

Introduction to Archaeology: A Workbook

INTRODUCTION TO ARCHAEOLOGY: A WORKBOOK

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Mavs Open Press

Arlington



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ABOUT THIS PROJECT

OVERVIEW

This workbook was designed for the Introduction to Archaeology (ANTH 2339) class in the Department of Sociology and Anthropology, University of Texas at Arlington. It was created to provide exercises that supplement and expand on topics and issues raised in lecture. For each major topic, students complete exercises that serve a range of functions; for example, some chapters are designed as note-taking aids to be filled out in class and/or during lecture (Chapter 4), while others can be completed at the end of the week to review key concepts and ideas. Exercises in this workbook vary from creating bullet point lists, completing tables, conducting online research, and writing short essays. At the end of the course students will have a completed workbook that can serve as a study guide.

ABOUT THE AUTHOR

Ashley Lemke is an Assistant Professor of Anthropology in the Department of Sociology and Anthropology at the University of Texas at Arlington (UTA). She received her Bachelor's degree in Anthropology and Classical Civilization from the University of Texas in 2008, her Master's degree in Anthropology from the University of Michigan in 2010, and her PhD in Anthropology from the University of Michigan in 2016. Her research focuses on hunter-gatherers and she works on land and underwater to examine archaeological sites. Dr. Lemke has worked extensively in North America and has conducted research at archaeological sites in Romania, Germany, and Spain. In addition to rigorous and innovative research, Dr. Lemke is a dedicated teacher. She is the recipient of the 2020 President's Award for Excellence in Teaching and the 2019 Outstanding Teaching Award for Tenure-Track Faculty from the University of Texas at Arlington. She was also awarded the Student Organization Advisor of Year Award in 2020 for her service as Faculty Advisor to the Anthropology club at UTA.

Brooke Troutman is the Scholarly Impact and Social Sciences Librarian for The University of Texas at Arlington Libraries. She is the liaison librarian for the School of Social Work as well as the Department of Sociology and Anthropology. She received her Bachelor's degree in History and Anthropology from Illinois State University in 2011. She received her Master's degree in Library and Information Science from Wayne State University in 2016. Her research interests include reclaiming library relevancy as a fundamental place for lifelong learning. This work includes collaborating closely with all university faculty and students to improve research and scholarship across disciplines. Her interests also include working to show libraries as a place for inclusion and access to information for all. She is a member of the American Library Association and the Association for College and Research Libraries. She is also a member of the Value of Academic Libraries Committee which works to promote and grow the value of academic libraries and improve the higher education experience for students.

Alanis Ramos Berrios is a recent graduate from the Anthropology program at the University of Texas at Arlington. She received her bachelor's degree in December 2019. As an undergraduate, she became the President of the Anthropology Club at her university and used this as an avenue for other endeavors such as becoming a Research Assistant and teaching College Success courses to incoming freshmen. She has been part of two archaeological field projects in the southern United States that focus on prehistoric hunter-gatherers. She plans to keep pursuing archaeology at a graduate level.

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UTA CARES GRANT PROGRAM

Creation of this OER was funded by the UTA CARES Grant Program, which is sponsored by UTA Libraries. Under the auspices of UTA's Coalition for Alternative Resources in Education for Students (CARES), the grant program supports educators interested in practicing open education through the adoption of OER and, when no suitable open resource is available, through the creation of new OER or the adoption of library-licensed or other free content. Additionally, the program promotes innovation in teaching and learning through the exploration of open educational practices, such as collaborating with students to produce educational content of value to a wider community. Information about the [grant program](#) and [funded projects](#) is available online.

AUTHOR'S NOTE

Creation of this workbook was sponsored by the University of Texas at Arlington (UTA) CARES Open Access Education Grant Opportunity. I commend UTA's commitment to providing no-cost resources for students. Over the course of teaching Introduction to Archaeology at UTA since Fall of 2016, I was contacted by numerous students who found traditional textbooks cost prohibitive. This class is now included in the Core Curriculum at UTA, fulfilling a Social and Behavioral Sciences requirement as it includes communication, social responsibility, and empirical and quantitative skills components. This course now serves more students than ever and with feedback from prior students, as well as support from the CARES Grant Opportunity, this workbook was created to provide a free resource for all future students in Introduction to Archaeology. I would like to thank Michelle Reed for all of her guidance and support throughout the grant application process, as well as Kartik Mann and Prathvi Kanchan for their assistance producing the workbook in PressBooks. Additionally, I would like to sincerely thank Brooke Troutman and Alanis Ramos for their hard work and dedication on this project.

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ABOUT THE COVER

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CHAPTER 1.

INTRODUCTION TO THIS WORKBOOK

Welcome to Introduction to Archaeology! This class will show you what archaeology is, what archaeologists' study, and introduce you to significant archaeological sites all over the world. Archaeology is a fascinating and unique field of study that focuses on recovering and interpreting material remains left behind by past peoples. In order to derive meaning from static artifacts and use them to understand dynamic human behavior in the past – archaeologists have developed specific research methods and analyses to help them in their quest to better understand our human story. From 3.3 million years ago when the first stone tools were made – to just a decade ago, or even yesterday – archaeology is an exciting science that explores early human evolution, ancient religions, different cultures, changes in human diets, the development of technology, and more!

Anthropology, and archaeology more specifically, is a social scientific discipline rooted in both quantitative and qualitative research methods to understand peoples, cultures, technologies, and societies in the past. Archaeology is the branch, or sub-field, of Anthropology which analyzes material remains to understand and champion human culture in the past. While archaeologists are primarily concerned with the past, it is also relevant to the present and future as archaeologists study issues that continue to impact our societies, such as social inequality, environmental change, and political conflict.

Introduction to Archaeology will provide you with an understanding of archaeological methods, theories, and concepts, as well as an overview of how our ideas about early human ancestors and diverse cultures throughout the world have changed over time. You will learn about artifacts, but also move beyond them to think critically about what the past means to you, to each other, and the importance of our shared global cultural heritage.

This workbook is designed to help you “think like an archaeologist” to get deeper into the science and work with new concepts. Exercises in the workbook will take you through how archaeology is presented in the media, how and when archaeology was invented, different types of archaeological evidence, how archaeologists find and dig sites, and many other topics. When archaeologists are “in the field” and excavating a site, they create very detailed written records in field notebooks. This workbook will act as your field notes throughout the class, you can return to it to review concepts and study for exams, and at the end of class you’ll have a complete workbook to remind you of all the key lessons you learned in Introduction to Archaeology. This workbook is not a substitute for class lectures; instead lectures and the workbook work together, as each workbook exercise is designed to act as both a review of material from lectures and an engaging activity. This workbook has been provided to you free of cost thanks to the UTA CARES grant program and is downloadable in a range of formats.

Welcome to Introduction to Archaeology and let's start exploring!

Dr. Lemke

CHAPTER 2.

INTRODUCTION TO ARCHAEOLOGY

1. You have likely heard the word “archaeology” before, but do you know what archaeologists study, or what archaeology really is?

2. Think of all the ways archaeology is presented to the public, such as TV shows or museums, what are they? List them in the table below in the first column, “Types of Media or Location” then think carefully about the pros and cons for each one and list these in the second and third columns in the table. For example, TV shows can be viewed by a large audience but they may not always be the most accurate portrayal of real science.

Type Of Media or Location	Pros	Cons
1. TV SHOWS	LARGE AUDIENCE	NOT ALWAYS ACCURATE
2.		
3.		
4.		
5.		

3. In your opinion, of all the methods listed in the first column above, what are the best means of public outreach? How can archaeologists do better in communicating with the public? Or should they bother? Write your answers/thoughts below.

CHAPTER 3.

HISTORY OF ARCHAEOLOGY

1. In lecture you were introduced to different phases in the development of archaeology. Choose one of these phases and describe it in the space below.

2. Now choose a significant individual from the phase that you just described. Describe the person in detail below and be sure to include what their contribution to the field of archeology was. Conduct independent research online or in the library about this person so you can include additional details beyond what was discussed in lecture.

CHAPTER 4.

ARCHAEOLOGICAL EVIDENCE: BUILD YOUR OWN GLOSSARY

Use this page to help you take notes during the Archaeological Evidence week. While in/or listening to lecture, be sure to write down definitions or other notes for each word or concept below:

Artifact

Ecofact

Feature

Site

Context

Matrix

Provenience

Association

Formation Processes

Taphonomy

Cultural Formation Processes

Natural Formation Processes

Worst Climate for Preservation

Best Climates for Preservation

CHAPTER 5.

ARCHAEOLOGICAL EVIDENCE

1. What are the **three** different categories of archaeological evidence? List them below.

2. a) What are **Formation Processes**? b) Explain the difference between **Cultural Formation Processes** and **Natural Formation Processes**.

3. Imagine you are an archaeologist out in the field, a) describe what you think would be the most ideal **environment** to work in in terms of **organic preservation** and b) why you chose that environment, c) what makes the environment you chose better than other types of environments?

CHAPTER 6.

FIRST SHORT PAPER

Topic: In class we have discussed “Archaeology in the News”. For your first short paper you will draw on what you have learned in class and the news stories we have discussed. Be sure to address the following points in your paper:

- (1) What **types** of archaeological stories or projects are *most likely* to be reported by the news media? What aspects of archaeological stories do media outlets **emphasize** in order to satisfy and **attract** readers?
- (2) Summarize (in your own words) the news stories and video of the **Franklin** shipwreck and **at least one other** story you heard about in class. Be sure to describe the story and include details.
- (3) Archaeological discoveries can raise **controversies** – particularly with respect to ownership of objects, territory, or culturally-specific views of the past. **Discuss** this issue with respect to the Franklin shipwreck. Explain why the ownership of this site is controversial. You may also write about a controversial issue raised in another news story but this must be in addition to the Franklin.
- (4) Did these stories or stories give you a better understanding of **what archaeology is** and **what archaeologists do**? **How** specifically? Or if it did not give you a better understanding of archaeology/archaeologists, **explain why**.
- (5) Do you think it’s a **good** thing for archaeology to be in the news? Why or why not? E.g. Does it help inform the public about “**real**” **archaeology**? Is it portrayed **accurately**? Does it connect archaeology to **real world/relevant issues**?
- (6) Finally, think back to the first day of class and what you thought archaeology was or what, if anything, you knew about archaeology. **Have your ideas changed? Stayed the same? How did “Archaeology in the News” influence your ideas?**

GRADING RUBRIC

Format Guidelines:

- Name
- Paper must be 3-5 pages, double spaced
- Pages must be numbered
- Correct spelling and grammar

Organization _____ / 5

Is there a clear beginning, middle, and end to the paper?

Content _____ / 5

Are there specific examples in the paper? Are they accurate?

Formatting _____ / 5

Are all of the above format guidelines met?

Mastery of the Course Materials _____ / 5

Does this paper demonstrate a clear understanding of the course materials and major themes?

Total Score _____ / 20

Percentage **Total Score/2 =** _____ / 10

Letter Grade

Points	Percentage (Points/2)	Equivalent Score	Letter Grade
20	10	100%	A+
19	9.5	95%	A
18	9	90%	A-
17	8.5	85%	B+
16	8	80%	B
15	7.5	75%	C+
14	7	70%	C
13	6.5	65%	D+
12	6	60%	D
11 & less	5.5 & less	55% & less	F

CHAPTER 7.

FINDING AND MAPPING ARCHAEOLOGICAL SITES

1. Archaeological survey is an important component of field research, a) what exactly is **survey**, define it below and answer b) why do archaeologists conduct survey?

2. When speaking in terms of survey, what is a **transect**?

3. Are **artifacts** on the **surface reliable**, i.e. do they give archaeologists an accurate representation of what is buried below the surface? Why/why not?

4. What is **GIS**? What is it used for?

CHAPTER 8.

EXCAVATING ARCHAEOLOGICAL SITES

PART ONE: REVIEW AND DEFINITIONS

1. Make a bullet point list of the different **excavations methods** discussed in class below:

-

-

-

-

-

2. Why is **stratigraphy** important?

3. What is the **law of superposition**?

4. What is **uniformitarianism**?

PART TWO: PLAN MAPPING

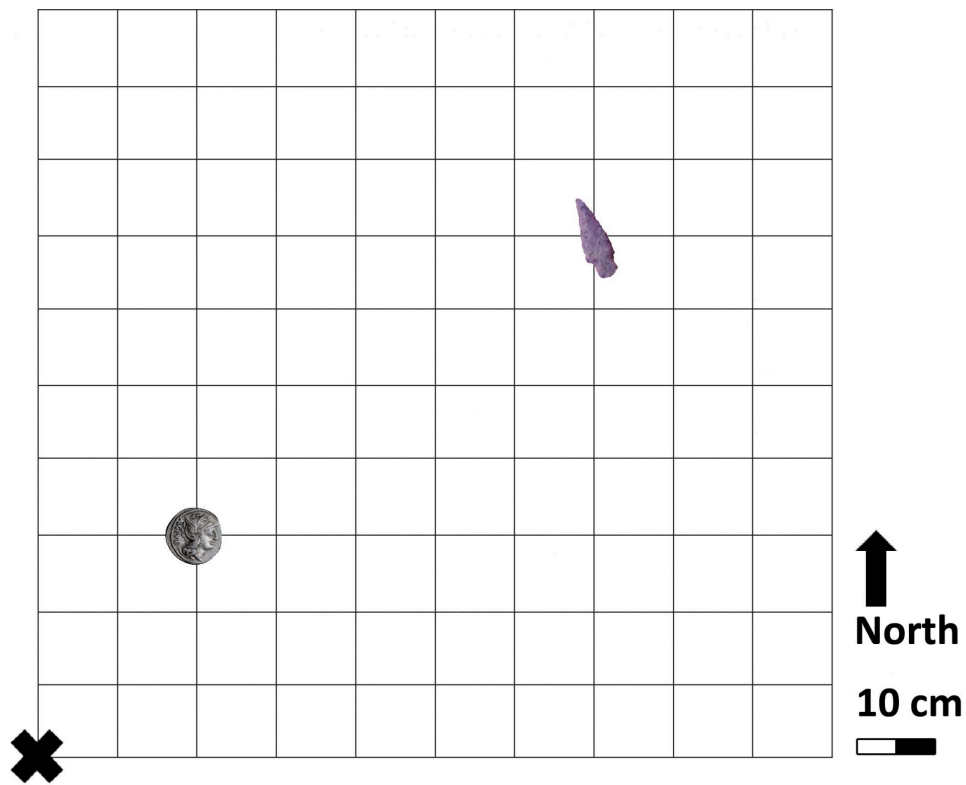


Fig 8.1 Plan Mapping

Use grid square above to answer the following questions and complete the exercises.

1. What does the "X" on the bottom left corner indicate? _____
2. This is the standard archaeology unit square, what are its dimensions?

3. Look at the artifacts in the square, list their coordinates in the empty table below:

North (cm)	East (cm)	Description
		Coin
		Stone projectile point

4. Draw the two (2) artifacts on your map from the table below:

North (cm)	East (cm)	Description
80	45	Stone tool
30	90	Ceramic sherd

CHAPTER 9.

UNDERSTANDING CHRONOLOGY AND DATING METHODS

1. a) What is **relative dating**? b) How does it help archaeologists?

2. There are two **geological** concepts that archaeologists utilize in the field to understand the approximate age of artifacts and/or different layers. Name both concepts and explain how they function as relative dating methods:

3. a) What is **absolute dating**? b) Name and describe three (3) **methods** of absolute dating:

CHAPTER 10.

SOCIAL ORGANIZATION

Complete the table below with information you heard in lecture, fill in all the blank spaces:

	Band	Segmentary Society	Chiefdom	State
Total Numbers	Less than 100	Up to a few 1000	5000-20,000+	20,000+
Social Organization				Class-based hierarchy under king or emperor; Armies
Economic Organization			Central accumulation & redistribution; Some craft specialization	
Religious Organization		Religious leaders; Calendrical rituals		
Contemporary Examples	Inuit; San; Australian Aborigines	Pueblos; New Guinea Highlanders; Nuer and Dinka	NW Coast Native Americans; 18 th century Polynesia	All modern states
Settlement Pattern				Urban: cities, towns; frontier defenses; roads
Architecture	See Figure 10.1 below: Mezhirich mammoth hut	See Figure 10.2 below: Çatalhöyük; Permanent huts; Burial Mounds; Shrines	See Figure 10.3 below: Stonehenge	See Figure 10.4 below: Chichén Itzá
Archaeological Examples			Early metal working and Formative societies	

Table 10.1: Social Organization Chart



Figure 10.1: Mezhirich mammoth hut



Figure 10.2: Çatalhöyük



Figure 10.3: Stonehenge



Figure 10.4: Chichén Itzá

1. What is the **four-fold classification system of societies**, and **who** was the anthropologist that developed it?

2. **Settlement pattern analysis** is a common method for investigating social organization in the past, since different types of societies lived in different types of homes and settlements. For example, most hunter-gatherers live in band societies, **a) what type(s) of architecture do band societies often have?** These groups can be highly mobile which means they move around the landscape a lot, **b) what would their settlement pattern look like?** c) **What types of archaeological sites would you expect to be left behind by band societies?**

3. **Describe** each type of social organization in detail.

- Band:
- Segmentary Society:
- Chiefdom:
- State:

CHAPTER 11.

ENVIRONMENT AND SUBSISTENCE

1. When archaeologists are looking for clues about past environments a) what are their **two primary sources of evidence**? b) Describe why these two sources are so important.

2. What are **isotopes** and how/why do archaeologists use them to study **past environments**?

3. **Animal remains** are often preserved in archaeological sites. What question must an archaeologist ask first when encountering animal remains?

4. Explain the **basic methods** used to discovering **sex**, **age**, and **season of death** in animal

remains.

5. Plant remains can tell us a lot about past **diets** and **environments** so identifying plant remains found at archaeological sites is essential. There are two types of botanical remains: **microbotanical** and **macrobotanical**. Within these two broader categories, list three main types of plant evidence you learned about in lecture in the table below.

Microbotanical	Macrobotanical
1.	
2.	
3.	

CHAPTER 12.

ZOOARCHAEOLOGY AND BIOARCHAEOLOGY LAB

STATION 1: MODIFIED BONES

A: Look at the cutmarks identified on bones. Now look at the bones. Do you see any cutmarks? How many? If so, describe their shape and size. What do cutmarks tell archaeologists?

B: These bones are burned. What is that evidence of? Why might these types of bone fragments be important?

STATION 2: BEYOND FOOD

Animal bones are very common in archaeological sites but they aren't always the remains of a meal. Look at these objects (all made of bone or horn) – what are they?

What are other ways animal bones wind up in archaeological sites?

STATION 3: BISON: ARCHAEOLOGICAL SPECIMENS AND COMPARATIVE COLLECTION

What parts of a bison do you have in your archaeological collection?

What are some differences you see in the same bones between the comparative collection and archaeological specimens?

STATION 4: BIOARCHAEOLOGY & DIET

Look at the mandible from a Neanderthal child (Teshik-Tash, Uzbekistan). Could archaeologists use this specimen to investigate Neanderthal diets? How?

What other methods do archaeologists use to study ancient diet?

CHAPTER 13.

SECOND SHORT PAPER

Topic: In class we have discussed bio-archaeology, the study of human bones found in archaeological sites, and mortuary analysis, the study of ancient burials and cemeteries. You are an archaeologist and you have excavated four burials from the same cemetery. You have radiocarbon dated these burials and they all date to the same time period (3000 years ago). **All four burials are from the same cemetery and these people are from the same society.** What can you say about these four people? What can you infer from these material remains? Be sure to answer (1) **What is the difference between status and rank?** Were these **high status** or **low status** individuals? Did they live in a **ranked** society? **How can you tell?** (2) **What type of social organization did these people likely have?** i.e. band, segmentary society, chiefdom, or state? **Why do you think that?** What other archaeological **evidence** from **outside the cemetery** would you need to **support** this claim? (3) What can you tell about their **health**? (4) How would you study their **diets**? (5) What **else** can you say about these people? Finally, (6) how is the analysis of skeletons and burials **different** from **most** archaeological research?

Be creative but also scientific! Make sure to discuss **all four burials**.

BURIAL 1

Biological Sex: Male. Age 50-60. Head facing North. Turtle shells placed behind head and pelvis. Marine shell (from 200 miles away) near skull. Deer antlers on neck and under arms. Clusters of beads found near neck, left arm, and pelvis. Falcon talon and three badger claws found inside mouth. Burial lies on top of a bird shaped out of thousands of small marine shells.



Figure 13.1: Burial 1

BURIAL 2

Biological Sex: Unknown. Age 4-5. Heading facing North. Eight carved antler statues placed on chest. Helmet made of copper plates, decorated with exotic stones and bronze. Rare stones and bronze also placed on waist. Large, very finely made pot and bronze sword next to child. The child's bones are very porous and x-rays showed Harris lines.

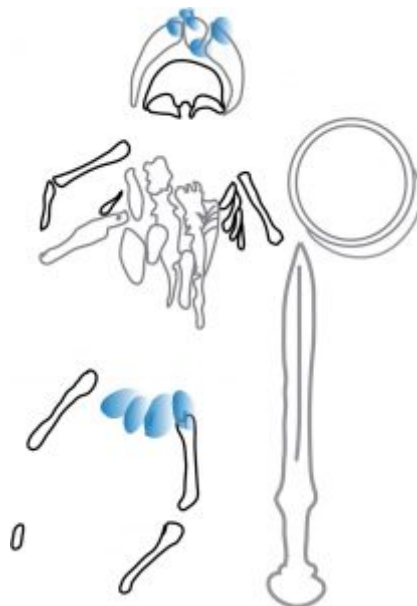


Figure 13.2: Burial 2

BURIAL 3

Biological Sex: Female. Age 30-40. Head facing South. Bronze plate placed on chest. Wooden comb placed near hand. Very crude, simple drinking vessel next to skull. Wrists and knees show signs of severe arthritis.



Figure 13.3: Burial 3

BURIAL 4

Biological Sex: Male. Age 30-40. Head facing South. Bronze plate placed on chest. Wooden comb placed near hand. Very crude, simple drinking vessel next to skull.



Figure 13.4: Burial 4

CHAPTER 14.

PAST TECHNOLOGIES

1. a) What is the difference between **organic** and **inorganic** materials? b) Which type of materials **preserve better** under any condition?

2. a) Thoroughly explain the **importance** of **stone technology** in the archaeological record. b) What are its' benefits? c) What are its' downfalls?

3. a) Define **refitting**. b) **Why** do archaeologists refit materials?

CHAPTER 15.

WHO OWNS THE PAST?

SHORT ESSAY

Who owns the past? What are the main issues involved in this question. Use specific examples discussed in class (e.g. specific countries/artifacts) to discuss.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

CHAPTER 16.

CAREERS IN ARCHAEOLOGY

1. What are the **three** (3) main sectors for careers in archaeology?

1.

2.

3.

2. What types of archaeological careers can you obtain with a **bachelor's degree** in Anthropology?

3. What types of archaeological careers can you obtain with a **master's degree** in Anthropology?

4. What type of archaeological careers can you obtain with a **Ph.D.** in Anthropology?

5. a) Are **you** thinking about pursuing Archaeology or Anthropology as a career? b) If so, in which **sector** would you like to work? c) Will you need a **graduate degree** to obtain your desired career?

6. Conduct an online search for archaeology jobs. List five (5) jobs that are currently listed for archaeologists with their respective hourly pay rates in the table below. If the job description does not include a pay rate, research the average pay rate for this type of career.

Job Title/ Description	Pay Rate (hourly)
1.	
2.	
3.	
4.	
5.	

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CHAPTER 1

NA

CHAPTER 2

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CHAPTER 3

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CHAPTER 4

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CHAPTER 5

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CHAPTER 6

NA

CHAPTER 7

NA

CHAPTER 8

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CHAPTER 9

NA

CHAPTER 10

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CHAPTER 11

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CHAPTER 12

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CHAPTER 13

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CHAPTER 14

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CHAPTER 15

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CHAPTER 16

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