‘PREPARE THE WATER AND ADD THE FAT?’
A re-interpretation of the Yale culinary tablet *YOS 11 25*

by

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ABSTRACT

My research methodology for the topic 'Prepare the water and add the fat?' A re-interpretation of the Yale culinary tablet *YOS 11 25*, took on a *multi-disciplinary approach*, which included gastronomy, archaeology, and experimental archaeology. When I critically looked at the 1995 and 2004 translations and publications of the Yale culinary tablet, *YOS 11 25*, published by Bottéro, I found that there are plenty differences between the two. I was never looking to re-translate the recipes as I am not a linguist, but what I did want to do was look at how have these recipes had been analysed previously. I found many inconsistencies in his various English publications and thus decided, to the best of my ability, to re-analyse and re-write the recipes by staying as close as possible to his translations while at the same time shedding new light on the various modern interpretations of the ingredients, as well as keeping all the ancient kitchen equipment and cooking instructions in mind. I critically looked at each recipe and, to my amazement, realised that what I was looking at was so much more than mere recipes. It was indeed the oldest cookbook in the world. I was pleasantly surprised by the inclusion of various cooking utensils such as strainers, sieves, and mortars and pestles. But my biggest surprise was the inclusion of ancient stoves and the various cooking pots that were used.

Next, I followed an *archaeological approach* by identifying the different utensils, ovens and pottery, found *in situ* in the different sites during the time periods, that relate to the recipes in the ancient Near East. I especially focused on the cooking pots that were used during the various periods as well as the ovens, stoves and pottery utensils excavated. I rightly believed that there is a link between the pottery cooking pots and the cooking methods that were used, relating to the phrase 'prepare the water and add the fat'.

Lastly, I concluded the study with a *practice-based* or *practice-led* approach, which took on an *experimental archaeological approach*, where I built a replica ceramic portable stove and cooking pot and put some of the recipes to the test. I believed this might shed new light on the recipes and the understanding of certain concepts and methods used, such as 'prepare the water and add the fat', as well as other cooking terms and instructions used in the recipes because, as Jean Bottéro himself stated: '*I have always refused to put to test these recipes, even the most intelligible ones'* (Bottéro 1987:11-19; my italics).

KEYWORDS

Yale culinary tablet; *YOS 11 25*; Yale Babylonian cooking tablets; Jean Bottéro; ‘Prepare the water and add the fat’; ‘*Tuḫ’u* beet stew’; Experimental archaeology; Multi-disciplinary approach; Practice-based or practice-led approach; Oldest recipe book in the world; Tannur, hearth and tabun; Ceramic cooking pots; Ceramic portable stove; Experimental cooking; Mesopotamian cooking pots; Ancient kitchens; Ancient recipes.

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CHAPTER ONE

INTRODUCTION

1. 1 INTRODUCTION

> The Yale culinary tablets not only offer us a rich lexicographic harvest, but they also pose important, yet much neglected questions regarding the technical language of ancient scribes. These texts enlighten us about a broad and very meaningful, yet scarcely expected aspect of the life and the "mentality" of the ancient Mesopotamians. These tablets force us to reflect more deeply on the literary history and its tradition. (…) *I have always refused to put to test these recipes, even the most intelligible ones* (Bottéro 1987:11-19; my italics).

Upon reading these words by Bottéro for the first time, I was immediately intrigued to study the *Yale culinary tablets*, specifically the *cuneiform tablet* officially called *YOS 11 25*. Despite their exact provenance being unknown, researchers agree, according to Bottéro (1987:11), that based on their written style and orthography, these recipes from ancient Babylon, written down in Akkadian, are classified as belonging to the Old Babylonian period around 1700 BC from Southern Babylonia. *YOS 11 25* (*Yale Oriental Series* no 11, tablet number 25, YBC 04664) is currently housed at the Babylonian Collection at Yale University, and it forms part of a series of three *cuneiform tablets* informally known as the Yale culinary tablets, or formally as *YOS 11 25*, *YOS 11 26*, and *YOS 11 27;* however, this study will only be focusing on *YOS 11 25*. It was originally published in YOS 11 by van Dijk, Goetze and Hussey in 1985 and it is relatively well preserved, with only a few texts missing; it is 12cm long and 16.4 cm in height, consisting of 75 lines in total (van Dijk, Goetze & Hussey 1985: xxxvi-xxxviii). Bottéro (1987:11) translated and analysed these recipes and according to the scribe who wrote down these recipes, classified them as 21 kinds of meat dishes and four kinds of vegetable dishes, which Bottéro suggested should be classified as broth. At the end of the article quoted above, Bottéro claimed that he would not wish these meals on his worst enemies (Bottéro 1987:11).

After reading some of these recipes, as a trained chef in the French school of cooking, I cannot agree with Bottéro that the food of the ancient Mesopotamians could be as unpleasant as he has made it out to be. It could be that some of these recipes have not been analysed correctly, and by cooking these recipes in an authentic way, we might be surprised by how good they really tasted. As human beings, we have been cooking food since ancient times. Surely such an advanced people as the Mesopotamians knew a thing or two about good food.

Needless to say, my curiosity was piqued, and I was compelled to investigate the cuisine of the Mesopotamians.

I was surprised to learn that, according to Bottéro (1985:38), there are approximately 800 food-related entries in the *Sumerian-Akkadian lexical list,* known as **TU7** in Sumerian and *ummaru* in Akkadian. These tablets recorded all the drinks and food known to them. In these lexical lists, there are, for example, approximately 20 different types of cheese, hundreds of soups, 300 different types of bread, and various different meat, fish and poultry dishes (Bottéro 1985:38).

As my interest in Mesopotamian cuisine grew and I read more widely about the topic, I could not always agree with the way some of these recipes were interpreted. For example, in *The Cuisine of Ancient Sumer,* Henri Limet (1987:134) refers to the recipe (no 7248 (ITT 4)) which reads as follows (see 2.4.1):

> **Ninda.i.de.a**
> 1 *sila* (1 L) of butter,
> 1/3 *sila* (333ml) of white cheese,
> 3 *sila* (3 L) of first quality dates,
> 1/3 *sila* (333ml) of Smyrna raisins

When Limet analysed and interpreted the recipe, he stated that this dish was 'a cake' because, as he explained, we may assume that flour was added, even though the recipe did not mention it. This interpretation was similarly problematic to me. From my background as a chef, I know that if a recipe does not call for an ingredient, one cannot simply assume that an ingredient can be added, or that it was added. In my opinion, this recipe is remarkably similar to a modern cheesecake, but without the crust. It could also have been small cheese balls, or even a fruit cheese dip or spread that was served with some form of bread on the side. Limet compared the above recipe with one from Nippur around the time of Hammurabi (Limet 1987:134):

> X *sila* of flour
> X *sila* of dates
> 5 *gin* (41.5g) butter
> 9 *gin* (74.7g) white cheese
> 5 *gin* (41.5g) grape juice
> 5 *gin* (41.5g) apples
> 5 *gin* (41.5g) figs

This recipe called for flour to be added, so one can rightly assume that this might have been some type of bread, pastry or cake depending, of course, on the various cooking methods

employed by the ancient chefs (Limet 1987:134). Because of the grape juice added, I could assume that this might have been a sweet pastry because of the consistency of the 'batter' as such, but this is only evident from a chef's perspective.

A further problem I encountered was in Bottéro's (1995) *Mesopotamian Culinary Texts*, recipe *YOS 11 25*. In the 25 recipes in *YOS 11 25*, the phrase 'prepare the water and add the fat' can be found in all but one recipe (Bottéro 1995:9). For me, this raised various questions about the interpretation or analysis of this particular sentence as well as other cooking instructions in the recipe. I also wondered about the cooking pots that were used, what these cooking pots were cooked on, as well as how this influenced the recipes and the way they were cooked and classified, and if this had a direct link to the expression 'prepare the water and add the fat'. What did this mean? Was this an instruction on how to cook the food or was this related to the pots that were used? Or was it just another ingredient in the recipe? Furthermore, it is important to investigate which utensils were available in the ancient kitchens and if this influenced the recipes in the way there were cooked, as well as the sequence in which the recipes were written down. What ingredients were available during this time period, and did this influence the way the ancient chefs put different flavour combinations together? Would building these ancient cooking systems lead to a better understanding to how these recipes were cooked?

Since the beginning of time, food has always been a noticeably big element in any culture, and by studying the cuisine of the Mesopotamians we will have gained a much better understanding of the inner workings of the ancient households as they spent vast amounts of their time cultivating grain and barley, looking after the fruit trees, and tending to the animals. They certainly spent just as much time working these into edible products such as cheese and bread. They offered the foods to the gods, they had feasts in the dining halls of the kings, and even the humble offerings at home took time to prepare. After all, if food did not play such a big role in their society, they would not have made 300 different types of bread, or 20 types of cheeses, or all the other hundreds of soups, stews, pastries and cakes.

1.2 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The main research question I will be trying to answer is how the cuneiform recipes have been analysed by Bottéro. In this study, my intention is not to translate the tablets, but rather to investigate how the recipes were analysed over the years by different scholars, particularly

focusing on Bottéro's 1995 and 2004 English translations. I am of the opinion that there are many neglected questions about ancient Mesopotamian cooking, especially regarding the way these recipes have been analysed, explained and interpreted over the years. One of my main concerns is that, upon closer inspection of Bottéro's translations, his 1995 English translation, *'Mesopotamian Culinary Texts'*, differs from his later publication, *'The oldest cuisine in the world. Cooking in Mesopotamia'*, published in 2004. . There are differences in both English translations, opening up a whole lot of research questions. How accurate are the assumptions or interpretations made in the analyses of these ancient recipes? Were most of these recipes analysed merely from a linguistic point of view? Or were they written down in the order and way the ingredients are supposed to be cooked? What new research has been done on these recipes since Bottéro's last publication in 2004? Have new ingredients been identified and translated? Could there be a better way to formulate these recipes so we can understand and cook them in modern times? What were the cooking instructions, kitchen equipment and utensils (available in the recipes), and what does this say about the sophistication of Mesopotamian cuisine?

In addition, if we analyse these recipes from a chef's perspective, what new information can be learned/gained? Much research has been done on other crafts of the Mesopotamians, for example classifying pottery. However, there is a lack of information on how the pottery was used, especially in the ancient kitchens. What did the expression 'prepare the water and add the fat' mean? Was all the food boiled in this water and fat mixture?

Further important questions are: What role did the cooking pot play in relation to the water and fat added in the recipes? What can we learn from the setup of the ancient kitchens and the different utensils and cooking pots used in which to cook these recipes? What did the ancient cooking pots and stoves look like? Will we be able to get a better understanding of the general use of these recipes if we study them in relation to the equipment that was used? Did these cooking pots have an effect on the way the recipes were written down and the way they were cooked? What influence did these stoves and cooking pots have on how these recipes were cooked?

These questions open the door to even more questions. What kind of cooking methods did they use? Was the water connected to how the ancient cooking pots functioned? What were the ancient cooking techniques used in Mesopotamia? Could it be possible that each recipe needs to be looked at in separately and classified as such instead of under the umbrella term

broth/stew? Lastly, will it be possible to replicate these ancient cooking pots and stoves as an experimental archaeological approach in order to put these recipes to the test, and if so, what would the outcome be? Will we be able to understand the phrase 'prepare the water and add the fat' better once we have cooked the recipes in the authentic way in which it was apparently intended to be cooked?

1.3 AIMS AND OBJECTIVES

The main aim of this study is to research the way the recipes were analysed and written down in recent studies, with particular focus on Jean Bottéro's English publications of 1995 and 2004. If we analyse the recipes from a chef's perspective, what new information can we add to the existing knowledge on these recipes? This study aims to determine how the modern understanding of cuisine can help to improve the explanation and the understanding of the ancient cooking methods as well as how these recipes were cooked in ancient times. An important objective is to suggest a new, updated and revised analysis of *YOS 11 25* taking into account the latest research from Yale and Harvard University, as well as new, updated suggestions of ingredients which, up until now, have still been based on research from 1995 and 2004. I would also endeavour to put some of these recipes to the test and, in the process, try to obtain more insight into the methods used and determine the meaning of the phrase 'prepare the water and add the fat'.

Another important aim is to investigate ancient kitchens in order to determine what kitchen equipment was available during the time period of the recipes and if this had an influence on how the recipes were cooked by looking at available archaeological information on cooking pots as well as fire installations such as stoves in order to assist in my experimental cooking of these recipes.

My further objectives are to use an experimental archaeological approach and build the cooking pots and stove according to current excavation reports in order to cook some of the ancient recipes that have been translated by Jean Bottéro. By looking at *YOS 11 25* from a chef's point of view, the objective of the study is to investigate the different cooking techniques, utensils and ceramics used in the ancient kitchens. Another objective would be to explore the way the recipes were written down and to analyse what the ancient cuisine of the Mesopotamians entailed.

I aim to get answers to these questions by building a replica pottery cooking pot and stove and practically cooking these recipes in what I believe is an authentic way. I want to investigate the meaning and practical application of 'prepare the water and add the fat', with which 26 recipes on tablet *YOS 11 25* start. I want to explore whether the ceramic cooking pot had an influence on the ancient cooking techniques, and if this in turn influenced the outcome of the recipe. How did the phrase 'prepare the water and add the fat' influence the way the cooking pot was used, if at all? How much water was really needed? Why was the water mixed with fat? I feel that my practical experience as a chef and ceramist might bring insight into ancient cooking, especially with regard to how these ancient cooking pots and stoves functioned. I hope that, by doing this, we will get a better understanding of the phase 'prepare the water and add the fat'.

1.4 HYPOTHESIS

As a qualified Swiss French chef, professional ceramic artist, and anthropologist with a background in archaeology, I have a solid knowledge and understanding as well as practical experience in the various fields mentioned. Therefore, a *multi-disciplinary approach* will be applied, which might illuminate the ancient craft of Mesopotamian cuisine. By approaching these recipes from a *gastronomic* (the study of food and culture) angle, it might further clarify our understanding of these recipes, and of Mesopotamian cuisine in general. This research might provide insight into the cuisine, and therefore shed light on our understanding of the Mesopotamian culture. My chef's training will assist me in analysing the recipes found on the cuneiform tablets, which could lead to obtaining new insights into the finer details of cooking, such as special cooking techniques, in addition to critically looking at the way these recipes have been analysed and transcribed. This is important because the way in which they wrote them down as well as the order in which they wrote the recipes could provide insight into the way they cooked their food.

As mentioned before, this study will also include an *experimental archaeological approach* (building the cooking pots and stove and then putting some of these recipes to the test), which might also shed new light on the understanding of certain concepts and methods used in these recipes, such as the phrase 'prepare the water and add the fat'. By using my training in ceramics (my ceramics were exhibited at the Rupert Museum, and I also built cooking pots for the National Geographic series – Origins) as well as my experience in excavation and restoring the ceramics on site at Hazor, Israel, with the University of South Africa and Prof

M. le Roux from 2013-2018, I plan to build the cooking pots based on archaeological findings in Iraq (Mesopotamia). I then want to put these recipes to the test by cooking them in the authentic manner, using the pottery cooking pot on a portable pottery stove.

1.5 METHODOLOGY

1.5.1 Approach

The research methodology for the topic 'Prepare the water and add the fat?' entails a re-interpretation of the Yale culinary tablets using a *multi-disciplinary approach*, which will include gastronomy, archaeology, experimental archaeology, as well as a *literary investigation* and textual analysis. For my main research, the recipes found on the *Yale Babylonian cuneiform tablet YOS 11 25*, which form part of the *Yale Oriental Series*, will be used. I will be critically looking at the ingredients and terminology of cooking that can be found in the ancient text *YOS 11 25* as well as the way it was translated and interpreted by Bottéro. I have found that there are various differences in the 1995 and 2004 English translations and publications by Bottéro and will be looking critically at both publications. Studying the terminology as well as cooking instructions present in the various recipes found in *YOS 11 25* will provide me with information on the various cooking methods that were employed during cooking as well as what cooking equipment was used, which in turn can help with recipe development and reconstructing a working recipe that we can cook in modern times.

I will also use an *archaeological approach*, such as the recovery, documentation, analysis and interpretation of material culture, by identifying the different utensils, ovens and pottery found *in situ* in the different sites during the time periods that relate to the recipes in the ancient Near East. This investigation will focus on the cooking pots that were used during the various periods as well as the ovens, stoves and pottery utensils that have been excavated. I believe that there is a link between the pottery cooking pots and the cooking methods that were used which relates to the phrase 'prepare the water and add the fat'.

Lastly, it will include a *practice-based* or *practice-led* approach by which, as Malins & Gray (1995:4) explain, the focus shifts from historical, theoretical approaches and critical evaluators to research done by actual practitioners whose focus and research reflect on and in action. The practitioner therefore has a greater insight into the topic because of actual experience as well as tactical knowledge based on professional knowledge. This can

contribute to the development of research based on critical and theoretical knowledge of a specific craft. The success of *practice-led research* lies in the ability of the researcher and crafts person to transfer their critical faculties and skills to the research (Malins & Gray 1995:4). This would take on an *experimental archaeological approach*, whereby I will be building an ancient ceramic portable stove and cooking pot to put some of the recipes to the test. I believe this might shed new light on the recipes and the understanding of certain concepts and methods used, such as 'prepare the water and add the fat', as well as other cooking terms and instructions used in the recipes because, as stated by Jean Bottéro himself: '*I have always refused to put to test these recipes, even the most intelligible ones'* (Bottéro 1987:11-19; my italics).

1.5.2 Structure of the dissertation

Chapter Two: Agriculture and ancient ingredients will be an introduction to the Mesopotamian culture, with specific focus on historical background and their environment. I will then explore the Mesopotamian agriculture in terms of their agricultural practices, what domestic crops were planted, and which animals were kept. I will include all the myths and stories that are directly related to their eating habits and the foodstuff they ate during the course of the chapter. I will then discuss the repertoire of ancient ingredients that were used in ancient cooking as well as analyse and discuss the various cooking ingredients used in the ancient recipes, such as bread and beer.

Chapter Three: Ancient kitchens, kitchen utensils and cooking pots will focus on the various types of ancient kitchens that have been excavated in Mesopotamia as well as the cooking equipment found in them. Analysing the different types of cooking pots, stoves, ovens and kitchen utensils that were available during the Mesopotamian period will give insight into ancient cooking techniques and uses. I will discuss in detail the cooking pots that were used during this time period as I believe they might be connected to how these ancient recipes were developed and cooked. I will then use this information in my experimental archaeology project, where I will build replica cooking pots and a stove in order to cook the recipes.

Chapter Four: 'Prepare the water and add the fat'? A reinterpretation of the Yale culinary tablet YOS 11 25 will introduce tablet A of the *Yale Babylonian culinary tablets*. The main chapter of this research, here I will specifically focus on the English translations of Bottéro and the various inconsistencies I have found in both publications. I will be investigating the

meaning of ‘prepare the water and add the fat’, as this phrase has intrigued me from the beginning of my investigation. What was the role of the water and fat in Mesopotamian cooking, and had this something to do with the cooking pots they were cooked in? I will then go into detail explaining each recipe on tablet *YOS 11 25*, analysing not only the ingredients used, but also the cooking terms found in each recipe. In addition, I will shed light on the various cooking instructions and cooking utensils mentioned in the recipes.

Chapter Five: Experimental archaeology will focus on the building and construction of the pottery cooking pots and stove, based on the information and archaeological photos I gathered and discussed in Chapter Three. As an additional experiment, I will cook the recipe *‘Tuḫ’u beet stew’*, recipe 22 in *YOS 11 25*, by using the specific cooking pot and pottery stove I built myself for this purpose. This experiment will hopefully illuminate the term ‘prepare the water and add the fat’ as well as enable us to gain insight into ancient cooking techniques, such as how to use some of their ancient cooking apparatus, the pottery cooking pot and portable stove. This will also finally reveal if Mesopotamian food was as bad as Bottéro claimed.

Chapter Six: Conclusion

1.6 LITERATURE REVIEW

1.6.1 Primary sources

For this study, I will be reviewing predominantly the translation of the *Yale culinary tablets*, which was first published in *The cuisine of ancient Mesopotamia* (1985), *The oldest cuisine in the world. Cooking in Mesopotamia* (2004), both by Bottéro, as well as the *cuneiform tablet* called *YOS 11 25* as my main primary sources. The *Yale culinary tablets* consist of a series of three tablets, which Bottéro (1987:11) assigned to the Old Babylonian Period (2000-1600 BC) and which he believed came from the southern part of Babylon. However, for this study, I will only focus on *YOS 11 25*.

Additional information on food ingredients, besides the cuneiform tablets, can be found on cylinder seals, plaques, business letters and reliefs, academic papers, and monographs on the topic of cuisine of the Mesopotamians as there are very few books available on the topic. As Ellison (1983) states in her paper ‘Some thoughts on the diet of Mesopotamia from c. 3000-600 BC’, it must be noted, however, that the information that is available in the cuneiform tablets does not give us equivalent information related to the various time periods and that

there are not many secondary sources available on the topic of cuisine, ancient kitchens or the pottery that was used by the Mesopotamians. Translating the various documents has been problematic because it is difficult to identify the various terms that were used in cooking, and the names of foodstuff that we find problematic to identify are difficult to translate and are often uncertain and disputed (Ellison 1983:146).

The cuneiform tablets that contain myths and legends of the Mesopotamians, which I will be using, were mostly translated by Samuel Kramer and Thorkild Jacobsen. In *History Begins at Sumer,* Samuel Kramer (1956:305) notes in the cuneiform text of *Inanna and Dumutzi*, ingredients used at their wedding are one of the main focuses. The ingredients, which were used in the form of a simile, describe various features in the wedding of the two gods, and in one line Inanna mentions that her hair is beautiful, like 'lettuce well-watered'. What makes these texts relevant is that they contain information about the various foodstuffs that were available and used by the Sumerians, Akkadians and Babylonians. The *Farmer's Almanac,* translated by Kramer (1956:65), provides information on ancient agricultural techniques.

In Jacobsen's translation *The Harp that once… Sumerian poetry in translation* (1987), there are a few cuneiform texts that focus on cuisine, such as *The Nanshe Hymn* (1987:125) which mentions positions of cooks and dishes. In the myth *Enki and Ninsikila/Ninhursaga* (1987:198), one can find various references to different plants. In the myth of *Dumutzi's wedding* (1987:20), Inanna sends her messenger to four different food producers with the order to provide fish, butter, milk, honey, birds and wine for their wedding.

In the Assyrian decree found in the *State Archives Assyria*, formally known as *SAA 12 68* (Lines 29, 31, 37), Gaspa (2009:96) also points out water being mentioned with relation to the cooking pots.

The *Royal hymn to Shulgi* (Neumann 1990: 326) notes that beer was enjoyed not only by the common people, but also the King. *Hymn to Ninkasi* (Damerow 2012:1-15) and *In the desert by the early grass* (Jacobsen 1987:75) present valuable insight on beer production as well as a recipe on beer making and beer consumption.

Lexical lists also provide valuable information on the foodstuff that the Mesopotamians consumed. *ARM XXI* (*Archives royales de Mari*) describes food ingredients in various lists. The cylinders of Gudea mention ingredients, kitchen utensils, food establishments, as well as the ritual use of food.

The *Electronic Text Corpus of Sumerian Literature* (*ETCSL*), as translated by Black, Cunningham, Fluckiger-Hawker, Robson and Zólyomi (1998), mentions various ingredients used in the recipes in *literature* such as: *Dumutzi's Dream* (*ETCSL* c.1.4.3), *The death of Gilgamešh* (ETCSL c.1.8.1.3), *Gilgamesh, Enkidu and the nether world (*c.1.8.1.4), and *Inanna's descent to the nether world* (c1.4.1).

BM 46226 describes the contents of the garden of King Marduk-apla-iddina, consisting out of sixty-seven plants in total, while Babylonian business letter *TCL 18 123* mentions the importance of barley.

1.6.2 **Secondary sources**

It is from the article 'The cuisine of ancient Mesopotamia' (1985) that I first started to question the phrase 'prepare the water and add the fat', which is one of the problems I want to look into in my research. In the light of the limited number of books available on the topic, I will mostly use academic papers.

Bottéro's research in his article 'The culinary tablets at Yale' (1987) provides an in-depth explanation of the tablets he has translated: what they look like, their size, where they come from, and the recipes they contain. He explains in detail his understanding of the concept 'cooking with water'. He is of the opinion that 'all were cooked in water', and he also wonders what happened to the water component after cooking (Bottéro 1987:11). Bottéro's book *Mesopotamian Culinary Texts* (1995) is, to my disappointment, written mostly in French. However, it does include an English chapter which provides the English translations of the recipes found in *YOS 11 25*. In addition, I did a one-year course in Akkadian in 2018 at the University of Potchefstroom to be able to read the transcriptions that are available in his book. I am also qualified in French/Swiss cuisine, and I am familiar with all the French cooking terminology, which I studied at the Belvoirpark Hotelfachschule Zürich. There are preliminary transliterations at the end of the book and, with the help of a Sumerian/Akkadian cooking glossary which can be found in the academic paper of Henri Limet, 'The Cuisine of Ancient Sumer' (1987), I am confident that most of the terms and terminology will be understood. The assistance of a French scholar/teacher will also be available if necessary.

The background and culture of the Mesopotamians as well as their agricultural practices and the products they produced, relative to the recipes, will be explained by referencing the

following books and articles: '*Everyday life in Ancient Mesopotamia'* (Bottéro 2001) and '*Mesopotamia: Writing Reasoning and the Gods*' (Bottéro 1992). For more information on Mesopotamian agriculture, I will make use of the following books and articles: '*Early Mesopotamia: Society and economy at the dawn of history*' (Postgate 1992) and '*History begins at Sumer'* (Kramer 1956). Various academic articles by Ellison such as 'Some thoughts on the diet of Mesopotamia from c. 3000-600 BC' (1983) will provide information on the food of the Mesopotamians, the raw products used, and their cooking methods. 'Methods of food preparation in Mesopotamia c. 3000-600 BC' (1984), which is a continuation on her previous paper, gives more detailed descriptions of the utensils that were used during that time. She also explains that the cuneiform tablets provide us with information such as the various crops that were grown, the different animals that the Mesopotamians kept, the various food items they made, food offerings to the gods, and food items that were issued to the king, his household, and that of the temple staff, and what the ordinary people ate.

The following articles will illuminate the various specialisations in the food sector that were available during the Mesopotamian period: 'Food and Identity in Mesopotamia, a new look at the Aluzinnu's recipes' (Milano 2004) and the article 'The Cuisine of Ancient Sumer' (Limet 1987), which does not give any recipes but does give a broad overview of the diet and cuisine of the Sumerians. Articles such as 'On the origins of kitchen gardening in the ancient Near East' (Leach 1982) and 'Ancient Mesopotamian Agriculture' (Jones 1952) are of great value in the absence of books on this specific topic. They would provide background information on how food was grown, produced, stored and preserved, which is relevant to the recipes as there are a few recipes that use dried, salted and pickled ingredients.

Lastly, the Ellison's 1981 article, 'Diet in Mesopotamia: The evidence of the barley ration texts' (c. 3000-1400 BC'), provides information on the various food products that were consumed as well as where they came from and how they were produced. This information can shed light on the recipes, especially if a recipe calls for certain fruit and vegetable components, as this can point to the assumption that certain dishes were only prepared during certain time periods because the ingredients were only available then. Furthermore, it can provide additional information to various other activities such as the preservation and drying of the food, which is often referenced in the Yale recipes. Ellison also goes into great detail on the vitamins and minerals that were provided by the food, pointing out that the Mesopotamians had a very rich and healthy diet.

For information on ancient kitchens, I will make extensive use of '*Menial art of cooking; Archaeological studies of cooking and food preparation'* by Graff & Rodriguez-Alegria (2012) and *'Inside ancient kitchens'* by Klarich (2010), both of which give much information on ancient kitchens, kitchen assemblage and ancient cooking pots, as well as the various papers published on the topic, such as Ur & Colantoni's 'The cycle of production, preparation and consumption in a Northern Mesopotamian city' (2010); Rova's 'Tannurs, tannur concentrations and centralised bread production at Tell Beydar and Elsewhere: An Overview' (2014); Pollock's 'Politics of food in early Mesopotamian centralized societies'(2012); and Peyronel & Spreafico's 'Food processing in the Levant during the Middle Bronze Age: Fire installations, cooking pots and grinding tools at Tell Mardikh-Ebla (Syria) – Two case studies (ed)' (2008). 'Two ovens from the first half of the 3rd millennium BC at Tell Arbid. Evidence for grain processing?' (2010) by Szelag provides deeper insight into ancient kitchens, while Ellison's 'The uses of pottery' (1984) and Gaspa's 'Wiping the pot clean: On cooking pots and polishing operations in Neo-Assyrian sources' (2009) mention various cooking equipment that was used in both household and palace kitchens.

Smogorzewska gives invaluable archaeological information on excavations done in various archaeological sites which provide plenty information on cooking pots and fire installations found in Mesopotamia in articles such as: 'Fire installations in household activities. Archaeological study from Tell Arbid (North- East Syria)' (2012); 'Ninevite 5 kitchen from Tell Arbid (Sector W)' (Smogorzewska & Reiche 2013); and 'Ninevite 5 kitchenware: morphology and technological characteristic' (2014). *Cooking pots in ancient and late antique cookbooks. Ceramics, cuisine and culture: The archaeology and science of kitchen pottery in the ancient Mediterranean world* by Donnelly (2015) provides plenty of information on cooking pots and their relation to the ancient recipes, while *Ancient Mesopotamia speaks. Highlights from the Yale Babylonian Collection. 'Charcoals from the past: Cultural and Palaeoenviromental implications. Proceedings of the Third International meeting of Anthracology* by Lassen, Frahm & Wagensonner (2019) provides information on ancient kitchens and cooking pots.

1.7 LIMITATIONS

The limitations I face with this study are the lack of recent and modern information done on the recipes, the last of which was published information by Bottéro was in 2004. There are not many books written on the subject, and those that are available are mostly written by the

same person – Jean Bottéro. Those not written by Bottéro use similar information obtained from studying his work. Information of opinions that are different or challenge his work do not really exists, making it difficult to get a broader view on the topic. Another limitation is the lack of information on ancient kitchens and ancient cooking pots, which I feel has been overlooked in archaeological excavations in the past. I have limited knowledge of Akkadian, and therefore it is not my intention to translate the original recipes, but rather to analyse the interpretations made by Bottéro using my specific knowledge and background in food, archaeology, and ceramics.

1.8 DEFINITIONS OF TERMS

- *Tannur*: Beehive-shaped clay oven.
- *Tabun*: Dome-shaped clay and mudbrick oven.
- *Andiron*: Individual clay pot stands, usually three in a set, used in a hearth.
- Portable stove: Movable clay stoves, used in various locations. Not fixed.
- Hearth: Fire installation usually in the shape of a horseshoe, used for cooking and fixed in position.
- *Diqaru*: Low-fired cooking pots.
- *Ruqqu*: High-fired cooking pots.

CHAPTER TWO

AGRICULTURE AND ANCIENT INGREDIENTS

2.1 INTRODUCTION

Mesopotamia, or 'the land between two rivers' as it is known from Greek, Postgate (1992:1-4) explains, was an ancient region situated between the Tigris and Euphrates rivers, and bounded in the northeast by the Zagros Mountains and in the southeast by the Arabian Plateau. Mesopotamia, which lies within the borders of modern Iraq and some parts in Syria and Turkey, was made up of different regions, each with its own geography, which in turn greatly influenced and affected the lifestyles of the people living there. This often coincided with ethnic and political divisions. Postgate notes that northern Mesopotamia comprised hills and plains with very fertile land due to the rivers and streams that flowed from the mountains as well as the seasonal rain it experienced. Southern Mesopotamia, on the other hand, was made up of marshy areas and wide, flat, barren plains, of which the area was much hotter and dryer. Cultivation of fields was only made possible by irrigation, and the region had very little natural resources (Postgate 1992:1-4) (see also Kramer 1958; Bottéro 2001).

Bottéro (1992:203-4) points out that the Pre-Pottery Neolithic population that lived in Mesopotamia originally only left behind archaeological remains, and not much is known about them. However, he also states that from research that was done over the last decade, we know that a new civilisation developed from two cultural groups that came to the area around the same time around 6500 BC and together created the later high society we know as Mesopotamians. Bottéro adds that the first group, believed to be Semites, came from the northern and north-eastern side of the Syro-Arabian Desert and were a seminomadic tribe that raised sheep and goats. They settled in the north and the centre of Mesopotamia and gradually over time moved more south. The second group, the Sumerians, is believed to have come from the east or south-east of the Iranian coast and settled in the south of modern-day Iraq, between the Tigris and Euphrates rivers. Bottéro explains that these two groups formed the principal population of the area from before the beginning of recorded history. Each civilisation had its own culture and its own language. Together these two cultures built an original civilisation which was rich, refined, and complex (Bottéro 1992:203-4).

2.2 MESOPOTAMIAN AGRICULTURE

As Jones (1952:46) explains, agriculture was a major activity in ancient Mesopotamia, which in turn affected the history of the other regions in the ancient Near East, and its effect stretched as far as the Greeks and the Romans. He points out that information on agriculture falls into two categories: written records and material remains. This includes all the tools, implements, seeds, storage pits, and granaries which were discovered in archaeological excavations all over the world as well as the graphic representations of plants, tools, and agricultural scenes and seals. We learn about agriculture from written sources such as the law codes, royal inscriptions, from official and private letters, and lastly, and most importantly, the business records from several periods in Mesopotamia. In order to understand the recipes found in *YOS 11 25* and the way they were put together, it is important to take a closer look at what the Mesopotamians cultivated. What ingredients were available around 1700BC when the recipes were written down? Were all the ingredients locally available or were they foraged or imported? The ancient chefs were truly knowledgeable and knew how to put a good recipe together because they had a deeper knowledge of the ingredients they used. They worked with seasonal produce and knew exactly which flavours went with which. From the business records, we gather that the main field crops were barley, wheat, emmer, sesame, onions, peas, and beans. Jones notes that not only were there fields producing crops, but there were also smaller plots called 'gardens', which produced ingredients such as dates, pomegranates, and figs (Jones 1952:46-48).

The *Farmer's Almanac,* found in ancient Nippur and dated to around 1700 BC-1500BC, gives detailed instructions on how to farm. It was translated by Kramer (1956:65).

> In days of yore a farmer gave [these] instructions to his son:
> When you are about to cultivate your field, take care to open the irrigation works [so that] their water does not rise too high in it [the field]. When you have emptied it of water, watch the fields wet ground that it stays even; let no wandering ox trample it. Chase the prowlers and have it treated as settled land. Clear it with ten narrow axes [weighing no more than] 2/3 of a pound each. Its stubble [?] should be torn up by hand and tied in bundles; its narrow holes shall be gone over with a drag; and the four sides of the field shall be fenced about. While the field is burning [in the summer sun] let it be divided up into equal parts. Let your tools hum with activity [?] The yoke-bar should be made fast, your new whip should be fastened with nails, and the handle to which your old whip was fastened should be mended by the workers children (Jones 1952:46-48).

Atalay & Hastorf (2006:289) describe the Mesopotamians as omnivorous, meaning they gained their protein and carbohydrates from both animals and plants. The foodstuffs that were

available changed from season to season. Domestic crops were planted in the autumn, matured during the spring and were usually harvested by the start of the winter months. They note that carbohydrates such as tubers and greens were harvested in the spring, grains were harvested in the summer, and the sweet fruit in the autumn. Animals were slaughtered throughout the year, in the winter there was only a limited variety of fresh fruit and vegetables available, and grains as well as dried fruits and nuts were usually stored (Atalay & Hastorf 2006:289).

Postgate (1992:158) remarks that fish such as carp, wild fowl and turtles as well as a variety of plants such as liquorice, the root of the rush and sedge tubers were utilised by the Mesopotamians long after agriculture had been established in the area. He notes that, as the *Farmer's Almanac* points out, cereal crops were planted in autumn and harvested the following year April/May, and those vegetables which required more frequent attention were planted in separate plots. He adds that animal husbandry was also inherited from the Neolithic period, of which each species was kept for distinct reasons. Sheep was by far the most important animal, not only for its meat, but also wool and milk products. Goats were usually herded together with sheep; however, their importance lay less with meat and more with their wool and milk products. Cattle were kept for ploughing, and pigs for their fat (Postgate 1992:158).

Leach (1982:1) adds that, historically, gardens which produced vegetables and herbs were known as kitchen gardens, and these gardens were usually situated close to the kitchen. The best evidence for kitchen gardening in Mesopotamia, according to Leach, comes from the cuneiform tablet *BM 46226* dating to the late 7th century BC, currently housed at the British Museum. It describes the contents of the garden of King Marduk-apla-iddina, consisting of 67 kinds of plants in total. Some of the ingredients that were grown in these gardens included onions, leeks, beets, radishes, turnips, garlic as well as herbs such as cumin, dill, fennel, aniseed, fenugreek, mint, thyme and coriander. He adds that ingredients such as figs, grapevines and other fruiting trees required separate plots from cereals and that these plots were enclosed by walls or earthen banks to keep out thieves and animals (Leach 1982:1-6).

Crawford (1991:43) notes that the most important ingredient that was cultivated in these garden plots was dates. The date palm, which was one of the first plants the farmers domesticated, is ideally suited to the conditions of Southern Mesopotamia, and it flourished

in the salty water. These fruit not only provided highly nutritious food, but they were also used to make date wine (Crawford 1991:43).

When one reads the myth *Dumutzi's Wedding*, translated by Jacobsen (1987:20), one gets a clearer picture of not only the ancient ingredients that were used, but also the variety of producers that produced these ingredients, and these ingredients are often mentioned in the *Yale culinary tablets* (see Chapter Four) (Jacobsen 1987:20):

> Dumutzi's Wedding
> Let me, the lady, send a messenger to the shepherd:
> May he treat me to prime butter and prime milk!
> Let me send a messenger to the squire, the farmer,
> May he treat me to honey and wine!
> To the fowler, who has his net spread out,
> Let me, the lady, send a messenger:
> May he treat me to choice birds!
> And the fisherman, none other! To his reed hut,
> Let me Inanna, send a messenger:
> May he treat me to his precious carps!
> Her bridallers, taking the day off, came.
> The fowler brought choice birds,
> The fisherman brought precious carps,
> Filled them in a… with Milady.
> The shepherd carried pails of butter in his hands,
> Butter and small cheeses he carried hung over his shoulder,
> Whipped herb-flavoured milk he carried
> Hung over his shoulder…
> (Jacobsen 1987:20)

Zuckerman (2007:186) explains that feasts such as *Dumutzi's Wedding*, which involved different cuisines and different styles of consumption, not only filled a variety of social and political roles, but were also highly competitive and exclusive events that served as a symbolical re-identification of class differences and social status (Zuckerman 2007:186). Sasson (2004:187) adds that the repertoire of ingredients that were used in cooking, found in texts, remained consistent throughout the years and only became scarce during periods of drought. These ingredients included a variety of grains such as barley and wheat, which they processed into various different products such as whole grains, cracked wheat, and flour. He adds that legumes such as chickpeas, broad beans, peas and lentils were also cultivated, as were onions, leeks, dates, sesame, oil and honey (Sasson 2004:187-188).

2.3 ANCIENT INGREDIENTS MENTIONED IN THE ANCIENT TEXTS

2.3.1 Information from *cuneiform tablets* and *cylinder seals*

Ellison (1983:146) remarks that the cuneiform tablets provide us with information about the various crops that were grown, such as grain and barley; the different animals that the Mesopotamians kept, such as sheep and pigs; the various food items they made, such as bread and beer; food offerings to the gods; and food items that were issued to the king and his household as well as those of the temple staff and ordinary people. She notes, however, that the cuneiform tablets do not give us the same amount of information for the various different periods. She adds that most of the information that we do have on food comes from the various periods of Ur III and Old Babylon. This also includes Lagash during the reigns of Lugalanda and Urukagina in the Early Dynastic III period, as well as the reign of Zimri-Lim in the second millennium in Mari, and Nuzi and Nippur during the mid- millennium. Ellison argues that translating the various documents has been problematic because the various terms that were used in cooking as well as the names of foodstuffs that were used are unfamiliar, and translations are often uncertain and disputed. This is especially true when examining the ancient recipes found in *YOS 11 25* as there are still some ingredients that have yet to be translated (see 4.2.1.2) (Ellison 1983:146).

The same is true with regard to scenes on cylinder seals, which are small and often stylised, and images could have ritual meanings instead of practical significance. Ellison adds that the meaning of the scene was often based on what the craftsmen believed happened and not what actually happened in the scene they depicted, thus making it difficult to get the correct information from cylinder seals (Ellison 1983:146a). The Babylonian ‘haute cuisine’ could not have developed, as Milano (2004:244) suggests, if it were not for the relatively wide diffusion of literature. This is because writing is the focal element in the transmission of technical knowledge. He also emphasises other factors, such as the availability of ingredients, both local and imported. Agricultural systems, trade network, elite officials and merchants all contributed to culinary traditions because social occasions, events and royal feasts played an important part in society (Milano 2004:244-245).

2.3.2 Culinary ingredients mentioned in other texts

The evolution of cuisine, as explained by Katz & Voigt (1986:25), has made certain plants edible as it was only humans who could transform inedible plants into edible, nutritious foods by means of processing and cooking them. The domestication of plants marked a turning point in ancient cuisine. Plants that were being cultivated started to become more important in the diet, and natural wild foods became more neglected in the diet because of the time spent on the seeding, weeding and harvesting of domesticated plants. Domestication of plants had a direct influence on ancient cuisine; as the number of wild plants in the diet declined, the number of recipes to prepare domesticated plants increased (Katz & Voigt 1986:25).

Written documents such as the myths of the Mesopotamians reveal an impressive list of names of plants that were available to the ancients. In one such myth, *Enki and Ninsikila/Ninhursaga,* translated by Jacobsen (1987:198), one can find various references to different plants that were grown, such as cucumbers, apples and grapes:

> Enki said to the gardener:
> Fill my lap! Bring cucumber in…
> Bring apples on their stems,
> Bring grapes in their clusters
> (Jacobsen 1987:198)

Bottéro (2004:15) explains that there are two categories of texts that provide us with information on what the Mesopotamians ate and drank – indirect sources and direct sources. Indirect sources are by far the greatest in number and are found in a variety of contexts, such as palace and temple archives. These lists, which are published in the series ARM, formally known as *ARM – Archives royales de Mari –* provide information about what (food ingredients) was eaten. He notes that the archives of Mari, contained the largest collection of documents relating to food ingredients. The scribes of Mari recorded all the quantities of foodstuffs, both solid and liquid, that made up the daily meals of the ruler. The scribes also meticulously wrote down every single ingredient that was used in the preparation of the king's meals, for example (Bottéro 2004:15):

> 80 pieces of meat [mutton]
> And two "joints" of beef:
> [Everything] received by the cooks,
> For the kings meals.
> *ARM XXI* no 80

Bottéro (2004:15) explains that the ingredients that were used to make bread were always at the top of the lists, indicating that it represented the principal element of the meal. He adds that what makes these lists interesting and different to the ingredients listed in *YOS 11 25* is that no amounts are given in the recipes; only the names of the ingredients (see 4.4.3). Here, they give the exact amounts of ingredients that were issued to the kitchens, for example:

> 180 litres of flour for unleavened bread
> 30 litres for leavened bread
> *ARM XII*, no 68

Bottéro (2004:16) remarks that other examples of indirect sources for food ingredients can be found in business letters. Take, for example, this Babylonian business letter (Oppenheim 1967:91):

> Tell the Lady Alitum: Aplum sends the following message: May the god Shamash keep you in good health. The ladies Lamassum and Nis-inlu came to me in tears, their heads bowed. They said: "You want to abandon us by going to Babylon without leaving us food for a single day!" When you receive my letter [send them thirty] feor- [measures of barley] in addition to the provisions which I have promised you for the girl. They shed tears and urged me, saying: "Help me, this year I am on the brink of starvation." They [text: she] have made me give my consent concerning the payment of thirty feor-measures of barley besides the provisions for the girl. So do have thirty feor-measures of barley loaded on a boat for your sisters; other-wise, they will not quit complaining to us during the entire year.
> (*TCL 18 123*)

Lexical lists also provide valuable information on the foodstuffs that the Mesopotamians consumed, in particular barley, which is one of the ingredients mentioned in the *Yale culinary tablets*. Lexical lists such as *MSL XI*, specifically texts *ḫubullu* 23 and 24 , Bottéro (2004:17) explains, were written by the scribes as a form of bilingual dictionaries whereby the Sumerian as well as Akkadian word was written, and there are some 500 to 600 lines of words on the subject of food. Although researchers are not always sure of the exact meaning of the words, Bottéro states that these lists do provide the relevant vocabulary on the food and drink that was consumed. He notes that it is interesting to note that on the lexical list we find around 200 varieties of breads, 50 different types of cheeses, and more than 80 dishes that were cooked in water; especially because all but one of the recipes in *YOS 11 25* have the instruction ‘prepare the water and add the fat’ (see 4.2.4.4) (Bottéro 2004:15-20).

However, Bottéro (2004:20-26) points out the most important and relevant documents on food would be the direct sources (on how the food was prepared and consumed) which explain the composition and the preparation of dishes – the recipes of the Mesopotamians. He

suggests that before the *Yale culinary tablets* were discovered, there were only two recipes available for study. The first was a recipe for '*mersu*' (see 2.4.1), written in Akkadian and referring to some form of cake. The other recipe comes from the great temple of Uruk, around the 4th century BC, and was written in a similar style to the Yale Babylonian recipes, where a master is teaching a student how to cook some sort of court bouillon. He theorises that the recipe does not give any information on the amounts of ingredients to be used, but different to that of the Yale collection, it also does not give any information on the method of preparation. The *Yale culinary tablets*, particularly *YOS 11 25*, contain 25 recipes, and it provides a clear account on the ingredients that were used as well as the cooking procedures and techniques of cuisine (Bottéro 2004:20-26) (see Chapter Four).

2.4 ANCIENT GRAINS

Katz & Voight (1986:5) explain that the domestication of plants marks a turning point in the relationship between food and food processing techniques. Domesticated plants became more important in the diet, and the number of wild species that were once collected decreased, which in turn led to the increase and development of recipes to prepare these domesticated plants. They suggest that this led to the formation of elaborate food traditions and rituals that were passed down from generation to generation as cultural adaptions, which led to genetic adaptions to wheat and dairy products. Katz & Voigt add that the complex process that led to people domesticating plants and animals occurred independently in several regions all over the world, but evidence of the earliest known domesticated plants in the ancient Near East has been found in Syria, Jordan and Israel (Katz & Voight 1986:5).

The earliest domesticated wheat, barley and lentils seeds that were found, which are different from their wild ancestors, come from around 8000 BC and appeared in settlements such as Tell Aswad, Jericho and Nahal Oren. It is interesting to note, as Katz & Voight remark, that hunter-gatherers known as the Natufian culture used sickle blades, grinding tools, storage pits and wild seeds. They emphasise that it was social conditions and motives that led to the shift from hunting and gathering to food production, and that people chose to invest more energy into the collection and propagation of wild wheat and barley as well as the discovery of new food processing techniques – the sprouting and fermenting of grains that led to the domestication of these grains (Katz & Voight 1986:5).

As Kaufman (2006:1) notes, barley and emmer were the most important early grains even though they are not mentioned by name in the recipes, with wheat, durum and spelt only appearing in later periods. Millet, sorghum, oats and rye were only grown in areas where the climate and soil did not support barley and wheat. Differences in climate, soil and irrigation techniques dictated the success of these to grains, and Kaufman points out that barley grew much more easily than wheat because it tolerated the hot climate as well as the saline and poor-quality soil, and it was less susceptible to disease. This, however, did not stop the Mesopotamians from growing wheat since wheat was more suited to making leavened bread. Once the Mesopotamians were able to control the rivers for irrigation, they were able to cultivate wheat more easily, but barley still remained the most important grain. Kaufman adds that there was only a choice of grains used to make breads versus cakes. This can be attested in the recipes found in *YOS 11 25* as there are eight recipes that call for cake or breadcrumbs to be added to the dish (see 4.4.3) (Kaufman 2006:xxxix).

Barley, or *genus Hordeum,* is thought to have originated in the Zagros Mountains from Western Iraq, from where it spread (in prehistoric times) to Mesopotamia, Egypt and then later into Europe. Kaufman (2006: xxxix) explains that for barley to be consumed, it was hulled. This was done by parching the husks, which were then loosened by threshing. The final cleaning took place by winnowing out the remaining bits of chaff and dirt. Once this was done, the barley was ready for cooking. He adds that barley had many uses, with beer being one of the most important products (see 4.4.4.4). Barley was also boiled or cooked whole and grinded into flour for porridges and flat breads (Kaufman 2006: xxxix). Dense cakes were made and then crumbed and used as a thickener in some recipes found in *YOS 11 25*, as can be seen in the recipes called Broth with crumbs, Francolin stew, Spleen stew, and Lamb broth (see 4.4.3).

Wheat, or *genus Triticum,* as Kaufman (2006:xxxix) remarks, consisted out of six species, of which five are still in use today. Each species has different amounts of proteins present, making some species more suitable for breads and others for cakes. He adds that wheat was hulled like barley or left naked, and this in turn affected how it was stored, processed, and transported. Hulled wheat such as einkorn, emmer and spelt were the earliest species, and like barley, as Kaufman explains, these grains had to be parched and pounded before threshing and winnowing to release the grains from the hulls. The naked wheats, bread durum and club durum, could be threshed without pounding or parching and, as Kaufman continues, this saved considerable time and labour. However, it must be noted that both hulled and naked

wheat were important as they were both valuable individually. For example, the hulls protected the grains against insects and protected the crops when they were in storage or transit (Kaufman 2006:xli).

Bottéro (2001:46) points out that it was the Mesopotamians who developed techniques for treating cereals in order to make them ready for consumption. Cereals were malted and crushed with a millstone or grinding trough, which made different kinds of semolina's and flours ranging from course to exceptionally fine once sifted. He believes that the Mesopotamians perfected the art of breadmaking before the beginning of the 3rd millennium BC (Bottéro 2001:46).

2.4.1 Mesopotamian bread

Two basic styles of bread, flat bread and formed bread, were popular in ancient Mesopotamia and, as Kaufman (2006:xliii) notes, are still eaten today. As the name suggests, flat breads such as pita are thin and cooked quickly on a hot, flat surface and are the oldest known bread. Although we do not exactly know when these flat breads came into existence, Kaufman speculates that flat bread dates back to 20 000 years ago. He points out that hunter-gatherers were the first to make flat bread out of wild grains, which they then baked on warm stones. He also states that flat breads were responsible for the development of the *tannur*, a cylindrical clay oven (Kaufman 2006:xliii).

Bottéro (2001:48) adds that according to the lexical lists, there were over 200 different bread items, and the tablets give us information on the ingredients used to make these breads. He identifies ingredients such as milk, oil, beer and flavourings such as different types of fruit and honey that were used, stating that the tablets even mention the type of flour and the shape of the breads, which ranged from large to small. Bottéro remarks that in the palace of Mari, around 1780 BC, no less than 50 different moulds have been found that were used to bake the breads (see 3.3 for an example of bread mould) (Bottéro 2001:48).

One of the first and oldest reconstructed recipes, which, according to Bottéro, comes from the beginning of the 2nd millennium BC, is the recipe for *mersu,* a Mesopotamian cake. Bottéro explains that he reconstructed this recipe from various administrative documents that not only call the recipe by its name, but also list the ingredients that were supplied to the kitchen in order for the preparer to make this. In Akkadian, *mersu,* or its Sumerian name **ninda.i3.de2.a** (cakes to which various different oils were added), loosely translated, means to mix or to stir

in a cooking pot. The ingredients, of which the main component was flour, were cooked in an oven and finally presented as the form of a cake/bread (Bottéro 2001:48).

According to Bottéro (2004:23*), mersu* was made by a specialist (*episat mersi*) in a *diqaru* ceramic cooking pot (see 3.5.3.1) (Bottéro 2004:23), stating that the recipe for *mersu* is as follows (Bottéro 2001:48):

> *Mersu*:
> Flour, sometimes milk, water or beer but preferably oil or butter for moisture was used for the batter to which dates, or other dried fruit such as figs/grapes or apples and pine kernel were added. Other flavourings such as nigella, cumin, coriander and sometimes garlic were added.

Limet (1987:133) states that when the **ninda.i3.de2.a** was made with flour, the mixture was made by 'beating in' various fatty ingredients such as sesame oil, pork, mutton, or even fish fat into the flour mixture. These breads were classified according to first quality, '*gug*', or ordinary quality, '*gin*', as well as distinguishing between white and black *mersu*, but it is not clear what the difference between the two is. He describes two other **ninda.i3.de2.a** recipes from Nippur during the reign of Hammurabi, of which the one contains flour and the other not (Limet 1987:134):

> *1.***ninda.i.de.a (CBC 8558)**
> X *sila* of flour
> X *sila* of dates
> 5 *gin* (41.5g) butter
> 9 *gin* (74.7g) white cheese
> 5 *gin* (41.5g) grape juice
> 5 *gin* (41.5g) apples
> 5 *gin* (41.5g) figs
>
> *2.* **ninda.i.de.a (no 7248 (ITT 4))**
> 1 *sila* (1 L) of butter,
> 1/3 *sila* (333ml) of white cheese,
> 3 *sila* (3 L) of first quality dates,
> 1/3 *sila* (333ml) of Smyrna raisins

Other types of pastry were also mentioned in the text, such as the *gug* cakes, which were made with a higher quality of flour and fat, as well as *giri.lam* (fruit pastries) and *e.da* (fruit pâté). Limet (1987:134) adds that these cakes were mentioned frequently in texts related to offerings to the gods, but he also notes that they were most probably eaten by the king. These cakes were made with the best quality flour and fat, and in most cases honey, dates and figs were added (Limet 1987:134).

2.4.2 Mesopotamian beer

Bread (*ninda*) and beer (*bappir*) have been linked to each other since before Sumerian times. As Damerow (2012:1) explains, the technique of brewing beer was a technological achievement predating the Sumerian civilisation, and it has been argued that it was, in fact, an invention of the 'Neolithic Revolution'. He adds that it has been suggested that it was, in fact, beer that caused the transition from hunting and gathering to living in stable settlements, and not the use of grain for foodstuff as previously proposed (Damerow 2012:1).

Damerow (2012:10) points out that proto-cuneiform texts from 3200 BC to 3000 BC document that beer was no longer just a cultural product of the rural settlements, but that it was a surplus product that was subjected to the centralised economy of the Sumerian states. He adds that information on ancient beer can be found in the administrative documents, literary texts and archaeological remnants of beer production. Damerow further comments that administrative documents represent the most information by far as they contain detailed records of raw materials, the amounts of beer produced, as well as the distribution of beer products. However, as he explains, little is known about how beer was produced, but by examining the terminology that was used in relation to beer production, we have some understanding of the process. The most important document relating to beer production is found in the literary text called the *Hymn to Ninkasi*. Damerow explains that this text, of which only three copies exist, was written in the Old Babylonian period and is a poem or song dedicated to Ninkasi, the goddess of brewing (Damerow 2012:1-15).

> Ninkasi, you are the one that handles dough (and)...with a big shovel, mixing,
> in a pit, the *bappir* (beer) with sweet aromatics.
> Ninkasi, you are the one that bakes the *bappir* (beer) in the big oven,
> puts in order the piles of hulled grain.
> Ninkasi, you are the one who waters the earth-covered malt ('*mumu*'). The noble dog guards (it even) from the potentates.
> Ninkasi, you are the one who soaks the malt ('sun') in a jar,
> the waves rise, the waves fall.
> Ninkasi, you are the one who spreads the cooked mash (*'titab'*)
> on large reed mats, coolness overcomes…
> Ninkasi, you are the one who holds with both hands the great sweetwort (*'dida'*),
> Brewing it with honey and wine.
> Ninkasi,..
> (you) the sweetwort ('*dida'*) to the vessel.
> The fermenting vat, which makes a pleasant sound,
> you place appropriately on ('top of') a large collector vat ('*lahtan'*).
> Ninkasi, you are the one who pours out the filtered beer
> of the collector vat,
> It is (like) the onrush of the Tigris and the Euphrates.

Beer and bread, as Homan (2002:275) remarks, were intimately linked in the ancient Near East, and breweries from Egypt to Mesopotamia created beer by lightly baking a bread created from grinded germinated cereals and then placing this bread with yeast in jars of water, after which the maltose sugars converted into alcohol. He adds that several Akkadian passages state that ingredients such as *bappir* bread and dates were thrown (the verb *nadu* – to throw) into the water to produce beer (Homan 2002:275).

Beer was also an important ingredient in the recipes found in *YOS 11 25* as it was often used in cooking, as evidenced in the recipe '*Tuḫ'u* beet stew', which is only one recipe which calls for *'beer*' (my emphasis, see below) as one of the ingredients. For a full discussion on beer as an ingredient, see 2.4.2; 4.3.1.3; 4.4.4.4 and 5.3.2.3. Found on the tablet in question (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5):

> 22 (62-64) *Tuḫ'u* beet stew.
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, *beer*, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *suhutinnu* (spring leek).
> (*YOS 11 25*)

Damerow (2012:4) explains that to date, nine different beers have been identified. This identification is based on the cuneiform signs of various jars depicted in the administrative documents. He adds that sometimes not only the number of jars were depicted, but also included in this information was the amounts of ingredients needed to make the specific beers, as well as the different sizes of jugs, for example big or small jugs. Damerow claims that the production and distribution of the various types of beer played an important role in processing grain into a variety of different products that were distributed. He also suggests a connection between the bevel rim bowls (see 3.4.4) and the '*ninda*' bread that was used in the production of beer, represented by the cuneiform sign *GAR*. He adds, however, that the sign *GAR* was used in a generalised way as it included all grain products and their rations. During the Old Sumerian period, around the 3rd millennium BC, beer is depicted in the administrative documents in a different format and described as golden beer, dark beer, sweet dark beer, red beer, and strained beer. Damerow explains that a characteristic feature of beer brewing in Mesopotamia was that the wort, which was prepared for fermentation, contained malt and water. It is further speculated that huge amounts of crushed barley were not subjected to the germination process (Damerow 2012:13-15).

The Sumerian word for brewer, as Neumann (1990:324) explains, is **LU2.ŠIM**, or *sirasu* in Akkadian, and can be found in both lexical and literary texts. In some instances, such in the Ur III text, the brewers are even referred to by personal name. Neumann adds that some brewers even had their own personal seals and that the brew master, as a rule, only worked in the temple or palace households. Neumann further explains that, according to administrative texts, the brew master received the ingredients that were needed for making beer, adding that as the official brew master, he received barley rations as well as land allotments and that the different brewers all had their own social positions dictated by the quality of their brew (Neumann 1990:324).

It is difficult to identify beer in the archaeological context, as Homan (2004:86) explains, because it was rarely stored for more than a few weeks, and the entire process of producing beer was achieved with one beer jar, which was drunk shortly after. Therefore, Homan points out, it is difficult to chemically detect beer in pottery residues, unlike wine which was stored in the ceramic jars for years. The earliest physical trace of beer dates back to the late 4th millennium BC, at a site called Godin Tepe. He adds that because of the difficulty of detecting calcium oxalate, the chemical compound that identifies beer, researchers must rely on the texts to study beer. Although beer has left a minor mark in the archaeological record, there are still a few artefacts that donate beer usage and production, namely beer weights, straws, and bread moulds and bevel rim bowls. These moulds or bevel rim bowls are suggested to have been used in bread baking and are directly linked to beer production. Homan explains that the moulds were heated in the oven first, after which beer bread batter was poured in and baked. He proposes that the holes in these moulds were there for easy removal of the baked bread. The bevel rim bowls (see 3.4.4), however, do not have these holes, so it is still unclear if they were used for baking bread (Homan 2004:86).

In Mesopotamia, several large hole-based jars called *gakkul* jars have been excavated, and these are believed to be fermentation vats. Homan (2004:86) suggests that the beer ingredients were poured into the jar, after which the mouth of the jar was sealed with a cloth or fermentation stopper. He adds that when the beer started fermenting, a pressure would build inside the jar and the beer would start to drip out of the jar's perforated bottom or out of the cloth that was stuffed into the fermentation stopper (Homan 2004:86). Homan notes that people in the ancient Near East often drank their beer with straws, same as can be seen in parts of Africa and Asia. The *Enuma Elish* refers to the gods drinking beer through a tube or pipe. The straws were mostly made from reeds, but there have been instances where metal

straws were found. The most common artefact related to beer drinking is strainer tips, which were attached to the bottom of reed straws. Homan futher remarks that the bowls with perforated bases were used to mix the beer bread with water while mashing the already prepared barley paste through the strainer into a larger bowl. Homan notes the fermentation stoppers, which are frequently found in the Syro- Palestinian Iron Age archaeological record, are commonly confused with fired loom weights, as the weights that were used in beer making were mostly unfired. These unfired round balls with a small hole in the middle look very much like loom weights, but these weights were used in beer production. These weights, as he describes, would have been placed on the mouth of a ceramic jar, with a cloth densely packed in the hole of the weight. This, Homan explains, allowed gasses to escape during the fermentation process while at the same time keeping microorganisms from contaminating the beer (Homan 2004:86).

In 2015, I excavated what was classified as loom weights and a perforated strainer in Hazor, Israel (see 3.4.1). At first it was speculated that the loom weights (see Fig 2.1) were related to the weaving industry, but I am of the opinion that they were related to beer production and are thus rather beer fermentation stoppers.

Fig 2.1 'Loom weights' *in situ* (photo by Melissa Barker, Hazor, Israel, 2015)

The 'fermentation stoppers' (in my opinion) were found *in situ* with a ceramic strainer (see Fig 3.9), which looks very much like the description of Homan (2004:86). The strainer was small and could easily fit a small bun of bread for straining or mashing for beer production. The bread would then be mashed through the holes with water and then scraped off and added with additional water into ceramic jars for further fermentation.

Beer was produced not only to be drunk as a recreational beverage, but also, as Neumann (1990:325) suggests, for cleaning, to be used in medicines, was often prescribed for constipation, coughs, and swollen eyes, and was used in ritual ceremonies. Beer was consumed not only in private households, but also in public drinking houses and taverns, and by both male and females. Tavern owners were mostly women, as evidenced in various laws found in the *Code of Hammurabi* (Neumann 1990:325).

Beer was the national drink in both Egypt and Mesopotamia and, according to Homan (2004:85), it was consumed by all classes of society. Beer was used cosmetically, and it was also used as a means of paying wages as well as bride-prices. Something interesting to note, as suggested by Homan is the close connection between women and beer, with beer as a craft having a female god as its main deity, not a male god as is customary for most crafts.

As Homan points out (2004:85) references in ancient literature such as the *Hymn to Ninkasi* as well as the composition called *In the desert by the early grass*, as translated by Jacobsen (1987:75), leave no doubt regarding the close connection between women and beer (Homan 2004:85):

> Your mother is approaching the… of the anointed ones,
> your mother is approaching the grange of the anointed ones,
> your mother has laid out a meal,
> she is calling,
> your mother has brewed beer, she is calling,
> When your mother who bore you has served her meal which she laid out, you may eat of it!
> When your mother who bore you has poured her beer which she has brewed, you may drink of it!

Prior to the Old Babylonian period, tavern owners, beer maids and brewers were all women. However, this later changed, as Homan (2004:85) explains, when males started to dominate state-run business. Beer production was taken over by males and started to be mass produced. This, however, did not change the fact that females were still responsible for producing beer for home consumption (Homan 2004:85).

Archer & Bartoy (2006:71) add that the art of making beer was, before the time of Hammurabi, a woman's occupation, along with those of tavern owner and brothel madam. They explain that ancient taverns also doubled up as houses for prostitution, and these houses were mostly run by madams. Women in these professions held a very high social status. This all was also linked to Ninkasi, the goddess of beer; however, at the end of the Babylonian period, strict laws were drawn up against tavern owners, as can be seen by punishments such

as death. These taverns are now associated with the 'underworld' as one law in the *Code of Hammurabi* suggests: 'If criminals plot in a woman tavern keeper – *sabitum* house, if she does not arrest them, she will be put to death' (Archer & Bartoy 2006:71). They add that the earliest historical references show that people have been sharing drinks for thousands of years. They point out that cylinder seals, plaques and friezes of over 4000 years old show images of both men and women enjoying communal drinks and activities such as ritual banquets (Archer & Bartoy 2006:71).

Neumann (1990: 326) notes that beer was enjoyed not only by the common people, but also the king, as can be read in the *Royal hymn to Shulgi*:

> With my brother and companion, the hero Utu, I drank beer in the palace, my consort, holy Inanna, the lady, joy of heaven and earth, sat with me at the banquet.

It was thus not unusual for both women and men to drink beer, as evidenced in the reference to those sitting down and drinking beer being full of cheer and chatter.

2.5 CONCLUSION

Although there is no direct mention of barley or wheat in the recipes of *YOS 11 25,* these foods (stews, broths, breads, cakes and porridges) were, according to Kaufman (2006:31), the most important foods consumed by nearly all Mesopotamians. Consumption on a daily basis depended on what was in season, but foodstuffs were also salted, dried, smoked, pickled, and fermented in order to preserve foods for winter months. The Mesopotamians used a large variety of herbs and spices in their food, with onions, leeks, garlic, coriander, cumin, dill, and *samidu* (Persian onion) being the most popular ingredients in the *Yale culinary recipes,* particularly those found in *YOS 11 25* (see 4.2.1.1). Sesame and linseed oil were the primary vegetable fats used, especially in those areas where olive trees were difficult to cultivate. Alternatively, animal fat was used. This is attested in the term 'prepare the water and add the fat', which can be found in each recipe (see Chapter Four). Kaufman points out that honey, figs and dates were used to sweeten dishes such as *mersu,* as sugar was unknown in the ancient Near East (Kaufman 2006:31). More information on the recipes found in *YOS 11 25* will follow in the coming chapters.

As Ellison (1984a:89) suggests, food is a fundamental human need, and from the beginning of time, people have been making decisions about which food items are edible, how these

foodstuff need to be prepared, and how they should be consumed and cultivated. A wide range of foodstuffs were cultivated for consumption in Mesopotamia, such as cereals like barley, emmer wheat, bread wheat and gruels, vegetables such as onions, leeks, peas (both field and grass), cress, turnips, chickpeas, cucumber, broad bean and lentils, and fruits such as dates, figs, grapes, apricots, plums, apples, pears and pomegranates. She suggests the Mesopotamians also used various herbs and spices in their cooking, such as coriander, cumin and salt, to name but a few familiar names. They naturally also ate the meat of sheep, goats, cattle, pigs, fish such as carp, game such as deer, hare, fowl and various other small birds, as well as various dairy products such as cheese, cream and milk produced from these animals (Ellison 1984a:89).

Forbes (1955:53) adds that with the introduction of the plough and the cultivation and irrigation of land started a new revolution in food habits. He notes that this led to cereals being crushed and sieved, and thus flour making was introduced, with loaves of bread being produced alongside the longstanding flat breads and cakes (see 2.4.1). To this, spices and condiments were introduced, which in turn saw the development of more complex-tasting food products and a wider variety of cereal dishes. Meat was mainly obtained from domesticated animals and the hunting of wild animals; however, because of the close proximity to the river and the abundance of fish, fishing remained the most popular choice for staple food (Forbes 1955:53).

To conclude, Samuel (1999:122) admits that food in all its aspects presents a particular challenge because the sheer nature of the material often changes, which in turn makes it exceedingly difficult for it to be recognised or survive in the archaeological record. He adds that evidence of raw resources such as bones and charred plant remains do survive fairly well, but prepared foods which were made more palatable by humans hardly ever survive the microbial attack and decay. He summarises that much of the activity of ancient people was associated with food production and preparation because it played such an important role not only for nutrition, but because it was a key element of their culture, as is shown by the vast amount of artefacts connected to food that are found in the archaeological record (Samuel 1999:122).

CHAPTER THREE

ANCIENT KITCHENS, KITCHEN UTENSILS AND COOKING POTS

3.1 INTRODUCTION

Food, as Stein (2012:47) points out, provides valuable insight into the dynamics of a culture, and he describes how cooking and consumption often appear in different social contexts. Not only do food preparation and consumption differentiate between domestic and public spheres, but they also allude to social identity such as gender or ethnicity (Stein 2012:47). Morrison (2012:231) explains that the difference between edible food and potentially edible food (plants and animals) is usually created through the act of cooking. He adds that as archaeologists, a great deal of focus is placed on studies of food production, such as agriculture, animal husbandry, and foraging; however, the process, the act of cooking itself, the environment in which cooking takes place as well as the equipment that is used are often disregarded. Cooking, as Morrison points out, is a necessary aspect of human life, not only as a mere biological necessity, but it is at once also ceremonial and culturally quotidian. He (2012:232) adds that cooking practices are distinguished by technological objects, food residues as well as spatially specialised rooms such as storerooms, kitchens, cookhouses, and ovens. Included are items such as cooking pots, grinding stones, pestle and mortar, and ceramic wares. He stresses that classifying food practices only into production, distribution and consumption leads to overlooking critical practices such as storing, processing and cooking – both the act of cooking and the environment where cooking took place (Morrison 2012:232).

This is especially relevant if one wants to truly have a deeper understanding of the ancient recipes and the way these recipes were cooked. I have come to realise that even though many studies are currently being done in the field of ancient cooking, the actual environment and the cooking pots that these recipes were cooked in are often overlooked. In this chapter, I want to take a closer look at the ancient kitchens from an archaeological perspective to get a sense of the real equipment that was used in Mesopotamia, such as the ancient pottery stoves and pottery cooking pots as well as various other utensils that were used in these ancient kitchens. This will provide information on how the ancient kitchens functioned in addition to giving a deeper understanding into how these ancient recipes were cooked. This is critical information as one of the objectives of this study is to find out exactly what the cooking pots

and stoves looked like in order for me to be able to do the experimental archaeology in Chapter Five. One simply cannot just look at these recipes independently. The way the ancient chefs put these recipes together was tightly connected to the environment in which they cooked as well as the ceramic equipment available at the time. I have been fortunate to participate in archaeological excavations in Israel at the World Heritage Site called Tel Hazor, with the University of South Africa (under leadership of Professor Le Roux) from 2013 to 2015, and again in 2017 and 2018, gaining valuable insight and first-hand experience working with the pottery that was excavated. In 2015 I was incredibly lucky to have excavated an ancient Iron Age kitchen with a hearth that contained beer looms and a beer strainer (see 2.4.2). I also assisted with the restoration of the excavated pottery of the various occupational levels of Hazor in 2015, 2017 and 2018, and this provided invaluable insight into the actual look and feel of the pottery of different time periods as well as the types of pottery that was produced. As a professional ceramicist, I was privileged to have been commissioned in 2018 to build replica cooking equipment such as cooking pots, iron smelting pots, as well as other cooking equipment for the National Geographic programme, Origins.

Investigating how the cooking pots functioned and how they were used is integral to understanding how the ancient recipes were cooked (see 5.3). As Donnelly (2015:141) puts it, the specific function of the cooking pots demands further study. How were they used, and what was cooked in them? These questions are important as they increase our knowledge of ancient cooking technology, of who created these vessels, and who the chefs were that used them. Donnelly does point out that one should caution against making assumptions about a cooking pot's function based on its appearance, relative to how cooking pots look currently, as well as take note that the function of a cooking pot can change over time and geographic space, but its appearance may still be the same. Donnelly (2015:142) believes that if one wants to study the function of a cooking pot in terms of cooking, the best place to start would be to look at cookbooks (Donnelly 2015:141-142).

I believe that *YOS 11 25* is exactly that, the oldest cookbook in the world, and if one wants to understand the ancient technology of cooking, it is best to not only look at the recipes as a singular study, but to also look at what was used to cook these recipes in, what environment these recipes was cooked in, and lastly what equipment was used to do this.

Graff & Rodriguez-Alegria (2012:1) emphasise that one of the contributing factors towards the lack of studies regarding cooking or food preparation is the prevailing idea that cooking, especially cooking within the household and in preindustrial societies, was a necessary activity and not a skilful or honourable activity. I agree with this notion as I believe much thought went into developing ancient cuisine and all the utensils that were used to make this possible. They stress that studying cooking activities can provide researchers with information into other aspects of society, such as relations of power in public and private spheres, politics, economics, social change, cultural practices, and social identity. Graff & Rodriguez-Alegria (2012:9) echo this by adding that cooking is an important aspect of economic life as it engages directly with agricultural production and foraging as well as the production of cooking tools and, most importantly, feasting and household meals. They (2012:2) add that cooking is an essential part of social life, whether it be in the context of a chef cooking a feast in a palatial or temple kitchen, or a simple meal prepared at home or in the field during the workday. It is therefore important to study not only the art of cooking, but also the different techniques and technologies of food preparation as well as the spaces where the food was cooked (Graff & Rodriguez-Alegria 2012:2).

3.2 ANCIENT KITCHENS

3.2.1 Domestic kitchens

The ancient kitchen, as described by Forbes (1955:50), was the birthplace of many technological terms, operations and equipment. It gave birth to installations such as hearths, ovens, furnaces and grinding equipment. It is also credited with the development of fermentation practices, alcoholic beverages, baking, and the various methods of the preservation of organic food. The technologies of pressing fluids and liquids from seeds and fruit as well as the development of ceramics were also developed in the ancient kitchens. He points out that cooking only became possible once suitable receptacles were invented that could withstand heating (Forbes 1955:50). Ur & Colantoni (2010:62) explain that ‘house’ (*bitum*) in Akkadian can be translated to mean both the physical structure or dwelling as well as the social and economic unit living in the household. This also includes the household’s possessions and the land owned by the household – the so-called estate (Ur & Colantoni 2010:62).

However, as Morrison (2012:232) explains, it must be noted ancient kitchens and cooking are among the least studied aspects of the material history, and not much information is available

on this topic (Morrison 2012:232). The life spaces where cooks worked and moved, as ancient kitchens are called by Graff & Rodriguez-Alegria (2012:245), are potentially recoverable in the archaeological contexts, but extraordinary analysis is called for. They point out that kitchen placement is a critical area of analysis. This is because burning wood, dung or charcoal produced smoke that was not particularly healthy for the cook, and it also posed a risk to the structures around it. Hearths and ovens were extremely hot, especially during the warmer seasons, and it is because of this that kitchens were often kept isolated from the rest of the house (Graff & Rodriguez-Alegria 2012:245).

Pollock (2012:155) states that two distinct contexts of commensality can be identified in Mesopotamian households: home-based and institutional households. The locations of fireplaces, cooking pots, grinding equipment and ceramics used for food preparation, eating and serving were usually found in the halls of many Ubaid-period houses. Pollock states that in some instances, side rooms were utilised for cooking and food preparation activities, but it must again be noted that the limited excavations of residential structures makes it difficult to study ancient kitchens (Pollock 2012:155).

Haaland (2007:176) adds that when ovens became more commonplace in the household, changes were made to the configuration of the houses. The physical structure changed from round/circular to multiple square rooms due to more emphasis being placed on storage and cooking with hearths and *tannur* ovens. The emphasis in the ancient Near East was on the hearth, oven and the ceramic portable stove, which were used for cooking the food. This was because bread was the staple food consumed in Mesopotamia. He is of the opinion that excavated settlements in the ancient Near East show that non-cooking hearths were typically located inside the houses, while cooking hearths were placed outside next to fire pits (Haaland 2007:176).

Peyronel & Spreafico (2008:213) explain that several excavated houses from the Middle Bronze Age II (1800-1600 BC) consisted of rooms with various different functions, such as storerooms, kitchens and working rooms, with more than one room being allocated to food processing and cooking. This is attested by fire installations, cooking pots and grinding tools found *in situ* (Peyronel & Spreafico 2008:213).

A recently excavated area of houses in Hamoukar (Ur & Colantoni 2010:66) is an excellent example of Mesopotamian households. Because of its abrupt abandonment, it was left with most of its inventory intact, and the area consists of houses with a large central courtyard,

various size rooms and an alley that separates the various houses from one another. Some houses had, on average, two ovens; one of which was situated in an open area of the main house, and the other in a more communal area. This indicates that this area was used by the inhabitants of the smaller houses that surrounded the 'main' or biggest house (Ur & Colantoni 2010:66).

Rova (2014:141) echoes this by adding that in the areas of private dwellings, each house was provided with a single or sometimes two or three *tannurs*, portable stoves and hearths (see 3.3.1.1), which were usually located in the courtyard of the house or occasionally near the entrance of the house. She points out that the earliest example of this can be traced back to the Neolithic period, continuing right through to later periods, and it can even be seen in modern times in rural areas of the Near East. Rova explains that where there were domestic dwellings which did not have their own private *tannur*, a concentration of *tannurs* was found in special buildings (perhaps ancient bakeries) or in open common spaces which were then shared by neighbouring families (see 3.3.1.3). Interestingly, she adds that it has been suggested that in areas such as densely built Mesopotamian urban centres, bread baking was probably done by privately owned bakeries. This was due to limited space and smoke evacuation, which discouraged bread baking in individual dwellings, and bread was then rather purchased. Rova does, however, point out that at the Late Bronze Age town of Tel Bazi in Syria, which has been extensively excavated, *tannur* ovens were present in almost all individual households, and that just two of these 'bakeries' existed (Rova 2014:141).

3.2.2 Palatial and temple kitchens

As Ur & Colantoni (2010:62) explain, public institutions such as palaces and temples were known as *ekallum* in Akkadian and **e.gal** in Sumerian, which literally translates to the 'great house'. Temples, known as the *egal* in Akkadian, were understood as the houses of the gods. They further point out that although modern scholars distinguish between private households and public households, it must be noted that the ancient Mesopotamians did not distinguish between this, as is evident from their native terminology (Ur & Colantoni 2010:62).

Be that as it may, there are two types of commensality, as Pollock (2012:156) mentioned earlier; the latter being associated with major institutions. This was attested in the Early to Late Uruk period (4000-3100 BC), followed by the Jemdet Nasr period (3100-2900 BC) and probably as well in the Babylonian periods. As already discussed (see 2.3.1), this is the

sphere of rations and allocations of food and drink believed by some researchers to have been distributed in the bevelled rim bowls as compensation for labour performed. However, it is still not clear what was distributed in the bowls, and many researchers have made various suggestions. Pollock points out that the archaeological and textual records of the kitchens, which provided these food items, are less clearly documented. She adds that excavated temples in Eridu(g) dating to the Ubaid period (3500 BC) had an array of unusual pottery vessels with elaborate decoration and which were presumably used in cultic offerings of food and drink (Pollock 2012:156).

Sasson (2004:180) mentions that palace and temple kitchens are often recognised because of ovens and other food preparation equipment found during excavations. He notes that the palace kitchens of Mari, located in sections 'O' and 'P' of the palace, are believed to have been food service areas because of the ovens and the large amount of ceramics that were found here. Kitchens were decentralised in function and location and were found in major segments of the palace and in temples (Sasson 2004:180).

Rova (2014:149) explains that although the presence of large domed ovens, oven pits and *tannurs* often indicate the presence of kitchens in archaeological evidence, it must be noted that textual references to kitchens are ample, for example *e-muhaldim/bit muhatimmi* (house 'room of the cook'), **e-gir4mah** (house of the 'large oven'), and *e-udun-na* (house of the oven) (Rova 2014:149).

Ur & Colantoni (2010:68) add that food consumption and preparation occurred in rooms that served several purposes in the household, and this was no different in palace or temple 'households'. These activities also occurred in large institutional households. The only differences were the scale of these activities and the rooms in which they occurred. Interestingly, they point out that although various models of centralised states assume that storage and redistribution of grain and other items such as oil occurred in the palaces and temples, storage facilities of such a massive scale have not been excavated often. They further point out that substantial amounts of grain were being stored and ground, and that a fair amount of bread was baked in these institutions. However, although these 'households' were provisioning other households, they surely were not able to provide for the entire population of a city – especially not one of more than seven hectares. In all these cases, it is important to understand that the food production activities in institutional households and

those of smaller private households appear to be similar. The difference lies in the degree to which these activities took place (Ur & Colantoni 2010:68).

3.3 KITCHEN INSTALLATIONS

3.3.1 Hearths, *tabun* and *tannur*

3.3.1.1 Hearths

Peyronel & Spreafico (2008:213) distinguish between four different types of fire installations: the horseshoe-shaped hearth, a *tannur*, a portable ceramic stove, and a *tabun* (Peyronel & Spreafico 2008:213). Crawford (1981:105) adds that ovens can be classified further into grills (*laptu* and *maqlu*), baking ovens, heating ovens and kilns. She defines a fire installation as an area of burning that is defined by and surrounded by a wall, curb or a trench. She also stresses the importance of remembering that although various attempts have been made to determine the development as well as the usage of these installations, one must not rule out the possibility that fire installations could have been used for various activities and purposes (Crawford 1981:105).

Fire installations, as Pollock (2012:156) points out, are a good place to start an investigation into the identification of food preparation locations because installations such as hearths, *tabun* and *tannur* were present in most houses, palaces and temples. In non-domestic buildings, the shape of the hearths varied from circular hearths of approximately one meter in diameter to occasionally rectangular fireplaces. As mentioned before, the fire installations connected to larger institutional places tended to be larger than those in smaller households (Pollock 2012:156).

Haaland (2007:176) points out that in most settlements in the ancient Near East, hearths were typically located inside the houses, as mentioned previously; however, there are some instances where the hearths were located outside, usually next to a roasting pit (Haaland 2007:176).

Smogorzewska & Reiche (2013:376) explain that the excavated hearths dating to the Ninevite 5 period were marked by a round spot of burned dark brown to black clay mixed with fine gravel. This formed the substructure for the hearths. In many cases, shovels were found in connection to the hearths as these were used to scrape out soot which collected during the firing of the hearths. They point out that the size of the hearths that were excavated at Tell Arbid corresponds to the size of the cooking pots that were found close to the hearths, and

each hearth was used for a single cooking pot. Thus, all the hearths had a diameter of 30cm, with all the cooking pots found in the vicinity of the hearths all having a diameter of 25cm (Smogorzewska & Reiche 2013:376-381).

There are two indirect references to hearths in the following two recipes on the tablet in question (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5), specifically in the sentences: '*before removing the kettle from the fire'* and '*with the pot resting on the heat'*, meaning the cooking pot was placed directly on the heat to cook the food (my emphasis, see below):

> 10 (26- 27) *Zamzaganu*:
> Scatter cut-up pieces of meat in a kettle (pot called *ruqqu*) and cook. Clean some *baru* (?) and add to the kettle. *Before removing the kettle from the fire*, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)
>
> 11 (28-30) Dodder stew:
> Not fresh meat but rather "salted' meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. *With the pot resting on the heat*, the broth is ready to serve.
> (*YOS 11 25*)

Peyronel & Spreafico (2008:213) note that houses that were excavated at Ebla (1800-1600 BC) had horseshoe-shaped hearths which consisted out of curved terracotta walls that were partially embedded in the floor. The curved walls were used as a barrier in order to avoid charcoal spilling onto the floor in addition to improving the heat and combustion of the fire (see Fig 3.1) (Peyronel & Spreafico 2008:213).

Fig 3.1 Horseshoe-shaped clay hearth (Peyronel & Spreafico 2008:217)

Crawford (1981:105) adds that the clay-lined open hearths with plastered sides and bases, which were excavated at Abu Salabikh, close to the ancient Sumerian city of Nippur, also had clay curbs similar to those described above. However, the shape and the size of the hearths differed considerably, with the largest hearth being 2.5m x 0.66m and the smallest being 0.5m x 0.25m, all with a plastered curb. She notes that hearths are often found together with *tannurs,* and in instances where the hearths are found by themselves, it usually indicates that they were used inside the house for heat and not for cooking. This type of clustering of fire installations can be found at other sites as well. Crawford explains that some hearths were used to grill meat. This formed the basis for modern kebab houses, where the skewers of meat are laid over a rectangular hearth filled with charcoal (Crawford 1981:105).

3.3.1.2 Tabun

Shafer-Elliott (2013:1) explains that the difference between a *tabun* and a *tannur* is the shape of the oven. A *tabun* is a dome-shaped oven mostly used in the household, while a *tannur* is a beehive-shaped clay oven, mostly found in palaces and temples as well as large households and bakery environments (Shafer-Elliott 2013:1).

Pollock (2012:157) points out that in contrast to the frequency with which hearths are discovered, *tabun* are quite rare in the archaeological record. This could be because the ovens may have been clustered in adjacent to main residential areas, which are often not excavated. She adds that bread may have been baked over open fires and hearths, or alternatively it is possible that ovens may have been misinterpreted as pottery kilns. The limited published details on fire installations make it difficult for researchers to assess their use (Pollock 2012:157).

Echoing this sentiment, Rova (2014:125) adds that there were a variety of fire installations specifically used for different cooking activities and an assortment of foods. Although there are occasional references in Akkadian texts to *tinuru* ovens, they also mention *utunu/atunu*, *kiru/kuru* and *kirmahhu* ovens, whose meaning is still obscure. *Kirmahhu* (large ovens) have been identified archaeologically in large public buildings in Ur, Nippur and Uruk (Rova 2014:125). Szelag (2010:116) adds another category of oven called the *kochstellen,* which is defined as cooking ovens or cooking places that were mainly used for cooking with ceramic pots, such as baking food in pottery baking dishes (Szelag 2010:116).

Crawford (1981:109) describes a unique two-storey oval oven (see Fig 3.2) with a perforated floor which was excavated at Abu Slalabikh, close to Nippur. The fire box with an arched stokehole was countersunk below floor level. Another example of these double oval ovens was found in the temple complex at Khafajah. She adds that traditionally, these types of ovens are frequently classified as pottery kilns; however, the proximity with which they were found to *tannurs* and hearths classifies them as ovens and suggests being used for domestic purposes and not pottery (Crawford 1981:109).

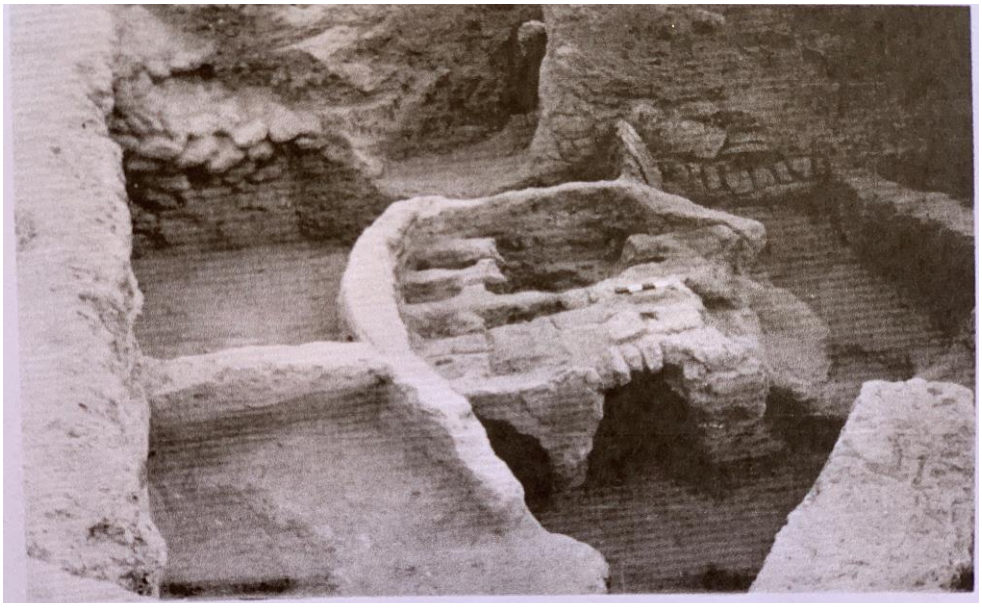

Fig 3.2 Double-storey cooking oven, Arbid, Northern Syria (Crawford 1981:110)

Szelag (2010:113) provides another description of two beautifully preserved ancient ovens, which were discovered in Tell Arbid in Northern Syria. The first oven consisted out of a circular chamber with two parallel walls forming a corridor. This specific oven was roughly 1.6m in length with 0.42m high walls. He proposes that the walls served as a firebox in order to fill the circular oven with heat or served as a means to provide fuel to the oven and to scrape out the ashes. The oven was made out of mudbrick, and the dome had an opening in the centre, with the inner chamber being lined with a thin layer of clay. The second oven was excavated in a rather unique setting and, as Szelag describes, was found adjacent to two rooms with grain silos. The conclusion was that the oven was used in the parching and drying of grains rather than being used for cooking (Szelag 2010:113).

Rova (2014:142) adds that large circular domed oven fire installations, called *kirmahhu* in Akkadian, have been unearthed during various temple and palace excavations at Ur, Nippur,

Uruk and Khafajah. These large domed ovens are also found at the palace of Mari and were not only used for baking bread, but also for other 'indirect cooking' methods, such as cooking in pots or baking dishes and cakes (Rova 2014:142) (see Fig. 3.3).

3.3.1.3 Tannur

Peyronel & Spreafico (2008:217) point out that the *tannur*, or great bread oven, was traditionally placed outside and therefore represented bread baking as a shared activity for two or more houses. These ovens used a great amount of fuel to keep hot and were expensive for one family to maintain. They explain that as families took turns to bake the bread, an activity usually ascribed to the women of the house, they all contributed to the fuel. These ovens were typically used to bake thin, flat disks of bread dough. They were flattened against the inside walls, just above the layer of coals (Peyronel & Spreafico 2008:217).

Tannurs have been present in the archaeological records from the Neolithic to the Late Islamic periods (see Fig. 3.4). The clay bread ovens, as Rova (2014:121-124) describes, are often cylindrical or slightly conical in shape and are known in Akkadian as *tinuru*. The term *tinuru/tannur* has been defined in recent ethnographic studies as belonging to different types of installations. These ovens are both fixed and portable, and they have a few similar characteristics. As Rova (2014:121-124) explains, they are usually found in domestic and rural environments and are mainly used to bake a specific leavened and unleavened bread called *hubz tannur*. The bread is round and flat in shape and is slightly sticky and was thus cooked by slapping the dough of the bread against the oven wall. The dough would then stick to the inner wall of the oven. The heat inside the oven and on the surface of the oven wall would cook the bread from both sides. The bread was ready to eat when it started to peel off the wall. These clay ovens were typically rather small, usually 125cm high with a base of 100cm. The base diameter varied between 40cm and 60cm on the inside. They were usually slightly conical or beehive-shaped, depending on the size of the oven. These ovens were usually gradually built in layered coils and took up to three days to finish (Rova 2014:121-124).

Fig 3.3 Bread mould from Mari, Louvre Museum
(https://commons.m.wikimedia.org/wiki/file:Baking_mold_Mari_Louvre_A018902.jpg)

Rova (2014:121-124) points out that it was usually specialised women that were the builders of these ovens. There was a large circular opening on the top of the cone, with a smaller ventilation hole found near its base. The ovens were usually located in the courtyards or open spaces like entrance halls, or on the side of the street. This was because of the smoke and heat the ovens generated. The ovens usually leaned on a wall and, as she explains, were fixed into the superstructure. The *tannur* was usually made from mudbrick and covered in a thick clay plaster (see Fig. 3.4). The cone of the oven was slightly tilted so that the opening of the oven was not horizontal. Building it in this way helped the person baking the bread to have better access to the area where the bread was baked. Furthermore, more than one *tannur* could be built next to each other in a single superstructure (Rova 2014:121-124).

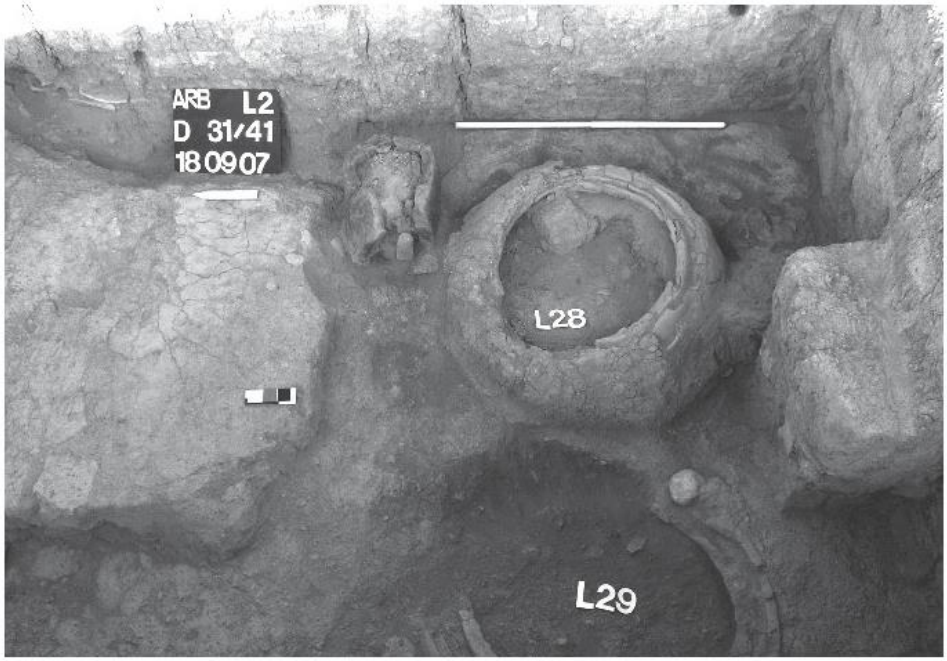

Fig 3.4 *Tannur* (L28) and a horseshoe-shaped hearth (L29) found in room L2, EDIII/ Akkadian period (Area D) (photo by A. Reiche in Smogorzewska 2012:237)

Rova (2014:126) furthermore explains that the fuel was introduced from the top opening and when the oven was hot enough, the dough was placed on the insides of the oven walls. The opening on the bottom of the oven was used to remove the ashes that had gathered at the bottom of the oven. The oven was again fuelled from the top opening whenever it started to cool down during the baking process and if more coals were needed in the bottom of the oven. It is also interesting to note that except for industrial bakeries, baking in the *tannur* was done exclusively by women. These ovens were also used for other cooking activities, such as placing a cooking pot on the upper opening and making meat and vegetable dishes; however, as explained, this type of cooking was done in most cases on other types of fire installations. Rova adds that flat disks made from the same material as the ovens can often be found close to the ovens and are believed to be *tannur* covers. Other associated finds that recur often are small bowls or dishes as well as small platforms or stone tables. These bowls were filled with oil or water to moisten the baker's hands – this was done to prevent the dough from sticking (Rova 2014:126).

According to Forbes (1955: 56), large bakeries formed part of the Sumerian temple economy, and there is evidence that furnaces were built for mass production. Excavations at the temple kitchen of Ur have uncovered large beehive-shaped clay bread ovens. Forbes adds that the

clay oven with a grate appeared around 2000 BC, and now loaves of bread could be baked in the oven, as can be attested by the bread moulds found in Mari (see Fig. 3.3) (Forbes 1955:56).

Tannurs varied in size and, as Smogorzewska (2012:245-246) describes, some were countersunk into the ground and others were built on the surface, on either pebble-made floors or on mudbrick superstructures. She adds that these fire installations did not change much over the various time periods, such as the *tannur* oven still in use in modern times. She notes that certain shapes and characteristics of the installations did change slightly in form and shape, depending on the popularity of that time period, although they were built with similar materials that were best suited to heat preservation. Similar to Peyronel & Spreafico (2008), Smogorzewska points out that fire installations were usually located either in open courtyards, enclosed open spaces, or rooms because of the amount of smoke they generated, and often these installations were shared amongst a few households because of the amount of fuel they needed, which was then usually shared between them. Fire installations such as *tannurs* often occurred in groups and were often different in size to accommodate the different sized cooking pots that were used to cook on them (Smogorzewska 2012:245-246).

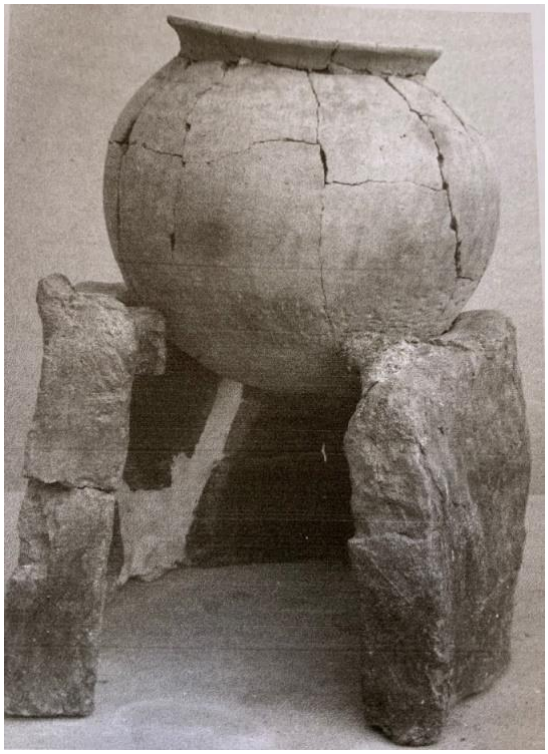

Fig 3.5 Clay horseshoe-shaped portable stove (Smogorzewska 2012:245)

3.3.1.4 Portable stoves

Apart from the already-mentioned fire installations, it must be noted that many ancient kitchens also had portable cooking installations. According to Peyronel & Spreafico (2008:220), these portable cooking fire installations were made from clay and came in various shapes, the most notable being horseshoe-shaped (see Fig 3.5), which was 30-40cm in height with a diameter of between 20 and 30cm, and the lesser-known free-standing or portable stove (see Fig 3.6) . These portable stoves usually corresponded to the size of the cooking pot. Although they resembled the typology of *tannurs,* these 'stoves' were not fixed installations that were embedded into the floor, but could rather be moved to various locations. Some were plain, while others had incised decorations on the front with knobs on the upper side to make them easier to move and transport (Peyronel & Spreafico 2008:220).

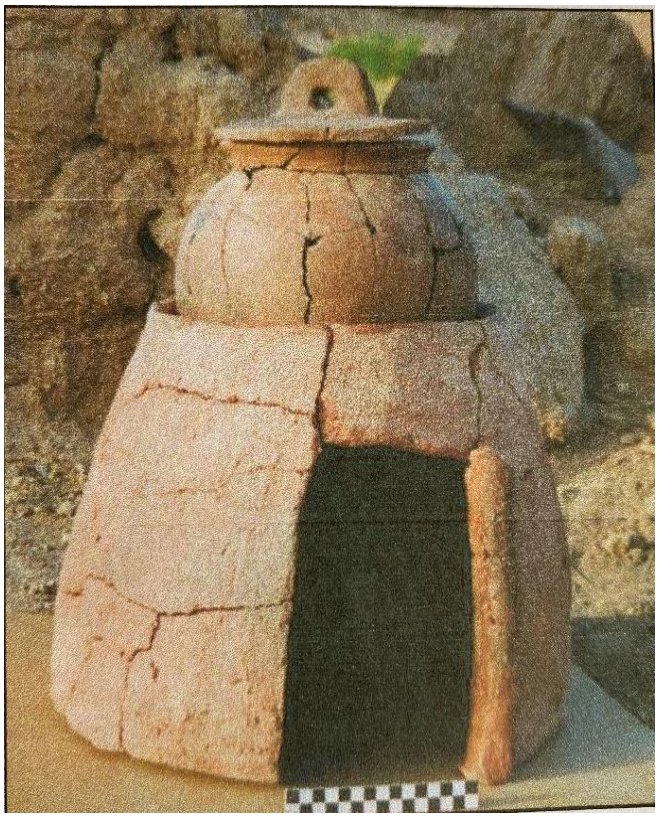

Fig 3.6 Portable stove (Smogorzewska 2014:491)

What makes these portable stoves so interesting is the technological features some of them had. When examining these stoves closely (see Fig. 3.7), it is evident that many of these portable stoves had notches on the top of the stove that were used for grilling meat and vegetables on skewers (see 5.3.3 and Fig 5.19) as well as a small inner rim to support cooking

pots of various sizes (Smogorzewska 2012:234). There are two direct mentions of a stove in the recipes no 11 and 13 found on the aforementioned tablet (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5), in the lines *'put the pot on the stove'* and '*barely sat on the stove*' (my emphasis, see below):

> 11 (28-30) Dodder stew:
> Not fresh meat but rather "salted' meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. When the pot has *barely sat on the stove*, the stew is ready to serve.
> (*YOS 11 25*)
>
> 13 (33-36) Ram stew:
> Other meat is not used. Prepare the water and the add fat, some dodder (or liquorice) as desired, salt to taste, onion, *samidu* (Persian shallot), coriander, leek and garlic. *Put the pot on the stove* and after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

For a full discussion on the use of the pottery stove, see 4.2.4.2 and 4.2.4.3. In Fig 3.7, the notches are clearly visible in the technical archaeological drawing. When doing my experimental archaeology (see Chapter 5), this feature was incorporated into the stove I made.

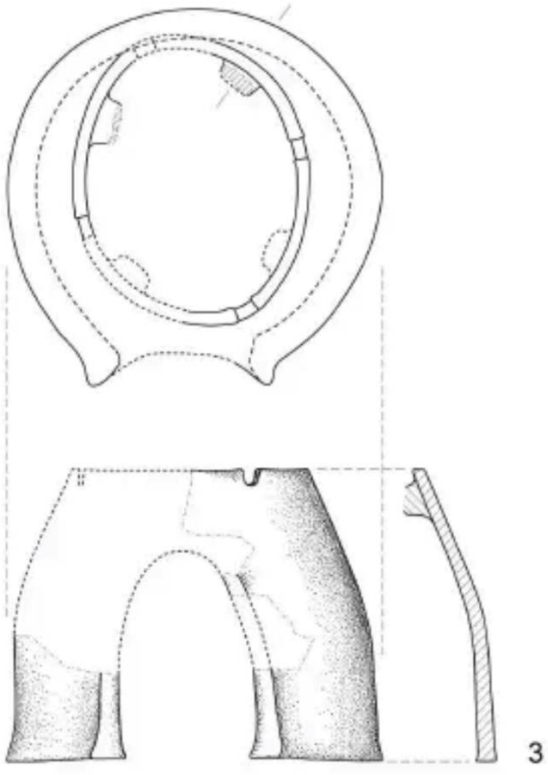

Fig 3.7 Portable stove cooking notches (Smogorzewska 2012:234)

3.3.1.5 Andirons

Smogorzewska (2012:244) describes *andirons* as portable pot stands used in hearths to support the cooking vessels over an open fire, and these *andirons*/pot stands (see Fig 3.8) were usually three to a 'set'. Hearths were semi-circular, circular, rectangular or horseshoe-shaped, and the *andirons/*pot stands were designed to be portable and supported the pot so as not to rest directly on the fire. Using these pot stands also made it easier to control the heat because the temperature could be easily controlled by adding or removing coals and fire without having to move the pot itself.

Fig 3.8 Curved andiron props (Smogorzewska 2012:245)

What made these 'props' (see Fig 3.8) different was the fact that they could be adjusted to fit various different sized pots rather than just one size pot per installation, and each of these 'stands' had a handle to make it easier to move and adjust (Smogorzewska 2012:244).

3.4 KITCHEN UTENSILS

Bottéro (1985:36) notes that cooking utensils, hearths and foodstuffs have been available to us for study since pre-historic times; however, as he points out, these ancient items do not provide us with enough information as to how the specific food items were prepared and what went into the various dishes. Therefore, besides the cuneiform tablets, the most important information available on food, such as the recipe, ingredients and utensils that the Mesopotamians used, can be found on excavated cylinder seals, plaques and reliefs. Bottéro adds that humans have always cooked food in various forms, but the choice and cooking

method depended on the society's available resources, their economy, and the likes and dislikes of the society (Bottéro 1985:36-37).

Pottery, according to Ellison (1984b:63), is the most common archaeological artefact and is commonly used as a chronological and cultural indicator. However, the purpose for which the pot was made is often overlooked. She explains that ceramics have a wide range of use, and the same shape is often used in different processing activities. Food preparation, for instance, requires a multitude of different containers or pots. She states that it is important to document what the exact provenance of the pot is. These vessels could be found inside and outside of a building. The conditions of the pots are also indicative of use. Blackening of a pot could mean that the pot was used on heat, and finding food residue inside the pot could indicate what the container were used for. Ellison points out that there is a tendency in archaeology to dismiss rough pottery as 'cooking pots'. Often, the artistry and skill which went into cooking and preparing food is overlooked, especially with regard to the equipment used for this purpose (Ellison 1984b:63).

3.4.1 Strainers, sieves and steamers

Strainers, sieves and steamers are pottery vessels that have holes in either their bases or on their sides. These vessels, according to Ellison (1984b:64), are believed to have been put over a pot with boiling water, and vegetables or whole grains were steamed and cooked in them. a strainer at Tel Figures 3.9 and 3.10 are wonderful examples of ancient steamers or strainers and these vessels could have also doubled up as strainers and colanders, and the insides of small sieves were often very rough, with Ellison pointing out that these could alternatively have been used as graters for cheese, spices and vegetables (Ellison 1984b:64). I excavated Hazor in 2015, which I believe was used in beer making activities, as previously discussed (see 2.4.2). However, it could also have double up as a strainer used in cooking, especially because of the legs that the pot stands on (see Fig 3.9). There is one reference to using a strainer in *YOS 11 25*, recipe no 9, Broth with crumbs; *crush and sift* (my emphasis, see below) spiced grain cakes. The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 9 (23-25) Broth with crumbs:
> Meat is not used. Prepare the water and add the fat, *šuḫutinnû* (spring leek), coriander, salt to taste, leek and garlic. *Crush and sift* spiced grain cakes (sour dough), sprinkle into the pot before removing it from the fire.
> (*YOS 11 25*)

Fig 3.9 Strainer (photo by Melissa Barker, 2015, Tel Hazor, Israel)

Forbes (1955:59) adds that in Mesopotamia as well as in Egypt, sieving was an important activity in the ancient kitchens, and many sieves of different sizes and shapes were made from reeds and rushes. It must be noted that only the best quality of bread flours were sieved (Forbes 1955:59).

Fig 3.10 Strainer, Ur excavations (www.ur-online.org)

3.4.2 Funnels

Several funnels have been excavated on various archaeological sites. Ellison (1984b:64) explains that they were used for domestic purposes during cooking as well as activities such as brewing and making cheese. The funnels either had one hole at the bottom or several holes on the side at the base of the funnels. In cheese making, the thickened soured milk would be put in a cloth bag or directly into the funnel, and this would be placed in a draining vessel which allowed the liquid to seep out of the draining holes, leaving the solid curd/cheese behind. Fig 3.11 is an excellent example of a funnel with multiple holes, excavated at Ur (Ellison 1984b:64). Recipe no 10, *Zamzaganu*, states '*strain the cooking liquid'* (my emphasis, see below). The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 10 (26- 27) *Zamzaganu:*
> Scatter cut-up pieces of meat in a kettle (pot called *ruqqu*) and cook. Clean some *baru* (?) and add to the kettle. Before removing the kettle from the fire, *strain the cooking liquid* and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

Fig 3.11 Funnel, Ur excavations (www.ur-online.org)

3.4.3 Mortars and grinding stones

The most obvious use for ancient mortars and grinding tools is to grind grain into flour, but Ellison (1984b:66) remarks other food substances such as herbs and spices may also require grinding and pounding. Mortars were most often made from stone (see Fig 3.12), but other materials such as wood and clay were also used. Ellison adds that mortars were used for specific ingredients because ingredients such as garlic would stain wooden or pottery mortars because of the natural oils. Some examples of small stone and pottery mortars have been excavated at sites such as Ur, Nuzi and Kish (Ellison 1984b:66).

In the *Yale Babylonian recipes,* there are quite a few recipes that call for spring onion, leeks or garlic to be mashed. Spices such as coriander or cumin are often to be ground as well. *YOS 11 25,* recipe no 22, '*Tuḫ'u* beet stew' is just one of a few examples which require mashed as well as ground coriander (see 4.4.1.5 and 4.4.1.6). The following recipe is found on *Tablet A* [*YOS 11 25*] (reworked and updated, see 4.2.5 and 5.3.3) (my emphasis, see below):

> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the *mashed* leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

Professor Magdel le Roux from the University of South Africa excavated two large basalt grinding stones, which were used in grain processing (see Fig 3.12), during the 2012 excavations at Tel Hazor, Israel.

Fig 3.12 Large basalt grinding stone (photo by Melissa Barker, Tel Hazor, Israel, 2015)

As Forbes (1955:58) points out, it is thanks to the kitchen that we have the development of grinding and crushing equipment. In Mesopotamia, there were three different types of hand mills, each with its own form adapted to grinding corn, sesame, or dates. He explains that it was only during the Assyrian periods that larger mills, driven by donkeys, were developed. As stated before, he also adds that grinding and making flour were considered female activities (Forbes 1955:58).

Fig 3.13 Mortar and pestle, **Tel Hazor Museum** (photo by Melissa Barker, Tel Hazor, Israel, 2016)

3.4.4 Bevel rim bowl

Meals were prepared using a multitude of various pottery bowls, cups, containers, jars and cooking pots. Another interesting bread mould that needs mentioning is the bevel rim bowl (see Fig 3.14) from the Uruk period (ca 4000-3100 BC). Chazan & Lehner (1990:21) speculate that these moulds were used as bread moulds and not, as previously suggested, as ration vessels. This suggestion is based on the similarity of these bowls to the Egyptian New Kingdom bread mould, as can be seen in the tomb of Ramesses III. This is based on the similarity between the cuneiform sign for bread, *ninda*, and the shape of the bevel rim bowl. Chazan & Lehner (1990:21) further point out that the bowls have been found in various administrative contexts at Godin Tepe, Tepe Yahya and Susa, as well as at temples at Tel Uqair and Tel Brak, and cemeteries at Susa, Tello and Eridu(g), while at Choga Mish, hundreds of bowls were found in pits. It is also interesting to note that the cuneiform sign for oven, as suggested by Chazan & Lehner, is a bevel rim bowl shape in a square enclosure. Given the preponderance of barley, they speculate that the bread baked in these bowls was

barley bread since barley was the preferred crop over wheat and emmer as its yield was exceptionally reliable. Furthermore, they mention that the sheer number of moulds found meant that baking the bread in those moulds allowed for many loaves to be baked at the same time, and these breads could be stored for up to two weeks (Chazan & Lehner 1990:21).

Fig 3.14 Bevel rim bowl, Ur excavations (www.ur-online.org)

3.4.5 Low-spouted vessels

Ellison (1984b:66) describes low-spouted vessels as vessels that have a pouring spout a third or more down the body of the vessel. These pouring vessels were mainly used in the cheese-making process, where the cream is separated from the milk. Once this separation had happened, the cream could easily be poured out, leaving the milk behind in the vessel. This process was also used in other cooking activities where liquid was separated from oil, froth or scum (see 3.4.2). Once the liquid was poured out, the unwanted leftovers remained behind in the pot (Ellison 1984b:66). There are some recipes in *YOS 11 25* that call for an ingredient called *kisimmu,* which is believed to be either sour cream or yogurt (see 4.2.1.2). In *YOS 11 25*, recipe no 18, Leg of mutton broth, the recipe calls for leek and garlic to be '*mashed with kisimmu'* (my emphasis, see below). The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 18 (50-51) Leg of mutton broth:
> With fresh meat from the leg of mutton. Other meat is also used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek and garlic *mashed with kisimmu* (sour milk/yogurt).
> (*YOS 11 25*)

Fig 3.15 Low-spouted vessel, Ur excavations (www.ur-online.org)

3.4.6 Miscellaneous kitchen utensils

Apart from hearths, ovens and *tannurs*, ancient kitchens also needed some cooking-related stone or ceramic equipment. Rova (2014:139) points out a particular archaeological installation called a bread kneading basin. This installation has been found in spaces adjacent to *tannur* ovens in various archaeological sites. Rova describes these basins as 'simple and multiple, white-plastered basins'. They are believed to have been used in the preparation of flour and dough, and like *tannur* ovens, these basins were often re-built on the same spot they were before, and the plaster was often re-applied (Rova 2014:139).

Another installation usually found in connection with hearths and ovens are mudbrick platforms. Smogorzewska (2012:241) describes these platforms as working surfaces used when handling the foodstuffs that were being prepared for the various fire installations. Storage bins were typically also located close to the hearths and were used for keeping and storing various foodstuffs that were cooked in these hearths (Smogorzewska 2012:241).

Specialised cooking equipment used in the kitchen was often made from clay, and its use can be determined by the shape of the pottery vessel and drawings seen on either cylinder seals or reliefs. As Ellison (1984b:67) explains, in order to understand the use and technology of ancient pottery and equipment, a closer study of the actual pottery is needed, and looking at these vessels from a chronological viewpoint or studying them as a cultural indication is

simply not enough. We could learn so much more about the state of technology as well as the society if the uses of pottery were given more attention (Ellison 1984b:67).

3.5 ANCIENT COOKING POTS

3.5.1 Introduction

Klarich (2010:4-6) explains that the details of how, where and by whom a meal was cooked are often left unaddressed, especially in archaeological research. More focus is needed on topics such as food processing, cooking activities, storage and disposal areas, as well as the ancient kitchens themselves, with the intention of understanding ancient cooking technology. Architectural remains such as palaces, temples and households as well as the archaeological finds such as fire installations and other associated activity areas can provide much information on cooking, brewing and baking activities. Klarich (2010:6) stresses that thorough documentation of these features is needed because this will give the researcher more information on how these areas were used, the scale of preparation, as well as how often these areas were used (Klarich 2010:6). As Graff (2012:21) explains, it is important to examine artefacts such as cooking pots through the lens of cooking practices because this makes it possible for researchers to learn more about the social and economic factors that shaped the ancient past. When one looks at cooking pots as a speciality product produced for knowledgeable cooks, this changes the way one views cooking pots (Graff 2012:21).

Graff (2012:34) argues that in the past, it was commonly believed that certain utilitarian ceramic vessels such as cooking pots changed truly little over time and were usually undecorated and made at home by individual household potters and that serving wares were richly decorated and changed often over time because they were imported and produced by specialist potters. However, as Graff explains, petrographic studies have started to show that in some cases, cooking pot wares were traded and that the finer wares were made locally. Recent ethnoarchaeological research points out that ancient producers and consumers were concerned with both the quality of the cooking pot and the quality of workmanship. A cook would not cook in or purchase an ill-made and non-functioning cooking pot. It has been stated by various archaeologists that because cooking pots were not visible to anyone outside the home, they were less valuable than the ceramic ware used in feast and celebrations. Therefore, these wares were deemed more valuable and finely produced by specialised potters. That is believed to be why most cooking pots were undecorated and not as valuable. Graff (2012:35-36), however, points out that archaeological evidence demonstrates that

although most cooking pots in the Near East were indeed not decorated, there were cooking pots that were decorated and considered valuable; for example, the wide-mouth carinated cooking pots called *handi* cooking pots. Lastly, ethnoarchaeological studies have demonstrated that not only were cooking pots made by specialists, traded, and sold in markets, but they were also highly valued objects that formed part of daily and special rituals (Graff 2012:34-36).

In order to better understand the recipes and how they were cooked, it is important to investigate ancient cooking pots in terms of the various types of cooking pots that were used as well as how they were made and possibly used to create these ancient recipes. Was the term 'prepare the water and add the fat' linked to the ancient technology of cooking in these pots and the stoves they were used on?

Bottéro (2001:47) suggests that even though there were various cooking pots and utensils used by the Mesopotamians, two principle pots were most popular, namely *diqaru* (low-fired cooking pot) and *ruqqu* (high-fired cooking pot) (Bottéro 2001:47).

Out of the 25 recipes in *YOS 11 25,* 11 recipes call for the food to be cooked in a pot (see 4.2.4.3). Recipe no 21, Francolin stew, calls for the francolins to be cooked in a *kettle/cauldron* (my emphasis, see below) before being added to the pot. The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 21 (58-61) Francolin stew:
> Fresh leg of mutton is also used (?). Prepare the water and add the fat. Trim the francolins. Add salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic mashed with milk (?). Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a *kettle*. Then return them to the pot. Carve and serve.
> (*YOS 11 25*)

It must be noted that recipe no 10, *Zamzaganu* (see 4.4.5), is the only recipe that is made from start to finish in the *kettle/cauldron* (my emphasis, see below). The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 10 (26- 27) *Zamzaganu*:
> Scatter cut-up pieces of meat in a *kettle* and cook. Clean some *baru* (?) and add to the *kettle*. Before removing the *kettle* from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

3.5.2 Description

Cooking pots are typically very course, and as Graff (2012:32) notes, multiple ceramicists who have examined ancient pottery shards microscopically classify the ware to be cooking pot material. Petrographic analysis conducted on shards found from the Euphrates to the Mediterranean indicate large amounts of temper or grog in the form of mostly calcite, but feldspar, crushed shells, quarts, limestone and chalk were also used. However, whenever calcite was available, it was the preferred temper or grog for potters to use for cooking pots. Graff (2012:32) adds that potters used different sizes of crushed temper or grog wedged into the clay because this counteracts shrinkage while the pot is drying, which reduces cracks developing, and it also makes the pot stronger against thermal shock while heating on an open flame (Graff 2012:32).

Muller et al. (2013:2-4) explain that cooking pots obtain their characteristics during manufacturing and that good quality cooking pots can handle the thermal shock of cooking on an open flame as well as the mechanical stresses such as stirring and scrubbing that come from handling the pot on a day-to-day basis. They add that thermal conductivity plays a significant role in the heating capacity of the cooking pot as this greatly influences the time the pot takes to heat up. Muller et al. (2013:2-4) emphasise that thermal shock resistance is another important cooking pot characteristic as this is the pot's ability to withstand sudden changes in temperature, which result from cooking on an open flame. This is because the heat transfer within a vessel is directed by the material properties, especially the pot's heat capacity and density. They explain that high thermal conductivity results in the pot's ability to heat up evenly and quickly on the fire, but it has a low heat capacity and is usually used to boil or fry food, meaning shorter cooking periods on a high heat. Pots with a low thermal conductivity usually take longer to heat up, but they have a higher heat capacity. Thus, once they have reached the correct temperature, they can retain the heat for longer, even after the pots have been removed from the fire. This type of cooking pot was mostly used for simmering stews and casseroles, such as the recipes found in *YOS 11 25* (Muller et al. 2013:2-4).

I can attest to this because when I did the *experimental cooking* (see 5.3.2), the ceramic cooking pot (see 3.5.1) took a while to heat up. One could not rush it because heating the pot too quickly or over a very high heat created hot spots, and the food started to burn a bit. However, once I lowered the heat (by removing burning wood from the stove) and just

slowly heated the pot, I obtained much better results. I also realised that once the ceramic pot is completely heated (the pot is hot to the touch all the way to the lid), it can be removed from the fire and the food carries on cooking for a long period afterwards.

Smogorzewska (2014:471) notes that other than the set of technical qualities each cooking pot should have as stated previously, cultural, social and economic factors also influence cooking pot design. She adds that cooking pots and cooking practices can vary outside their cultural traditions as well as within their society's cultural traditions (Smogorzewska 2014:471).

The differences in cooking pot capacity, Smogorzewska (2014:490) explains, do not only have to do with the number of people that are cooked for, but also the kind of food that is cooked. The following recipe, 7 (17-19), Kid stew, is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and it is evident from the recipe this must have been a very big pot in order to fit the head, legs and tail of the animal (my emphasis, see below) as well as other meat in the stew:

> 7 (17-19) Kid stew:
> *Singe the head, legs and tail. Other meat is used.* Prepare the water and add the fat, onion, *samidu* (Persian shallot), leek and garlic, bound with (?) blood, mashed (?) *kisimmu* (sour milk/yogurt). Then a corresponding amount of šuḫutinnû (spring leek).
> (YOS 11 25)

This recipe (see 4.4.1.1 and 4.2.4.3) required a noticeably big cooking pot. Most ancient cooking pots had rounded bases, so they needed a hearth, portable stove or *andiron* for support over the fire (see 3.3.1.4). They might also have been placed directly on the open fire in the hearth. Smogorzewska (2014:497) adds that these cooking pots were mostly coiled in heavily grogged clay (see 5.2.2.2). The potters used various tools made from shell, bone and chipped stone as pottery scrapers in order to work in the coils and make the surface smooth. Some cooking pots were burnished (sealing the surface of the pot with a small stone or bone until it is very shiny and smooth), while others were not. It is interesting to note, as Smogorzewska (2014:497) describes, that some cooking pots had surface treatments on the outside which were relevant to the pots' function. The surface treatment (scraped and analogical impressions) usually only covered the base of the cooking pot, and this helped with making the pot less slippery. These impressions also improved the thermal properties of the cooking pot by improving the rate of heating on the outside, which then resulted in speedier cooking times (Smogorzewska 2014:497).

Vokaer (2010:118) states that the perfect cooking pot is rounded in shape with thin walls, it should not have any sharp edges, and it should be made with clay with a high concentration of grog and be low-fired. The ideal lifespan of a well-made cooking pot is between one to three years (Vokaer 2010:118).

3.5.3 Types of cooking pots

3.5.3.1 Diqaru and ruqqu

Different manufacturing techniques such as coiling or wedging in grog or temper, are particularly important, especially when it comes to cooking pots, because this greatly affects the strength, toughness and thermal shock resistance. Muller et al. (2013:5-6) have identified these manufacturing techniques as all contributing to the cooking pot's overall suitability for cooking over an open fire. As outlined above (see 3.5.2), cooking pots that were fired to a higher temperature (where the clay was vitrified) had a higher thermal conductivity than the cooking pots that were fired at a lower temperature and were thus more porous. Both cooking pots were used in the ancient kitchen. They point out that the shape of the cooking pot was also important and enhanced the function of the pot as it was made with a specific function in mind (Muller et al. 2013:5-6). Another important feature of the ancient cooking pots, as Bottéro (2004:50-54) notes, was that each household kitchen had various sized cooking pots (*diqaru*) which would cater for various numbers of people, as well as cooking pots/kettle/cauldrons (*ruqqu*) used for frying and boiling. He adds that the ceramic cooking pot most frequently mentioned in the recipes was the *diqaru* cooking pot, with *ruqqu* only mentioned twice (see 3.5.1) (Bottéro 2004:50-54).

Diqaru required a fair amount of water and needed a long time to boil, while *ruqqu* needed very little water or none at all. It is interesting to note that Gaspa describes these pots as leaving a deposit after cooking and that this 'cooking deposit' could then be used again to start the next meal. He adds that when one wanted to start the next meal, a small amount of water was added to the pot, which was then put on a hot stove. Once the pot heated up, the boiling water would then loosen the deposit at the bottom of the pot – in other words, the water would *deglaze* the pot. The pot was now ready to use. He points out that this is referred to in the recipes as *halasu* – preparing the pot for cooking (Gaspa 2009:95). The same technique can be used after one has cooked meat and the meat sediment needs to be deglazed, although the water and fat in the case of *YOS 11 25,* in the phrase 'prepare the water and add

the fat', are not used in this way. In this case, the water and oil added to the pot contribute to the moisture of the actual dish. This is discussed in full in Chapter Four (see 4.2.4.4.).

3.5.3.2 Closed-mouthed and open-mouthed cooking pots

Muller et al. (2013:5-6) have identified two different shape cooking pots that were used in the kitchen: closed-mouthed and open-mouthed ceramic cooking pots. The open-mouthed cooking pot was generally high-fired as this better suited boiling activities, while the closed-mouthed cooking pot was low-fired as the closed mouth helped to keep the heat of the cooking pot inside, which helped with the long simmering this pot was used for (Muller et al. 2013:5-6). The morphology of the cooking pot is especially important, as Lis (2015:104) explains, as this provides information on how the cooking pot was used. Open-mouthed cooking pots were best suited for boiling and frying foods as the wide-open mouth of the cooking pot helped with the fast evaporation of heat as well as easy access to whatever was boiling or frying inside the pot (Lis 2015:104).

In *YOS 11 25*, recipe no 8, Bitter broth, the recipe calls for the meat and vegetables to be boiled. The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and states that once the water and fat and all the ingredients were added to the pot, one had to '*bring to a boil*' (my emphasis, see below), and then once this was cooked, one had to take the meat out and add the remaining ingredients to the '*broth in the pot'* (my emphasis, see below). As pointed out above, the meat had to be removed; therefore, easy access was needed, and thus the open-mouthed cooking pot would have been used:

> 8 (20-22) Bitter broth:
> Meat is used. Prepare the water and add the fat, milk, cypress (or juniper berries), onion, *samidu* (Persian shallot), leek, garlic and *zurumu* (unknown). *Bring to a boil*, remove the cooked meat, stir leeks, garlic, *šuḫutinnû* (spring leek), and mint into the *broth in the pot*, then add *zurumu* (unknown).
> (*YOS 11 25*)

Lis (2015:104) notes that closed-mouthed cooking pot is difficult to stir because the opening of the pot is narrow, so one has trouble seeing inside the pot; therefore, it is more suited to slow cooking. These closed-mouthed cooking pots were excellent heat retainers and thus suitable for long cooking periods, such as for stews and barley (Lis 2015:104).

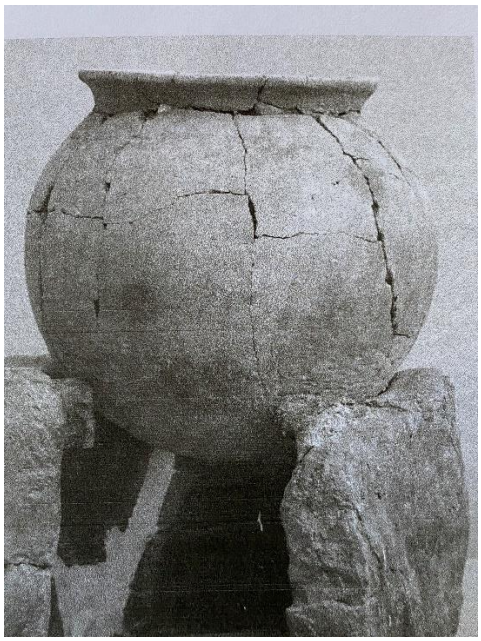

Fig 3.16 Example of a closed-mouthed cooking pot (Smogorzewska 2014:245)

There are five recipes in *YOS 11 25* that call for all the ingredients in the recipe to be added to the pot at the same time, indicating that they had to be cooked together. The ingredients are all stew meats that need a long time to cook, such as lamb, mutton, ram, venison, and tripe. Closed-mouthed cooking pots were ideal for these (see 4.2.4.3 for an in-depth discussion). The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and end with the cooking instruction '*assemble all the ingredients in a pot'* (my emphasis, see below), meaning that once the pot is heated up, all the ingredients are added and cooked until done. In two instances, the dish is garnished (see 4.4.6.1) with fresh herbs once cooked and ready to serve:

> 3 (5-8) Red stew:
> Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and mashed leek and garlic. Soak the meat in the reserved blood and *assemble all the ingredients in a pot*.
> (*YOS 11 25*)
>
> 5 (1-14) Venison stew:
> Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin[?], coriander[?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood, *assemble all the ingredients in a pot*.
> (*YOS 11 25*)
>
> 19 52-54 *Halazzu* stew:
> Meat is used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek, and garlic, mashed with *kisimmu* (sour milk/yogurt).

> Crush the corolla (?) of some of the cultivated plant called *halazzu* (carob seeds/syrup), *assemble all the ingredients in a pot.*
> (*YOS 11 25*)
>
> 23 (65-67) *Kanasu*:
> Leg of mutton(?) is used. Prepare the water and add the fat, *samidu* (Persian shallot), coriander, cumin and *kanašû*. *Assemble all the ingredients in the cooking vessel,* and sprinkle with crushed garlic. Then blend into the pot *šuḫutinnû* (spring leek) and mint.
> (*YOS 11 25*)
>
> 24 (68-70) *Ḫiršu*:
> Leg of mutton[?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). *Assemble all the ingredients in the pot,* and sprinkle leeks and coriander on top (garnish). It is ready to serve.
> (*YOS 11 25*)

According to Smogorzewska (2014:472), ethnographic data shows that most ancient cooking pots by the time of the Ninevite 5 period were already squat, with a large basal surface, in order to have efficient heat transfer. She adds that 'hole-mouth cooking pots' or 'closed-mouthed cooking pots' (see Fig 3.16) were all low-fired, and this style of cooking pot was typical of various other time periods as well as other pottery traditions. She further states that if the cooking pot had a lid, the pot lid would fit the size of the cooking pot mouth (Smogorzewska 2014:472).

3.5.3.3 Bean pots

Ellison (1984b:76) describes bean pots as vessels that have long, fat bodies with narrow necks, typical of the various different cooking traditions yet similar in shape to cooking pots all over Mesopotamia. This cooking pot was a good shape for food that required a long cooking time. The food was usually layered, with the item needing the longest cooking time such as lentils and barley at the bottom, and then the meat and vegetables next, with the ingredients requiring the shortest cooking period at the top, such as the herbs and garnish. These pots had tight-fitting lids, but the pot could also be used without the lid. It would be placed over a low-heat fire and cooked for a long period of time (see 3.5.3.2) (Ellison 1984b:76).

Peyronel & Spreafico (2008:214) add that the common shape of the cooking pot was globular, with either a thick rim to make handling of the pot easier or a thin base to have efficient heat transfer. They add that other shapes of cooking utensils with flat bases, called ceramic baking dishes/tins, were also used (see Fig 3.17). These dishes were used inside the

oven to cook a variety of dishes as well as on the horseshoe-shaped hearth and stove (see 3.3.1.1) (Peyronel & Spreafico 2008:214).

3.5.3.4 Ceramic baking dishes/tins

Crawford (1981:111) echoes this by adding that quite a few baking dishes of this sort have been excavated at Mari as well as at other archaeological sites in both royal and domestic settings, usually in the vicinity of stoves and hearths. She states that these 'tins', as she calls them, were used to bake cakes, pies, breads and other dishes (Crawford 1981:111).

Fig 3.17 Baking dish, Ur excavations (www.ur-online.org)

Similar baking dishes have been excavated at Hazor from both the Late and Middle Bronze Ages, all made from cooking pot material. Zuckerman (2007:101) explains that these cooking trays were handmade platter or tray-like vessels, made from the same material as cooking pots. These trays were slightly convex or more commonly flat-bottomed, with a short rim. They had a diameter of between 25 and 40 cm with incised linear decorations. Cooking trays can be attested all over the Near East, all with slightly different characteristics specific to the different areas. Some cooking trays were burnished on the concave side, therefore they could be used on both sides, such as when cooking on an open fire (Zuckerman 2007:101).

3.5.4 Instructions on how to use the cooking pot found in ancient texts

The usage of cooking pots, and especially those in Mesopotamia, as Gaspa (2009:95) suggests based on Bottéro's recommendations, was based on certain pots needing water to cook and others not needing water. As I have already mentioned (see 3.5.2), research into ancient ceramic cooking pots classifies them as either low-fired or high-fired cooking pots,

and the higher the temperature at which the cooking pot was fired, the less water was needed in cooking for the pot to cook. As stated above, closed-mouthed cooking pots, bean pots and *diqaru* (cooking pots) were filled with water and needed a long time to boil. Open-mouthed cooking pots, which did not require much cooking time and were usually used for frying and boiling, were called *ruqqu*, cauldrons or kettles. These two cooking methods and cooking pots are frequently indicated in the recipes found in *YOS 11 25* (see 4.2.3.6) (Gaspa 2009:95).

3.5.4.1 Cooking with water

There are a few ancient texts that mention cooking operations, with the user instructed to add water to the cooking pot. Gaspa (2009:96) discusses a text found in the book of Ezekiel 24:3-5, where the instruction is to add water to the pot and to put all the meat into the cooking pot (my emphasis, see below) (Gaspa 2009:96):

> (3) *Put on the cooking pot, put it on and pour water into it*.
> (4) Put into it the pieces of meat, all the choice pieces – the leg and
> the shoulder. Fill it with the best of these bones. Take the pick of the flock. Pile
> wood beneath it, bring to a boil, cook the bones in it.
> (Ezekiel 24:3-4)

In the Assyrian degree found in the *State Archives Assyria,* formally known as *SAA 12 68* (lines 29; 31; 37), Gaspa (2009:96) points out water being mentioned again in relation to the cooking pots (my emphasis, see below) (Gaspa 2009:96):

> (29) *The pot is filled with water*
> (31) the wood is burned beneath the pot

3.5.4.2 Put the pot on the stove

There is one recipe in *YOS 11 25*, no 13, that directly instructs the chef to put the pot on the stove to cook, meaning not directly on the fire, in the line '*Put the pot on the stove*' (my emphasis, see below). The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 13 (33-36) Ram stew:
> Other meat is not used. Prepare the water and add the fat, some [?] dodder (or liquorice) as desired; salt to taste; onion, *samidu* (Persian shallot), coriander, leek and garlic. *Put the pot on the stove* and, after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

The stove could also be used as a place from which to serve the food as one recipe instructs the chef to put the pot back on the heat and only then is it ready to serve. When I think of this

in terms of the archaeological artefacts, as discussed earlier in the chapter, and the fire installations available during that time period (see 3.3.1.1), the sentence '*with the pot resting on the heat*' (my emphasis, see below) could refer to the hearth or portable stove. The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 11 (28-30) Dodder stew:
> Not fresh meat but rather "salted" meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. *With the pot resting on the heat*, the broth is ready to serve.
> (*YOS 11 25*)

3.6 CONCLUSION

As Morrison (2012:232) points out, cooking practices are distinguished by technological objects, food residues, and spatially specialised rooms. Included are items such as cooking pots, grinding stones, pestles and mortars, and ceramic wares. He notes that classifying food practices into only production, distribution and consumption can lead to overlooking critical practices such as storing, processing and cooking. Often, the act of cooking as well as the environment where cooking took place may be overlooked (Morrison 2012:232).

In my opinion, this really is the case when one critically looks at the equipment that was used during the time period (see 1.1) of the recipes found in *YOS 11 25*. What I found interesting is that it was exceedingly difficult to find information on the ceramic cooking pots that were used and available at the time, especially in connection with ancient cooking and ancient kitchen research. There is ample information on the analysis of cooking pots and their thermal conductivity, but hardly any research has been done on how the ancients used and cooked in these pots as well as what they used to cook on, which has been overlooked on many occasions. This is especially relevant if one wants to truly have a deeper understanding of the ancient recipes and the way these recipes were cooked. It became clear that even though many recent studies have been done in the field of ancient cooking, there is still a broad scope of research that needs to be done.

As Donnelly (2015:141) puts it, the specific function of the cooking pots as well as the stoves and utensils used in the ancient kitchens demands further study. How were they used, and what was cooked in them? These questions are important as they increase our knowledge of ancient cooking technology – of who created these vessels and who the chefs that used them were. Donnelly does point out that one should caution against making assumptions about a

cooking pot's function based on its appearance relative to how cooking pots look currently, as well as take note that the function of a cooking pot can change over time and geographic space, but its appearance will remain the same (Donnelly 2015:141).

In this chapter, I looked at the ancient kitchens from an archaeological perspective to get a sense of the real equipment that was used in Mesopotamia. I have found a variety of equipment available to the ancient chef. There was equipment like ancient portable pottery stoves, a variety of pottery cooking pots, and various other equipment such as funnels and baking tins, to name but a few used in the ancient kitchens. This has given me much information on how the ancient kitchens functioned in addition to providing a deeper understanding into how the ancient recipes were cooked. This information is very important for my experimental archaeology, where I built the cooking pots and stove, discussed fully in Chapter Five (see 5.2). As mentioned before, one cannot simply look at these recipes by themselves – one has to understand what these recipes were cooked in and on what. The cooking pots that were used played an important role in the making of many of these recipes, and the recipes state in many cases which pot should be used.

The way in which the ancient chefs put these recipes together was tightly connected to the environment in which they cooked as well as the ceramic equipment available at the time. Investigating how the cooking pots functioned and how they were used is integral to understanding how the ancient recipes were cooked. The use of water in the recipes was tightly connected to the earthenware cooking pot. The stewing cooking pot was low-fired and, as discussed in 3.5.3, was used for cooking over long periods of time.

I would additionally like to suggest that it is possible that some of the recipes could have been cooked in high-fired cooking pots more suited to boiling and frying, and therefore the water was needed to boil the meat, as discussed in 3.5.4.1. In both cases, the water would evaporate even though two different cooking techniques were used. For a full discussion on the function of water and the phrase 'prepare the water and add the fat' in the recipes, see 4.2.4.5. From a chef's perspective, especially when it comes to cooking certain meats such as mutton, ram, goat and lamb, one needs long cooking periods in order for the meat to become tender, and therefore a fair amount of water would be needed in order to prevent the meat from burning, especially during long cooking periods.

CHAPTER FOUR

‘PREPARE THE WATER AND ADD THE FAT?’
A re-interpretation of the *culinary tablet YOS 11 25*

4.1 INTRODUCTION

The notion of ancient gastronomy has acquired new meaning and legitimacy because of the translations and publication of the *Yale culinary tablets* by Jean Bottéro in 1987. These early second millennium BC ‘cookbooks’ were written down in Akkadian, and they demonstrate that a formalised culinary tradition did exist and that not only did ancient Mesopotamians have a vast technical knowledge, but they also had different gastronomic techniques (Bottéro 1987:11). As explained in Chapter One, despite their exact provenance being unknown, researchers agree, according to Bottéro (1987:11), that based on their written style and orthography, these recipes from ancient Babylon, written down in Akkadian, are classified as belonging to the Old Babylonian period around 1700 BC from Southern Babylonia. *Tablet A* (*YOS 11 25*) itself is relatively well preserved, with only a few texts missing (Bottéro 1987:11).

Milano (2004:243) explains that as a literary genre, these tablets have opened a new perspective in the investigation of ancient cooking techniques as now we have the tools to understand not only how ancient ingredients were prepared, but also how they tasted (Milano 2004:243). Once one has a deeper understanding of the ancient ingredients which were produced in Mesopotamia, as discussed in Chapter Two, and a wider view of what these recipes were cooked in as well as the equipment that was used (see Chapter Three), one can get a clearer picture of the construction of the recipes found in *YOS 11 25*.

Gumerman (1997:110) describes food as overly complex and presenting a particular challenge to archaeologists who wish to study ancient food. He adds that most contemporary research involves the systematic recovery and removal of fauna and flora remains from the archaeological context, such as households or temples. This is done in order to study dietary variations between elites and commoners or male and females in order to determine the various levels of status in a society. He is convinced that by studying social variation, one can get a better understanding of food symbolism because various groups such as stats or gender may have viewed food in different ways. Other factors such as food preparation, consumption

and the way the ancients discarded their food also provide information on food (Gumerman 1997:110).

Samuel (1999:122) defines the term 'food' as all the raw resources and ingredients, intermediate stages of preparation, the final product, which is ready for consumption, as well as the leftovers which are associated with all the stages of preparation (Samuel 1999:122). Gumerman (1997:106) observes that food incorporates numerous aspects of culture and is intrinsically social, and thus social relations are defined and maintained through food. He adds that food is often allocated differently depending on the various social statuses for elites and commoners and thus they may receive different types and portions of food according to their status. Complex societies create elaborate food systems, such as the set of conditions under which food is produced, distributed, prepared, consumed and lastly discarded. He concludes that behaviour towards food is also affected by other interrelated factors, such as the environment, economics, social organisations and belief systems (Gumerman 1997:106-107).

The research question I will try to answer in this chapter is how the cuneiform recipes in *YOS 11 25* have been translated and analysed in English by Bottéro, and if I can add new information to this topic from a chef's perspective. In this study, my intention is not to translate the tablets, but rather to use and compare Bottéro's (1995 and 2004) English translations as well as all the recent translations and studies that have been published on the ingredients in the recipes in *YOS 11 25* by scholars such as Kelly (2012) and Barjamovic et al. (2019) as a base. My aim is to re-write the recipes in order to reflect my suggestions and interpretation (see 4.2.5). Once I have done this, I hope to understand and interpret the cooking techniques of the Mesopotamians better. I believe that there are many neglected questions about ancient Mesopotamian cooking, especially with regard to the way these recipes have been analysed, explained and interpreted over the years. My objective is to determine how modern-day practical understanding of cuisine can help to improve the explanation and the understanding of the ancient cooking methods found in *YOS 11 25*.

By studying the literature of the Mesopotamians in conjunction with the *Yale culinary tablets* as well as putting some of these recipes to the test (see Chapter Five), we can begin to get a more in-depth understanding of their culture. With this chapter, I want to delve deeper into the phrase 'prepare the water and add the fat' and other cooking instructions found on the recipes which perplexed me from the start. What does this mean, and are there other cooking

instructions present in these recipes that might have been overlooked? As already discussed (see 3.5), the ancient cooking pot played a very important role in how these recipes were cooked, as well as the result each different cooking pot would give, as a finished and fired product (see 3.4.2). A further objective is to find out how the recipes were interpreted and explained by Bottéro. How have the ingredients been analysed by various scholars? What ancient cooking techniques did these chefs invent that are still used today? I want to analyse these recipes with the hope of being able to not only understand these recipes from a chef's perspective, but also to be able to construct a modern recipe (see 5.3) that will bring this ancient cuisine back to life.

4.2 *TABLET A: YALE ORIENTAL SERIES 11 25* (*YOS 11 25*)

4.2.1 Introduction

Bottéro (2004:26) explains that *Tablet A* (*YOS 11 25*) is 118 x 164 x 33mm in size and well preserved, with only a few places on its obverse side damaged. The tablet consists of 75 lines and comprises 25 recipes in total, of which 21 are meat recipes and four vegetable-based recipes (Bottéro 2004:26); (see 4.3.1 & 4.3.2).

When studying *YOS 11 25*, it is not clear which recipes are referred to by the scribe as the four vegetable recipes as some of the ingredients are still untranslated (see 4.2.1.2). However, I have found, after closer investigation, that one can divide the recipes into further sub-categories, namely: four mutton recipes (see 4.3.1.2); two lamb recipes (see 4.3.1.3); four game recipes (see 4.3.1.5); one offal recipe (see 4.3.1.4); two goat recipes (see 4.3.1.1); four unknown meat recipes (see 4.3.1.7); three preserved meat recipes (4.3.1.6); and two vegetarian dishes (see 4.3.2).

Each recipe is about two to five lines long, and for ease of understanding I will write the recipes as follows, as suggested by Bottéro in his 2004 publication. Each recipe has been numbered from 1 to 25 in order for the reader to distinguish between the various recipes (this is also the order in which the recipes can be found on the tablet), which is then followed by a number in brackets indicating where the line of the recipe starts on the cuneiform tablet, followed by the recipe name, e.g. 16 (45-46), Elamite broth. Where I want to highlight a particular phrase or word I am explaining or analysing, I will use *italics* (it must, however, be noted that the *Akkadian* words are also written in italics) (Bottéro 2004:26):

16 (45-46) Elamite broth:
Meat is used. Prepare water, add fat, dill, *šuḫutinnû*, coriander, leek and garlic, bound with blood, a corresponding amount of *kisimmu*, and more garlic. The (original) name of this dish is *Zukanda*.
(*YOS 11 25*)

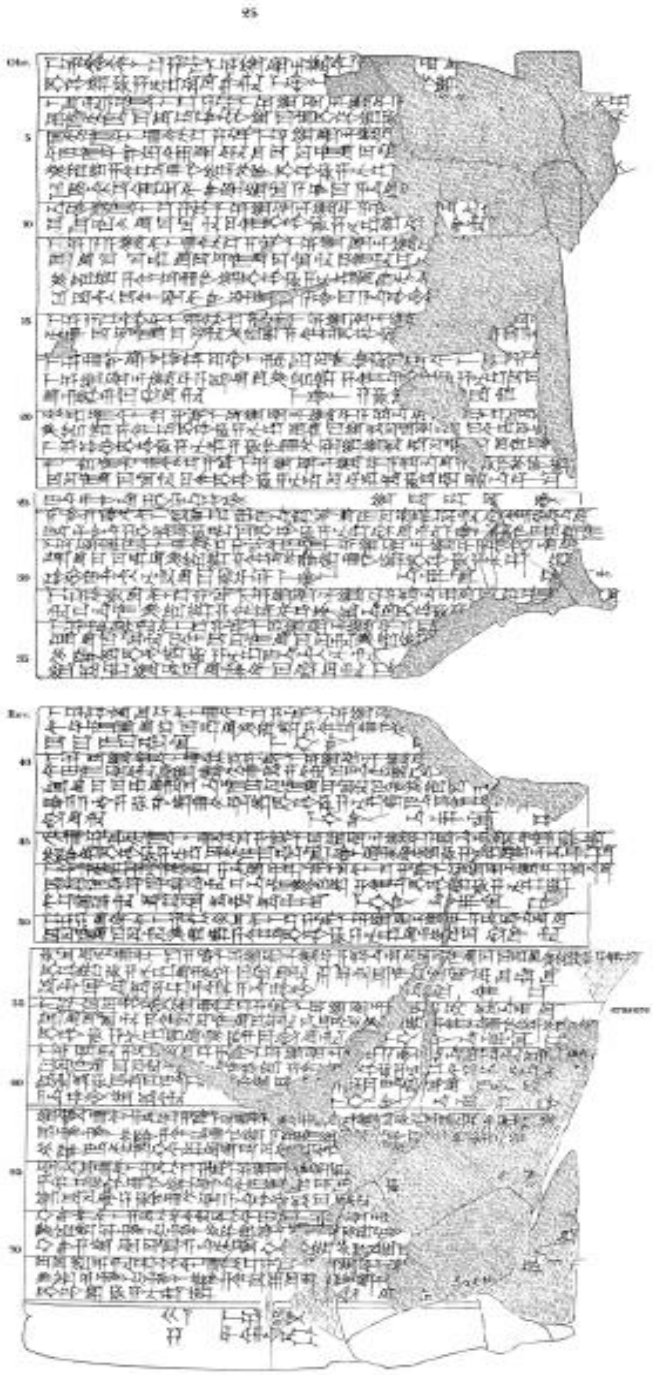

Fig 4.1 ***YOS 11 27,*** **Yale culinary tablet** (https://cdli.ucla.edu)

4.2.1.1 Translated ingredients in the recipes

As Stol (1987b:57) points out, we are still very much reliant on etymology when it comes to the identification of ancient terms for food. There are in total 36 ingredients that are used in the recipes in *YOS 11 25*, which forms part of the *Yale culinary tablets* (see Fig.4.1); however, less than half of the ingredients can be identified undisputedly. In order to make sense of the recipes and, most importantly, to be able to cook these recipes, one needs to take a closer look at the ingredients that were used. The most important ingredients (those which we know the names of and the ones that are used in nearly all the recipes) are onion, garlic, leek, coriander, cumin, and turnips. However, when ingredients are described, it is not clear if it is the actual product or only part thereof that is to be used. Take for instance coriander; do we assume the recipe is calling for coriander seeds or for the leaves (see 4.2.1.2) (Stol 1987b:57)?

a. Garlic

Stol (1987b:57) explains that garlic, in addition to other alliaceous vegetables, was a major food staple in ancient Mesopotamia. It is a hardy perennial and includes other genus such as shallots, leeks, chives and a variety of different onions. The Sumerian term '**sum**' on its own usually referred to as garlic, but combined with other signs it included a variety of the allium family such as onion, leek and shallot. Garlic cloves, as they are known in English, were called 'head of garlic' – in Sumerian **sir**, and *turu* in Akkadian. Garlic and onions were often planted together; however, it must be noted that garlic takes longer to mature, usually around five months as to oppose to the three months it takes for onions (Stol 1987b:57).

According to Bottéro (1995:161), garlic is referred to as *hazannu* in the culinary texts, but it is unclear whether the actual ingredient is a whole clove of garlic or whether only a bit of it is used (Bottéro 1995:161). The following recipes containing garlic (my emphasis, see below) are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and *garlic*. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (alliaceous plant).
> (*YOS 11 25*)
>
> 23 (65-67) *Kanasu* stew:
> Leg of mutton [?] is used. Prepare the water and add the fat, *samidu* (Persian shallot), coriander, cumin and *kanašû* (unknown). Assemble all the ingredients

in the cooking vessel, and sprinkle with crushed *garlic*. Then blend into the pot *šuḫutinnû* (spring leek) and mint.
(*YOS 11 25*)

Stol (1987b:58) points out that the *Mari texts* never refer to garlic as *šūmū,* but rather *ha-za-(an-)nu (sar) hazannu* (Stol 1987b:58). References to garlic can be found in the *Electronic Text Corpus of Sumerian Literature* (*ETCSL*), as translated by Black et al. (1998), in literature such as:

Inanna's decent into the underworld (ETCSL c.1.4.1):
šum2sar nig2 sis-a nnu-gum-eme-eš
lu2 ku6 nu-gu7-me-eš lu2 ga-rašsar nu-gu7-[me-eš]
"hey crush no bitter garlic. They eat no fish, they eat no leeks".

Dumutzi's Dream (ETCSL c.1.4.3):
šum2sar nig2 sis-am3 zu2 nu-gub-bu-me-eš
lu2 ku6 nu-gu7-me-eš lu2 ga-rašsar nu-gu7-me-eš
"Who never chew sharp-tasting garlic, who eat no fish, who eat no leeks"

*The death of Gilgameš*h (ETCSL c.1.8.1.3):
/su\-sar-gin7 he2-bur2 šum2-gin7 he2-ak-e
"Let it be unravelled like palm-fibre and peeled [?] like garlic"

b. Onions

Onions, or **sum-sikil** in Sumerian and *šamakillumš* in Akkadian, have a wide variety of cultivars, and they are usually classified according to the area in which they are grown, such as 'Dilmun onion', 'Tuba' and 'Marhasi onion'. Other onions such as 'date palm onion' and 'spring onion' are also attested. According to Stol (1987b:60), in Old Babylon a distinction could be made between a normal onion (**sum-sikil**) and the shallot *sum el-lum.* They are closely related and, as he points out, it is interesting that the difference between the onions (the normal onion having seeds and the shallot being a seedless onion) can also be detected in the ancient writings as there is no reference to the 'seed' of *sum el-lum*. It is well known that onions can be grown from either a seed or a bulb, whereby the bulb is fragmented into bulbils called *fiska* and planted. Red onions were also cultivated in Ancient Mesopotamia, with Stol pointing out the word *sum.huš sar* could refer to the red variety. He adds that in *tablet BM 46226,* the contents list of the garden of King Marduk-apla-iddina starts with garlic, onion (*sum.sikil sar*), leek and *mirgu*, with the next four plants listed. Stol remarks there is a variety of onions such as *an.tah. šum* (small onion)*, ša-as-ni-bi (šišanibe), ku-ni-ip-hi (sum.KIL) and zi-im-zi-im-mu(sum.hu ša).* He concludes that these same words can be found in the *Banquet Stella of Assurnasirpal II* (Stol 1987b:60). The following recipe contains two different types

of onion, namely Persion shallot and normal onion (my emphasis, see below), found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 7 (17-19) Kid stew:
> Singe the head, legs and tail. Other meat is used. Prepare the water and add the fat, *onion*, *samidu* (*Persian shallot*), leek and garlic, bound with (?) blood, mashed (?) *kisimmu* (sour milk/yogurt). Then a corresponding amount of *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

c. Leeks

Leek, or *geršānum* in Akkadian and **ga-raš [sar]** in Sumarian, refers to a type of bulb leek or leek with a head (see 4.2). Stol (1987b:62) explains these are all cultivars of *ampeloprasum*, the broadleaf wild leek. Stol adds that in the historical sources, there are numerous references to a species of leek with a head referred to as bulb-leek, with references of this specific leek in both Babylonian and Classical texts, but no real evidence has been found for this specific variety. He points out that the Sumerian plant name **ga.raš.sag** and Akkadian *geršānum* both refer to 'leek with a head', and he speculates that perhaps this leek was grown only by specialist gardeners and the everyday leek, *karašum* or *karšum* in Akkadian, was grown in household gardens (Stol 1987b:62-63). The following recipe contains two types of leeks, mature leeks and spring leeks (my emphasis, see below), found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 9 (23-25) Broth with crumbs:
> Meat is not used. Prepare the water and add the fat, *šuḫutinnû* (*spring leek*), coriander, salt to taste, *leek* and garlic. Crush and sift spiced grain cakes (sour dough), sprinkle into the pot before removing it from the fire.
> (*YOS 11 25*)

References to leeks can be found in the *ETCSL*, as translated by Black et al. (1998), in literature such as:

> *Gilgamesh, Enkidu and the nether world* (c.1.8.1.4)
> [siki-ni ga-raš]/sar/-gin7 i3-guru5-guru5
> "She plucks her hair out like leeks"
>
> *Inanna's descent to the nether world* (c1.4.1)
> siki-ni ga-rašsar-gin7 sag-ga2-na mu-un-ur4-ur4-re
> "The hair on her head is bunched up if it were leeks"

d. Turnips

Turnip, or **lu[sar]** or abundant vegetable in Sumerian and *laptu* in Akkadian, was a major dietary staple in Mesopotamia. It is remarkably high in vitamin C although not dense in

calories. It is a biennial crop propagated by seed throughout the cooler seasons, and it usually takes 70-80 days to grow, after which it is harvested by hand (Stol 1987b:62-63). The following recipe, found on *Tablet A* (*YOS 11 25*), contains turnips (my emphasis, see below) (reworked and updated, see 4.2.5):

> 25 (71-75) Garden turnips:
> Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* (Persian shallot) and *turnips*. At the end add coriander and cake crumbs bound with blood, as well as mashed leek and garlic.
> (*YOS 11 25*)

References to turnips can be found in the *ETCSL*, as translated by Black et al. (1998), in literature such as:

> *Proverbs collection 3* (c.6.1.03)
> šim sis-me šim ga-rašsar he2
> šim lu-ub2sar nam-me
> "Let our odour be the smell of leeks – let it not be the smell of turnips"

4.2.1.2 Untranslated, unclear and modern suggestions for ingredients in YOS 11 25

Other ingredients that are used in the recipes, of which the translations are not clear, are: *šūmū* – roasted meats; *samidu* – alliaceous plant (having the taste of garlic and onion – shallots, chives, spring onions); *šuḫutinnû* – alliaceous plant; *kisimmu* – sour milk/yogurt; *hiršu* – root vegetable; *andahsu* – alliaceous plant; and *kismu* – chives (Bottéro 1995:195-223).

Barjamovic et al. (2019:120) propose that *samidu* be translated as Persian shallot, not only because of its appearance in the cuneiform record alongside herbs such as cilantro, cress and mustard greens, but also because of its continual use in later medieval recipes and modern Iraq. They propose that *šuḫutinnû* be identified as kurrat or spring leek. Spring leek is thin and tender, with a slight hint of garlic – similar in flavour to garlic chives (Barjamovic et al. 2019:120).

It is interesting to note that although Bottéro makes various suggestions as to what he thinks some of the ingredients were, not all scholars agree with his interpretations. Kelly (2012:38-45) writes that although Bottéro has interpreted *kašu* as bitter dodder, she believes it should rather be translated as wild liquorice (*glycyrrhiza glabra*). She remarks that this makes much more sense in cooking terms as this would impart a delicate, sweet anise-like flavour to the food, rather than the bitter flavour of dodder. I tend to agree with this notion. She ventures as far as to suggest that *ḫalazzu* could be carob seeds or even carob syrup or powder as it is widely enjoyed all across the Levant and Western Asia. She adds that *zibu* could be black

onion seeds (*nigella sativa*) as it was widely used not only in Mesopotamian, but also Egyptian food and it is still used in modern foods in these areas today (Kelly 2012:38-45).

Kelly (2012:38-45) further mentions that although Bottéro has suggested *šibburattu* is rue, she believes it to be mustard as this plant is widely used; not only its seeds, but also its leaves. It is a common ingredient in medical poultices and a treatment for urinary infections. Other suggestions include *surmenu* being juniper berries rather than Bottéro's cypress cones. She does state that this translation is very close as juniper is part of the cypress family, and in cooking it makes more sense to use juniper berries as opposed to cypress cones, especially when used in dishes such as game-based stews and curries. Lastly, she suggests that *ukus-hab* is citron rather than Bottéro's cucumber or colocynth. Her reasoning is that colocynth is a very powerful laxative and in large doses even poisonous, although its seed is a common ingredient used in modern food, and that cucumber will never stand up to all the other flavours it is used with. Therefore, citrus makes more sense as its description is very similar to that of colocynth. I tend to agree with many of her suggestions (Kelly 201:38-45).

Bottéro (1995:195-223) and Kelly (2012:38-45) do agree on the translations of the ingredients *kamunu* (cumin), *kisiburru* (coriander), *nunu* (mint), *salahu* (cress), *šamaškillu* (fennel) and *šambaliltu (*fenugreek) that are used in the recipes. Bottéro (1995:4) observes that the meat broths in *YOS 11 25* are called *me* in the recipes, which literally means water. However, in connection to the recipes, he is convinced that it most probably means bouillon, stew or even sauce, although most often the recipe is named after the animal and cut of meat that is used. Whenever the recipe refers to meat, he assumes that beef was used, although he adds that mutton was also an extremely popular ingredient. He points out that five of the recipes, however, do not derive their names from the meat that was used, but rather from the main condiment used in the dish, such as dodder or salt, or from the appearance of the dish, such as clear or red broth (see 4.3.1.6). One of the recipes refers to its geographical or cultural origin – the Elamite broth, and at the end of the recipe, the scribe wrote down the recipe's original name *Zukanda* (see 4.3.3.1) (Bottéro 1995: 4).

Various different aromatics (see 4.4.6) were added to the meat broths for flavour, amongst which onion, leeks and garlic seem to have been the favourites amongst the chefs, along with *šuḫutinnû,* of which we know little. Other ingredients such as *kisimmu, samidu* and *zurumu* were also used in the recipes, but they are difficult to identify. Bottéro (1985:42) believes

samidu to be related to either the onion family, mustard, or cumin, while the ingredients *zurumu* (see 4.3.3.2) and *Tuḫ'u* (see 4.3.1.3) are totally unknown (Bottéro 1985:42).

4.2.2 Bottéro's English translations of *YOS 11 25* as published in 1995 and 2004

4.2.2.1 1995 translations

The following recipes have been directly copied from Bottéro's 1995 publication, '*Textes culiniares Mesopotamians*':

> I (1) *Meat broth*. Meat is used. Prepare water; [add]fa[t,..],mashed leek and garlic and a corresponding amount of raw *[Suhut]innû*
> (*YOS 11 25*)
>
> II (3) *Assyrian style.* Meat is used. Prepare water; [a]d[d] fa[t,...],gar]lic and *zurumu* with ...blood, and [mashed] leek and ga[rlic. Carve and serve (Bottéro 1995:9).
> (*YOS 11 25*)
>
> III (5) *Red (broth).* Fresh meat is not used, but rather "salted" entrails or stomach. Prepare water; add f[at,...],salt [as desired, cake crumbs (?)], onion, *samidu*, cumin (?), coriander (?), and [mashed] leek and garlic. Soak the meat in the reserved blood, and [assemble all the ingredients] in a pot for cooking. (Bottéro 1995:9).
> (*YOS 11 25*)
>
> IV (9) *Clear (?) (broth).* Meat is used. Prepare water; [ad]d fat, mi[lk (?)], cypress (?) as desired, and ma[sh]ed leek and garlic. Ca[rve and serve] (Bottéro 1995:9).
> (*YOS 11 25*)
>
> V (11) *Venison broth.* Other meat is not used. Prepare water; [add] fat, some crushed dodder (?), salt as desired, cak[e crumbs (?), . . .], onion, *samidu*, cumin (?), (coriander (?)), leek, garlic, and *zurumu*, as well as [. . .]. Soak the meat in the reserved blood, and a[ssemb]le all the ingredients in a pot for cooking (Bottéro 1995:9).
> (*YOS 11 25*)
>
> VI (15) *Gazelle broth.* Other meat is not used. Prepare water; add fat, salt as required, onion, *samidu*, leek and gar[lic..] (Bottéro 1995:9).
> (*YOS 11 25*)
>
> VII (17) *Goat's kid broth*. Singe the head, legs and tail. Other meat is used. Prepare water; add fat, onion, *samidu*, le[e]k, and garlic bound with bl[ood],mashed *kisimmu*, and a corresponding amount of ra[w] su- hut[innû] (Bottéro 1995:9).
> (*YOS 11 25*)
>
> VIII (20) *Bitter (?) (broth).* Meat is used. Prepare water; add fat, m[il]k, cypress (?) [as desired (?)],onion, *samidu*, leek, garlic, and *zurumu*. Bring to a boil, [remove (?)]the co[oked] meat, and stir (into) the broth in the pot leeks, garlic, *suhutinnû* ,and mint, and then [more (?)] *zurumu* (Bottéro 1995:9).
> (*YOS 11 25*)

IX (23) *(Broth)with crumbs (?).* Meat is used (!). Prepare water; add fat, *suhutinnû*, coriander (?), salt as desired, leek, and garlic. Crush and sift spiced grain cakes, and sprinkle in the pot before removing it from the fire (Bottéro 1995:9).
(*YOS 11 25*)

X (26) *Zamzaganu (broth).* Scatter cut up pieces of meat in a cauldron and cook. Clean some *bâru* and add it. Before removing it from the fire, strain the cooking liquid and stir in mashed leek and garlic, and a corresponding amount of raw *suhutinnû* (Bottéro 1995:9).
(*YOS 11 25*)

XI (28) *Dodder (?) broth.* (Fresh) meat is not used, but rather "salted." Prepare water; add fat, some crushed dodder (?), onion, *samidu*, coriander (?), cumin (?), leek, and garlic. When the pot has barely sat on the stove, carve and serve (Bottéro 1995:9).
(*YOS 11 25*)

XII (31) *Lamb broth.* Other meat is used. Prepare water; add fat, some ground salt, cake crumbs (?), onion, *samidu*, milk, and mashed leek and garlic (Bottéro 1995:9).
(*YOS 11 25*)

XIII (37) *Ram (?) broth.* Other meat is not (!) used. Prepare water; add fat, […], some crushed dodder (?), salt as required, onion, *s[amidu*…, coriander (?), leek, and garlic. [...] on the stove. Remove from fire and mash in *kissimu*. Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

XIV(37) *Bidsud broth*. Other meat is not used. Pre[pare] water; [add fat,…..], diIl (?), some crushed dodder (?), onion, *samidu*, corian[der (?), ...,leek, and garlic] bound with blood. Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

XV (40) *Spleen broth*. Other fresh meat is not used. Prep[are water; add] fa[t,…]. Scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it, some crushed dodder (?), cake crumbs (?), salt as desired, onion, *samidu*, [. . .],bits of roasted *qaiâtu*-dough, *Suhutinnû*, mint, and leek and onion bound with blood. Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

XVI (45) *Elamite broth.* Meat is used (!). Prepare water; add fat, dill (?), *Suhutinnû*, coriander (?), leek and garlic bound with blood, a corresponding amount of *kisimmu*, and more garlic. The original name of this dish is *Zukanda* (Bottéro 1995:10).
(*YOS 11 25*)

XVll (47) *Amursânu-pigeon broth*. Split the pigeon in two. Other meat is (also) used. Prepare water; add fat, s[om]e gr[oun]d s[al]t, bread crumbs (?), onion, *samidu*, leek, and garlic, having already soaked these "herbs" in milk (Bottéro 1995:10).
(*YOS 11 25*)

XVlll (50) *Leg (of mutton) (?) broth*, with fresh meat from the leg (of mutton). Other meat is also used. Prepare water; add fat, salt as required, onion, *samidu*, leek, and garlic mashed with *kisimmu* (Bottéro 1995:10).
(*YOS 11 25*)

XIX (52) *Halazzu (in broth?).* Meat is used. Prepare water; add fat, some ground salt, onion, *samidu*, and leek and garlic mashed with *kisimmu*. Crush the corolla (?) of some of the cultivated plant called *halazzu*. Assemble all the ingredients in a pot for cooking (Bottéro 1995:10).
(*YOS 11 25*)

XX (55) *Salted broth.* Leg (of mutton) (?), but no other (meat) is used. Prepare water; add fat, dodder (?) as desired, salt as required, cypress (?), o[nio]n, *samidu*, cumin (?), coriander (?), and leek and garlic mashed with *kisimmu*. Carve and serve (Bottéro 1995:10). (*YOS 11 25*).

XXI (58) *Francolin (?) broth.* Fresh leg of mutton (?) is also used. Prepare water and add fat. Tr[im] the fran[col]ins (?). Add salt as required, cake crumbs (?), onion, *sami[du*, and le]ek and garlic [mashed with] milk. Having cut up the francolins (?), put them into the brot[h in the p]ot; but they should first be cooked in a caul[dron…], before returning them to the pot (for cooking? final simmering? presentation?). Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

XXll (62) *Tuḫ'u beets (?).* Leg (of mutton) (?) meat is used. Prepa[re] water; a[d]d fat. Peel (?) the vegetables. Add salt, be[er], oni [on], arugula (?), coriander (?), *samidu*, cumin (?), and the beets. Assemble (all the ingredients in the cooking vessel) and mash [le]ek and garlic. After cooking, sprinkle the resulting porridge with coriander (?) and [raw] *Suhutinnû* [. . .] (Bottéro 1995:10).
(*YOS 11 25*)

XXlll (65) *Kanasu*. Leg (of mutton) (?) meat is used. Prepare water; [add] fat, […], *samidu*, coriander (?), cumin (?) and *kanasu.* Assemble (all ingredients in the cooking vessel) and sprinkle with crushed garlic. (After cooking), blend into the pot *suhutinnû* and mint [...] (Bottéro 1995:10).
(*YOS 11 25*)

XXlV (68) *Hirsu*. Leg (of mutton) (?) meat and "salted" meat are used. Prepare water; add fat,
[. ..], onion, arugula (?), chopped best quality (?) coriander (?). [. ..] and *hirsu*. Assemble (all the ingredients in the cooking vessel). (After cooking), sp[rinkle le]ek and [chopped?] cori[ander (?). Carve and serve (Bottéro 1995:11).
(*YOS 11 25*)

XXV (71) *Garden-variety turnips*. Meat is not used. Prepare w[ater; add] f [at,...], onion, arugula (?), coriander (?), *samidu* and turnips. At the end (?) add coriander (?) and cak[e cru]mbs (?) b[ou]nd with [b]lood, as well as mashed leek and garlic [...](Bottéro 1995:11).
(*YOS 11 25*)

Total: 21 meat broths

4 vegetable broths

4.2.2.2 2004 translation

The following recipes have been directly copied from Bottéro's 2004 book '*The oldest cuisine in the world. Cooking in Mesopotamia*' (Bottéro 2004:26-29):

1 (1) Meat broth.
Meat is used. Prepare water; add fat, [ ] (2), mashed leek and garlic, and corresponding amount of raw *šuḫutinnû* (Bottéro 2004:26).
(*YOS 11 25*)

2 (3) Assyrian style.
Meat is used. Prepare water; add fat [ ], garlic, (4) and *zurumu* with…. blood (?), and (mashed) leek and garlic. It is ready to serve (Bottéro 2004:26).
(*YOS 11 25)*

3 (5) Red broth (?).
Fresh meat is not used. Prepare water, add fat, [ ], (6), salt [as desired cake crumbs [?]], intestines or stomach, (7) onion, *samidu*, cumin, coriander and mashed leek and garlic. (8) Soak the meat in the reserved blood and assemble all the ingredients in a pot (Bottéro 2004:26).
(*YOS 11 25*)

4 (9) Clear broth (?).
Meat is used. Prepare the water, add fat [ ], milk (?), (10) cypress (?) as desired, and mashed leek and garlic. It is ready to serve (Bottéro 2004:26).
(*YOS 11 25*)

5 (11) Venison broth.
Other meat is not used. Prepare water, add fat [ ], some crushed dodder, salt to taste; cake crumbs [?], (13) onion, *samidu*, cumin[?], coriander[?], leek, garlic and *zurumu* [ ]. (14) Soak the meat in the reserved blood, assemble all the ingredients in a pot (Bottéro 2004:27).
(*YOS 11 25*)

6 (15) Gazelle broth.
Other meat is not used. Prepare water; add fat, salt to taste; onion, *samidu*, leek and garlic (Bottéro 2004:27).
(*YOS 11 25*)

7 (17) (Goats) Kid broth.
Singe the head, legs and tail. Other meat is used. Prepare water, add fat [ ] (18), onion, *samidu*, leek and garlic, bound with (?) blood [ ] (19), mashed (?) *kisimmu*. Then a corresponding amount of raw *šuḫutinnû* (Bottéro 1995:9).
(*YOS 11 25*)

8 (20) Bitter broth.
Meat is used. Prepare water, add fat [ ], milk, cypress, [ ] (21) onion, *samidu*, leek, garlic and *zurumu*. Bring to a boil, remove the cooked meat, (22) stir leeks, garlic, *šuḫutinnû*, and mint into the broth in the pot; then add *zurumu* (Bottéro 2004:27).
(*YOS 11 25*)

9 (23) Broth with crumbs.
Meat is used (there is a probable an error by die copier here, who writes "*meat is not used"*). Prepare water; add fat, *šuḫutinnû*, coriander, (24) salt to taste, leek and garlic. Crush and sift spiced grain cakes, (25) sprinkle into the pot before removing it from the fire (Bottéro 2004:27).
(*YOS 11 25*)

10 (26) *Zamzaganu*.
Scatter cut-up pieces of meat in a kettle and cook. Clean some *bâru* (?) and add to the kettle. (27) Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (Bottéro 2004:27).
(*YOS 11 25*)

11 (28) Dodder broth.
Not fresh meat but rather "salted' meat is used. Prepare water; add fat, (29) some crushed dodder, onion, *samidu*, coriander, cumin, leek and garlic. (30) With the pot resting on the heat, the broth is ready to serve (Bottéro 2004:27).
(*YOS 11 25*)

12 (31) Lamb broth.
Other meat is used. Prepare water; add fat, salt, to taste; (31) cake crumbs [?], onion, *samidu*. Also add some milk, and some mashed [?] (Bottéro 2004:27).
(*YOS 11 25*)

13 (33) Ram broth (?).
Other meat is not used. Prepare water; add fat; some [ ] (34); dodder as desired; salt to taste, onion, *samidu*, (35) coriander, leek and garlic. Put the pot on the stove (35) and after removing it, mash in *kisimmu*. It is ready to serve (Bottéro 2004:27).
(*YOS 11 25*)

14 (37) *Bidšud* [?] broth.
Other meat is not used. Prepare water; add fat, [ ] (38), dill, crushed dodder, onion, *samidu*, cumin, [ ], leek and garlic, (39) bound with blood. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

15 (40) Spleen broth.
Other fresh meat is not used. Prepare water, add fat, [ ] (41), scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it; (42) Some crushed dodder; cake crumbs (?), salt to taste, onion, *samidu*. [ ] (43), Bits of roasted *qaiiâtu*-dough, *šuḫutinnû,* high quality mint, mashed leek and onions bound with blood. (44) It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

16 (45) Elamite broth.
Meat is used. Prepare water; add fat, dill, *šuḫutinnû*, (46) coriander, leek and garlic bound (?) with blood, a corresponding amount of *kisimmu*, and more garlic. The (original) name of this dish is *Zukanda* (Bottéro 2004:28).
(*YOS 11 25*)

17 (47) *Amursânu*-pigeon broth.
Split the pigeon in two; (other) meat is also used. Prepare water; add fat; (48) salt, to taste; breadcrumbs, (?) onion, *samidu*, leek and garlic. (49) (before using), soak these herbs in milk. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

18 (50) Leg of mutton broth (?).
With fresh meat from the leg of mutton. Other meat is also used. Prepare water; add fat, (51) salt, to taste; onion, *samidu*, leek and garlic, mashed with *kisimmu* (Bottéro 2004:28).
(*YOS 11 25*)

19 (52) *Ḫalazzu* in broth.
Meat is used. Prepare water; add fat, salt, to taste; onion, *samidu*, (53) leek, and garlic, mashed with *kisimmu*. Crush the corolla (?) of some of the cultivated plant called *Ḫalazzu*, (54) Assemble all the ingredients in a pot (Bottéro 2004:28).
(*YOS 11 25*)

20 (55) Salted broth.
Leg of mutton (?), but no (other) meat is used. Prepare water, add fat, (56) dodder as desired; salt to taste, cypress, onion, *samidu*, cumin, coriander, (57) leek and garlic, mashed with *kisimmu*. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

21 (58) Francolin broth.
Fresh leg of mutton is also used (?).Prepare water; add fat. Trim the francolins. (59) add salt, to taste; cake crumbs, (?) onion, *samidu*, leek and garlic mashed with milk (?). (60) Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. [ ] (61). Then return them to the pot. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

22 (62) *Tuḫ'u* beet broth.
Lamb meat is used [?]. Prepare water; add fat. Peel the vegetables. Add salt, beer, onion, (63) arugula, coriander, *samidu*, cumin, and the beets. Assemble all the ingredients in the cooking vessel and (64) add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (Bottéro 2004:28).
(*YOS 11 25*)

23 (65) *Kanasu* broth.
Leg of mutton(?) is used. Prepare the water, add fat, (66) *samidu*, coriander, cumin and *kanašû*. Assemble all the ingredients in the cooking vessel, and sprinkle with crushed garlic. (67) Then blend into the pot *šuḫutinnû* and mint (Bottéro 2004:29).
(*YOS 11 25*)

24 (68) *Ḫiršu* broth.
Leg of mutton[?] and "salted" meat are used. Prepare the water, add fat, [ ] (69), onion, arugula, the best chopped coriander, and *ḫiršu*. [ ] (70). Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top. It is ready to serve (Bottéro 2004:29).
(*YOS 11 25*)

25 (71) Garden turnips broth.
Meat is not used. Prepare water; add fat, [ ] (72), onion, arugula, coriander and cake crumbs[?], bound with blood; (73) add mashed leeks and garlic [ ] (Bottéro 2004:29).
(*YOS 11 25*)

(74) 21 meat broths
(75) 4 vegetable broths

4.2.3 Differences between the two translations

After critically investigating both of Bottéro's translations of the Yale culinary tablets, particularly *YOS 11 25*, I realised that there are some inconsistencies. There are differences in the cooking terms used in some of the recipes, utensils used, as well as ingredients mentioned between the book *Mesopotamian Culinary Texts* published in 1995 and the 2004 publication, *The oldest cuisine in the world. Cooking in Mesopotamia.* The instruction '*carve and serve'* (1995) has been replaced with '*ready to serve'* (2004), as have '*salt to taste'* (1995) with '*salt as desired'* (2004) and '*to taste'* (2004), and '*cauldron'* (1995) with '*kettle'* (2004) (italics

my emphasis). (For a more in-depth analysis and description of cooking instructions, see 4.4.) For now, I am only focusing on the inconsistencies between the two translations. I am not yet discussing the recipes.

4.2.3.1 Carve and serve/ready to serve – different cooking instructions

It becomes very confusing when one reads the differences in instructions between the two translations, because the instructions '*it is ready to serve*' and '*carve and serve*' (my emphasis, see below) are two very different cooking instructions – especially in recipes which have big pieces of meat such as leg of mutton or whole birds like francolins. These items need to be carved first before serving, so changing the instructions to simply 'ready to serve' changes the presentation of the dish as well as the dishing up method. Refer to the following recipes:

> 2 (3) Assyrian style.
> Meat is used. Prepare water; add fat [ ], garlic, (4) and *zurumu* with…. blood (?), and (mashed) leek and garlic. *It is ready to serve* (Bottéro 2004:26).
> *(YOS 11 25)*

> II (3) *Assyrian style*. Meat is used. Prepare water; [a]d[d] fa[t,...],gar]lic and *zurumu* with ...blood, and [mashed] leek and ga[rlic. *Carve and serve* (Bottéro 1995:9).
> (*YOS 11 25*)

> 4 (9) Clear broth (?).
> Meat is used. Prepare the water, add fat [ ], milk (?), (10) cypress (?) as desired, and mashed leek and garlic. *It is ready to serve* (Bottéro 2004:26).
> (*YOS 11 25*)

> IV (9) *Clear (?) (broth).* Meat is used. Prepare water; [ad]d fat, mi[lk (?)], cypress (?) as desired, and ma[sh]ed leek and garlic. *Ca[rve and serve*] (Bottéro 1995:9).
> (*YOS 11 25*)

> 11 (28) Dodder broth.
> Not fresh meat but rather "salted' meat is used. Prepare water; add fat, (29) some crushed dodder, onion, *samidu*, coriander, cumin, leek and garlic. (30) With the pot resting on the heat, the broth is *ready to serve* (Bottéro 2004:27).
> (*YOS 11 25*)

> XI (28) *Dodder (?) broth.* (Fresh) meat is not used, but rather "salted." Prepare water; add fat, some crushed dodder (?), onion, *samidu*, coriander (?), cumin (?), leek, and garlic. When the pot has barely sat on the stove, *carve and serve* (Bottéro 1995:9).
> (*YOS 11 25*)

> 13 (33) Ram broth (?).
> Other meat is not used. Prepare water; add fat; some [ ] (34); dodder as desired; salt to taste, onion, *samidu*, (35) coriander, leek and garlic. Put the pot on the stove (35) and after removing it, mash in *kisimmu*. *It is ready to serve* (Bottéro 2004:27).

(*YOS 11 25*)

XIII (37) *Ram (?) broth.* Other meat is not (!) used. Prepare water; add fat, […], some crushed dodder (?), salt as required, onion, *s[amidu*…, coriander (?), leek, and garlic. [...] on the stove. Remove from fire and mash in *kissimu*. *Carve and serve* (Bottéro 1995:10).
(*YOS 11 25*)

14 (37) *Bidšud* [?] broth.
Other meat is not used. Prepare water; add fat, [ ] (38), dill, crushed dodder, onion, *samidu*, cumin, [ ], leek and garlic, (39) bound with blood. *It is ready to serve* (Bottéro 2004:28).
(*YOS 11 25*)

XIV(37) *Bidsud broth*. Other meat is not used. Pre[pare] water; [add fat,…..], diIl (?), some crushed dodder (?), onion, *samidu*, corian[der (?), ...,leek, and garlic] bound with blood. *Carve and serve* (Bottéro 1995:10).
(*YOS 11 25*)

15 (40) Spleen broth.
Other fresh meat is not used. Prepare water, add fat, [ ] (41), scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it; (42) Some crushed dodder; cake crumbs (?), salt to taste, onion, *samidu*. [ ] (43), Bits of roasted *qaiiâtu*-dough, *šuḫutinnû,* high quality mint, mashed leek and onions bound with blood. (44) *It is ready to serve* (Bottéro 2004:28).
(*YOS 11 25*)

XV (40) *Spleen broth.* Other fresh meat is not used. Prep[are water; add] fa[t,…]. Scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it, some crushed dodder (?), cake crumbs (?), salt as desired, onion, *samidu*, [. . .],bits of roasted *qaiâtu*-dough, *Suhutinnû*, mint, and leek and onion bound with blood. *Carve and serve* (Bottéro 1995:10).
(*YOS 11 25*)

20 (55) Salted broth.
Leg of mutton (?), but no (other) meat is used. Prepare water, add fat, (56) dodder as desired; salt to taste, cypress, onion, *samidu*, cumin, coriander, (57) leek and garlic, mashed with *kisimmu*. *It is ready to serve* (Bottéro 2004:28).
(*YOS 11 25*)

XX (55) *Salted broth.* Leg (of mutton) (?), but no other (meat) is used. Prepare water; add fat, dodder (?) as desired, salt as required, cypress (?), o[nio]n, *samidu*, cumin (?), coriander (?), and leek and garlic mashed with *kisimmu*. *Carve and serve* (Bottéro 1995:10).
(*YOS 11 25*)

21 (58) Francolin broth.
Fresh leg of mutton is also used (?).Prepare water; add fat. Trim the francolins. (59) add salt, to taste; cake crumbs, (?) onion, *samidu*, leek and garlic mashed with milk (?). (60) Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. [ ] (61). Then return them to the pot. *It is ready to serve* (Bottéro 2004:28).
(*YOS 11 25*)

XXI (58) *Francolin (?) broth.* Fresh leg of mutton (?) is also used. Prepare water and add fat. Tr[im] the fran[col]ins (?). Add salt as required, cake crumbs (?), onion, *sami[du*, and le]ek and garlic [mashed with] milk. Having cut up the francolins (?), put them into the brot[h in the p]ot; but they should

first be cooked in a caul[dron…], before returning them to the pot (for cooking? final simmering? presentation?). *Carve and serve* (Bottéro 1995:10).
(*YOS 11 25*)

24 (68) *Ḫiršu* broth.
Leg of mutton[?] and "salted" meat are used. Prepare the water, add fat, [ ] (69), onion, arugula, the best chopped coriander, and *ḫiršu*. [ ] (70). Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top. *It is ready to serve* (Bottéro 2004:29).
(*YOS 11 25*)

XXlV (68) *Ḫiršu*. Leg (of mutton) (?) meat and "salted" meat are used. Prepare water; add fat, [...], onion, arugula (?), chopped best quality (?) coriander (?). [. ..] and *ḫiršu*. Assemble (all the ingredients in the cooking vessel). (After cooking), sp[rinkle le]ek and [chopped?] cori[ander] (?). *Carve and serve* (Bottéro 1995:11).
(*YOS 11 25*)

4.2.3.2 'Salt as desired'/'Salt to taste'/'to taste' and 'as desired'

The instructions on some of the recipes are very confusing because some recipes are translated as '*salt to taste'* (2004), and in the 1995 version they are translated as '*as desired'* or *'as required'* (my emphasis). Then, in the same recipe (2004), the instructions state that the '*ingredients*' (my emphasis) should be added '*to taste'* (my emphasis). The confusion comes in when trying to cook this recipe and you are not sure (especially if you look at both recipes) what exactly is '*to taste*' (my emphasis, see below). Is it the salt or the ingredients, or both?

6 (15) Gazelle broth.
Other meat is not used. Prepare water; add fat, *salt to taste*; onion, *samidu*, leek and garlic (Bottéro 2004:27).
(*YOS 11 25*)

VI (15) *Gazelle broth.* Other meat is not used. Prepare water; add fat, *salt as required*, onion, *samidu*, leek and gar[lic..] (Bottéro 1995:9).
(*YOS 11 25*)

9 (23) Broth with crumbs.
Meat is used (there is a probable an error by die copier here, who writes "*meat is not used"* Prepare water; add fat, *šuḫutinnû*, coriander, (24) *salt to taste*, leek and garlic. Crush and sift spiced grain cakes, (25) sprinkle into the pot before removing it from the fire (Bottéro 2004:27).
(*YOS 11 25*)

IX (23) *(Broth) with crumbs (?).* Meat is used (!). Prepare water; add fat, *suhutinnû*, coriander (?), *salt as desired*, leek, and garlic. Crush and sift spiced grain cakes, and sprinkle in the pot before removing it from the fire (Bottéro 1995:9).
(*YOS 11 25*)

15 (40) Spleen broth.
Other fresh meat is not used. Prepare water, add fat, [ ] (41), scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it; (42) Some crushed dodder; cake crumbs (?), *salt to taste*, onion, *samidu*. [ ] (43),

Bits of roasted *qaiiâtu*-dough, *šuḫutinnû,* high quality mint, mashed leek and onions bound with blood. (44) It is ready to serve (Bottéro 2004:28)
(*YOS 11 25*)

XV (40) *Spleen broth.* Other fresh meat is not used. Prep[are water; add] fa[t,…]. Scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it, some crushed dodder (?), cake crumbs (?), *salt as desired*, onion, *samidu*, [. . .], bits of roasted *qaiâtu*-dough, *Suhutinnû*, mint, and leek and onion bound with blood. Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

13 (33) Ram broth (?).
Other meat is not used. Prepare water; add fat; some [ ] (34); dodder as desired; *salt to taste*, onion, *samidu*, (35) coriander, leek and garlic. Put the pot on the stove (35) and after removing it, mash in *kisimmu*. It is ready to serve (Bottéro 2004:27).
(*YOS 11 25*)

XIII (37) *Ram (?) broth.* Other meat is not (!) used. Prepare water; add fat, […], some crushed dodder (?), *salt as required*, onion, *s[amidu*…, coriander (?), leek, and garlic. [...] on the stove. Remove from fire and mash in *kissimu.* Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

21 (58) Francolin broth.
Fresh leg of mutton is also used (?). Prepare water; add fat. Trim the francolins. (59) add salt, *to taste;* cake crumbs, (?) onion, *samidu*, leek and garlic mashed with milk (?). (60) Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. [ ] (61). Then return them to the pot. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

XXI (58) *Francolin (?) broth.* Fresh leg of mutton (?) is also used. Prepare water and add fat. Tr[im] the fran[col]ins (?). Add *salt as required*, cake crumbs (?), onion, *sami[du*, and le]ek and garlic [mashed with] milk. Having cut up the francolins (?), put them into the brot[h in the p]ot; but they should first be cooked in a caul[dron…], before returning them to the pot (for cooking? final simmering? presentation?). Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

In the following examples, the ingredients are added ‘to taste’ in the 2004 version, but in the 1995 version this sentence has been omitted completely:

12 (31) Lamb broth.
Other meat is used. Prepare water; add fat, salt, *to taste*; (31) cake crumbs [?], onion, *samidu*. Also add some milk, and some mashed [?] (Bottéro 2004:27).
(*YOS 11 25*)

XII (31) *Lamb broth.* Other meat is used. Prepare water; add fat, some ground salt, cake crumbs (?), onion, *samidu*, milk, and mashed leek and garlic (Bottéro 1995:9).
(*YOS 11 25*)

17 (47) *Amursânu*-pigeon broth.
Split the pigeon in two; (other) meat is also used. Prepare water; add fat; (48) salt, *to taste*; breadcrumbs, (?) onion, *samidu*, leek and garlic. (49) (before using), soak these herbs in milk. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

XVll (47) *Amursânu-pigeon broth*. Split the pigeon in two. Other meat is (also) used. Prepare water; add fat, s[om]e gr[oun]d s[al]t, bread crumbs (?), onion, *samidu*, leek, and garlic, having already soaked these "herbs" in milk (Bottéro 1995:10).
(*YOS 11 25*)

18 (50) Leg of mutton broth (?).
With fresh meat from the leg of mutton. Other meat is also used. Prepare water; add fat, (51) salt, *to taste;* onion, *samidu*, leek and garlic, mashed with *kisimmu* (Bottéro 2004:28).
(*YOS 11 25*)

XVlll (50) *Leg (of mutton) (?) broth*, with fresh meat from the leg (of mutton) (?). Other meat is also used. Prepare water; add fat, salt as required, onion, *samidu*, leek, and garlic mashed with *kisimmu* (Bottéro 1995:10).
(*YOS 11 25*)

4.2.3.3 Broth with crumbs – inconsistency in the translations

There is a big difference between the 1995 and 2004 translations of the recipe 'Broth with crumbs' (9 [23-25]). Bottéro (2004:27) states in the recipe, and I quote: 'Meat is used (there is a probable an error by die copier here, who writes "*meat is not used")'* (Bottéro's italics) (2004:27). I do not agree with adding an ingredient when the recipe clearly originally states that no meat is used. I also do not understand why this very important piece of information is left out in the 1995 translation.

9 (23) Broth with crumbs.
Meat is used (there is a probable an error by die copier here, who writes "*meat is not used").* Prepare water; add fat, *šuḫutinnû*, coriander, (24) salt to taste, leek and garlic. Crush and sift spiced grain cakes, (25) sprinkle into the pot before removing it from the fire (Bottéro 2004:27).
(*YOS 11 25*)

IX (23) *(Broth) with crumbs* (?). Meat is used (!). Prepare water; add fat, *suhutinnû*, coriander (?), salt as desired, leek, and garlic. Crush and sift spiced grain cakes, and sprinkle in the pot before removing it from the fire (Bottéro 1995:9).
(*YOS 11 25*)

4.2.3.4 Mashed leek and garlic and the incomplete ingredient list of 'Lamb broth'

In the different translations of this recipe, there are once again differences that come to light. The 1995 recipes states *mashed leek and garlic*, while the 2004 recipe only say *mashed* [?], without any explanation offered by Bottéro.

12 (31) Lamb broth.
Other meat is used. Prepare water; add fat, salt, to taste; (31) cake crumbs [?], onion, *samidu*. Also add some milk, and some *mashed* [?] (Bottéro 2004:27).
(*YOS 11 25*)

XII (31) *Lamb broth.* Other meat is used. Prepare water; add fat, some ground salt, cake crumbs (?), onion, *samidu*, milk, and *mashed leek and garlic*. (Bottéro 1995:9)
(*YOS 11 25*)

4.2.3.5 Inconsistencies in '*Garden turnips' and 'Amarusanu-pigeon broth'*

The recipes 'Garden turnips broth' (2004) and 'Garden-variety turnips' (1995) also differ from each other, with the 2004 recipe not calling for *samidu* or the double use of coriander. It also seems that in the 2004 translation, the turnips were left out. Furthermore, the cooking instructions are different. The lines '*at the end add coriander and cake crumbs bound with blood'* as well as *'mashed leek and garlic*' (my emphasis, see below) were omitted in the 2004 version.

25 (71) Garden turnips broth.
Meat is not used. Prepare water; add fat, [ ] (72), onion, arugula, coriander and cake crumbs[?], bound with blood; (73) add *mashed leeks and garlic* [ ] (Bottéro 2004:29).
(YOS 11 25)

XXV (71) *Garden-variety turnips.* Meat is not used. Prepare w[ater; add] f [at,...], onion, arugula (?), coriander (?), *samidu* and turnips. *At the end (?) add coriander (?) and cak[e cru]mbs (?) b[ou]nd with [b]lood,as well as mashed leek and garlic* [...] (Bottéro 1995:11).
(*YOS 11 25*)

The '*Amursânu*-pigeon broth' recipe of 1995 also appears incomplete because in the 2004 translation, the line '*It is ready to serve*' appears, but in the 1995 translation this was omitted:

17 (47) *Amursânu*-pigeon broth.
Split the pigeon in two; (other) meat is also used. Prepare water; add fat; (48) salt, to taste; breadcrumbs, (?) onion, *samidu*, leek and garlic. (49) (before using), soak these herbs in milk. *It is ready to serve* (Bottéro 2004:28).
(*YOS 11 25*)

XVll (47) *Amursânu-pigeon broth.* Split the pigeon in two. Other meat is (also) used. Prepare water; add fat, s[om]e gr[oun]d s[al]t, bread crumbs (?), onion, *samidu*, leek, and garlic, having already soaked these "herbs" in milk (Bottéro 1995:10).
(*YOS 11 25*)

Here the cooking instructions differ. In the 2004 translation, all the ingredients should be assembled in the pot, with the leeks and coriander '*on top*' (my emphasis), while in the 1995 translation, the leeks and coriander should be sprinkled '*after cooking'* (my emphasis):

24 (68) *Ḫiršu* broth.
Leg of mutton[?] and "salted" meat are used. Prepare the water, add fat, [ ] (69), onion, arugula, the best chopped coriander, and *ḫiršu*. [ ] (70). Assemble all the ingredients in the pot, and sprinkle leeks and coriander *on top*. It is ready to serve (Bottéro 2004:29).

(*YOS 11 25*)

XXlV (68) *Hirsu*. Leg (of mutton) (?) meat and "salted" meat are used. Prepare water; add fat, [. ..], onion, arugula (?), chopped best quality (?) coriander (?). [. ..] and *hirsu*. Assemble (all the ingredients in the cooking vessel). (*After cooking*), sp[rinkle le]ek and [chopped?] cori[ander (?). Carve and serve (Bottéro 1995:11).
(*YOS 11 25*)

4.2.3.6 Different cooking pots used

The following recipes are unclear due to the 2004 translation calling for the recipe to be cooked in a '*kettle*' and '*pot*'(my emphasis), while the 1995 translation specifies a '*cauldron*' and '*cooking vessel*' be used (my emphasis).

21 (58) Francolin broth.
Fresh leg of mutton is also used (?). Prepare water; add fat. Trim the francolins. (59) add salt, to taste; cake crumbs, (?) onion, *samidu*, leek and garlic mashed with milk (?). (60) Once the francolins have been cut up, put them into the broth in the *pot*, but they should first be cooked in a *kettle*. [ ] (61). Then return them to the *pot*. It is ready to serve (Bottéro 2004:28).
(*YOS 11 25*)

XXI (58) *Francolin (?) broth.* Fresh leg of mutton (?) is also used. Prepare water and add fat. Tr[im] the fran[col]ins (?). Add salt as required, cake crumbs (?), onion, *sami[du*, and le]ek and garlic [mashed with] milk. Having cut up the francolins (?), put them into the brot[h in the *p]ot*; but they should first be cooked in a *caul[dron…],* before returning them to the *pot* (for cooking? final simmering? presentation?). Carve and serve (Bottéro 1995:10).
(*YOS 11 25*)

24 (68) *Ḫiršu* broth.
Leg of mutton[?] and "salted" meat are used. Prepare the water, add fat, [ ] (69), onion, arugula, the best chopped coriander, and *ḫiršu*. [ ] (70). Assemble all the ingredients in the *pot*, and sprinkle leeks and coriander on top. It is ready to serve (Bottéro 2004:29).
(*YOS 11 25*)

XXlV (68) *Hirsu*. Leg (of mutton) (?) meat and "salted" meat are used. Prepare water; add fat,
[. ..], onion, arugula (?), chopped best quality (?) coriander (?). [. ..] and *hirsu*. Assemble (all the ingredients in the *cooking vessel*). (After cooking), sp[rinkle le]ek and [chopped?] cori[ander (?). Carve and serve (Bottéro 1995:11).
(*YOS 11 25*)

4.2.3.7 The cooking equipment has been changed

In the different translations of the recipe 'Dodder broth', there is a big difference between the pot resting on the heat versus being sat on the stove. These cooking instructions are important because there were many different cooking hearths, ovens and stoves in Mesopotamia (see 3.3), and changing the cooking equipment from stove to resting on the heat implies, in theory, two different methods of cooking. The pot was either used to cook directly on the fire (resting

on the heat) or to cook above the fire (sitting on a stove). What is also perplexing is that in the 2004 translation of the recipe, the pot is '*resting on the heat*' (my emphasis, see below), while in the 1995 translation it calls for the pot to '*barely sit on the stove'* (my emphasis, see below). These are two different cooking techniques because the one (2004) means a long period on the heat, and in the other (1995) it states that the food needs to be cooked quickly or that it does not need a long cooking period, which is evident in the fact that in this recipe there is no fresh meat used, only salted meat. Fresh meat such as mutton and lamb requires long cooking periods, as will be discussed in 3.5.3.2.

> 11 (28) Dodder broth.
> Not fresh meat but rather "salted' meat is used. Prepare water; add fat, (29) some crushed dodder, onion, *samidu*, coriander, cumin, leek and garlic. (30) With the *pot resting on the heat*, the broth is ready to serve (Bottéro 2004:27).
> (*YOS 11 25*)

> XI (28) *Dodder (?) broth.* (Fresh) meat is not used, but rather "salted." Prepare water; add fat, some crushed dodder (?), onion, *samidu*, coriander (?), cumin (?), leek, and garlic. When the pot has *barely sat on the stove*, carve and serve (Bottéro 1995:9).
> (*YOS 11 25*)

4.2.4 Possible solutions and suggestions for the ingredients found in *YOS 11 25*

When analysing the recipes in *YOS 11 25,* especially from a chef's perspective, it becomes clear that there are more to the recipes than just a list of ingredients. There are various cooking instructions, cooking equipment and various instructions with regard to the amount of ingredients to use present in those recipes. These instructions are cooking techniques and learned knowledge passed over from one chef to the next or obtained in chefs training. When a chef learns how to cook on a professional level, certain techniques and cooking theory are learned, and once one has mastered these techniques, one can cook anything. Certain techniques that have been used since Mesopotamian times (as we will be discussing in depth later) are still used in modern times. As discussed in Chapter Three, the different cooking pots (3.5.3) also played an important role in the cooking of these recipes.

All these recipes found in *YOS 11 25* were cooked on open fires and stoves, hearts and portable ovens, and unless stated otherwise, were cooked in low-fired ceramic cooking pots (see 3.5.3.2). From my experimental cooking (see 5.3), I have realised that many of these recipes should be cooked over a slow heat in a ceramic pot and that the pot carries on cooking long after it is taken off the heat. The recipes in *YOS 11 25* were likely written down because someone, perhaps the palace or temple chef, deemed them important enough to write down

the ingredients in order to remember the unique flavour combinations. When an advanced technique was needed or an important step was to be used, this was also added to the recipe. As we will see, some cooking steps that were obvious to the ancient chef have been left out, and assumptions can only be made based on our own modern cooking experience. That being said, many ancient techniques are still used in exactly the same way in modern times, so it is possible to assume that similar cooking techniques were also used.

4.2.4.1 Difference between stew, soup and broth

I am inclined to think that many of the recipes found in *YOS 11 25* are not broths or soups, as Bottéro (1995:9) suggests, but rather stews – especially where the recipes indicate that the meat must be cooked in a pot. Stewing is defined in the *Larousse Gastronomique* (Robuchon 2009:1019) as follows:

> The term for long slow cooking in liquid. This may be carried out on the stove or the oven, but in both cases the temperature should be kept low enough to prevent the liquid from doing anything more than simmering, a gentle bubble is all that is required. The ingredients are covered with liquid and a generous proportion of flavourings such as onions and root vegetables, are added with aromatics. This is a method for tenderising tough meats and firm ingredients, such as pulses and root vegetables. The cooking time may range from 1 hour to 4-5 hours, according to the type of food used. Stews should always be rich, an intensity resulting from mingling flavours, extraction of juices and breaking down of connective tissue and gelatinous substances. If the extended cooking time results in significant evaporation even at controlled temperature, the heat may be increased [or pan covered] towards the end to encourage reduction. Stews also have a good colour, from the sediment forming around the rim of the pot as well from colourful root vegetables.

The following definition of soup is provided in the *Larousse Gastronomique* (Robuchon 2009:995):

> Soup is a savoury liquid food served at the beginning of a meal or as a light meal in itself. Soups can be classified into two groups, clear soups or thick soups. Clear soups can further be subdivided into *buillon* and *consommé* (clarified clear soup). Thick soups is subdivided according to the thickening agent that were used to thicken the soup; puree soup (puree vegetables), cream soup, velouté- soups (thickened with egg whites), and bisques soup (shellfish and cream).

Broth is defined in the *Larousse Gastronomique* (Robuchon 2009:123) as follows:

> Broth or *bouillon* is the plain unclarified broth or stock obtained from boiling meat and vegetables. It is used instead of water to cook certain dishes and to enrich soups and sauces.

Classifying the recipes only as broths is problematic, especially because the rest of this recipe above as well as cooking equipment used were not taken in consideration when the recipes were analysed and classified. It appears as though the recipes were all simply classified under one generic term, and this creates problems – especially if one wants to cook these recipes. Where the recipes call for ingredients such as ram, mutton, intestines, and whole pieces of meat such as leg of lamb or animal head and legs to be cooked in a cooking pot, I have termed these recipes stews because of the time needed for the ingredients to be cooked. Because of the plentiful experimental cooking I have done (see Chapter Five), I have concluded that the amount of water and fat were related to the cooking pot and the amount, size and type of meat that was used, as well as how long it took to cook (see 4.2.4.5 for full discussion on the phrase 'prepare the water and add the fat').

4.2.4.2 Cooking equipment mentioned in the recipes

Although it was not clear from the start when I first looked at the recipes, as my research into the subject deepened I realised that there are indeed other cooking instructions as well as different cooking pots used in the recipes. There are various recipes in *YOS 11 25* that call for the meat to be cooked in different cooking pots (see 3.5.3), thus the cooking techniques and vessels are different. Recipe no 21, 'Francolin stew' found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5 and below) is one such recipe. This is quite an advanced recipe and one of the longest as it requires the chef to cook the lamb in a pottery cooking pot while at the same time cooking the Francolin (bird) in a kettle (meaning high heat and frying) until it is cooked and only then adding it to the lamb mixture before serving. In Bottéro's (1995:10) original translation, the recipe ends with '*carve and serve'*. It is interesting to note that Bottéro has changed this to 'ready to serve' because the recipe calls for a fresh leg of lamb as well as francolin birds to be used. It makes more sense to carve and serve this dish as there is much meat to serve up, which is usually done by carving the meat into individual servings (my emphasis, see below).

> 21 (58-61) Francolin stew:
> Fresh leg of mutton is also used [?]. Prepare the water and add the fat. Trim the francolins. Add salt, to taste*;* breadcrumbs, [?] onion, *samidu* (Persian shallot), leek and garlic mashed with milk [?]. Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. then return them to the pot. *Carve and serve*.
> (*YOS 11 25*)

The recipe '*Zamzaganu'* found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) also calls for the meat to be cooked in a kettle rather than a pot (see 3.5.3.1). Cooking meat in a kettle means that the meat is seared over a high heat until it is cooked and has a nice brown colour. It is interesting and important to note that this is the only recipe that does not call for water and fat (see 4.4.5). This shows a clear distinction between a cooking pot and a kettle (see 3.5.3.2). One would automatically assume that the kettle is a cauldron (defined as a metal pot with a lid and a handle). However, I have my reservations. I would suggest that when the recipe refers to a *kettle* (my emphasis, see below), it should rather be understood as a high-fired cooking pot (see 3.5.3.1).

> 10 (26- 27) *Zamzaganu*:
> Scatter cut-up pieces of meat in *a kettle* and cook. Clean some *bâru* [?] and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

Bottéro (2004:52) mentions that *ruqqu* (kettle) appears twice in the recipes, and he suggests this kettle to be a pot made from metal (copper and bronze) because the recipes call for the ingredients to be fried over a high heat. Yet, as he himself states, we have no data to assess this pot's shape or dimensions. He adds that it was not necessarily the shape that was important, but rather the material because a higher heat was needed to fry the ingredients – hence his suggestion of metal (Bottéro 2004:52). I do not agree with the suggestion of the pot being metal as I, like Bottéro, still need to find data to support this. It must also be noted that there have been a few recent academic papers by Smogorzewska (2014:497) and Lis (2015:104) on the different fired ceramic cooking pots that have been excavated all over the ancient Near East, and they never mention anything about metal cooking pots (see 3.5).

4.2.4.3 Assemble all the ingredients in the pot

There are five recipes on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) in which the instruction '*assemble all the ingredients in the pot'* (my emphasis, see below) is present. This would indicate that unlike most of the recipes which have various steps in the cooking process, these ingredients were all cooked together at once. This is related to the pottery cooking pot. I have learned from my experimental cooking (see 5.3) that when cooking in a low-fired ceramic cooking pot, it does not require much stirring because of the way the pot is designed. Once the pot has heated up significantly and the meat and liquid are near boiling,

the pot can be taken off the fire and it will continue cooking because of its excellent heat-retaining abilities (see 3.5.3.1). The pot heats up from the bottom up, and this is why the water and fat mixture and the meat are at the bottom (or first in the list), followed by the vegetables (see 5.3.2.1). All the food is cooked at different stages as the pot heats up. The most tender herbs and vegetables are added at the end as a garnish. Because these recipes were cooked in a pot, it indicates a long cooking period, and therefore it is better to classify these as *stews* rather than broths (my emphasis, see below).

> 3 (5-7) Red stew:
> Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and mashed leek and garlic. Soak the meat in the reserved blood and *assemble all the ingredients in a pot.*
> (*YOS 11 25*)
>
> 5 (11-14) Venison stew:
> Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin [?], coriander [?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood**,** *assemble all the ingredients in a pot*.
> (*YOS 11 25*)
>
> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. *Assemble all the ingredients in the cooking vessel* and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (alliaceous plant).
> (*YOS 11 25*)
>
> 23 (65-67) *Kanasu* stew*:*
> Leg of mutton [?] is used. Prepare the water and add the fat, *samidu* (Persian shallot), coriander, cumin and *kanašû* (unknown). *Assemble all the ingredients in the cooking vessel*, and sprinkle with crushed garlic. Then blend into the pot *šuḫutinnû* (spring leek) and mint.
> (*YOS 11 25*)
>
> 24 (68-70) *Ḫiršu* stew:
> Leg of mutton [?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). *Assemble all the ingredients in the pot,* and sprinkle leeks and coriander on top. (garnish). It is ready to serve.
> (*YOS 11 25*)

4.2.4.4 Cooking on the stove

There are two direct mentions of a stove in the recipes in *YOS 11 25*, no 11 and 13, in the lines *'put the pot on the stove'* and '*barely sat on the stove*' (my emphasis, see below) (see 3.3.1.4). I have built one of these portable stoves (see 3.3.1.4 and 5.2.2.3), and they are

incredibly versatile. As already discussed, these the cooking pots used in the ancient kitchen were made to fit on top of the stove. They even have notches on the inside to accommodate different sized cooking pots, and the stoves were portable so they could be moved around to different areas in which to cook. In both recipes, the dish is cooked on the stove, but the cooking times differ. I am inclined to speculate that because of this, they might have used two different types of cooking pots (see 3.5). 'Dodder broth' with salted meat was to be cooked quickly – '*barely sat on the stove*' (my emphasis, see below) – while in 'ram stew' all the ingredients were added to the pot and cooked on the stove – '*put the pot on the stove*'. Seeing that it was ram meat, this means that it was cooked for some time in order for the meat to cook properly and tenderly. Recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 11 (28-30) Dodder broth:
> Not fresh meat but rather "salted' meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. *When the pot has barely sat on the stove*, the stew is ready to serve.
> (*YOS 11 25*)
>
> 13 (33-36) Ram stew:
> Other meat is not used. Prepare the water and the add fat, some dodder (or liquorice) as desired, salt to taste, onion, *samidu* (Persian shallot), coriander, leek and garlic. *Put the pot on the stove* and after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

4.2.4.5 Prepare the water and add the fat

I feel it is important to explain why I have decided to classify some recipes as stews and left the rest as broths (see 4.2.4.1), as classified by Bottéro (1995 and 2004). This is because the phase 'prepare the water and add the fat' has intrigued me since the beginning of my investigation. In his 1995 translation, Bottéro (1995:4) postulates that because the term '*mu*' is used to classify these recipes, the recipes were all cooked in water. He suggests this because no one knows what happened to the water after cooking. For example, if it did not cook away, it could be considered a broth or a soup; however, if it did cook away, '*sauce*' would be a better way to describe it. He states that because it is not exactly clear what happened to the water after cooking, he decided to render '*mu*' to mean broth or in essence '*cooked in water*' (my emphasis), further stating, and I quote, 'for this reason, I have considered to render *mu* in these contexts as "broth"' (Bottéro 1995:4).

While I can understand why he decided to do this, I have to point out that one critical ingredient was left out during this consideration – the fat. The phrase is not just 'prepare the water'; it is 'prepare the water and add the fat'. Therefore, the actual liquid mixture that was used to cook these recipes was a water and fat mixture. This changes the classification of these recipes completely, and therefore I decided to critically investigate all the recipes and look at what made these recipes different from one another. It has become clear that the cooking pot played a big role in classifying some of these recipes. One very important example which will be discussed in section 4.4.5 is the recipe called *Zamzaganu*, which is classified as a broth. However, this is the only recipe out of the 25 recipes on *Tablet A* (*YOS 11 25*) that actually does not have the instruction 'prepare the water and add the fat' (see Bottéro 1995:9).

When I started this research, it was the phrase 'prepare the water and add the fat' that fascinated me the most because it was present in 24 of the 25 recipes. What did it mean to prepare the water and add the fat? From my experimental cooking (see 5.3), I have learned that there were, in fact, a few reasons why the water and fat were added right at the beginning of the recipe, before the rest of the ingredients, one of which being because of the way a ceramic cooking pot works.

Firstly, the ceramic cooking pot takes a long time to heat up before it is ready for cooking, and because of this the water and fat mixture is heated up with the pot. This is especially important because the pot is made from clay. One cannot wait for the pot to be piping hot and then add cold water and oil to it as this can lead to the pot cracking as well as cause the fat and water to erupt, which can cause serious damage to both the chef and cooking pot. Believe me, I have learned this the hard way (see 5.3.2.3.b). One also cannot heat up the water first and then add the cold fat or vice versa. This is asking for trouble because the ceramic pot can crack, which is something the ancient chefs knew. When adding the cold water and fat mixture to the cold pot and heating them up together, it is easy to know when the pot is warm and ready for cooking because one can see the mixture boiling and know it is time to add the onions.

What I have learned from my experimental cooking (see 5.3.2.3) is that the amount of water and fat that is added to the pot depends completely on what meat is being cooked (this is why the recipe states what meat is being used at the beginning), for how many people, and whether the ingredients need a long cooking time or only a short time. The lovely thing is that

although there is water and oil in the pot initially, once all the ingredients have been added, you basically do not have to add any more water to the dish if you made sure to add enough water in the beginning. Of course, one will add more moisture if needed, such as water or, in the case of '*Tuḫ'u* beet stew', beer (see 5.3). If it is taking longer to cook because of tough meat, one just adds a bit more water, but this does not have to be stated on the recipe – one can see this while cooking.

The lovely thing about closed-mouthed cooking pots (see 3.5.3.2) is that one does not need to stir the food much, and because of the closed rim of the cooking pot, moisture does not evaporate quickly. Therefore, one does not really need to add more liquid after the initial water. One must just always make sure to take evaporation in account during heating when adding more water to the pot.

Once all the different cooking equipment such as the cooking pots and the different fire installations these recipes were cooked on have been considered, it becomes clear that we need to classify these recipes correctly. All the recipes include water and fat, and therefore they were all 'cooked in water', but this definitely does not make them all broths.

4.2.5 Reworked and updated analyses and interpretation of *YOS 11 25*

It has occurred to me that perhaps the difficulty in analysing *YOS 11 25* lies in the way the English translations have been published over the years, which raises the question of whether the Akkadian transliterations do not perhaps need a fresh and modern relook. As this is out of the scope of the current research project, I have reworked and updated the recipes based on both of Bottéro's English translations of 1995 and 2004 and added the new suggestions of ingredients (see 4.2.1 for full discussion) based on scholars such as Kelly (2012:38-45) and Barjamovic et al. (2019:120), and this is indicated in brackets.

As far as possible, I have kept the recipes in their original form as was suggested by Bottéro in 1995 and 2004; however, I have attempted to make the recipe more user-friendly. I have put the newly researched ingredient suggestions in brackets because this lets the reader know that there are, in fact, alternative suggestions for certain ingredients. I have combined the sentence '*prepare the water and add the fat*', which is discussed fully in 4.2.4.5, critically looked at the recipes and, where I felt it was needed, kept the sentence '*ready to serve*' (2004) or where big pieces of meat such a whole leg of lamb or whole poultry was used, I have kept the instruction '*carve and serve*' (1995) (see 4.2.3.1).

I have decided to keep the 1995 version of 'dodder broth' because it really does make a difference in the cooking method when something is cooked on a portable stove versus cooking directly on coals (see 4.2.3.7).

I have also made suggestions for two additional Assyrian-style recipes (indicated in brackets), which are fully discussed in 4.3.3.2.

> 1 (1) Meat broth:
> Meat is used. Prepare the water and add the fat, mashed leek and garlic and corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)
>
> 2 (3-4) Assyrian-style:
> Meat is used. Prepare the water and add the fat, garlic and *zurumu* (unknown) with blood, and (mashed) leek and garlic. It is ready to serve.
> (*YOS 11 25*)
>
> 3 (5-8) Red stew:
> Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], intestines or stomach, onion, *samidu* (Pesian shallot), cumin, coriander and mashed leek and garlic. Soak the meat in the reserved blood and assemble all the ingredients in a pot.
> (*YOS 11 25*)
>
> 4 (9-10) Clear broth:
> Meat is used. Prepare the water and add the fat, milk (?), cypress (or juniper berries) as desired, and mashed leek and garlic. It is ready to serve.
> (*YOS 11 25*)
>
> 5 (1-14) Venison stew (Assyrian-style):
> Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin[?], coriander[?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood, assemble all the ingredients in a pot.
> (*YOS 11 25*)
>
> 6 (15-16) Gazelle broth:
> Other meat is not used. Prepare the water and add the fat, salt to taste, onion, *samidu* (Persian shallot), leek and garlic.
> (*YOS 11 25*)
>
> 7 (17-19) Kid stew:
> Singe the head, legs and tail. Other meat is used. Prepare the water and add the fat, onion, *samidu* (Persian shallot), leek and garlic, bound with (?) blood, mashed (?) *kisimmu* (sour milk/yogurt). Then a corresponding amount of *šuḫutinnû* (spring leek).
> (*YOS 11 25*)
>
> 8 (20-22) Bitter broth (Assyrian-style):
> Meat is used. Prepare the water and add the fat, milk, cypress (or juniper berries), onion, *samidu* (Persian shallot), leek, garlic and *zurumu* (unknown). Bring to a boil, remove the cooked meat, stir leeks, garlic, *šuḫutinnû* (spring leek), and mint into the broth in the pot, then add more *zurumu* (unknown).
> (*YOS 11 25*)

9 (23-25) Broth with crumbs:
Meat is not used (writing on the tablet Bottéro 2004:27). Prepare the water and add the fat, *šuḫutinnû* (spring leek), coriander, salt to taste, leek and garlic. Crush and sift spiced grain cakes (sour dough), sprinkle into the pot before removing it from the fire.
(*YOS 11 25*)

10 (26- 27) *Zamzaganu:*
Scatter cut-up pieces of meat in a kettle and cook. Clean some *bâru* (?) and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
(*YOS 11 25*)

11 (28-30) Dodder broth:
Not fresh meat but rather "salted" meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. When the pot has barely sat on the stove, the stew is ready to serve.
(*YOS 11 25*)

12 (31-32) Lamb broth:
Other meat is used. Prepare the water and add the fat, salt, to taste; cake crumbs [?], onion, *samidu* (Persian shallot). Also add some milk, and some mashed [?] leek and garlic.
(*YOS 11 25*)

13 (33-36) Ram stew:
Other meat is not used. Prepare the water and add the fat, some dodder (or liquorice) as desired, salt to taste, onion, *samidu* (Persian shallot), coriander, leek and garlic. Put the pot on the stove and after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
(*YOS 11 25*)

14 (37-39) *Bidšud* [?] broth (Elamite-style)*:*
Other meat is not used. Prepare the water and add the fat, dill, crushed dodder (or liquorice), onion, *samidu* (Persian shallot), cumin, leek and garlic, bound with blood. It is ready to serve.
(*YOS 11 25*)

15 (40-44) Spleen stew:
Other fresh meat is not used. Prepare the water and add the fat, scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it. Some crushed dodder (or liquorice), cake crumbs [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiiâtu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions bound with blood. It is ready to serve.
(*YOS 11 25*)

16 (45-46) Elamite broth:
Meat is used. Prepare the water and add the fat, dill, *šuḫutinnû* (spring leek), coriander, leek and garlic bound with blood, a corresponding amount of *kisimmu* (yogurt/sour milk), and more garlic. The (original) name of this dish is *Zukanda*.
(*YOS 11 25*)

17 (47-49) *Amursânu*-pigeon broth:
Split the pigeon in two; (other) meat is also used. Prepare the water and add the fat, salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic. (before using), soak these herbs in milk.

(*YOS 11 25*)

18 (50-51) Leg of mutton broth:
With fresh meat from the leg of mutton. Other meat is also used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek and garlic mashed with *kisimmu* (sour milk/yogurt).
(*YOS 11 25*)

19 52-54 *Ḫalazzu* stew:
Meat is used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek, and garlic, mashed with *kisimmu* (sour milk/yogurt). Crush the corolla (?) of some of the cultivated plant called *ḫalazzu* (carob seeds), assemble all the ingredients in a pot for cooking.
(*YOS 11 25*)

20 (55-57) Salted broth:
Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) as desired; salt to taste, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, leek and garlic, mashed with *kisimmu* (sour milk/yogurt). Carve and serve.
(*YOS 11 25*)

21 (58-61) Francolin stew:
Fresh leg of mutton is also used (?). Prepare the water and add the fat. Trim the francolins. Add salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic mashed with milk (?). Once the francolins have been cut up, put them into the water in the pot, but they should first be cooked in a kettle. Then return them to the pot. Carve and serve.
(*YOS 11 25*)

22 (62-64) *Tuḫ'u* beet stew:
Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
(*YOS 11 25*)

23 (65-67) *Kanasu* stew:
Leg of mutton(?) is used. Prepare the water and add the fat, *samidu* (Persian shallot), coriander, cumin and *kanašû*. Assemble all the ingredients in the cooking vessel, and sprinkle with crushed garlic. Then blend into the pot *šuḫutinnû* (spring leek) and mint.
(*YOS 11 25*)

24 (68-70) *Ḫiršu* stew:
Leg of mutton[?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top (garnish). It is ready to serve.
(YOS 11 25)

25 (71-75) Garden turnips:
Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* (Persian shallot) and turnips. At the end add coriander and cake crumbs bound with blood, as well as mashed leek and garlic.
(*YOS 11 25*)

4.3 DIFFERENT TYPES OF RECIPES FOUND IN *YOS 11 25*

Yale culinary tablet YOS 11 25 provides the reader with plenty of information with regard to the ingredients as well as the cooking pots and cooking techniques that were used during the time period in which it was written (see Fig 4.1). Whoever wrote down these recipes did not feel the need to write down the exact amounts of the ingredients that were to be used in the recipes; however, they did give some indications as to how much to put into the pot, as seen in 'to taste' (see 4.4.4.1.). I believe the quantity of the ingredients that were used depended on the chef's taste and the size of the cooking pot as these recipes were mostly one-pot meals unless stated otherwise. In what follows, I will be discussing the different types of recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) based on the information I have gained thus far.

4.3.1 Meat recipes

Bottéro (1985:37) points out that the main ingredient in the recipes found in *YOS 11 25* was meat, of which the most important meat animals were cattle, sheep, and often gazelle. Although the gazelle was not a domesticated animal like the others, there are references to gazelles being fed barley in order to fatten them up for cooking, which indicates that in some instances, there might have been some attempts to domesticate herds of gazelles. He remarks that although fish is not mentioned in the Yale recipes, it did form an important part of the economy of Lagash in the Early Dynastic III Period. The Yale culinary tablets capture the long history of Mesopotamian cooking, but we only get a tiny glimpse of the vast categories of ingredients that were consumed during that period, such as flour, grain, vegetables and animals. He points out that as far as we know, the Mesopotamians had no dietary taboos; perhaps only on certain religious days. They never ate their horses, but unlike many other societies, the Mesopotamians had no problem eating pork (Bottéro 1985:37-39).

Ellison (1983:147) states that the main animals the Mesopotamians used in cooking were cattle, sheep and goats. However, during the 3rd millennium BC, gazelle was just as important. In fact, during the Ur III Period, there was even a month named after the gazelle – **MAS.DA.KU**, the month of gazelle-eating (Ellison 1983:147).

Ellison (1984a:93) adds that additional information available from the Ur III Period can be found in the delivery texts of animals to the kitchens. From these texts we learn that, in some cases, meat was delivered for specific groups of people that worked in the palace and

temples, and in one such text, sheep was delivered for the sole use of the female weavers. Ellison believes this could have been for a special occasion such as New Year. How these animals were presented to them is unclear, but it is suggested that the main methods for cooking the meat were either by boiling, stewing or roasting (Ellison 1984a:93).

The following different meat recipes, such as kid, ram, mutton, lamb and venison, are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and one can see that the Mesopotamians were really spoiled with the large variety of meat available.

4.3.1.1 Goat recipes

> 7 (17-19) Kid stew:
> Singe the head, legs and tail. Other meat is used. Prepare the water and add the fat onion, *samidu* (Persian shallot), leek and garlic, bound with [?] blood, mashed [?] *kisimmu* (sour milk/yogurt). Then a corresponding amount of *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

> 13 (33-36) Ram stew:
> Other meat is not used. Prepare the water and add the fat, some [?] dodder (or liquorice) as desired; salt to taste; onion, *samidu* (Persian shallot), coriander, leek and garlic. Put the pot on the stove and, after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

4.3.1.2 Mutton recipes

> 18 (50-51) Leg of mutton broth:
> With fresh meat from the leg of mutton. Other meat is also used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek and garlic mashed with *kisimmu* (sour milk/yogurt).
> (*YOS 11 25*)

> 20 (55-57) Salted broth:
> Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) as desired; salt to taste, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, leek and garlic, mashed with *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

> 23 (65-67) *Kanasu* stew:
> Leg of mutton [?] is used. Prepare the water and add the fat, *samidu* (alliaceous plant), coriander, cumin and *kanašû* [?]. Assemble all the ingredients in the cooking vessel, and sprinkle with crushed garlic. Then blend into the pot *šuḫutinnû* (spring leek) and mint.
> (*YOS 11 25*)

> 24 (68-70) *Ḫiršu* stew:
> Leg of mutton[?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top (garnish). It is ready to serve.

(*YOS 11 25*)

4.3.1.3 Lamb recipes

12 (31-32) Lamb broth:
Other meat is used. Prepare the water and add the fat, salt, to taste; cake crumbs [?], onion, *samidu* (Persian shallot). Also add some milk, and some mashed [?] leek and garlic.
(*YOS 11 25*)

22 (62-64) *Tuḫ'u* beet stew:
Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
(*YOS 11 25*)

4.3.1.4 Offal recipe

3 (5-7) Red stew:
Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and mashed leek and garlic. Soak the meat in the reserved blood and assemble all the ingredients in a pot.
(*YOS 11 25*)

4.3.1.5 Game meat recipes

Game meat is usually darker in colour, tender, contains much less fat, and is usually pursued and taken in the field and forests. Game meat such as francolins and pigeons is usually not cooked for long periods of time because it can dry out quickly. Therefore, in the recipe for francolin broth found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), the bird is not cooked with the lamb, but is rather cooked separately (see 4.4.1.2) – '*they should first be cooked in a kettle*' (my emphasis, see below). The pigeon is also not cooked for long. Other game such as venison needs longer cooking periods in order for it to be softer. The meat can also be tenderised by soaking it in the reserved blood before cooking.

5 (11-14) Venison stew (Assyrian-style):
Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin [?], coriander[?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood, assemble all the ingredients in a pot.
(*YOS 11 25*)

6 (15-16) Gazelle broth:
Other meat is not used. Prepare the water and add the fat, salt to taste, onion, *samidu* (Persian shallot), leek and garlic.
(*YOS 11 25*)

17 (47-49) *Amursânu*-pigeon broth:
Split the pigeon in two; (other) meat is also used. Prepare the water and add the fat; salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic. (before using), soak these herbs in milk. It is ready to serve.
(*YOS 11 25*)

21 (58-61) Francolin stew:
Fresh leg of mutton is also used (?). Prepare the water and add the fat. Trim the francolins. Add salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic mashed with milk (?). Once the francolins have been cut up, put them into the broth in the pot, *but they should first be cooked in a kettle*. Then return them to the pot. It is ready to serve.
(*YOS 11 25*)

4.3.1.6 Preserved meat recipes

Preserving meat was a common and natural practice for the Mesopotamians since ancient times, as Bottéro (2004:60) claims, because products such as meat, fish, fresh fruit and vegetables deteriorated quickly in the heat if not eaten at once. From documents such as delivery notes or lists of provisions, we have learnt that drying, salting, smoking and pickling meat and fish were very popular ways of preserving the ingredients, especially if they were sent across long distances. Although we have no information concerning the salting techniques that were used, Bottéro has included terms that were used in their writings, such as sprinkling, light rubbing and heavy rubbing. This gives one an idea of what techniques might have been used to cure the meat, and there are at least three recipes on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) that use dried and '*salted*' (my emphasis, see below) meat, stomach and spleen. Another popular ingredient that Bottéro mentions was used in the recipes was called *siqqu*. *Siqqu* was a condiment made out of fish or shellfish and sometimes grasshoppers, which was generously salted and left to decompose, and the juices that were created were saved and used as a condiment in food – very similar to our modern soya sauce (Bottéro 2004:60).

Bottéro (1995:19) points out that in all the recipes, the meat was desalted before it was used in cooking, which is why they needed to add more salt during the cooking process. The salt that was added to the dish was flavoured by adding other ingredients such as dried and powdered mint. He adds that the flavoured salt would not be added to the dish while cooking, but instead the chefs would rub the meat with the salt before cooking (Bottéro 1995:19).

Ellison (1983:148) remarks that dried and salted fish were included in the deliveries of Lagash and that there were also references to salted and pickled meat in the Neo-Assyrian

periods. She goes as far as to suggest that dried and salted fish could have been one of Mesopotamia's vanished exports of the 3rd millennium BC (Ellison 1983:148).

Haaland (2007:177) adds that there are several advantages of fermented food other than nutrition. Fermenting food not only serves as a way of keeping the food product longer, but it also has various health benefits because of the bacteria that are produced during the fermenting process (Haaland 2007:177). The following recipes contain different salted meat ingredients (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5):

> 11 (28-30) Dodder stew:
> Not fresh meat but rather "*salted*" meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. When the pot has barely sat on the stove, the stew is ready to serve.
> (*YOS 11 25*)
>
> 15 (40-44) Spleen stew:
> Other fresh meat is not used. Prepare the water and add the fat, scatter pieces of "*salted*" stomach and spleen in the cooking vessel and add milk to it. Some crushed dodder (or liquorice), cake crumbs [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiiâtu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions bound with blood. It is ready to serve.
> (*YOS 11 25*)
>
> 24 (68- 70) *Ḫiršu* stew:
> Leg of mutton [?] and "*salted*" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* [?]. Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top (garnish). It is ready to serve.
> (*YOS 11 25*)

4.3.1.7 Unknown or unclear meat dishes

The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and interestingly they do not state which meat is to be used (we can only make assumptions as to what this was, as a variety of meat was used), but only that '*meat is used*' or '*cut up pieces of meat*' are used (my emphasis, see below). I would think it would have been any meat that was available and fresh on the day. In recipe 14 (37-39), '*Bidšud* broth', I would suggest that *Bidšud* (translations unclear) is the name of the meat that is to be used as it states that '*other meat is not used*' (my emphasis, see below), meaning only *Bidšud* is to be used. However, because we do not know what it is, we can only make assumptions as to the type of meat used.

> 1 (1) Meat broth:
> *Meat is used*. Prepare the water and add the fat, mashed leek and garlic and corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

4 (9-10) Clear broth [?]:
Meat is used. Prepare the water and add the fat, milk [?], cypress (or juniper berries), [?] as desired, and mashed leek and garlic. It is ready to serve.
(*YOS 11 25*)

8 (20-22) Bitter stew:
Meat is used. Prepare the water and add the fat, milk, cypress (or juniper berries), onion, *samidu* (Persian shallot), leek, garlic and *zurumu* (unknown). Bring to a boil, remove the cooked meat, stir leeks, garlic, *šuḫutinnû* (spring leek), and mint into the broth in the pot, then add *zurumu* (unknown).
(*YOS 11 25*)

10 (26- 27) *Zamzaganu*:
Scatter cut-up pieces of meat in a kettle and cook. Clean some *bâru* and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
(*YOS 11 25*)

14 (37-39) *Bidšud* [?] broth:
Other meat is not used. Prepare the water and add the fat, dill, crushed dodder (or liquorice), onion, *samidu* (Persian shallot), cumin, leek and garlic, bound with blood. It is ready to serve.
(*YOS 11 25*)

4.3.2 Vegetarian recipes

A wide variety of vegetables were grown in Mesopotamia, with textual references to onions and cress being found in Lagash, Nippur and Mari. Although there are no references to chickpeas and lentils, Ellison (1983:147) explains that these legumes and pulses were used extensively in ancient cooking and their remains have been found at sites such as Ur and Nimrud (Ellison 1983:147). I believe there are only two vegetarian dishes in *YOS 11 25*. Although the writing on the tablet states there are four vegetable broths (Bottéro 2004:29), it is hard to understand which these are.

The two vegetable dishes, 'broth with crumbs' and 'garden turnips', are different to the meat dishes since these are the only two dishes that do not have meat added to them. The recipes called '*garden turnips'* and '*broth with crumbs*' (my emphasis, see below), found on *Tablet A* [*YOS 11 25*] (reworked and updated, see 4.2.5), state that '*meat is not used*' (my emphasis, see below) (as discussed in 4.2.3.3), so this means the water and fat are to be added to the pot first. In both recipes, the main ingredient is vegetarian, either turnips or breadcrumbs. It must, however, be noted that although the vegetables are cooked in water, this does not make them broths in the sense of a watery dish as both of these recipes are thickened with blood (natural thickening agent), with the cake/breadcrumbs also thickening the water/sauce.

9 (23-25) Broth with crumbs:
Meat is not used. Prepare the water and add the fat, *šuḫutinnû* (Persian shallot), coriander, salt to taste, leek and garlic. Crush and sift spiced grain cakes, sprinkle into the pot before removing it from the fire.
(*YOS 11 25*)

25 (71-75) Garden turnips:
Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* and turnips. At the end add coriander and cake crumbs bound with blood, as well as mashed leek and garlic.
(*YOS 11 25*)

4.3.3 Foreign cuisine

What I find fascinating about the recipes found on Tablet A (*YOS 11 25*) (see 4.2.5) is the inclusion of foreign cuisine into the repertoire of recipes. It points to foreign influence and trade and mostly, I would think, good relations. The collection includes Elamite and Assyrian-style stews and broths.

4.3.3.1 Elamite stew

What sets this recipe apart from the Mesopotamian recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), as Barjamovic et al. (2019:121) point out, is that dill is added to the stew. *Dill* (my emphasis, see below) is primarily used in modern-day Iranian kitchens and is very rarely used in Iraq, but it was used in ancient Elam already. In recipe 16 (45-46), 'Elamite broth', it states that it is an Elamite stew and that the Elamite name for it is *Zukanda* (Barjamovic et al. 2019:121):

16 (45-46) Elamite broth:
Meat is used. Prepare the water and add the fat, *dill*, *šuḫutinnû* (spring leek), coriander, leek and garlic bound with blood, a corresponding amount of *kisimmu* (yogurt/sour milk), and more garlic. The (original) name of this dish is *Zukanda*.
(*YOS 11 25*)

What I would like to suggest is that perhaps we should then, based on Barjamovic et al.'s suggestion that dill is an indication of Elamite influence, consider '*Bidšud* broth', found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), to also be an Elamite stew (or *Elamite-influenced*) (my emphasis, see below) as it also contains dill as one of its ingredients. '*Bidšud* broth' could then perhaps be considered an Elamite ingredient or name. Perhaps further investigation is needed.

14 (37-39) *Bidšud* [?] broth (Elamite-influenced):
Other meat is not used. Prepare the water and add the fat, *dill*, crushed dodder (or liquorice), onion, *samidu* (Persian shallot), cumin, leek and garlic, bound with blood. It is ready to serve.
(*YOS 11 25*)

4.3.3.2 Assyrian-style stew

It is not exactly clear what makes the following recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) *Assyrian-style* (my emphasis) dishes as the ingredients and method of cooking are similar to the other recipes save for the ingredient *zurumu*. I can only suggest that *zurumu* must have been an imported Assyrian ingredient. It is not known what *zurumu* is, but recipe 2 is classified as an Assyrian-style dish with this as one of the main ingredients. Although the other recipes are not classified as *Assyrian-style* (my emphasis, see below), they also contain *zurumu*. If one can make the assumption that this is indeed an Assyrian ingredient, perhaps more research into their cuisine and ingredients is needed to find out the meaning and translation of this specific ingredient.

2 (3-4) Assyrian-style:
Meat is used. Prepare the water and add the fat, garlic and *zurumu* [?] with blood, and (mashed) leek and garlic. It is ready to serve.
(*YOS 11 25*)

5 (1-14) Venison stew (*Assyrian-style*):
Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin[?], coriander[?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood, assemble all the ingredients in a pot.
(*YOS 11 25*)

8 (20-22) Bitter broth (*Assyrian-style*):
Meat is used. Prepare the water and add the fat, milk, cypress (or juniper berries), onion, *samidu* (Persian shallot), leek, garlic and *zurumu* (unknown). Bring to a boil, remove the cooked meat, stir leeks, garlic, *šuḫutinnû* (spring leek), and mint into the broth in the pot, then add more *zurumu* (unknown).
(*YOS 11 25*)

4.4 COOKING INSTRUCTIONS FOUND IN THE RECIPES IN *YOS 11 25*

As Graff et al. (2012:2) explain, cooking is defined as the act of providing and transforming food, and it is the food preparation process where heat is used to alter the food, such as roasting, boiling, frying, smoking and baking. Food preparation refers to food processing such as butchering, cutting, pickling, peeling, fermenting, grinding, milling, salting, etcetera., that makes food edible and storable, enabling the cooking process which makes the food culturally acceptable (Graff et al. 2012:2). Although there are no actual step-by-step cooking instructions present in the *Yale* culinary tablet, similar to our modern-day recipes, one can,

however, find various different cooking instructions in these recipes. Each recipe provides information on the way the food is to be cooked in the sentence '*Prepare the water and add fat'* in addition to other useful instructions, such as '*peel the vegetables*' and '*singe the meat*'. These phrases as well as others will be investigated. The instructions are quite simple, and often the same instruction is repeated in various different recipes. Because of this, I am inclined to think that this indicates that these cooking steps may have been a 'norm' during this time. In fact, all 25 recipes have at least one or two cooking instructions present. It is interesting to note that these same cooking techniques are still being used in modern times.

4.4.1 Preparation instructions

Tablet A (*YOS 11 25*) (reworked and updated, see 4.2.5) provides the reader with ample information on how to prepare the raw ingredients to get them ready for cooking. Like modern chefs today, the ancient chefs did not just throw ingredients into a pot and hope for the best. They were trained in the art of cooking and knew exactly which ingredients complemented each other. They also had a vast knowledge of how to make certain ingredients more palatable, for example by peeling the vegetables before putting them into the pot or by removing the hair from animal skin before cooking with it. It should be noted that to the untrained person, these instructions would not just be a given as certain techniques are quite technical, such as cooking meat and poultry separately or knowing how to cut and trim the meat. I will discuss this in more depth below.

4.4.1.1 Singeing the meat

Singeing, as defined in the *Larousse Gastronomique* (Robuchon 2009:973), is done over an open flame in order to burn off any feathers, down or hair that remain after plucking or skinning the animals (Robuchon 2009:642-643). What is clear from recipe 7 on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) is that the main ingredients are the head, legs and tail, while standard pieces of goat's meat (we don't know which) are used to bulk up the meat in this recipe. The first step found in this recipe instructs the reader to make sure all the hair has been removed before adding the meat to the pot in the sentence '*singe the head, legs and tail*' (my emphasis, see below). By just looking at the amount of meat, I would assume a large cooking pot was needed to cook all this in (see 3.5.3):

> 7 (17-19) Kid stew:
> *Singe the head, legs and tail.* Other meat is used. Prepare the water and add the fat, onion, *samidu* (Persian shallot), leek and garlic, bound with [?] blood,

mashed [?] *kisimmu* (sour milk/yogurt). Then a corresponding amount of *šuḫutinnû* (spring leek).
(*YOS 11 25*)

4.4.1.2 Browning the meat separately

Recipe 21(58-61), Francolin stew, is a technical recipe because two different types of meat are used in the same recipe, cooked using two different cooking techniques. The recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) and states that the francolins '*first be cooked in a kettle*' (my emphasis, see below). The lamb is cooked in the ceramic cooking pot first, and while this is happening, the francolins are trimmed and then browned separately in a kettle/cauldron (see 3.5.3) before being added to the stew in the ceramic pot later on. When I read this recipe, I cannot help thinking that one can look at the recipe from two perspectives. The first thing that comes to my mind is that the francolins are to be dipped in the breadcrumb mixture, cooked/fried in the kettle and then added to the lamb right at the end of the meal just before it is ready to be served. They are not cooked with the lamb. Another way of looking at this is that the lamb is cooked with the breadcrumbs and vegetables in the cooking pot, with the breadcrumbs acting as a thickener (see 4.4.3), while in the kettle the francolins are sautéed until brown and then added to the lamb towards the end of the cooking period.

21 (58-61) Francolin stew:
Fresh leg of mutton is also used [?]. Prepare the water and add the fat. Trim the francolins. Add salt, to taste*;* breadcrumbs, [?] onion, *samidu* (Persian shallot), leek and garlic mashed with milk [?]. Once the francolins have been cut up, put them into the broth in the pot, *but they should first be cooked in a kettle.* Then return them to the pot. It is ready to serve.
(*YOS 11 25*)

4.4.1.3 Trimming and cuts of meat

Trimming is done by the chef before cooking in order to remove the unsuitable or inedible parts of the animal or vegetables as well as to remove the insides and excess fat of the animal. These offcuts are often classified as trimmings in the recipes. This is usually done after the bird is plucked and singed; for example, trimming off the tip of the wings of the bird. It must be noted that the ancient chefs did not throw these trimmings away and instead used them as 'meat fillers and substitutes' in various recipes. The following recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) contains a few references to various different cuts of meat, such as '*trim the francolins*', '*scatter pieces*' and '*cut-up pieces of meat*', all of

which points to there being a variety of cuts of meat available for cooking (my emphasis, see below):

> 10 (26- 27) *Zamzaganu:*
> Scatter *cut-up pieces of meat* in a kettle and cook. Clean some *bâru* [?] and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

> 15 (40-44) Spleen stew:
> Other fresh meat is not used. Prepare the water and add the fat, *scatter pieces of* "salted" stomach and spleen in the cooking vessel and add milk to it. Some crushed dodder (or liquorice), cake crumbs [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiiâtu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions bound with blood. It is ready to serve.
> (*YOS 11 25*)

> 21 (58-61) Francolin stew:
> Fresh leg of mutton is also used [?]. Prepare the water and add the fat. *Trim the francolins*. Add salt, to taste*;* breadcrumbs, [?] onion, *samidu* (Persian shallot), leek and garlic mashed with milk [?]. Once the *francolins have been cut up*, put them into the broth in the pot, but they should first be cooked in a kettle. Then return them to the pot. It is ready to serve.
> (*YOS 11 25*)

4.4.1.4 Peel the vegetables

Traditionally, peeling is done by hand using a sharp knife/tool. This is done to remove the unwanted skin of the fruit or vegetables, and in the case of recipe 10 (26- 27), '*Zamzaganu'*, the beetroot, onions and shallot; however, it must be noted that it is not clear what utensil the ancient chefs used to peel the vegetables. The following recipe, found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), instructs the reader to '*peel the vegetables*' (my emphasis, see below) before adding them to the pot. Although we do not know what *bâru* is, I assume it must be a type of vegetable (see 4.4.5), thus it also needs to be cleaned before being added to the pot:

> 10 (26- 27) *Zamzaganu:*
> Scatter cut-up pieces of meat in a kettle and cook. *Clean some bâru* [?] and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat *Peel the vegetables*. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

4.4.1.5 Mashing leek and garlic to make a paste

This is an interesting cooking instruction because the recipes call for mashed leek and garlic, as well as spring leeks in some instances. In order to mash something, one needs a mortar and pestle. This kitchen equipment has been used in cookery since Mesopotamian times (see 3.4.3). Mashing the leek and garlic together forms a paste, making the flavour of the garlic and leek become stronger and more easily incorporated into the meal. The majority of the recipes call for the mashed leek and garlic to be added to the dish at the beginning, and thus it can be assumed that this was used as one of the base ingredients for the sauce of the dishes. Mashed vegetables also cook away, becoming part of the sauce of the dish. The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), with '*mashed leek and garlic*' (my emphasis, see below) forming part of the base sauce rather than the garnish:

> 1 (1) Meat broth:
> Meat is used. Prepare the water and add the fat, *mashed leek and garlic* and corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)
>
> 2 (3-4) Assyrian-style:
> Meat is used. Prepare the water and add the fat, garlic and *zurumu* (unknown) with blood, and *(mashed) leek and garlic.* It is ready to serve.
> (*YOS 11 25*)
>
> 3 (5-8) Red stew:
> Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], Pluck (heart, liver, lungs), intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and *mashed leek and garlic*. Soak the meat in the reserved blood and assemble all the ingredients in a pot.
> (*YOS 11 25*)
>
> 4 (9-10) Clear broth [?]:
> Meat is used. Prepare the water and add the fat, milk [?], cypress (or juniper berries) as desired, and *mashed leek and garlic.* It is ready to serve.
> (*YOS 11 25*)
>
> 10 (26- 27) *Zamzaganu:*
> Scatter cut-up pieces of meat in a kettle and cook. Clean some *bâru* [?] and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in *mashed leek and garlic* and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)
>
> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the *mashed leeks and garlic*. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

Note that in the following recipe found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), the paste is added at the end of the cooking period. This indicates that the paste of 'mashed leek and garlic' (my emphasis below) was intended to lift the flavour of the dish at the end rather than being cooked with the meat for an extended period.

> 25 (71-75) Garden turnips:
> Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* and turnips. At the end add coriander and cake crumbs bound with blood, as well as *mashed leek and garlic*.
> (*YOS 11 25*)

4.4.1.6 Mashing leek and garlic with other ingredients to make a paste

This paste is different to the one above because it is mixed with *kisimmu* (sour milk/yogurt). The mashed leek and garlic are mashed with the yogurt/sour milk to make a paste, and this is added to the dish. What makes these dishes different is that they are now creamy. This addition changes the consistency of the sauce completely. Where the above recipes are a stock-based (or water-based) dish, the yogurt in the recipes below will not only make the dishes creamier, but also thicker as yogurt/sour milk acts as a thickening agent. The following four recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) all have *kissimu* (my emphasis, see below) added to the dish as one of the final ingredients:

> 18 (50-51) Leg of mutton broth:
> With fresh meat from the leg of mutton. Other meat is also used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), *leek and garlic mashed with kisimmu (sour milk/yogurt).*
> (*YOS 11 25*)
>
> 19 (52-54) *Ḫalazzu* stew:
> Meat is used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), *leek and garlic mashed with kisimmu* (*sour milk/yogurt*). Crush the *corolla* [?] of some of the cultivated plant called *ḫalazzu* (carob seeds/syrup), assemble all the ingredients in a pot.
> (*YOS 11 25*)
>
> 20 (55-57) Salted stew:
> Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) as desired; salt to taste, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, *leek and garlic, mashed with kisimmu* (*sour milk/yogurt*). It is ready to serve.
> (*YOS 11 25*)
>
> 21 (58-61) Francolin stew:
> Fresh leg of mutton is also used [?]. Prepare the water and add the fat. Trim the francolins. Add salt, to taste*; breadcrumbs, [?] onion, samidu (Persian shallot), leek and garlic mashed with milk* [?]. Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. Then return them to the pot. It is ready to serve.
> (*YOS 11 25*)

4.4.2 Cooking with blood

Cooking with blood is still done today (mostly using pig's blood) in various countries around the world, and in cold countries it is considered a fortifying food. Blood is used as a marinade as well as a flavouring agent added to stews and soups, and it is used as a thickening agent and not a colourant as many believe. One cannot substitute blood with tomato sauce, for instance (in these ancient recipes), as the Mesopotamians did not have tomatoes. I read in an article by Adomaite (2020) that a professor Sutherland from the University of Cambridge cooked the recipe called '*Elamite* broth', which was taken from the published paper of Barjamovic et al. (2019) (just for fun and not for research purposes), and he substituted the blood in the recipe with tomato sauce, which of course changed the whole recipe (Adomaite 2020). It was no longer an authentic dish. Therefore I think it is better to rather leave out the blood completely if one does not want to use it, rather than trying to substitute it with something else.

Traditionally, blood is immediately stirred with salt, vinegar or alcohol to prevent it from clotting and deteriorating. In two of the recipes, the instruction is to soak the meat in the blood before cooking to reconstitute it and then to add this to mixture to the stew. In both instances, the meat is dried and salted.

4.4.2.1 Using blood as a marinade

The way that blood is used in these recipes is peculiar because the blood is used as a marinade as such because the meat must be soaked in the blood before being added to the pot. Marinade is defined in the *Larousse Gastronomique* (Robuchon 2009:642-643) as:

> A flavoured liquid, cooked or uncooked, in which savoury ingredients such as meat, offal, game, fish or vegetables as soaked for a length of time in order to impart flavour, to tenderise and to add moisture. This is done with liquids such as blood, vinegar, salt water, oil and herbs and spices. This is one of the oldest culinary procedures and has been used to preserve food from ancient times (Robuchon 2009:642-643).

We do not use blood in our modern cuisine as much as the Mesopotamians did, and I suspect that this cooking method of soaking the meat in the blood had something to do with the type of meat that was used, namely venison and tripe. For venison, soaking the meat in blood will tenderise it and add some flavour, while the blood will reconstitute the dried tripe. The following two recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) call

for the meat to '*soak in reserved blood*' (my emphasis, see below) before it is added to the pot for cooking:

> 3 (5-8) Red stew:
> Fresh meat is not used. Prepare the water and add the fat, salt, cake crumbs [?], intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and mashed leek and garlic. *Soak the meat in the reserved blood* and assemble all the ingredients in a pot.
> (*YOS 11 25*)

> 5 (1-14) Venison stew*:*
> Other meat is not used. Prepare the water and add the fat, some crushed dodder (or Liquorice), salt to taste, cake crumbs [?], onion, *samidu* (Persian shallot), cumin [?], coriander[?], leek, garlic and *zurumu* (unknown).
> *Soak the meat in the reserved blood,* assemble all the ingredients in a pot.
> (*YOS 11 25*)

4.4.2.2 Blood as a thickening agent – 'bound with blood'

Typically, a small amount of blood is added at the end of the cooking period in order to thicken the sauce of the dish. Blood is never cooked for a long time as it can start curdling if cooked for too long. This is also evident in *YOS 11 25*. All the recipes call for the blood to be added at the end of the cooking period. In some recipes, the chef states that the meal is ready to serve, while in others it just states that the dish is to be '*bound with blood'* (my emphasis), meaning to be thickened with blood. Blood is not added to give a red colour to the dish (as many people believe) because once the blood starts cooking, its colour changes to brown – just like meat. This means that one cannot substitute blood with tomato sauce, for instance. If one wanted to cook these recipes and not use blood, it would indeed be better if you wanted to cook these recipes and not want to use blood, to use a small amount of flour to thicken the sauce or simply to leave it out (as stated above). The following recipes are thickened or '*bound with blood'* (my emphasis, see below) found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 14 (37-39) *Bidšud* [?] broth (Elamite-style)*:*
> Other meat is not used. Prepare the water and add the fat, dill, crushed dodder (or liquorice), onion, *samidu* (Persian shallot), cumin, leek and garlic, *bound with blood.* It is ready to serve.
> (*YOS 11 25*)

> 15 (40-44) Spleen stew:
> Other fresh meat is not used. Prepare the water and add the fat, scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it. Some crushed dodder, cake crumbs [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiiâtu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions *bound with blood.* It is ready to serve.
> (*YOS 11 25*)

16 (45-46) Elamite broth:
Meat is used. Prepare the water and add the fat, dill, *šuḫutinnû* (spring leek), coriander, leek and garlic *bound with blood*, a corresponding amount of *kisimmu* (yogurt/sour milk), and more garlic. The (original) name of this dish is *Zukanda*.
(*YOS 11 25*)

25 (71-75) Garden turnips:
Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* (Persian shallot) and turnips. At the end add coriander and cake crumbs *bound with blood*, as well as mashed leek and garlic.
(*YOS 11 25*)

4.4.3 Crumbs as a thickening agent

Adding crumbs to a dish not only adds texture, character and bulk, but it also acts as a thickening agent since the amount of crumbs added determines the thickness of the dish. It is interesting to note that in the recipes 'Red broth' and 'Venison broth', the meat was soaked in blood to reconstitute it (see 4.4.2.2), and therefore the breadcrumbs were added to thicken up the sauce. The person who developed this recipe clearly had a solid knowledge of food preparation and understood that adding both would make the sauce too thick. The following recipes which include '*cake crumbs*' (my emphasis, see below) as an ingredient are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

3 (5-8) Red stew:
Fresh meat is not used. Prepare the water and add the fat, salt, *cake crumbs* [?], intestines or stomach, onion, *samidu* (Persian shallot), cumin, coriander and mashed leek and garlic. Soak the meat in the reserved blood and assemble all the ingredients in a pot.
(*YOS 11 25*)

5 (1-14) Venison stew*:*
Other meat is not used. Prepare the water and add the fat, some crushed dodder (or Liquorice), salt to taste, *cake crumbs* [?], onion, *samidu* (Persian shallot), cumin [?], coriander[?], leek, garlic and *zurumu* (unknown*)*. Soak the meat in the reserved blood, assemble all the ingredients in a pot.
(*YOS 11 25*)

9 (23-25) Broth with crumbs:
Meat is not used. Prepare the water and add the fat, *šuḫutinnû* (spring leek), coriander, salt to taste, leek and garlic. *Crush and sift spiced grain cakes*, sprinkle into the pot before removing it from the fire.
(YOS 11 25)

12 (31-32) Lamb broth:
Other meat is used. Prepare the water and add the fat, salt, to taste; *cake crumbs* [?], onion, *samidu* (Persian shallot). Also add some milk, and some mashed [?].
(*YOS 11 25*)

15 (40-44) Spleen stew:
Other fresh meat is not used. Prepare the water and add the fat, scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it. Some

crushed dodder (or liquorice), *cake crumbs* [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiiâtu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions bound with blood. It is ready to serve.
(*YOS 11 25*)

17 (47-49) *Amursânu*-pigeon broth:
Split the pigeon in two; (other) meat is also used. Prepare the water and add the fat; salt, to taste*; breadcrumbs*, [?] onion, *samidu* (Persian shallot), leek and garlic (before using), soak these herbs in milk. It is ready to serve.
(*YOS 11 25*)

21 (58-61) Francolin stew:
Fresh leg of mutton is also used [?]. Prepare the water and add the fat. Trim the francolins. Add salt**,** to taste*; breadcrumbs*, [?] onion, *samidu* (Persian shallot), leek and garlic mashed with milk [?]. Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. Then return them to the pot. It is ready to serve.
(*YOS 11 25*)

25 (71-75) Garden turnips:
Meat is not used. Prepare the water and add the fat, onion, arugula, coriander, *samidu* (Persian shallot) and turnips. At the end add coriander and *cake crumbs* bound with blood, as well as mashed leek and garlic.
(*YOS 11 25*)

4.4.4 Quantities of ingredients

Additional information on the method of preparation can be found in the sequence in which the recipes were written down. All of the recipes follow a certain pattern in steps, where the main ingredient is always stated first, followed by water and fat, and then the rest of the ingredients follow in the order in which they are supposed to be added to the pot. As discussed before (see 4.2.1.1), the most common ingredients in all the recipes are salt, onion, *samidu* (Persian shallot) and leek. These ingredients served as the base of the recipe, and then the rest of the ingredients were added in the order that makes up that unique recipe. Even though it is widely accepted that the quantities of the ingredients are not provided in the modern sense of the word, we do, however, have an indirect indication of how much to use, as is evident in various recipes in the form of '*to taste'* (my emphasis) (also see 4.2.3.2).

4.4.4.1 To taste

There are two differences in the way the recipes were written down. This distinction can be seen between 'salt to taste' and adding ingredients '*to taste*' (my emphasis, see below). The following recipe is found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

12 (31-32) Lamb broth:
Other meat is used. Prepare the water and add the fat, salt, *to taste*; cake crumbs [?], onion, *samidu* (Persian shallot). Also add some milk, and some mashed [?] leek and garlic.
(*YOS 11 25*)

Here the emphasis is not on adding salt to taste, but rather on adding cake crumbs, onion and *samidu* (Persian shallot) to taste. This is remarkably interesting indeed as this gives us some information regarding the amounts to be used in an indirect way; ingredients are added according to the taste of the person making this meal. This same instruction can be found in the recipes of '*Ḫalazzu* stew', 'Leg of mutton broth', 'Francolin broth' and '*Amursânu*-pigeon broth'. The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

17 (47-49) *Amursânu*-pigeon broth:
Split the pigeon in two; (other) meat is also used. Prepare the water and add the fat, salt, *to taste;* breadcrumbs, [?] onion, *samidu* (Persian shallot), leek and garlic. (before using), soak these herbs in milk. It is ready to serve.
(*YOS 11 25*)

18 (50-51) Leg of mutton broth:
With fresh meat from the leg of mutton. Other meat is also used. Prepare water; add fat, salt, *to taste;* onion, *samidu* (Persian shallot), leek and garlic mashed with *kisimmu* (sour milk/yogurt).
(*YOS 11 25*)

19 52-54 *Ḫalazzu* stew:
Meat is used. Prepare the water and add the fat, salt, to taste; onion, *samidu* (Persian shallot), leek, and garlic, mashed with *kisimmu* (sour milk/yogurt). Crush the corolla (?) of some of the cultivated plant called *ḫalazzu* (carob seeds), assemble all the ingredients in a pot for cooking.
(*YOS 11 25*)

21 (58-61) Francolin stew:
Fresh leg of mutton is also used [?]. Prepare the water and add the fat. Trim the francolins. Add salt, *to taste;* breadcrumbs, [?] onion, *samidu* (Persian shallot), leek and garlic mashed with milk [?]. Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. Then return them to the pot. It is ready to serve.
(*YOS 11 25*)

4.4.4.2 Salt to taste

The difference can be seen in 'Ram stew, where the recipe calls for the chef to add salt according to taste, rather than ingredients according to taste (also see 4.2.3.2):

13 (33-36) Ram stew:
Other meat is not used. Prepare the water and add the fat, some dodder as desired, *salt to taste*, onion, *samidu* (Persian shallot), coriander, leek and garlic. Put the pot on the stove and after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
(*YOS 11 25*)

This same instruction of '*salt to taste*' (my emphasis, see below) also appears in the recipes for 'Salted broth', 'Venison stew, 'Gazelle broth' and 'Broth with crumbs'. I have, however, noted that the following recipes are made from rather salty and strong-tasting meat and therefore it makes sense for the chef to add salt according to taste to avoid the dish being overly salty. The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 5 (11-14) Venison stew (Assyrian-style):
> Other meat is not used. Prepare the water and add the fat, some crushed dodder (or liquorice), *salt to taste*, cake crumbs [?], onion, *samidu* (Persian shallot), cumin [?], coriander [?], leek, garlic and *zurumu* (unknown). Soak the meat in the reserved blood, assemble all the ingredients in a pot.
> (*YOS 11 25*)
>
> 6 (15-16) Gazelle broth:
> Other meat is not used. Prepare the water and add the fat, *salt to taste*, onion, *samidu* (Persian shallot), leek and garlic
> (*YOS 11 25*)
>
> 9 (23-25) Broth with crumbs:
> Meat is not used. Prepare the water and add the fat, *šuḫutinnû* (spring leek), coriander, *salt to taste*, leek and garlic. Crush and sift spiced grain cakes, sprinkle into the pot before removing it from the fire.
> (*YOS 11 25*)
>
> 20 (55-57) Salted broth:
> Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) as desired; *salt to taste*, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, leek and garlic, mashed with *kisimmu* (sour milk/yogurt). It is ready to serve.
> (*YOS 11 25*)

4.4.4.3 Add ingredients as desired

The following recipes state that certain ingredients such as juniper berries, dodder and liquorice, which is rather a unique and acquired taste, should be added according to taste (see 4.2.3.2). This is very similar to contemporary recipes where the modern chef recommends ingredients such as chilli be added according to the taste of the chef or person cooking the dish as not everybody likes or can handle the strong flavour of certain ingredients. This is also a caution not to overdo this ingredient and to give the person adding this ingredient the choice of adding this or even leaving it out, if so desired. The following recipes as well as the cooking instruction '*as desired*' (my emphasis, see below) are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 4 (9-10) Clear broth [?]:
> Meat is used. Prepare the water and add the fat, milk [?], cypress (or juniper berries) *as desired*, and mashed leek and garlic. It is ready to serve.

(*YOS 11 25*)

13 (33-36) Ram stew:
Other meat is not used. Prepare the water and add the fat, some dodder (or liquorice) *as desired*, salt to taste, onion, *samidu* (Persian shallot), coriander, leek and garlic. Put the pot on the stove and after removing it, mash in *kisimmu* (sour milk/yogurt). It is ready to serve.
(*YOS 11 25*)

20 (55-57) Salted broth:
Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) *as desired*; salt to taste, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, leek and garlic, mashed with *kisimmu* (sour milk/yogurt). It is ready to serve.
(*YOS 11 25*)

4.4.4.4 Beer as an ingredient

What makes '*Tuḫ'u* beet stew' so interesting and different from the rest of the recipes is the addition of beer. As discussed in Chapter Two (see 2.4.2 for full discussion), beer was an especially important ingredient in Mesopotamia. As Bottéro (2004:70) explains, beer was occasionally used in addition to or as a replacement for water in the dish. Adding beer to a dish gives it extra flavour as well as moisture, especially during long cooking periods (Bottéro 2004:70). In the instance of adding beer to this particular dish, found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), which I cooked for my experimental cooking (see 5.3), the beer adds a different flavour dimension to the dish in addition to serving as a tenderiser for the rich lamb meat.

22 (62-64) *Tuḫ'u* beet stew:
Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, *beer*, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
(*YOS 11 25*)

4.4.5 *Zamzaganu*

'Zamzaganu' is unique in the series of recipes found in *YOS 11 25* in that it does not have the instruction 'prepare the water and add the fat'. The meat is cooked in a kettle, meaning it is cooked over a high heat (see 3.5.3.2) together with *bâru* (unknown). I would also like to suggest that *bâru* (my emphasis, see below) might be some form of vegetable with a high water content (like spinach or lettuce) that loses much water while it cooks. This dish is intended to be a dry dish as the recipe instructs that the excess water be poured off and put back on the stove, after which the final fresh ingredients are added as a garnish (see 4.4.6.1).

It is also the only recipe that is cooked completely in a high-fired cooking pot, with the water strained in the middle of the cooking period because the meat is to be fried and not boiled in water; therefore, no water is added (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5):

> 10 (26- 27) *Zamzaganu:*
> Scatter cut-up pieces of meat in a kettle and cook. Clean some *bâru* (?) and add to the kettle. Before removing the kettle from the fire, strain the cooking liquid and stir in mashed leek and garlic and a corresponding amount of raw *šuḫutinnû* (spring leek).
> (*YOS 11 25*)

4.4.6 Finishing the meal

One thing worth noting is that even though not much information is provided on how to cook these recipes, most of the recipes do specify how to 'garnish and finish off the dish'. '*Garnish'* is defined in the *Larousse Gastronomique* (Robuchon 2009:490) as:

> A single food item or a combination of ingredients accompanying the dish. The garnish can be placed around or on top of the dish or served along side the dish. The garnish always blends with the flavour of the basic dish and sauce if there is one. Overall the garnish is placed on or around the dish in order to achieve an overall harmony of shapes, colour and taste that is pleasing to the eye and compliment the flavour of the dish.

The recipes in *YOS 11 25* are finished off in various ways, and these are clearly stated. The recipes either tell you how to garnish the meal with the final fresh herbs (sprinkle, blend), or they tell you the dish is ready to serve. Garnishing (sprinkling) the freshly chopped or mashed herbs into the meal at the end finishes the dish off wonderfully while also adding a bit of crunch and flavour to the stew. Many dishes do not get garnished, and the reader or chef is informed that no more ingredients are needed in the pot, thus it is '*ready to serve*' (my emphasis, see below in 4.4.6.1).

4.4.6.1 Garnishing the meal

Most dishes are finished off with similar fresh ingredients, but in different flavour combinations suitable for the specific recipe. The most popular garnishes mentioned are *šuḫutinnû* (spring leek), garlic, leek, coriander, and breadcrumbs. The following recipes are found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5), and all of them are garnished in various ways, ranging from '*sprinkle the cooked mixture with coriander, and šuḫutinnû* (spring leek)', '*sprinkle with spiced grain cakes*' and '*sprinkle leeks and coriander on top'* (my emphasis, see below):

9 (23-25) Broth with crumbs:
Meat is not used (writing on the tablet). Prepare the water and add the fat, *šuḫutinnû* (spring leek), coriander, salt to taste, leek and garlic. *Crush and sift spiced grain cakes (sour dough), sprinkle into the pot before removing it from the fire.*
(*YOS 11 25*)

23 (65-67) *Kanasu* stew:
Leg of mutton [?] is used. Prepare the water and add the fat, *samidu* (Persian shallot), coriander, cumin and *kanašû* [?]. Assemble all the ingredients in the cooking vessel, and *sprinkle with crushed garlic*. *Then blend into the pot šuḫutinnû (spring leek) and mint.*
(*YOS 11 25*)

22 (62-64) *Tuḫ'u* beet stew:
Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. *Sprinkle the cooked mixture with coriander, and šuḫutinnû (spring leek).*
(*YOS 11 25*)

24 (68-70) *Ḫiršu* stew:
Leg of mutton[?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). Assemble all the ingredients in the pot, and *sprinkle leeks and coriander on top (garnish).* It is ready to serve.
(*YOS 11 25*)

4.4.6.2 Ready to serve

There are ten recipes found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5) that contain the phrase *'It is ready to serve'* (my emphasis, see below), which informs the reader that after the garnish has been added, the dish it is ready to be served.

2 (3-4) Assyrian-style:
Meat is used. Prepare the water and add the fat, garlic and *zurumu* (unknown) with blood, and (mashed) leek and garlic. *It is ready to serve.*
(*YOS 11 25*)

4 (9-10) Clear broth (?):
Meat is used. Prepare the water and add the fat, milk (?), cypress (or juniper berries) as desired, and mashed leek and garlic. *It is ready to serve*.
(*YOS 11 25*)

11 (28-30) Dodder stew:
Not fresh meat but rather "salted' meat is used. Prepare the water and add the fat, some crushed dodder (or liquorice), onion, *samidu* (Persian shallot), coriander, cumin, leek and garlic. *When the pot has barely sat on the stove, the stew is ready to serve.*
(*YOS 11 25*)

13 (33-36) Ram stew:
Other meat is not used. Prepare the water and add the fat, some dodder (or liquorice) as desired, salt to taste, onion, *samidu* (Persian shallot), coriander, leek and garlic. Put the pot on the stove and after removing it, mash in *kisimmu* (sour milk/yogurt). *It is ready to serve.*

(*YOS 11 25*)

14 (37-39) *Bidšud* [?] broth:
Other meat is not used. Prepare the water and add the fat, dill, crushed dodder (or liquorice), onion, *samidu* (Persian shallot), cumin, leek and garlic, bound with blood. *It is ready to serve.*
(*YOS 11 25*)

15 (40-44) Spleen stew:
Other fresh meat is not used. Prepare the water and add the fat, scatter pieces of "salted" stomach and spleen in the cooking vessel and add milk to it. Some crushed dodder (or liquorice), cake crumbs [?], salt to taste, onion, *samidu* (Persian shallot). Bits of roasted *qaiatu*-dough, *šuḫutinnû* (spring leek), high quality mint, mashed leek and onions bound with blood. *It is ready to serve*.
(*YOS 11 25*)

17 (47-49) *Amursânu*-pigeon broth:
Split the pigeon in two; (other) meat is also used. Prepare the water and add the fat, salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic. (before using), soak these herbs in milk. *It is ready to serve.*
(*YOS 11 25*)

20 (55-57) Salted broth:
Leg of mutton, but no other meat is used. Prepare the water and add the fat, dodder (or liquorice) as desired; salt to taste, cypress (or juniper berries), onion, *samidu* (Persian shallot), cumin, coriander, leek and garlic, stir in *kisimmu* (sour milk/yogurt). *It is ready to serve.*
(*YOS 11 25*)

21 (58-61) Francolin stew:
Fresh leg of mutton is also used (?). Prepare the water and add the fat. Trim the francolins. Add salt, to taste; breadcrumbs, (?) onion, *samidu* (Persian shallot), leek and garlic mashed with milk (?). Once the francolins have been cut up, put them into the broth in the pot, but they should first be cooked in a kettle. Then return them to the pot. *It is ready to serve*.
(*YOS 11 25*)

24 (68-70) *Ḫiršu* stew:
Leg of mutton[?] and "salted" meat are used. Prepare the water and add the fat, onion, arugula, the best chopped coriander, and *ḫiršu* (root vegetable). Assemble all the ingredients in the pot, and sprinkle leeks and coriander on top (garnish). *It is ready to serve*.
(*YOS 11 25*

4. 5 CONCLUSION

When reading Bottéro's 1995 and 2004 translations of the recipes in *YOS 11 25* (see 4.1), one does not notice the finer details and instructions at first. It was only when I decided to reconcile both publications as well as update ingredients that have been newly researched that the true recipes made themselves apparent. Upon delving deeper into them, you realise with some amazement that you are busy reading the oldest cookbook in the world. It is so much more than just recipes. It becomes clear that the simplicity of the flavour combinations was very well thought out. Some meals were more technically constructed, while others were

simpler, with the main ingredient being in the limelight. In others, vegetables were added to make them more complex. The Mesopotamians had a variety of kitchen equipment available to them, and when you combine the recipes with the actual equipment that was available during this time period, you get a wonderful picture of Mesopotamian cuisine.

There are, however, some setbacks when it comes to studying these recipes as some words are still untranslated (see 4.2.2.2). Therefore, we are still not exactly sure how to analyse some of the recipes. I have suggested that perhaps we are looking in the wrong place for some of these words as I think they might be Elamite or Assyrian ingredients, for example the recipe '*Bidšud* broth' (see 4.3.3.1) and 'Bitter broth' (see 4.3.3.2).

When I started this study and looked more critically at the ingredients in the recipes, I realised they are more complex than what Bottéro (2004:26) first suggested. He notes that *YOS 11 25* comprises 25 recipes in total, of which 21 are meat broth recipes and four are vegetable-based broths. There are some interesting cooking techniques as well as some interesting ingredients and flavour combinations, like adding beer to '*Tuḫ'u* beet stew' (see 4.4.4.4 and 5.3.2.3) or by adding *kissimu* (yogurt or sour milk) to the stew to make it creamier. The ancient chefs also knew a thing or two about the technical aspects of cooking, for example using blood and crumbs for flavour and to thicken the sauce. They hardly ever combined these ingredients as they knew this would make the sauce too thick, and where they did combine these two ingredients, the blood was used to reconstitute the meat and not added to the sauce. They also knew to use different types of cooking pots for different cooking techniques, as can be seen in the recipe Francolin broth' (see 4.4.1.2), where two different cooking pots were used to cook the meat.

Even though there are no exact amounts of ingredients stated in the recipes, on closer inspection you realise that there are hints as to how much you should use. First of all, the amount of ingredients is always related to the size of the cooking vessel. The main ingredients, and thus the largest amount, are always mentioned first, such as the meat, after which the water and fat mixture is added (see 4.2.4.5). The water and the fat component is directly linked to the amount of ingredients used, the size of the pot, and the number of people the dish is being cooked for. Thereafter, many recipes give the amount in term of 'to taste' and 'as desired'. The recipes are cleverly constructed, and thought was given to the ingredients. In some recipes where salted and dried meats were used, the chef was instructed to use salt 'to taste' in order for the dish not to be too salty. In other recipes which used

different types of meat, the rest of the vegetables and herbs were to be added ‘to taste’. This was usually up to the chef, as well as the space left in the pot. The dishes were finished off slightly differently and garnished with sprinkles of garlic, coriander, baby leeks, spring onions and yogurt or sour cream.

My experimental cooking of these recipes have given me vast insight to how these recipes should be cooked, which has challenged some of my earlier assumptions regarding the water in the pot (see 5.3). In the next chapter, Experimental archaeology, I will go into more detail about my findings of cooking in a ceramic pot as well as a portable ceramic stove, similar to what has been excavated (see 3.2), as well as critically look at the phrase ‘prepare the water and add the fat’. What I have found is that these recipes were a feast fit for kings.

CHAPTER FIVE

EXPERIMENTAL ARCHAEOLOGY

5.1 INTRODUCTION

> *I have always refused to put to test these recipes, even the most intelligible ones* (Bottéro 1987:11-19; my italics).

Upon reading this sentence by Bottéro for the first time, I decided to take it upon myself to test some of these recipes. I cannot agree with Bottéro that the food of the ancient Mesopotamians could be as unpleasant as he has made it out to be. As human beings, we have been cooking food for millennia. Surely such an advanced people as the Mesopotamians knew a thing or two about cooking good food. I was not only pleasantly surprised by the well-thought-out flavour combinations, but also impressed by the ancient chefs' extensive knowledge of recipe development (see Chapter Four). There were so many different food products available, as well as the many distinctions between the different cooking methods and the variety of equipment they used in the kitchen (see Chapter Three). I have seen a few modern examples cooked over the years, such as in the studies done by Kelly (2012), Lassen (2019) and Barjamovic (Barjamovic et al. 2019). However, I have to point out that none of these attempts at cooking the recipes have been done in authentic pottery cooking pots or on portable stoves. In all the above attempts and many others not mentioned here, the recipes were cooked in modern cooking pots, which of course did not exist in ancient Mesopotamia.

I decided to apply an *experimental archaeological approach* by building the cooking pots and portable stove in my ceramic studio as well as putting some of the recipes to the test, hoping this might shed new light on the recipes and the understanding of certain concepts and methods used. At the same time, I also wanted to further investigate the meaning and practical application of 'prepare the water and add the fat', the phrase with which 24 recipes on the *Yale culinary tablet YOS 11 25* start (see 4.2.4.4). I wanted to explore whether the ceramic cooking pot had an influence on the ancient cooking techniques and if this, in turn, influenced the recipes' quality and taste. How did the term 'prepare the water and add the fat' influence the way the cooking pot was used? How much water was really needed? Why was the water mixed with oil? My practical experience as a chef and ceramist might bring insight into ancient cooking, especially with regard to how these ancient cooking pots and stoves functioned (see 3.5.4). To get answers to these questions, and as part of my experimental archaeological approach, I also built a replica ceramic cooking pot and ceramic portable stove

and practically cooked these recipes in what I believe to have been an authentic way (see 5.3).

'Tuḫ'u beet stew' is a straightforward meat stew recipe and is cooked with two main ingredients, lamb and beetroot. Many recipes on *YOS 11 25* only have a variety of onions in them, so adding beetroot and beer to the lamb is interesting. Many modern lamb dishes are also served with something sweet in order to break the richness of the lamb fat, so adding the beetroot, which is sweet, to the stew balances out the flavours beautifully (see 5.3.2.3.) Another unusual ingredient, as illustrated by Bottéro (2004:70), is the addition of beer to the stew (see 5.3.2.3.). What makes the addition of beer to the recipe interesting is that this is the only time on *YOS 11 25* that beer is an actual ingredient in a dish. However, it must be noted that beer is also added in a variety of recipes on Tablet B (*YOS 11 26*) as a substitute for water (not discussed in this dissertation). Adding beer to a dish was rare and was typically done to substitute some of the water in the dish and to add flavour (Bottéro 2004:70). The following recipe can be found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5):

> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. Assemble all the ingredients in the cooking vessel and add the mashed leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
> (*YOS II 25)*

5.2 EXPERIMENTAL BUILDING AND CONSTRUCTION OF COOKING POTS AND A PORTABLE STOVE

5.2.1 Cooking pots and portable stove

In August 2020 I was fortunate enough to do a ceramic residency at Imiso Ceramics in Cape Town, headed by Andile Dyalvane and Zizipho Poswa, two of South Africa's leading African ceramists. This residency was called *Nuhatimmu*, or 'to cook'. Cooking these recipes in a ceramic pot has been one of my biggest dreams since the moment I found out about these recipes from the late Sharon Zuckerman, co-director of Hazor in 2013, while excavating as a volunteer with the Department of Biblical and Ancient Studies at the University of South Africa. However, I first had to acquire the ceramic skill to do so, and it took me four years to learn how to do pottery. Because of my background in Ancient Near Eastern Studies and my experience with the restoration of pottery during the archaeological excavations at Hazor, Israel, I was approached by the director of Origins, a National Geographic documentary, with

the request to build ceramic cooking pots for one the episodes in the documentary in 2017. It is with this background as well as my experience in ceramic restoration which I acquired at Hazor that I approached Imiso Ceramics in 2020 with the objective of building the cooking pots and doing the experimental cooking as part of a six-week ceramic residency.

I decided to use the example of a portable stove and cooking pot (see Fig 5.1) found in the academic paper of Smogorzewska (2014:491), as discussed in Chapter Three (see 3.3.1.4 and 3.5). I took some creative licence with my design on the outside of the oven by adding handles for moving the stove as well as adding a door; however, but it worked on exactly the same principle.

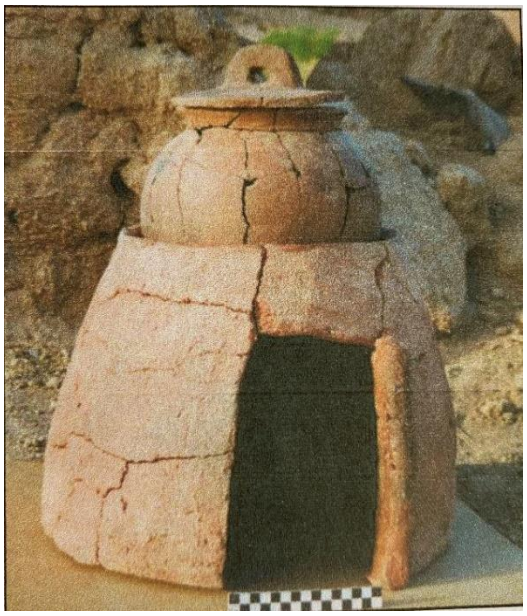

Fig 5.1 Mesopotamian portable stove and cooking pot with lid (Smogorzewska 2014:491)

5.2.2 Making of the cooking pots and portable stove

5.2.2.1 Design and templates

To get the design of the cooking pot, I printed out a large-scale photo of the Mesopotamian stove and cooking pot (see Fig 5.2) and traced the design directly onto tracing paper. This gave me a measurement of a 12cm cooking pot profile, which I then enlarged until I got the desired sized cooking pots (see Fig 5.3).

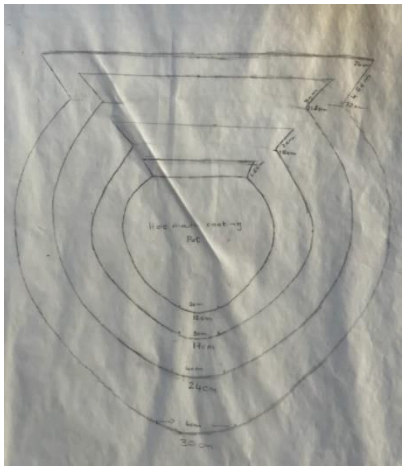

Fig 5.2 Cooking pot design, based on Fig 5.1 (photo by Melissa Barker, 2020)

Next, I traced the profile of the different sized cooking pots onto Styrofoam (see Fig 5.3) and cut out the templates I was going to use to construct the pots and oven. I made three different sized cooking pots: 30cm, 24cm, and 17cm (see Fig 5.7).

Fig 5.3 Cooking pot templates (photo by Melissa Barker, 2020)

When I was excavating at Hazor (see 3.4.1), we unearthed numerous cooking pots from both the Iron and Bronze Age levels. Professor Ben-Tor (director of the site) gave me some samples of cooking pot shards for reference, which I used as a reference while building the cooking pots, as well as other non-indicative shards. It must be noted that these samples are not the same as Mesopotamian pottery shards – they were just for reference purposes, such as the colour of the clay and examples of decoration.

Fig 5.4 Ancient ceramic pottery shard samples from Hazor, Israel (photo by Melissa Barker, 2020)

5.2.2.2 Cooking pots

I built the cooking pots from the templates using heavily grogged, coiled earthenware clay with excellent thermal shock properties that is locally available in South Africa. The grog in the clay makes it possible for the vessel to resist thermal shock, as discussed in Chapter Three. I used templates (see Fig 5.5) to help me to keep true to the pots' shape and form.

Fig 5.5 Building the 30cm cooking pot using the template; phase one (photo by Melissa Barker, 2020)

I used the coiling technique (see 3.5.2) to form the pots, and it took me two weeks to complete all three cooking pots. I built the cooking pots in three phases, with phase one (see

Fig 5.5) consisting of building the base of the pots. This is a crucial stage as the base must carry the weight of the rest of the pot. Phase two (see Fig 5.6) entailed building the body of the pots, and finishing all three pots took me an entire week.

Fig 5.6 Phase two of building the cooking pots (photo by Melissa Barker, 2020)

Phase three of building the cooking pots was done in the third week and entailed me finishing the rims, handles and lids of the cooking pots. I also burnished the pots on the inside and finished the rounded bases of the cooking pots (see 3.5.2). I made little stands for the pots as they were no longer able to balance on their rounded bases.

Fig 5.7 Phase three; finished cooking pots (photo by Melissa Barker, 2020)

5.2.2.3 Portable stove

I followed the same building technique as with the cooking pots to build the portable stove (see 5.2.2.2). First, I made a template and then I built the stove out of coils, with the same heavily grogged terracotta clay. Building the stove was no easy feat, and it took 40 kg of clay to make. The size of the oven opening at the top corresponds to the 24cm cooking pot (see 3.5.3.2).

What is interesting about these portable stoves is the way they were designed (see 3.3.1.4). One does not immediately notice the subtle inclusions into these ovens until doing proper research on them. On the inside at the top of the stove opening, there is a small inner rim to hold smaller sized cooking pots, with notches/cut-out grooves on the top of the stove's rim to hold skewers for cooking meat. This was a wonderful discovery and a very clever innovation.

I decided to take some artistic licence when making the oven as I did not want to waste the clay from the opening of the stove as it made a perfect door to the oven. I do not know if these ovens had doors because to date there has not been any evidence in the archaeological record; however, this does not mean that they did not have doors. I used the oven door to regulate the heat when cooking the skewers (see 5.3.3). I also added carry handles on the side of the stove as it ended up being too heavy to carry without them.

Fig 5.8 Portable stove, raw clay (photo by Melissa Barker, 2020)

The stove took me three weeks to build. I kept the door intact as this aided in the stove keeping its shape not only while drying, but also when being fired in the kiln. Fig 5.9 below shows the complete cooking system.

Fig 5.9 Complete cooking system, raw clay (photo by Melissa Barker, 2020)

When the cooking system was bone dry, which took about two weeks, the pots and stove (see Fig 5.9) were fired. I found it captivating how the raw clay transformed into the bright terracotta colour (see Fig 5.11). It must be added that one does not always appreciate the skill, technological and aesthetical features of the ancient pottery when it is excavated, because it has weathered so much. This is only evident when doing it yourself with fresh new clay. Finally, with my cooking pots and portable stove ready to be used, I was ready to move on to the experimental cooking.

Fig 5.10 In the kiln, ready to be fired (photo by Melissa Barker, 2020)

Fig 5.11 Portable stove and cooking pot fired and ready for cooking (photo by Melissa Barker, 2020)

5.3 EXPERIMENTAL COOKING

5.3.1 Experiment number one (2018)

Fig 5.12 '*Tuḫ'u* beet stew' recipe, experiment number one (photo by Melissa Barker, 2018)

In 2018, after having gathered enough information, I decided to cook '*Tuḫ'u* beet stew' for the first time for my promoter, Professor M le Roux and a few university students at my house. At

the time, the experimental cooking by Harvard University and Professor Barjamovic (Barjamovic et al. 2019) had not yet been done, and thus *šuḫutinnû* (spring leek) and *samidu* (Persian shallot) were still unknown at the time. I cooked the recipe in a cast iron pot, as I had not built the pottery pots yet. However, for my experimental cooking, I used the following 2018 recipe, based on the 2004 translations by Bottéro:

> *Tuḫ'u* beet stew (2018):
> Recipe 22 (*YOS 11 25*, lines 62-64)
>
> Ingredients:
> 2 kg lamb
> 10 g salt
> 100 ml water
> 20 ml fat
> 20 ml coriander seeds grinded
> 20 ml cumin seeds grinded
> 2 onions chopped
> *Samidu*
> 6 medium beets peeled and chopped
> 20 g arugula chopped
> 20g fresh coriander chopped
> *šuḫutinnû*
> 20g or 5 cloves of garlic, mashed
> 1 beer (I used Kölsch)
>
> Method of preparation:
> Meat is used.
> Prepare the water and add the fat.
> Peel the vegetables.
> Assemble all the ingredients in the pot.
> Mash the leeks and garlic and add to the pot.
> When the dish is cooked, sprinkle with fresh coriander and spring leek (garnish).

The outcome was similar to the experimental cooking done again in 2020 (see below), even though I cooked it in a cast iron pot. However, the flavour the leeks and Persian onions imparted was quite surprising when I cooked it again in 2020 with the full ingredient list in the ceramic pot.

5.3.2 Experiment number two (2020)

5.3.2.1 Cooking equipment used: cooking pot, mortar and pestle, and portable stove

For my second experimental cooking of the '*Tuḫ'u* beet stew', recipe no 22, I looked at the instructions and ingredients found in the recipe, which now included the new updated suggestions for *samidu* and *šuḫutinnû* found on the tablet in question (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5):

> 22 (62-64) *Tuḫ'u* beet stew:
> Lamb meat is used [?]. Prepare the water and add the fat. Peel the vegetables. Add salt, beer, onion, arugula, coriander, *samidu* (Persian shallot), cumin, and the beets. *Assemble all the ingredients in* the *cooking vessel* and add *the mashed* leeks and garlic. Sprinkle the cooked mixture with coriander, and *šuḫutinnû* (spring leek).
> (*YOS II 25)*

In lines no 64-65, the instructions are very clear. '*Assemble all the ingredients in the pot and add the mashed leeks and garlic'* calls for the leeks and garlic to be mashed before being added to the pot. When I looked at the ceramic assemblage and kitchen installations (see 3.3) found in most archaeological sites, mortars and pestles (see 3.4.3) were commonly used to grind and mash food items. Ceramic cooking pots were also widely distributed and make up most of the cooking assemblage usually found. I made myself a pottery mortar and pestle especially for this experiment (see Fig 5.13) as well as three cooking pots (see Fig 5.7).

Fig. 5.13 Pottery mortar and pestle (photo by Melissa Barker, 2020)

There is one direct mention of a stove in the recipes in *YOS 11 25*. The following recipe is found on the aforementioned tablet (*Tablet A* [*YOS 11 25*]) (reworked and updated, see 4.2.5):

> 13 (33-36) Ram stew:
> Other meat is not used. Prepare the water and the add fat, some dodder (or liquorice) as desired, salt to taste, onion, samidu (Persian shallot), coriander, leek and garlic. *Put the pot on the stove* and after removing it, mash in kisimmu (sour milk/yogurt). It is ready to serve.
> (YOS 11 25)

Although recipe no 22, '*Tuḫ'u* beet stew', does not call for the food to be cooked on the stove like the above recipe, I decided to make a stove in order to be able to cook the food as authentically as possible. I wanted to get the full experience, from making the pot and stove,

to cooking the recipes. It simply was not good enough for a study as important as this to cook these recipes on modern stoves, using modern pots. How was I to find out what 'prepare the water and add the fat' means if I cooked it in unsuitable cooking pots? I was now ready to cook.

5.3.2.2 Proposed 'Tuḫ'u beet stew' recipe (2020)

By 2020, once I had gathered enough new information and was able to get the full ingredients list for *'Tuḫ'u* beet stew', I was able to create a working recipe based on my chef's training as well as the previous cooking experiments. *'Tuḫ'u* beet stew' is a straightforward recipe, and the process of cooking it is very simple. When looking at *YOS 11 25* as a whole, one comes to realise that the instructions found in the recipes explain perfectly how they should be cooked. It contains many descriptions, such as peel the vegetables, add the water and the fat, put it in a pot, on a stove, and sprinkle the dish with fresh herbs once it is cooked (discussed fully in Chapter Four). So, when the time came to cook the '*Tuḫ'u* beet stew', I was fully equipped. All the recipes follow a logical procession, and each recipe comes with step-by-step instructions on how to cook it. Perhaps what was needed was to look at these recipes from a chef's perspective, and not only from a linguistic point of view (see 1.1).

The method of cooking the recipes found in *YOS 11 25* is simple since they all follow the same steps, with some of them being more involved than others, but this is also stated clearly in the recipes. The following are the steps used to cook '*Tuḫ'u* beet stew', as well as many other recipes found on *YOS 11 25*:

- Step one: Prepare the meat and cut it up.
- Step two: Prepare the water and add the fat. The amount of water and fat is related to the type and amount of ingredients used. Add it to the pot. Heat.
- Step three: Peel all the vegetables.
- Step four: Once the water and fat mixture starts boiling, add the meat and vegetables mentioned in the recipe. Stir the pot. Add the salt.
- Step five: Mash the leeks and garlic. After half an hour of cooking, add this to the pot.
- Step five: Add the beer. The amount is related to the moisture level in the pot and how long the stew still needs to cook.
- When the meat is nearly tender, remove from the fire. The pot still carries on cooking.

- Once the meat is tender and falling off the bone, and just before serving, garnish the meal with freshly chopped coriander and spring leeks. It is ready to serve.

Tuḫ'u beet stew (2020):

Recipe 22 (*YOS 11 25*, lines 62-64, reworked and updated, see 4.2.5)

Ingredients:
3 kg lamb (I used leg of lamb)
250 ml water
40 ml fat (I used duck fat)
10 g salt
30 g coriander seeds grinded
30 g cumin seeds grinded
2 onions chopped
5 Persian shallots chopped
5 medium beets peeled and chopped
2 large leeks
20 g arugula chopped
250 ml beer (I used Kölsch)
20 g or 5 cloves of garlic mashed
20 g fresh coriander chopped
4 spring leeks mashed (you can also use spring onions)

Method of preparation:
Meat is used.
Prepare the water and add the fat.
Peel the vegetables.
Assemble all the ingredients in the pot.
Mash the leeks and garlic and add to the pot.
When the dish is cooked, sprinkle with fresh coriander and spring leek (garnish).

Method of preparation explained:
Meat is used: This means you can use any cut of lamb you want. I used leg of lamb, which I asked my local butcher to cut up, bone included.
Prepare the water and add the fat: I mixed 250 ml of water with 40ml of duck fat, and I added this to the ceramic pot to heat up.
Peel the vegetables: Beetroot, onions, Persian shallot, large leeks and garlic need to be peeled and chopped before being added to the pot. Reserve the garlic.
Assemble all the ingredients in the pot: Once the water and fat mixture starts bubbling, throw all the ingredients into the pot. Stir the pot until all the ingredients are mixed and put the lid on the pot. Cook for half an hour.
Mash the leeks and garlic with a mortar and pestle until blended and add to the pot. Stir the pot until all the ingredients are incorporated. Add the beer.
When the dish is cooked (this took about two hours), sprinkle with fresh coriander and spring leek (garnish).
Tuḫ'u beet stew is ready to be served.

Fig 5.14 '*Tuḫ'u* beet stew' cooked, served with barley (2020) (photo by Melissa Barker, 2020)

5.3.2.3 Analysing the 'Tuḫ'u beet stew' recipe

In 2019, new information came to light through the research done by Barjamovic et al. (2019) of Harvard University, who proposed *samidu* to be Persian shallot and *šuḫutinnû* to be spring leek (see 4.2.1.2). With this new information at hand, I finally had enough information for the complete recipe, cooking the new and improved recipe several times in 2020, once even in France while doing an artist residency in February 2020. The recipe was well received by all the participants of the residency, but I still had to cook it in the stainless steel pot that was available. It was only during my residency with Imiso Ceramics that I finally got the opportunity to test the recipe out authentically on the ceramic stove and pots I had built.

a. Flavour combinations

What makes the '*Tuḫ'u* beet stew' recipe as well as the rest of the recipes in this series extremely interesting is the way the ancient chefs put together the flavour combinations of the dishes.

Fig 5.15 Main dry ingredients of the '*Tuḫ'u* beet stew' recipe (photo by Melissa Barker, 2020)

The chef cooking *'Tuḫ'u* beet stew' used coriander twice, once in its dry state (see Fig 5.15), as well as fresh, indicating that they knew to use every single edible part of the plant. An interesting observation, especially when it comes to the different flavour combinations, is the addition of arugula to the dish. In modern cuisine, arugula or rocket, as it is otherwise known, is a very peppery plant. It is amazing how the ancient chefs knew that adding the arugula to the dish would add the peppery flavour which so beautifully balances out the rest of the ingredients. At a time when peppercorns were not available, this addition added a much-needed peppery dimension to the dish. Pepper is often used to bring out flavours – take for instance the modern notion of eating strawberries served with crushed pepper. One would think the pepper would be too overpowering, but you are often pleasantly surprised by how good the strawberry tastes.

Vegetables and herbs were prepared and cooked in two different ways. With regard to the first method, onions, leeks, Persian shallots and beetroot were peeled and cleaned before being cooked. I have not found any information as to how this was done. The only conclusion I could come to was that they used stone tools with which they 'peeled' the vegetables' outer skin off by scraping it clean, similar to what we would do with a knife or sharp object. Although it is not apparent, this indicates a sort of finesse while cooking, which means the chefs cared about the dishes they presented. Cleaning, peeling and chopping the vegetables

and not just throwing them in a cooking vessel further points to the fact that cooking had already reached a higher level of sophistication.

Fig 5.16 Onions and leeks, fresh '*Tuḫ'u* beet stew' ingredients (photo by Melissa Barker, 2020)

The second method, mashing the leek and garlic in a mortar and pestle halfway through cooking the meal, is an interesting cooking technique (see 4.4.1.5). One must be careful not to characterise all onions and related vegetables under the same flavour category. They all impart such different nuances. I decided to distinguish between the different alliaceous vegetables by cutting them differently. The onions and leeks were chopped, but I decided to leave the Persian shallots whole in order to create some texture in the dish (see Fig 5.16). It must be noted that how the vegetables are cut up does not make any difference to the dish; it will only affect the cooking time of the stew as roughly chopped vegetables take longer to cook than finely chopped vegetables. Adding the mashed-up leeks and garlic halfway through cooking instantly lifted the dish and quickly dissolved into the stew because of its processed nature.

Most dishes on the recipe series are finished off with similar fresh ingredients, but in different flavour combinations suitable for each recipe. The most popular garnishes in most of the recipes found on *YOS 11 25* (see 4.4.6.1) are *šuḫutinnû* (spring leek), garlic, leek, coriander, and breadcrumbs (see 4.4.6.1). Even though **'***Tuḫ'u* beet stew' calls for coriander twice, grinded coriander is not typically added at the end of the dish because the seeds are very strong in flavour, while fresh coriander leaves, on the other hand, are typically added when the dish is done cooking because of the delicate fresh flavour they add to the meal. The leaves

are never added at the beginning of cooking as the flavour will be cooked away, and sometimes the leaves get bitter if cooked for a long time.

I grinded the cumin and coriander seeds to bring out the flavour of the spices (see 5.3.2.1), and I cooked this recipe a few times, gradually increasing the amount until I came to what I believed to be the perfect addition to really appreciate this beautiful flavour combination. Combining lamb with beetroot and adding cumin and coriander to the dish was a very authentic combination. I would never have imagined beetroot with lamb, but I was pleasantly surprised at the flavour. The beetroot added not only a sweet nuance to the dish and perfectly balanced out the oiliness of the lamb, but it also imparted a wonderful red colour to the dish (see Fig 5.17). This, topped with the fresh coriander and spring leeks, made a beautiful visual and tasted incredible (see. Fig 5.14).

Fig 5.17 '*Tuḫ'u* beet stew', cooked (photo by Melissa Barker, 2020)

Lastly, I have to comment on the salt. In the recipes in *YOS 11 25*, adding salt was described in two ways, 'add salt' and 'salt to taste' (see 4.2.3.2.). In '*Tuḫ'u* beet stew', salt is added (see Fig 5.18). As already discussed, I have found that when the recipe had very salty ingredients, such as tripe and salted intestines (see 4.3.1.4), the recipe called for salt to be added to taste. However, in this case, the chef had to add a fair amount of salt to the dish to bring out all the flavours. Of course, it stands to argue that salt is always added to taste as this depends on the palate of the chef that is cooking. I am merely pointing out that the ancient chefs knew the difference between adding salt to something that had no salt already added to it and something that was already salted, for example in order to preserve it; therefore the caution of using salt to taste.

Fig 5.18 Add salt (photo by Melissa Barker, 2020)

b. Prepare the water and add the fat

When I started this study, my main objective was to analyse the phrase ‘prepare the water and add the fat’. What did it mean to prepare the water and add the fat? I proposed at the beginning of the study that perhaps the recipes were translated incorrectly and that ‘prepare the water’ could have meant the pot. However, I have come to realise that this was just wishful thinking. So what did this mean in the practical sense of the word? Upon starting with my research, I correctly supposed that the water was not needed to make the dish into a soup/broth, as originally suggested by Bottéro (see 4.2.2), but rather that the cooking pot needed this water in order for it to function properly. While this notion was partially correct, I was pleasantly surprised when I eventually cooked the recipe authentically and discovered that there was nothing special to this particular sentence. It was simply that – prepare the water and fat, meaning to measure the water and fat according to the meat that was used and add this mixture to the pot.

The first time I cooked the recipe, I swirled the water around in the pot because I thought that the water was needed to seal the pot (meaning it pulled into the walls of the pot, therefore sealing the surface). Which I believed was why the onions were the next ingredient. In experiment two, I decided to try a different approach by heating up the pot first and then adding the cold water and oil. As I mentioned in chapter four (see 4.2.4.5) this was asking for trouble, as the eruption this caused made me scared that the pot was going to explode from the thermal stress , luckily this did not happen. But I did have a big scare and decided to rather start again with a new pot.

The ingenuity of the cooking pots lies in the temperature at which they were fired (see 3.5.3). High-fired cooking pots do not absorb the moisture, as I thought they would, but neither do the low-fired pots. The difference lies in the heat conductivity of the actual pots. When adding water to a high-fired pot, the pot heats up faster, and thus one could easily rapidly boil the ingredients, making this type of pot suited for fast cooking. The water does not pull into the pot, and the rapid boiling of the water cooks the ingredients much faster. When cooking in a lower-fired pot (see 3.5.3.2), as I did for this study, the amount of water added does not change the dish into a soup/broth, as suggested by Bottéro (see 4.2.2). It simply helps with the long cooking periods needed to cook the specific meat used in these recipes.

In many recipes found in *YOS 11 25,* the meat used, such as ram, goat and offal, needed long cooking periods for the meat to become soft and tender and ready to eat. What I have discovered is that the pot itself did not need as much water as previous researchers suspected because once the ingredients were added, the moisture content in the vegetables themselves also added to the 'water level' in the dish. Once the pot got started, one did not need to add anything else to the pot. In fact, I realised that when the pot was removed from the stove, the food still carried on cooking for a long time because of the excellent heat conductivity of the pot.

The amount of water in the pot was directly linked to the meat being cooked, and with each recipe, this measurement was related to the time it would take to cook the meat. One had to prepare the water (the amount according to the type of meat) and then added the fat for added flavour and moisture. Next, this mixture was added to the cold pot, which was then placed on the stove to heat up together (see 4.2.4.3).

c. Adding beer to the dish

The Mesopotamians loved beer. It was one of the principal beverages of the time (see 2.4.2). I added the beer as a water substitute, as Bottéro (2004:70) suggested (see 4.4.4.4). As far as this ingredient goes, it was the hardest to figure out. I decided to go with the suggestion of Barjamovic et al. (2019) and used a German beer called Kölsch, available locally from the Shackelton Brewing Company in Cape Town. It added a subtle flavour, not something you would be able to distinguish as alcohol cooks away. This part of the experimental cooking was tricky as we do not know what beer the ancient Mesopotamians would have added and how much. However, based on the sophistication of the recipe, I believe that the flavour of the beer was perfectly matched to the dish.

5.3.3 Alternative uses for the portable stove

Fig 5.19 Portable stove, alternative uses (photo by Melissa Barker, 2020)

As a side project, I could not help but try out the portable stove's alternative uses in an additional study. Once again, I was blown away by the ingeniousness of the ancient Mesopotamians. This little stove is truly incredible. I made meat skewers, which I decided to marinate overnight in the dry spices found in the '*Tuḫ'u* beet stew' recipe mixed with oil. I then skewered on the rest of the ingredients with the meat before cooking. It was amazing how quickly this little stove cooked the meat. I could only do three skewers at the time, but they cooked in no time. Having the door to the little stove also helped with regulating the

heat. However, it was not necessary – something I learned when I accidentally broke the door during my second cooking experiment. This was very unfortunate, but through this I realised I did not need it. As another experiment I wanted to see if I could bake bread on it (like the *tannur*) by slapping it on the outside walls of the stove. However, the bread was only cooked on one side. The bread needs to be baked inside the stove. It was worth the experiment because it is now obvious why the Mesopotamians had various fire installations. Cooking the food in this way gave me a small glimpse into the daily lives of the Mesopotamians. I was transported back in time, and the communal way of cooking was wonderful. However, as a side warning, the stove does smoke a lot and it needs constant care and attention to keep the fire going and for the stove to maintain its optimal heat.

5.4 CONCLUSION

Building the ceramic cooking pots and stove has been a long-standing dream of mine. From the moment I read the phrase 'prepare the water and add the fat', I knew instantly from my chef's as well as ceramic expertise that in order for researchers to be able to properly understand Mesopotamian cooking, these recipes had to be cooked in ceramic cooking pots. It took me a long time to gather the information I needed in order to build them since archaeological papers and books specifically focused on Sumerian and Babylonian cooking pots are rare and these pots were hardly given any attention in earlier excavations. Thus, when I eventually did find the information on cooking pots and, as a bonus, the portable ceramic stove, I knew that I was onto something very special. It took me three weeks as a professional ceramist to finish building the cooking pots and stove, and a further 40 kg of clay to produce them. It was very hard work and took a fair amount of concentration and skill to build the stove specifically. I was relieved when my cooking system finally made it out of the kiln firing, all intact and ready to be used. When the day came for me to finally cook, I was so nervous because I had never used a pottery stove, and there is no handbook that one can read to explain how to do this. Believe it or not, cooking on a ceramic stove and cooking pot is something to get used to. One cannot simply light a fire, put on the pot on and cook. The stove had to be warmed up gradually, and it smoked a lot. I realised immediately why these fire installations were mostly used outside. Cooking in the ceramic pot is a dream because the pot does all the work for you – you hardly have to stir the food; you just have to make sure you maintain the heat in the stove.

I have discovered the meaning of the phrase ‘prepare the water and add the fat’, and it is directly linked to the type of cooking pot used as well as the amount of meat to be cooked. Interestingly, as discussed already, I originally thought that the water was related to the absorption properties of the pot, and that is why I swirled it around the very first time I used the cooking pots. But I was pleasantly surprised that the pot did not absorb the water as originally suspected. Because of this, I decided to just keep things simple the second time and made a mix of water and fat according to the amount of meat as well as vegetables I would use. I realised during the second experiment that the water and fat should be heated with the pot, and once the pot is heated and ready for cooking, you can visually see this by the boiling of the water and fat mixture. Once this occurs, the pot is ready for cooking and for the first ingredient, which is usually onions.

From a chef’s perspective, these recipes were well thought out and the flavours perfectly matched. When salted meat was used, the chef cautioned against extra salt. When the ingredient had a strong flavour, such as dodder, the recipe called to add this ‘to taste’. The amount of ingredients was always up to the person cooking it, but the main ingredient was always mentioned first. Sometimes extra meat was added, and in some instances two different cooking techniques and different cooking pots were utilised. There was no need to write down the amount of ingredients needed, because this was always left up to taste, the size of the cooking pot that was used, as well as the number of people the recipe was cooked for.

These recipes were so cleverly designed that they could easily be adjusted to feed anywhere from four to fifty people. All that was needed was to adjust the amounts according to what would fit in the cooking pot. The food did not need to be stirred at all; only when adding additional ingredients. I realised the first time I cooked the recipe (as the first practice round and general problem solver) that the pot carried on cooking even after it was taken off the fire, and the food in the pot nearly burned. I kept this in mind when I cooked it the second time and took the pot off the stove just as I thought the food was nearly done. The resting of the pot on the pot stand continued cooking the food, and after 20 minutes it had cooled down enough to dish up. I then garnished the stew with freshly chopped coriander leaves and spring leeks, as per the recipe.

The flavour of the ‘*Tuḫ’u* beet stew’ can be described as rich in cumin and coriander flavours, balanced out by the slight sweetness of the added beetroot. The colour of the dish is

a pleasant deep red, topped with bright green coriander leaves and crunchy, fresh spring leeks, making it pleasing to the eye. The feedback I have received from the people that I have cooked for so far has always been extremely positive. Everybody loves the simplicity of the dish as well as the colour and flavour combinations. I cannot wait to cook and experiment with the rest of the recipes in this series, but this is a topic for further study.

CHAPTER SIX
CONCLUSION

6.1 INTRODUCTION

Ever since I first read about the Yale culinary recipes in 2013 and realised that I would indeed be able to shed new light on them, I have felt compelled to investigate these recipes from a chef's perspective as I believed they were intended to be used by and were written exclusively for chefs. As Bottéro (1987:11) explains, these early 2nd millennium BC 'cookbooks' from Southern Babylon were written in Akkadian and are classified as belonging to the Old Babylonian period, around 1700 BC. *Tablet A* (*YOS 11 25*) itself is relatively well preserved and consists of 25 recipes, of which 21 are meat and four are vegetable dishes. When studying *YOS 11 25,* it is not clear which recipes are referred to by the scribe as the four vegetable recipes as some of the ingredients are still untranslated (see 4.2.1.2). However, I have found one can further divide the recipes into sub-categories; these are four mutton recipes (see 4.3.1.2), two lamb recipes (see 4.3.1.3), four game recipes (see 4.3.1.5), one offal recipe (see 4.3.1.4), two goat recipes (see 4.3.1.1), four unknown meat recipes (see 4.3.1.7), three preserved meat recipes (4.3.1.6), and two vegetable recipes (see 4.3.2). There are only a few texts missing, and these culinary tablets demonstrate that a formalised culinary tradition did exist and that not only did ancient Mesopotamians have a vast technical knowledge, but they also had different gastronomic techniques (Bottéro 1987:11).

6.2 RESEARCH QUESTIONS

My most important research question was regarding how the recipes in *YOS 11 25* have been translated, interpreted and analysed (in English) by Bottéro and if I could make a valid contribution to the interpretation from a chef's perspective. My intention was never to translate the tablets, but rather to use and compare Bottéro's (1995 and 2004) English translations as a base, combined with the most recent translations and publication on the ingredients in the recipes in *YOS 11 25* by scholars such as Kelly (2012) and Barjamovic et al. (2019), to re-analyse and rework the recipes where possible (see 4.2.5). There are many neglected questions about ancient Mesopotamian cooking, especially regarding the way these recipes have been analysed, explained and interpreted over the years. Upon delving deeper

into the phrase ‘prepare the water and add the fat’ (see 4.2.4.5) and other cooking instructions found on the recipes, I found the results surprising. I had various other questions about the interpretation and analysis of this particular sentence as well as other cooking instructions found in the recipes (see 4.4). I also wondered about the cooking pots that were mentioned in the recipes as well as other equipment such as stoves, how these influenced the recipes and the way they were cooked and classified, and if this had a direct link to the phrase ‘prepare the water and add the fat’ (see 5.3.2.3b).

6.3 AIMS AND OBJECTIVES

One of my main objectives was to research the way the recipes were analysed and interpreted in recent studies, specifically focusing on Jean Bottéro’s English publications of 1995 and 2004. I wanted to re-analyse the recipes from a chef’s perspective. Another important objective was to suggest a new, updated and revised analysis of *YOS 11 25*, taking into account the latest research from Yale and Harvard University as well as new, updated suggestions of the ingredients, which up until now were still based on research from 1995 and 2004 (see 4.2.2). I thoroughly investigated all the recipes and managed to update and rework as well as re-interpret the recipes where possible (see 4.2.5). I further endeavoured to put one of these recipes to the test (see 5.3), and in the process I obtained more insight into the cooking methods used and by doing so came to a possible conclusion regarding the meaning of the phrase ‘prepare the water and add the fat’.

Another important aim was to investigate archaeological reports and articles on ancient kitchens in order to determine what equipment was available during the time period of the recipes and whether this had an influence on how the recipes were cooked. I looked at available archaeological information on cooking pots (see 3.5) as well as fire installations such as stoves (see 3.3.1). This helped me apply an experimental archaeological approach by building a replica pottery cooking pot and stove (see 5.2) and practically cooking these recipes in what I believe to have been an authentic way (see 5.3). I wanted to investigate the meaning and practical application of the phrase ‘prepare the water and add the fat’, with which 24 recipes (see 4.2.4.5) on *Tablet A* (*YOS 11* 25) start. Furthermore, I wanted to explore whether the ceramic cooking pot had an influence on the ancient cooking techniques and if this, in turn, influenced the outcome of the recipe (see 4.2.4.3). My practical experience as a chef and ceramist have brought valuable insight into the understanding of ancient cooking, especially into how these ancient cooking pots and stoves functioned. By

doing this, I also gained a better understanding of the phase ‘prepare the water and add the fat’. I have come to the conclusion (5.3.2.3) that the water and fat mixture was directly related to the size of the cooking pot, the type of meat that was to be used, and the number of people eating the meal. The type of cooking pot (3.5.3) also played a big role in whether the recipe was considered a stew or a broth (see 4.2.4.1).

6.4 METHODOLOGY

My research methodology for the topic *‘Prepare the water and add the fat?’ A re-interpretation of the Yale culinary tablet YOS 11 25* took on a *multi-disciplinary approach*, which included gastronomy, archaeology, experimental archaeology, as well as a *literary investigation* and textual analysis. When critically looking at the 1995 and 2004 translations and publications by Bottéro, I have found that there are plenty of differences between the two (see 4.2.3).

Next, I followed an *archaeological approach* by identifying the different utensils, ovens and pottery found *in situ* at the different sites during the time periods that relate to the recipes in the ancient Near East. I specifically focused on the cooking pots (see 3.5) that were used during the various periods as well as the ovens (3.3.1.3), stoves (see 3.3.1.4) and pottery utensils (see 3.4) that have been excavated. I rightly believed that there is a link between the pottery cooking pots and the cooking methods used relating to the phrase ‘prepare the water and add the fat’.

Lastly, I concluded the study with a *practice-based* or *practice-led* approach which took on an *experimental archaeological approach*, where I built a replica ceramic portable stove and cooking pots and put some of the recipes to the test (see 5.2.2). I believed this might help shed new light on the recipes and the understanding of certain concepts and methods used, such as the phrase ‘prepare the water and add the fat’ (see 4.2.4.5. and 5,3.2.3 b) as well as other cooking terms and instructions (4.4) used in the recipes.

6.5 RESULTS

I will forever be grateful for the incredible work done by Professor Bottéro in terms of paving the way for us to understand and read these recipes. However, I have found many inconsistencies between his two English publications (of 1995 and 2004) and thus decided, to the best of my ability, to re-analyse and re-interpret and these recipes. I tried to stay as close

as possible to Bottéro's translations, but at the same time, to shed new light on the various modern interpretations of ingredients such as *samidu* (Persian shallot) and *šuḫutinnû* (kurrat or spring leek) (see 4.2.1.2). I also kept all the ancient kitchen equipment mentioned in the recipes such as stove, cooking pots and cooking instructions such as 'peel the vegetables' or 'singe the legs' in mind. I critically looked at each recipe and I was pleasantly surprised by the inclusion of various cooking utensils such as strainers, sieves, and mortars and pestles (see 3.4.3). However, my biggest surprise was the inclusion of ancient stoves and the various cooking pots that were used (see 3.5).

6.5.1 Cooking pots and portable stove

My biggest obstacle since starting this investigation was to find the cooking pots and fire installations as well as how they looked like in the archaeological record. It took me years of research to eventually find the correct information. My excavation experience at Hazor proved to be invaluable in building the cooking pots and portable stove because I worked first-hand with these ancient artefacts, and I was lucky enough to have handled a few cooking pots during my excavations and assistance with the restoration of cooking pots at Hazor. I even had the privilege of partially restoring a Bronze Age cooking pot. My work experience with National Geographic, by whom I was commissioned to build the kitchen ensemble, was very helpful in honing my skills. This, as well as years of practising ceramics professionally, provided me with the practical experience to build the cooking pots and portable stove. However, not until I had found the academic information and publications of Smogorzewska (2012), which provided me with visual references for what this equipment looked like. I was finally able to get the proper archaeological information on Mesopotamian kitchens, the equipment they used, and the layouts of the ancient kitchens that I needed in order to build the cooking pots and stoves in 2020.

I had spent years looking for Mesopotamian cooking pots, and when I eventually found them in the writings of Smogorzewska (2012), it struck me that they were all similar in shape, no matter from which area they were. The cooking pots all had rounded bases made from heavily grogged clay as well as lids. The reason for the rounded base was so one could nestle the pot nicely in the coals without any sharp corners that interfere with space or heat transfer (see 3.5). The pot heats evenly this way, even if put on the portable stove. The portable stove (3.3.1.4), I have to admit, was what made the study worth it for me in the end. I never would

have imagined that the Mesopotamians had access to such a wonderful apparatus in ancient times, never mind the ancient bread stoves and pottery kilns. Not only could one use this stove for cooking with cooking pots, but one could also use the notches in the design to grill meat and vegetables in addition to using the outside of the stove walls to grill bread, and as a final *coup de grâce*, it was portable! You don't get better than that. I could just imagine this was a dream apparatus to have in the ancient kitchens. As discussed in Chapter Three (see 3.5), the ancient cooking pot played a very important role in how these recipes were cooked, as well as the result each different cooking pot would give as a finished and fired product (see 3.5.3).

There were, however, a few recipes (see 4.2.4.2) that called for the ingredients to be cooked in a variety of different cooking vessels such as the *ruqqu* and *diqaru* (see 3.5.3.1) as well as different cooking techniques such as singeing, frying and boiling (see 4.4). One has to note, however, that the ancient chefs did not use low-fired cooking pots exclusively – they also used high-fired cooking pots as well as baking trays, tins and bread moulds, which have been excavated all over Mesopotamia. When one takes a closer look at archaeological data and moves away from purely classifying these recipes as broths or stews (see 4.2.4.1) and take into consideration other ceramic containers that were used for cooking (see 3.4), as mentioned above, one comes to realise there were more than a few different ceramic equipment present in ancient kitchens.

6.5.2 *YOS 11 25* – revised and updated

When I started the study, I had many questions relating to the recipes, such as what ingredients were specifically used in these recipes and how the ingredients were cooked and prepared. I analysed these recipes from a chef's perspective with the hope of being able to not only understand these recipes, but also to construct a working recipe that will bring these ancient dishes back to life. Whoever created and wrote down these recipes did not feel the need to give any more information on the amounts of the ingredients that were to be used (see 4.2) because, as I realised from my experimental research (see 5.3.2.1), the quantity of the ingredients depended on the size of the pot that was used as well as the number of people that was being cooked for as these recipes were mostly one-pot meals. When I delved deeper into the recipes, particularly when I started to compare Bottéro's 1995 and 2004 translations (see 4.2.3), I started to discover many inconsistencies. Some cooking instructions differed from each other, such as 'carve and serve' (1995) and 'ready to serve'(2004) (see 4.2.3.1), as well

as different cooking equipment mentioned (4.2.3.7), and in one recipe 'Garden turnips', ingredients were even left out (see 4.2.3.5). It became clear that in order to understand them better, I needed to re-look these recipes. There have been a few recent studies done on the topic by researchers like Kelly (2012) and Barjamovic et al. (2019), and together with the new suggestions of ingredients such as *samidu* (Persian shallot) and *šuḫutinnû* (kurrat or spring leek) (see 4.2.1.2), I set out to re-interpret the recipes to reflect the latest research on the topic. Once I finished re-writing the recipes, I critically looked at each recipe and analysed it in order to see what cooking instructions were present in each recipe (see 4.4), which kitchen equipment was used in the recipes (see 4.2.4.2), the cooking pots mentioned (4.2.4.3), and lastly what the phrase 'prepare the water and add the fat' means (see 5.3.2.3.b).

6.5.3 Experimental archaeology

Upon first reading these recipes, the fact that they were all classified as broths yet they were cooked in ceramic pots confused me because I know from my chef's training that the pot used to cook the food in makes a huge difference to the end product of the recipe. I not only set out to properly analyse and re-interpret the recipes, but I also wanted to challenge Bottéro and cook the recipes, which he refused to do (Bottéro 1987:11-19). In 2013, I did not yet have the skills to build these pots, but I knew they were so important to this study that I set out to become skilled enough in pottery in order to build these pots. It took me seven years of commitment to ceramics in order to be able to build the cooking system in 2020. Building the cooking system (pots and stove) coil by coil took me three weeks, and I used 40 kg of clay! Once the system was bisqued and ready to be used (see 5.2.2), I was excited as well as scared because I had replicated a cooking system that had not been in use for hundreds of years. I had no clue what I was doing – all I could do was rely on my chef's as well as ceramist's experience and tackle this new situation to the best of my abilities.

For my experimental cooking, I decided to focus on recipe no 22 (62-64), *'Tuḫ'u* beet stew', found on *Tablet A* (*YOS 11 25*) (reworked and updated, see 4.2.5). The reason I decided to use this particular recipe (see 5.3.2.2) was that it was one of the few recipes on the tablet where all the ingredients are known. The first time I cooked the recipe in the ceramic pot, I was convinced that the water sealed the pot. I swished it around, hoping to seal the surface, and added the fat. I realised once I added the rest of the ingredients that the dish was very dry and that I had to add more water in the middle of cooking. This led me to realise that I was overthinking the phrase 'prepare the water and add the fat' and that instead of trying to match

what I had originally thought was how it would work, I needed to take a step back and read the recipe literally (see 5.3.1). I also realised that the ceramic cooking pot has such excellent heat-retaining properties and keeps on cooking long after being removed from the stove that I nearly burned the first batch (see 5.3). Firing the stove was something to get used to – it smokes a lot, especially if you drop the ball and do not regulate the heat properly and you do not add wood consistently. But I soon got the hang of it, and I cannot believe this stove has become redundant. I could think of so many rural peoples who could benefit from having one of these in the homestead.

For my second experiment (see 5.3.2), armed with all my newly-gained knowledge on cooking pots and stoves, I set out to cook the same recipe again. This time it worked like a dream. I 'prepared the water and added the fat', meaning I measured the water based on the size of the pot and the amount of ingredients used, and I added a good amount of fat to this, pouring this mixture into the cold pot. Next I gradually heated the pot on the stove. The water and fat mixture was ready to receive the ingredients when it started boiling rapidly. I then added the ingredients stated in the recipe, starting with the meat and onions, leeks, garlic, arugula, and lastly beetroot, and cooked this until it was ready to be taken off the stove. Many recipes tell you exactly how long this is through phrases such as 'with the pot resting on the heat' or 'barely resting on the heat' (see 4.2.4.4 for full discussion). When I cooked the recipe in this way, I did not have to add extra water at all, and there was minimal stirring involved. I then remembered to take the food off the stove just before the meat was completely tender, because I knew the dish would carry on cooking even when it removed from the stove. Once the dish was cooked, as in most recipes, I garnished the dish (see 4.4.6.1) with more mashed garlic, spring leeks or *kissimu* (yogurt).

What I gained from this study is so much more than what I had ever expected. I not only managed to build and use ancient technology, but I also brought ancient cooking back to life. I was able to cook these recipes in what I believe was the best possible authentic way, and this once again made me realise how ingenious the Mesopotamians really were. They were the innovators of cuisine. Not only were they able to produce a multitude of different dishes and flavour combinations, but they were also the inventors of stoves, ovens and fully functioning kitchens filled with various pottery kitchen utensils and equipment. I hope that this study would stimulate more investigations into ancient cooking systems and hopefully broaden our knowledge of Mesopotamian cooking activities.

6.5.4 'Prepare the water and add the fat'

The most important question that I wanted to answer in this study and which boggled my mind from the beginning was what did the phrase 'prepare the water and add the fat' mean? As mentioned above, in most recipes in *YOS 11 25*, the first ingredient mentioned is always the meat that is going to be used, followed by the phrase 'prepare the water and add the fat'. This instruction is remarkably similar to modern recipes, which tell the chef cooking the food to add oil to the pan and to add the onions. When I first started this study in 2016, I wrongly assumed, by reading that line, that a chef automatically knew that the onions were to be fried without anybody explaining that to him and that the water would evaporate, in effect sealing the pot, and the oil would stay behind. I wondered if this could mean that the method of preparation started with the meat being added to the pot first, then being browned, followed by the pot being deglazed with the prepared water.

When I finally did my experimental cooking in 2020, I realised not only that I was wrong, but to my surprise and somewhat of a disappointment that there is no special meaning or hidden instruction in this phrase. It simply means that one had to measure the right amount of water and fat needed to cook the recipe, based on the size of the cooking pot and meat used. This mixture was then added to the pot, and once it heated up (started to boil), the rest of the ingredients were added to the pot in the sequence in which it was written down in the recipe (see 4.2.4.5 and 5.3.2.3 for full discussion). It is interesting to note, however, that only one recipe, recipe no 10, '*Zamzaganu'* (see 4.4.5), has no water and fat added to it, and the natural juices that are produced as a by-product of cooking are strained before serving, making it the only dish in the recipe collection that is 'dry'.

6.6 FURTHER RESEARCH

What struck me most during the years of research was the scope of studies that can still be done on the subject of Mesopotamian cuisine, especially in relation to *YOS 11 25*. As I have mentioned before (see 4.2.5), my intention was never to translate the tablet, but merely to highlight the research already done on the subject. I do, however, feel that some things that were not within the scope of this paper deserve further investigation.

- Investigating foreign cuisine and ingredients such as the Elamite ingredient *zurumu*. Perhaps an investigation into the Elamite ingredients and language would provide the meaning or translation of that particular ingredient (see 4.3.3.1).

- I also think that perhaps looking into the Assyrian ingredients and language would shed light on the word *samidu* as this ingredient is present in both recipes (see 4.3.3.2).
- Proper documentation is needed in archaeological excavations, with special focus on household, palace and temple kitchens and their resulting artefacts, in order to assist in further research into ancient cuisine.
- Further experimental archaeological cooking experiments such as cooking all the recipes found on *YOS 11 25* are needed in order to get a better understanding of the various cooking instructions as well as cooking methods employed by the Mesopotamians.

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