

# Text Only Version - The Secret in the Cellar

This document describes the settings, characters, dialogue and activity for each of 37 Webcomic pages and includes links to a number of supplemental short documents providing further information about the how the mystery was discovered and solved. At the end of every tenth comic page, there is an option to return to the beginning (here) or to the ["Written In Bone" home page](#) on the web.

Quick Shortcuts to [Comic Page 11](#)    [Comic Page 21](#)    [Comic Page 31](#)

## The Webcomic begins

**Comic Page 1.** The clues were buried a long time ago. That won't stop a team of archaeologists, historians, forensic experts, and one college intern named Ana from uncovering the truth about the Secret in the Cellar, a Written in Bone Forensic Mystery from Colonial America.

Characters in the story are Dr. Kingsley, Forensic Anthropologist, Charles Chief Archaeologist, Ana, College Intern, Janet, Deputy Archaeologist, Dr. Howell, Historian.

**Comic Page 2.** Scene Description. View of the green expanse of a sod farm. Two people are visible, facing each other. One is kneeling and looking in his cupped hand to examine its contents, the other's head is downcast, watching him.

Caption. Two modern-day archaeologists in the Tidewater Chesapeake area, Maryland USA. An archaeological survey.

Janet says. What did you find Charles?

Charles says. Trade and belly tobacco pipes. Quite a few of them! Looks like we were right to think there was a colonial settlement around here.

Article:

[Background of the Tidewater Chesapeake Area](#)

**Comic Page 3.** Scene Description. Close shot of two cupped hands, three pieces of artifacts cradled in them.

Charles says. Look Janet - the sod farm operations must have disturbed and uncovered these artifacts.

Janet says. I hope the removal of the topsoil didn't destroy too many of them. We need to get a Lost Towns dig started right away.

Images:

[Images of Trade & Belly Pipes](#)

Article:

[17th century colonization of the Chesapeake area](#)

Website:

[Website for the Lost Towns Project](#)

**Comic Page 4.** Scene Description. Up-view of Charles giving direction to Janet, who is writing on a clipboard.

Charles says. Let's do a geophysical survey and a shovel test pit survey to see if we can still locate where people had built their homes, then we'll bring in a dig team.

Definitions:

[Definition of geophysical survey](#)

[Definition of shovel test pit survey](#)

**Comic Page 5.** Scene Description. Charles, Janet, and Ana the intern standing side-by-side. Charles is turned toward her slightly. Ana is clad in overalls, T-shirt, and bandana. She raises her hand to shake Janet's hand, revealing a small tattoo on her left. She wears large earrings. She has light brown skin, her ancestry is ambiguous.

Caption. Months later.

Charles says. Janet, I'd like you to meet Ana, our intern. She'll be learning about archaeology and getting college credit for it.

Janet says. Glad to have you. You'll be helping to excavate a house cellar from the last half of the 17th century, where the owners discarded their trash. And you know what they say - you can learn a lot about people from their trash.

Ana says. Sounds great.

Website:

[Website on Archaeology](#)

Roles:

[Janet's Role](#)

[Charles' Role](#)

[Ana's Role](#)

**Comic Page 6.** Scene Description. Continuation of Comic Page 5.

Janet says. Come on, I'll help get you started in your assigned quadrant. This is a great site and we've already found lots of artifacts.

Ana says. I am real excited to help. Also, anything we find will help me develop a presentation I have to give to my ENTIRE Anthropology department.

Janet says. But, unless your name is really Lara Croft, don't expect to find anything like gold, or death traps. You might find an old jug or two.

**Comic Page 7.** Scene Description. Close shot over Ana's right shoulder as she brushes dirt from the top of a small, smooth white object protruding from the earth at an angle with her left hand. A dirt-filled suture, the top bit of the left orbit, have become visible among the clods of dirt clinging to the skull.

Caption. A few weeks later - Ana is working in a shallow trench in her quadrant of the old cellar.

Ana says. Hey! JANET! HEY! I think this might be a skull--- a HUMAN SKULL!

**Comic Page 8.** Scene Description. Frontal image of Ana speaking to Janet who is on her knees digging in another quadrant with her back to Ana.

Janet says. Yeah, right. No, wait. Oh look, I found some Aztec gold too.

Ana says. No, really! Check it out. It's a HUMAN SKULL!

**Comic Page 9.** Scene Description. Frontal shot of Charles down in the pit, examining the bones. His sleeves are rolled up and his sun hat askew. Most of the team is crowded on the lip of the cellar behind him, watching intently. A team member is kneeling beside him taking digital photographs of the bones. Charles points to it with his right hand; his left hand rests on the ground below a team member who is sketching the scene.

Caption. A few weeks of digging later.

Charles says. Wow. Look how the body was folded into this small space between the floor beams. They must've used this ceramic milk pan to cram the body in the trench.

Ana says. But why in the cellar and without a coffin? I mean, why would someone bury a body with the trash under their own house?

Images:

[Ceramic Milk Pan Images](#)

**Comic Page 10.** Scene Description. Ana has an 'aha' expression on her face as she asks her question.

Ana says. Hey, do you think they were hiding the body?

Charles says. I don't know yet, but it's very unusual. Let's hope we can find some clues that will help us determine when the body was buried in the cellar and why.

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**Comic Page 11.** Scene Description. Close shot of a page in Ana's journal with image of Ana in the foreground. Text is hand written.

Caption. Ana writes about her experience in her journal.

Ana writes. We finally uncovered the rest of the body today. It is very easy to see that someone shoved the body under the house into a shallow trench that was too small for the body.

We also found a crack in the back of the skull. Janet thinks that a blow to the head could have killed this person, and then someone hid the corpse under the house. Gross! I can't imagine a dead body in my basement! This whole murder idea is a little

freaky. I hope we can solve this mystery by combining the evidence from the dig, the forensic bone data, and what we can determine from history.

Tomorrow, a famous local historian, Dr. Howell, is going to visit and tell us more about the area during the 17th century.

**Comic Page 12.** Scene Description. Side shot of Charles and Ana down in the pit. Historian Howell stands at the edge, overlooking the scene. Janet is crouching. Howell points to a spot in the distance.

Caption. Dr. Howell shares his knowledge of local history.

Dr. Howell says. I didn't think of it until after we talked on the phone, but the English Civil War spread to the Colonies around the time you are asking about. The Battle of the Severn River was fought right over that hill in 1655!

Charles says. What?

Ana says. Huh?

Article:

[The Battle of the Severn River](#)

Role:

[Dr. Howell's Role](#)

**Comic Page 13.** Scene Description. The team imagines the battlefield scene, with musket smoke, bodies lying on the field.

Dr. Howell says. We know that after the battle, four prisoners of war were executed – but no graves were ever found. Once you've dated the site, we'll have a better idea if this is one of the soldiers from the battle. Oh, it would be very exciting if you found more of the missing bodies in the other pit that you found in the adjacent quadrant in the cellar.

**Comic Page 14.** Scene Description. Janet and Ana are down in the pit. Ana is crouching. Janet is excited as she shows Ana what she's found. Three artifacts -- a worn, dirt-clotted farthing coin, a fragment of window lead, and a broken belly pipe stem of reddish clay -- lay on a small tray she offers with her left hand, she points to them with her right index finger. In the background, a several team members are working in the pit.

Caption. Weeks later

Ana says. Too bad there wasn't another skeleton in the other pit -- that would have given us a lot more clues. Now, I am not sure if this person was an executed prisoner of war or not.

Janet says. Although we didn't find another body, we did find several artifacts with and on top of the body that we should be able to date. Pretty soon, we'll be able to have a good idea when our mystery person died.

Activity:

[Can you date the site?](#)

**Comic Page 15.** Scene Description. Charles has entered the pit from the right of the panel. Janet has turned slightly and holds the tray up for Charles to examine. Charles has taken the coin from the tray and is holding it up to his eyes with the fingers of his left hand (as one would regard an unset jewel), he squints at it using a magnifying glass held in the other hand. Janet and Ana look at him as he draws a conclusion. Ana is still squatting, the journal in her hands.

Charles says. Look here! This coin is dated 1664 and this piece of window lead has a date stamp of 1663. So the window lead indicates that the house was built in 1663 or later. We use a variety of facts to determine the "terminus post quem."

Ana says. But, Dr. Howell said that the Battle of the Severn River happened years earlier -- in 1655, so the body can't be one of the executed soldiers.

Charles says. Our mystery person might not have been a soldier, but we now know a date after which he or she was buried.

Ana says. SHE!? I've been assuming that he was a guy. I mean a soldier, therefore a guy.

Definition:

[Definition of terminus post quem](#)

Images:

[Images of the coin and window lead](#)

**Comic Page 16.** Scene Description. Continuation of Comic Page 15.

Charles says. The sex is one of the things that I'm hoping that Dr. Kingsley, from the Smithsonian, will be able to determine when he comes next week to examine the body 'in situ.' Forensic anthropologists can tell a lot about the body even before taking it to a lab. Then, once in the lab, it's like the bones actually start talking to them.

Definition:

[Definition of 'in situ'](#)

Activities:

[Can you identify the age?](#)

[Is the skeleton male or female?](#)

[Can you identify ancestry?](#)

**Comic Page 17.** Scene Description. Close view of Charles and Dr. Kingsley from behind, kneeling close to the skull. Charles holds a brush. Dr. Kingsley's left hand probes the skull.

Caption. Dr. Kingsley examines the body in situ.

Dr. Kingsley says. From the size and shape of the pelvis, I would say we are looking at a male. And the growth plates suggest a teenager. The shape of the cranium, the slope of nasal bones and the width of the nasal cavity suggest European ancestry. We have to examine all the bones and teeth back at the lab to get an accurate age, how long he'd been in the Colonies and what might have killed him.

Role:

[Dr. Kingsley's Role](#)

**Comic Page 18.** Scene Description. Continuation of Comic Page 17.

Charles says. What about that fracture in the back of the skull?

Dr. Kingsley says. I need to look more closely to decide if this was the cause of death or happened postmortem.

Activity:

[Is there evidence of trauma?](#)

**Comic Page 19.** Scene Description. Ana's journal. Under the page heading "Questions," she has listed these questions (in order), each preceded by a large check box. Ana checks off the "When did he die?" box. She has already written "approx. 1664 or later" in the margin next to the question. She has also crossed out "battle" that she added under "accident."

Ana writes. "It was amazing that Dr. Kingsley could tell so much from the bones. I hope our trip to the Smithsonian lab next week can provide some more answers. I've been worried about my presentation that's coming up. I just really want to know what happened to him before I finish my internship."

Questions:

Age = teenager

Sex = male

Where was he from? Skull = European, but was he born in America?

When did he die? Approx. 1664 or later

How did he live?

Why a cellar, not a cemetery?

How did he die?

Murder

Disease

Accident

Battle? - Battle of the Severn River happened in 1655

Highlighted items.

Age = teenager

Sex = male

Skull = European



Crossed out: Battle/Battle of Severn River

**Comic Page 20.** Scene Description. Ana, Charles, Janet and Dr. Kingsley standing around the skeleton arranged all in pieces on a raised padded table at the Smithsonian. Dr. Kingsley is standing in the center holding an x-ray. Everyone is looking at the bones.

Caption. The team reviews the lab analysis results with Dr. Kingsley.

Ana says. So, how old was the boy, Dr. Kingsley?

Dr. Kingsley says. Dental X-rays indicate an age of 15 to 17 years. This matches well with the unfused growth plates in his arms and legs -- showing that he was still growing at the time of death.

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**Comic Page 21.** Scene Description. Continuation of Comic Page 20.

Ana says. What about his skull fracture?

Dr. Kingsley says. His skull fracture happened after he was buried. This fracture was perhaps caused by the weight of the dirt and trash above him. His right elbow was injured, but had already healed. We also observed a perimortem fracture of his right wrist, with no evidence of healing. So, it looks like he experienced some trauma near the time of death.

Definition:

[Definition of perimortem](#)

**Comic Page 22.** Scene Description. Continuation of Comic Page 20.

Charles says. Can you determine if he was born here or not?

Dr. Kingsley says. Absolutely. We analyzed stable carbon isotopes in his bones. Europeans had wheat-based diets and their bones contain lower amounts of the <sup>13</sup>C isotope. The bones of someone born in the Chesapeake, or living here a long time would have higher amounts of the <sup>13</sup>C isotope from their corn-based diet. You are what you eat, even 350 years after your last meal.

Activity:

[Can you determine diet?](#)

**Comic Page 23.** Scene Description. Close shot of Ana's journal page from above (Comic Page 19). She has already written "Born in Europe, recent immigrant because the bones showed a wheat-based diet" in the margin next to the question.

NOTE: The questions on Age and Sex have already been checked off and 16 years old and male (respectively) written down. This time she adds "Skull fracture was postmortem after Murder."

Ana writes.

Questions:

Age = 16 years old

Sex = male

Where was he from? Born in Europe - recent immigrant because the bones showed a wheat-based diet

When did he die? Approx. 1664 or later

How did he live?

Why a cellar, not a cemetery?

How did he die?

Murder - Skull fracture was postmortem

Disease

Accident - Is wrist fracture related?

Battle? - Battle of the Severn River happened in 1655

Highlighted items.

16 years old

Born in Europe

Aprox 1664 or later

Murder crossed out with Skull fracture written over

**Comic Page 24.** Scene Description. An imagined scene. A close frontal shot of a standing boy looking down and off-panel to his left while carrying a heavy wooden yoke across his shoulders, in the barrels at each end of the yoke is water. His face is hidden by a large brim hat.

Dr. Kingsley says. As you can see, the spine and teeth are damaged, possibly from physical labor and/or disease.

Activities:

[Can you identify activity patterns?](#)

[Can you identify disease in bone?](#)

**Comic Page 25.** Scene Description. The upper part of the panel shows an image of the boy that reflects the team's collective imagination. The boy is shown in the past, plowing the field -- sweating and stumbling along behind a yoke of two oxen and a crude wooden plow.

Charles says. So, he wasn't a young gentleman -- he worked too hard, and was buried like a dog.

Ana says. Well, who other than slaves were forced to work that hard?

Article:

[Conditions in the early Colonies](#)

**Comic Page 26.** Scene Description. Charles, Janet, Ana, and Dr. Kingsley are standing in the lab, as Ana looks up from her cell phone. Dr. Kingsley has an x-ray in his hand that he was reading. The x-ray has the final clue. So Dr. Kingsley is on the right side looking excited and reading the x-ray.

Caption. What caused this boy's death?

Ana says. Here's an e-mail from Dr. Howell who just uncovered a proposed law from that time requiring public burial. Indentured servants were being buried privately,

without coffins, and not in a cemetery. Masters seem to have been hiding servants' deaths.

Janet says. His life and death certainly fit that of an indentured servant -- heavy labor, poor health, and a hidden burial.

Dr. Kingsley says. Aha! I think we have enough clues to say how this boy died!

**Comic Page 27.** Scene Description. Ana and Janet are in a library with few to no patrons, facing each other, each of them leaning back with elbows against adjacent waist-high book shelves.

Caption. Weeks later. Ana is discussing her presentation with Janet.

Ana says. Although I think everything we discovered is fascinating, and I'm really excited to tell my story to my class, I'm just afraid my talk won't mean as much for the audience. I mean, this isn't like a TV show with non-stop action. Do I need to add something more?

Janet says. Isn't finding a body exciting? Stick with the facts and what you think they mean. That's the beauty of science - it helps you better understand the world around you.

**Comic Page 28.** Scene Description. It is the past. Medium, somewhat hazy shot of a pint-sized, shoeless young male in ragged early colonial garb. He is struggling along a dusty lane under the weight of the large crate he is carrying on his back. The track is bounded on one side by a split-rail fence. He is under the watchful eye of his beefy master, who is wearing a leather apron and directs him with an outthrust arm and a scowl. The the boy's face is not seen. Janet's head is in the corner, talking.

Janet says. Sure, this is some nameless kid from long ago who had a rough life. And died worse. But he deserves to have his story told.

**Comic Page 29.** Scene Description. Montage combining images of Ana discovering the skull at center bottom (the main image), surrounded on the top and sides by an arc of smaller images including the skeleton in the position it was found, the coin, Dr. Kingsley doing lab work, and a grinning, muddy Janet.

Janet says. And I think he would want you to tell it. Just describe what you did to find him again, and how you used science to uncover the truth about him.

**Comic Page 30.** Scene Description. Back to the library scene, bookshelves in the background. Close shot of Ana looking determined, her eyes narrowed and glittering. Janet says. Let the audience experience what it all meant to you. That'll be plenty exciting! Ana says. I will.

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**Comic Page 31.** Scene Description. Frontal quarter-view of Ana standing behind a lectern in class. She is leaning into it, chin up, confident. The first row or two of the audience is visible, from the side. To Ana's left-rear is a large rolling whiteboard. She has printed WRITTEN IN BONE across the top with a marker in large letters, as her presentation's title, underneath she has taped a number of photos, sketches and statistical charts to illustrate her talk.

Caption. Ana concludes her final presentation.

Ana says. So -- all of this evidence from the scene, the burial location, the skeleton, and what we can learn from historic documents, suggests that the boy was a 15 to 17 year old European indentured servant. The bones show evidence of a hard life and early death.

**Comic Page 32.** Scene Description. The final piece of the story is shown as a large image. An inset of Ana's face is included in the upper right corner as a small fore figure so it is clear that Ana is telling a story of what happened long ago. The boy is down on one knee, his right arm is raised to protect his head. His arm is blocking his face from view. An older man is standing over the boy with a garden hoe in his hand. The man is yelling at the boy and is prepared to strike the boy with the handle of the hoe. This is a rage incident.

Ana says. Final analysis of the wrist fracture indicates that the boy was probably murdered. He did not die as a result of disease or accident. The perimortem wrist fracture is consistent with a defensive injury. The boy used his right arm to block a strong blow. The fracture itself wouldn't have killed him, but the defensive injury combined with his hidden burial, points to a violent death.

**Comic Page 33.** Scene Description. Close shot of Ana at the lectern, brushing the hair out of her eyes with her right hand and looking relieved and slightly triumphant. On each side of the lectern there are images of Charles, Janet, Dr. Kingsley, and Howell.

Ana says. There are still questions about the exact cause of death, but science builds on evidence discovered one piece at a time. And it takes time and lots of different people and specialties to get to the answers. It's a team effort -- and I'm glad I was part of it.

**Comic Page 34.** Scene Description. Shot of Ana at the lectern, from the audience. She looks down, suddenly contemplative.

Ana says. I'll take a few questions now, but the person I'd, uh, most like to ask some questions, and thank, can't exactly be here.

**Comic Page 35.** Scene Description. Medium shot of Ana, in cap and gown, shaking hands enthusiastically with Charles in the heavily-carved, arched doorway of a great university building, at the top of a long flight of marble stairs. A crowd of jubilant graduates and their parents streams by the two of them on either side and out of the building, tassels flying. Charles shakes Ana's hand with his right hand, his eyes fixed on hers. At the same time he gestures off-panel with a sweep of his left arm, as if inviting her to accompany him somewhere.

Caption. Months later

Charles says. Before you leave us, young lady, I thought you'd like to meet an old friend.

Ana says. Huh?

**Comic Page 36.** Scene Description. Close shot of the reconstructed head of the boy. It sits on a simple column in the middle of a darkened room with a spotlight shining down on it, a card reading "Boy in the Cellar: Facial Reconstruction" sits at its base. The small figures of Charles and Ana (in her academic costume) are visible in silhouette in the middle distance, framed by the open doorway. Ana throws both arms in the air in surprise and delight. Ana says. That's AMAZING! Charles says. The Smithsonian forensic anthropologists, working with a forensic artist, created a facial reconstruction. Now that's science really putting a face on history.

Article: [Forensic Facial Reconstruction](#)

**Comic Page 37.** This story is based on an actual case – click [Behind The Scenes](#) to read a summary of the events as they occurred in the actual case.

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