

ARCHAEOLOGY OF
YAP
MICRONESIA



2018

FOOTPRINTS OF THE ANCESTORS

LOOKING FOR ARCHAEOLOGICAL EVIDENCE OF
EARLY SETTLEMENT ON THE ISLANDS OF YAP



MATTHEW F. NAPOLITANO

WITH S.M. FITZPATRICK AND G. CLARK

WRITTEN & ILLUSTRATED BY JOHN G. SWIGGER



FOOTPRINTS OF THE ANCESTORS

Written and illustrated by John G. Swogger

with Matthew Napolitano, University of Oregon,
Esther Mietes, D7 Archeologie (Netherlands),
and Francis Reg, Officer, Yap State Historic Preservation Office.

With special thanks to Chief James Limar and Francis Reg for helping to arrange permissions to work in Anoth and Magachagil, and to Sebastian Tamagken and all the other landowners who allowed us to work on their land.

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Co-grantees: Dr. Scott M. Fitzpatrick, University of Oregon and Matthew F. Napolitano, M.A. University of Oregon.

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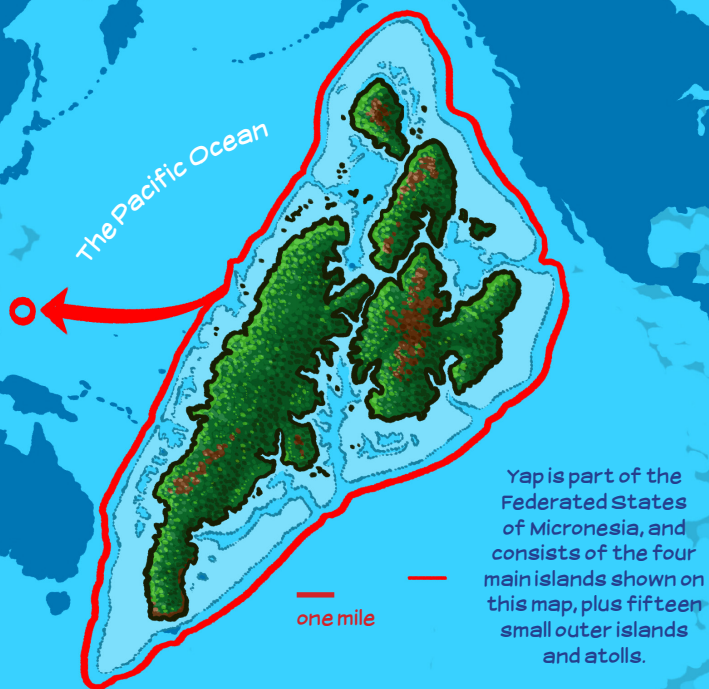




THE ISLANDS OF YAP in the western Pacific, are known as the "islands of stone money." Called "rai" on Yap, stone money are large round disks of limestone brought from the island of Palau, and were used historically to mark important exchanges between Yapese communities. Today this stone money has also come to symbolize the unique identity of Yap itself.


But how did this unique identity come about?

When did the original settlers of Yap come to these remote islands?



This comic tells the story of one attempt to answer some of these questions: it follows the work of an archaeological expedition funded by **National Geographic** and led by PhD researcher **Matthew Napolitano** from the University of Oregon.

Together with an international team of researchers, and with help from Yap's **Historic Preservation Office** and local communities and leaders, Napolitano spent the summer of 2018 looking for clues about the early settlement of the islands of Yap, and evidence of the first people to call this unique place "home".



I'm Matthew Napolitano, and I'm an archaeologist from the University of Oregon. I've come to Yap with a team of archaeological researchers to look for evidence of early settlement on Yap - and look for clues about the first people to come to the island.

This work is part of my PhD research, and what I find out this year will help us understand how - and when - all the islands of the Pacific were originally settled.

Matthew "Nappy" Napolitano.

PhD researcher, University of Oregon. I came to Yap in 2016 and 2017 doing research for my PhD. I'm really interested in how, when and why the first people came to Yap. I hope that my research can answer some of these questions!

Francis Reg


Officer, Historic Preservation Office, Yap. I'm responsible for ensuring that the culture and heritage of Yap is preserved - but also studied and understood. I've worked with Scott and Matthew during their previous seasons on Yap.

Dr. Scott Fitzpatrick.

Professor of Archaeology, University of Oregon. I've been doing archaeology on Yap and Palau for over twenty-five years, and regularly bring my students to the Pacific to learn archaeological techniques and do their own research.

Kaylien Rungun

I live near Anoth village, in Southern Yap. I worked with Matthew, Esther and Scott during 2016 and 2017, and now I work for the Yap State Historic Preservation Office. I'm glad Matt and his team are interested in Yap for their research - having archaeologists come to the island helps connect our island culture to the history of the whole of Micronesia.



I'm Chief James Limar, and I'm very happy to welcome Matthew and his team to Yap, and to help them find suitable sites that will help their research. I'm interested in what his work might be able to tell us about how and when our ancestors first came to this island.

This is an important part of the story of Yap, and an important part of our heritage.

John Swogger

Archaeological Illustrator. I've worked with Scott for many years on excavation projects in the Caribbean and Palau. My job is to help present archaeology in a way that everyone can understand - so I wrote and illustrated this comic.

Esther Mietes

Archaeologist in the Netherlands and head of the archaeological research and consultancy company D7 Archaeologie.

I've also worked with Scott on his projects in the Caribbean. I specialize in designing and managing archaeological projects big and small. I came to Yap with Matthew in 2016 and 2017 to help him with his research.

Chief James Limar

Chief of Gilman and Member of the Traditional Council of Pilung. I'm the Chief of Gilman Municipality as well as the Director of the Small Business Development Center (SBDC). As Chief, my role, first and foremost, concerns tradition and custom. But all of us on Yap, no matter who we are, have a role to play in helping tell the story of our ancestors. Archaeology and our ancient heritage is an important part of what makes the culture of Yap unique.

We arrived in Yap early this morning after a long journey from Palau...

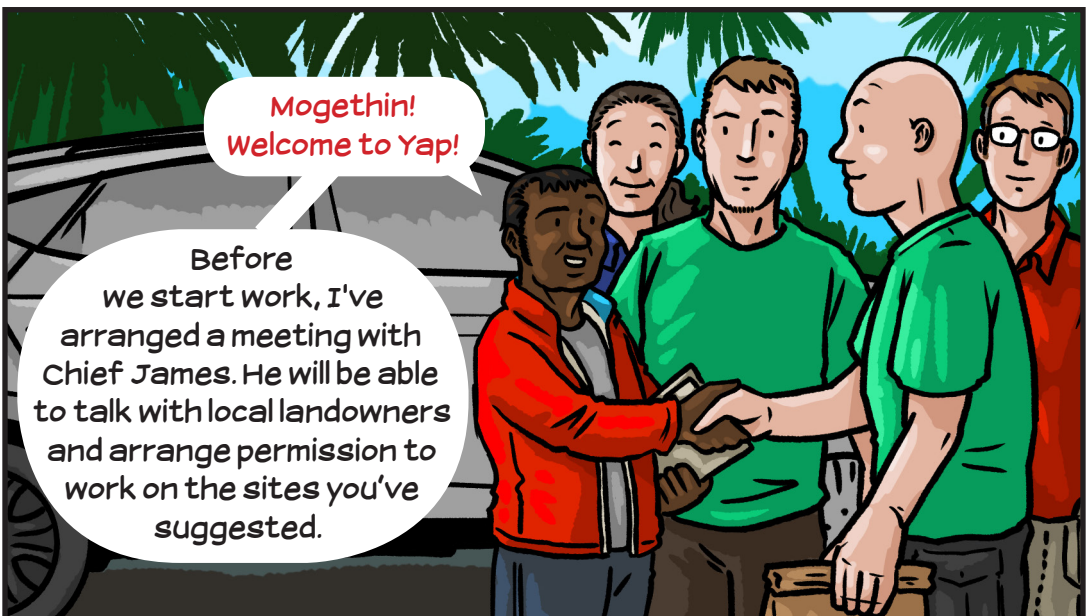


We'll be staying at the **ESA Bayview Hotel** in Colonia, which we will also use as our lab and research space. However, we'll be working most days at sites in the southern part of Yap.



Mogethin!
Welcome to Yap!

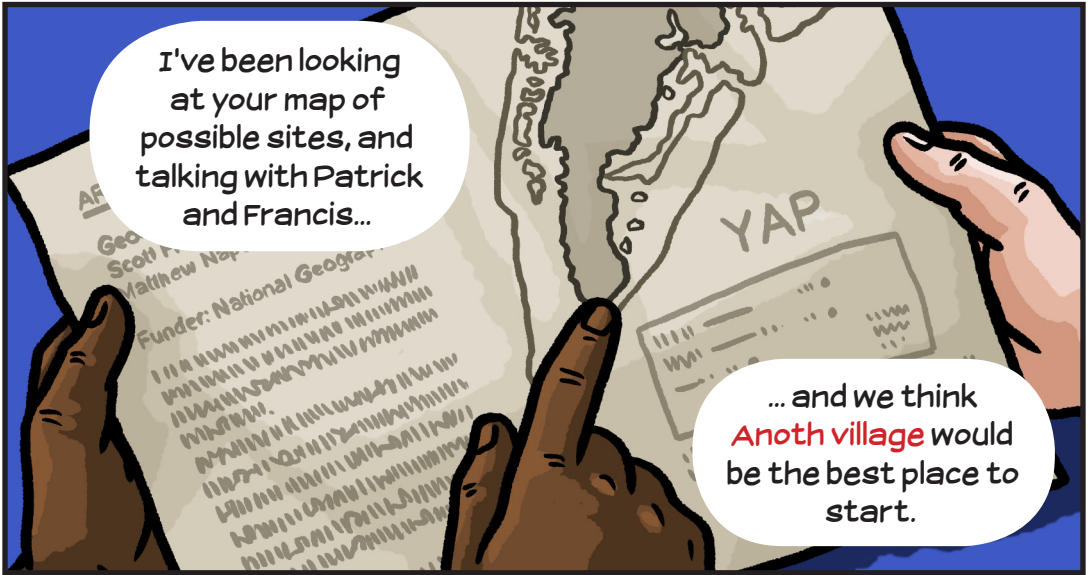
Before we start work, I've arranged a meeting with Chief James. He will be able to talk with local landowners and arrange permission to work on the sites you've suggested.





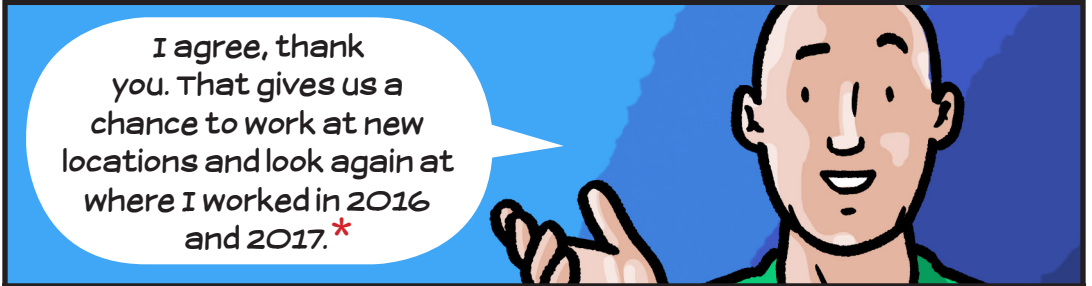
Mogethin!
Welcome to Yap!

Francis has told me about the research you're doing, and I'm happy to help with your work.



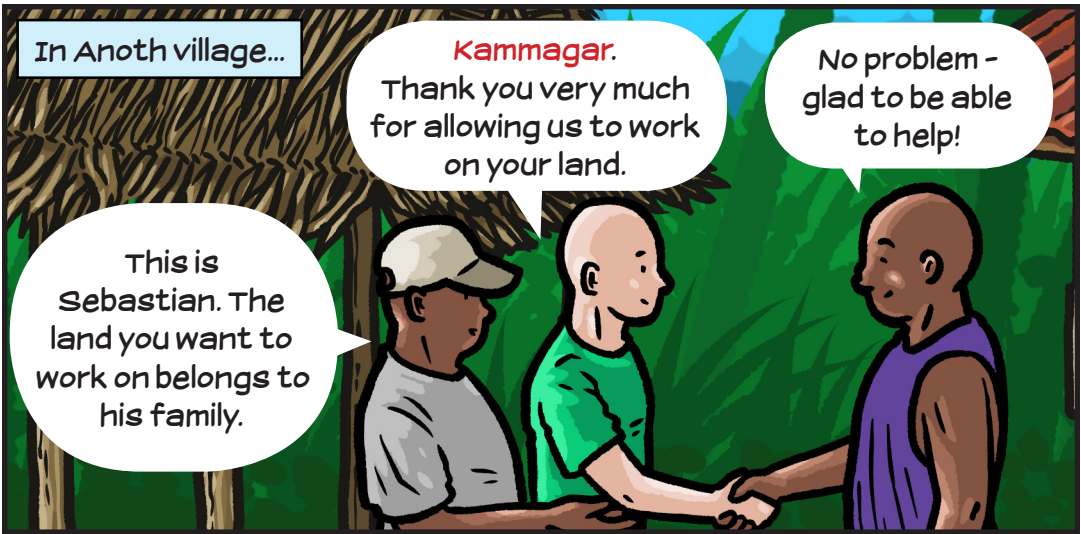
I've been looking at your map of possible sites, and talking with Patrick and Francis...

... and we think **Another village** would be the best place to start.



I agree, thank you. That gives us a chance to work at new locations and look again at where I worked in 2016 and 2017.*

* When Scott, Esther and I came to Yap in 2016 and 2017 we excavated a trench at the site of Pemrang in Guror, near Magachagil village. The results of those two seasons' work convinced me that it would be a good idea to come back to Yap and conduct research for my PhD - which is what I'm doing this year.

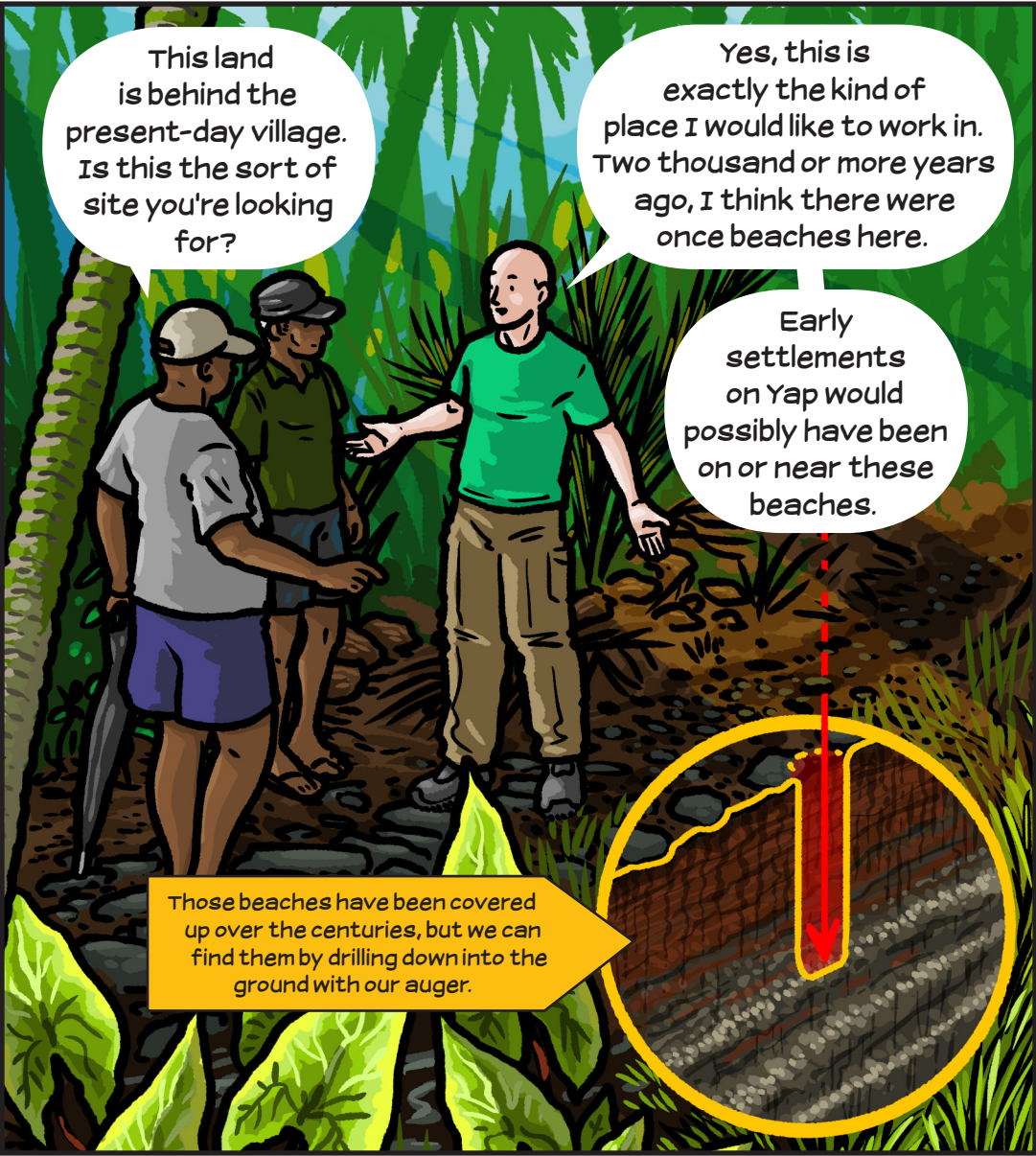


In Anoth village...

Kammagar.
Thank you very much
for allowing us to work
on your land.

No problem -
glad to be able
to help!

This is
Sebastian. The
land you want to
work on belongs to
his family.



This land
is behind the
present-day village.
Is this the sort of
site you're looking
for?

Yes, this is
exactly the kind of
place I would like to work in.
Two thousand or more years
ago, I think there were
once beaches here.

Early
settlements
on Yap would
possibly have been
on or near these
beaches.

Those beaches have been covered
up over the centuries, but we can
find them by drilling down into the
ground with our auger.



That makes sense. In some of our stories, this area between the red clay hills and where the beach is today was filled-in by people and reclaimed from the sea.



Is this before the time when people from Yap went to Palau to bring back stone money?



That's right. Some people say that this was all to keep the young men from fighting too much!



Once we sign the official permit, we start work, bringing the auger and other equipment we'll be using out to Anoth.

The auger is made in meter-long sections.



You drill it into the ground by twisting the handle...

.. and you then lift the auger out of the hole you've just dug to get a sample of the soil.



A simple but effective tool.

The auger can go down to five meters, but how deep we go depends on what kind of soil we find.

Each auger hole is a glimpse down into the subsoils below the surface soil...

... and a window back in time.

Part of our research will be to determine what the soils we uncover indicate.

Thick red clay

Mixed clays and decayed organic matter

Sand from ancient beach

concreted sand, shell and coral ("calcrete")



We're going to use the auger to look at the subsoils below Anoth and try and locate the ancient beaches - and, hopefully, the early settlement sites.

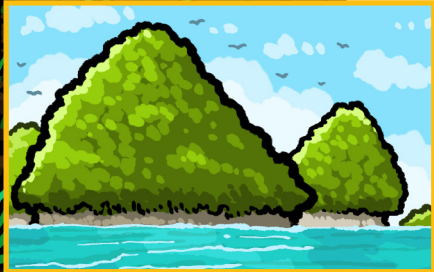
Several things will help me decide where we auger:

Hopefully, this will help narrow the search, so we're not just looking for a needle in a haystack...!

But it's still going to be hard work locating these early sites. Every day will count, and Esther, John and I will be doing our best to make the most of our time on Yap.



Information from people who have lived their whole lives in Anoth.



Data about soils and geology from Yap and nearby Pacific islands.



Data from previous archaeological excavations done on Yap.



Advice from archaeological colleagues like Scott and Geoff.

But, there are other factors in Anoth village itself that will determine where we will be able to use the auger...

Another village has been occupied for over 500 years, and the landscape is a maze of well-used roads and paths, stone house platforms, betel palm plantations and taro fields. Finding places we can auger can be very difficult.





But despite these difficulties, the auger is a really useful tool. At the end of our first week we've already done over 20 holes, and we're getting some interesting results...

This is what we've been finding in some of the auger holes at Anoth:



water table

fish bone

AH2018-009



crushed shells

compact sand

AH2018-009b



thick red clay

mixed clays

AH2018-004



grey sand

white sand

broken coral

calcrete

AH2018-005



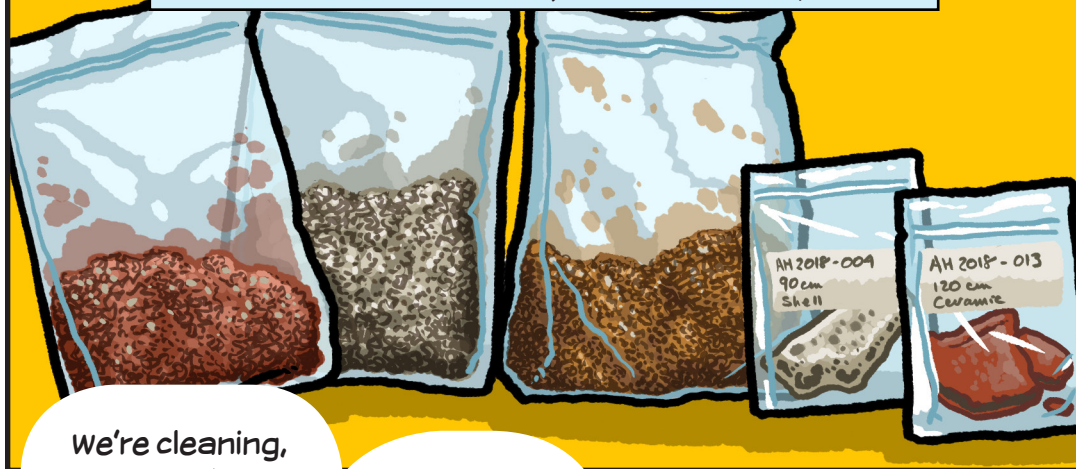
possible charcoal

pieces of pottery

smooth gravel

AH2018-010

We've taken samples of the shell and pottery that we find, as well as samples of the soil layers.

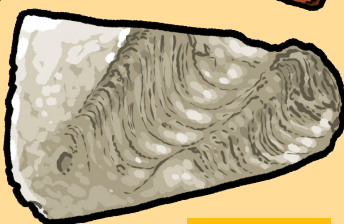


We're cleaning, sorting and listing the samples...

... and we've begun to identify some of the shell and pottery.



fragments of different kinds of pottery



shell adze



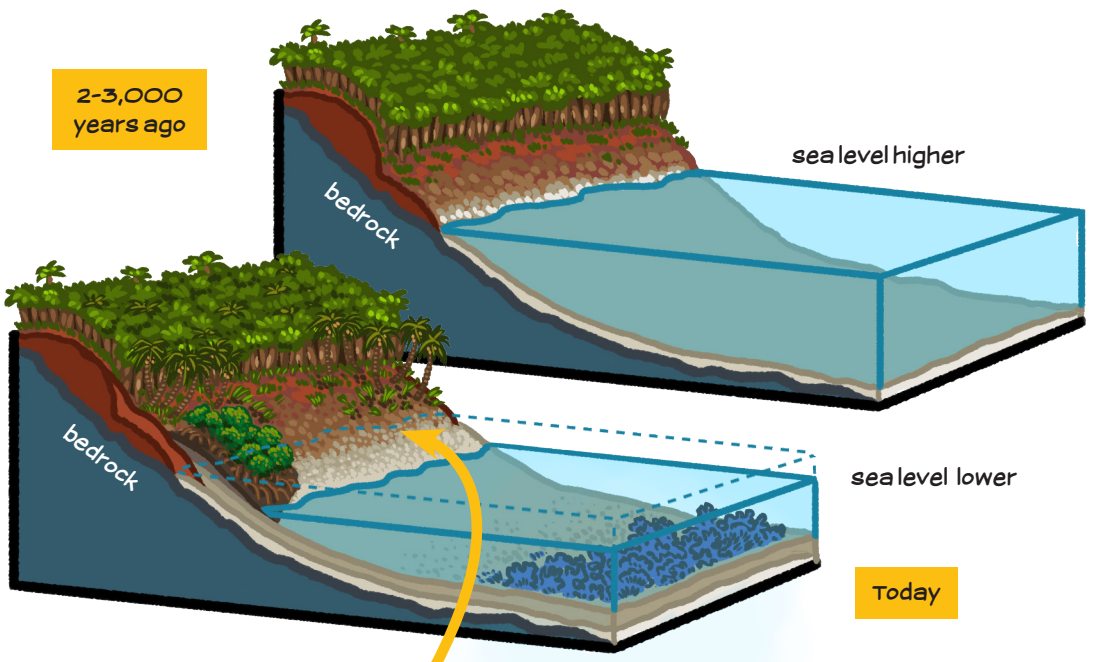
fragment of burnt shell bracelet

So, what do our auger results and our samples tell us so far?



Separating out tiny shells, small bones and fragments of ancient plants from a soil sample. This gives us evidence about what people were using for food.

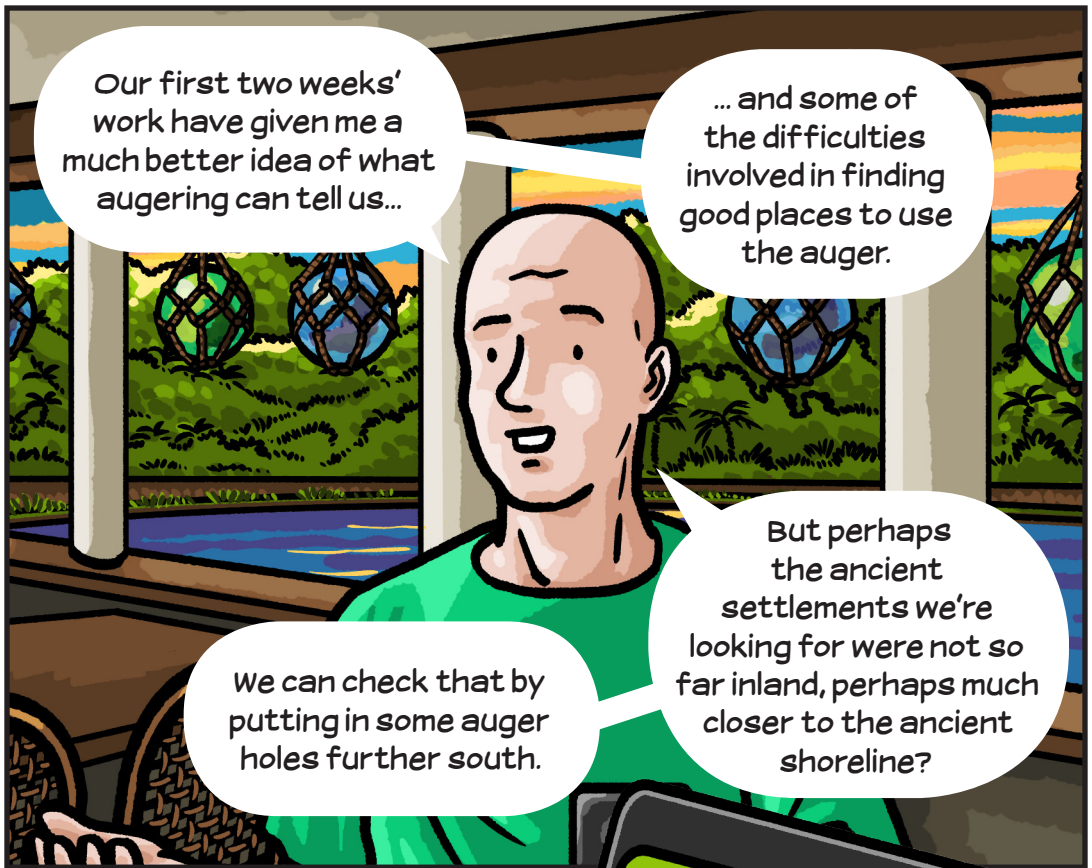
We've confirmed what we know from research elsewhere in the Pacific that sea levels were higher 2-3,000 years ago than they are today. It's great to be able now to contribute data from Yap to this research.



This means that the ancient shoreline would have been further inland than it is today.

This is why we've looked first at the inland areas in Anoth, where the ancient beaches would be.





Our first two weeks' work have given me a much better idea of what augering can tell us...

... and some of the difficulties involved in finding good places to use the auger.

We can check that by putting in some auger holes further south.

But perhaps the ancient settlements we're looking for were not so far inland, perhaps much closer to the ancient shoreline?

We've been augering in the southern part of the island of Yap, around Anoth Village, where - through Chief James - the landowners have given us permission to work. The red dots show where we've put our auger holes so far. We've tried to put in an auger holes about every ten meters - if we can. But obviously we haven't put them in the middle of stone platforms, or disturbed any taro fields, and sometimes there have been trees, roots or standing water in the way.

... in an area called **Rungluw**.

This is why the red dots aren't spaced evenly on this map, and why it's important for us to try and get permission to work in as many places around Magachagil and Anoth villages as possible. We don't have permission to work to the east or west of these two villages yet - but this is something that Chief James and Francis will be working on while we're in the field.

So this week, we start working on land about 150 meters in from the present shore line...



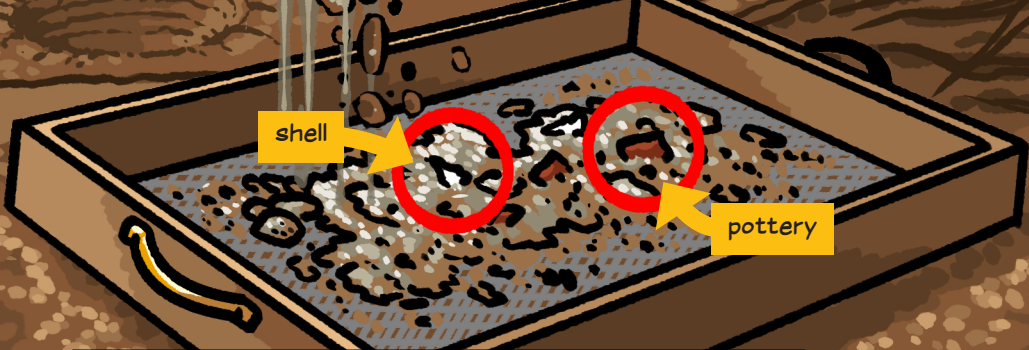
I'm also going to ask for permission to extend our survey elsewhere around these villages, too.



Dr. Michiko Intoh

This area to the south of Anoth village and Magachagil village was excavated in the 1980s by the Japanese archaeologist Michiko Intoh. But this area was hit by **Typhoon Sudal** in 2007, and we're taking the opportunity this week to investigate and see whether any of the archaeological layers were disturbed by the **storm surge**.

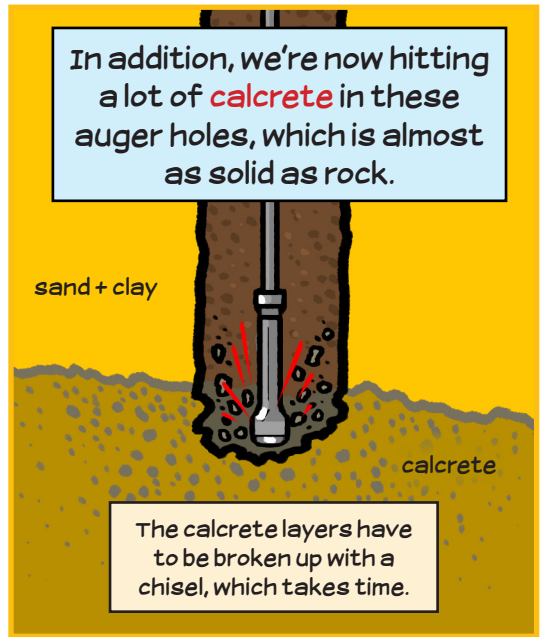
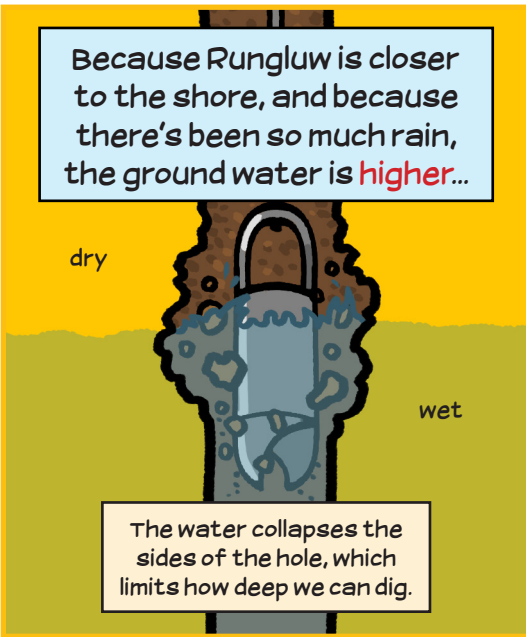
Our auger holes at Rungluw turn up both ancient **shell** and **pottery** - just like we've found elsewhere.



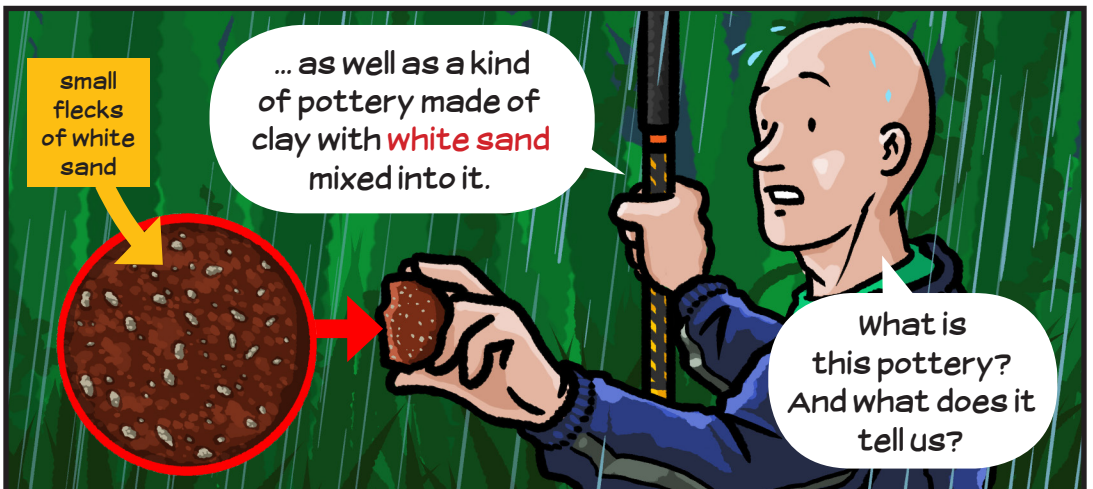
This, and the sand washed over stone platforms near Rungluw tells us that Typhoon Sudal **didn't** cause any damage to the site...



... but instead dumped modern beach sand **on top of it**.



However, despite having to take extra time to deal with the high water and the calcrete, we are still finding beach sand in these auger holes...

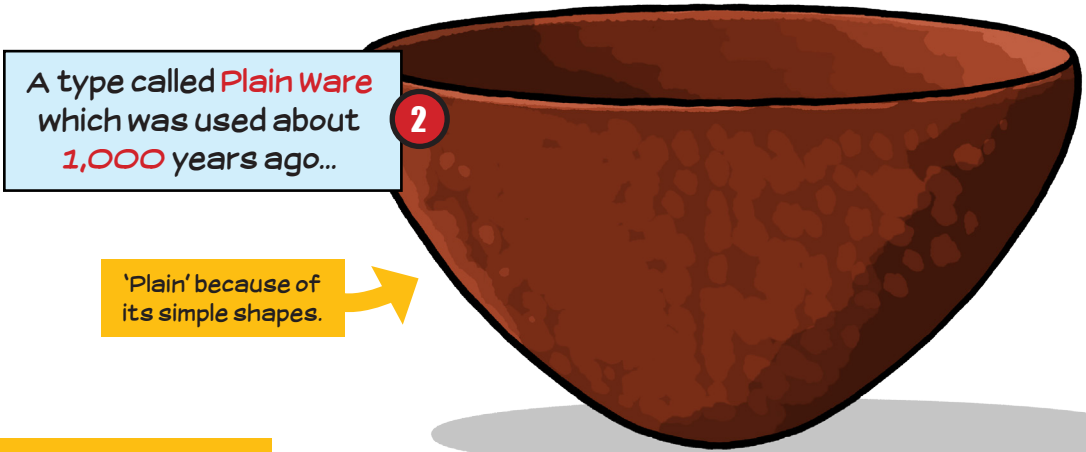


We are finding pieces of three different types of ancient pottery:



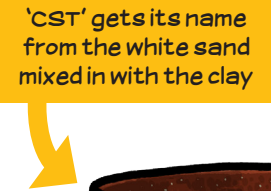
A type called **Laminated Ware** which was used around **500** years ago...

'Laminated' because the clay used to make the pots is built up in layers, like plywood. "Ware" simply means "a specific type of pottery"



A type called **Plain Ware** which was used about **1,000** years ago...

'Plain' because of its simple shapes.



'CST' gets its name from the white sand mixed in with the clay

And the oldest type, called **Calcereous Sand Tempered Ware** (or **CST**, for short), which was used about **2,000** years ago.

So, when we find CST, we know we are digging through layers that are around **2,000** years old.

There is a fourth kind of pottery which might be on Yap - this is a kind of ware called **Lapita**.

But Matt and his team still haven't found any of this kind of pottery - **yet...!**

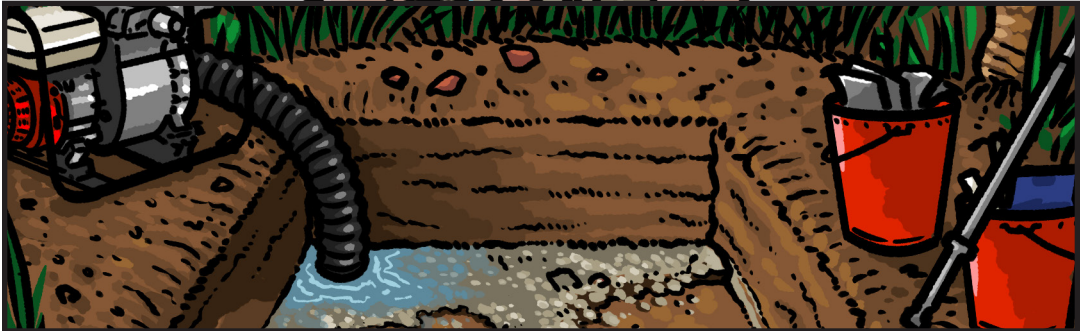
Lapita pottery originated around the Bismark Archipelago and was used across Western Polynesia about **3,000** years ago... or even earlier. It's decorated with designs made with carved wood or shell tools. So far, however, no Lapita pottery has ever been found in Micronesia.



Dr. Geoff Clark - Associate Professor, Australian National University. One of my areas of expertise is pottery from Micronesia and Polynesia. I helped Matt and Scott put this project together, and will be helping Matt with advice during his fieldwork.

So, during our last two weeks of work - based on what we've learned **so far** this season...

- **where** and **how** should we **concentrate** our search for evidence of Yap's early settlements?



If we open up a 1-meter by 1-meter excavation trench near Rungluw, that will give us enough working space to chisel through the layers of calcrete and to use our water pump to deal with the ground water. This way we could see what soils lie further down.



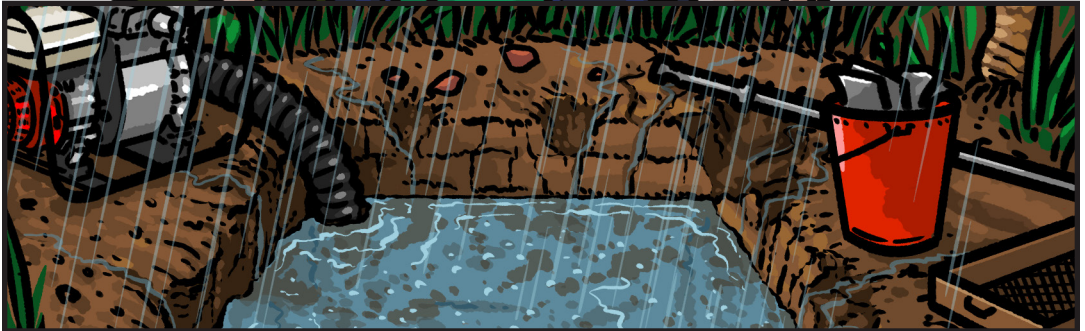
If we go back further inland, behind the taro patches, we may also find evidence of early settlements away from the shore. The red clay up there takes a long time to dig through, but we could find evidence of very early settlements below it.



We can wait for permission to work on the land close to Magachagil, and continue augering around Rungluw. This would allow us to create a complete picture of the soils in the southern part of Yap, along the line of where we think the ancient beaches are.

Sometimes in archaeology, the circumstances aren't right for you to do **everything** you want.

So my decision is based on what will give us **the most information** in the time that we have **left** on Yap.



We opened up a test trench and quickly realized we would spend more time coping with the water and the calcrete than excavating. As interesting as it would be to dig here, it's not something we can do effectively in two weeks. **Save this for next year!**



Chief James has told us that clay from here was used to fill in around the modern houses in Anoth. It's probable that we won't find any remaining archaeology here.



Francis and Chief James have talked to more of the landowners around Anoth, and we now have permission to work on their land as well! This means we can extend our survey to cover as big an area as possible. **Pick up the auger, Esther!**

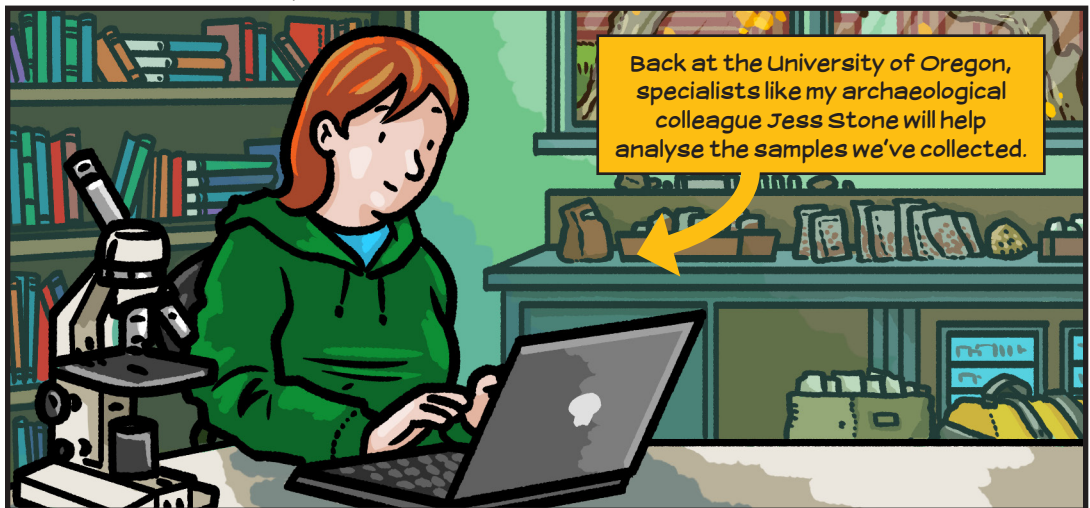


We are joined in these last few weeks by my colleague Dr. Amy Gusick from the Natural History Museum of Los Angeles.

Our auger holes around Mot have been very difficult to dig because of the bad weather, but every bit of information we get from them helps us build up a bigger, more complete picture of Southern Yap.



With all the rain, there are days when it feels like we're not making any progress at all - but I know we are!



Back at the University of Oregon, specialists like my archaeological colleague Jess Stone will help analyse the samples we've collected.

Sometimes the bigger picture only really starts to come together after fieldwork is finished and we have time to analyse our data in detail.

In our last week on Yap, Chief James and Francis kindly organize a public meeting in Gilman School. It's a chance for us to tell everyone about what we have been doing and what we have learned so far... and what we have planned for the future!

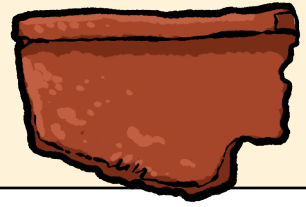
Kammagar!
Thank you all for coming to our presentation. I'll be explaining about our archaeological project...

... and showing you what we've learned!



We have made three important discoveries this season:

1 The most important thing we have been able to do with this work is show that human settlement on Yap begins earlier than anyone realized: as early as **2,200** to **2,400** years ago.



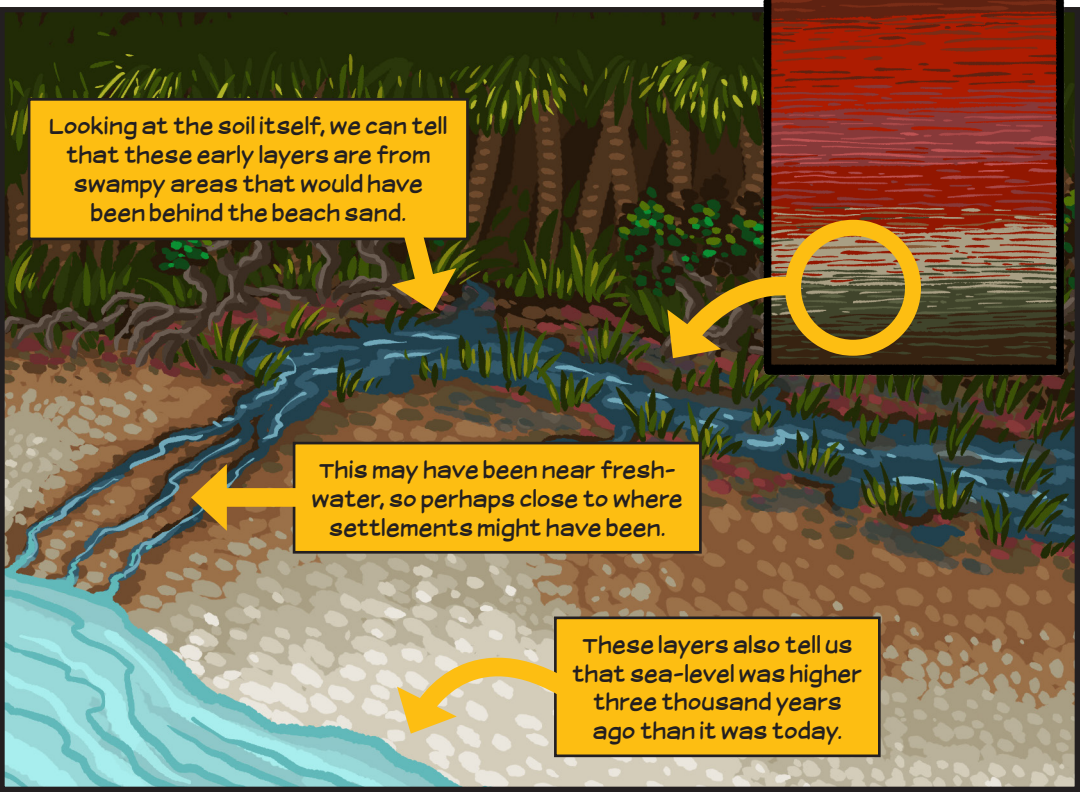
This is so significant that myself, Scott, Geoff and my colleague Jess have published these results in an academic article in the *Journal of Island and Coastal Archaeology*.



This is clearly important for us, but it's even more important for the people of Yap. It's great to be able to share this information here so that everyone can appreciate this island's unique and ancient culture.



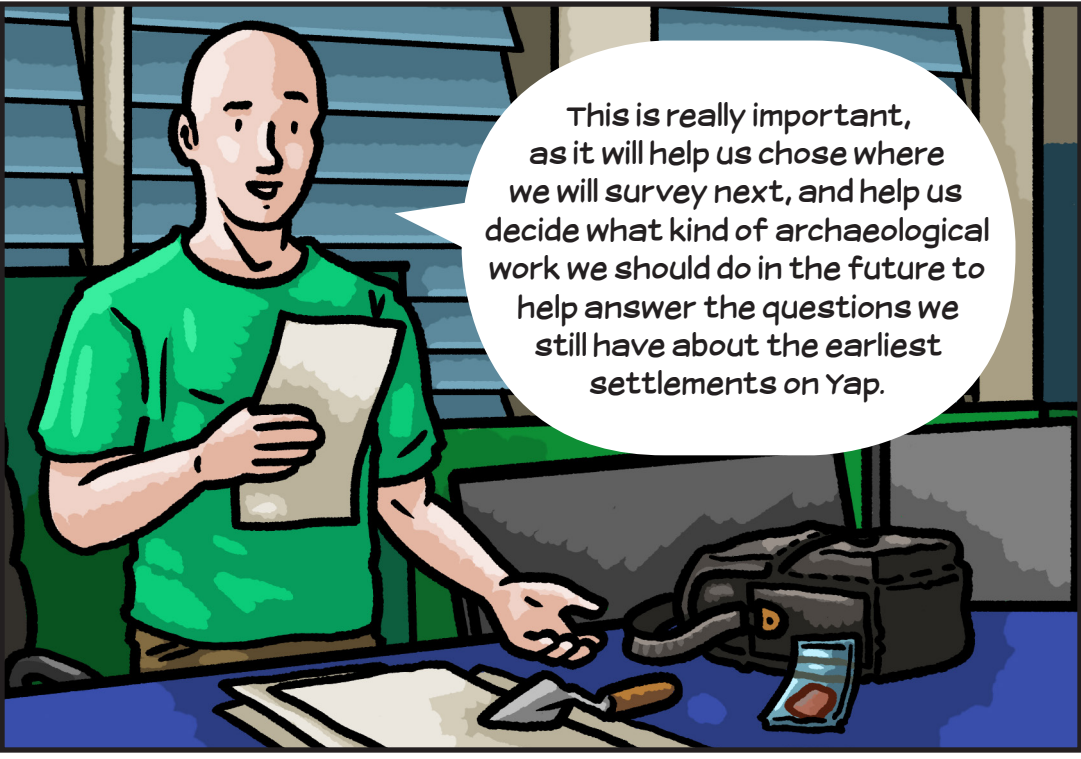
2 Our auger holes have allowed us to take radiocarbon dating samples which tell us the oldest soil levels we've reached are at least **3,000 to 3,500** years old.



Looking at the soil itself, we can tell that these early layers are from swampy areas that would have been behind the beach sand.

This may have been near fresh-water, so perhaps close to where settlements might have been.

These layers also tell us that sea-level was higher three thousand years ago than it was today.



This is really important, as it will help us chose where we will survey next, and help us decide what kind of archaeological work we should do in the future to help answer the questions we still have about the earliest settlements on Yap.

3

Most importantly, our work this season has covered a lot of ground! Our auger survey now covers a really wide area around Anoth and Magachagil. This means we are starting to build up a comprehensive picture of the whole of Southern Yap - not just around one or two small sites. A big survey area means a lot of data - which is what we need if we want to understand the "big picture" of ancient Yap. This "big picture" includes not just answers to questions about how and when Yap was first settled, but potentially about relationships between Yap and other islands in the region, like Palau.



Our results from this season will add to the growing list of academic publications about the archaeology of Yap. If you're interested in reading more about the work that's been done here, these are some useful references:



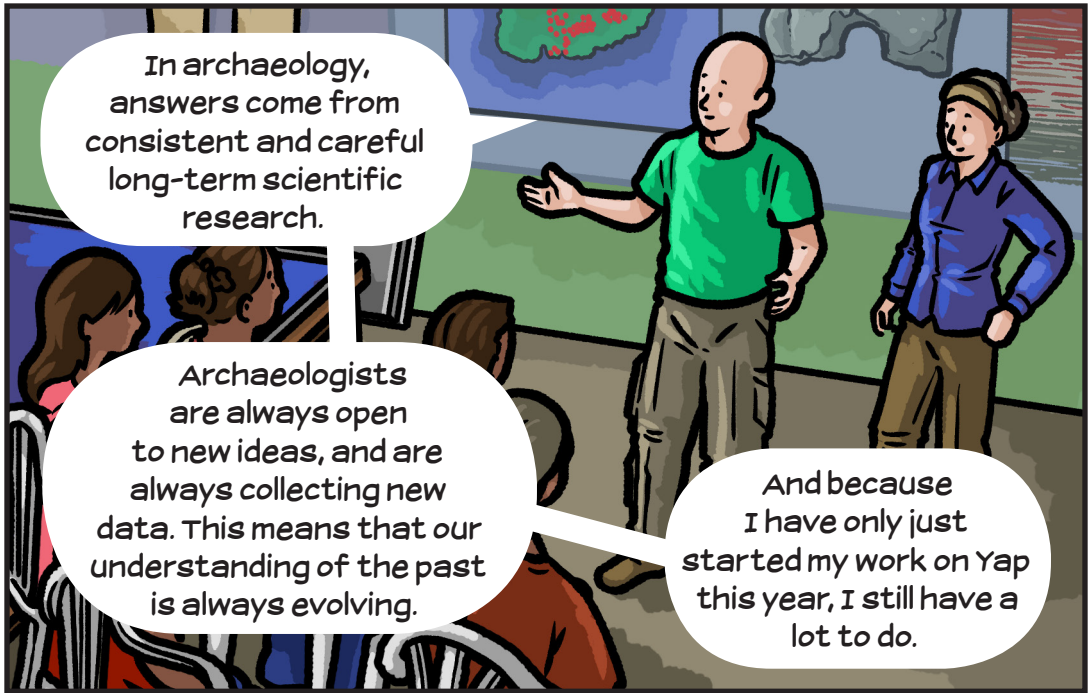
John Dodson & Michiko Intoh, 1999. "Prehistory and Paleoecology of Yap, Federated States of Micronesia." *Quaternary International* 59:17-26.

Michiko Intoh, 1997. "Human Dispersals into Micronesia." *Anthropological Science* 105(1): 15-28.

Michiko Intoh & Foss Leach, 1985. "Archaeological Investigations into the Yap Islands, Micronesia: First Millennium BC to Present Day." BAR International Series 277.

Matthew Napolitano, Scott Fitzpatrick, Geoffrey Clark and Jessica Stone, 2019 "New Investigations of Early Prehistoric Settlement on Yap, Western Caroline Islands." *The Journal of Island and Coastal Archaeology*, 14(1), pp. 101-107. This is the archaeological and scientific report that covers preliminary work that we did at Pemrang.

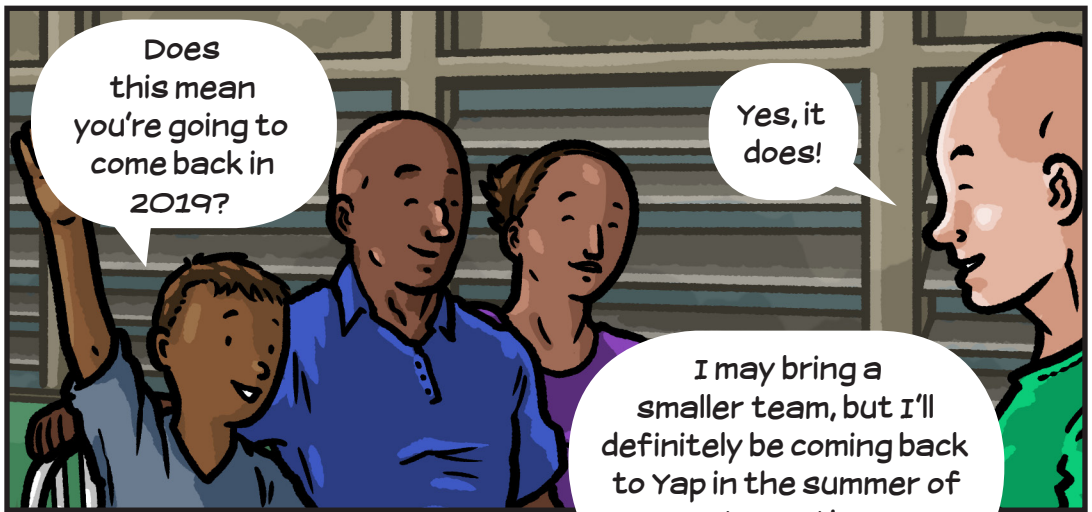
Jun Takayama, 1982. "A Brief Report on Archaeological Investigations of the Southern Part of Yap and Nearby Ngulu Atoll" in *Islanders and Their Outside World: A report of the cultural and anthropological research in the Caroline Islands of Micronesia in 1980-1981* (T.Aoyagi, ed.): 77-104. Committee for Micronesian Research, Rikkyo University, Tokyo.



In archaeology, answers come from consistent and careful long-term scientific research.

Archaeologists are always open to new ideas, and are always collecting new data. This means that our understanding of the past is always evolving.

And because I have only just started my work on Yap this year, I still have a lot to do.



Does this mean you're going to come back in 2019?

Yes, it does!

I may bring a smaller team, but I'll definitely be coming back to Yap in the summer of 2019 to continue my research.



Join us in summer 2019 to find out what we learn during our next season of archaeological work - as we continue to look for evidence of the earliest settlements on Yap!

TO BE CONTINUED...

ARE YOU INTERESTED IN FINDING OUT MORE ABOUT THE HISTORY AND HERITAGE OF YAP?



Archaeology is just one way to help preserve and celebrate the ancient culture of Yap. There are many other ways we can learn about our history and heritage:

- Get to know the history and traditions of our island - **talk to the older members of your family or village** about what they know.
- **Get involved in traditional arts and crafts** - like dancing and boat-building. These skills connect us to previous generations and are an important part of our culture and heritage.
- **Think about new ways to celebrate our heritage** in the twenty-first century: tell the story of our island and its people through social media, games, tattooing - even comics!
- **Help connect Yap to other Pacific island communities** through visits, social media and by getting involved in Pacific-wide community, culture and sport events.
- **Become part of that story whatever you do** - at school, at home and at work.



And if you want to know more about archaeology and the work of the Historic Preservation Office, come and talk to us at the HPO!

We can show you how the work of HPO offices across FSM help protect our ancient heritage and make sure it survives to inspire and support future generations on Yap.

FOOTPRINTS OF THE ANCESTORS

Who first settled the island of Yap in the Western Pacific? And when did they arrive?

Hoping to answer these questions as part of his PhD at the University of Oregon, archaeologist Matthew Napolitano has come to Yap with a team of researchers.

With the assistance of the Yap Historic Preservation Office, Matthew and his team carry out the first part of a survey of the southernmost coastline of Yap island. They are looking for evidence of the earliest settlers on Yap. Tiny fragments of shell, coral and pottery buried deep in the ground yield important clues.

This comic tells the story of that first season of archaeological work, and shows how detailed scientific investigation contributes to our understanding of cultural heritage.

