Dredged Up

Issue 35
Autumn 2024

Archaeology Finds Reporting Service Newsletter

Welcome to Issue 35 of ***Dredged Up***, the newsletter of the Marine Aggregate Industry Archaeological Protocol. Since the last newsletter in Spring 2024, **57 finds** have been reported in 30 reports.

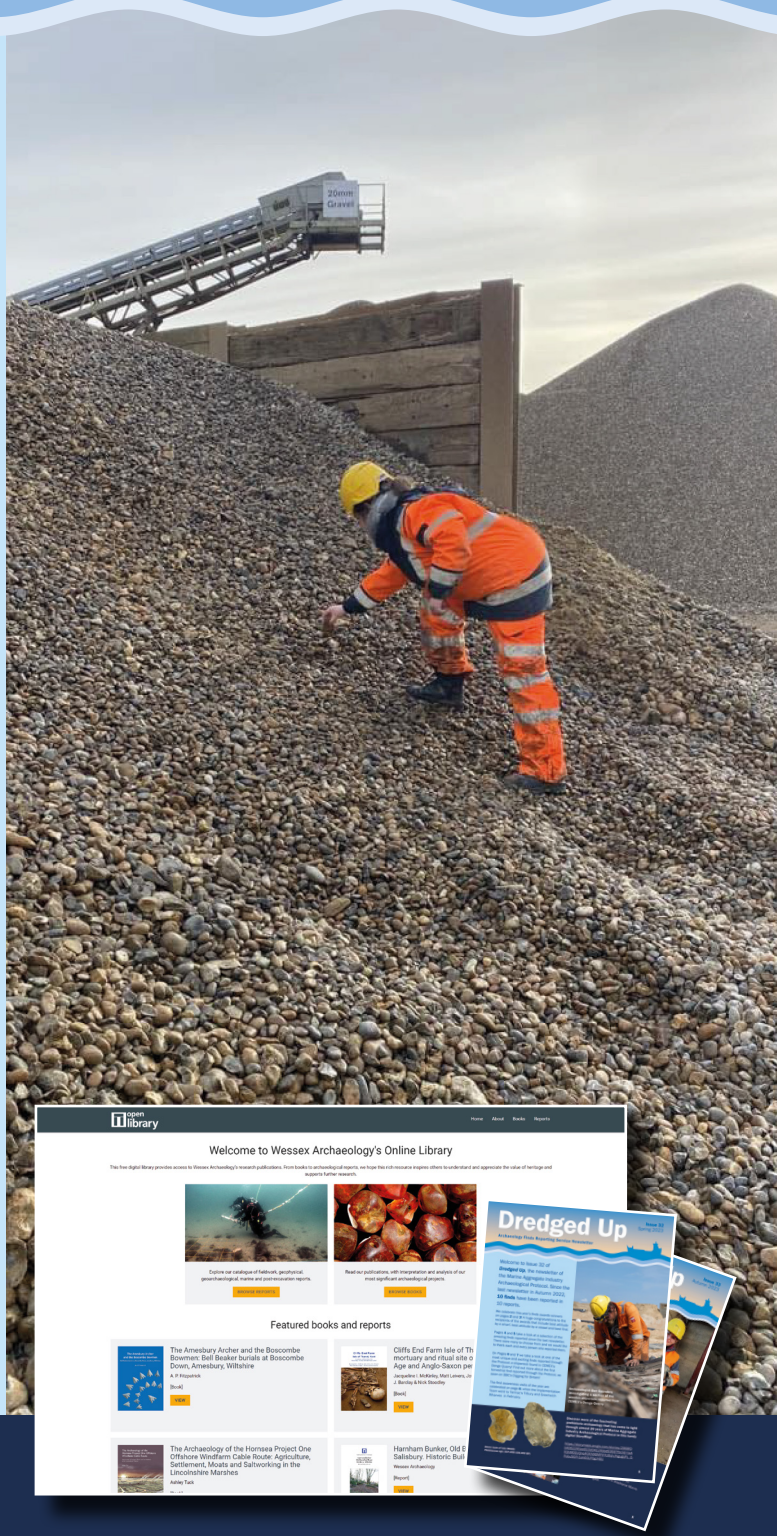
Pages **2** and **3** showcase a selection of finds that have been reported since the last issue of *Dredged Up*. We would like to thank everyone who has reported a find. Your enthusiasm does not go unnoticed.

This year we started a new round of awareness visits. The visits are celebrated on page **4**.

Even small finds are of great importance to tell the story of our ancestors. See page **5** to learn more about clay pipes and their contribution to archaeology.

Cannon balls have been a common find since the start of the Protocol. The cannon balls were once fired from mighty cannons aboard ships or from coastal defences. Pages **6**, **7** and **8** explore the history of cannons and provide tips and tricks for drawing your own cannons and recognising the different types.

On page **8** we have a fun word search. A hint: the answers are based on topics relating to awareness visits.



Protocol Updates

Wessex Archaeology has launched a brand-new online platform: Janeway. This platform includes over 40 years of archaeological research completed by Wessex Archaeology. On the platform you can scroll back to old versions of the Marine Aggregate Industry Archaeological Protocol's Annual Reports and *Dredged Ups* or read more about different terrestrial and marine excavations! Explore our new page and dive into our history! https://wessexarchaeologylibrary.org/

Finds Roundup

Cemex_1147

Cemex_1147 (seen below) is an unusual find, and it represents a whale bone which was discovered in Licence Area 407 in the South Coast dredging region, approximately 15 km south-east of the Isle of Wight. Filip Gorka-Niwinski discovered it on board ***Cemex Go Innovation***.

The whale bone is approximately 150 mm in diameter and 75 mm in length. Lorraine Higbee from Wessex Archaeology was contacted regarding the find and was able to confirm that it was a Cetacea vertebra. Cetacea are a group of marine mammals that include whales, dolphins and porpoises. These animals are characterised by their exclusively marine habitat, air-breathing respiratory system and high intelligence. This piece of whale bone does not appear to have any man-made marks. However, using whale bone as an artistic material has been very common in the past, known as scrimshaw. Scrimshaw is an artistic form and was practiced usually by whalers who engraved images into the byproducts of the whaling industry, such as whale bone and teeth. It is not clear how this bone found its way onto the seabed; most likely it was an entirely natural process. It is important that whale bone is reported through the archaeological Protocol, as examples of scrimshaw art when discovered offer a unique insight into the minds of past mariners.

Heidelberg_1159

Heidelberg_1159 (seen above) is a wooden ship component that was discovered in aggregate dredged from Licence Area 240 in the East Coast dredging region, approximately 12 km south-east of Great Yarmouth. It was discovered during an operational sampling visit, conducted by Wessex Archaeology staff at **Dagenham Wharf**.

Heidelberg_1159 is presumably a ship component. The find is approximately 380 mm long, 140 mm wide and 20 mm thick. The wooden component contains three square nail holes and is heavily damaged on both sides. Paolo Croce, a marine archaeologist at Wessex Archaeology, identified this find as probably a wooden ship component. The find yields evidence of a seafaring past, as shown by the square nail holes on the top of the wooden board. The distance between the nail holes matches the distance of ship planking. The nail holes only appear on the top side of the wooden component, indicating that it was presumably fastened at the very end of the hull planking or attached to a side of the ship. The wood type is unknown, however, the quality is outstanding. The grains on the wood are well visible, but no evidence of tool- or cut-marks have been found. The object Heidelberg_1159 is an isolated find, however, timber pieces with interesting shapes or with evidence of fastening techniques (nail holes or treenails) should always be reported through the Protocol. These types of finds could indicate the presence of a previously undiscovered wooden shipwreck.

Tarmac_1152

Tarmac_1152 (seen above) is an iron anchor chain that was discovered in Licence Area 509/3 in the Thames Estuary dredging region, 27 km south-east of the Essex coast. Aaron Faulkner discovered it on board ***City of London***.

This find appears to be a wrought iron anchor chain. The links are around 75 mm in width and 125 mm in length. There are also studs evident in several links, though some are now missing. Wrought iron studded chains, such as this, were common in the 19th and early 20th centuries. As studs are present, the chain cannot predate 1819 when this innovation was introduced. The introduction of iron chains came as the size of vessels increased, making hemp anchor cables insufficient. Hemp cables could also rot in tropical conditions, becoming a health hazard for the crew. While it is unclear how this chain came to be on the seabed, it was most likely lost or discarded over the side of a vessel.

Brett_1144

Brett_1144 (seen in the three images below) is a shell casing that was discovered in Licence Area 508 in the Thames Estuary dredging region, approximately 28 km south-east of Kent. Dean Jackson discovered it on board ***Britannia Beaver***.

The casing has a diameter at the base of 70 mm and an overall length of approximately 130 mm. Images of the find were shared with Richard Noyce, Curator of Artillery at The Royal Armouries Museum. He suspected that the casing belonged to a 40 mm Bofors shell. It is important to note that the calibre of a round is almost always based on the size of the projectile, which is invariably smaller than that of the base of the casing. The Bofors 40 mm Automatic Gun was a series of anti-aircraft weapons designed in Sweden and used by a number of nations. The weapons entered service in the 1930s, with the L/60 variants being the most common. The weapons were commonly mounted on naval vessels, though ground-based use was also possible. The weapons were fed manually by loading in four round clips, which somewhat limited the weapons rate of fire to around 100 rounds a minute. These weapons remained in use on naval vessels until the 1990s, where they began to be replaced by the multi-barrelled 20 mm and 30 mm phalanx CIWS systems. The United States Air Force retained their use on board AC-130 gunships, with the weapons finally being retired in 2020. While it is unclear how this find found its way to the seabed, the most likely cause is that it was fired from a vessel, either during training or in anger, during the Second World War.

A new year with new wharf visits!

This year we started a new round of awareness visits. Kirsten from the Implementation Team visited the following wharves:

Cemex Brighton Wharf
Cemex Northfleet Wharf
Cemex Angerstein Wharf
Cemex Southampton Wharf
Tarmac Burnley Wharf
Tarmac Shoreham Wharf
Tarmac Medina Wharf, Cowes
Tarmac Tilbury Wharf

Thanks again for the warm welcome and interesting conversations about archaeology!

What are awareness visits all about?

During an awareness visit a member of the Implementation Team visits the wharf or vessel and provides a short presentation about all the different types of archaeological finds that can be encountered, how these finds reach the seabed, how to report these finds and how to take care of them. Furthermore, there is an opportunity to handle many examples of archaeological finds brought to the awareness visit by the Implementation Team member, who will explain the different features of each find that makes them recognisable. During the visit there is lots of time for questions, advice and discussions. Following the awareness training, certificates of completion are emailed to the wharf for everyone that attended.

Interested in awareness visits?

We are happy to arrange an awareness visit for you if you haven't had one in a while or when new staff members have recently joined.

To arrange an awareness visit, please get in touch with us by emailing **protocol@wessexarch.co.uk** or call **01722 326867**. Alternatively, contact us if you have any questions or need advice. We are happy to help!

Have you become curious about the information covered in an awareness visit? See page **8** for a word search based on the topics presented in the awareness visits. Good luck with finding them all!

A) Cemex Brighton Wharf; B) Cemex Northfleet Wharf; C) Tarmac Burnley Wharf; D) Tarmac Medina Wharf, Cowes.

Britain's Smoking Days

Clay pipes: so small, yet so significant. Clay pipes were used to smoke tobacco; they were an everyday object in British society (Oswald 1975, 3). This habit came from the North American Indians and was introduced in Britain during the reign of Elizabeth I in the 16th century (Moore 1980, 1). Early clay pipes were handmade, but soon a large industry that utilised a pre-factored mould emerged (Oswald 1975, 5).

The shapes and sizes of clay pipes vary over the years and archaeologists use these variations to date the pipes themselves, their surrounding deposits and even wreck sites. The first pipes were straightforward and had no decorations on them. The small bowl on the front of the pipe only held a small amount of tobacco, likely due to high prices (Moore 1980). Over the years, the form of the bowl became larger, wider and more embellished.

A whole industry for the production of the clay pipes was later established in Britain. Pipe-makers started to mark their initials on the clay pipes, often found on the spur beneath the bowl (Moore 1980, 6). Sometimes, pipe-makers would use a mark or stamps on the pipes. These marks and initials are crucial for archaeologists in tracing the manufacturer and the city where the pipes were made (Higgins 2008, 243). Being able to identify a mark linked to a known maker and location provides archaeologists with valuable insights potentially helping ascertain a more accurate dating of associated archaeological contexts (Oswald 1975, 127).

The clay used for making pipes primarily came from local white clay. This white clay had previously been used by the Romans for their pottery. In some places, such as Stamford, a different type of clay was used, resulting in pipes with a brown colour (Oswald 1975, 11). Even the colour of the clay can indicate variations in time and place! The Isle of Wight was one of the few places that exported the necessary clay needed for producing the pipes (Higgins 2017, 166).

Who knew such a small object could tell such a varied story! The eagle-eyed among you may have noticed that we have an example of a pipe in the Awareness Visit finds handling case - but did you know that clay pipes have never been reported through the Protocol? Maybe you could be the first to find one!

References:

Higgins, A. 2008. 'Clay Tobacco Pipes and other Pipeclay objects', 243–286, in Garner, D. *et al.* (eds), *Excavation at Chester 25 Bridge Street 2001: Two Thousand Years of Urban Life in Microcosm*. Chester: Chester City Council Archaeological Service Excavation and Survey Report 14.

Higgins, A. 2017. 'Clay Tobacco Pipes and Pipemakers from the Isle of Wight', 166-218, in *Proceedings of the Hampshire Field Club & Archaeological Society* (eds), Hampshire studies 72. Hampshire: Hampshire Field Club & Archaeological Society.

Moore, W.R.G. 1980. *Northamptonshire Clay Tobacco-Pipes and Pipemakers*. Northampton: Northampton Museum and Art Gallery.

Oswald, A. 1975. *Clay pipes for the archaeologist*. Oxford: British Archaeological Reports, British Series 14.

Clay pipes can be difficult to spot - as this image of river debris from Blackfriars, London demonstrates!

The first line of defence: ships and their cannons

Since the start of the Protocol over 100 cannon balls have been reported. It is time to take a closer look into the mighty machines that fired those cannon balls: **cannons**.

Different types of cannons (sometimes called 'guns') were invented in the past, but the English and Swedish were the main producers for iron cannons for quite some time. We fast-forward to the year 1540, in which the invention of the cast-iron muzzle-loading cannon took place (Smith 2017, 56). This invention led to changes in naval warfare in England. Materials for these cannons, like iron, were widely available in Western Europe and therefore cast-iron guns could be produced cheaply and in large quantities in England (Brinck 2020, 49). The process of casting iron cannons was a specialised job and required great expertise and control of the quantity of iron that was held in the blast furnace (Smith 2017, 56).

In the 15th and 16th century, the Dutch started to import cannons from England to use in their wars, but the English government eventually grew wary of this. The Dutch could become a threat to England and yet England was supporting them with ordnance. In fact, in times of war, the Dutch would fire back at the English with their own cannons (Brinck 2022, 232)! Due to this fact, by 1630 trading and selling cannons to the Dutch was no longer allowed (Croce *et al.* 2022, 55).

The market in Finspong, Sweden was not restricted and a new production centre for the Dutch emerged (Croce *et al.* 2022, 56). This led to Sweden becoming the market leader on cast-iron products (Brinck 2020, 55). The guns produced in Sweden are called Finbankers, even if the guns were produced outside of Finspong (Croce *et al.* 2022, 56). The guns produced in Sweden resemble the English cannons from 1620 (Brinck 2020, 55). England already made cannons for quite some time and produced good examples of how a cannon should be. This led to two main types: the English cannon and the Swedish cannon. Eventually cannon started to be produced in other places.

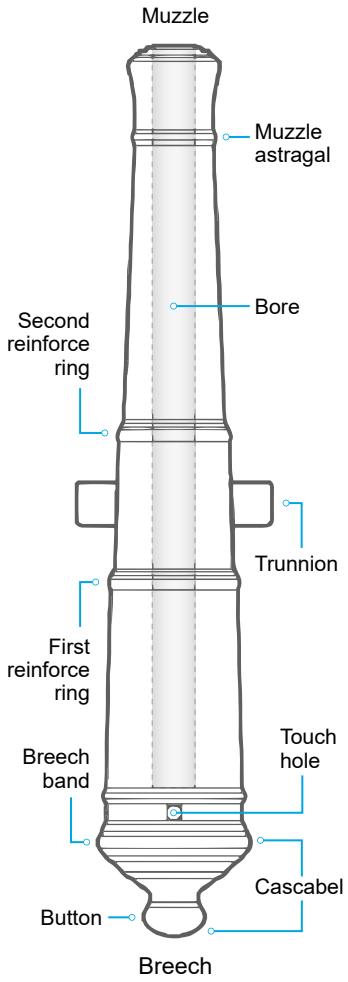


Figure 1: Cannon terms

How to recognise/research your (English) cannon:

Origin marks or decorations: although origin marks weren't always used on cast-iron cannons there are some good examples, for example, Englishman Thomas Gresham used his family crest of a grasshopper together with his initials, as seen in Figure **2** (Brinck 2020; Wessex Archaeology 2024)

Figure 2 (right): Grashopper family crest and initials T and G from Thomas Gresham on cannon (Wessex Archaeology 2014)

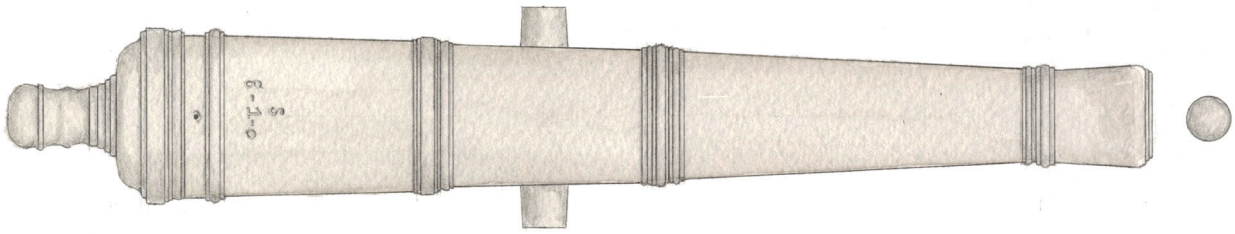


Figure 3: Initial S and weight on cannon BWL1_0051 (Wessex Archaeology 2017)

Initials: some casters in England used their initials, however they can be hard to interpret, for instance, on Figure **3** (above) the initial 'S' stands for Robert Sackville, an English gun-caster (Wessex Archaeology 2017; Croce *et al.* 2022, 59)

Weight: on English cannons the weight was recorded with an identifiable notation: hundredweight, quarts, and pounds (Brinck 2020, 70), as in Figure **3**, above.

Figure 4: Extended cascabel on cannon BWL1_0080 (Wessex Archaeology 2017; Croce et al. 2022, 59)

Measurements and features (Brinck 2020, 70; Croce *et al.* 2022): The measurements of the cannon and the different features on it, such as the length in combination with the shape of the cascabel, informs the researcher what cannon(s) they are researching. For instance, most English cannons between 1565–1590 had an extended cascabel (Figure **4**).

Note: Previously, two fragments from a cannon found at Clubbs Denton Wharf were recorded through the Protocol: Clubbs_1024 and Clubbs_1025 (Figure **5**). This cannon was discussed in *Dredged Up* Issue 31 in: www.wessexarch.co.uk/sites/default/files/field_file/DredgedUp_Autumn2022_Digital.pdf

Figure 5 (right): Cannon fragments, Clubbs_1024 and Clubbs_1025

How to draw a cannon:

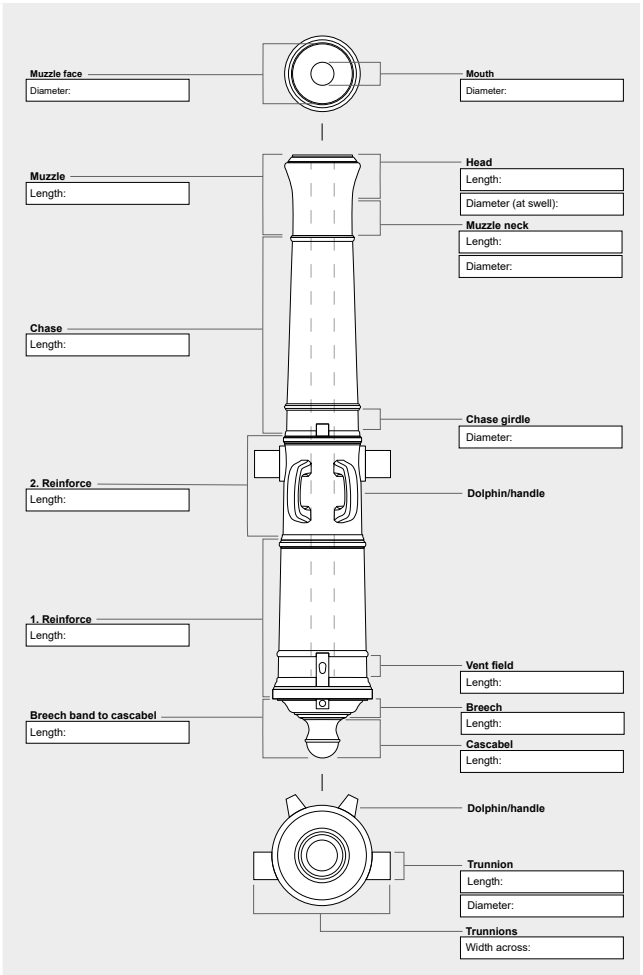
If you want to know more about the cannon you've encountered, the most important step is to measure and draw the cannon and mention all the different features on it.

1. Start with measurements from the breech band to the muzzle (see Figure **6** for the most important measurements).
2. Measure the distance from the breech band to different features, such as rings and decorations.
3. Measure the length and distance from breech to the cascabel (the end part of the cannon).
4. Don't forget to measure some overall measurements, like the length of the bore and muzzle and their diameters too.
5. Take some pictures for reference.
6. The draft version of your detailed measurements could look like Figure **7** (seen on Page **8**).

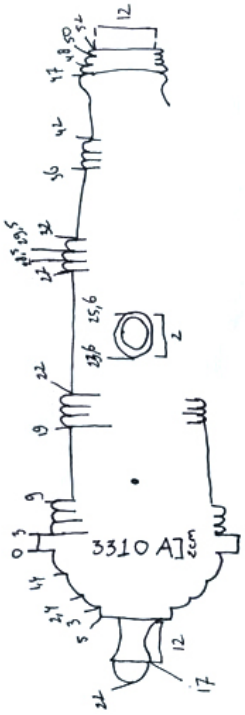
Now that you have documented the most important information about the cannon, the records can be used for further study or analysis by yourself or an expert.

If you really like drawing cannons, the measurements you took can support a professional drawing, like the ones often featured in archaeological reports (Figure **3**). Generally, the scales used for these drawings are 1:10 or 1:5 cm. Your drawing can even contribute to the Big Cannon Project on Facebook, where drawings and research on cannons across the world have been shared.

Figure 6 (right): Important measurements of cannons (Wessex Archaeology 2024)



Disclaimer: The identification of cannons in this article is based on those examples that can be found on land (such as those displayed at museums and fortresses). Iron guns found on the seabed are heavily concreted, and without conservation, the marks are difficult to recognise. If the cannon is heavily concreted (ie., covered in thick rust), **do not** deconcrete it to look for markings. Deconcretion should be done by specialists as part of the conservation of the cannon and in liaison with the Receiver of Wreck if the cannon has been reported via the Merchant Shipping Act 1995. Bronze cannon, on the other hand, maintain their shape and inscriptions underwater. The technique to measure and draw cannons provided in this article can also apply to bronze cannons.



References:

Brinck, N. 2020. *Guns of the Netherlands.* Amersfoort: Rijksdienst voor het Cultureel Erfgoed.

Croce, P., Trollope, C. and Scott, G. 2022. 'Eight iron cannons recovered from Portsmouth Harbour', in *The Ordnance Society (eds), Journal of the Ordnance Society Volume 29 2022 29*, 54-67. The Ordnance Society.

Smith, T. 2017. 'Early cannon made in England', in *Steel times international (eds), Steel Times International 41*, 56. Surrey: Steel Times International.

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Wessex Archaeology. 2017. *Queen Elizabeth Class Capital Dredge Project Her Majesty's Naval Base, Portsmouth Final Archaeological Report.* Salisbury: unpublished report ref. T23454.01.

Wessex Archaeology, 2024. *Coastal and Marine Cast Gun Record.* Salisbury: Wessex Archaeology.

Figure 7 (left): Drawing of a cannon with measurements (draft by K. Pollé)

Word Search

S	A	B	A	L	C	V	A	A	X	E	F	S	P	S
B	O	N	E	V	R	E	E	D	F	G	I	T	O	H
F	S	I	T	Y	I	Z	R	E	Q	X	J	O	K	I
I	M	D	L	A	M	A	C	A	U	E	N	N	N	P
L	U	X	E	S	P	N	T	X	M	P	D	E	E	W
S	N	V	L	E	A	V	X	I	P	I	R	E	M	R
H	I	L	W	N	K	M	L	V	O	H	C	U	M	E
E	T	M	D	D	E	G	P	H	A	N	O	S	R	C
L	I	R	P	P	I	S	F	L	I	N	T	N	C	K
L	O	X	T	I	M	S	T	A	E	T	E	N	P	A
S	N	L	T	V	R	S	W	A	M	S	Q	W	A	R
B	E	T	I	M	B	E	R	S	M	E	T	A	L	T

Bone

Aviation

Ordnance

Soil Samples

Timber

Munition

Flint

Shipwreck

Stone

Metal

Ceramics

Shells