



## Methods of Food Preparation in Mesopotamia (c. 3000-600 BC)

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## MISCELLANEA

### METHODS OF FOOD PREPARATION IN MESOPOTAMIA (c. 3000-600 BC)

This study was carried out to discover what foodstuffs could be obtained in Mesopotamia c. 3000-600 BC and how they were prepared. The evidence comes from botanical, faunal and other remains found on excavated sites (including tools, ovens and pottery), artistic representations on cylinder seals and reliefs, and cuneiform texts.

A wide range of foodstuffs was available. Cereals—especially barley, emmer wheat and bread wheat—were the main crops but onions, chick peas, lentils, field peas, grass peas, cress, coriander, cumin and other herbs and spices were also grown, and fruit-trees including dates, figs, pomegranates, apricots, apples and grapes were cultivated. Other fruits which were eaten but which may have been brought into the country rather than grown there were pears and plums. Sheep, goats, cattle and pigs were kept, game animals such as antelopes, deer and hares were hunted and fish and birds were caught.

The textual material does not always complement the archaeological testimony, so that in some periods most information for food stuffs is drawn mainly from the documents while for others it has come from excavated remains. In addition, the amount of evidence varies from place to place and period to period—for example there is more textual evidence for fish at Lagaš in the mid-third millennium than there is at any other place or time.

#### *Cereal Preparations*

Cereal preparations formed the main part of the Mesopotamian diet. Cereal grains can be prepared and eaten whole in a number of dishes or they can be ground into flour and baked as bread. They can also be made into a drink.

#### *Whole grains*

The simplest method of preparing barley and wheat for eating is by roasting or parching the grains. Archaeological evidence for this is difficult to obtain. The botanical remains indicate only the occurrence of barley or wheat but not what, if any, methods were used to prepare them. Any simple hearth or kitchen range could be used for parching, and such structures are common on excavated sites. It is unlikely that a specific pottery vessel was used only for parching grains as any fairly shallow dish or plate which could be set on a hearth or range would suffice.

#### *Burghul*

Another method of preparing whole grains is the manufacture of burghul. The whole grains are boiled in open vessels with as little water as possible until they are soft. They are then spread out in the sun to dry. Burghul keeps well. When it is required for eating it can be prepared by steaming or boiling; only a small amount of liquid is needed. The burghul can then be eaten with oil, meat or vegetables or it can be added to soup.

A study of burghul making was carried out by the archaeological team working at Aşvan, Turkey, in 1972<sup>1</sup>). They found that it was made once a year, over specially constructed hearths. These were often trenches about half a metre wide by 2 metres long and 60 cm deep. The grain was boiled in cauldrons set over the trench which was filled in again the same day after use.

This use of a trench recalls the so-called *Opferstätten* trenches found at Warka in the Eanna precinct<sup>2</sup>). The purpose usually assigned to them is that of offering places for the gods. However, the fact that the troughs were apparently infrequently used may mean that their purpose was for the production of something which only required periodic preparation—in other words burghul. The width and even the depth of the Warka troughs are similar to those of the burghul-trenches at Aşvan.

### *Cereal dishes*

Words for roast barley, semolina, and a type of groats appear in lists of food provided for the kitchen, for royal meals and as ingredients for beer<sup>3</sup>). One particular dish made from semolina is *sasqû*. This was a creamy or soup-like dish, prepared from semolina made from emmer wheat or barley and mixed with water, milk or oil. It could be served plain or mixed with dates (although the latter are mainly confined to ritual occasions<sup>4</sup>). Another preparation *paḫpāsu* was probably made from coarsely crushed and malted barley (very occasionally emmer wheat). At Mari both *sasqû* and *paḫpāsu* appear to have been side dishes rather than main parts of the king's meals<sup>5</sup>).

### *Breads and flours*

Grain was also ground into flour, mainly for the production of bread. The milling was carried out by hand usually by rubbing and grinding with a rubbing stone on a quern. Stone querns and mortars have been found at many sites, often with stone hammers, pestles or rubbers. There is a little evidence for rotary hand-mills and those that have been found are too small for grinding grain<sup>6</sup>).

Flours of different fineness can be produced according to the amount and type of grinding and sieving. That different grades and qualities of flour existed is shown by the number of words and phrases used to describe them (e.g. 'coarse barley flour' *zì.šE/lappinnu*, a flour sometimes issued as rations and *zì mirqu* probably finely ground flour<sup>7</sup>).

The most common use of flour is to make bread, of which there are two basic types—unleavened bread made by simply mixing flour and water into a dough, and leavened bread which consists of the mixture of flour and water, plus yeast or another type of leaven.

In present day Iraq, bread is made by fermenting the dough, either by the yeasts in the air, or more usually by the use of a sour (a piece of the previous batch of dough). The dough is flattened by tossing and patting from hand to hand until it is very thin. It is then baked either by placing it on the inside of a tannour-oven, or on an iron plate.

The tannour-oven is constructed of clay and curves gently up like a dome. It has an opening at the foot for stoking and clearing out the ashes and a larger opening at the top for the insertion of the flattened dough. A fire of wood and sometimes chaff

or dried dung is lit inside the oven and allowed to burn until the structure is heated through. The dough is then placed on the inside wall of the oven through the top opening. The tannour-oven has been found on most archaeological sites in Mesopotamia from the end of the fourth millennium at Tepe Gawra to the first millennium at Nimrud and it seems likely that tannour-bread was the type commonly eaten<sup>8</sup>).

Bread was made into various shapes (balls, rings, crescents as well as flat flaps) and representations of different shapes can be seen on cylinder seals and impressions, reliefs or on stone vases. Many of these scenes indicate some of the different ways bread was served at a meal. Flaps of flat bread were often served with fowl or joints of meat or fish set on top<sup>9</sup>). Another shape occasionally referred to in texts is bread shaped like a hand (NINDA ŠU)<sup>10</sup>). It is possible that this is the bread which is represented like a fan or a bunch of bananas on some Assyrian reliefs<sup>11</sup>).

### *Cakes*

Different types of sweet confections were made. One example is NINDA Ì.DÉ/*mersu*<sup>12</sup>). This was a preparation of flour and oil to which other items could be added. In lists of ingredients sent to the cooks at Mari, dates, nuts and different spices including cumin and coriander were given for *mersu*<sup>13</sup>).

Sweetened cakes and breads, often stuffed with dates, figs or other fruits, are popular nowadays in the Near East. A traditional way of decorating such cakes is to use a *klaicha*-mould. These moulds, which are now usually metal or wood, have a design on the inside base. When the pastry and the stuffing are prepared, the inside of the mould is lightly oiled and a layer of pastry is pressed into it so that it fits into the design. The filling is added and more pastry is used to cover it. After the edges have been pinched together the mould is turned over so that the pastry-case comes out with the design now impressed on its top. The pastry-case is then baked.

Many pottery moulds were discovered at the Palace at Mari<sup>14</sup>). These moulds are round or rectangular plates with raised sides and a variety of designs on the internal base. In an experiment (by this writer) it was found that a pastry case made from plain flour, water and oil, and filled with chopped dates and nuts, could be pressed into a reproduction of one of the Mari moulds. It turned out and baked satisfactorily, retaining the design. Similar moulds<sup>15</sup>) tentatively dated to the Larsa period are on display in the Iraq Museum in Baghdad. It is possible that all these moulds, and indeed even the copper 'handled-pans' which were found at AŠŠUR<sup>16</sup>) were used in the manner of *klaicha*-moulds today, possibly to decorate NINDA *mersu*.

### *Beer*

The term 'beer' today covers all malted liquors known as beer, ale, stout, porter and lager. The chief raw material for all these drinks is barley which has been malted, and many of the differences derive from the use of caramelized sugar, darker malt, local waters used in the brewing processes, and variations in the techniques of fermentation. Hops are added for preservation and flavouring, the amount used varying according to the type of beer to be produced. For instance lager is more lightly hopped than ale and stout. Hopped beer was not known in England until the early 16th century (AD) and its predecessor, the old 'ale', was a

cereal preparation which could be brewed at home. It was probably similar to the traditional country beers still made in many parts of the world.

Texts give details of how the Mesopotamians made their beer<sup>17</sup>). First the barley was malted and then a malted bread was baked, broken into pieces and soaked in water. Starchy materials such as semolina and flours were also baked as bread and similarly broken into pieces, and mixed in the wort produced by the infusion of the malted bread and eaten, together with any spices or other flavouring. The mixture was heated and left standing for fermentation. It could be taken as a sweet non-alcoholic drink before fermentation.

Once the basic recipe for producing beer was known many different sorts and strengths could be made. This is shown by the number of words used to describe beer<sup>18</sup>). While many descriptions may have been 'commercial' names given by particular brewers to advertise their own products, other names refer to the ingredients and to the strength of the drink. One beer—called *alappānu*—was flavoured with pomegranates<sup>19</sup>).

Many scenes on cylinder seals dating from the Jemdat Nasr to the Agade period show people drinking out of large vessels through tubes. This may have been because the beer was not strained or filtered so that it contained substances which were unpleasant to swallow. From the Early Dynastic period onwards some cylinder seals show people drinking through tubes while others hold cups in one hand<sup>20</sup>). If these cups are for liquid, and are not dishes for food, perhaps in the mid-third millennium new techniques in brewing were evolved which produced a clearer beer with few foreign bodies. These two types of beer may have continued to be made side by side for some considerable time, at least until the end of the Early Dynastic III period. Another change in technique is implied by a change in writing the word for brewer. In the third millennium 'brewer' was written LÚ.ŠIM + GAR/LÚ.BAPPİR (in Lagaš KAŠ.GAR) but during the Kassite period there was a tendency to write simply LÚ.ŠIM, and sometimes ŠIM.A in the Neo-Assyrian period<sup>21</sup>). This change in writing, together with the fact that beer-bread (BAPPİR/*bappīru*) is only referred to in religious texts and vocabularies in the late second millennium<sup>22</sup>), suggests that the practice of baking special types of breads to be added to the malted grain was to a certain extent abandoned.

#### *Flesh, fish and fowl*

Information about the consumption and preparation of meat for food is slight when compared with the amount of information available about cereal food-sources. The main domestic animals (cattle, sheep and goats) were kept as work-animals and for wool, hair, hides and dung as well as for their flesh and dairy produce. Even wild animals such as gazelles may have been hunted for their hides as much as for their flesh and in certain periods and among certain levels of society, the element of sport in hunting was important.

During the Ur III period many texts record the delivery of animals to the kitchen (É.MUḪALDIM) and in some cases it is specifically stated that these animals are for particular groups of people—for instance the troops<sup>23</sup>). From Ur come two texts which record the issue of sheep for female weavers possibly for special occasions such as the new year<sup>24</sup>). Fish were given to servants at the new year also. That mutton, pork, fowl and fish were included in the provisions for the king's

households is shown by a text listing these foodstuffs with dairy products, eggs and fruit sent from the temple of Nannar<sup>25</sup>) but rather more surprisingly it seems that meat was also supplied to prisoners of war<sup>26</sup>).

The Neo-Assyrian reliefs contain several representations of the slaughter of animals and the skinning and cutting up of the carcase<sup>27</sup>). In one scene inside a fortified camp, a fat-tailed sheep is slaughtered on a bench—its head positioned so that its blood is drained into a basin<sup>28</sup>). It is not clear whether this was to keep the tent clean or whether the blood was being saved for any reason.

The main methods of cooking the joints into which the carcasses were cut were boiling or roasting. A text from the Ur III period refers to goats being roasted in an oven<sup>29</sup>). A series of texts dealing with the cult of Aššur (Neo-Assyrian period) gave instructions for cooking meat<sup>30</sup>). The sacrificial meat might be placed on a hearth—to roast—and cut-off meat was boiled or stewed. Other instructions given to the cook to take the offal and the head, legs, ribs and bones of animals suggest that little of the carcase was wasted.

A dish which is popular in Iraq today is *parcha*, made from the lower legs and feet of sheep together with the head and stomach. It is served on pieces of bread. A sheep's head placed on bread and set before Ishtar on an Akkadian seal<sup>31</sup>) and the references to sheeps' heads and legs on bread in the Cult of Aššur texts may mean that *parcha*-type dishes were cooked then.

The discovery of pig-bones on settlement sites such as Tell Asmar and Nuzi<sup>32</sup>) suggest that pork was eaten. Pig teeth were found in some of the graves in the Royal Cemetery at Ur, and these may be the last surviving remains of pigs slaughtered for food<sup>33</sup>). Other animal bones found in the Ur graves were large and had been deliberately broken, presumably to extract the marrow<sup>34</sup>).

Gazelles were important as food, especially in the third millennium. In the Ur III period a month was named after this animal at Puzriš Dagan—'the month of eating gazelles'<sup>35</sup>). And in the Old Babylonian period at Chagar Bazar gazelles were fed on barley, probably to fatten them<sup>36</sup>). The continuation of the importance of gazelles as food is suggested by the provision of 500 for the banquet given by Aššurnaširpal at Nimrud in the Neo-Assyrian period<sup>37</sup>).

Fish formed an important source of food, both in the diet of the ordinary people and in the meals given to the kings and their households<sup>38</sup>). Fish bones have been found on many sites (e.g. Eridu, Ur, Warka, Tell Asmar, Nippur, Tello). Deposits of fish, often compressed into layers in which the skeletons, skin and scales could be distinguished were found at Tello<sup>39</sup>) and Warka<sup>40</sup>). These may be the bottom layers of fish which had been piled up for drying or salting<sup>41</sup>). The salt solution which drains away during dry salting could have caused the staining of the floor in Level 1-4 at Warka.

The textual evidence shows that many different types of fish were known and utilized. Texts from Lagaš (Early Dynastic III) mention at least 20 sorts, some of which were also described as being salted or dried<sup>42</sup>). Later in the third millennium and in the second, the number of named fish and the quantities mentioned in texts drop considerably but the continued discovery of fish-hooks in the second and first millennia indicate that fish continued to be caught<sup>43</sup>). The Neo-Assyrian reliefs depict the rivers and canals being full of different sorts of fish but although the texts of this period show that taxes and tribute were being paid in fish, the numbers

recorded are not quite as large as those in the third millennium and the fish are nearly always called 'fish' without the species being given<sup>44</sup>). This however may only reflect a difference in attitude between an area dominated by rivers, canals, lakes and marshes where fishing was a main industry (i.e. the cities of third millennium Sumer) and an area (Assyria) which drew its supplies from an empire and in which fishing played a minor part.

Some species of fish can be identified in the texts<sup>45</sup>). Identification on reliefs are more uncertain because of the lack of specific features depicted. Of the fish-names which can be identified, the most common are types of barbel, a member of the Cyprinidae family to which the carp belongs.

Birds and their eggs played only a secondary role as a food source, and textual references to them are rare. But bird bones have been found on many sites<sup>46</sup>) and it is probable that birds were eaten. The most frequently mentioned ones were the goose and the duck, and doves or pigeons<sup>47</sup>). The DAR.LUGAL.MUŠEN/*tarlugallu* has been identified as the cock (family *Gallus*) and the DAR.MUŠEN/*tarru* may be the hen (or at least the female of the *tarlugallu*<sup>48</sup>). The DAR.ME.LUH.HA.MUŠEN/*šulāmu*, *šallāndu* etc., has also been identified as the domestic hen<sup>49</sup>). The association with Meluhha suggests that the bird was brought from the Indus Valley area, probably as a novelty, but the scarcity of references in economic texts and the lack of representations suggest that it was not common until later. One of the earliest pictures of a cock with its distinctive head and tail comes from Aššur in the Middle Assyrian period<sup>50</sup>). Other sure representations are much later. References to possible hens in the Near East outside Mesopotamia, nearly all date from the mid-second millennium onwards<sup>51</sup>).

#### *Miscellaneous*

##### *Dairy Produce*

Dairy products formed part of offerings for many rituals and they are included in lists of food items from third to first millennia emphasising their continuous use as food. The main milk animals were the sheep, goat and cow. Dairy products are often listed on texts recording herds of sheep and cattle<sup>52</sup>). These products are normally Ì.NUN/*himētu* ghee (clarified butter) and GA.ĦAR—cheese, probably curd cheese. GA/*šizbu*—milk<sup>53</sup>) is seldom listed on such texts and may be rare. This suggests that milk more commonly was made into butter and cheese—presumably because such products keep better and can be more easily transported. Ghee keeps more easily than ordinary butter and as Ì.NUN was sometimes issued for a year at a time<sup>54</sup>) this term may be better identified as ghee rather than butter.

##### *'Honey'*

The main sweetening agents in Mesopotamia must have been syrups made from fruit, especially from dates, and honey. LĀL/*dīšpu* is usually translated as honey<sup>55</sup>) but this has been challenged on the grounds (a) that bees were not brought into Mesopotamia until the Neo-Assyrian period when the Governor of Suhi and Mari boasts of bringing bees from the north<sup>56</sup>) and (b) that the similarity between *dīšpu* and *dibis* (the Arabic for date-syrup) is so great that they must have the same meaning. LĀL was probably used simply to mean 'sweetening syrup' whose specific origin was not considered important.

What type of meals did the people of Mesopotamia prefer or think right? Remains of food-dishes were found on saucers as part of a foundation offering in a grave at Ur (PG/1054) in the mid-third millennium. Here the bones of sheep/goat, date stones, dried apple rings, and the remains of what was possibly flat bread suggest that a mixed diet of meat, fruit and bread was preferred<sup>57</sup>). Rations issued to 'messengers' in the Ur III period usually included beer, bread, onions and oil, with the occasional addition of fish<sup>58</sup>). The king's meals at Mari<sup>59</sup>) show a wide variety of cereal and vegetable based dishes, with fruit, honey, oils, fish and meat. In accounts listing food given for a marriage ceremony in the Old Babylonian period at Ur, sheep, bread and beer, together with ghee and linseed oil were issued to the groom, his mother and members of the wedding party<sup>60</sup>). At Nimrud in the first millennium what may be the remains of a cooked meal included barley, possibly cracked, grapes, perhaps dried, and green vegetables<sup>61</sup>). Texts from the same period and the list of provisions for Aššurnaširpal's feast<sup>62</sup>) show that a wide variety of foodstuffs was favoured and that both cereal and vegetable dishes and meat were used. A text from Warka in the Neo-Babylonian period gives what may be a recipe and throws some light on the tastes of the people at that time<sup>63</sup>). The recipe says that plenty of roasted spices, including mustard, cress and cumin, should be boiled in water, into which 2 shekels of cucumber were added the mixture was to be cooked until it was 1 SILÀ (a reduction of about a half). It was then strained and stuffed (?) (*ta-nam-di* (!) you pour) into raw meat. This suggests that highly spiced dishes were eaten and that dishes of meat stuffed with vegetables were prepared. But the offerings in the Royal Graves, the marriage ceremony, the king's meals at Mari and Aššurnaširpal's feast, are 'special occasions'. It is the messengers' rations and the remains of the meal found at Nimrud which may give a better idea of everyday food<sup>64</sup>).

ROSEMARY ELLISON

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5) E.g. ARMT IX No. 185 col. III 15' and 23'.

6) E.g. M. von Oppenheim, *Tell Halaf*, London & New York (n.d.), Putnam's, 206; and *Tell Halaf* (ed. B. Hrouda), Vol. IV, Berlin, de Gruyter, 1962, 51, Plate 38 a, c, Plate 39 a, b, c; V. C. Childe, 'Rotary Querns on the continent and in the Mediterranean Basin', *Antiquity* XVIII, 1943, 21-24.

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- 10) T. G. Pinches, *The Amherst Tablets*, London, Bernard Quaritch, 1908. No. 102, line 6.
- 11) R. D. Barnett, *Sculptures from the Northern Palace of Aššurbanpal at Nineveh (668-627 BC)*, London, British Museum (1976), Plate LXV.
- 12) ARMT IX, 278; ARMT VII, 259; CAD, Vol. 10/2 M *ursu*, 108.
- 13) ARMT XI, No. 13.
- 14) A. Parrot, *Le Palais II/3*, Documents et Monuments. Mission Archéologique de Mari, Paris, Geuthner, 1959, 33-57.
- 15) E. Douglas Van Buren, *Fauna of Ancient Mesopotamia*, *Analecta Orientalia* 18, Rome, Pontifical Biblical Institute, 1939, 107 and Fig. 95.
- 16) A. Haller, *Die Gräber und Gräfte von Assur*, Wissenschaftliche Veröffentlichung der Deutschen Orient Gesellschaft 65, Berlin, Mann, 1954, Grave 20, Plate 10 b, 10; 104, Tomb 21, Plate 21 a f. The handled pans have also been associated with metal working. See P. Calmeyer, 'Das Grab eines altassyrischen Kaufmanns', *Iraq* 39, 1977, 90 and Plate II.
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- 19) CAD, Vol. I/1 A. *alappānu*, 335-336.
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- 48) A. Salonen, *Vögel ...* 151-153, 154-56; AHw.
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- 50) A. Haller, *Die Gräber und Grüfte von Aššur*, Wissenschaftliche Veröffentlichung der Deutschen Orient Gesellschaft 65, Berlin, Mann, 1954, 135, Abb. 161 and Plate 29.
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- 53) AHw, 1253, *šizbu*.
- 54) A. T. Clay, *Documents from the temple archives of Nippur dated in the reign of Cassite rulers* (complete dates), Babylonian Expedition of the University of Pennsylvania XIV, Philadelphia University of Pennsylvania, 1906, No. 138, 1 passim.
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- 57) R. Ellison, J. Renfrew, D. Brothwell and N. Seeley, 'Some food offerings from Ur, excavated by Sir Leonard Woolley and previously unpublished', *Journal of Archaeological Science* 5, 1978, 1-11.
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- 59) ARMT VII, IX, XI, XII. See VII, 256, para. 70, and IX No. 251, rev. 5'-8'.
- 60) S. Greengus, 'Old Babylonian Marriage ceremonies and rites', *JCS* 20 (1966), 55-72.
- 61) H. Helbaek, 'Plant remains from Nimrud', *Nimrud and its remains* (M. E. L. Mallowan), London, Collins, 1966, 614.
- 62) D. Wiseman, *Iraq* 14, 1952, 24-44.

63) E. Ebeling, 'Ein rezept zum Würzen von Fleisch', *Orientalia* (NS) 18, 1949, 171-172.

64) It should be noted that the references cited in the footnotes give only some of the evidence for the use of food and its preparation in Mesopotamia. For many of the products see for example H. H. Figulla, *Iraq* 15, 1953, 88-122 and 172-192. Further references can be found in the articles and books given in the footnotes or in the unpublished thesis, *A Study of Diet in Mesopotamia (c. 3000-600 BC) and associated agricultural techniques and methods of food preparation* (Elizabeth Rosemary Ellison), University of London, 1979. For salt and its use see the articles of D. Potts and K. Butz in this volume of JESHO.