The archaeological exploration of caves in Jamaica: the Portland Ridge case

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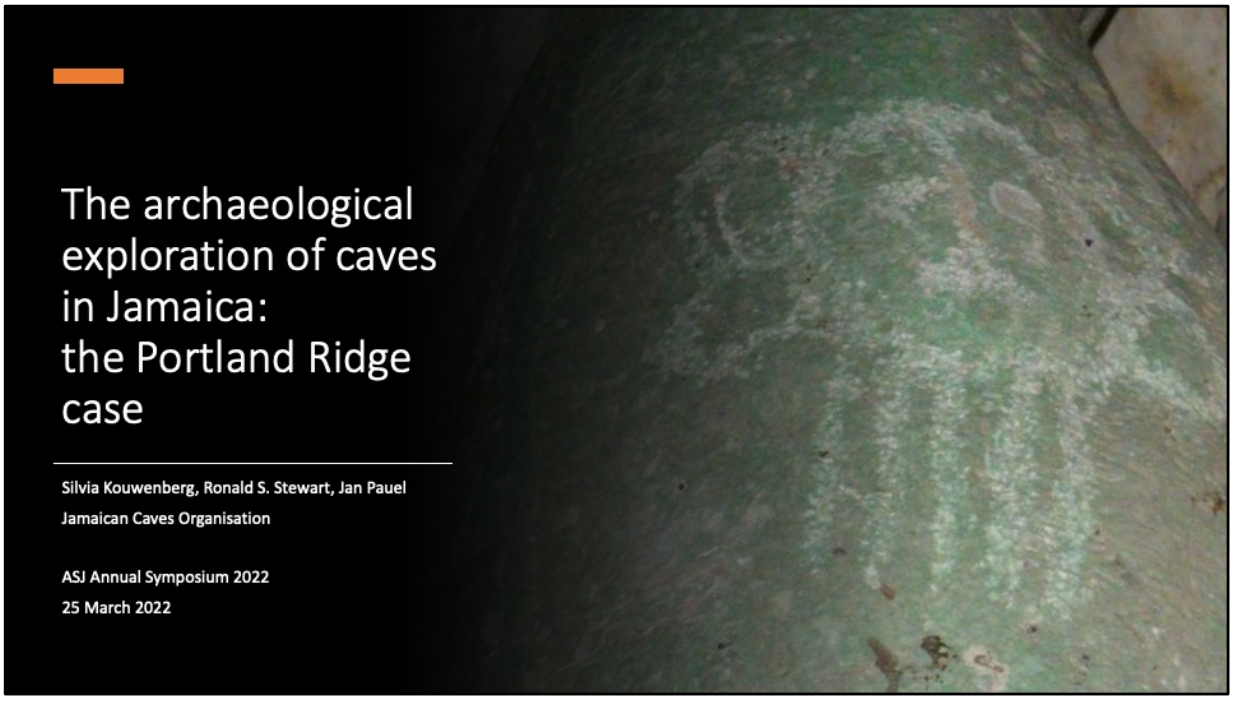
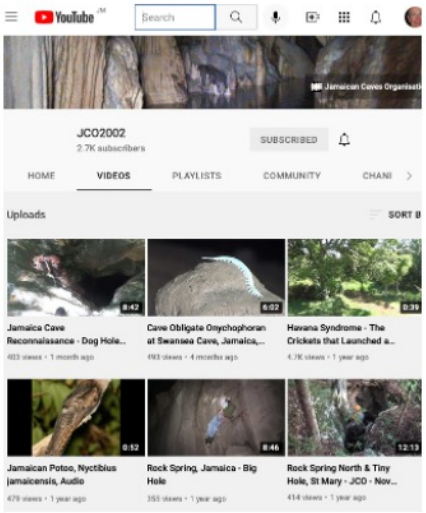
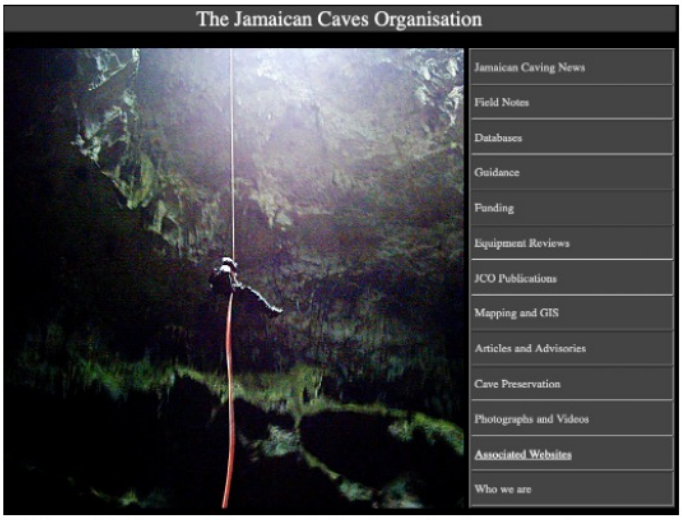
ASJ Annual Symposium 2022
25 March 2022







The Jamaican Caves Organisation (JCO), established in 2002, is an all-volunteer caving organisation devoted to the preservation, exploration and documentation of caves in Jamaica, and to education, research and advocacy about caves. It is a successor to the Jamaican Caving Club, established 1958, and active into the 1990s. The JCO operates a website www.jamaicancaves.org and a YouTube channel https://www.youtube.com/user/JCO2002. The JCO counts the Portland Ridge among its areas of focus.

The JCO published its report on *The Caves of the Portland Ridge, Jamaica* in 2020. This report was produced to support documentation of, research on, and preservation of the caves and the surrounding ecologies of the Portland Ridge.

The report lists all known caves and sinkholes of the area and provides GPS positions for most of them. It also discusses research insights on speleogenesis, palaeoclimatology & palaeoecology, and cave fauna, alongside archaeology.

The report builds on A.G. Fincham's magnificent 1997 *Jamaica Underground. The caves, sinkholes and underground rivers of the island,* UWI Press. [JU]

Today, we present the Portland Ridge as an example of the relationship between the work of the JCO and cave archaeology. This presentation is based on the JCO's (2020) report on the Caves of the Portland Ridge, which was produced to support documentation of, research on, and preservation of the caves and the surrounding ecologies. The report lists all known caves and sinkholes of the area and provides GPS positions for most of them. In the report, we also discuss research insights on speleogenesis, on palaeoclimatology & palaeoecology, and on cave fauna, archaeology and palaeontology.

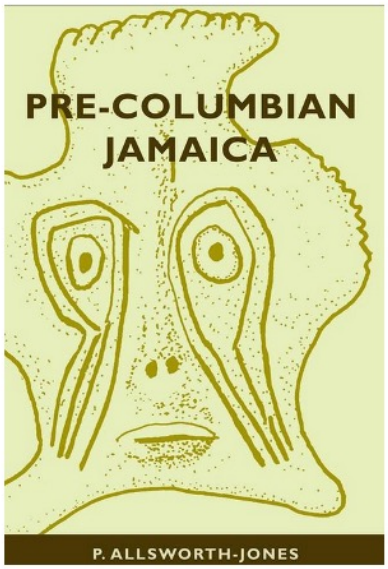
Portland Ridge is the most southern peninsula of Jamaica. The highest elevation is just over 150 meters above sea level, and it has a surface of approximately 40km2. The geology of Portland Ridge is White Limestone in the Newport formation. Portland Ridge is part of a system of tropical dry forests and is home to many Jamaican endemic plant and animal species. Almost the entire Portland Ridge area is controlled by two gun clubs, the PWD Hunting and Sporting Club and the Jackson Bay Gun Club, through long term leases. The two gun clubs control about half of the peninsula each. The use of the forest for seasonal recreational hunting and the long term leases of the two properties have allowed for a considerable amount of habitat protection and species conservation for most of the peninsula for the past approximately 80 years. Thus, the caves of the Portland Ridge have been spared the disturbance and destruction by human agents seen in caves in more accessible locations.

This map shows the known cave sites on the South Portland Ridge to the left and the North Portland Ridge to the right. As can be seen here, much of the Portland ridge looks like *terra incognita*. This is due to the nature of the terrain. Dense dry limestone forest on honeycomb karst makes penetration challenging to say the least.

An aerial impression of the dense limestone forest on the ridge shows clearly how inhospitable the terrain is. Add to that the absence of reliable water sources, and it is not surprising that one midden on the North Portland Ridge is the only evidence found to date of a Taino settlement on the peninsula.
Nevertheless, it is abundantly clear that the Taino had a presence at the ridge, where they created pictographs and petroglyphs, and left pottery, and human remains in caves. There is no evidence that they used caves for habitation. So if Taino people did not live on the ridge, what business did they have there?

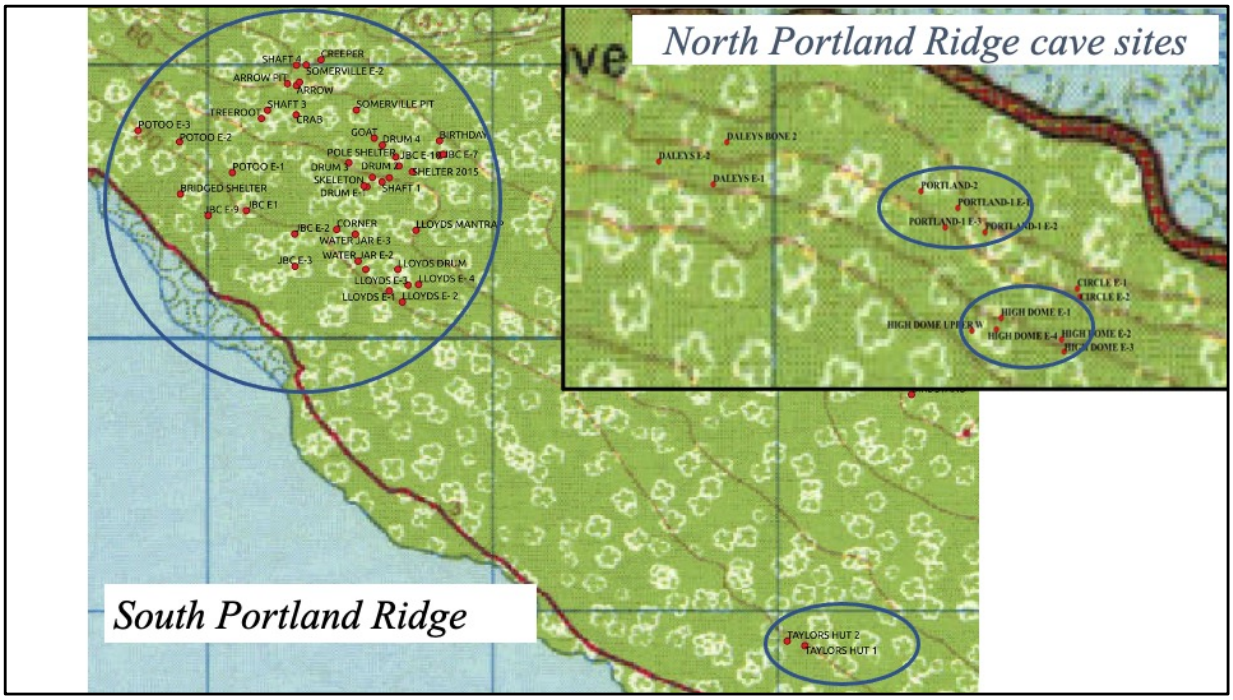
Cave archaeology on the Portland Ridge

- James Edwin Duerden, 1897. Aboriginal Indian remains in Jamaica. With a note on the craniology of the aborigines of Jamaica, by Professor A.C. Haddon. *Journal of the Institute of Jamaica* II, 4. [reprinted in Allsworth-Jones 2008]
- Jackson Bay Cave "contained the very perfect, flattened human skull of some aged person, and fragments of another skull; along with numerous limb and other bones, turtle bones, pottery, and shells" (2008, p.248). These finds, he says, were added to the Museum collections of the Institute of Jamaica, where they presumably remain to this day.
- Philip Allsworth-Jones, 2008. *Pre-Columbian Jamaica.* University of Alabama Press. [with CD]
- A substantial overview of the prehistoric evidence from Jamaica, based on the James W. Lee collection, which is held at the University of the West Indies, Mona.

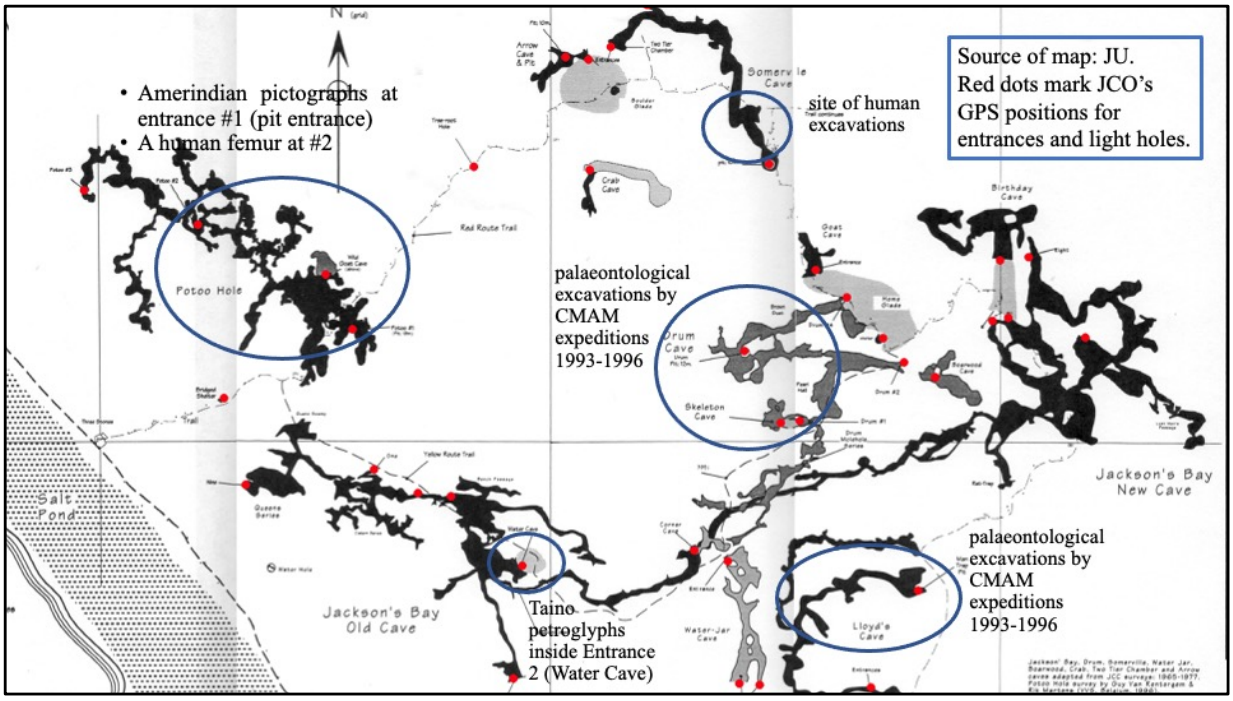


The earliest attempt at a somewhat systematic discussion of cave finds in Jamaica is by James Edwin Duerden, Curator of the Museum of the Institute of Jamaica in the early 1890s. His *Aboriginal Indian remains in Jamaica* was published in the Journal of the Institute of Jamaica in 1897.

After Duerden, more than a century passes before another such attempt is made, in the form of the publication of *Pre-Columbian Jamaica*, by Allsworth-Jones (2008). This work is a substantial summary of the prehistoric evidence from Jamaica, based on the James W. Lee collection, which is held at the University of the West Indies, Mona.

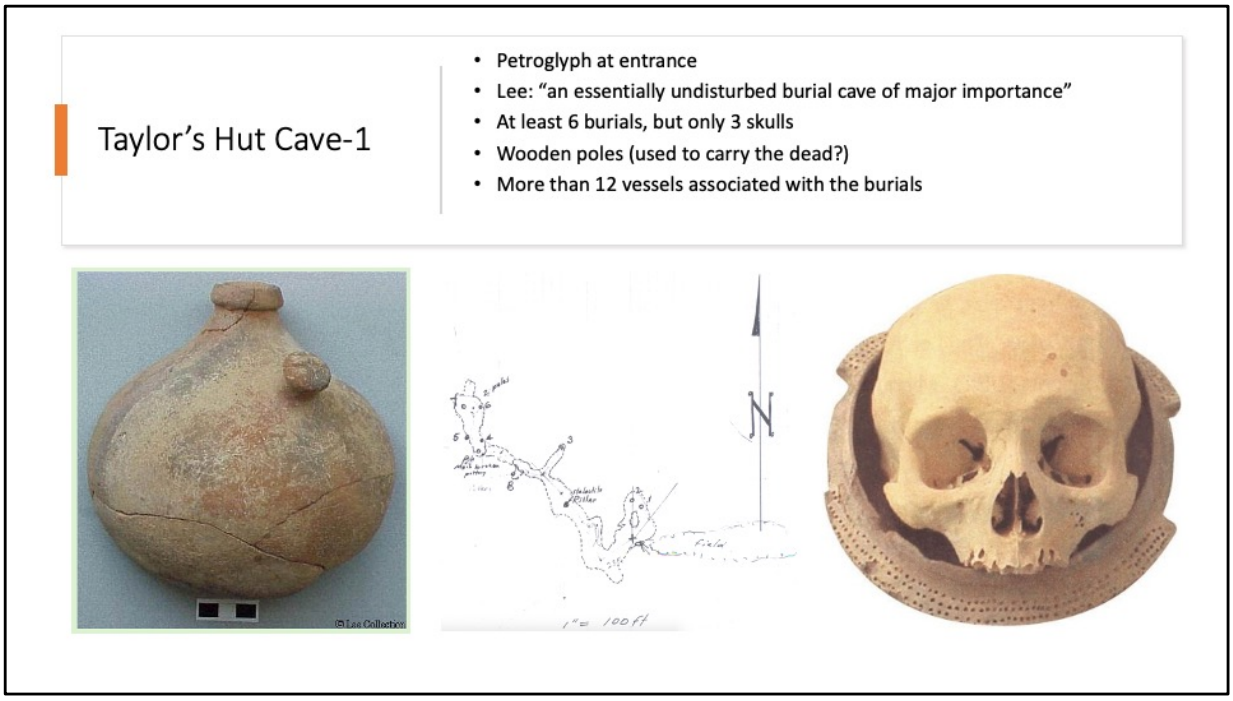


James Lee's site listing, as reproduced in Allsworth-Jones's book, includes Potoo Hole, several caves in the Jackson's Bay Cave complex, and the Taylor's Hut Caves, which are all on the South Ridge, as well as the Portland Caves and High Dome Cave on the North Ridge.



Lee's work was limited to surface collection and observation. Some excavation has been done by others. On the South Ridge, Somerville Cave has been the site of excavations of human remains in the late 1990s. Palaeontological expeditions have been organized through the American Museum of Natural History from 1993 to 1996 which involved excavations in Lloyd's Cave, Skeleton Cave, and Drum Cave.

Here, we will focus on human presence, and we will therefore not discuss the palaeontological excavations. Suffice it to say that McFarlane, Lundberg & Fincham (2002) report collecting vertebrate remains which include several endemic extinct species, including two bird species (caracara, and a flightless ibis), a Jamaican rice rat, an undescribed rodent, and of course *Xenothrix mcgregori* – the extinct Jamaica primate.



Taylor's Hut Cave-1 was mapped by James Lee in 1971. According to Allsworth-Jones (2008: CD), he described the site as "an essentially undisturbed burial cave of major importance". At about 8 prominent positions, and in several other places, large pottery fragments and/or skeletal remains occurred on the cave floors of two of the major passageways. There seem to have been at least 6 burials, but there were only 3 skulls, one in a good condition and two in a poor state of preservation. The presence of some wooden poles in the immediate vicinity of the pottery and skeletal remains suggested to Lee that they had been used to carry the dead persons into the cave. The poles were 2-3 inches thick and 8-10 feet long. in order to safeguard the material from damage, the decision was taken to remove it from the cave and to reconstruct the broken pottery vessels. Before this was done, the material was photographed in situ. On first entering the cave, Lee ascertained that more than 12 vessels were associated with the burials. After reconstruction, he described 11 of them as follows: "three pots are round, six are boat shaped, one is teardrop shaped, and one is a squat bottle". 5 or 6 large griddle fragments occurred at a point over 300 feet inside the cave. The fragments were found to be parts of three burens, one of which was squarish with rounded corners, about 50 cm long on each side.

With the help of Jackson's Bay Gun Club staff, we located the cave February last year.

We saw poles which answer to Lee's description, with twine around some of the ends. We also noted pottery sherds and scattered human bones. It is amazing to us that this cave has not been the site of a major excavation.

Analysis of commingled skeletal remains from a pre-contact cave site in the Jackson's Bay Cave series, Jamaica. E.A. REGA, J. MICHAELSON and L. TENEYCK. W.M. Keck Science Center, The Claremont Colleges, Claremont, CA 91711

The commingled and fragmentary human skeletal remains recovered from the pit entrance of Sommerville Cave on the Portland Ridge afford a unique opportunity to examine a substantial sample of skeletons of the aboriginal inhabitants of Jamaica. Wet tropical climates are notorious for very poor preservation of bone. Thus, the remains from this dry cave, where accelerator dating of faunal material has produced a date of 710 +/- 60 years BP provide a rare opportunity to examine these prehistoric people.

Preliminary excavation was conducted in 1997 and 1998 in cooperation with the Jamaica National Heritage Trust to assess and collect human bones and artifacts which were present both as a surface scatter and deeper within the dry loose cave substrate. Results of the MNI analysis (minimum number of individuals) demonstrate that at least twelve individuals are represented in the skeletal sample. Taphonomic analysis of bone fragment size in conjunction with vertical location reveal a clear sorting of bone fragments by size – large fragments were nearer the surface, with small bones and bone fragments migrating to deeper levels. Circumstances of original deposition remain, however, unclear. Hypotheses include mass suicide, primary inhumation/exposure and subsequent disturbance or secondary placement of previously defleshed bones. Stable isotope analysis reveals a diet consisting of mixed terrestrial and marine resources. Pathology includes two examples of unhealed spiral fractures in separate individuals most likely resulting from falls of a great distance.

Somerville Cave

A chamber cave with a depth of 18m. Entry can be gained by vertical descent or through an entrance in the side of a deep glade. The two entrances are connected via a passage over 250 m long.

Somerville Cave is the site of excavations of human remains carried out in the late 1990's. Unfortunately, the results of this work have not been published. Allsworth-Jones (2008, p.130-131) summarizes the findings, based on unpublished abstracts by the researchers (Rega, Michaelson & TenEyck 1999; Rega 2006). We were able to locate one of the abstracts, which is shown here.

Commingled and fragmentary human skeletal remains were recovered both as surface scatter and deeper within the dry loose cave substrate from the Pit Entrance, where the deposits are 10 m below an opening on the present ground surface. Based on the MNI analysis (Minimum Number of Individuals), at least 12 individuals are represented in the skeletal sample, including at least one neonate, one infant, four juveniles, five adults, and one possible senescent. Allsworth-Jones notes that this mixture of ages is somewhat similar to that detected at other Jamaican caves in the past. In the abstract shown here, it is stated that stable isotope analysis reveals a diet consisting of mixed terrestrial and marine resources, and that pathology includes two examples of unhealed spiral fractures in separate individuals, most likely resulting from falls of a great distance. Rega et al. speculate about possible causes of death, naming mass suicide, primary inhumation aka burial, secondary placement of previously defleshed bones.

According to Allsworth-Jones, two apparently satisfactory radiocarbon dates were obtained: 940 ± 40 B.P. (Beta-170212) and 620 ± 40 B.P. (Beta-170213). The calibrated age ranges for these dates work out at A.D. 1010-1195 and 1290-1410 respectively. Allsworth-Jones points out that this is entirely consonant with the discovery of several White Marl style pottery fragments in the deposits.

Potoo Hole

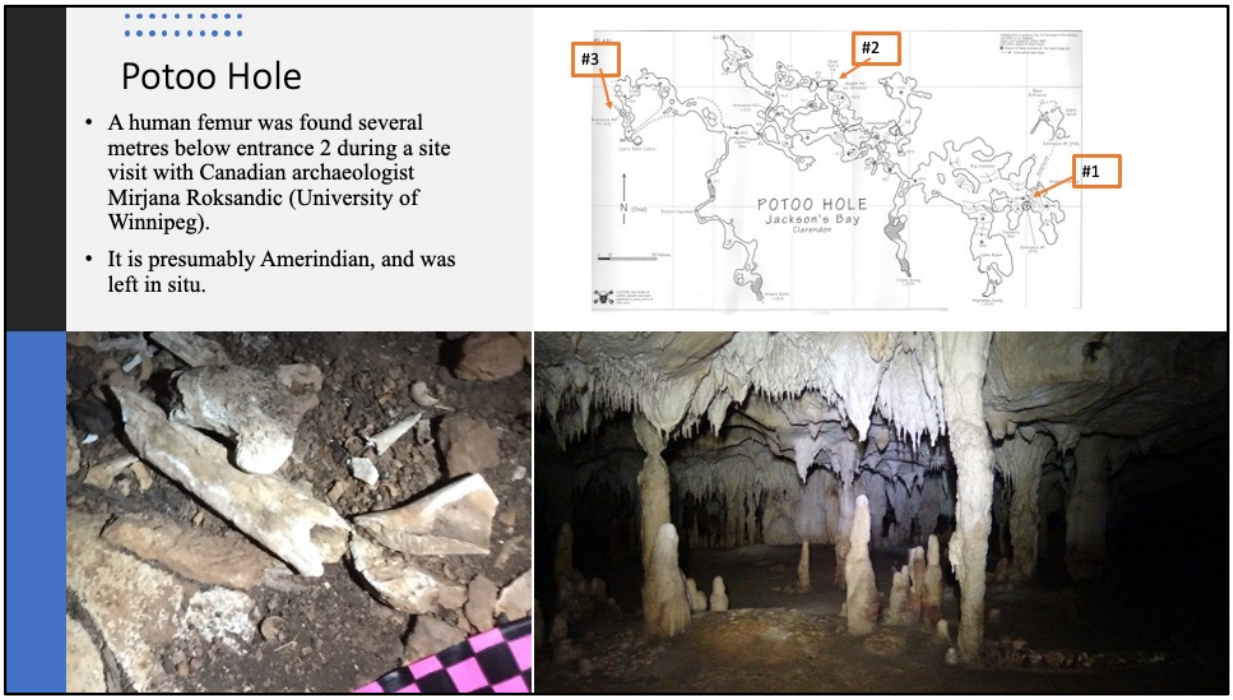
A complex cave of 2,170m of passages and chambers. While 2 other, easier entrances are available, it is the 20m deep vertical overhung pit entrance which provides access to a large, relatively well-lit cavern which is the site of a gallery of pictographs.

Distribution of pictographic types	
Zoomorphic	18 (40%)
Anthropomorphic	7 (15%)
Geometric	8 (18%)
Undefined	13 (27%)

Fincham, A.G. & A.M. Fincham. 1997. The Potoo Hole pictographs. *Jamaica Journal* 26,3: 2-6.

The deep pit entrance of Potoo Hole was first discovered in 1993, and was eventually explored by the Jamaica Caving Club in 1996, when the descent into the pit entrance of Potoo Hole revealed pictographs over the surfaces of a wall at the base of the pit entrance. The pictographs are executed in a red ochre and a blackish pigment which may be charcoal. Among the pictographs depicting animals, there are at least eight representing turtles, probably sea turtles. Crocodiles and iguanas also appear to be represented.

While cavers, as can be seen in the picture, descend on ropes, or in earlier times on rope ladders, Taino daredevils must have made the two-stage descent using tree roots.



While there are 2 easier entrances for this complex cave system, it is unlikely that people could have traversed the complex cave system from entrance 2 or 3 to the pit entrance.
Apart from pictographs, a human femur was found a short distance below entrance 2.

Jackson's Bay Great Cave:

A complex cave system with a total length of over 3,360m and at least 10 entrances.

- Taino petroglyphs are located inside Entrance 2 (Water Entrance).
- Duerden: Jackson Bay Cave "contained the very perfect, flattened human skull of some aged person, and fragments of another skull; along with numerous limb and other bones, turtle bones, pottery, and shells" ([1897] in Allsworth-Jones 2008:248)
- Allsworth-Jones (2008: CD) reports on Lee's 1971 site visit: That year a number of petroglyphs were observed near the mouth of the "water cave" entrance, though some had been mutilated. Fragments of pottery were collected from the mud at the edge of the lake at this point. Another opening of the same "cave system" was designated separately by Lee as CC14. The two together appear to be the same as the "burial cave" described by MacCormack and Duerden.
- D.A. McFarlane reported two radiocarbon dates obtained on (1) a human bone fragment, 710 ± 60 BP (1240 ± 60 AD) and (2) a marine shell, 795 ± 70 BP (1155 ± 70 AD).

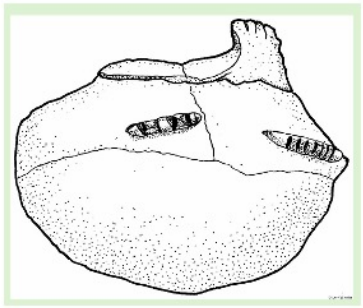
Duerden notes that Jackson Bay Cave, which is on the South Portland Ridge, "contained the very perfect, flattened human skull of some aged person, and fragments of another skull; along with numerous limb and other bones, turtle bones, pottery, and shells" (reprinted in Allsworth-Jones 2008, p.248). These finds, he says, were added to the Museum collections of the Institute of Jamaica, where they presumably remain to this day.

On his site visit in 1971, James Lee observed a number of petroglyphs near the mouth of the water entrance, some mutilated. He collected fragments of pottery from the mud at the edge of the water.

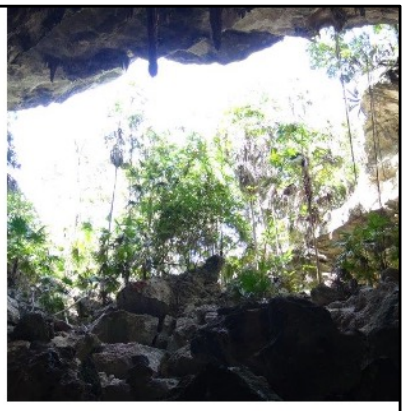
Portland Caves 1 & 2:

#1: A dry passage 153m long. A well-known cave from which most of the guano was excavated in the 1940's.
#2. A dry passage 300m long. Dates on the walls extend back to the mid 1770's. For many years, it was the base of a local man named Busha.

- Cave-1 was mapped by Lee in 1964.
- He recovered "a handful of potsherds" and "a pair of human upper leg bones" sufficient for him to classify it as a burial site.
- R.R. Howard visited in 1948 with C.B. Lewis. Both he and Lewis recovered "large amounts" of human skeletal material, "all heavily broken and widely scattered." Howard also found shells and pottery fragments.



Decorated rim sherd collected at High Dome Cave (Allsworth-Jones 2008:CD).



High Dome Cave

- Chamber caves, 200m long.
- Mapped by James Lee in 1967, described as a burial cave. Lee found arm and leg bones and a fragment of a bowl.
- Just one of many instances where pot sherds are still found on cave visits.

Rock art at the Portland Ridge

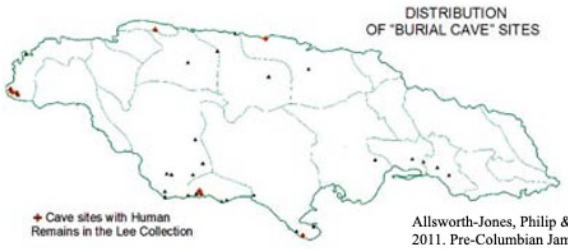
- Unusual:
  - Coastal location
  - In complex caves (Potoo Hole, Jackson's Bay Great Cave)
  - Not located at the cave entrance (Potoo Hole)
  - Potoo Hole is one of only 4 known pictograph sites
- In common with other such sites:
  - At cave entrance (JBGC, Taylor's Hut), possibly boundary marking / acting as guardians
  - Motifs: a mix of zoomorphic, anthropomorphic, and geometric / abstract motifs
  - Pictograms and petroglyphs differ markedly in range and representation of motifs

The work on Jamaican rock art by Leslie-Gail Atkinson leads us to believe that the Portland Ridge rock art sites are unusual in several respects: their coastal location is not common, as most Taino rock art is found in locations in the interior of Jamaica; shelter caves appear to have been much preferred, with complex caves such as Potoo Hole and Jackson's Bay Great Cave in a minority of Taino rock art sites; of 26 known rock art sites, the majority have petroglyphs only, Potoo Hole being one of only 4 pictograph sites; finally, Taino rock art is usually located at the cave entrance, making Potoo Hole, where pictographs are located at the base of the pit entrance, requiring what must have been a hazardous climb down, rather exceptional.

In other ways, the sites and the art conform to patterns found broadly across Jamaica, such as proximity to water (petroglyphs at JBGC are found at the Water Entrance) and their motifs (a mix of zoomorphic, anthropomorphic, and geometric / abstract motifs). An analysis of the Jackson's Bay petroglyphs is yet to be carried out, but given their location at the entrance of the cave, they may be interpreted similarly to Allsworth-Jones' (2017) analysis of petroglyphs at Warminster Rock Shelter as having boundary marking functions, possibly acting as guardians (p.228).

Concluding remarks

- Duerden (1897): "caves served the Indians as natural ossuaries, or places where the bones of their fellows, perhaps some time after death, were collected and deposited in common sepulture".
- Findings suggest both primary and secondary burials. The dry conditions mean that preservation is good. Continued finds of human remains suggests scope for excavations.
- Study of the (sacred) art at Potoo Hole and Jackson's Bay Great Cave is called for.
- Research in caves of the Portland Ridge has yielded results contributing to the local archaeological record, and findings which potentially contribute to larger research questions regarding pre-colonial human populations of the Caribbean. Unfortunately, research results have not always been published, and there has been no work since the 1990s.



Allsworth-Jones, Philip & Richard Knisely-Marpole. 2011. Pre-Columbian Jamaica: The sites in the landscape. *Actes du 24e congres de l'AIAC*, 210-219.

Duerden argues that "caves served the Indians as natural ossuaries, or places where the bones of their fellows, perhaps some time after death, were collected and deposited in common sepulture" ([1897] in Allsworth-Jones 2008:242). He points to numerous similar examples across the Caribbean region. The indications are that several Portland Ridge caves served that function. Human remains have been found in what appear to be both primary and secondary burials, with pottery fragments in the vicinity and in some instances as vessels for human remains. The map shows that Portland Ridge burial caves are among only around 30 such sites identified to date in Jamaica. The fact that we come across human remains from time to time strongly suggests that excavation is likely to yield more evidence of burial caves.

The Taino used some of the Portland Ridge caves also for what is usually assumed to be sacred art. The Potoo Hole pictograms are unique in their location and do not therefore appear to have the boundary function of the petroglyphs at Jackson's Bay Great Cave and Taylor's Hut Cave. An initial analysis has been carried out of the Potoo Hole pictograms, but a more definitive study is needed. The petroglyphs have not been studied at all.

We are fortunate that the Portland Bight is a relatively well protected area, but even

so we see the evidence that people access the caves, which means that acts of vandalism and removal of materials are possible. We of the Jamaican Caves Organisation are concerned that no research has taken place since the 1990s, and that work carried out previously has not always led to publication. We hope that this presentation can help to spark new interest in the archaeological research potential of the caves of the Portland Ridge.

Acknowledgements

- The Jackson Bay Hunting and Fishing Club and the PWD Hunting and Sporting Club
- Local community members
- Feedback provided in the compilation of the report *The caves of Portland Ridge, Jamaica* by Dr Philip Allsworth-Jones (archaeologist, retired, UWI), Dr Zachary Beier (archaeologist, UWI)

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