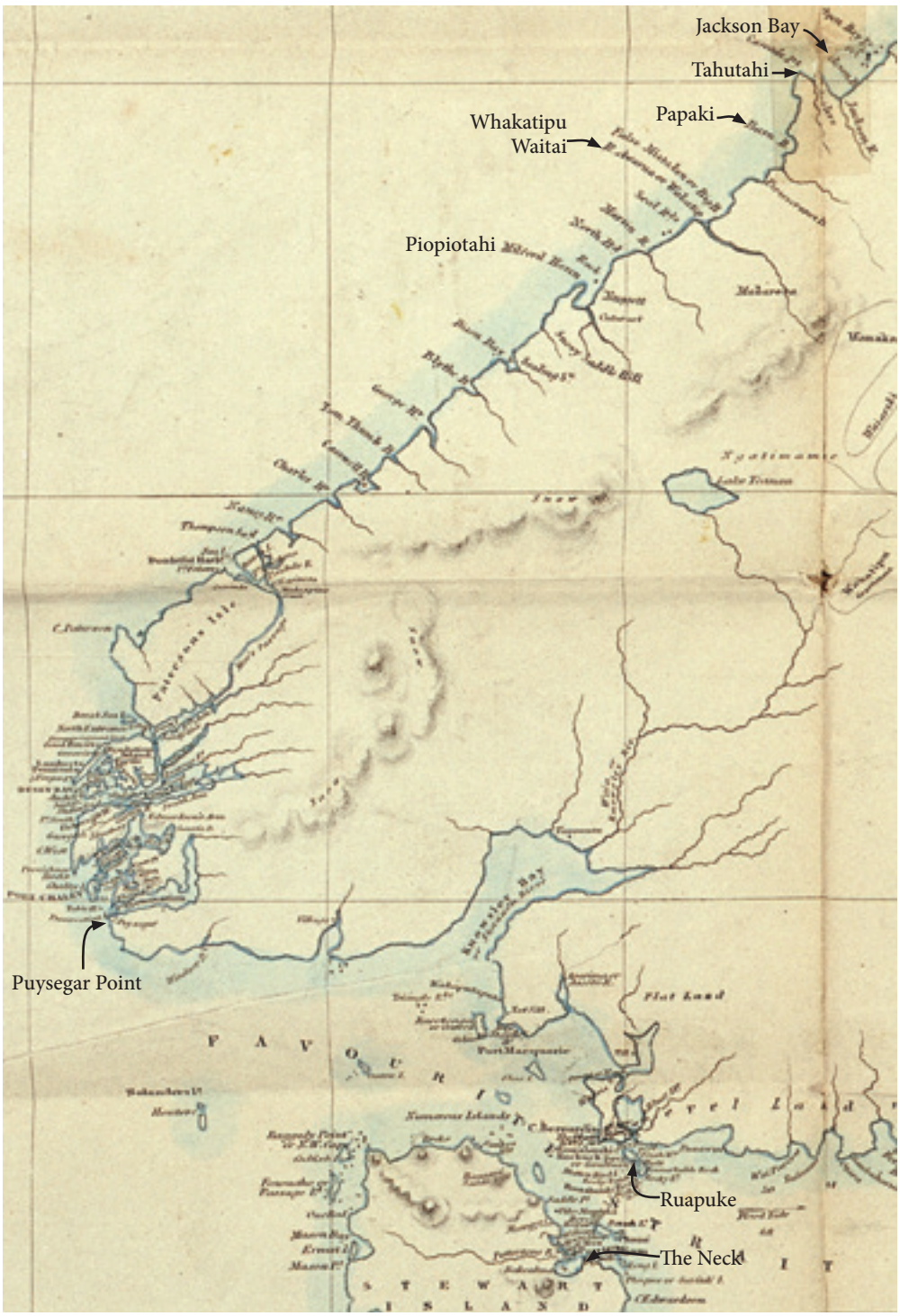

Figure 6. During the 1830s and 1840s mariners were recording coastal features, adding names and noting existing place-names as shown in this section of the map of New Zealand produced by Wyld in 1843. Places relevant to this article are indicated. Auckland Libraries Heritage Collections, Map 1640

go to Manila, almost certainly with pounamu as there were few other exports from New Zealand to Manila at the time, the *Royal Mail* headed south. Anglem's daughter Ellen remembered that her father returned from Sydney to Rakiura as Captain of the *Royal Mail* and "picking up all the old natives here, he took them around to Milford to get greenstone" (Beattie 1920: 50).

Finding Nephrite

This may have been when the search began for nephrite rather than bowenite (tangiwai). While valued for its beauty, Māori viewed bowenite as an inferior stone because its relative softness made it less useful as a tool (Heaphy in *Otago Daily Times*, 20 January 1863: 4; Natusch 2017: 141). Having lived with Māori for more than 10 years Anglem would have known of the difference between the two stones and in conference with his Māori relatives may have decided that it was better to supply nephrite to the Chinese market.

Māori had to be involved in the search because it takes knowledge and experience to recognise nephrite in its natural state. As James Stack explained, nephrite resembled the surrounding boulders "and only the trained eye can detect its presence" (Chapman 1891: 514). To find pounamu a "tohunga performed certain religious rites, and retired to rest alone, and in his dreams a spirit would come and indicate the spot where a stone would be found" (Chapman 1891: 515).

Stack's observations tally with those of the aforementioned whaler William Thomas who was probably part of Anglem's party. He remembered that at first the speculators couldn't find the greenstone. Thomas recounted:

> *Captain Anglem came to Bluff and got a very old Maori who had travelled a great deal on the West Coast, to go with him and point out the greenstone which they [Pākehā] could not distinguish from other rocks… [this man] went off into a deep sleep, as he called it, and when he awoke he took them straight to the spot* (Dudfield 2011: 83).

Further corroboration of Māori involvement in finding the stone comes from Anglem's family. Although rarely recorded in written sources it is apparent that Māori wives journeyed with their Pākehā husbands. For example, Caroline, the daughter of Captain Robert Brown and Te Wharerimu (Ngāi Tahu) (Stevens 2008: 79), often accompanied her husband Captain Howell and "repeatedly went on whaling expeditions, taking her turn in the boat and at times using the harpoon" (*Otago Witness*, 4 May 1899: 21). Maria Te Anau also travelled with her husband. The couple's son Christopher was conceived in about September 1842 when Anglem (and therefore also Maria) was based at Piopiotahi (Mackay 1876: 18).

Most of the small number of mentions of this greenstone recovery give Piopiotahi as the source of the pounamu (*New Zealand Colonist*, 9 September 1842: 2; *New Zealand Gazette and Wellington Spectator*, 10 September 1842: 2). While the speculators were happy to let people think they were retrieving stone from Piopiotahi there are contemporary accounts that give the location as Papaki (Barn Bay), about 60 kilometres further north.

Well-known sealer and whaler Thomas Chaseland (also known as Chasling, see Church 2008: 137–141), who was working out of Jackson Bay in late 1842 (Howard 1940: 371), found men at Papaki "left behind to blast the rock and pack it in boxes" (Dudfield 2011: 84).

Dr David Monro of Nelson who sailed along the east coast of Te Wai Pounamu in 1844 recorded that he heard a lot about the "West Side" from both Māori and Pākehā at Awarua (Bluff) (*Nelson Examiner and New Zealand Chronicle*, 5 October 1844: 124). He was told that a block of several tons lay on the beach at "Barn Bay" and it was here that Anglem was working.

This location makes sense as the northern end of Papaki is one of the few places on

Figure 7. Captain Henry Fox of the *Wave*. Reproduced from Batson, 1963.

this part of the coast where you can safely land a whaleboat. The Tahutahi (Cascade River) mouth, further north, could also be entered by whaleboats in good conditions and physical evidence (detailed later) indicates that pounamu recovery took place between these two places.

After the first overseas shipment of greenstone, which, as mentioned, was probably bowenite from Anita Bay, Piopiotahi was simply used as the only safe anchorage point for the larger vessels required to transport the stone to Asia. Whaleboats were used to travel along the coast and collect the pounamu (Fox 1886: 1).

After the discovery of at least one large pounamu boulder in the vicinity of Barn Bay, probably in September 1842, there was a flurry of activity. In early October Captain Anglem and the *Royal Mail* arrived at Sydney and were variously reported to have come from Wellington in ballast and from a sealing voyage (*The Australian*, 10 October 1842: 2) and "to obtain supplies for the sealing parties which she has left on some of the islands" (*The Sydney Morning Herald*, 10 October 1842: 2). Tellingly the *Royal Mail* was not reported as bringing any sealskins. It appears that Anglem, having found a large boulder or boulders of pounamu, needed to report to the investors and get instructions on how to proceed.

Anglem took the *Royal Mail* from Sydney to Nelson to give a written command from Dacre to the master of another of Dacre's ships, the 61 ton *Wave* (Fox 1886: 1). Captain Henry Fox (1819–1891) (Fig. 7) was instructed to sail in company with the *Royal Mail* to Piopiotahi and the two ships left Nelson in early November 1842 (*Nelson Examiner*, 5 November 1842: 2). They anchored in Harrison Cove and, as Fox later remembered, over the next 6 weeks:

> *Captain Anglin [sic], with some gangs of sailors employed by him, in their large boats, were absent at different times along the coast, collecting the greenstone, none of which I was informed, was found in Milford Haven [Piopiotahi], which was purely chosen as a convenient and secure harbour for the vessels. The boat's crews, I was told, were sworn to secrecy as to where they got it, &c., and we certainly got no information from them. Finally the greenstone, about two tons, which I may say I never saw till we got to Manila, was brought on board in hardwood cases, heavily strapped with iron, and I sailed with it direct to Manila about the middle of December* (Fox 1886: 1).

Withholding or providing misleading information was typical of sealers, whalers and other speculators (Ballantyne 2012: 127). For example, Captain Cheyne, who was employed by Dacre and Elgar on another venture, was bitter about not being able to enter Sydney Harbour to receive medical attention in case news of his arrival was leaked (Shineberg 1971: 64). After leaving Milford Sound, Captain Fox called into Nelson and stated he was going to Fiji (*Launceston Advertiser*, 9 Feb 1843: 3) but actually went to Manila to deliver the stone to Henry Elgar.

After the departure of the *Wave*, Anglem remained in South Westland to obtain more nephrite. While retrieving bowenite from Anita Bay had been relatively straight forward,

Figure 8. The coastline between Tahutahi (Cascade River) mouth and Papaki (Barn Bay) on a fine calm day. Photograph by Daryl Munro.

collecting nephrite from the coastline further north was quite a different proposition. Some of the pounamu being retrieved would have been carried or dragged over medium to large boulders, as shown in Figure 8. William Thomas recalled that the syndicate had great difficulty trying to break up the boulders and that "they could not manage if for a long time" but "at long last a man came and drilled holes in it and they blasted it with powder" (Dudfield 2011: 83).

Anglem and several of his men were injured in a mistimed explosion in January 1843 and had to seek medical assistance at Nelson. Both of Anglem's hands were "dreadfully shattered" and he had been partially blinded while another two men also received eye injuries (*Nelson Examiner and New Zealand Chronicle*, 21 January 1843: 183). It had taken 12 hours in a whaleboat for the party to get back to Piopiotahi and then another ten days for the *Royal Mail* to reach Nelson. Anglem had a finger amputated and lost the sight in one eye (Dudfield 2011: 83).

On the same day that Anglem and party arrived at Nelson seeking help, the *Anita* was leaving Wellington for Piopiotahi. They would have arrived to find the *Royal Mail* absent but probably found a message left for them on Post Office Rock, off Fox Point (Fig. 9), which sealers and whalers used to leave notes for each other in bottles (*Otago Daily Times*, 2 April 1864: 5).

After a month at Nelson recovering from injuries, Anglem and the *Royal Mail* left Nelson (*Nelson Examiner*, 18 February 1843: 2) and joined the *Anita* at Piopiotahi where they both remained until about May. Enough pounamu must have been retrieved to justify both the *Anita* and *Royal Mail* sailing to Manila where they had arrived by July 1843. The *Anita* then left for China, probably with Henry Elgar on board to conduct sale negotiations (*The Australian*, 11 September 1843: 3).

As bowenite is also found in China, the jade

Figure 9. Anita Bay looking towards Fox Point with Post Office Rock visible off the end of the point. *Auckland Weekly News*. Auckland City Library AWNS-19071024-1-2

dealers in Canton might have been familiar with it and were perhaps willing to buy the speculator's first shipment. Unfortunately, later shipments of nephrite did not meet with the same success. Although nephrite was more highly-valued by Māori than bowenite, it appears that Chinese jade dealers were unimpressed with it. As previously mentioned, nephrite from South Westland is known for its black specks and colour variations and Shortland records that the Chinese saw this as a flaw (Shortland 1851: 36).

Edward Cunningham (1823–1889), who had worked in China for Russell & Co, which in 1842 was the largest American trading house in China, heard about the arrival of the nephrite. He remembered that the jade dealers in Curio Street, Canton, realising that a sudden influx of jade would ruin them, declined to buy it at any price (Kinnicutt 1889: 89).

Based on his own experience, jade prospector Daryl Munro has suggested that another reason the jade was rejected was that the use of explosives resulted in some of the nephrite being crazed or fractured (as in Fig. 10). Anglem and his men wouldn't have known that crazed jade is unworkable.[5] Anglem himself later said that the Chinese refused to buy the stone "as they could not work it" (*Evening Post*, 24 August 1886: 2).

All sources agree that the venture had been a costly failure. Elgar was most likely ruined and his schooner, *Anita*, was subsequently advertised for sale at Canton (*The Sydney Morning Herald*, 16 October 1843: 2). Captain Dacre lost heavily, reputedly £10,000 (*New Zealand Herald*, 11 October 1884, supplement: 1). Not only had the bulk of the stone not sold but it had been a lot more difficult, and therefore more expensive, to quarry than they had anticipated.

Elgar did not forget about the jade though. It had been placed in Russell & Co's storage ship at Cumsingmoon near Macao and in about 1851 Cunningham, who was now a junior partner in the firm's Canton business, was surprised to

Figure 10. A fragment of nephrite found by Daryl Munro at Watson Bluff north of Barn Bay. The piece has clearly been broken off a larger rock by the use of explosives. Note the fractures in the upper left side. Photograph by Julia Bradshaw

Figure 11. A piece of pounamu with an oxidised drill hole (on left) found by Robert Long at Barn Bay. Photograph by Robert Long

receive a request to uplift the stored pounamu. Fifty boxes were collected by the original depositor and storage fees of US$7,000 paid (Kinnicutt 1889: 89–90). This must have been Elgar, who was still based in Asia, but he died shortly afterwards and the final destination of this pounamu is unknown.

For Anglem and his family the venture had been a disaster. The injuries Anglem suffered during the mistimed explosion are likely to have caused long-term health problems and he almost certainly returned from Asia without a penny. Anglem was back at Rakiura by February 1844 (Howard 1940: 380) but must have worked his passage home on another vessel as the *Royal Mail* was still in China (*The Sydney Morning Herald*, 20 June 1844: 2).

The failure of the venture would have also affected the other Māori-Pākehā families involved. Shortland recorded that the workmen remained on the spot for several months "after which having nearly exhausted their provisions, and ruined their tools, hopeless of receiving their arrears of pay, they concealed, by burying in the ground, the fruits of their labour, and then scattered" (Shortland 1851: 36).

Ngāi Tahu whānau were significantly involved in the pounamu venture through their knowledge and kinship but their individual contributions are difficult to ascertain as documentary sources only fleetingly mention some of the Europeans who were involved. The only crew members identified are William Thomas (married to Tukuwaha [Ngāi Tahu]) and whose detailed knowledge leads one to believe that he must have been there) and Nathanial Bates, married to Hinepu (Ngāi Tahu) and later Kuihi Watson (Ngāi Tahu) (Stevens 2008: 77), who was one of the men injured in the mistimed explosion (Dudfield 2011: 83).

Subsequent Recovery of Pounamu

Māori-Pākehā families in Southland were aware of the opportunity offered by the abandonment of the speculation and acted on it. Shortland records that the year after the syndicate's failure some of the pounamu found its way to Wellington where it was sold to Māori for one shilling per pound of pounamu (Shortland 1851: 36).

Some evidence of these shipments has been found. In February 1845 Ulrich Prophet of Whanganui received "a large and valuable piece of greenstone" shipped on the *Katherine Johnstone* from Wellington (*New Zealand Spectator*, 15 March 1845: 3).

In March 1845 the *Rover's Bride* brought one ton of pounamu to Nelson and then carried on to Whanganui (*Nelson Examiner*, 15, 22, 29 March 1845). The captain of this vessel was James Joss, a sailing mate and neighbour of William and Maria Anglem at The Neck. Joss, the husband of Caroline Puaitaha (Stevens 2008: 89), was working in company with William Lovett of the cutter *Royal William* (43 tons). A month later, Joss and Lovett in their respective vessels arrived in Wellington from Piopiotahi via Nelson, each with another cargo of greenstone (*New Zealand Spectator and Cook's Strait Guardian*, 12 April 1845: 1; *Wellington Independent*, 12 April 1845: 1).

In August 1846 the *Katherine Johnstone* delivered another two "pieces" of pounamu to Whanganui (*New Zealand Spectator and Cook's Strait Guardian*, 29 August 1846: 2). All of these shipments of pounamu were from South Westland. If, as in Joss's first load, the amount of pounamu in each shipment was one ton then altogether perhaps four or five tons was taken to Wellington and Whanganui during 1845 and 1846.

In March 1846 Anglem himself arrived at Wellington in the cutter *Levin* (24 tons) (*Wellington Independent*, 25 March 1846: 2) and may have had pounamu with him. This was probably Anglem's last trip to the North Island. While at Wellington he met Colonel Edward Godfrey and subsequently sent him charts he had made of southern New Zealand (Dudfield 2011: 86). Anglem said that he was destitute and would consider himself recompensed by "old clothes, hooks, nails – anything at all" (Hall-Jones 1944: 187). He died later that year, aged 46 years, after having a seizure while gardening at his home at The Neck, Rakiura (Dudfield 2011: 87).

Figure 12. A partially blasted pounamu boulder, estimated to weigh 50 tons, in situ north of Barn Bay. Photograph by Daryl Munro

Physical Evidence of 1840s Retrieval

A find of nephrite artefacts in the Cascade River area during the 1950s and the subsequent finding of gem-grade specimens in the area sparked a jade rush (Beck and Mason 2002: 50). From the 1970s onwards prospectors and others have found evidence of an earlier period of recovery of pounamu using metal tools and explosives.

Long-time jade prospector Daryl Munro

Figure 13. The drill hole found in a pounamu boulder cut up by Bernie Radomski and photographed by Russell Beck in 1987. For comparison, the size of the old New Zealand 50 cent coin shown is 31.75mm. The block's current location is unknown and it may have been cut up. Photograph provided by Ann Beck

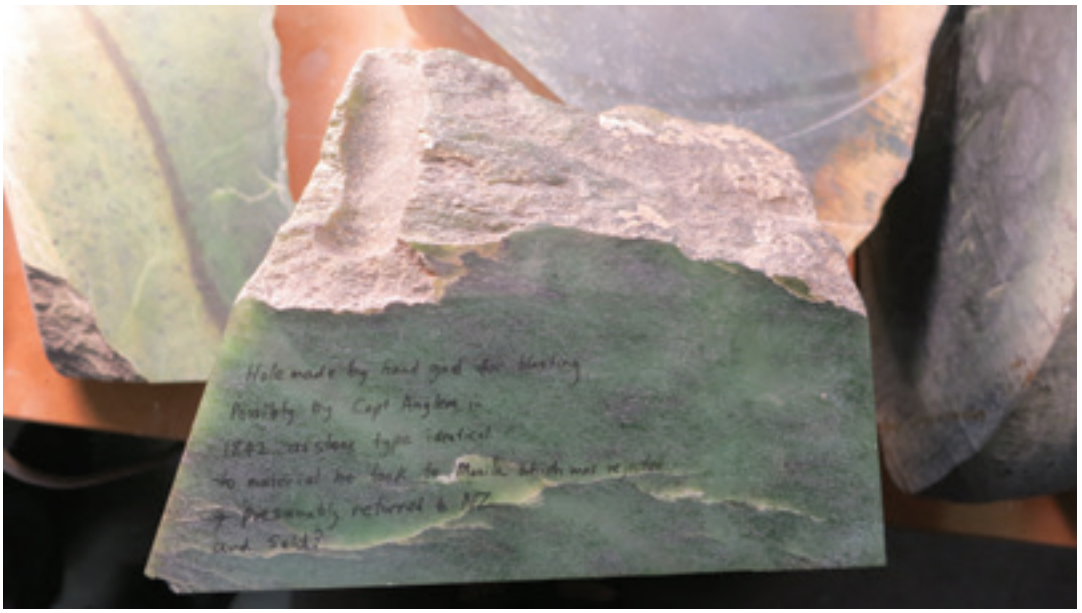

Figure 14. The drill hole found by Russell Beck in a piece of pounamu which probably came from the Devlin Brothers workshop in Dunedin. Russell Beck noted on the stone: "Hole made by hand(illeg) for blasting. Possibly by Capt Anglem in 1842 as stone type is identical to material he took to Manila which was rejected & presumably returned to NZ and Sold?" Photograph by Julia Bradshaw

Figure 15. Tūtoko's boulder. Otago Museum Collection GL3585. Photograph by Kane Fleury

remembers a large pounamu boulder in the Hope River estuary which had pieces blown out of it.[6] Gorge River resident Robert Long remembers that in the early 1980s four or five large lumps of blasted pounamu were found around Hope River mouth (Fig. 11).[7]

Just north of Barn Bay, Munro found a boulder of approximately 50 tons which has had at least two large pieces (300–400 kg each) blown out of it (Fig. 12). Munro suggests that these pieces were too big for Anglem and his men to deal with so they were left behind. The stone is not great quality but the men are unlikely to have known that.[8]

Beck photographed part of a boulder found in the late 1970s by Bernie Radomski, Bill Radomski and Howard Smith which had an old drill hole made using metal tools which likely dates from Anglem's time (Fig. 13).[9] Beck located another piece of South Westland nephrite (Fig. 14) with an old drill hole and was convinced that this specimen was part of the boulder that Anglem blasted, writing that "The stone has characteristic inclusions, the same as many mere in museum collections" (Beck, not dated).[10]

A fascinating mystery is presented by a large piece of pounamu (Fig. 15) previously in the possession of the rangatira Tūtoko and his whānau who had been based at Whakatipu Waitai since the 1830s (Madgwick 1992: 34). The family were visited by geologist James Hector in 1863 and they gifted Hector a large block of pounamu which is now at Otago Museum (GL3585).

Hector recorded that the stone had drill holes and marks of blasting (Hector 1863: 205). Hector's handwriting is hard to read but it appears he was told that it came from "white men" (Hector 1863: 205). Beck identified the stone as being very typical of South Westland nephrite, but not the "Anglem stone" and said that it could have come from any of the river mouths between Big Bay and Barn Bay (Beck 2015: 1). The boulder weighed about 81 kg

Figure 16. A large block of South Westland pounamu found at Paekākāriki in 1937. The drill hole and cut face are thought to have been made after it was taken to the North Island. Whanganui Museum 1937.21

Figure 17. Mere donated to Canterbury Museum in 1950 by Mrs Florence Ollivier. Canterbury Museum E150.938

and it may have been delivered by whaleboat, perhaps by either Anglem or Joss as a koha.

Another block of South Westland stone was found by Beck at Whanganui Regional Museum (1937.21). He identified the sawn block of pounamu (Fig. 16) as typical South Westland nephrite but again not the "Anglem stone" (Beck 1988). The 30 kg block was found buried in a swamp at Paekākāriki, north of Wellington, in 1937 (*Levin Daily Chronicle*, 5 April 1937: 8). The piece has an old bore hole. It is likely that this is some of the stone recovered from South Westland by Joss and others in 1845.

Beck identified 20 taonga at the Museum of New Zealand Te Papa Tongarewa as having been made from Barn Bay type stone using post-contact technology.[11] It is beyond this paper's scope to report on post-contact taonga made from South Westland stone held by museums. However, it is worth noting an interesting example from Canterbury Museum's collection. A mere that was presented to Canterbury Museum in 1950 by Mrs Florence Ollivier of Christchurch was identified by Russell Beck as exhibiting characteristics of the Barn Bay source (Fig. 17). When it arrived at the Museum, Director and Ethnologist Roger Duff noted that the mere, which is thought to have come from Rotorua, was "post European work but possibly done by a Māori craftsman, beautifully balanced". It is significant that Duff noted that taonga made from nephrite with distinctive "black flecks", a noticeable feature of South Westland pounamu, were "peculiar to post European work" (Canterbury Museum Ethnology Register entry E150.938). This suggests that South Westland stone may have become the primary source of pounamu during the mid-nineteenth century, especially in the North Island.

Conclusion

The first export of large quantities of unworked pounamu from New Zealand was underway by March 1842. This constitutes the country's first substantial export of minerals, pre-dating mining for manganese and copper (Hector 1869: 361) by about 6 months.[12] The venture was the result of interdependent Ngāi Tahu and Pākehā families in southern New Zealand looking for economic opportunities as the sealing and whaling industries that brought them together declined. This activity also stemmed from Sydney-based speculators continuing to search for new trade items.

Despite the lack of written records, it is clear that the difficulties associated with finding nephrite meant that Māori were crucially important to the speculation. The pounamu venture was thus the result of knowledge sharing between Ngāi Tahu and Pākehā as earlier illustrated in the sealing and whaling industries which are described in more detail by Stevens and Wanhalla (2017) and others.

The pounamu speculation undertaken in South Westland during 1842–1846 was the first European experience with raw pounamu and arguably marks the beginning of the colonisation of pounamu by Pākehā. The trade, which bypassed traditional Ngāi Tahu networks, previously disrupted by the destruction of Kaiapoi Pā in 1831, took pounamu directly to the North Island.

The settler state assumed it owned minerals on land the Crown purchased from Māori, including pounamu, despite this being a taonga with possession guaranteed under the terms of the Treaty of Waitangi signed in 1840. The 1864 discovery of a payable goldfield in Te Tai o Poutini (purchased by the Crown in 1860) and the ease with which large quantities of pounamu could now be shipped from the West Coast saw Ngāi Tahu lose control of that source as well, but this has since been clawed back.

While perhaps 15 tons of pounamu was sent to China in the 1840s, it is the pounamu taken directly to Wellington and other places within the country that is of greater interest in New Zealand. A number of taonga in domestic museums are made from stone from this source.

Further work on identifying taonga held by museums that are made from South Westland

stone may shed further light on how the direct transport of pounamu affected the supply and manufacture of taonga pounamu, in the North Island in particular. It may be that taonga pounamu became more widely available after Ngāi Tahu lost exclusive control of the supply (ownership of pounamu was returned to Ngāi Tahu in 1997 as part of the iwi's Treaty Settlement).

It is likely that stone came from multiple places, definitely Papaki but also the beaches and river mouths north and south, such as Tahutahi (Cascade River) and possibly even as far south as Te Hokiauau (Big Bay).

Confirmation of the venture has been found locally. At Barn Bay and nearby, evidence of drilling and blasting can been seen on pounamu boulders and pieces found there. Taonga identified as being made from South Westland stone that exhibit the use of metal tools in their making can be traced back to this 1840s period of exploitation through the skill of their manufacture.

The venture also provides insights into the organisation and connections of mariners and their families on New Zealand's imperial frontier – both with one another as well as with merchants in Australia and Asia. This highlights both the secrecy involved, which was also a hallmark of the sealing industry in which many of the same people were participants, as well as the amazing organisation of the venture given the challenges of communication at the time.

Some of the names associated with the expedition survive in present day place-names. The name Anita Bay (known to Ngāi Tahu as Hupokeka) remembers the first voyage of the schooner *Anita* while Fox Point is named after the Captain of the schooner *Wave* which took pounamu to Manila in January 1843. The name Post Office Rock has not survived but Anglem's role in southern New Zealand is remembered in the naming of the tallest peak on Rakiura (also known as Hananui), as well as through his many Ngāi Tahu descendants who continue to carry his name.

Acknowledgements

I was privileged to know Russell Beck and am pleased to be able to extend his work into this mystery that intrigued us both. My warm thanks to Ann Beck for her assistance and interest in this project. I am very grateful to peer reviewers Michael Stevens and Dougal Austin and also to Bob Kerr, Roger Fyfe, Paul Madgwick, Phil Moore and Daryl Munro for their comments and suggestions. Thank you also to the following for their contributions: Emma Burns, Simon Cox, Robert Long, Simon Nathan, Libby Sharp, Howard Smith and Natalie and Cyril Win.

Endnotes

1 Paul Madgwick, email to author, 23 March 2021.
2 Anglim or Anglin appears the most common spelling in early records but over time this has changed to Anglem and this modern spelling, which is preferred by the whānau, has been used in this paper. For more details about the origin and variations of the name see *O'hANGLUINN, The Surname 'Anglin* by Aidan Anglin, 2011. https://issuu.com/aidan-anglin/docs/the_surname_anglin [cited 11 Nov 2020].
3 Death Certificate Ellen Gilroy, 1926/9804. Births, Deaths & Marriages, Department of Internal Affairs, New Zealand. https://www.bdmhistoricalrecords.dia.govt.nz/search.
4 Baptism Record, Ellen Angline 1834: 383/1834 V1834383 129. Available from: https://familyhistory.bdm.nsw.gov.au/lifelink/familyhistory/search?0 [cited 6 October 2020].
5 Daryl Munro, interviewed by author, 1 January 2021.
6 Daryl Munro, interviewed by author, 1 January 2021.
7 Robert Long, emails to author, November 2020.
8 Daryl Munro, interviewed by author, 1 January 2021.
9 Russell Beck's notes from a personal communication with Bernie Radomski, December 2009.
10 Russell Beck, handwritten notes, courtesy of Ann Beck.

11 Museum of New Zealand Te Papa Tongarewa. 2021. List of 20 taonga identified as having been made from Barn Bay pounamu by Russell Beck, supplied by Dougal Austin, Senior Curator, Mātauranga Māori, 4 February 2021.

12 See also *Nelson Examiner*, 10 December 1842: 158; *New Zealand Colonist*, 13 December 1842: 2; *Daily Southern Cross*, 22 April 1843: 2.

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Red Argillite Artefacts from the Canterbury Region, New Zealand

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Māori artefacts (taonga) made from red argillite are rare and only about 20 have been recorded from Canterbury, mainly from early period coastal occupation sites dating to the fourteenth or fifteenth centuries. They include small adzes or chisels, minnow lure shanks, discs and a decorated hook point. Most of these probably had a non-utilitarian purpose and at least some were likely possessed by people of higher social status. New information is provided on these artefacts and on possible sources for the raw material.

Keywords: Canterbury, Māori artefacts, red argillite, stone sources, taonga

Introduction

One of the more unusual rock types utilised by early Māori in Canterbury and Otago, in the South Island of Aotearoa New Zealand, was red argillite (indurated mudstone). A small number of artefacts of this material were recorded by Wayne Orchiston in his PhD thesis (1974: table 2.26), most of which had been found at coastal sites between Banks Peninsula and Otago Peninsula, and included adzes, chisels, 'slate' knives, minnow lure shanks and some unique carved objects. Altogether he listed 20 items from Canterbury, although none of these were described or illustrated. In fact, Orchiston (1974) was more concerned with the source of the argillite and undertook a thorough review of the geological literature available at the time, suggesting that it may have been obtained from somewhere inland of the Waitaki and Opihi river mouths in South Canterbury. Skinner (1974: 115) records that the source of red argillite was the "headwaters of the Waitaki", though the basis for this was not stated.

The present study involved a re-examination of all of the red argillite artefacts listed by Orchiston (1974) from the Canterbury region that could be relocated in museum collections, and was primarily aimed at providing better documentation of these items and confirmation of the rock type; some new records were also able to be added to the list. The geographic distribution of these artefacts is shown in Figure 1. Limited fieldwork was also undertaken to identify potential sources of the raw material.

Catalogue numbers referred to in the text (e.g. E138.336) are mainly those of Canterbury Museum. Numbers prefixed 'D' refer to items held by Otago Museum, and 'SCM' to objects in South Canterbury Museum.

Lithology and Source

Most of the artefacts of red argillite from Canterbury are reddish brown (2.5YR – 5YR) or weak red (2.5YR, 10R) in colour (colours are according to the Munsell Soil Color Chart, 2000 version, in artificial light). Much of the argillite is distinctly sheared and contains sparse to common, irregular, greenish grey or dark-coloured veins. The argillite is a relatively hard but brittle rock and because of its fissility,

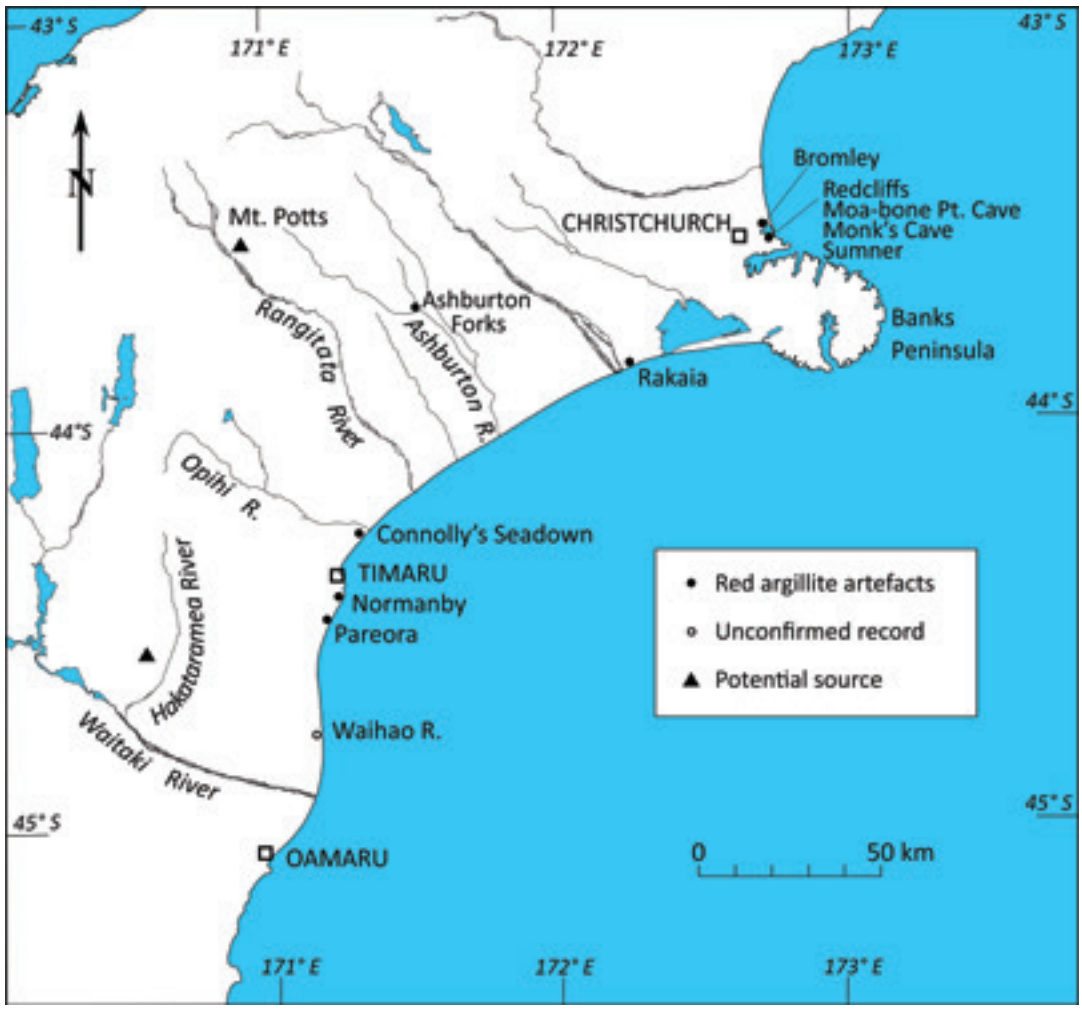

Figure 1. Location of sites with red argillite artefacts, and potential primary sources of the rock type, in the Canterbury region. Map: Louise Cotteral

is prone to fracturing along sub-parallel shear planes.

The question of where the red argillite was procured from is a matter of speculation. Certainly Orchiston's (1974) view that all of the argillite was obtained in South Canterbury cannot be substantiated, although there are some bands of red-green meta-volcanic rocks within the Permian greywackes in the inland area (Forsyth 2001).

Two potential primary sources were identified in this study: in the lower Hakataramea valley at Station Stream and the Mt Potts area in the Rangitata River Valley (Fig. 1). Cobbles of red argillite (up to 40 cm across) are abundant in Station Stream. The argillite is all of similar colour (dark red), shows moderate to strong fissility and contains common colourless to dark green veinlets. Samples from the Mt Potts area are more variable in colour, ranging from dark red to weak red (10R 5/2 – 5/3), reddish grey and purplish red. They show weak to strong fissility and some contain parallel, light greenish grey argillite bands. Colourless, white and dark green veins are rare to common. This

area is likely to be one of the main sources of pebbles and cobbles of red argillite found in the Rangitata River and on the coast near the river mouth. A few pebbles and small cobbles have also been seen in the Ashburton River, at the mouth of the Rakaia River and in the Opihi River in South Canterbury, so clearly there were other secondary sources.

Given the broad distribution of artefacts (including Otago) it is likely the red argillite was procured from multiple sources, probably mainly from major rivers or along the coast near river mouths. This is backed up to some extent by a flake or spall (E139.26) off a smooth water-worn cobble found at Sumner, as well as part of a rounded cobble of red-brown argillite (E167.16) from the Rakaia site L37/4, which appears to have been worked.

Description of Artefacts

No detailed study of the artefacts made from red argillite has been attempted, but those items listed by Orchiston (1974 table 2.26) that could be relocated in Canterbury Museum and other museum collections were re-examined, and 10 other examples have been added to the list (Table 1). Additional items recorded by Orchiston from Otago (n = 10) and Southland (n = 1), and those held in private collections, were not considered. Altogether 21 objects from the Canterbury region are recorded here.

Red argillite was used for a wide variety of artefact types, most if not all of which were probably non-utilitarian. The more common (n = 5) are small adzes or chisels (or pieces of them). One unusual chisel from Normanby (SCM E278) is flat-sided and has a narrow bevel at both ends; it is also remarkably thin (2 mm). Another, from Rakaia (E153.21), has a high-angle bevel as well as a laterally reduced butt, similar to that of a Duff Type 1B adze (Duff 1956) (Fig. 2). Because of the nature of their bevels, both of these chisels would have been unusable for woodworking. There is also a particularly interesting piece from Redcliffs (E158.795), consisting of an elongate, partly polished fragment that has been sawn and

Figure 2. Chisel with laterally reduced butt from the Rakaia River mouth. Note the high angle, slanted bevel. Canterbury Museum E153.21

Figure 3. Piece of sawn red argillite from Redcliffs, showing a snapped groove along the lower edge. The opposite (upper) edge is polished. Canterbury Museum E158.795

snapped (Fig. 3). It suggests that some chisels (and possibly other items) were produced from larger slabs by this technique, which is the same as that used for cutting nephrite. A partly polished but uncut slab (E163.599) was also found at nearby Moa Bone Point Cave.

Only one larger adze has been recorded, from the Pareora River mouth (D25.1678). It is made from less fissile reddish brown argillite and has been initially shaped by flaking then almost entirely polished (Fig. 4). It has a flat-oval cross-section and one curved side. The bevel is almost symmetrical or bifacial, rounded, and the cutting edge is slightly damaged. The adze lacks a defined butt and therefore would be classed as a Type 2 form (Duff 1956).

There are three fishing-related items from Canterbury. Two of these are minnow lure shanks, one from Redcliffs (E142.276), the other a probable broken shank from Bromley (E159.236). The latter consists of a polished piece with a sub-triangular cross-section. The Redcliffs lure is thin and flat-sided with lateral notches near the pointed head, three on the tail, and another on the distal end (Fig. 5). The sides and edges are mostly polished. The most impressive item, though, is an ornamented trolling lure hook point from the Rakaia River mouth (E155.83), previously illustrated by Trotter (1972 Fig. 4a). It is 68 mm in length and made from dark reddish brown argillite. There are 17 evenly-spaced notches along the outer margin of the point and the attachment end is in the form of a fish head with a small drilled hole (eye) for lashing to a trolling lure shank (Fig. 6). It is unlikely, however, that such an item would actually be used in fishing,

Figure 4. Polished adze, with flake scars, from the Pareora River mouth. Otago Museum D25.1678. Photo by author

given its ornamentation, and could have been worn as a pendant. Notably, little evidence of fishing has been recorded from the Rakaia site (Jacomb 2005).

Other items that probably had an ornamental purpose include two discs, one from Ashburton Forks and the other from the Pareora River mouth. The Ashburton Forks example (E138.336) is an almost perfectly circular polished disc of red argillite (Fig. 7). The two sides of the disc are well-polished and the outer edge, which is only about 1.5 mm thick, has been intentionally smoothed. Interestingly, a more ovate disc of well-polished dark grey argillite (E99.54.19, 100 x 76 mm) was found in the same area. It was mistakenly recorded by Orchiston (1974) as being made of red argillite and interpreted by him as a "slate knife" (see below). Neither of these discs has a drilled hole for attachment of a suspension cord. The disc from Pareora (D30.1134) is larger and sub-circular in shape (Fig. 8). It has been smoothed on both sides, one of which is relatively flat, the other slightly convex. It is also slightly wedge-shaped in cross-section and there is a prominent notch on the thinner margin, possibly resulting from a broken drill hole. There is no indication of wear along the thinner edge and therefore it does not appear to have been used as a cutting implement. It is likely both red argillite discs were made from natural flat pebbles.

There is also an intriguing record of nine "fish knives" being found on a farm "a few miles below Mount Somers" in about 1898–1899, which were apparently all of similar size and shape (Smith 1900: 430). Seven of these were unfortunately destroyed, but Smith

Figure 5. Minnow lure shank from Redcliffs, showing notches on the 'tail'. Canterbury Museum E142.276

believed that three of the nine were made from "reddish-yellow chert". Duff (1976: 11) also refers to these 'knives' and states that three consisted of a "reddish variety" of slate, one of which is the disc of red argillite (E138.336) from Ashburton Forks. Duff (1976) considered such 'knives' were used to flense the fat off moa skins, and possibly seals, but evidence that they were used for such a purpose, or indeed were knives at all, seems to be lacking.

Orchiston (1974) recorded six items from Canterbury in museum collections that he considered to be slate knives or 'ulu'. One of these, from Moncks Cave (E158.346), was unable to be relocated and another from Pareora, in the Auckland Museum (AM 33844), could not be re-examined. Two others are the disc of grey argillite from Ashburton Forks and the disc from Pareora mentioned above. The only items that appear to show any indication of being used as knives are from Connolly's Seadown, near Temuka (D75.49, D79.6609), both of which consist of flat, smooth-sided pieces of red argillite with a single worn edge.

Chronology

It is notable that all except one of the red argillite artefacts – the disc from Ashburton Forks – came from early sites along the Canterbury coast. Only a few of these sites have been securely dated, but available radiocarbon dates for Redcliffs indicate this large site complex was occupied in the fourteenth to early fifteenth centuries (Jacomb 2009), while those obtained for the Rakaia site point to occupation in the early 1300s (Jacomb 2005). Unfortunately the Pareora site has not been dated, but the fact that it contained abundant moa bone (Griffiths 1955) and also silcrete artefacts (pers. obs.), suggests that it was relatively early. Two dates from an oven at the Waihao River mouth (site J40/32) where Orchiston (1974) recorded a slate knife fragment, provide an age within the thirteenth to fourteenth centuries (Challis 1995). Red argillite has not been recorded from Panau (dated), Tumbledown Bay

Figure 6. Ornamental trolling lure hook, Rakaia River mouth (68 mm in length). Canterbury Museum E155.83

(dated), or Opihi River (undoubtedly late) and therefore it would appear that artefacts of this material were being manufactured mainly, if not exclusively, in the fourteenth to fifteenth centuries.

Discussion

The distribution of red argillite artefacts in Canterbury would appear to be closely linked to the proximity of natural sources of the raw material and it is notable that no items have been recorded in North Canterbury, or in Marlborough with the exception of a minnow shank from Ship Cove (Orchiston 1974). Only one item was listed by Orchiston from Southland (Invercargill). Evidence of actual manufacture, in the form of slabs or sawn pieces, has so far been recorded only from Redcliffs Flat and adjacent Moa Bone Point Cave, which may indicate this large site complex was the main centre of production.

Disc pendants or amulets are very rare and confined to the South Island, although none are known from Otago or Southland (Orchiston 1974). A slate disc (60 mm diameter) is recorded from Wairau Bar, along with an "unfinished specimen" made from black metasomatised argillite (Duff 1956: 128; Prickett 1999). Both of these lack a suspension hole. Several decorated discs made of serpentine have also been documented, most of which come from the upper half of the South Island, including a superb example from Banks Peninsula (Skinner 1974; Prickett 1999).

Although it seems odd that relatively brittle and easily split red argillite would be made into items such as adzes and chisels, it can be explained by the fact that the colour red (whero or kura) holds particular significance to Māori (Skinner 1974: 115; Holdaway 1984; Petrie 2011). Indeed, some items, like the decorated lure hook from Rakaia and polished discs, may have signified high social status. They could also have had some ritual or ceremonial importance and Holdaway (1984: 204) suggests these may have "either been cached with other ceremonial artefacts, or broken, possibly deliberately, as a mark of

Figure 7. Polished disc from Ashburton Forks. Canterbury Museum E138.336

Figure 8. Disc from Pareora. The notch on the lower edge may be a broken drill hole. Otago Museum D30.1134. Photo by author

their tapu status". The Rakaia lure hook was found in association with three hog-back adzes, a serpentine reel and fragment of a red argillite 'slate knife' (Duff 1955: 147), but unfortunately there is no information on the context of other finds.

Kōkōwai or red ochre was also considered to have special status (Holdaway 1984; Petrie 2011) and it is possible that red argillite could have been used as a minor source of pigment during the early period in Canterbury and Otago. Certainly the process of cutting and polishing red argillite would have produced a suitable red powder as a byproduct, although if the argillite was utilised as a pigment it seems more likely that the raw material would be crushed and ground. Currently, however, there is no evidence of this.

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Table 1. Details of red argillite artefacts from Canterbury. Site numbers are those of the New Zealand Archaeological Association Site Recording Scheme (www.archsite.org.nz). Museum abbreviations are: CM = Canterbury Museum; OM = Otago Museum; SCM = South Canterbury Museum; AM = Auckland Museum. All dimensions in mm.

Locality	Site no.	No.	Museum	Artefact type	Colour	Length	Width	Thickness	Reference
Bromley	M35/323	E159.236	CM	minnow shank	weak red 2.5YR 4/2	45	22	20	Orchiston 1974
Redcliffs Flat	M36/24	E142.276	CM	minnow shank	reddish brown 2.5YR 4/3	80	17	6	Orchiston 1974
Redcliffs Flat		E158.795	CM	sawn piece	reddish brown 2.5YR 4/3	70	24	11	new record
Redcliffs Flat		E164.916	CM	broken chisel	reddish brown	66	31	15	new record
Redcliffs Flat		2008.1108.93	CM	piece	weak red 10R 4/3				new record
Moa-bone Point Cave	M36/25	E163.599	CM	partly polished slab	reddish brown 2.5YR 5/3	137	82	26	new record
Moa-bone Point Cave		19XX.1.2919	CM	adze flake	reddish brown	65	22	14	new record
Moncks Cave	M36/47	E158.346	CM	slate knife*					Orchiston 1974
Sumner	n/a	E139.26	CM	flake off cobble	reddish brown	67	51	9	new record
Banks Peninsula	n/a	E149.713	CM	chisel	weak red 10R 4/3	57	25	7	new record
Rakaia River mouth	L37/4	E153.21	CM	chisel	reddish brown 2.5YR 4/3	93	28	10	Trotter 1972; Orchiston 1974
Rakaia River mouth		E155.83	CM	trolling lure hook	reddish brown 2.5YR 3/4	68.5			Trotter 1972
Rakaia River mouth		E167.16	CM	worked cobble	reddish brown				new record

Table 1. (continued)

Locality	Site no.	No.	Museum	Artefact type	Colour	Length	Width	Thickness	Reference
Ashburton Forks	n/a	E138.336	CM	polished disc	weak red 2.5YR 4/2	71	69	5	new record #
Connolly's Seadown	K38/13	D75.49	OM	knife?	reddish brown 2.5YR 4/3	65.8	40.3	7.5	Orchiston 1974
Connolly's Seadown		D79.6609	OM	knife?	red	62.8	43.7	7.3	Orchiston 1974
Normanby	K39/3	E278 (151)	SCM	chisel	reddish brown 2.5YR 3/3	30	15	2	Orchiston 1974
Pareora River mouth	J39/29	33844	AM	slate knife*					Orchiston 1974
Pareora River mouth		D25.1678	OM	adze	reddish brown 2.5YR 4/3	117.3	60.5	17.3	Orchiston 1974
Pareora River mouth		D30.1134	OM	disc	weak red 2.5YR 4/2	98.9	86	14.2	Orchiston 1974
Pareora River mouth		D82.650	OM	piece off chisel	weak red 10R 4/2	36.8	21.7	6	new record

*not re-examined

illustrated by Duff (1976) but not properly documented

Kinsey's Southern 'Wonderland of Ice and Snow': New Insights into Early Alpine Photography

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This article offers new insights into New Zealand's early alpine recreation and tourism heritage. It focuses on Joseph James Kinsey (1852–1936), an extraordinary yet typical Victorian gentleman of the day, and his collection of alpine photographs and related ephemera held at Canterbury Museum, which captures the evolutionary moment of the South Island's mountains' transformation into a tourist site. In 1880, Kinsey, his wife Sarah and their daughter May migrated from England to New Zealand. The Kinsey family, like many others at the time, were seeking new opportunities. Kinsey, the entrepreneur, philanthropist, collector, amateur mountaineer, photographer and businessman had boundless enthusiasm for the mountains in the province of Canterbury, a "wonderland of ice and snow." Taken when the nineteenth century gave way to the twentieth, these photos offer a valuable record of Victorian-era drama, discovery and exploration in the South Island's mountains. Today, as the South Island's glaciers recede at a dramatic rate, this collection has even more significance.

Keywords: Alpine photography, New Zealand mountaineering heritage, Sir Joseph James Kinsey, Victorian era recreation and tourism

Introduction

Canterbury Museum holds an extensive collection of more than 2,500 items collected by Sir Joseph James Kinsey (1852–1936), who arrived in Lyttelton aboard the *Jessie Readman* in 1880 with his wife Sarah and their five-year-old daughter May. Despite modest origins in England, Kinsey rose to wealth, power and respectability in the colony. His services to Antarctic exploration were recognised in 1914 by the Royal Geographic Society and again in 1917 when he received a knighthood. An obituary published in *The Press* soon after his death described him as "a man of many parts" (*The Press*, 6 May 1936: 12). Those words neatly captured his diverse range of pursuits and hint at his extraordinary drive and boundless enthusiasm. He was an entrepreneur, philanthropist, collector, amateur mountaineer, photographer and businessman, as well as a father and husband. The surviving leather-bound visitor books from the Kinsey homes in Christchurch (Warrimoo) and Sumner (Te Hau o Te Atua) reveal the breadth of his connections. His guests included Antarctic explorers like Robert Falcon Scott and Ernest Shackleton, and distinguished writers such as Mark Twain, Blanche Baughan, Arthur Conan Doyle and George Bernard Shaw. He was a resourceful and creative networker whose links reached out across the British Empire.

This paper draws on Kinsey's photographic collection to explore his role in alpine photography, interest in mountaineering and enthusiasm in promoting the Southern Alps as a recreational destination. We also examine Kinsey's friendship with New Zealand's early

explorers, amateur climbers and climbers from overseas, and consider his significance as an advocate for his province. Kinsey's photographs also present a documentary record of late nineteenth-century climbers, their equipment and the appropriate apparel and behaviour expected of a Victorian gentleman and a Victorian lady climber. In highlighting themes of gender, respectability and sartorial theatre, we provide windows through which to understand Kinsey's conduct, while our examination of his previously undocumented contribution to the fields of early alpine photography and mountaineering allow us to enrich contemporary commentaries with a new viewpoint.

Contributions to the Historical Records on Climbing

The history of climbing in New Zealand has been well documented by a number of writers and historians. Early publications written by key climbers and members of the New Zealand Alpine Club such as Arthur Harper, George Mannering and Malcolm Ross recorded events as they happened, offered advice on the equipment required for climbing and gave instruction on the use of cameras (Mannering 1891; Ross 1894; Harper 1896). Australian climber Freda du Faur, the first woman to ascend Aoraki/Mount Cook, also contributed to New Zealand's early mountaineering folklore in her notable 1915 publication *The Conquest of Mount Cook and other climbs* (du Faur 1915). Later, authors recorded the histories not only of successful climbs and climbers but also of the pioneer alpine guides and explorers. These people compared the conditions of climbing in Europe to climbing in the New Zealand Alps as access to the latter improved and purpose-made equipment imported from overseas became available. Among important works adding to current historiography are those of John Pascoe (1959, 1983) and Graham Langton (2006). Kinsey's contribution to this literature cannot be denied. Correspondence showcasing his keen interest in mountaineering along with the photographs and mountaineering paraphernalia, including ice axes, climbing ropes, rocks and plants that he bequeathed to Canterbury Museum, continue to inform work directed towards documenting the history of climbing in New Zealand and Kinsey's role in it.

These archived materials also provide evidence of Kinsey's loyalty to and his promotion (in most cases) of the people he met and admired during his climbing ventures. Letters to and from climbers Arthur Harper (1865–1955), Malcolm Ross (1862–1930), Jack Adamson, Jack Clark (1875–1914), Edward FitzGerald (1871–1931) and Matthias Zurbriggen (1856–1917), dated from 1886 to 1907, describe efforts to explore routes into the Alps from the West Coast and various climbs around the Aoraki/Mount Cook region. Taken together, the letters confirm Kinsey's strong interest in the early exploration of these areas (Kinsey Papers, Canterbury Museum 1947.55.1). His many correspondents, and not just those interested in climbing, frequently asked him for favours and are therefore indicative not only of his influence with his peers and in government matters but also of his acumen for business exchange.

Kinsey's correspondence also contains further evidence of his passion for collecting all manner of items associated with his interests, including of course climbing in the mountains. His collections of alpine photographs, mountaineering equipment and geological specimens, the pleasure he took from these acquisitions, his sense of self in his relationship with them and his determination to achieve a measure of control over the environment give added insight into his activities and behaviours. These collections, and his photographic collection in particular, show the range of his collecting practice and his persistence in acquiring the finest examples.

Canterbury Museum and various individuals benefited in many ways from Kinsey's generosity, but that generosity

was in part indicative of his aspirations for recognition, respect and status. Members of the Antarctic expeditions used his darkroom, and his photography collection includes copies of negatives by Herbert Ponting, Edgar Evans, Frank Hurley and Edward Wilson. Kinsey's taste for adventure, his entrepreneurial inclination, sense of fun and interest in newsworthy events and people of note lay behind his association with mountaineers from overseas. His motives for joining the climbing expeditions he embarked on with overseas climbers Edward FitzGerald, Matthias Zurbriggen and Giuseppe Borsalino, the latter from Italy, were a combination of all the above traits. But most importantly his desire to prove climbing in the Southern Alps of New Zealand equalled the merits of climbing in the European Alps was a motivating factor in his association with overseas visitors. Kinsey's pride in colonial New Zealand was unmistakable to all who met him.

The Beginnings of Kinsey's Alpine Photography

New Zealand's photographic history has been well documented and surveyed by a number of notable experts. Photo-historian Hardwicke Knight (1971), who wrote numerous books on the technical and social history of photography and a collaborative history by William Main and John B Turner (1993), follow the development of the pioneer photographers from the 1840s. Recent work by David Eggleton (2006) builds on the earlier histories, contributing to an ever-growing interest in the visual arts. Chris Brickell (2012) looks closely at men in nineteenth-century New Zealand redefining the accepted notion of masculinity. Athol McCredie (2015), researcher, photographer and curator of photography at The Museum of New Zealand Te Papa Tongarewa, explores the reason the images he has chosen for his book were taken and their intended use. McCredie's analysis is valuable as he unravels history from the 1850s to the present. In their important edited collection *Early New Zealand Photography, Images and Essays* (2011), Angela Wanhalla and Erika Wolf take a different approach, emphasising the materiality of colonial photographs and the significance of interpreting the photo object. In her essay, 'Chance Residues', historian Bronwyn Dalley (2006) examines the way photographs can be used to investigate social history and to understand the past. These texts are of use in defining Kinsey's role as a photographer, in comparing his photographic practice with those of his contemporaries and the value of his collection.

As is evident from the numerous photographs taken by him in the Canterbury Museum collection, Kinsey was a skilled amateur photographer. Kinsey's photographs captured scenes and people in Christchurch, picnicking in Canterbury, expeditions into the Southern Alps and climbing in the Aoraki/Mt Cook region. His friendship with banker George E Mannering (1862–1947) may have helped spark his interest in both climbing and mountain photography. Mannering was a member of the Alpine Club, London, established in 1857, and a key founding member of the New Zealand Alpine Club, founded in 1871. His ability as an alpine photographer and his contributions to newspapers and booklets were extensive, and his accomplishments in the 1880s and 1890s as one of New Zealand's first amateur climbers were comprehensive and inspiring (Fig. 1) (Mannering 1891). The easy camaraderie between him and Kinsey is clearly visible in photographs taken at Kinsey's home on Papanui Road, where they experimented in the darkroom (Fig. 2).

Kinsey captured mountain scenery on camera using a whole plate model called The Ruby, produced by the Thornton Pickard Company from about 1890 to 1907. The wooden folding field camera could also be used as a hand camera. And because it was durable, light to carry and could produce excellent photographs, Kinsey recommended it to tourists as the most appropriate and convenient camera to take on their journeys (Knight 1971:

Figure 1. Joseph Kinsey with kea. Kinsey Collection, Canterbury Museum 1940.193.230

157). Its resilience was tested on a trip Kinsey took that encompassed Lake Pukaki, the Hermitage at Aoraki/Mount Cook and Ball Hut when the coach Kinsey was travelling in broke down. According to an account by Jack Clark published in *The Press* (21 May 1895: 2) the party travelled on over rough moraine and were fording the Hooker River when one of the horses with its pack attached bolted and fell into the river. Although considered light, the camera without the turntable and shutter still weighed two and three-quarter pounds and a box of one dozen dry plates weighed two and a quarter pounds (Knight 1971: 158). Canterbury Museum's Kinsey holdings include a large number of his glass plates of various sizes, as well as numerous boxes filled with lantern slides, a range of photograph albums (not necessarily compiled by Kinsey), and his family's *Day Book*, spanning 763 pages and including images of numerous mountain expeditions. Many of the identifiable negatives have been exposed and reside in other files, for example, the Alpine and Antarctic folders where the images have been arranged in subjects and are the collections of not only Kinsey, but of many photographers.

Identifying Kinsey's Images

Some of the photographs Kinsey included in the collections he gave to Canterbury Museum are easy to identify as his because he labelled them. One such is a photograph of the interior of Ball Hut (Fig. 3), taken during the trip just described. Prominent in the centre of the photograph is the bag over which he stencilled "J. J. Kinsey" (6). The reason for this number is unclear. Propped up on the right hand side of the floor is another item with Kinsey's name

Figure 2. Joseph Kinsey and George Mannering in Kinsey's home-based darkroom. Kinsey Collection, Canterbury Museum 1940.193.12, p267

on it. One of the men accompanying Kinsey, alpine guide Jack Clark, described the interior of the hut as presenting:

> *a better appearance than usual, from the fact that the party had a lady with them, whose womanly instinct introduced order and insisted upon it being observed in the house. The leg of mutton was from a sheep that had been packed up the Tasman some ten days previously, and which had been frozen and stored in one of many of Nature's own 'freezing works' to be found in the locality* (The Press, 21 May 1895: 2).

The "lady" Clark referred to was Kinsey's daughter May who, in Clark's opinion, deserved credit for her "pluck and endurance as a climber" (*The Press*, 21 May 1895: 2). In this largely male domain, the jar of Mount Cook lilies in the bunk room was no doubt considered a feminine touch, although Clark's comments about Miss Kinsey suggests he approved of the orderly influence she brought to the venture.

Ball Hut, a 14 mile walk from the Hermitage, was a small corrugated-iron building divided inside into two sections by a canvas curtain devised to separate the men's quarters from the women's. In the male-dominated sport of climbing, Victorian conventions and ideas of morality dictated that women climbers be accompanied by a chaperon or family member. For May, her father's company overcame any objections to her presence. Ball Hut measured 19 feet long by 12 feet wide. The hut's spartan furnishings included a table, packing cases, a stool, canvas bunks, mattresses or chaff bolsters, pillows, blankets, a box cupboard, enamel plates and mugs. The floor was paved with morainic stones.

Giuseppe Borsalino expressed his disappointment on his arrival at Ball Hut 2 years later with Kinsey and May. He had expected to find a mountain hut similar to those in Switzerland, "with comfortable bunks, seats, a fireplace and chimney" (*The Weekly Press*, 30 October 1897: 11). May agreed that the living there was "a little hard, yet the bunks and bedding are good, and it is an excellent shelter and far in advance of having to live and sleep in tents." An old oil drum outside served as a stove.

Two other images, from 1894 and included in the 30 October 1897 *The Weekly Press* article, present additional examples of Kinsey's stencilled labelling. Captioned *A Welcome Sunbath*, the first photo shows May, Borsalino and Zurbriggen relaxing outside Ball Hut after a snowstorm had kept them inside for several days. The image that appeared in the article appears to have been edited, with the label eliminated, but the second photo (Fig. 4), taken on the same occasion and featuring Kinsey, Borsalino and Zurbriggen, clearly displays the label "J. J. Kinsey, The Hermitage, Mt Cook 2". This photograph would have been set up by

Figure 3. Interior of Ball Hut during Kinsey's stay there in May 1895. Kinsey Collection, Canterbury Museum 19XX.2.5309

Kinsey and most likely taken by May.

Another photograph in the Kinsey Collection is labelled as a J J Kinsey photograph and did appear in May Kinsey's contribution (titled *Samples of our Alpine outfit*) in *The Weekly Press*'s special Christmas edition of 1897, but it is credited to Jack Adamson, Manager of the Hermitage, in his biography *The Spirit of Mountaineering* (Hobbs 2007: 150) (J J Kinsey Collection, alpine sundry, Folder 11, Negative 6422). The image (Fig. 5) was taken during a visit to the Hermitage when Adamson would have been busy with guests. It's possible that Kinsey and friends arranged the display and that Adamson took the image. Adamson had established a darkroom at the Hermitage, which he generously shared with his visitors, but he claimed that some of his original slides went missing from there and were later printed in other mountaineering books.

It seems likely that mistakes over identification did occur and continued to occur, with the sharing of negatives contributing to this situation. On one occasion Adamson took a photograph of W A Kennedy and three other cyclists who had ridden to the Hermitage and then sent the plates to Kinsey to be developed. Kinsey may have kept copies of the images, even though in this case it was clear who the photographer was. The collection of mountaineering photographs that comprise the Kinsey Collection therefore includes not only Kinsey's work but also the work of his friends and others whom he admired. The reverse is also evident. The W A Kennedy collection at Canterbury Museum, for example, includes some of Kinsey's images.

A map of Aoraki/Mount Cook was used as

Figure 4. Joseph Kinsey, Signor Giuseppe Borsalino and Matthias Zurbriggen, Ball Hut, 1894. Kinsey Collection, Canterbury Museum 19XX.2.5308

a focal point in two further images taken at the Hermitage, but by whom is uncertain. In the first image (Fig. 6), labelled *Studying Mt Cook and its Glaciers*, a person, most likely Kinsey, is shown seated on a chair close to a wall, with his back facing the camera. His raised legs lean against a wall above him as he studies the map between his legs. In another photograph which is simply called *Its Effects* the ice axes replace the splayed legs in the first photo (*The Weekly Press*, 30 October 1897: 11). While Kinsey's wit is easy to detect, it does not necessarily serve as a means of identifying the work as his, and indeed could have been taken by May.

Sharing the Photographs

Evidence of the quality of Kinsey's photography was further confirmed by requests over the years to use his images during lectures or to illustrate articles in prestigious periodicals. In 1894, for example, W Herbert Jones, a visiting lecturer from the Royal Geographical Society of England, London, requested slides of the Southern Alps from Kinsey. Previously, Jones had supported his lectures with slides taken by mountaineer E A FitzGerald, but he considered these images "too dense" and unfocused (*Taranaki Herald*, 23 July 1894: 2). In return for the use of Kinsey's slides, Jones

Figure 5. *Samples of our Alpine outfit*, 1895. Kinsey Collection, Canterbury Museum, alpine sundry, Folder 11, Negative 6422 1/4, 1940.193.12.

Figure 6. *Studying Mt Cook and its Glaciers*. A gentleman assumed to be Joseph Kinsey sitting in front of a map of Aoraki/Mount Cook. Kinsey Collection, Canterbury Museum 1940.193.235.

promised to give him the best slides he could find of alpine subjects. Another example is that of two of Kinsey's photographs which appeared in "The People's Parks and Playgrounds", an article written by Edith Searle Crossman and published in 1901 in *New Zealand Illustrated Magazine* (1901: 386–388). The images featured Broderick's Hut near the head of Talisman and a view of Mount Sefton and the Moorhouse Range.

In 1900, Leonard Cockayne, a botanical research scientist, contributed a chapter to a book written to mark the fiftieth jubilee of Canterbury province. Cockayne titled his chapter 'A Glimpse into the Alps of Canterbury' and illustrated it with five of Kinsey's mountain photographs (Cockayne 1900). He also referred to the article Kinsey had written for the 30 October 1897 edition of *The Weekly Press*, commenting as he did so on the "splendid set of photographs" used to illustrate the "excellent general account". Like Kinsey, Cockayne believed not only in the protection of New Zealanders' "grand heritage" but also in the value of promoting the Alps as a tourist destination. For Cockayne:

> *Mountains are the noblest recreation ground, the finest school for physical and moral training, a source of perfect health to those who visit them, and a place of all places for enlarging our minds by the study of nature in Nature's greatest laboratory* (Cockayne 1900: 215).

In agreeing to supply photographs for the chapter, Kinsey endorsed Cockayne's views.

Another publication complemented by Kinsey's images was *Snow Kings of the Southern Alps*, written in 1910 by Blanche Baughan, a neighbour of Kinsey's on Clifton Hill from 1910 to 1930. Two years earlier, in 1908, Baughan's essay 'The Finest Walk in the World' had appeared in the London *Spectator* and led

Figure 7. *On the Great Tasman Glacier*, 1910. Kinsey photograph reproduced from Baughan (1910)

to a series of similar essays published in booklet form, one of which was 'Snow Kings'. *On the Great Tasman Glacier* (Fig. 7) from that earlier publication (1908: 47) is a particularly fine example of Kinsey's mountain photography and today provides evidence of the extent to which the glacier has retreated. *The Press* also recognised the booklet's value, describing it as "admirably adapted for sending to friends at a distance as a souvenir of New Zealand" (23 December 1911: 7).

Baughan wrote 11 travel books between 1908 and 1929. Historian Anne Maxwell had this to say of her:

> *Given her leading role in the 'Māori land' school of writing and her longstanding commitment to forging a distinctive style of literature for the new nation, it is reasonable to suppose she was looking for images that would be constitutive of national identity* (Maxwell 2011: 149).

Maxwell also observed that Baughan accorded the photographs she chose to illustrate her books with further national significance by choosing images of well-recognised tourist spots taken by New Zealand photographers (Maxwell 2011: 151). The iconic nature of Kinsey's images made them the perfect choice for such a project. The sense of place portrayed in them showcases his profound connection with and understanding of the Southern Alps, while his willingness to see them published made obvious his sincere desire to promote the area. He took pleasure in sharing his images and would have found the ensuing publicity promoting the Southern Alps gratifying.

Kinsey often shared his passion for the mountains with guests by conducting lantern slide shows that featured his images. He offered his slide shows not only in his home but also in public places. When, for example, the H.I.G.M.S. *Buzzard*, a German warship, visited Lyttelton in March 1895, Kinsey played

Figure 8. *Aoraki/Mount Cook, 1896.* J J Kinsey photograph. Kinsey Collection, Canterbury Museum 19XX.2.5307

a part in the crews' entertainment. According to a reporter from *The Press*, his series of alpine slides presented the visitors with "a very good idea of Glacierland" (4 March 1895: 5). For Kinsey the photographer, converting the "wilderness to the scenic" in this way suggests a desire to master the environs of the Alps. In author, mountaineer and photographer John Pascoe's view, "Indifferent technique, ignorance of retouching, and disregard for orthodox composition are less than crimes if the photographer has the imagination to give sincerity to the vitality of the scenes and peoples he records" (Brasch 1947: 302). Although Kinsey was not a professional photographer, he was singularly able to capture and convey to others the atmosphere of the Alps. His energetic approach, feeling for the land and skill in avoiding the "crimes" that Pascoe alluded to combined to produce outstanding images.

Kinsey also communicated his love of the mountains in words. An 1897 article from *The Weekly Press*, for example, vividly expresses his desire to share his admiration of Aoraki/Mount Cook, which he photographed many times in different light and weather conditions (Fig. 8). It also reveals the way he identified with the mountain's allure when photographing it and the awe he sensed in its presence:

> *… the monarch of our New Zealand Mountains opens out and Mount Cook with its three peaks and tent shaped sides introduces itself to the impatient and curious traveller. How lovely, how interesting this giant looks! It seems to say, "Here I stand alone, will no one come and admire my incomparable beauties?"* (*The Weekly Press*, 30 October 1897: 2).

Involvement with other Mountaineers

Despite his interest in climbing, Kinsey was not a member of the New Zealand Alpine Club established in July 1891. Although he photographed and was photographed with key members of the Club, particularly Harper, Ross and Mannering, and shared common interests and corresponded with them, his name was not on the members list (Mannering 2000: 196). It is his correspondence that verifies his active interest in the affairs of the club. These letters, along with correspondence between other climbers and explorers, give a sense of the issues of the time and the concerns of the men involved. They also reveal a great deal about the personality of the writers and their relationships. The convoluted exchange of opinion in letters to newspaper editors written by some of these men is a case in point.

In the mid-1890s, the Secretary of the New Zealand Alpine Club, Marmaduke Dixon, published articles in the *New Zealand Alpine Journal* and wrote a letter to the editor of *The Press* that caused dissent among some of the club's members.[1] The tenor of Dixon's articles was also evident in the letter, written shortly after three young men (Jack Clark, Tom Fyfe and George Graham) became, on Christmas Day 1894, the first party to successfully summit

Aoraki/Mount Cook:

> *The very name of Mount Cook is so hackneyed, and it is so shorn of its glories from a climbing point of view by Mr Green, and the ice staircases which exist cut on to the very ice-caps by his followers, that Mr Fitzgerald will regard it only like walking up a high to follow Mr Green's route … So well known and so simple is Mr Green's route that it is quite possible Mount Cook will be climbed by ladies in the near future* (*The Press*, 28 December 1894: 3).

Dixon also censured the "unsportsmanlike" use of crampons by "foreigners": "Had we employed these instruments Mt Cook would not have waited until Xmas Day 1894 to be topped." A reply to Dixon's letter appeared in *The Press* on 21 January 1895. Written by "Mountaineer", it refuted many of Dixon's assertions and pointed out Dixon's own failure to climb Aoraki/Mount Cook. According to Mountaineer, Dixon's letter was a "case of sour grapes".

In September 1895, Malcolm Ross sent Kinsey a copy of a letter addressed to the editor of the *New Zealand Alpine Journal* and signed by members of the Alpine Club (Kinsey Papers, 55/47, Box 1, Folder 3/73, Canterbury Museum). The letter criticised Dixon's articles. Dixon's commentary, they said, was contradictory, incorrect and unjust. As Ross stated in his letter to Kinsey, the January 1895 letter to *The Press* signed "Mountaineer" had seen Dixon's statements "literally torn to tatters" and consequently caused speculation about who Mountaineer was. On 7 February 1895, Dixon wrote to Norman K Cox, accusing him of being the author, but Cox denied authorship and also declared that it was not written by Tom Fyfe or George Graham, the conquerors of Aoraki/Mount Cook (Cox correspondence, ARC 1991.72, Folder 1060, Canterbury Museum). Kinsey then became the obvious suspect. Ross, who had obviously seen the letter Dixon wrote to Cox, paraphrased Dixon's indignation in another letter to Kinsey dated 22 March 1895:

> *The latest thing is that Mr. Kinsey is the author of the letter signed 'Mountaineer' that appeared some time ago in the Christchurch Press. Mr Kinsey always does make a muddle of things, and it is just like his cheek to poke his nose into matters he doesn't know anything about. It has all come about since the visit of FitzGerald. Mr Kinsey never took any interest in alpine climbing till FitzGerald arrives – but the reason is not far to seek – Mr Kinsey has a marriageable daughter! Thus Mr M. J. Dixon fumed in a letter to Fyfe, of which I have been favoured with a perusal. It is not verbatim et literatum (except the last sentence) but that is the gist of it. Poor Miss Kinsey – I am sorry for her.… This of course is quite confidential* (Kinsey Papers, 55/47, Box 1, Folder 2/49, Canterbury Museum)

While Ross's sympathies appear to have been with Kinsey, there is an underlying feeling that he may have been fuelling the situation further by duplicating parts of Dixon's letter.

Edward FitzGerald's arrival in New Zealand from Britain in 1894 with Swiss guide Matthias Zurbriggen obviously added to the conflicts plaguing the New Zealand Alpine Club between 1894 and 1896. It prompted the local climbers to attempt to summit Aoraki/Mount Cook in December 1894 just before FitzGerald set off from Christchurch for the Hermitage in January 1895. As noted earlier, Tom Fyfe, Jack Clark and George Graham realised that ambition on Christmas Day 1894 and that they did may have been because they and other members of the Alpine Club did not trust FitzGerald's assertion that he would respect the locals' claim to any unclimbed peak. Marmaduke Dixon seemed to be in two minds about FitzGerald's true intentions: "I do not think FitzGerald has any intention towards Cook," he wrote in a letter. "He has volunteered to respect our claim to any peak or peaks – but I'll not ask him to – I'll just

Figure 9. The FitzGerald party, which included Kinsey and daughter May, on their way to the Hermitage. J J Kinsey photograph. Kinsey Collection, Canterbury Museum 1940.193.227

explain and leave it absolutely to his good taste" (Box 49, Folders 1059–1068, Arc 1991.72, 5, Canterbury Museum).

It seems that FitzGerald did mean what he said. In May 1895, the *New Zealand Alpine Journal* published an article titled 'Mr. E. A. FitzGerald's Work in New Zealand'. It was introduced by the journal's editor, who advised:

> *Before leaving the colony Mr FitzGerald very kindly placed a copy of his journal at our disposal, and we print in this issue copious extracts describing his ascents ... His journey to the Hermitage was marked by many vexatious delays, owing to the poor arrangements for the conveyance of a large party with heavy impedimenta* [Fig. 9]. *He was accompanied by his guide, Matthias Zurbriggen, Messrs. Barrow, Ollivier, Kinsey and Miss Kinsey, and was met on arrival at the Hermitage by Mr. G. E. Mannering. Mt Sefton was the first peak chosen for an assault, and on January 11th, after a week's bad weather, a start was made* (*New Zealand Alpine Journal II*, 7: 39).

The only other mention of Kinsey and his daughter in the account is the advice that they returned to Christchurch a week on from 11 January, leaving Mannering, Adamson, Ollivier and Zurbriggen as part of FitzGerald's climbing party. After another bout of bad weather, FitzGerald, Zurbriggen, Barrow and Jack Clark successfully ascended Mount Sefton on 24 January 1895. They returned to the Hermitage and the following day Clark rode 50 miles to send a telegram to Kinsey asking for more supplies (Langton 2011: 46). With his influence and experience in arranging and supplying cargo for shipping, Kinsey was in his element.

FitzGerald, recognising Kinsey's procurement skills and generosity, readily took advantage of his willingness to assist the visiting climbers. While at the Hermitage, FitzGerald, having encountered a camper who had been holidaying there and was about to return to Christchurch:

> *… took the opportunity of sending off a batch of mail letters by him and a roll of Eastman films, which I had exposed on Mt Tasman and Haidinger. These last I sent to Mr Kinsey in Christchurch, as he had kindly offered to develop them for me* (FitzGerald 1896: 190).

On his return to Christchurch, FitzGerald again called on Kinsey's friendship:

> *I remained in Christchurch a few days developing my numerous photographs in Mr Kinsey's darkroom, which he very kindly placed at my disposition, [sic] with his assistance. It is, in great measure, owing to the skill and care with which he has developed these photographs for me that I have been enabled to bring out such comparatively good results with so small a camera … As I was stopped one*

> *evening at Mr Kinsey's house, after having developed a number of these photographs, a ring came at the telephone bell and the following message was delivered – 'News just received that Zurbriggen ascended Mt Cook'* (FitzGerald 1896: 322).

Fitzgerald's book *Climbs in the New Zealand Alps: Being an Account of Travel and Discovery*, published on his return to Britain, exaggerated his achievements and included descriptions that often proved to be inaccurate (FitzGerald 1896). His writing also echoed his often arrogant treatment of the locals while he was in New Zealand and his disdain of their achievements, which had done little to endear him to New Zealand's mountaineers. A letter that Ross wrote to Kinsey on 12 February 1895 suggested FitzGerald thought of his companions as hangers-on (Kinsey Papers, 55/47, Box 1, Folder 2/33, Canterbury Museum). He'd apparently referred to Fyfe as a "dammed plumber" and stated that he'd rather the first ascent of Aoraki/Mount Cook had been made by a "gentleman". Further evidence of FitzGerald's disparagement of the New Zealand climbers came in a letter he wrote to Kinsey just a few days after the one Ross had written. In his letter, FitzGerald told Kinsey that "he found Clark useless" (Kinsey Papers, 55/47, Box 1, Folder 2/36, Canterbury Museum)

Although most of FitzGerald's travelling companions came from a similar social standing, he regarded them as inferior, an attitude he shared with other British climbers. Climbing at that time was an elitist activity and the British climbers saw themselves at its apex. With all the characteristics of a London-based gentlemen's club, the British Alpine Club's register represented mountaineering as a genteel sport with a membership drawn from the professional middle classes. To be eligible for election, prospective members had to possess "experience in climbing in the Alps or evidence of literary or artistic accomplishments related to mountains" (Hansen 1995). But the New Zealand climbing community was not immune from these attitudes. Despite being the first to reach the summit of Aoraki/Mount Cook in late 1894, Fyfe and Clark were unable to join the New Zealand Alpine Club because they did not qualify as gentlemen climbers. Labourers and part-time paid guides had also been excluded from the club since 1895 (Langton 1996).

FitzGerald considered Aoraki/Mount Cook to be an easier climb than the other peaks he tackled in the Southern Alps. These mountains included Mounts Silberhorn, Sealy, Tasman and Sefton, and he stated that he sought to scale "virgin peaks only" (*The Press*, 15 March 1895: 5). The easy camaraderie and generosity Kinsey displayed towards FitzGerald may have been tainted by the controversy created by the release of FitzGerald's book the following year, but Kinsey's humour regarding FitzGerald is obvious in a telegram he sent to Ross after Zurbriggen reached the summit of Aoraki/Mount Cook on 14 March 1895: "Zurbriggen climbed Cook accompanied part way by Adamson. What will Fitz say – he only tackled virgin peaks. Kinsey" (Kinsey Papers, 55/47, Box 1, Folder 2/35, Canterbury Museum). Zurbriggen's was the second successful ascent of the mountain and the first solo ascent. A year later, in February 1896, Zurbriggen returned to New Zealand as a guide for Italian climber Signor Giuseppe Borsalino. Kinsey and daughter May accompanied them on their trip south to the Hermitage.

Enticing Tourists

Information on the mountains, climbing and exploration of the Southern Alps was generally published in surveyors' scientific papers or in government records. Tourist publicity was limited. Consequently, in October 1897, when *The Press* advertised that the Christmas issue of *The Weekly Press* would include a comprehensive illustrated article on Aoraki/Mount Cook and its glaciers, the article was enthusiastically anticipated.

> *A magnificent set of alpine views, from copyright photographs, together with specially written descriptions by Mr and Miss Kinsey of Mount Cook and its Glaciers. By which the Beauties of our Southern Alps in general, and the Monarch of New Zealand mountains in particular, will be pourtrayed [sic] in a manner never previously attempted. The Achievements of Alpinists in New Zealand will be summarised, the Humours of Alpine Travelling illustrated, and all information given that is likely to be useful to tourists, making the Number an Invaluable Guide, whether to New Zealanders or Strangers* (*The Press*, 21 October 1897: 4).

A Christchurch *Press* review of the article on the day it was published in *The Weekly Press* commended the humour, energy and obvious enthusiasm of the photographers Mr and Miss Kinsey (*The Weekly Press*, 30 October 1897: 7). One only has to read the first paragraph of Kinsey's narrative in the article to agree with the reviewer's comments: "Where shall we go for our holiday?", asked Kinsey. "To the Hermitage, Mount Cook? Oh no. It is such an awful place to reach and the Glaciers! They are frightfully dangerous! And the privations one has to suffer! Oh no, let us take a quiet three weeks at Sumner." As an alternative to the dramas described by "alpine heroes", Kinsey set out to encourage the "ordinary holiday maker" to visit the mountain region. His text focused on the history of the region, methods of travel, and accommodation, but his description of crossing the suspension bridge over the Hooker River was more likely to have deterred than encouraged tourists: "when the structure begins to oscillate or undulate … the person becomes so terror-stricken that he remains stationary in the centre of the span, clutching the life lines lest the next step should precipitate him into the roaring torrent below" (Fig. 10).

Kinsey's description of crossing the Hooker feeds into the impression of alpine travel he berated in his opening paragraph. But he was being ironic. As he commented, most people who visit the mountains feel obliged to write a book or newspaper article describing "terrifying experiences, hair-breath escapes; roaring torrents, crevasses … horrifying records to establish themselves for evermore as 'alpine heroes'. … [S]uch an absurd fallacy," he continued, "should at once be exposed", thus allowing tourists to enjoy a trip to Aoraki/Mount Cook and its glaciers knowing what the "ordinary holiday maker may expect to experience." And if his words still failed to convince, then he could leave it to his photographs to fully express the beauty of the mountain's scenery and entice visitors to them.

May Kinsey was just as keen as her father to promote the mountains as a tourist destination. Her detailed account of the trip she made with her father, Zurbriggen and Borsalino in 1896 published in the special Christmas 1897 edition of the *Weekly News* was one she hoped would persuade readers to consider a holiday in the "wonderland of ice and snow". She supported her article, which followed on from her father's contribution, with 41 photographs from her visits to Aoraki/Mount Cook and its environs. Her humour matched Kinsey's as she described the party's exploits and the images she chose served to illustrate comical happenings. Like her father, she endeavoured to show that while trips into the mountains required some rigour, they also offered fun and adventure. One of her photographs, titled *In Difficulties*, depicts Ollivier carrying FitzGerald ashore from the coach in the Forks Stream. Another photograph shows Ollivier carrying Barrow ashore (Fig. 11).

Several photographs in the article under the banner *Shearing Time* presented a comedic study of hair-cutting both in preparation for and during the Kinseys and their companions' sojourns in the mountains. They also show that travellers to the mountains could maintain appearances while there, as evident in Figure 12, which portrays May cutting her father's hair. This photo was juxtaposed with one showing Kinsey cutting May's hair (Fig. 13), although

Figure 10. *Crossing the Hooker River*, 1890. Kinsey Collection, Canterbury Museum 1940.193.62, p139

Figure 11. Arthur Ollivier ferrying Joseph Kinsey across the Hooker River. Kinsey Collection, Canterbury Museum 1940.193.12, p519

Figure 12. May and Joseph Kinsey. Kinsey Collection, Canterbury Museum 1940.193.12, p533

Figure 13. May's turn to have her hair cut – by her father. Kinsey Collection, Canterbury Museum 1940.193.12, p264

Figure 14. Barber George Mannering and Joseph Kinsey. Kinsey Collection, Canterbury Museum 1940.193.12, p254

Figure 15. *Barber Malcolm Ross*. Kinsey Collection, Canterbury Museum 1940.193.12, p254

in this case it seems the over-large scissors may have been intended for another purpose such as shearing sheep. Together, the two photos confirm Kinsey's tongue-in-cheek wit.

Hair cutting was a favourite photographic theme for Kinsey and his friends, perhaps not only because of the amusing aspects of cutting and shaving rituals but also because of the serious attention men dedicated to grooming and their noticeable interest in personal appearance. Victorian references to the "beard movement" recognised a striking change in the appearance of men. Writers promoted this new masculine image as a mark of masculine authority and men's superiority over women (Oldstone-Moore 2005). Kinsey often posed, his bald head lathered, with a barber whose scissors were open and ready for action. Figure 14 depicts George Mannering and Kinsey, with the action held steady ready for the photograph to be taken. Figure 15 shows Malcolm Ross as the barber.

Setting the Scene and Social Standing

The alpine photographs in Kinsey's collection are a valuable resource not only because they provide a unique window into the social life of his climbing associates and their adventures but also because they illustrate his determination to promote the Southern Alps to others. Many of his photos therefore have a staged look and that look was deliberate on Kinsey's part. He wanted others to see the mountains as he saw them and to appreciate what he knew they offered visitors and adventurers. Figure 16, for example, taken on an ice face of the Tasman Glacier, depicts a climbing party, ice axes poised, carefully posed on ice steps, probably cut by their guide Jack Clark. The fashionable attire of the climbers and the presence of women in the party readily suggest the accessibility of the glacier.

Careful staging may not always have conveyed the impression Kinsey hoped for. In Figure 17, which depicts the arrival of Kinsey,

his daughter May, Claude Barrow, FitzGerald, Zurbriggen, Clark and Arthur Ollivier at Ball Hutt in 1895, Kinsey has called his actors to centre stage and instructed them on the poses, ones of celebration, he wanted them to present. Undoubtedly, the climbers were exhilarated by the superb views of the Tasman Glacier and the surrounding peaks, but curiously the cast's expressions lack the warmth and enthusiasm Kinsey generally inspired in his leading players.

His desired impression is more successful in Figure 18. Here, the hats raised in greeting emphasise the politeness and formality of social exchange at this time, even when out in the mountains. The staged manners also convey the continuing emphasis in the Alpine Club on mountaineering as essentially a gentleman's pursuit. Camaraderie among mountaineers is evident, too, with Kinsey introducing his guest Signor Borsalino to guide Malcolm Ross. Another feature of the photo is the Victorian gentlemanly attire on display. The three men stand in a surrounding familiar to them. Comfortable and relaxed, they are dressed for leisure in woollen suits, shirt collar and tie, ready to be scrutinised by the photographer. Borsalino's stylish Italian clothes and his elegant dark tweed jacket set him apart. Ross's neat appearance is rendered incongruous by his swag and ice axe. Kinsey has achieved a jaunty look with the addition of a scarf tied around his hat, while Borsalino, hat raised, acknowledges the introduction.

Borsalino was considered a leader in the European fashion industry and was an early wearer of the fedora hat, which originated in France in the early 1880s but was not widely worn by men until the 1920s. Men's hats during these decades were an index of social class as never before or since (Cunnington and Cunnington 1970: 340). Those being photographed generally savoured the opportunity to have their sartorial eccentricities recorded by the camera and were intent on projecting a suitable self-image. The subjects' choice of costume and accessories were an indicator of their occupational class and prosperity, and the qualities that typically mattered most were dignity, respectability and soundness.

Figure 19, posed against mountain scenery, also has all the hallmarks of tailored Victorian elegance. May's stance exudes confidence and sophistication. Although Kinsey positioned Ross below May, he is undiminished, appearing charming and debonair, cigar in hand. The two reflect their comfortable standing in an age when generally only the well-off could travel to the Hermitage for a holiday in the mountains.

Kinsey's sense of theatre and his need for control of a situation is epitomised in Figures 20 and 21. Kinsey, posed outside the Hermitage, is dressed for the occasion and he owns the space. It suggests he is calling the campers to order in the tradition of the British Army, where daily routines and events were signalled in this way. He has adopted an appropriate hat, although it is more typical of Swiss mountain dwellers. The alpenhorn and the tartan rug hint at clan membership. In her essay in *Early New Zealand Photography*, published in 2011,

Figure 16. *Kinsey party, Tasman Glacier, 1895.* Kinsey Collection, Canterbury Museum 19XX.2.5306

Figure 17. *Arrival at Ball Hut, 1895*. J J Kinsey photograph. Kinsey Collection, Canterbury Museum 1940.193.236

Kerry Hines speculated that "Dressing up for the camera may have provided an opportunity to express something of one's own identity while simultaneously imaging, presenting and enjoying oneself in different personae" (Hines 2011: 77). Although there is a playful element to many of Kinsey's photographs, they nevertheless "reflect this authentic involvement in an activity or interest". As Hines reminds us, "self-portraits of photographers play-acting and in costume date back to the earliest days of photography."

The participants in these outdoor occasions did not always perceive themselves as appropriately dressed. On the occasion of a tea party at Kea Point in 1896, the retiring Assistant Surveyor-General John Holland Baker wrote:

> *Miss Kinsey, my wife, my daughter and I took our tea to Kea Point. Mr Kinsey, Signor Giuseppe, and the two guides who had been out on the Mueller Glacier, joined us there and we had a jolly picnic and were all photographed by Mr Kinsey. This photo* [Fig. 22] *I still possess and we look the most complete set of ruffians that it is possible to imagine* (Baker 1965: 301).

Ill-dressed they may have been, but Baker's enjoyment of the occasion is evident in his comments.

Figure 23 depicts a hunting party comprised

Figure 18. Joseph Kinsey introducing Giuseppe Borsalino to Malcolm Ross by the great Tasman Glacier. J J Kinsey photograph. W A Kennedy collection, Canterbury Museum 1975.203.12345

Figure 19. Malcolm Ross and May Kinsey near Aoraki/Mount Cook. J J Kinsey photograph. Kinsey Collection, Canterbury Museum 19XX.2.4158

of Kinsey, Zurbriggen and George Mannering. The scene is a woolshed, and Kinsey, sitting on a wool bale, is characteristically at the centre of the photograph. With nonchalance, the three men pose for the camera, but none of them gazes at the lens nor are they conversing. Yet the camaraderie between them is unmistakable. Mannering, always the epitome of good taste, is wearing an ammunition belt, but the feathers in his hat and the fob chain still distinguish him as a gentleman concerned with his appearance.

The photograph also provides another indication of the construct of manliness in colonial New Zealand. As Jock Phillips explains, "the Victorian concept of manliness took on a particular twist in New Zealand, becoming associated with pioneering toughness ... the ability to be independent and capable in difficult circumstances" (Phillips 1987: 33–34). According to Phillips, hunting gave all males of this era the chance to "prove their manhood", made easier by the fact that hunting was initially not subject to game laws. From 1861, however, both exotic and introduced fauna became progressively protected from hunting under government legislation, with that progression strongly influenced by "game hunters, or sportsmen as they preferred to be known" (Aramakutu 1997: 121–122). Their influence sought the "preservation of sport for the colonial gentry", but by 1910 "every indigenous bird was protected absolutely in New Zealand unless it was exempted by Order in Council" (Aramakutu 1997: 2). Phillips also stresses the role that "yarning" (telling stories) and singing ballads played in building a "strong male culture" (Perkins and Cushman 1993: 25). The bonhomie between the three men in Figure

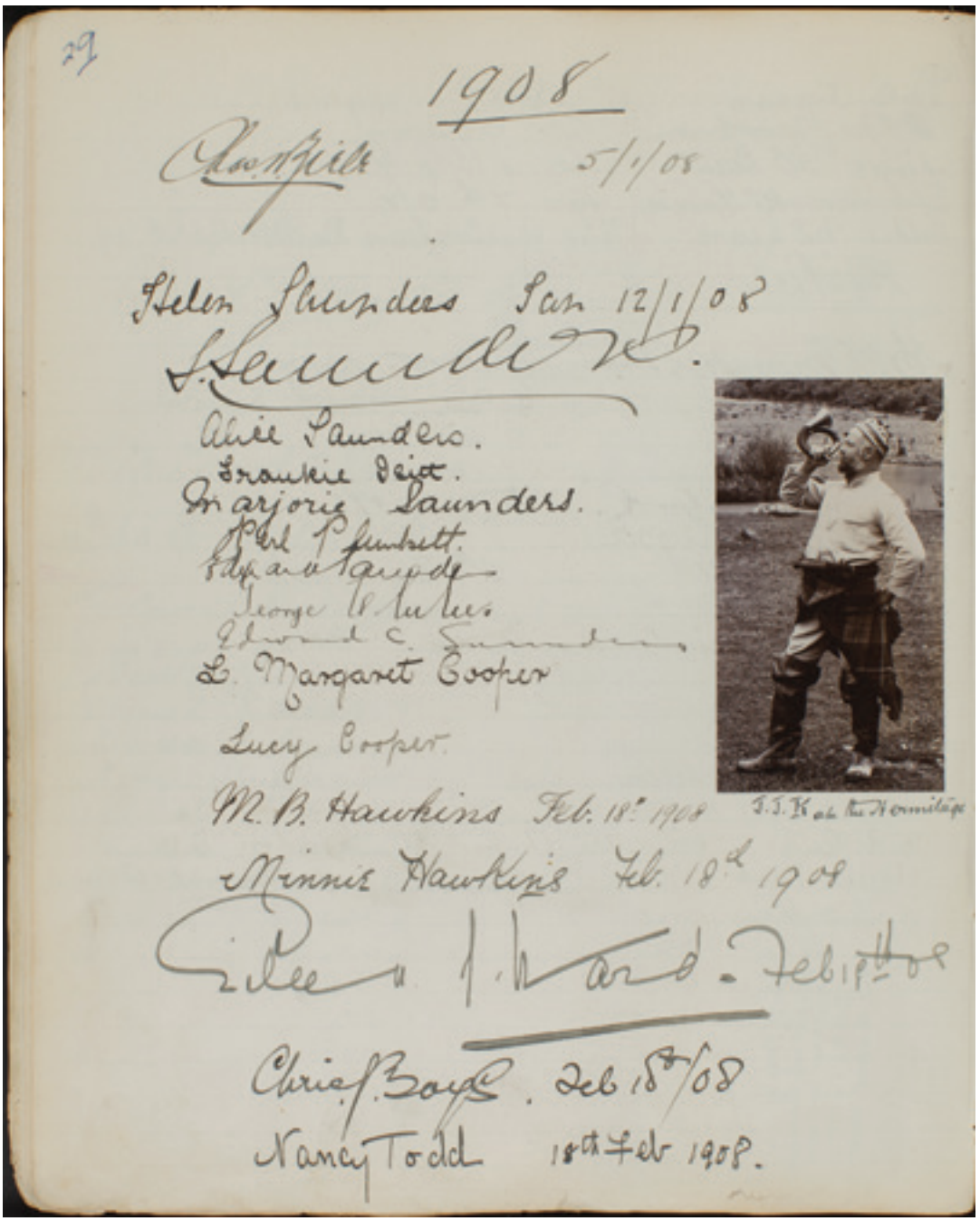

Figure 20. Joseph Kinsey. J J Kinsey photograph. Warrimoo visitors' book 1903–1913, Kinsey Collection, Canterbury Museum 1940.193.68, p29

23 is clear, and they undoubtedly yarned in the evening over dinner, with Kinsey, as was his habit, producing the vocal entertainment.

The eight triumphant climbers in Figure 24 have just arrived at the summit of Mount Torlesse, generally considered a straightforward climb and therefore a learning ground for amateurs. It was also within easy reach of Christchurch. Arms, poles and ice axes are raised to salute their conquest. Kinsey's exuberance and his position in the forefront of this photo, as well as in many other of his own photographs and those of his friends, portray him as a leader. His presence regularly dominated images. Always comfortable behind the lens, he was equally at ease as the subject of an image.

Figure 21. *J J Kinsey as Bugler*. Kinsey Collection, Canterbury Museum 1940.193.12, p525

Some Ongoing Questions of Authorship

The constant exchange of photographs between the mountaineers and amateur climbers of the late-nineteenth and early-twentieth centuries presents a further challenge to determining who actually took various pictures in Kinsey's collection, as does the number of photographers represented in the collection. The photos in the alpine section of his collection, for example, include ones taken by his daughter, Zurbriggen, FitzGerald, Mannering, Fyfe, Ross, Ollivier and Adamson. The use of Kinsey's Christchurch darkroom by both local and visiting climbers saw images developed, shared and stored without clear attribution, making it difficult to determine just who had taken them. The previously mentioned darkroom set up by Jack Adamson at the Hermitage added to the lack of certainty over ownership owing to sharing of unlabelled negatives.

But the collection also contains groups of photos systematically labelled and ordered according to authorship. The layout of the photographs in the collection's *Day Book* illustrates Kinsey's systematic approach to organising this particular grouping.[2] The leather-bound *Day Book* is heavy and comprises over 700 ruled ledger pages with photographs inserted in purpose-made slots. Kinsey has noted on the inside back cover, "Given to Ollivier, 11th March". This is followed by a list of 11 photographs taken in the Southern Alps, a further example of the sharing that took place and the confusion of ownership that resulted. Descriptions of each photograph are handwritten and include appropriate information, including the roll number of the film and when it began. Some of the photographs in the *Day Book* are clearly photographs that Zurbriggen took from the summit of Aoraki/Mount Cook and which precede Kinsey's own images of mountain scenery. Other images in the *Day Book*, taken at the time of FitzGerald and Zurbriggen's climbs with Clark as porter, can be readily identified as ones that FitzGerald took and sent to Kinsey for development. The letter that FitzGerald sent with these particular rolls of film detailed times, exposures, weather conditions and locations, thus expediting the labelling process (Fitzgerald to Kinsey, 11 February 1895, Kinsey Papers, 55/47, Box 1, Folder 2/32, Canterbury

Figure 22. From left to right, Giuseppe Borsalino, Matthias Zurbriggen, John Holland Baker, Isabel Baker, May Kinsey, Jack Clark and Noeline Baker picnicking at Kea Point. Joseph Kinsey photograph, 1896. Alexander Turnbull Library, Wellington, PA1-q-137-66-1

Museum).

At times, sharing negatives seriously displeased the original photographer. On 12 June 1895 Kinsey wrote to FitzGerald telling him of Alpine Club Member Arthur Harper's annoyance that he, Kinsey, had given FitzGerald lantern slides that Harper had developed from his negatives (Kinsey Papers, 55/47, Box 1, Folder 3/66, Canterbury Museum). Kinsey had understood that FitzGerald had received permission from Harper for Kinsey to do this but Harper denied this. On another occasion, Harper had asked Kinsey to provide prints from Fyfe's negatives and there is no mention of permission being sought or given (A P Harper to Kinsey, n.d. June 1895, Kinsey Papers, 55/47, Box 1, Folder 3/69, Canterbury Museum). In time, Kinsey assembled a large collection of Harper's alpine photographs in the *Hull Book*, previously used for details of marine insurance.[3] The *Hull Book* includes mostly A P Harper's photographs taken during his time working with the Department of Lands and Survey as assistant surveyor to veteran explorer Charlie Douglas. Like the *Day Book*, the *Hull Book* has purpose-made slots filled with photographs taken in or near Christchurch, the Aoraki/Mt Cook region, South Westland, Franz Joseph and Fox Glaciers and some of the West Coast.

Although many of Zurbriggen's images are clearly attributed to him in Canterbury Museum's Kinsey Collection, there is some confusion over whether photos Zurbriggen referred to on two separate occasions were his or Kinsey's. In a March 1895 letter to Sir W Martin Conway of the Alpine Club, London, Zurbriggen wrote:

Figure 23. George Mannering, Joseph Kinsey and Matthias Zurbriggen. Kinsey Collection, Canterbury Museum 19XX.2.1348

> *I have complete maps of the alpine district I have been over and a splendid assortment of photographs given to me by Mr. Kinsey – a gentleman who came with our caravan to the Tasman and took excellent pictures there – lives in Christchurch* (Kinsey Papers, 55/47, Box 1, Folder 2/51, Canterbury Museum).

On his return to New Zealand in 1896, Zurbriggen was interviewed by *The Press*. He gave a full account of a meeting at the Alpine Club in London where he spoke about the alpine regions of New Zealand. He then, he told *The Press* reporter, had returned to his home in Macugnaga, a mountain village in Northern Italy:

> *The photographs which I took Home were much admired and those who saw them were perfectly astonished. After I had set them up in my room in Macugnaga … the climbers who were touring in this district came in numbers to see them and, as was the case in England, expressed considerable astonishment. Again I would desire to take the opportunity of thanking Mr Kinsey for these photos and maps, which were amongst the most interesting and valuable of the many things I took back with me* (*The Press*, 17 February 1896: 6).

Kinsey had kept in contact with Zurbriggen after his departure in 1895, sending him news of all that was happening in the Alps. Consequently, when Zurbriggen arrived in Melbourne prior to the last leg of his second (1896) journey to New Zealand, Kinsey was

Figure 24. *Ascent of Mount Torlesse*. Kinsey Collection, Canterbury Museum 1940.193.12, p583

the obvious person to facilitate his plans once he arrived in the country. Zurbriggen cabled Kinsey requesting he organise porters and stores for his expedition to the Aoraki/Mount Cook region. Zurbriggen expressed his delight on learning that Kinsey and May would accompany him, and he was even more pleased when he learned Kinsey would be taking his camera. He was excited by the prospect of obtaining images of areas that had not previously been photographed. The antagonism felt by New Zealand climbers towards FitzGerald did not extend to Zurbriggen, who was popular and admired for his ability as a mountaineer. Accordingly, on his return in 1896, the Kinseys were not the only members of the climbing fraternity offering him a warm welcome.

"A Delightful Little Climb" – Gender and the Mountains

Kinsey's attitude to the capabilities of women climbers was condescending, even though May shared her father's mountain experiences and his enthusiasm for photography and there was no suggestion she held up any of the climbing parties. Having suggested in his *The Weekly Press* article that "A delightful little climb can be undertaken by ladies to the top of Mount Ollivier 6296 feet", he pointed out that this peak was only 700 feet higher than Mount Herbert (*The Weekly Press*, 1897: 3). On the next page of the paper, after describing the improvements made to the roads, tracks and huts, so lessening the danger of being overtaken by bad weather, Kinsey noted: "With such advantages there is no reason why ladies as well as men with a

competent guide should not visit those most distant points on the glaciers which, up to the present, have only been available to the hardy mountaineer." Condescending Kinsey and doubtless his mountaineering friends might have been towards lady climbers, but they still enjoyed the ease of a Sunday walk on the Port Hills above Christchurch (Fig. 25).

Climbing was considered a male institution, a manly activity following the traditions of climbers from overseas. Members of the New Zealand Alpine Club were predominantly middle-class males, in keeping with the club's elitist traditions. In a 2001 journal article, geographers Karen Morin, Robyn Longhurst and Lynda Johnston positioned the Hermitage and Aoraki/Mount Cook as a valuable location "for examining the entrenchment of the hegemonic masculinist New Zealand national identity constructed around heroic mountaineering" (Morin et al. 2001). They considered the experience of "white mountaineering women on Mount Cook" as both embracing the masculinist identity of hero and destabilising it. "Narratives about mountaineering too often ignore the huts, lodges, the places of staying behind. The roles performed by women (and some men) who never had the opportunity and/or the desire to climb but instead kept the home fires burning, and supported the efforts of others" (Morin et al. 2001: 117) describe the roles May (Fig. 26) and her father played during the heroic masculine mountaineering scene of the 1890s. While May and Kinsey did of course climb in the mountains, they never did so as the true mountaineers of the time.

Despite Kinsey's and May's efforts to persuade more people to come to the area, the costs of travelling to and exploring the environs of Aoraki/Mount Cook were a deterrent to many individuals, and women especially given their generally low wages if they were in paid employment or were reliant on men's incomes. An expedition in the 1890s from Fairlie to Aoraki/Mount Cook that included return fares (excluding the Christchurch leg), accommodation at Fairlie at eight shillings per night, at Pukaki at eight shillings per night, and at the Hermitage twelve shilling per night, along with daily rates for hiring horses at ten shillings and guiding fees of ten shillings could sum up to approximately £10 for 9 days. Essentially, the cost of the trip, the months of leisure time necessary and the essential equipment was beyond the means of many, meaning most visitors were wealthy, a factor that added to the exclusivity of such an excursion.

The subscription to the Alpine Club of one guinea or 21 shillings for a member and half a guinea for a subscriber was in itself a disincentive for unskilled workers (read: men) earning 3 to 7 shillings a day or about two pounds a week.[4] However, unlike its British counterpart, the New Zealand Alpine Club was open by this time to women wishing to join it. The *Otago Daily Times* noted that British reviews of a book entitled *Mountaineering* by C T Dent and others, reported that the club "is beginning to do good work and is unique in that it has elected a lady mountaineer as an active member" (*Otago Daily Times*, 12 November 1892: 5). However, given the British club at that time was not offering women membership, it is a moot point as to whether its members considered the New Zealand club's availability to women part of its "good work". Because Britain's first alpine club, formed in 1857, did not admit women as members, women formed their own club in 1907. The woman referred to as a member of the New Zealand Alpine Club was Forrest Ross, listed as a new member in October 1892. Her husband, Malcolm Ross, was at the time one of the club's four vice-presidents. Forrest was a very able climber and accompanied her husband on several climbs. Nonetheless, she reported that by reason of her sex she was expected to be "housekeeper and cook" during her alpine climbs (Ross and Ross 1934: 9).

In 1904, *New Zealand Illustrated*, the Christmas edition of *The Weekly Press*, highlighted the question of appropriate clothing for lady climbers, observing that "women's

Figure 25. Two photographs of a Sunday walk on the Port Hills, 1894. Kinsey Collection, Canterbury Museum 1940.193.12, p591 **A**, Kinsey is on the left with his camera set to record the scene. **B**, Kinsey is now seen celebrating the occasion.

Figure 26. *Washerwoman*, May Kinsey at Ball Hut, 1897. J J Kinsey photograph. W A Kennedy collection, Canterbury Museum 1975.203.20180.

skirts should be very short, say at least eight inches clear of the ground". Freda du Faur, who in 1910 became the first woman to climb Aoraki/Mount Cook and also recorded the fastest time, described leaving the Hermitage in a "proper skirt" and taking it off as soon as she was out of sight. Climbing with a single male guide jeopardised her moral reputation. Du Faur wrote:

> *As soon as I cheerfully announced, when asked, that I was going to climb Mount Sealy alone with a guide I found myself up against all the cherished conventions of the middle-aged … One old lady implored me with tears in her eyes "not to spoil my life for such a small thing as climbing a mountain*" (du Faur 2015: 35–36).

Du Faur clearly felt the disadvantages of being a woman pioneer.

The concerns expressed over du Faur's attire and unchaperoned status not only emphasised the constraints placed on aspiring women climbers but also reflected the dominance and controlling influence of many men in the field of mountaineering. The comments of Albert Mummery (1855–1896), an English mountaineer and author, revealed the attitudes of men born and raised in the Victorian era towards lady climbers. He wrote:

> *… it has frequently been noticed that all mountains appear doomed to pass through the three stages, an inaccessible peak, the most difficult ascent in the Alps and an easy day for a lady. In other words, once a great peak had been climbed and was no longer deemed out of reach, any ordinary person might have a go – even a woman*

> *– and the mountains' greatness was gone* (Mummery 1946: 113).

He did, however, admire and respect English mountaineer Lily Bristow's expertise and commented positively on her ascent of the Grepon in 1893. Bristow, who had scandalised her friends by sharing a tent with men, made numerous ascents in the Swiss Alps (Jones 2012). Of her rock climbing skill, Mummery noted "that she showed the representatives of the Alpine Club the way in which steep rocks should be climbed … it was hardly an easy day for a lady" (Mummery 1946: 112). In fact, Mummery ranked it amongst the hardest climbs he made. Even by 1925 and a new generation of climbers, the attitudes of men to women in the mountains appear to have changed little. For example, A N Blakiston, a member of the New Zealand Alpine Club, wrote after a trip taken with Arthur Harper, then 60 years of age, and his daughter Rosamond, aged 16, that "Anyone who takes the responsibility of taking women (young or old, trained or otherwise) on hard mountain trips should have very adequate male support … the female of the species can become very obtuse and difficult to deal with." (Alpine Collection, Box 7, Folder 25, ALP171.99, Canterbury Museum).

"To Write in Your Favour" – Kinsey's Mountain Letters

The uncertainty over what the government's purchase of the Hermitage in 1895 meant for its future and those who frequented the area generated a great deal of correspondence between those affected by this change. Both Adamson and Clark wrote to Kinsey asking for his support and assistance. In his letter, Adamson mentioned that he had written to John McKenzie, Minister of Lands, but he also wanted to know from Kinsey if he had been able to talk with McKenzie or any other Members of Parliament to cite his knowledge of the place and his outstanding capabilities (Adamson to Kinsey, 6 June 1895, Kinsey Papers, 55/47, Box 1, Folder 3/64, Canterbury Museum). Kinsey replied, "I shall be happy to write in your favour." Clark, when seeking Kinsey's advice, asked, "Do you think that there would be any chance of getting a place there and who would I write to apply to?" (Clark to Kinsey, 9 June 1895, Kinsey Papers, 55/47, Box 1, Folder 3/65, Canterbury Museum). Ross also wrote to Kinsey suggesting that as he was in a position to have early news of the new owners of the Hermitage, he might be able to recommend his brother Kenneth Ross as a guide and stockman (Ross to Kinsey, 6 December 1895, Kinsey Papers, 55.47, Box 1, Folder 3/76, Canterbury Museum).

Like his earlier correspondence, the letters Kinsey received and wrote at this time contribute to the valuable record of early exploration in the Southern Alps. A P Harper, who had joined the Department of Lands and Survey as a surveyor in 1893, wrote to Kinsey in 1894 thanking him for photographs he had sent and requested "a print or two off some of Fyfe's negatives" (A P Harper to Kinsey, 30 August 1894, Kinsey Papers, 55/47, Box 1, Folder 2/20, Canterbury Museum). A collection of Harper's photographs of the West Coast, taken during his time as surveyor, are included in the J J Kinsey Collection's *Day Book*. In an eight-page letter to Kinsey, which Harper described as an "epistle" from the Karangarua River, he expressed grateful thanks for the newspapers Kinsey had sent him.

Harper's letters were also rich in detailed descriptions of the landscape. In a letter he wrote in November 1894, he described Cassel Flat, which he had recently visited, as "about a mile long and ¾ broad surrounded by huge rocky hills rising nearly sheer – in some cases bare rock for 3000 feet or more – while here and there bush finds a foothold, the whole surroundings are grand" (A P Harper to Kinsey, 14 November 1894, Kinsey Papers, 55/47, Box 1, Folder 2/23, Canterbury Museum). He then went on to provide vivid imagery of the terrain, weather conditions, swollen rivers, waterfalls and floods. His focus here reflected the early

colonists' view of Canterbury's rivers, with their wide gravel floodplains, as "threatening barriers. Their behaviour was unpredictable compared with the familiar streams of Europe" (Winterbourne et al. 2008: 41). Although Kinsey's experience of the mountains was limited to more accessible areas, he would have valued Harper's correspondence with its accounts of places he had neither visited nor was likely to.

During 1895, Kinsey exchanged a number of letters with alpine guide Jack Clark, with whom he had enjoyed various excursions in the Alps (Fig. 27) (Letters from Clark to Kinsey, 1 February 1895 [item 28] and 2 May 1895 [item 58], Canterbury Museum 1947.55.1). At some stage in that year, Clark travelled to Christchurch and it was then that he was interviewed by a reporter from *The Press*, with the article, titled 'A New Zealand Alpine Guide: A Chat with Jack Clark', being published in the paper on 21 May 1895. The article included photos taken by Kinsey. The following excerpt from a letter that Clark wrote to Kinsey from Timaru soon after suggests that Kinsey had arranged the interview in order to promote Clark as a guide:

> *While I am writing this the Press is just brought in. I can but poorly return thanks for all I owe you Mr Kinsey but I think you have managed to put it in very nicely and the illustrations come out fine. Seriously Mr Kinsey you will end by making me very Vain.* (Clark to Kinsey, 16 May 1895, Kinsey Papers, 55/47, Box 1, Folder 2/60, Canterbury Museum).

The reporter described Clark as a "young fellow … lithe and full of pluck and courage" and then added, "Jack Clark has all the makings of a first-class guide." (*The Press* 21 May 1895).

Despite his superior attitude at times, Kinsey's gentle side was frequently evident in his correspondence, not only in what was said to him, but in what he said to and did for others, with his just-mentioned support of Jack Clark being but one example. Kinsey also constantly showed his appreciation of kindness. He was always grateful to those who assisted him and acknowledged their thoughtfulness, usually by letter, but sometimes in his published writing. When relating, in *The Weekly Press*, a story of the arrival of one of his parties at Glentanner Station, where they were met by Malcolm and Forrest Ross, he wrote:

Figure 27. Alpine guide Jack Clark with Joseph Kinsey. Kinsey Collection, Canterbury Museum 19XX.2.5310

> *In my own case I can never forget or repay the kindness to myself and party, when through wretched horses and the breakdown of our coach, and after walking from the foot of Pukaki, reaching Glentanner late at night they gave us an excellent supper, beds and breakfast and sent us away refreshed and rejoicing in the morning* (*The Weekly Press*, 30 October 1897: 2).

Jack Adamson and his wife Nora, managers of the Hermitage, also received a letter from

Kinsey in June 1896 thanking them for their hospitality and kindness. Kinsey made sure to let them know that Zurbriggen and FitzGerald were "particularly appreciative of Jack's excellent knowledge of the area and Jack and Nora's hospitality" (Kinsey to Adamson, 29 June 1896, Kinsey Papers, 55/47, Box 1, Folder 3/80, Canterbury Museum).

Zurbriggen gifted an ice axe to Kinsey that later came to be associated with the Antarctic and its use by Scott's Northern Party in 1910 (Canterbury Museum ALP180.2). The axe was also loaned to Ross, who wrote of its significance and value. In Ross's view the axe that had accompanied the famous guide to the top of 20 peaks in the European Alps was fundamental to his person. It was like a soldier giving away his sword. Regarded as a sacred text, the Italian Alpine Club published *Fiorio e Ratti*, the dangers of mountaineering and rules to avoid them in 1889, declaring ice axes as among the most "inseparable companions of the mountaineer". The gift of the ice axe was generous, but Zurbriggen undoubtedly had much to thank Kinsey for. Without Kinsey's assistance and generosity, Zurbriggen's passage to the Alps would have been difficult. Kinsey's organisation of porters and provisions for the journey smoothed his way.

New Directions

By the early twentieth century, Kinsey's focus had altered. He was no longer actively involved in the mountain scene. May, his most constant climbing companion, had married and shifted to Dunedin in 1900. Many of the men he had corresponded with over alpine matters had also moved away. Harper went to Thames in 1896 as a barrister and solicitor; Mannering left Christchurch in 1897 to take a position in the Union Bank in Hastings; and Ross shifted from Dunedin to Wellington in 1900 to work as a parliamentary correspondent. Three years later, Clark moved to Millers Flat. The changed scene at the Hermitage and the uncertainty of its future may also have been a factor in Kinsey's declining interest. It was declared bankrupt in 1894 and purchased by the government in September 1895.

Kinsey's last recorded trip into the mountains had been in 1898, when Clark guided him along with May and Mr W C Hill to the new hut at Malte Brun, an easy day's walk from Ball Hut. On the way up the Tasman Glacier the party navigated by compass due to a dense fog. With the danger of crevasses in the poor visibility, they were safer roped together, and it took two attempts to find access to the hut up the moraine wall. Based at the hut for a week, they made excursions further up the glacier, where Kinsey secured a large set of photographs. No doubt Clark carried the heavy plate camera for him. A dump of snow delayed their return, and for a time they survived on "low rations" (Langton 2011). In her book, *Snow Kings of the Southern Alps*, Blanche Baughan attributes Figure 28, *Malte Brun Hut*, to Kinsey (Baughan, 1910: 33). It is in his collection, but it was taken by Clark. Close examination of the image shows Kinsey and his daughter in front of the hut. From here, wrote Baughan, the outlook is "sublime" with views of Aoraki/Mount Cook, the upper Tasman and the Main Divide: "… the long line of the very loftiest summits of these Alps … [is] an experience rather than a sight".

Conclusion

Kinsey's photographic collection forms the legacy to the mountaineering phase of his life. Whether the images in his collection were taken by him, set up by him (with someone else taking the shutter) or were images he had collected from other photographers, all provide a valuable record of colonial adventuring in the Southern Alps and the antecedents of New Zealanders' reputation (rightly or wrongly) as an outdoors people. Kinsey made a significant contribution to the heritage of the nation. As an advocate for his province Kinsey publicised the splendour and accessibility of the mountains through literature, his photographs and newspapers. In an age of global warming Kinsey's images, for the most

Figure 28. Malte Brun Hut, with Joseph Kinsey and daughter May standing outside it. Kinsey Collection, Canterbury Museum 19XX.2.4140

part housed in Canterbury Museum, provide a valuable record of the shifting landscape. But Kinsey's collection also contributed to his own identity or self-making. His photographs gave him the opportunity on many occasions to tell and retell the story of how the images were acquired. In finding and obtaining objects in this way, collectors like Kinsey merged "his own experience with the object, with his fantasy about its past history" (Rubel and Rasman 2001: 309).

Kinsey's photographs sit very comfortably amongst the collection of alpine photography taken by his friends and associates. But it is the images in his collection that are taken beyond the limits of his own climbs that allow him to live the myth of the true alpine experience. As Walter Benjamin noted and has been observed since, "For a collector … ownership is the most intimate relationship that one can have to objects. Not that they come alive in him; it is he who lives in them" (Benjamin 1968: 319). The idea that Kinsey felt an impulse to achieve a measure of authority over the environment, for example over the mountain peaks he had experienced only from a distance, could also have been a valid reason for his collection. Specimens of rock that Jack Clark collected from the summits of the various mountains he climbed, notably Haast Arête and Haidinger, and then sent to Kinsey, functioned in the same way. "Mount Kinsey," Clark wrote to Kinsey (Kinsey Papers, 55/47, Box 1, Folder 2/28, Canterbury Museum) in early 1895, "is quite a fine Peak and will be a nice climb. I am keeping you a specimen of rock of Sealy. I will keep a piece of the top of every peak I climb ... I am taking your hint and keeping an account of the climbs. Would you tell

Figure 29. *Mount Kinsey from Fitzgerald Saddle*. Kinsey Collection, Canterbury Museum 1940.193.12, p402

Mrs Kinsey that I have not got many edelweiss yet but will have by and by?" (Figs. 29 and 30).

In 1903, Kinsey's holiday house on Clifton Hill Te Hau o te Atua was completed and became a favourite destination for weekends and holidays, thus contributing to the next phase of his life, one away from the mountains that had so beguiled him in the last decades of the nineteenth century. A further reason for his altered focus can be attributed to his shipping company, which had been in his sole ownership from 1887 until he formed a new partnership, Kinsey Barns & Co, in 1889. As the nineteenth century gave way to the twentieth, Kinsey's interest in his company took on a new imperative and absorbed more of his energy. The Antarctic era had begun and Kinsey's involvement in the affairs of the expeditions that passed through Lyttelton left little time for leisurely pursuits into the mountains with his Thornton Pickard camera.

Figure 30. The old Hermitage. J J Kinsey photograph. W A Kennedy collection, Canterbury Museum 1975.203.5538

Endnotes

1 M J Dixon wrote two articles for the *New Zealand Alpine Journal*, Vol. II: "Attempts on Aorangi from the eastern side: An historical resumé", May 1895, pp. 5–19; "The siege of Mt Cook", May 1894, pp. 245–257. His letter to *The Press* appeared on page 3 of the 28 December 1894 edition.

2 The *Day Book* (Canterbury Museum 1940.193.12) compiled by Kinsey has ruled ledger pages with photographs inserted in purpose-made slots. The album contains scenes of and people in Christchurch; FitzGerald and Zurbriggen expeditions in the Southern Alps and Aoraki/Mount Cook region; crossing to the West Coast via the Copeland Valley and return via Graham's Saddle; A P Harper's West Coast photographs; ascent of Mount Torlesse; and personalities at Aoraki/Mount Cook.

3 *Hull Book*, Canterbury Museum 1940.193.62. Photographs are inserted into purpose-made slots.

4 Miners' wages, *The Press*, 9 November 1894. Miners were reported to be earning £2/10s a week. An earlier report in *The Press* (31 December 1894) stated that the average wage for workers at the Belfast Freezing Works were between £3.17s and £4 a week.

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Deleatidium kakahu, new species of *Deleatidium* (Ephemeroptera: Leptophlebiidae) from New Zealand

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The mayfly, *Deleatidium (Deleatidium) kakahu* sp. nov. from the central South Island and lower North Island is described. A description of the three principal life stages (nymph, subimago and imago) is included. Notes on ecology and distribution are given. Diagnostic characters of the species are illustrated and compared with similar species.

Keywords: *Deleatidium*, Ephemeroptera, Leptophlebiidae, mayflies

Introduction

The Leptophlebiidae are distributed worldwide and are the largest mayfly family found in New Zealand. The endemic genus *Deleatidium* currently comprises 20 species (Hitchings and Hitchings 2018; Pohe 2018) and was established by Eaton (1899). Further species were described by Phillips (1930) and Towns and Peters (1979, 1996) who also established two subgenera *Deleatidium (Deleatidium)* and *D. (Penniketellum)* in their latter paper. More recently, additional species have been added by Hitchings (2008, 2009, 2010) and by Hitchings and Hitchings (2016, 2018).

The imago, subimago and larva of a new species of *Deleatidium* from the South Island and lower North Island is described in this paper. Information is included to provide methods of distinguishing the new species from similar species and also habitat information.

Materials, Methods and Conventions

Late instar larvae of the new species were associated with subimagos and imagos by proximity and by rearing in aquaria. Specimens in all life stages are stored in 80% ethanol. Body, fore and hindwing lengths were measured in millimetres with a microscope eyepiece graticule using an Olympus SZ40 microscope. Mean measurements are given in parentheses. Length ratios of the segments (femur: tibia: tarsomeres 1–5) are based on the length of the tibia. Collecting sites are grouped into regions of New Zealand using the two letter area code of Crosby et al. (1998). Those referred to in this paper are: MB, Marlborough; NN, Nelson; SC, South Canterbury; WN, Wellington; and WA, Wairarapa. Map references are given as latitude and longitude in decimal degrees. Altitudes are given in metres above sea level. All material is held at Canterbury Museum, Christchurch (CMNZ) and the Arthropod Collection, Landcare Research, Auckland (NZAC).

Systematics

Order: Ephemeroptera Hyatt & Arms, 1891
Family: Leptophlebiidae Banks, 1900
Genus: *Deleatidium* Eaton, 1899, as diagnosed by Towns & Peters 1996: 27–29
Subgenus: *Deleatidium* (*Deleatidium*) Towns & Peters, 1996, as diagnosed by Towns and Peters 1996: 30

***Deleatidium (Deleatidium) kakahu* sp. nov.**

Description: Dimensions (mm). Imago male: length of body 7.0–8.0 (7.5); forewings 7.6–10.5 (8.3). Imago female: length of body 6.9–7.9 (7.4); forewings 8.1–9.5 (8.6). Mature larva: length of body 7.6–9.5 (8.0).

Male imago: Head dark brown to whitish, pedicel and antennal scape pale brownish, flagellum white; eyes in contact in the mid-line with their upper portion yellow and lower portions greyish black. Thorax. Pronotum and mesonotum yellowish brown, darker at the margins, the latter with three narrow parallel longitudinal median and submedian marks; metanotum and scutellum yellowish brown; thoracic pleura and sterna pale brown, each with a greyish brown well defined macula; legs yellowish white. Length ratios of male imaginal foreleg segments 1.33: 1.00: 0.039: 0.060: 0.060: 0.070: 0.070. Pretarsal pad without an apical hook. Wings. Forewing (Fig. 1A): membranes hyaline, width 0.34 (0.31–0.36) x length; longitudinal and cross veins uniformly uncoloured; membranes of cells C and Sc pale greyish brown; bullae weakly marked at midlength in veins Sc, R2, R4+5 but barely visible on R1. Veins C and Sc without crossveins in basal half. Vein ICu connected at base to CuA and CuP. Crossveins of C and Sc absent from basal half of the forewing. Hindwing (Fig. 1B): width 0.51 (0.44–0.60) x length; length 0.27 (0.23–0.31) x that of forewing; vein Sc 0.95–0.96 (0.96) x length of forewing. Abdomen (Figs. 2A and 2B). Dorsal surface without, or almost without a mid-dorsal longitudinal line, darker brown posterolateral margins sharply defined on segments 1–6, less so on 7–9. Submedian paired brownish marks on segments 1–5. Each tergum with brownish lateral margin which includes a short dark brown diagonal stripe. Each tergum darker posteriorly. Sternum 7 with strongly pigmented blackish ganglion. Other ganglia more lightly pigmented. Genitalia (Fig. 3A) in ventral view with paired, almost colourless penes, the apices of which are hemispherical, fused, narrowed sub apically and expanded basally. Paired, asymmetrically tapered appendages project posteriorly at about 45 degrees close to the midpoint of the penes (Fig. 3B) and angled at about 45 degrees posteriorly to the shaft of the penes. Styliger plate with a shallow median cleavage. Each forceps bears a cluster of

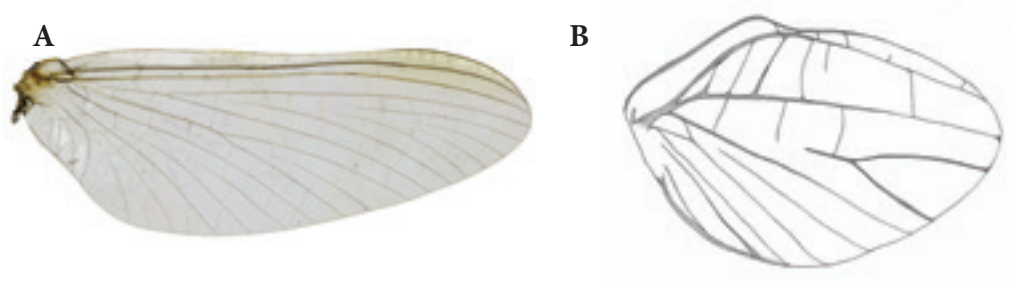

Figure 1. Male imago. **A,** forewing. **B,** hindwing

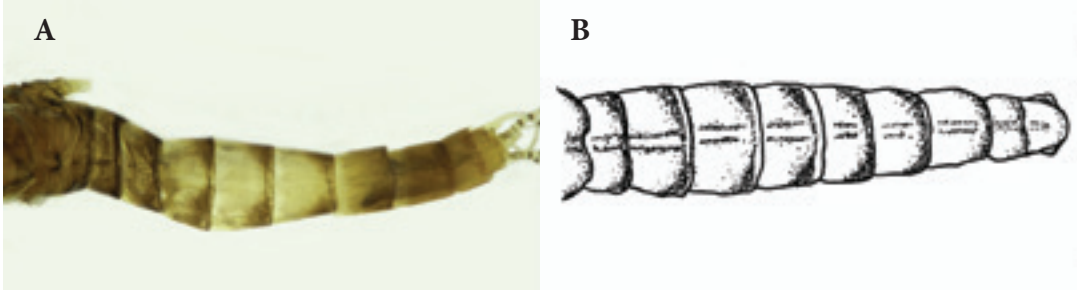

Figure 2. Male imago dorsal surface (distorted). **A**, photograph. **B**, drawing (antennae and caudal filaments truncated)

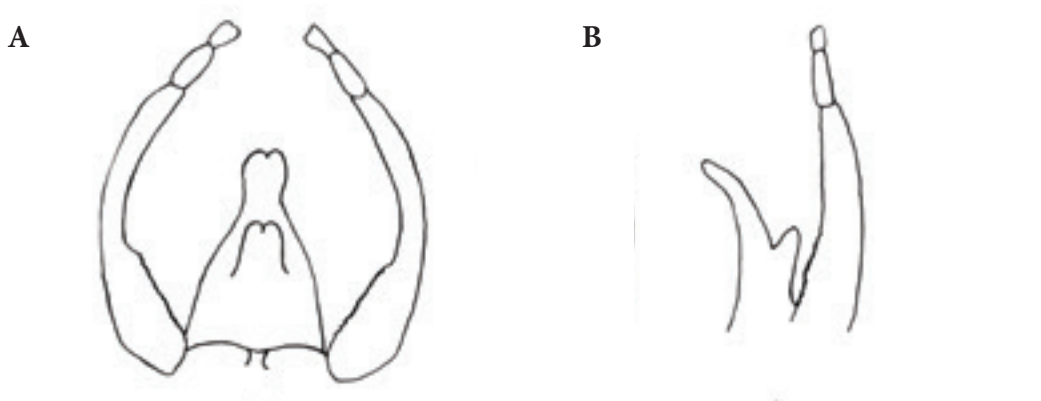

Figure 3. Male genitalia. **A**, lateral view. **B**, ventral view

Figure 4. Female imago forewing venation

Figure 5. Male subimago forewing venation

Figure 6. Mid instar larva: dorsal view

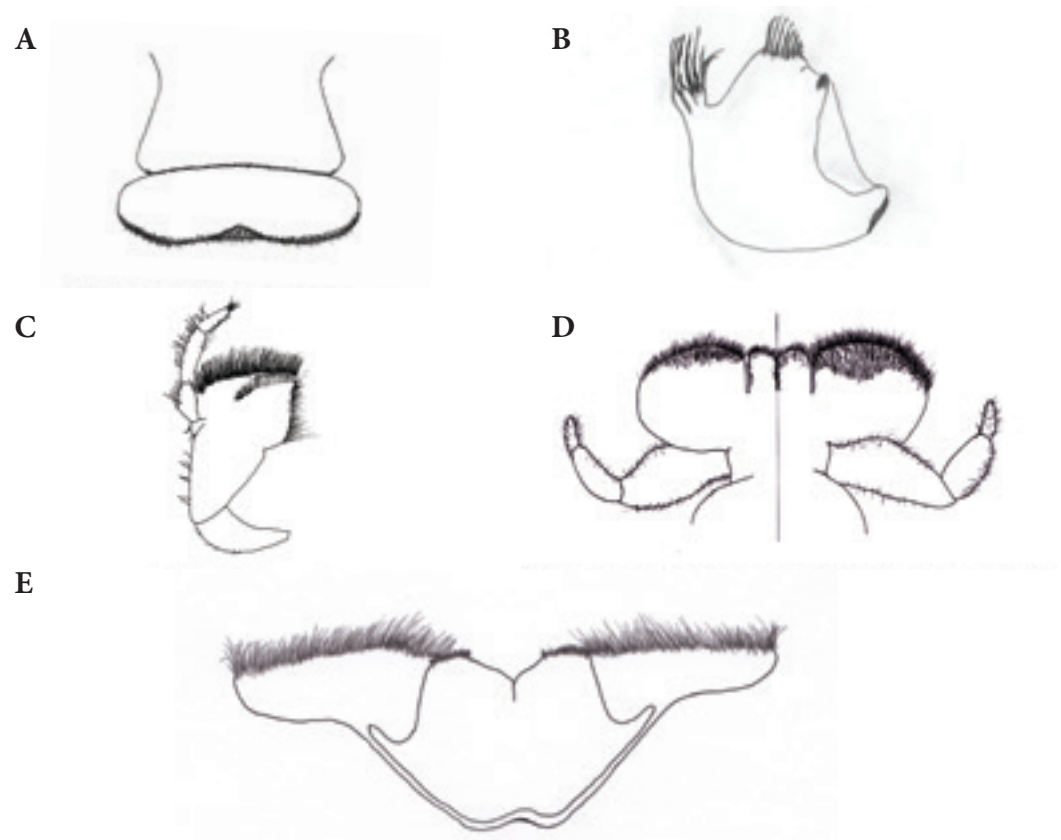

Figure 7. Larval mouthparts. **A**, clypeus and labrum. **B**, left mandible. **C,** right maxilla. **D**, labium in dorsal (left) and ventral (right) views. **E**, hypopharynx

10–15 short basal spines. Caudal filaments 0.94 cm, long, pale grey, of similar length and tending darker at the articulation of the annulations.

Female imago: As in the male, except as follows: eyes black and separated by about twice the width of the eye. Femora pale yellowish white and without markings. Forewing (Fig. 4): width 0.30–0.36 (0.34) x length; membranes of cells C and Sc greyish in apical half. Veins brownish. Hindwing width 0.44–0.65 (0.55) x length and length 0.19–0.23(0.22) x that of the forewing.

Dorsal abdomen with the abdominal longitudinal line more clearly defined line than the male. Sternum 9 with a widened, v-shaped cleft.

Subimago: Male and female as in the imago except as follows: male head whitish between the eyes; upper portion of eyes yellowish white, lower portion black. Female eyes blackish. Pronotum yellowish with paired submedian brown lateral marks; mesonotum with paired median longitudinal marks and paired brownish yellow submedian lateroparapsidal sutures; metanotum whitish, darker laterally. Pleura whitish with brown margins. Ventral thorax and abdomen whitish, darker at the posterolateral margins. Ventral abdominal ganglia brownish, visible on sternum 7, less so on sterna 3–6. Legs whitish. Wing (Fig. 5) membranes brownish grey, veins of cells Sc and R1 darker. Dorsal abdominal segments whitish, with well-defined central longitudinal mark and dark brown

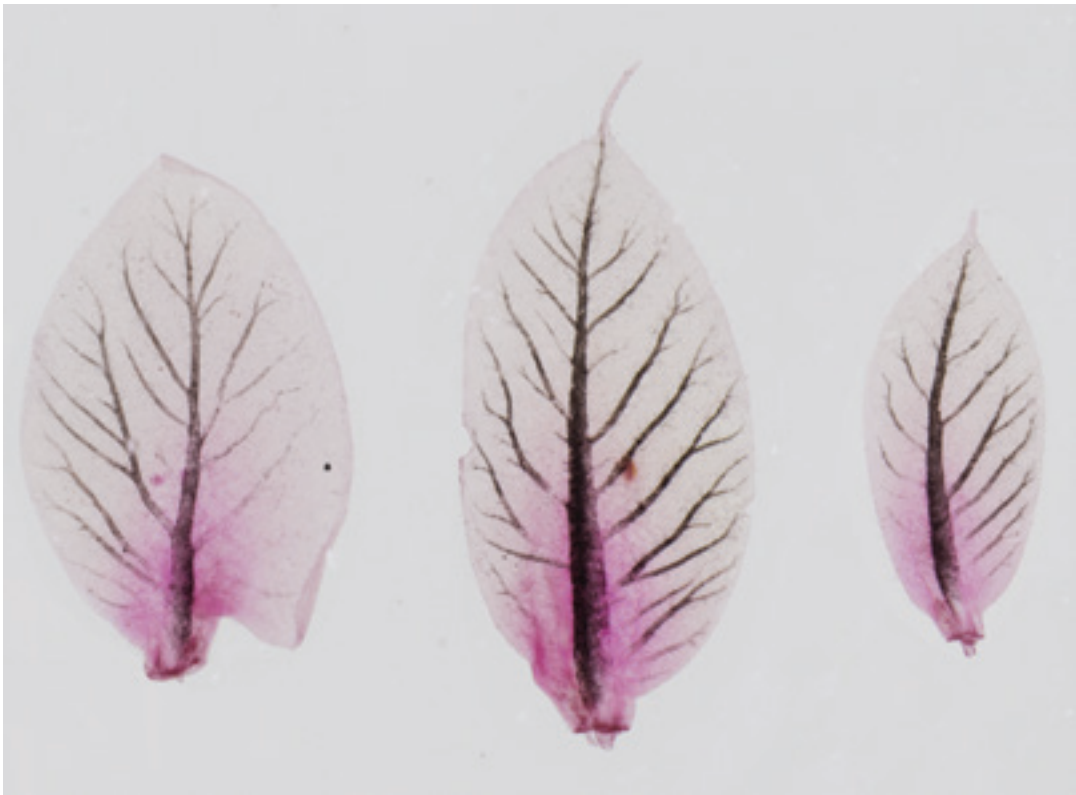

Figure 8. Abdominal gills 1, 4 and 7

posterolateral margins; each segment with a small lateral brownish macula. Male genitalia: penes whitish and fused to rounded apices and with bluntly pointed ventral appendices at midlength; distal portion of each penis angled about 45 degrees posteriorly. Female: sternum 9 emarginated as for female imago.

Larva: Mid instar larva (Fig. 6). Head brown; upper portion of male eyes brownish, darker at the margins, lower portion black; female eyes blackish. Antennae 1.3–2.5 mm long. Mouth parts: Labrum 0.72 x as long as clypeus and 1.09 x as wide (Fig. 7A). Anteromedian emargination with irregular spines. Notum yellowish-brown with borders and lateroparapsidal sutures darker; left mandible (Fig. 7B); right maxilla (Fig. 7C). Galea-lacinia with sub-apical row of about 20 spines; palp segment 2 1.4 x as long as segment 1; segment 3 0.7 x as long as segment 2; labium in dorsal (left) and ventral (right) views (Fig. 7D); palp segment 2 0.75–0.86 (0.81) x as long as segment 1; segment 3, 0.50–0.75 (0.63) x as long as segment 2; hypopharynx (Fig. 7E). Thorax. Notum yellowish brown with margins and latero-paracidal sutures darker. Femur 1 with basal whitish macula. Dorsal abdomen without, or with only a faint longitudinal median line; segments uniformly yellowish brown, each with darker transverse posterior marking. Sterna whitish. Ventral abdomen pale yellowish, with ganglion darkened on sternum 7 but less so on preceding sterna. Posterolateral projections present on segments 3–9. Abdominal gills single, translucent, longer than wide and with numerous blackish tracheae; apices pointed. Gill 1 generally ovate with a small ventral lobe and a very small point apically. Gill 7 not folded ventrally. Some gills may have apical points drawn out (Fig. 8).

Holotype: Male imago, SC, Kakahu River, -44.154, 171.097, 110 m, 3 January 2002, JB & GM Ward (CMNZ 2021.33.1).

Allotype: Female imago (reared), SC, Kakahu River, -44.151, 171.000, 96 m, 16 February 2019, Tim R Hitchings, (CMNZ 2021.33.2).

Paratypes: Male imago, MB, Pelorus River, -41.301, 173.569, 30 m, 7 January 2016, C Vink (CMNZ 2021.33.3); 1 male imago, SC, Kakahu River, -44.154, 171.097, 110 m, 3 January 2002, JB & GM Ward (CMNZ 2021.33.4); 1 male imago, SC, Kakahu River, -44.154, 171.097, 110 m, 3 January 2002, JB & GM Ward (CMNZ 2021.33.5); 1 male imago, SC, Kakahu River, -44.154, 171.097, 110 m, 3 January 2002, JB & GM Ward (CMNZ 2021.33.6); 1 male subimago, NN, Anatoki River, One Speck Road, -40.867, 172.798, 15 m, 11 December 2011, JB & GM Ward (CMNZ 2021.33.7); 1 male subimago, MB, Pelorus/Tinline Rivers, -41.315, 173.503, 80 m, 31 January 2004, TR Hitchings (CMNZ 2021.33.8); 1 female subimago (reared), SC, Kakahu River, -44.151, 171.090, 112 m, 28 October 2019, Tim R Hitchings (CMNZ 2021.33.9); 2 larvae, SC, Kakahu River, -44.1537, 171.0947, 110 m, 21 January 2018, TR Hitchings (CMNZ 2021.33.10, CMNZ 2021.33.11); 1 larva, SC, Totara Creek tributary, -44.229, 170.956, 151 m, 16 December 2018, Tim R Hitchings (CMNZ 2021.33.12). Mouth parts on slide.

Other material examined: 3 female subimagos, SC, Kakahu River, -44.154, 171.097, 110 m, 3 January 2002, JB and GM Ward (CMNZ 2021.33.13, CMNZ 2021.33.14, CMNZ 2021.33.15); 2 larval exuviae, SC, Raincliff Stream tributary, -44.140, 170.964, 177 m, 11 December 2018, Tim R Hitchings (CMNZ 2021.33.16, CMNZ 2021.33.17); 1 female subimago plus exuvia, SC, Kakahu River, -44.151, 171.090, 112 m, 28 October 2019, Tim R Hitchings (CMNZ 2021 33.18); 1 larva, WN, Waiohine River, -41.006, 175.402, 140 m, 23 February 2020, MFJ Hitchings (CMNZ 2021.33.19); 2 larvae, WA, Kiriwhakapapa Stream, -40.8085, 175.544, 310 m, 10 April 2003, TR Hitchings (CMNZ 2014.2.24524, CMNZ 2014.2.24525); 1 male subimago plus exuvia (reared), SC, Kakahu River, -44.151, 171.090, 112 m, 11 January 2020, Tim R Hitchings (CMNZ 2021.33.20); 1 female imago plus exuvia (reared), SC, Kakahu River, -44.151, 171.090, 112 m, 11 January 2020, Tim R Hitchings (CMNZ 2021.33.21).

Diagnosis

The larva of *Deleatidium kakahu* resembles that of *D. autumnale* but the latter has all gills rounded and all ganglia pigmented. Also, *D. autumnale* does not have a dark band across the posterior margin of most abdominal terga. *Deleatidium kakahu* has a small point on gill 1 and the other gills are variably pointed, the proximal abdominal ganglia are hyaline and there is often a dark band across the posterior margin of most terga. In the subimago, the forewings of *D. kakahu* have no darker clouds at the crossveins and each of the abdominal terga 2–7 have a short, dark brown, diagonally sloping lateral mark. In the male imago of *D. kakahu*, the fused penes also have fused ventral appendages, whereas in the female, diagonal lateral tergal marks are present.

Its larva also resembles that of *D. fumosum*, which may be distinguished by posterolateral abdominal projections on segments 4 or 5 to 9, a rounded first gill and pale proximal and distal macules on the first femur. In contrast, *D. kakahu* has posterolateral projections on segments 2 or 3 to 9, a small point on gill 1 and a single proximal macula on the first femur. *Deleatidium fumosum* also has prominent dark maculae on terga 2 to 8 but terga 5, 6 and 7 are more weakly pigmented than the others. *Deleatidium kakahu* has terga without a pigmented pattern except for a dark posterior band.

The larvae of *D. kakahu* can also be distinguished from *D. vernale* by the absence of strongly pigmented maculae and connectives on the thoracic and abdominal ganglia. The dorsal abdomen of the larva of *D. kakahu* is relatively uniform in colouring and lacks a median whitish longitudinal line.

D. kakahu can be distinguished from *D. lillii* by the length of gill 1, which, in *D. lillii*, is greater than its width and also the presence of elongated apical filaments on some of the gills in *D. kakahu*,

where this is not the case in *D. lillii*.

The imagos of *D. kakahu* may be confused with those of *D. branchiola*, but can be distinguished by the following features shown by the imago of *D. branchiola*: in the forewing, yellowish colouration of the longitudinal and crossveins, a bulla at the junction of Sc, R2 and R4+5, and also vein ICu1 being basally connected to CuP as well as ICu. In the male of *D. branchiola* the penes have sharp-pointed ventral appendages but in *D. kakahu* these are rounded.

Distribution

The present known range of *D. kakahu* includes the foothills region of South Canterbury (SC) between Geraldine and the Raincliff River, including the Kakahu Forest. Specimens, identified as the same species, have also been collected from the Pelorus (MB) and Anatoki Rivers (NN) in the northern South Island. In the North Island, specimens have been collected from the Waiohine River on the eastern side of the Tararua Range (WN) west of Masterton and Kiriwhakapapa Stream in the Wairarapa (WA).

Habitat

All presently known collecting sites for *D. kakahu* have been less than 320 metres above sea level. Alpine streams in south and mid Canterbury have, up to the present, not revealed further specimens. It is possible that the species has an isolated distribution, confined largely to low altitude bouldery stretches of strong-flowing water flowing through beech and mixed podocarp forested foothills. The habitats of outlying populations are similar.

Etymology

The species name is derived from the Māori kākahu, a cloak or covering, and has been applied to the forested area from which the species was first collected.

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Spelling is in accordance with the Concise Oxford English Dictionary.

Abbreviated Latin terms	Full stops should be used in abbreviations of Latin terms, such as e.g., i.e., c.f., c. 1984, et al.
Capitals	Capitals should be used sparingly. All proper names and substantives only where they refer to specific individuals, offices or organisations (e.g. Labour government; the government. Use Prime Minister, but Cabinet minister. Capitalise the first word and all the principal words in titles of publications and in chapter titles. Capitalise both words in a compound title, e.g. Governor-General.
Dates	Are written in numerals, e.g. 1800s, 8 May 1923. Spell out nineteenth century, sequential dates in full 1956–1986.
Endnotes	Numbered endnotes can be used in the text, but not footnotes. Endnotes should contain enough information to guide the reader to any external references. Endnotes are denoted in the text by sequential, superscript numbers after the sentence that concerns them. The endnote list is placed after acknowledgements and before the reference list.

Illustrations	All illustrations, figures and/or tables must be referred to in the text. If referring to a figure in the text, use the full word Figure or Figures. If the figure reference is in brackets, use the abbreviated form (Fig. or Figs). When referred to in the text, capitalise the word Table. The words figure and table should not be capitalised when referring to a figure or table cited in a reference. Use the following the format for figure captions: **Figure 1.** Description (credit [where appropriate]). Captions for composite figures should follow the following style: **Figure 1.** Brief description of the entire figure. **A,** Specific description of part A. **B,** Specific description of part B. Please indicate where in the text authors would prefer such illustrations to be placed.
Initialisms	BNZ, BA, OBE, PhD – no punctuation and not italicised.
Interpolated Matter	To enclose remarks not intended by the author to be part of the main statement, (e.g. an afterthought) square brackets are to be used.
Italics	Genera, species, sub-species, names of ships, titles of published books, plays, films, pamphlets and periodicals. Books and periodicals are italicised in the references, but newsletters are not.
Māori Language	Our practice is to use the te reo Māori word first followed by the English translation in round brackets. Macrons are standard practice where appropriate except where original texts (without macrons) are being quoted.
Numbers in text	To be in words for numbers up to nine and then use numerals, except for measurement and time e.g. 35 kg, 1,290 km, (all to be converted to metric), 6 hours. Comma to be used in four figures or more, e.g. 8,000. All numbers that begin a sentence must be spelled out. Use an unspaced en-dash not a hyphen for ranges.
Omissions	When omissions are made in quoted text, use three dots within a sentence and four dots when the break resumes in a new sentence.
Quotation marks	Double quotation marks are to be used for quoted text, but single within quotations. Quotations over 40 words are to be in italics and indented. Punctuation marks such as full stops or commas should be placed outside the end quote mark unless they are an essential part of the quotation. Use single quotes sparingly and only for words that are no longer in common use or those that may not be acceptable today. Do not use for colloquialisms.

Taxonomic authorities	Taxonomic authorities should be given at first mention in the text, but not in the abstract or title unless they are the focus of a taxonomic paper. To distinguish a taxonomic authority from a cited reference, the author and date should be separated by a comma and an ampersand used rather than the word "and" (e.g. *Rallidens platydontis* Staniczek & Hitchings, 2014). Taxonomic authorities need not be listed in the references, except when further cited in the text.

References (including bibliography)

All publications included within the reference section must be cited within the body of the paper.

The convention of citation in text in the format author surname (year) and (author surname and year) is used. Two authors are cited as Fraser and McCarthy (2012) or (Fraser and McCarthy 2012) and three or more authors as Winterbourn et al. (2008) or (Winterbourn et al. 2008). Newspaper articles by unknown authors should be cited in the text in the following format: (*Press*, 19 December 1938: 11)

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Use an unspaced en-dash not a hyphen for page ranges.