



CREATION DETECTIVES

#2

WHALE CEMETERY

(INSPIRED BY TRUE EVENTS)





CREATION DETECTIVES

WHALE CEMETERY

INSPIRED BY RESEARCH BY DRs. LEONARD BRAND,
ARTHUR CHADWICK, AND RAÚL ESPERANTE



**FAITH &
SCIENCE**
COUNCIL



GEOSCIENCE
RESEARCH INSTITUTE



NATURALEZA Y CREACIÓN

ORIGINAL IDEA AND SCRIPT:

NOEMÍ DURÁN

MANOLO QUINTANILLA

EDITING:

TIMOTHY STANDISH

DESIGN AND TECHNICAL REALIZATION:

PEDRO AGUERRI

ROBERTO BALLESTERO



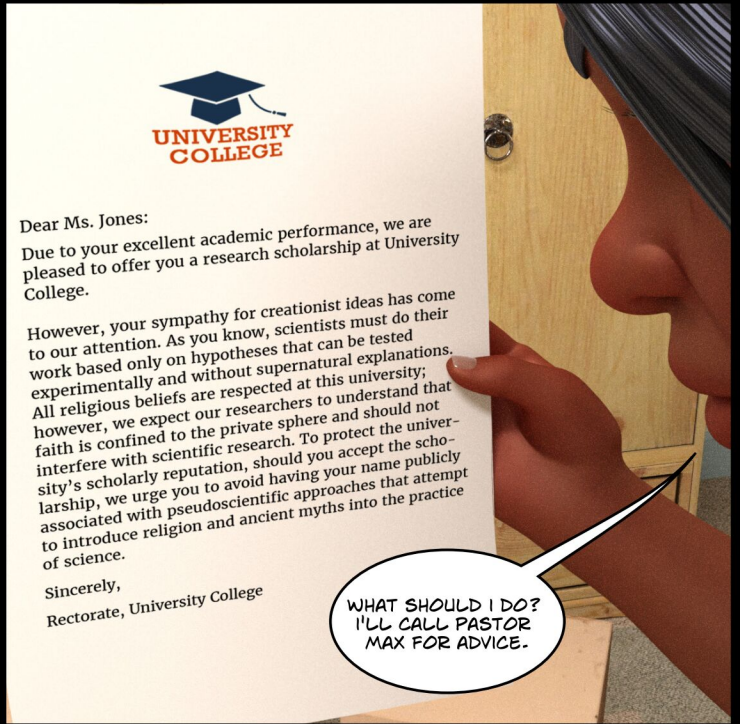


ONE WEEK BEFORE.



DUE TO YOUR EXCELLENT ACADEMIC PERFORMANCE, WE ARE PLEASED TO OFFER YOU...

A RESEARCH SCHOLARSHIP!



UNIVERSITY COLLEGE

Dear Ms. Jones:
Due to your excellent academic performance, we are pleased to offer you a research scholarship at University College.

However, your sympathy for creationist ideas has come to our attention. As you know, scientists must do their work based only on hypotheses that can be tested experimentally and without supernatural explanations. All religious beliefs are respected at this university; however, we expect our researchers to understand that faith is confined to the private sphere and should not interfere with scientific research. To protect the university's scholarly reputation, should you accept the scholarship, we urge you to avoid having your name publicly associated with pseudoscientific approaches that attempt to introduce religion and ancient myths into the practice of science.

Sincerely,
Rectorate, University College

WHAT SHOULD I DO? I'LL CALL PASTOR MAX FOR ADVICE.



CONTACTS

P
Pastor Max
Peter Stones

Q
R
S
T
U

YOU'VE GOT MAIL.
YOU'VE GOT MAIL.



10:40

SUBJECT:
• Case for the Creation Detectives. Utmost discretion required.



WE'VE DONE AN AWESOME JOB!

YOU BET. WHAT DO YOU THINK, POIROT?

WOOF!

THEY PAINTED MY FOOTPRINT. SENSATIONNEL! THERE'S NO DOUBT WHO LE NAPOLEON OF THIS TEAM IS.

BEEP BEEP

BZZZZZZ!

10:40

SUBJECT: Case for the Creation Detectives. Utmost discretion required.

I am a friend and fan. I need your help with a case but it requires maximum secrecy. Meet me tonight, 8 PM at the attached address. Be very discreet.

Password: Coconino.



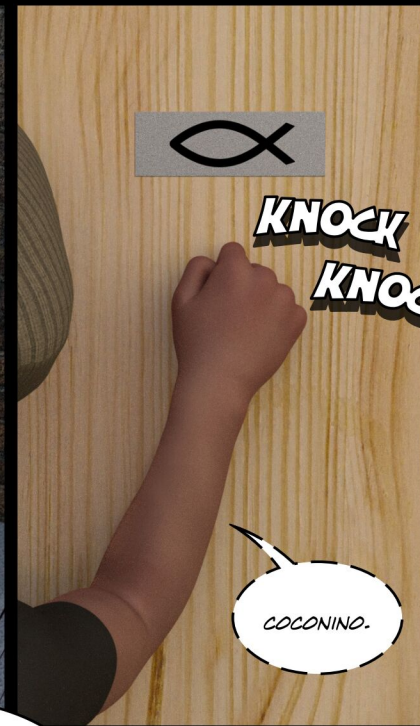


ARE YOU SURE ABOUT GOING DOWN THERE?

THEY DID ASK FOR OUR HELP.

POIROT WILL PROTECT US.

AND WHO WILL PROTECT ME?



KNOCK KNOCK

COCONINO.



SCREECH



WELCOME!

MY NAME IS CHRISTIAN AND I ATTENDED YOUR PRESENTATION ON THE COCONINO FOOTPRINTS. I AM ALSO A BIBLE-BELIEVER, BUT I AM AFRAID THAT OPENLY ADMITTING IT WOULD GET ME INTO TROUBLE.

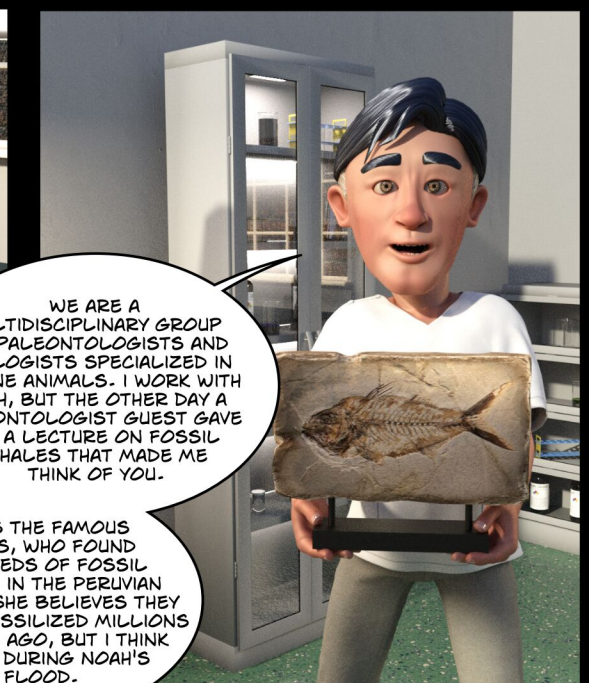
THAT EXPLAINS THE SECRECY?

EXACTLY. I WORK IN A LAB WHERE EVERYONE IS AN EVOLUTIONIST, AND I DON'T KNOW HOW THEY'D REACT IF THEY KNEW ABOUT MY FAITH.



WE ARE A MULTIDISCIPLINARY GROUP OF PALEONTOLOGISTS AND BIOLOGISTS SPECIALIZED IN MARINE ANIMALS. I WORK WITH FISH, BUT THE OTHER DAY A PALEONTOLOGIST GUEST GAVE US A LECTURE ON FOSSIL WHALES THAT MADE ME THINK OF YOU.

SHE'S THE FAMOUS DR KIS, WHO FOUND HUNDREDS OF FOSSIL WHALES IN THE PERUVIAN DESERT. SHE BELIEVES THEY SLOWLY FOSSILIZED MILLIONS OF YEARS AGO, BUT I THINK IT WAS DURING NOAH'S FLOOD.



FOSSIL WHALES! SO COOL!

WHY DON'T YOU INVESTIGATE THEM YOURSELF?

I DON'T DARE TELL MY BOSS, ALTHOUGH MAYBE I SHOULD.

WHALE BONES, GIGANTESQUE WHALE BONES!



I WOULDN'T DO IT...

WHY NOT? YOU MIGHT BE SURPRISED.

WHILE YOU THINK ABOUT IT, WE CAN START INVESTIGATING. PERU, HERE WE COME!

CAN I COLLECT A SOUVENIR?



I HAVE THE LOCATION ROUTE, WEATHER INFORMATION AND AIRLINES. AS SOON AS MAX REPLIES I'LL PURCHASE THE PLANE TICKETS.

DO YOU HAVE YOUR PASSPORTS?

YES, DAD... WE'LL NEED A GPS, CAMERAS, A PORTABLE FRIDGE, A PET CARRIER BAG FOR THE PLANE...

AND, JUST ANOTHER LITTLE THING, DAD...

DID HE SAY PET CARRIER BAG?

DID HE SAY PLANE?

MAIS NON! CE N'EST PAS POSSIBLE!*

*BUT NO! IT IS NOT POSSIBLE!

MAX SENT A VOICE MESSAGE.

BZZZ... SORRY... ARCHAEOLOGY DIG... SSST... POOR COVERAGE... YOU GO... COMING... BLEEP... AS SOON AS I CAN. MEET PROFESSOR ORLANDO... BZZT... BEFORE DESERT... GOOD FRIEND... WHIRR... BEEP BEEP BEEP

HE'LL COME SOON. DON'T WORRY AND TRY TO REST, LIKE PETER.

WHAT A SNORE!

SHOULDN'T WE HAVE WAITED FOR PASTOR MAX?

ZZZZ ZZZ
ZZZZ ZZZ

IF GOD WANTED DOGS TO FLY, HE'D HAVE GIVEN US WINGS. I'M POIROT, NOT BLÉRIOT*!

*LOUIS C.J. BLÉRIOT WAS A FRENCH AVIATION PIONEER.

MY FIRST TIME IN SOUTH AMERICA! SO COOL!

NOW, STRAIGHT TO THE HOTEL. WE'LL FIND THE UNIVERSITY AND PROFESSOR ORLANDO FIRST THING TOMORROW.

PETER, HOW DID YOU CONVINCED YOUR DAD TO SEND THE VAN ON THE PLANE?

THE CREATION DETECTIVES NEED THEIR VEHICLE.

MUA MUA



DID YOU SLEEP WELL, DIANA? I WAS SO TIRED, I BARELY HEARD PETER'S SNORING.

I DON'T SNORE!

IT WAS POIROT.

DID HE SAY HE DOESN'T SNORE?

I DIDN'T SLEEP, I WAS LOOKING FOR INFORMATION ABOUT THE WHALES BUT SOMETHING WAS WRONG WITH THE INTERNET.



GOOD MORNING. WE'RE LOOKING FOR PROFESSOR ORLANDO.

HE'S ON A TRIP, BUT WILL BE BACK TOMORROW.

I'M ANA, HIS ASSISTANT. CAN I HELP YOU?



WE'RE GOING TO INVESTIGATE FOSSIL WHALES. WE HOPED PROFESSOR ORLANDO COULD GIVE US SOME ADVICE.

THE WHALES ARE IN THE GORGEOUS BUT DANGEROUS ICA DESERT.

YOU SHOULD WAIT FOR THE PROFESSOR TO RETURN. MAYBE WE COULD BOTH GO WITH YOU.

PROFESSOR ORLANDO'S FRIEND PASTOR MAX SENT US.

DON'T WORRY. WE HAVE EXPERIENCE IN FIELD RESEARCH.



I STRONGLY RECOMMEND WAITING, BUT AT LEAST TAKE THIS MAP OF THE ICA AREA

AND BE CAREFUL!



I THINK THAT'S ALL..

ARE YOU SURE WE HAVE ENOUGH FOOD?

TO FEED AN ARMY! LET'S GO!



ACCORDING TO THE GPS, WE'LL BE THERE IN 4 HOURS.

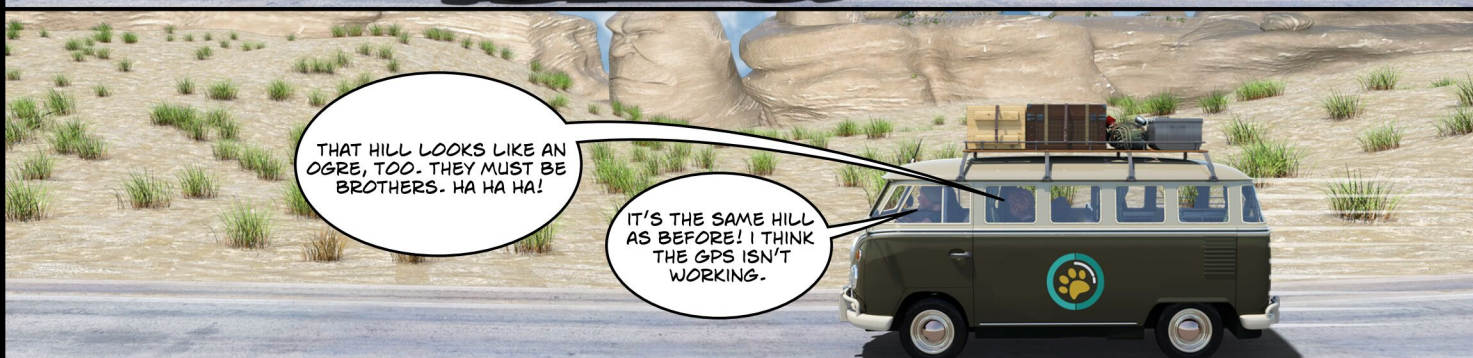


WHAT AN IMPRESSIVE LANDSCAPE!



LOOK AT THAT HILL! IT LOOKS LIKE AN ANGRY OGRE'S FACE!

HA HA HA! THAT'S TRUE!



THAT HILL LOOKS LIKE AN OGRE, TOO. THEY MUST BE BROTHERS. HA HA HA!

IT'S THE SAME HILL AS BEFORE! I THINK THE GPS ISN'T WORKING.



IT'S GETTING LATE. WE'LL HAVE TO DO THIS THE OLD-FASHIONED WAY. CAN YOU HAND ME THE MAP, PLEASE?

I DON'T KNOW WHERE THE MAP IS. DIDN'T YOU HAVE IT?

ARE YOU KIDDING? I HAVEN'T TOUCHED THAT MAP. ANA GAVE IT TO YOU!



I CAN'T BELIEVE YOU LOST THE MAP. WHAT DO WE DO NOW?

DID YOU SAY "YOU" LOST? IT'S YOUR FAULT FOR TRUSTING THE GPS SO MUCH!

THAT'S ENOUGH, STOP ARGUING!

WE'LL SLEEP IN THE VAN AND DECIDE WHAT TO DO TOMORROW.



MY BACK HURTS!

POIROT! DON'T DO THAT ON THE WHEEL! YOU HAVE THE ENTIRE DESERT!



I'M SO HUNGRY I COULD EAT AN ELEPHANT!

WE HAVE TO BE CAREFUL. LOSING ONE DAY MEANS WE NEED TO RATION OUR FOOD.

COME ON! YOU SAID WE COULD FEED AN ARMY!

PLEASE DON'T START ARGUING AGAIN.



WOOF! WOOF!

THE MAP! GOOD JOB, POIROT.

ONE HOUR LATER, THEY REACH THEIR DESTINATION.



AT LAST! THIS PLACE IS INCREDIBLE!

ARE THOSE THE WHALES?

LET'S START AS SOON AS POSSIBLE. WE'LL HAVE TO GO GET FOOD LATER.



WHOOSH

WHOOSH

WHOOSH



JAMES!
DIANA! LET'S
GET OUT OF
HERE!

WHAT'S
WRONG,
PETER?

SPEAK LOUDER,
WE CAN'T HEAR
YOU!

WHOOSH



WHOOSH

WAIT, WHAT'S
THAT SOUND?

WHERE'S IT
COMING FROM?



LET'S GET OUT
OF HERE, POIROT
FOUND...

WHOOSH

IT'S A SANDSTORM!



IF YOU DON'T KNOW WHAT
HAPPENED NEXT, GO TO PAGE 3.

WHOOSH



WHOOSH

PLEASE, LORD,
HELP US TO GET OUT
OF HERE.

AND TAKE CARE
OF POIROT.

AND FORGIVE US FOR
BEING SO RECKLESS.



YOU SERIOUSLY FRIGHTENED ME! THANK GOD YOU'RE ALRIGHT. WHERE'S POIROT?



WOOF, WOOF



POIROT! ARE YOU ALRIGHT?

THUNK



MON AMI! I KNEW YOU'D RESCUE ME.

I'M HAPPY TO SEE YOU TOO!



DON'T DO SOMETHING LIKE THIS EVER AGAIN. LUCKILY, ANA TOLD US ABOUT YOUR PLANS. WHAT WERE YOU THINKING GOING INTO THE DESERT BY YOURSELVES?

DRIVING A VAN, WITHOUT PROPER EQUIPMENT, AND WITHOUT BACKUP. WHAT IF WE HADN'T FOUND YOU? PEOPLE HAVE DIED IN THESE DESERT SANDSTORMS.



WE'LL STAY WITH A LOCAL FAMILY. THAT WILL ALLOW US TO BE CLOSER TO THE RESEARCH SITE AND YOU'LL GET ACQUAINTED WITH PERUVIAN CULTURE.



I ASKED MY ASSISTANT ANA TO JOIN US. WHEN YOU DO RESEARCH IN A FOREIGN COUNTRY IT IS CRUCIAL TO COUNT ON LOCAL PEOPLE, AND TO LISTEN TO THEM!



TOMORROW WE'LL GO BACK TO THE SITE WHERE THE FOSSIL WHALES ARE, BUT WITH PROPER EQUIPMENT. WE'LL NEED HATS, SUNGLASSES...

YES, YES, SEÑOR ORLANDO. THAT IS ALL WELL AND GOOD, BUT WHAT THESE KIDS NEED IS TO EAT AND REGAIN THEIR STRENGTH. THEY LOOK EXHAUSTED.

...FIELD NOTEBOOKS AND PENCILS, PROTECTIVE CAMERA HOUSING, TOILET PAPER, WATER, ENERGY BARS, FIRST AID KIT, SUNSCREEN AND SATELLITE PHONE.



I THINK WE'RE READY.

WE'RE ONLY EATING ENERGY BARS?



I'M TRULY SORRY, MAX

DON'T WORRY ABOUT IT, ALL IS FORGIVEN.

THIS IS A NICE VAN BUT NOT FOR THESE ROADS. TOMORROW WE SHOULD LEAVE IT HERE.

YES, FRENCH VANS ARE MORE RELIABLE.



LET'S START BY MARKING EVERY WHALE WE FIND WITH THESE FLAGS.

AGAIN, POIROT? NOT ON THE WHEEL!

I THINK IT'S A BAD IDEA TO BRING A PET TO A RESEARCH SITE.



THESE BONES LOOK PRETTY STALE.

WHAT ARE YOU DOING, ANA?



I AM TAKING SOIL SAMPLES. THE ROCKS SURROUNDING THE FOSSILS CAN GIVE US INFORMATION ABOUT THE ENVIRONMENT WHERE THE WHALES DIED.

WAIT FOR THE GPS TO CONNECT TO THE SATELLITES, THEN PRESS HERE AND TAKE NOTE OF THE COORDINATES.



POIROT, NO! THAT'S NOT A FIRE HYDRANT!

THIS IS NOT ACCEPTABLE. THIS ANIMAL IS GOING TO SPOIL THE FOSSILS. I'VE SAID IT ONCE AND I WILL SAY IT AGAIN: A PALEONTOLOGICAL RESEARCH SITE IS NOT THE PLACE FOR A PET.

POIROT ISN'T JUST A PET, HE'S PART OF OUR TEAM. IN THE GRAND CANYON, HE DISCOVERED THE FOOTPRINTS THAT HELPED US SOLVE THE COCONINO SANDSTONE MYSTERY.



SEVERAL HOURS LATER.



I NEED TO GO TO THE TOILET.

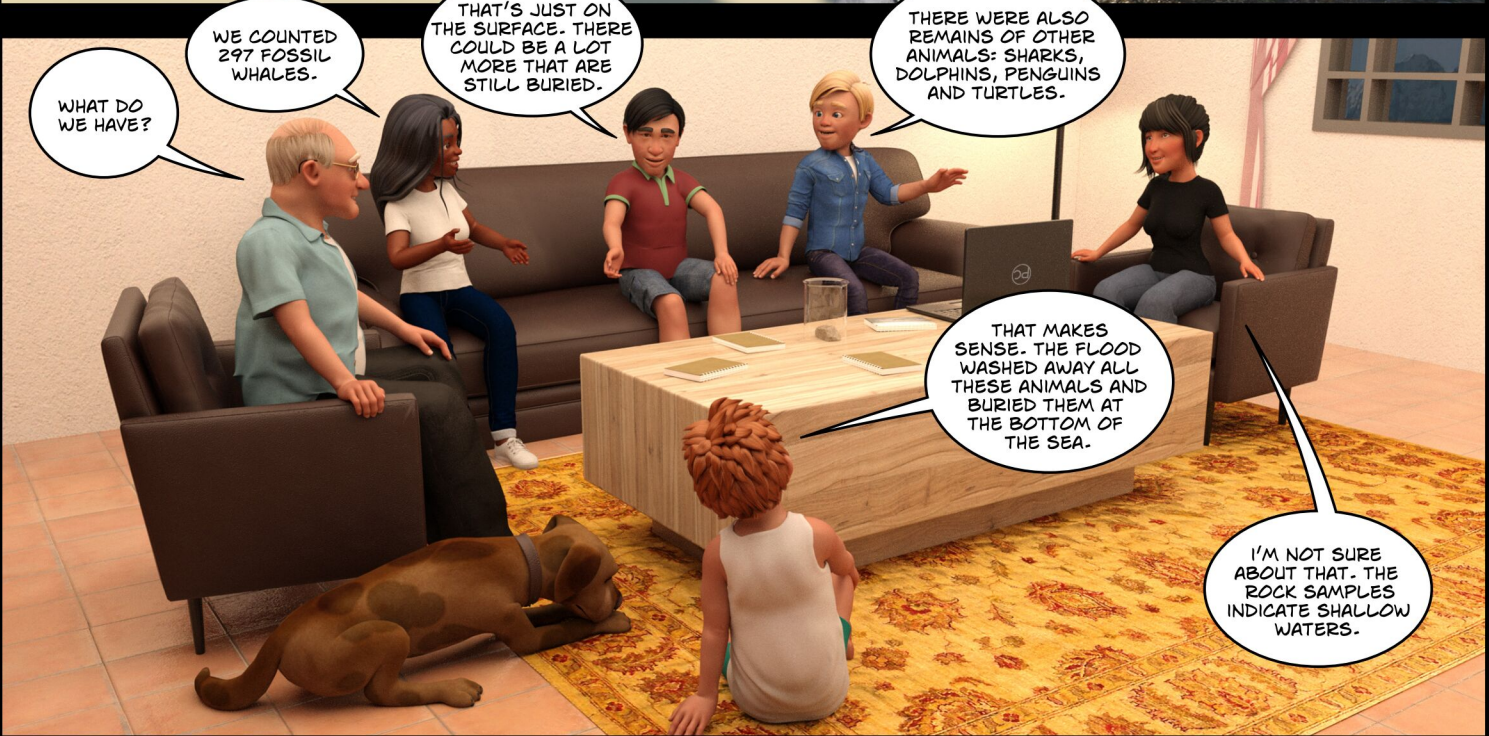


TAKE THIS. DO YOU SEE THAT HILL? FROM WHALE JN1-17 TO THE RIGHT, THAT IS THE LADY'S RESTROOM.

MMMM. I THINK I CAN WAIT. IT'S ALMOST TIME TO GO HOME.



COMING THROUGH!!!



WHAT DO WE HAVE?

WE COUNTED 297 FOSSIL WHALES.

THAT'S JUST ON THE SURFACE. THERE COULD BE A LOT MORE THAT ARE STILL BURIED.

THERE WERE ALSO REMAINS OF OTHER ANIMALS: SHARKS, DOLPHINS, PENGUINS AND TURTLES.

THAT MAKES SENSE. THE FLOOD WASHED AWAY ALL THESE ANIMALS AND BURIED THEM AT THE BOTTOM OF THE SEA.

I'M NOT SURE ABOUT THAT. THE ROCK SAMPLES INDICATE SHALLOW WATERS.



SO, IT WASN'T THE FLOOD?

WHAT IF WE WAIT TO DRAW CONCLUSIONS AND KEEP ON INVESTIGATING?

WE COULD ASK GOD FOR HELP.

GREAT IDEA!



AFTER PRAYING TOGETHER, THEY ALL GO TO SLEEP.

DON'T BE SAD POIROT, PROFESSOR ORLANDO WILL SOON RECOGNIZE YOUR VALUE AS A CREATION DETECTIVE.

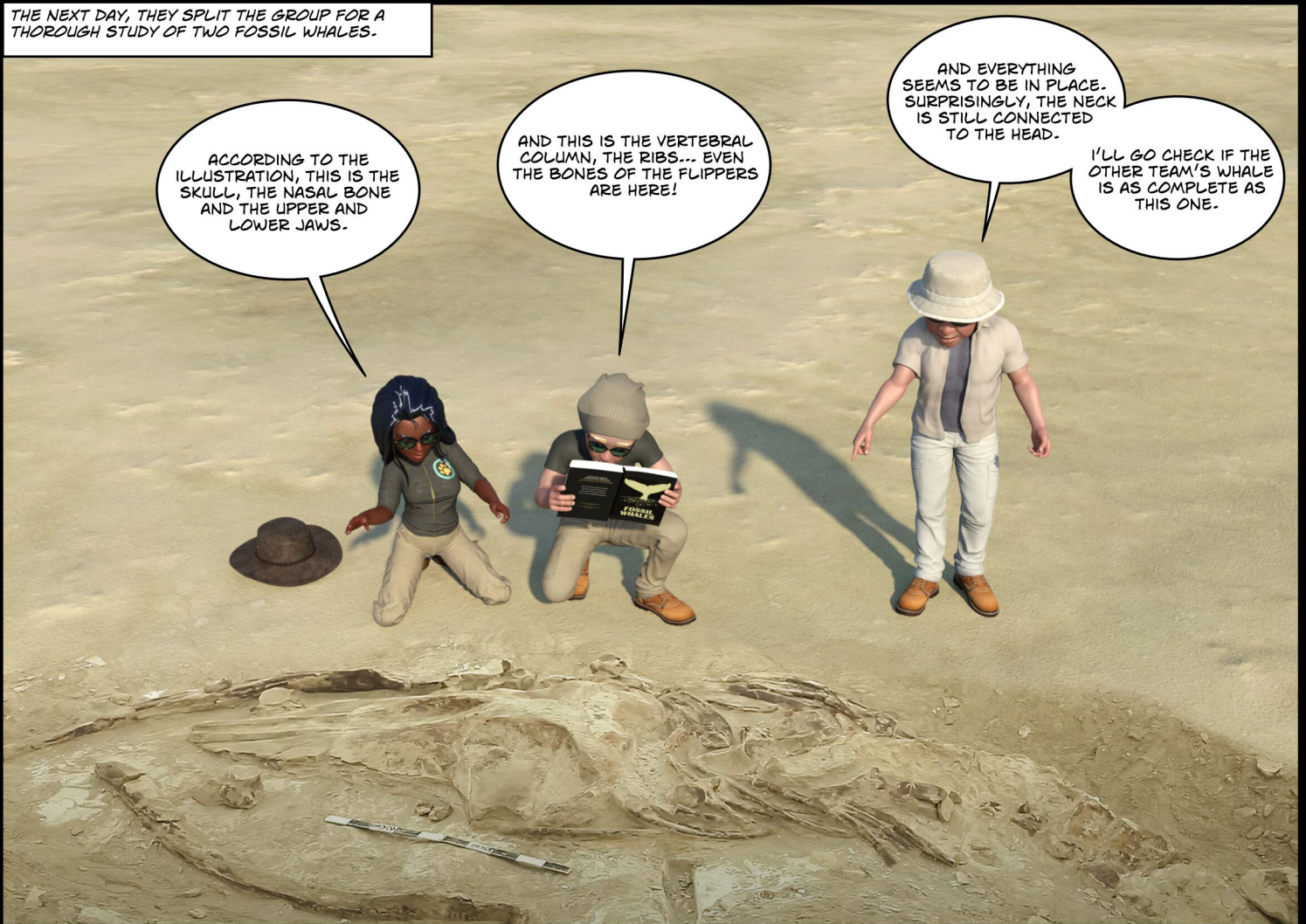
THE NEXT DAY, THEY SPLIT THE GROUP FOR A THOROUGH STUDY OF TWO FOSSIL WHALES.

ACCORDING TO THE ILLUSTRATION, THIS IS THE SKULL, THE NASAL BONE AND THE UPPER AND LOWER JAWS.

AND THIS IS THE VERTEBRAL COLUMN, THE RIBS... EVEN THE BONES OF THE FLIPPERS ARE HERE!

AND EVERYTHING SEEMS TO BE IN PLACE. SURPRISINGLY, THE NECK IS STILL CONNECTED TO THE HEAD.

I'LL GO CHECK IF THE OTHER TEAM'S WHALE IS AS COMPLETE AS THIS ONE.

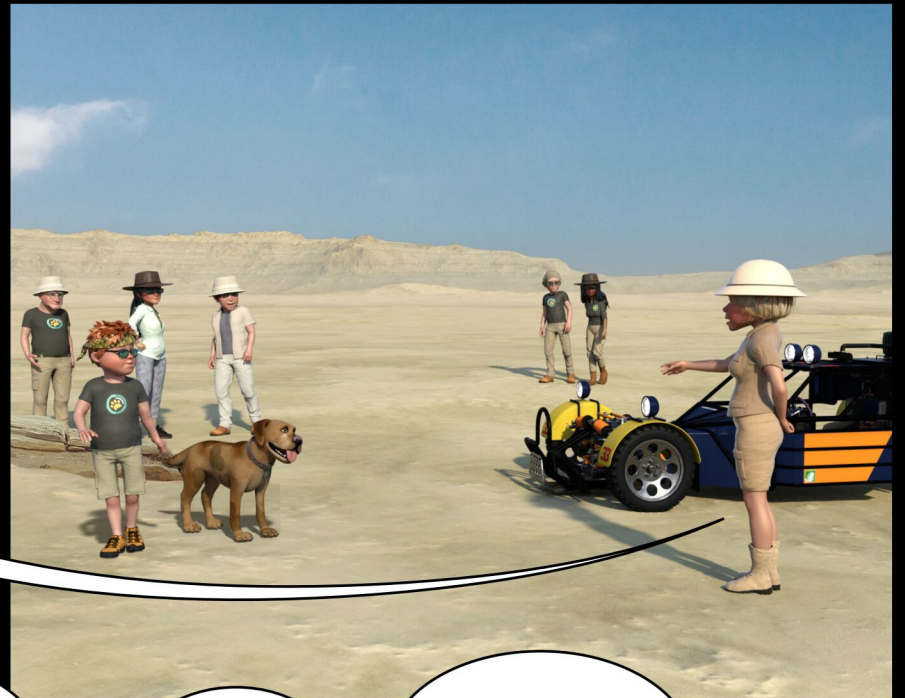


WHERE'S THE HEAD? IS IT ON THAT SIDE?

I THINK SO. WE DON'T SEE IT WELL BECAUSE IT'S BURIED. BUT THE VERTEBRAE PERFECTLY PRESERVE EVERY DETAIL.

THE RIBS ARE ALSO INTACT. AND I THINK I FOUND SOMETHING VERY INTERESTING ON THIS ONE.





THAT'S THE WHALE'S FILTERING ORGAN. THE STRIPES ARE CALLED BALEEN AND IT'S VERY STRANGE TO FIND THEM IN FOSSILIZED SPECIMENS.

I AM DOCTOR DAWN KIS, PALEONTOLOGIST AND MARINE MAMMAL EXPERT.

I'VE STUDIED THESE WHALES FOR YEARS AND PUBLISHED MANY PAPERS. IT'S SURPRISING TO LEARN OF ANOTHER RESEARCH TEAM IN MY RESEARCH AREA. THE TRUTH IS, I DON'T THINK THERE IS MUCH LEFT TO DISCOVER.

IT IS A PLEASURE TO MEET YOU, DOCTOR KIS.

AND TO HAVE THE OPPORTUNITY TO ASK AN EXPERT. COULD YOU PLEASE TELL US HOW DO YOU THINK THESE FOSSILS FORMED?





TO UNDERSTAND THE PAST WE HAVE TO OBSERVE THE PRESENT. WE CAN OBSERVE SEDIMENTS SLOWLY BUILDING UP ON THE SEA FLOOR, FORMING LAYERS OF A FEW CENTIMETERS EVERY THOUSAND YEARS.

THESE ANCIENT WHALES DIED, SANK TO THE BOTTOM, THEN SLOWLY BECAME BURIED UNDER SEDIMENT AND FOSSILIZED.

BUT, IF IT TOOK MORE THAN A THOUSAND YEARS FOR THE WHALE TO GET BURIED, WHY IS IT THAT THE BONES ARE SO WELL PRESERVED?

THERE WAS PROBABLY NO OXYGEN IN THE ENVIRONMENT, AND THAT PREVENTED DECAY.

THE ROCKS SURROUNDING THE FOSSILS FORMED IN SHALLOW WATERS, 60 METERS MAXIMUM. THERE SHOULD HAVE BEEN OXYGEN.

HOW DO YOU EXPLAIN THE WHALE'S BONES BEING JOINED TOGETHER INSTEAD OF SCATTERED ABOUT?

AND THAT WE FOUND EVEN THE SMALL BONES OF THE FLIPPERS?

WELL, I...

IS IT POSSIBLE THAT THESE WHALES WERE BURIED RAPIDLY?

A FLOOD? HAHAHA

NOW I UNDERSTAND! YOU'RE CREATIONISTS NAIVELY TRYING TO EXPLAIN EVERYTHING WITH BIBLE MYTHS.

I TELL YOU: NOBODY IN THE PALEONTOLOGICAL COMMUNITY WILL TAKE YOUR SPECULATIONS SERIOUSLY. I'M OUT OF HERE. GOODBYE!



FOR EXAMPLE... BY A GIGANTIC CATASTROPHE... MAYBE... A FLOOD?

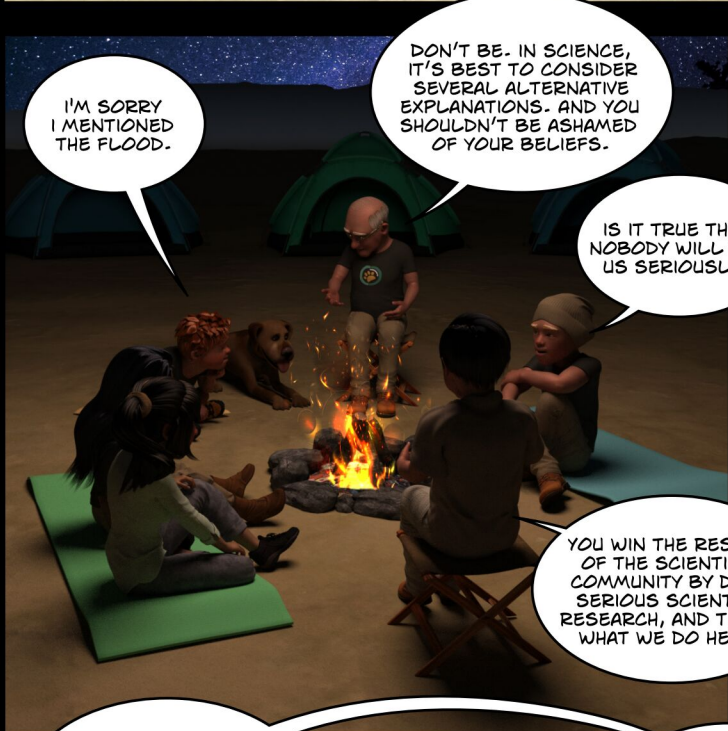




IT'S GETTING LATE. WHAT DO YOU THINK OF CAMPING HERE FOR THE NIGHT?

A FLOOD... HAHHA

WROOOOOW



I'M SORRY I MENTIONED THE FLOOD.

DON'T BE. IN SCIENCE, IT'S BEST TO CONSIDER SEVERAL ALTERNATIVE EXPLANATIONS. AND YOU SHOULDN'T BE ASHAMED OF YOUR BELIEFS.

IS IT TRUE THAT NOBODY WILL TAKE US SERIOUSLY?

YOU WIN THE RESPECT OF THE SCIENTIFIC COMMUNITY BY DOING SERIOUS SCIENTIFIC RESEARCH, AND THAT'S WHAT WE DO HERE.

THE BALEEN THING CAUGHT MY ATTENTION. DO YOU KNOW WHAT THAT IS?

THE BALEEN PLATE IS LIKE A GIANT STRAINER. WHALES COLLECT WATER IN THEIR MOUTHS, THEN PUSH IT OUT THROUGH THE BALEEN WITH THEIR TONGUES TRAPPING ANY LITTLE FISH, CRUSTACEANS AND OTHER ANIMALS.



THE DOCTOR SAID THAT IT WAS STRANGE TO FIND A BALEEN PLATE IN FOSSIL WHALES. I WONDER WHY.

IF I REMEMBER CORRECTLY, BALEEN IS NOT MADE OF BONE BUT A SOFTER MATERIAL LIKE OUR FINGER NAILS. I BET IT DECAYS FAST.

IF WE COULD JUST INVESTIGATE IT...



WHAT IF I ASK MY DAD FOR A SUBMARINE AND WE ALL TRAVEL TO THE BOTTOM OF THE OCEAN SEARCHING FOR DEAD WHALES?

A SUBMARINE??



IT WAS JUST AN IDEA...

FIRST A PLANE AND NOW A SUBMARINE!

IT'S NOT THAT BAD. I DON'T KNOW ABOUT THE SUBMARINE, BUT THERE MAY BE A TEAM OF BIOLOGISTS SOMEWHERE RESEARCHING WHAT HAPPENS TO DEAD WHALES.



THAT'S WHAT WE DID WITH THE SALAMANDERS WHEN STUDYING THE GRAND CANYON: OBSERVING THE PRESENT TO UNDERSTAND THE PAST...

THAT'S SIMILAR TO WHAT DOCTOR KIS SAID.

WHAT IF WE ASK CHRIS? HE SAID THERE ARE MARINE ANIMAL EXPERTS AT HIS LAB.

GOOD IDEA! I'LL CALL HIM.



I'M EXCITED TO HEAR FROM YOU! DID YOU KNOW THAT I PLUCKED UP THE COURAGE AND TALKED TO MY BOSS, DR. MEI? SHE APPRECIATED IT AND SAID ALTERNATIVE VIEWS ENRICH SCIENCE, MAKING US BETTER RESEARCHERS! DR. MEI IS CURRENTLY ON A RESEARCH SHIP STUDYING THE SEABED OFF CALIFORNIA'S CENTRAL COAST. I THINK THEY HAVE AN EMPTY SPOT ON THE SHIP!

YOU HEARD IT. WHO WANTS TO GO?

I CAN'T LEAVE POIROT.

UFF, PETER EST UN HEROS!

WHAT IF DIANA GOES? SHE KNOWS A LOT ABOUT WHALES.



OK. I'LL DO IT!

I'LL GIVE YOU A RIDE TO THE AIRPORT. YOU CAN BE IN CALIFORNIA BY TOMORROW.



ALPi1



CÉRÉALE AT THIS TIME OF NIGHT?

LOOK AT ME! I'M A WHALE!

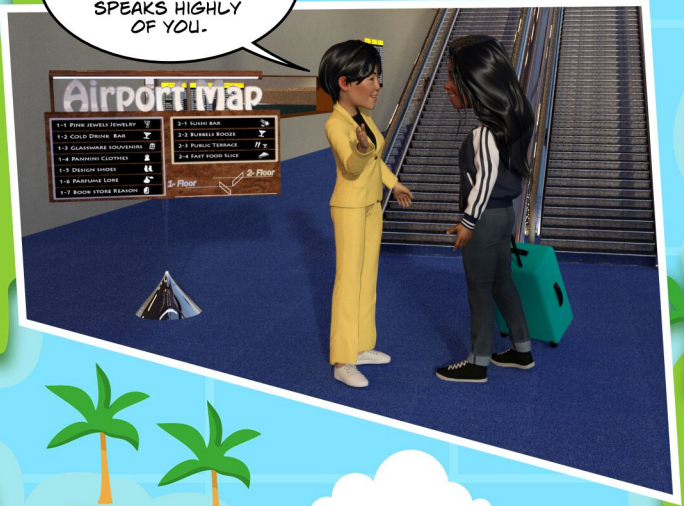


PFFFFFFF

WELCOME TO CALIFORNIA, DIANA. I AM DR. MEI. MY COLLEAGUE CHRIS SPEAKS HIGHLY OF YOU.

NORTH AMERICA

CALIFORNIA (USA)



I HAVE THE FEELING THAT THIS BALEEN THING IS GOING TO BE IMPORTANT.

AND I WAS THE ONE WHO FOUND IT.

ICA (PERU)

SOUTH AMERICA



READY FOR THE ADVENTURE?!

OF COURSE!

LETS GO BELOW DECKS AND CHECK OUT THE REMOTELY OPERATED DIVING VEHICLE.

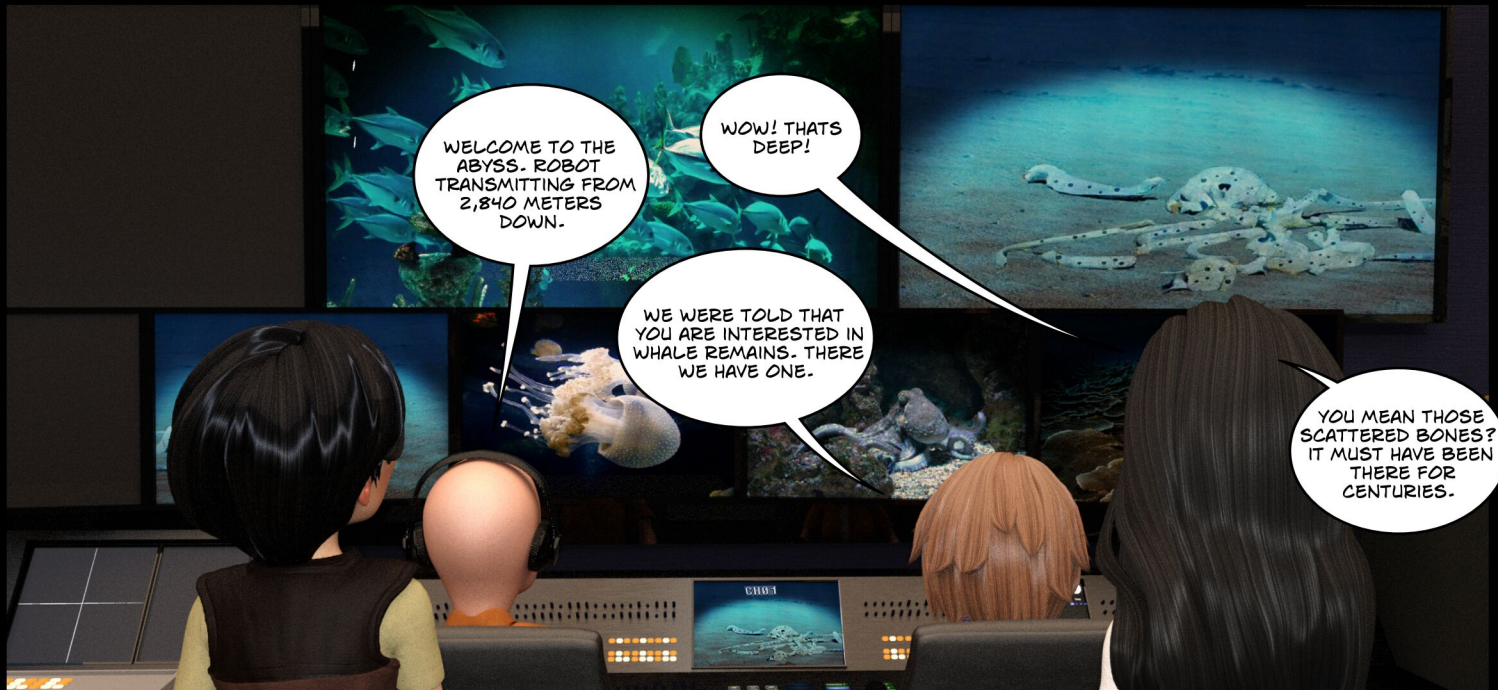
HOW COOL!



DID YOU ALREADY DEPLOY IT?

THIRTY MINUTES AGO. IT JUST REACHED THE BOTTOM.

TURNING ON LIGHTS AND CAMERAS.

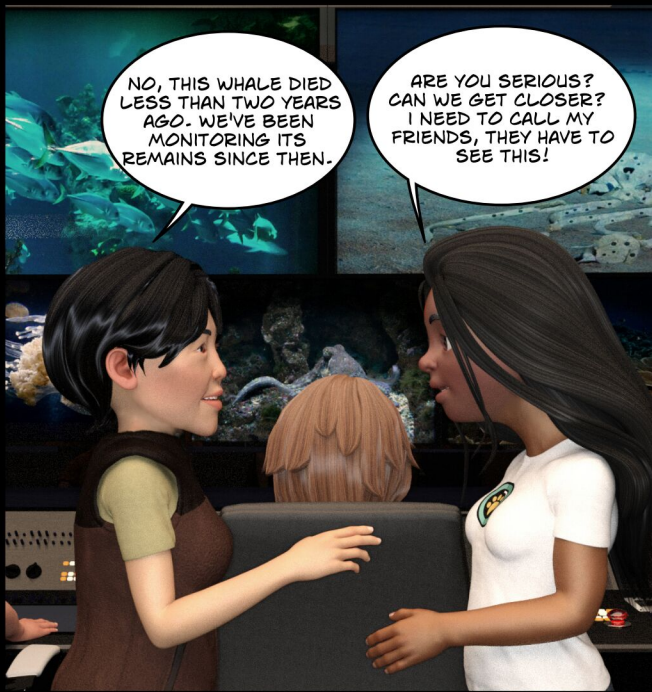


WELCOME TO THE ABYSS. ROBOT TRANSMITTING FROM 2,840 METERS DOWN.

WOW! THATS DEEP!

WE WERE TOLD THAT YOU ARE INTERESTED IN WHALE REMAINS. THERE WE HAVE ONE.

YOU MEAN THOSE SCATTERED BONES? IT MUST HAVE BEEN THERE FOR CENTURIES.



NO, THIS WHALE DIED LESS THAN TWO YEARS AGO. WE'VE BEEN MONITORING ITS REMAINS SINCE THEN.

ARE YOU SERIOUS? CAN WE GET CLOSER? I NEED TO CALL MY FRIENDS, THEY HAVE TO SEE THIS!



HI! I'M IN THE BOAT AND WE FOUND A WHALE, WELL, THE BONES OF A WHALE. SHALL I SHOW THEM TO YOU?

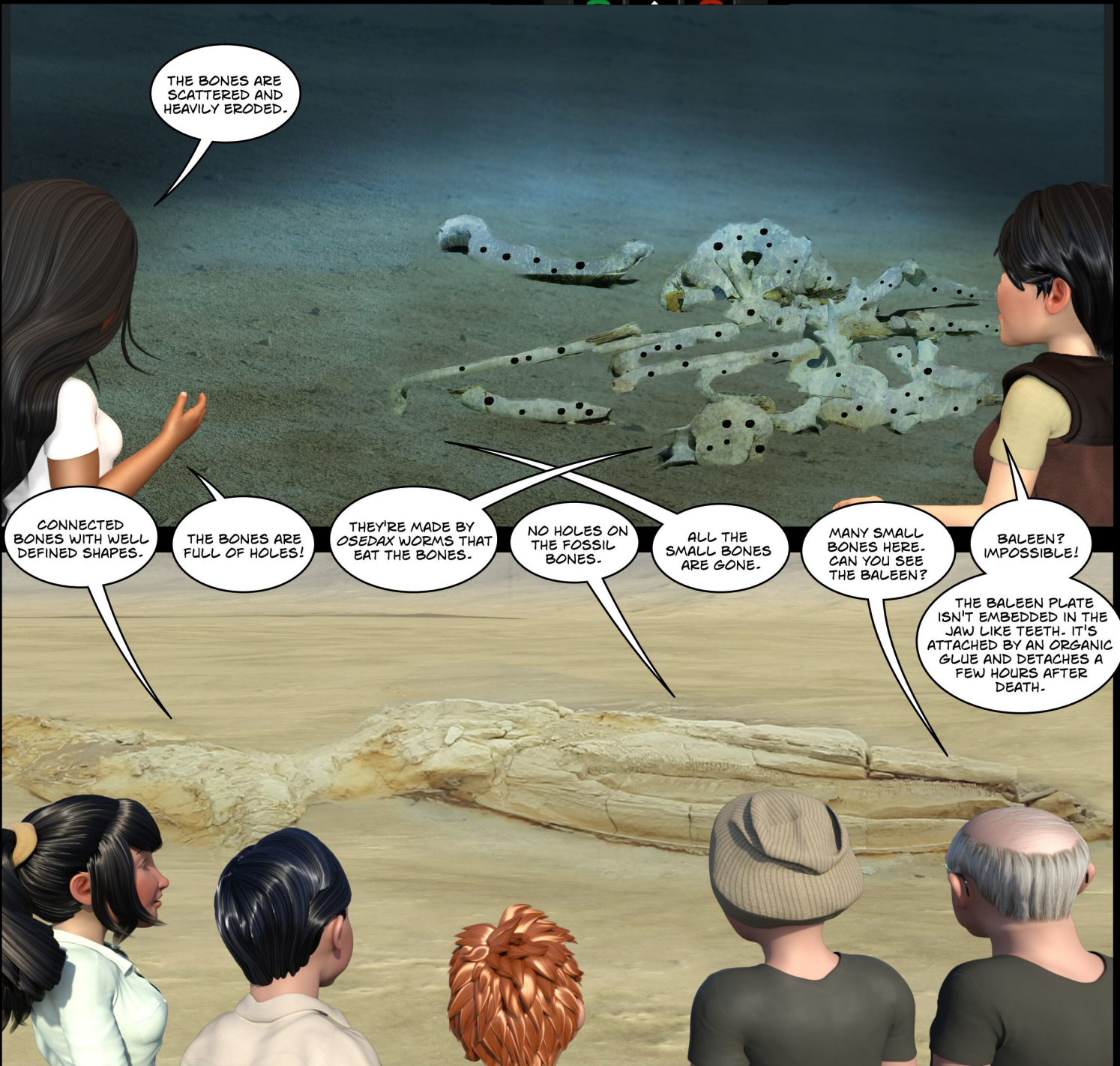


SURE!

YES!

LET'S COMPARE THEM TO THE FOSSIL WHALES!

THIS IS GREAT!



THE BONES ARE SCATTERED AND HEAVILY ERODED.

CONNECTED BONES WITH WELL DEFINED SHAPES.

THE BONES ARE FULL OF HOLES!

THEY'RE MADE BY OSEDAX WORMS THAT EAT THE BONES.

NO HOLES ON THE FOSSIL BONES.

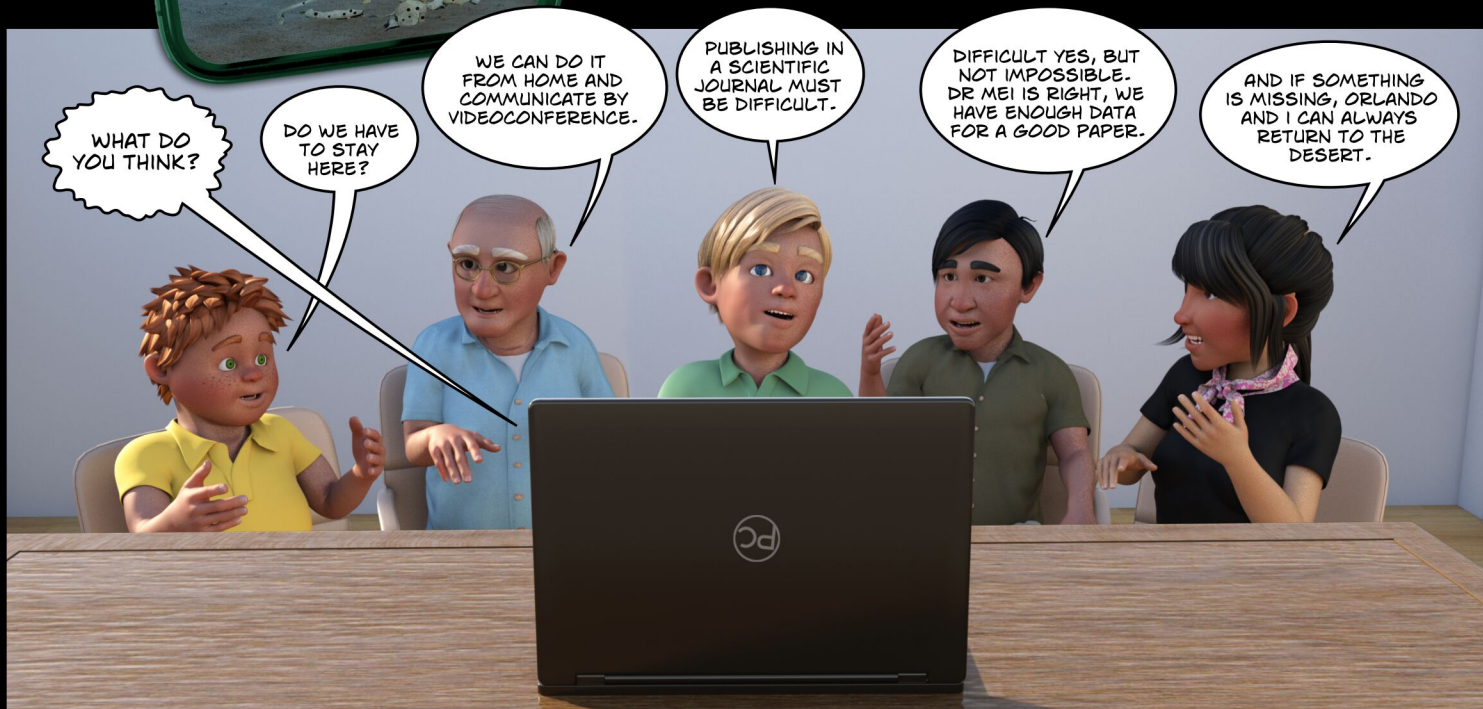
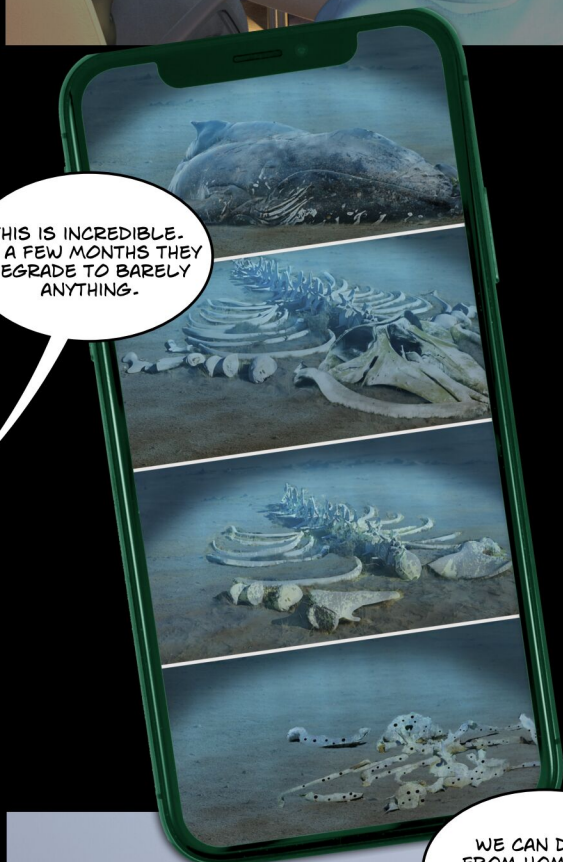
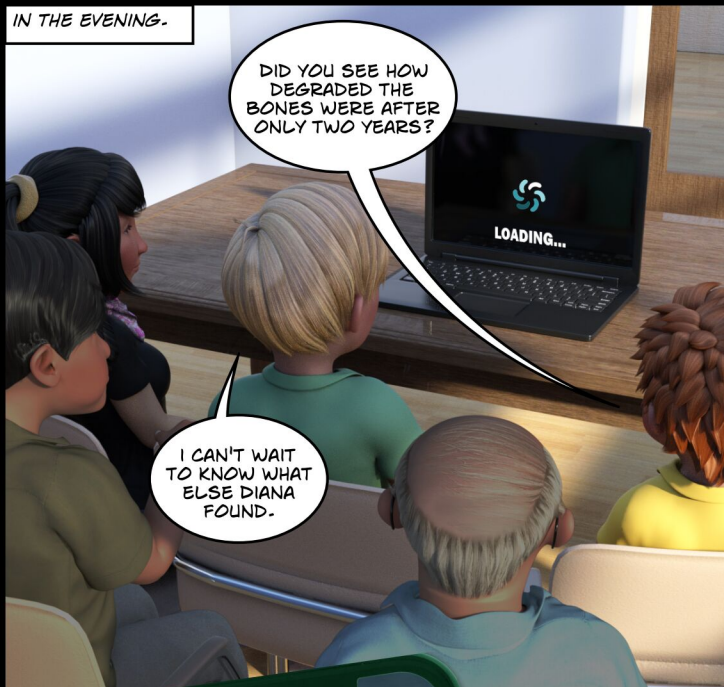
ALL THE SMALL BONES ARE GONE.

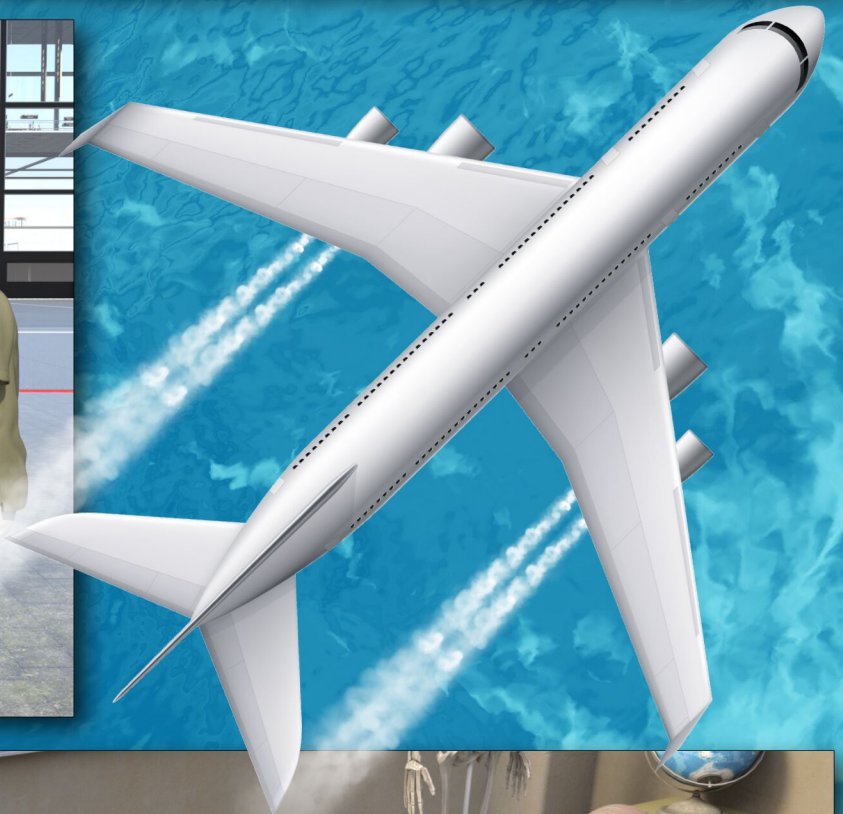
MANY SMALL BONES HERE. CAN YOU SEE THE BALEEN?

BALEEN? IMPOSSIBLE!

THE BALEEN PLATE ISN'T EMBEDDED IN THE JAW LIKE TEETH. IT'S ATTACHED BY AN ORGANIC GLUE AND DETACHES A FEW HOURS AFTER DEATH.

IN THE EVENING.



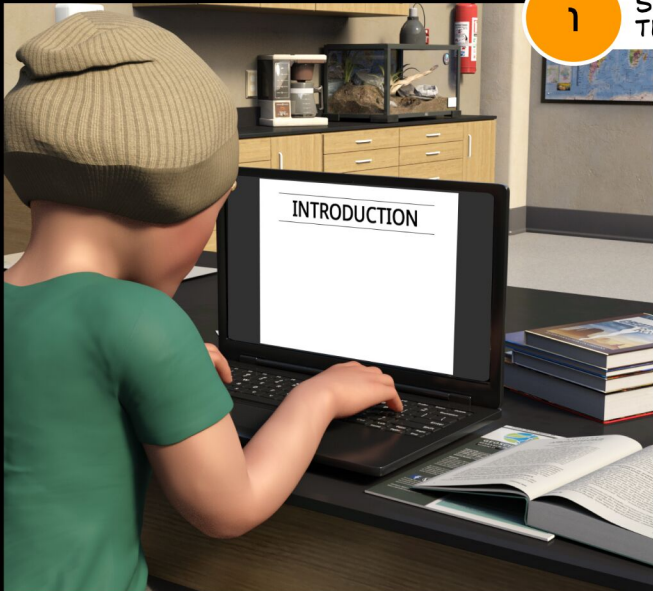


BACK AT HOME.



1

SUMMARIZE THE RELEVANT BIBLIOGRAPHY IN THE INTRODUCTION.

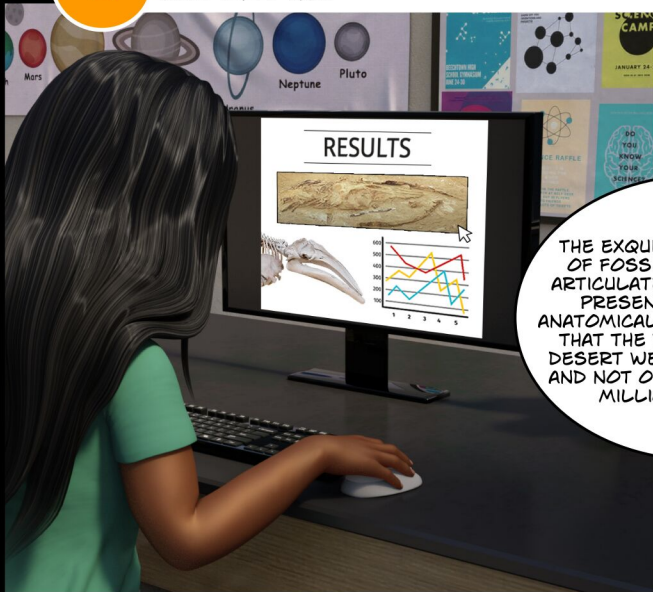


EXPLAIN THE METHODOLOGY IN DETAIL, DOCUMENTING EVERYTHING WITH PICTURES, MEASUREMENTS, AND DRAWINGS.

2

3

ORGANIZE THE RESULTS USING TABLES AND GRAPHS.



THE EXQUISITE PRESERVATION OF FOSSIL BONES, MOSTLY ARTICULATED, ALONG WITH THE PRESENCE OF BALEEN IN ANATOMICAL POSITION SUGGESTS THAT THE WHALES OF THE ICA DESERT WERE BURIED RAPIDLY AND NOT OVER THE COURSE OF MILLIONS OF YEARS.



JUSTIFY YOUR CONCLUSIONS.

4



FINISHED. WE ONLY HAVE TO ADD THE NAMES OF THE AUTHORS AND SUBMIT IT.

DON'T SUBMIT IT YET. I'LL BE RIGHT BACK.

DEAR LORD, IF I SIGN THE PAPER I CAN SAY GOODBYE TO THAT SCHOLARSHIP BUT I DON'T WANT TO BE ASHAMED OF MY FRIENDS OR HIDE MY BELIEFS. MY FUTURE IS IN YOUR HANDS. AMEN.

ARE YOU ALRIGHT, DIANA? IS THERE SOMETHING WRONG?

THIS IS EXCITING!



DONE. YOU CAN SUBMIT IT.

I'LL DO IT!

IS EVERYTHING ALRIGHT?

EVERYTHING IS PERFECT.

YOU DIDN'T INCLUDE MY NAME...

ONE MONTH LATER.



THEY REPLIED!!!



WHAT DID THEY SAY???

I DON'T KNOW! I HAVEN'T READ IT!



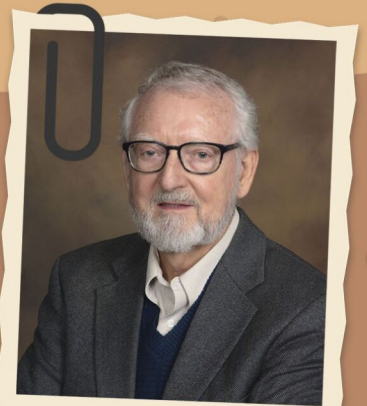
THE TRUE HEROES:

LEONARD BRAND, ARTHUR CHADWICK, AND RAÚL ESPERANTE

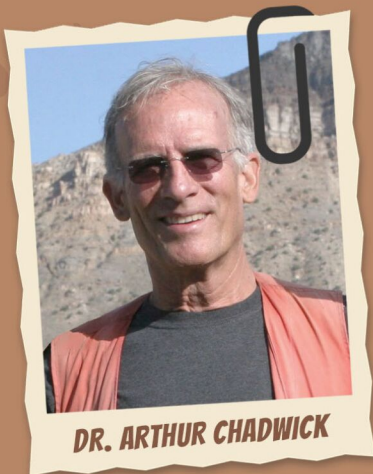
The characters in this comic book are fictional, but real scientific research has been done on the fossil whales of the Ica desert. Most of the data discussed in the story were discovered during this research and resulted in several papers published in renowned scientific journals such as *Geology*, the *Journal of South American Earth Sciences*, and *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Many scientists participated in studying the Ica fossil whales for at least 30 years, but three researchers who played a leading role in the depicted discoveries are paleontologists Drs. Leonard Brand, Arthur Chadwick, and Raúl Esperante.

Dr. Leonard Brand is a professor and past chair of the Earth and Biological Sciences Department at Loma Linda University, California. He is the author of several books on the relationship between faith and science, including two engaging books for children and teenagers entitled *Secrets Uncovered. Stories from a Christian Fossil Hunter* and *God, Science, Friends, and God's Love for You*. Dr. Brand was also a crucial figure in the Coconino sandstone research (see *Creation Detectives 1 – The Flooded Desert*).



DR. LEONARD BRAND



DR. ARTHUR CHADWICK

Dr. Arthur Chadwick is a Research Professor of Biology and Geology and co-Director of the Dinosaur Science Museum and Research Center at Southwestern Adventist University. He and Dr. Brand were the primary research team at the Ica Desert, and they co-authored several papers on the fossil whales as well as the influential textbook *Faith, Science and Earth History*, which any Christian (and non-Christian) student interested in science should read (You can get it for free at: <https://www.grisda.org/faith-reason-and-earth-history>)



Dr. Raúl Esperante is a senior researcher at the Geoscience Research Institute in Loma Linda, California. He started studying the fossil whales as a graduate student under Dr. Brand and Dr. Chadwick. He was so thrilled by the topic that, after graduating, he kept going back to Ica and expanding the research for decades. Dr. Esperante is the actual scientist who, like Diana in the story, embarked on a research vessel and discovered that in today's oceans whale skeletons do not last long.



DR. RAÚL ESPERANTE



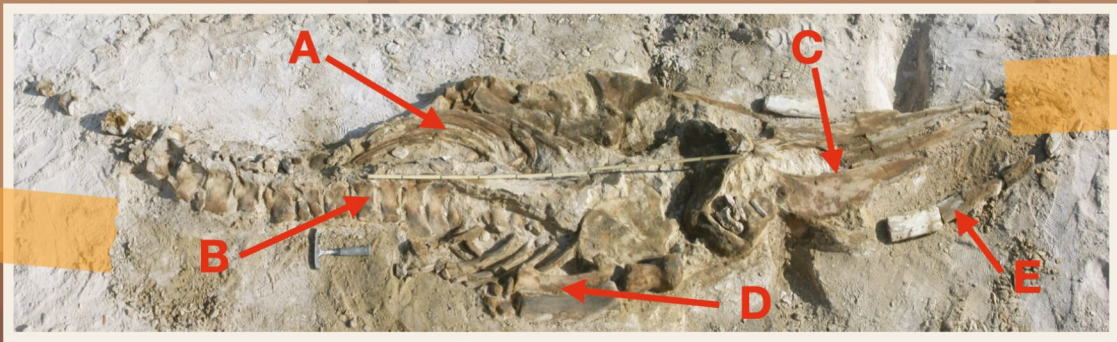
If you want to know more about these real-life scientific heroes and their experiences during the fossil whale research, you can go to: <https://www.grisda.org/whale-cemetery>

Now that you finished reading the story...

DO YOU DARE TO PUT YOUR MEMORY AND UNDERSTANDING TO THE TEST?

Try answering these questions:

1. In which country and on which continent does this adventure of the Creation Detectives take place?
2. What do the Creation Detectives do wrong at the beginning of the story that puts them in danger?
3. When scientists work in a foreign country, why is it important to have assistance from local scientists?
4. Which of these pieces of scientific equipment was NOT used in the research?
 - a. Notebook
 - b. Ruler/Measuring tape
 - c. Camera
 - d. GPS
 - e. X-ray machine
 - f. Submarine robot (remote underwater vehicle)
5. Can you identify these parts of the skeleton – skull, mandible, vertebral column, ribs, and flipper bones – in this very well-preserved fossil whale from the Ica Desert?



6. What is the name of the crucial whale organ that Poirot discovered on page 17? Where is it located?
7. What were the main differences between the fossil whales from the Ica desert and the skeletons of current dead whales at the bottom of the Pacific Ocean?
8. What are the sections of a scientific article?

ANSWERS:

1. Peru in South America.
2. They went to do field research without adult supervision.
3. Because they know the sites, the routes, the weather, and proper equipment.
4. (e) X-ray machine.
5. A- Ribs, B- Vertebral Column, C- Skull, D- Flipper Bones, E- Mandible
6. Baleen. Mouth.
7. The fossil whales were well preserved with articulated bones. In current skeletons there were few bones, all scattered and full of holes.
8. Introduction, Methods, Results, Discussion.

IF YOU ARE 6 TO 11 YEARS-OLD, YOU CAN INVESTIGATE *HOW WHALES EAT*

1. Ask your parents to help you find some information about whales in books or on the internet: How large are they? What types of whales are there? What do they eat?

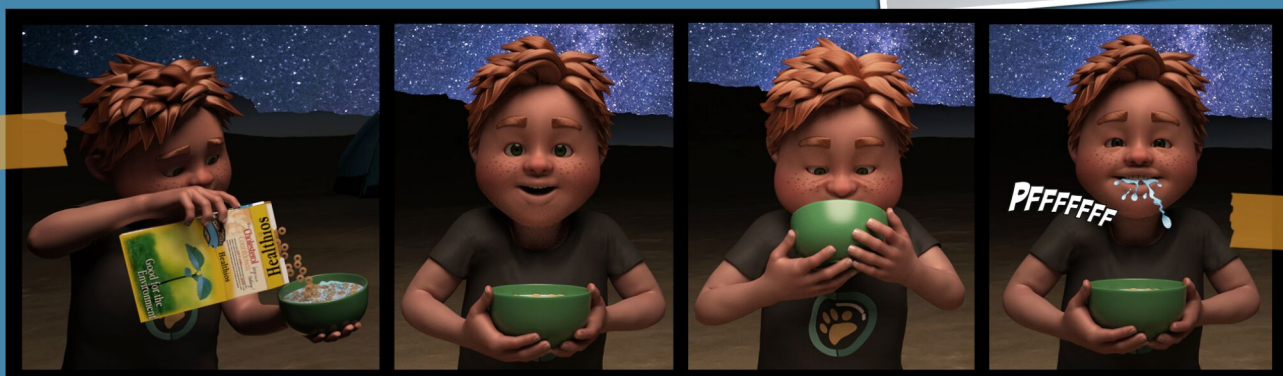
2. Look for detailed pictures of whales and pay attention to their mouths. You will find two types: toothed whales and baleen whales. Toothed whales have teeth like you, but baleen whales have a special feeding organ.

3. Ask your parents to help you find pictures of the baleen. What does it look like?

4. Do you know how baleen works? Diana explained it on page 19. She said that it is like a giant strainer. Why does a whale need a strainer?

5. Ask your parents if you can use a kitchen strainer for an experiment. Fill a bowl with water and add some cereal or puffed rice. These will represent the tiny organisms called "krill" that baleen whales eat. Go to the sink, pour the water with cereal into the strainer and see what happens. How does this experiment help you understand how whales eat?

6. If your parents agree, you can make the experiment funnier by mimicking Peter at the top of page 21. Instead of using a strainer, fill your mouth with the mix of water and cereal, but do not swallow it. Find an appropriate place, open your lips keeping your teeth closed and push the content of your mouth with your tongue. The water should go out between your teeth, but not the cereal. This is how whales eat!



IF YOU ARE 12 TO 16 YEARS OLD, YOU CAN INVESTIGATE *THE MYSTERIOUS STRUCTURE ON THE WHALE RIB*

At the bottom of page 16, pastor Max found something interesting in one of the ribs of a fossil whale and took a picture. However, the team was so busy with other data that they did not have time to solve the mystery. Would you like to help them?

1. Look at the round picture on page 16 and describe what you see. Can you guess what that is?
2. When doing research, it is important to carefully observe all the data. Looking at all the ribs of all the fossil whales in sight, you find a similar structure (a diagonal line crossing the rib) in another specimen (picture 1). In a different whale, you also find a weird thickening in the middle of a rib (picture 2). Would these new discoveries help you? Do they confirm your first hypothesis or suggest something different? What could you do to better understand these ancient whale structures? (You can find a tip in the first panel of page 18).



3. If you have decided to look for similar patterns in the skeleton of current whales, go to the internet and search for the following paper: "Osteo-pathological analysis provides evidence for a survived historical ship strike in a Southern Hemisphere fin whale (*Balaenoptera physalus*)". You don't need to read the entire article, but look at the figures, especially figures 6 and 7. Do they look familiar? Read the abstract of the paper to understand what the lines and thickenings of the ribs are. Could you apply the same to the fossil whales? What is your conclusion about the mysterious structure?

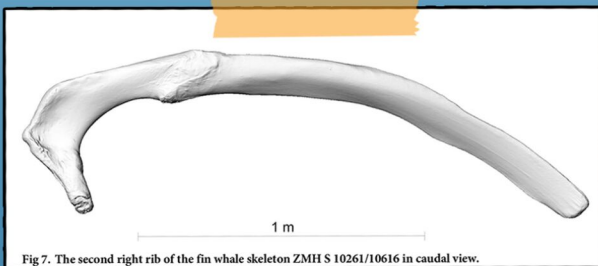


Fig 7. The second right rib of the fin whale skeleton ZMH S 10261/10616 in caudal view.



Fig 6. The first right rib of the fin whale skeleton ZMH S 10261/10616 in caudal view.

PLOS ONE

RESEARCH ARTICLE

Osteo-pathological analysis provides evidence for a survived historical ship strike in a Southern Hemisphere fin whale (*Balaenoptera physalus*)

Hannah Viola Daume^{1,2*}, Helena Herr², Heinrich Mallison³, Matthias Glaubrecht^{1,4}, Thomas M. Kaiser¹

1 LIB–Leibniz Institute for the Analysis of Biodiversity Change, Museum of Nature Hamburg, Hamburg, Germany, 2 Institute of Marine Ecosystem and Fishery Science, Universität Hamburg, Hamburg, Germany, 3 Palaeo3D, Rain, Germany, 4 Department of Biodiversity of Animals, Universität Hamburg, Hamburg, Germany

* viola.daume@gmail.com

Check for updates

OPEN ACCESS

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Abstract

The life history of a fin whale (*Balaenoptera physalus*) caught during whaling operations in the 1950s was partly reconstructed. 3D surface models of the bones of the skeleton curated at the Zoological Museum of Hamburg were used for an osteopathological analysis. The skeleton revealed multiple healed fractures of ribs and a scapula. Moreover, the processus spinosus of several vertebrae were deformed and secondary effects arising from logical findings provide evidence for large blunt trauma and secondary effects arising from it. Reconstruction of the likely cause of events suggests collision with a ship inflicting the fractures and leading to post traumatic posture damage as indicated by skeletal deformations. The injured bones had fully healed before the fin whale was killed by a whaler in the South Atlantic in 1952. This study is the first in-detail reconstruction of a historical whaling collision in the Southern Hemisphere, dating back to the 1940s, and the first documentation of a healed scapula fracture in a fin whale. The skeleton provides evidence for survival of a ship strike by a fin whale with severe injuries causing long-term impairment.



ANSWERS: The structures found in the fossil ribs were healed fractures. We cannot know the cause of the fractures, maybe a collision with rocks or the attack of a predator, but we know that the whale survived because the broken bone fused back together. If you want to know more, look for this article on the internet: Esperante, Raúl & Poma Porras, Orlando. (2015). Taphonomy and palaeopathology of two mysticete whales, upper Miocene Pisco Formation, Peru. Spanish Journal of Palaeontology, 30 (1), 1-14. <https://doi.org/10.7203/sjpp.30.1.17198>



HERE AT LAST,
POIROT!

YELLOWSTONE
NATIONAL PARK.

READY FOR THE
NEXT CASE?

I'M SURE THIS
PARK IS FULL OF
CUTE LITTLE
ANIMALS.

GRRRR



FAITH &
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12501 Old Columbia Pike
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United States



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11060 Campus St
92350 Loma Linda (United States)
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C/ Mariano Royo, nº 19
Pral. C, Oficina 5
50006 ZARAGOZA (España)
info@nyc.org.es | nyc.org.es
facebook.com/nycnaturalezaycreacion