

Offprint from

Studia Chaburensia

Edited by Hartmut Kühne

Editorial Board:

Peter M.M.G. Akkermans, Eva Cancik-Kirschbaum,
Florian Janoscha Kreppner, Karen Radner

Volume 1

2010

Harrassowitz Verlag · Wiesbaden

Dūr-Katlimmu 2008 and Beyond

Edited by Hartmut Kühne

2010

Harrassowitz Verlag · Wiesbaden

Scientific Committee:

Dominik Bonatz, Dominique Charpin, John Curtis, Jean-Marie Durand, Jesper Eidem, Frederiq Mario Fales, Jörg Klinger, Maria Grazia Masetti-Rouault, Stefania Mazzoni, Peter Miglus, Adelheid Otto, Simo Parpola, Peter Pfälzner, Nicolas Postgate, Michael Roaf, Stefan Seidlmayer, Daisuke Shibata, Chikako E. Watanabe.

The series will consider contributions in the following fields:

- History, with an emphasis on regional, local, and micro-historical approaches.
- Archaeology, with an emphasis on studies on material-cultural phenomena from excavation contexts and on functional analysis.
- Environmental studies, with an emphasis on the reconstruction of rural and urban landscapes and their development in relation to the natural conditions.
- Settlement history, with an emphasis on the development of settlement patterns and systems.
- Social studies, with an emphasis on rural communities, their organization and relationship to the central government; every day life and social systems.
- Publication of dissertations and other theses dealing with topics concerning these subjects.
- Publication of international and interdisciplinary conferences on topics concerning these subjects.

Manuscripts are to be submitted to the editor as word-documents, with figures as single jpg-documents with a resolution of at least 800 dpi. Languages: English, French, German (for other languages please contact the editor).

Address of the editor: Hartmut Kühne, Institut für Vorderasiatische Archäologie, Hüttenweg 7, 14195 Berlin, Germany.

Bibliografische Information der Deutschen Nationalbibliothek
Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the internet at <http://dnb.d-nb.de>.

For further information about our publishing program consult our website <http://www.harrassowitz-verlag.de>

© Otto Harrassowitz GmbH & Co. KG, Wiesbaden 2010
This work, including all of its parts, is protected by copyright.
Any use beyond the limits of copyright law without the permission of the publisher is forbidden and subject to penalty. This applies particularly to reproductions, translations, microfilms and storage and processing in electronic systems.

Printed on permanent/durable paper.

Typesetting: Tobias Schmidt, Berlin

Printing and binding: Memminger MedienCentrum AG

Printed in Germany

ISSN 1869-845X

ISBN 978-3-447-06209-1

Contents

Editorial Foreword.....	VII
Foreword	IX
Annie CAUBET, François POPLIN	
Réflexions sur la question de l'éléphant syrien	1
Grégory CHAMBON, Florian Janoscha KREPPNER	
Hohlmaßsysteme und deren „Standardisierung“ in Assyrien und Volumina von Gefäßkeramik aus Dūr-Katlimmu	11
Dominique CHARPIN	
An Old Babylonian Itinerary along the Ḫābūr.....	33
Jean-Marie DURAND	
Dur Katlim(m)u/Šēḫ-Ḫamad, how and why?.....	49
Frederick Mario FALES	
Production and Consumption at Dūr-Katlimmu: A Survey of the Evidence	67
Helmut FREYDANK	
Betrachtungen zur Weidewirtschaft in Dūr-Katlimmu.....	87
Anja FÜGERT	
Ein Pazuzu-Kopf und ein Tonverschluss mit Abdrücken eines Pazuzu-Kopfes aus Tall Šēḫ Ḫamad	101
Florian Janoscha KREPPNER, Heide HORNIG	
A Neo-Assyrian Chamber Tomb in Dūr-Katlimmu	107
Hartmut KÜHNE	
The Rural Hinterland of Dūr-Katlimmu.....	115
Maria Grazia MASETTI-ROUAULT	
Rural Economy and Steppe Management in an Assyrian Colony in the West.....	129
Christa MÜLLER-KESSLER	
Die aramäischen Verkaufsklauseln in den Beischriften.....	151
Marina PUCCI	
The Discovery of the City-Canal of Dūr-Katlimmu	163
Karen RADNER	
Neue neuassyrische Texte aus Dūr-Katlimmu	175
Hervé RECULEAU	
The Lower Ḫābūr before the Assyrians	187
Daisuke SHIBATA	
Continuity of Local Tradition in the Middle Habur Region in the 2 nd millennium B.C.....	217
Francelin TOURTET	
“Demons at home”	241

Editorial Foreword

This volume initiates a new series *Studia Chaburensia*. It will be devoted to the study of provincial regions with an emphasis on the development, change, and collapse of settlements, environment, economy, administration, and every day life in rural areas dependent on urban centres or not. Chronologically unlimited, the series will focus on the Assyrian and contemporary civilisations of the second and first millennia BCE. Geographically it will encompass Upper Mesopotamia as well as neighbouring regions.

January 2010-01-15

Production and Consumption at Dūr-Katlimmu: A Survey of the Evidence*

The Middle Assyrian Period

Important new sets of data for the reconstruction of the ancient history of the Lower Ḫābūr region are continuing to appear, thanks to the meritorious completion and publication of older and newer archaeological and philological studies tied to the Tall Šēḫ Ḥamad excavation project directed by Hartmut Kühne. Thus, in the last few years, consistent editions of texts discovered on the site, resp. of Neo-Assyrian¹ and of Middle Assyrian date² have been made public; these two series of “everyday” (or archival) documents constitute important additions for the historian’s benefit to a textual corpus from Tall Šēḫ Ḥamad which already comprised a volume on Middle Assyrian letters³. But this is not all the historian has at present at his disposal regarding the Lower Ḫābūr region in Antiquity: the Tall Šēḫ Ḥamad project has quite recently also issued a further collection of studies on the habitat of the named area, from Antiquity to the present, in the light of archaeology and the natural sciences, from climatology to palaeozoology to palaeobotany⁴. And finally, a further site in the same general area, Tell Ṭāban (ancient Ṭābētu), excavated by a Japanese team, already well known for its official inscriptions⁵, has also yielded a first set of documents from its own Middle Assyrian archives which are by and large contemporaneous with the ones from Tall Šēḫ Ḥamad⁶.

The time is therefore ripe for a set of preliminary considerations, aiming to connect at least some of the strands of what is nowadays known concerning Tall Šēḫ Ḥamad – ancient Dūr-Katlimmu and the anthropic/natural landscape of the Lower Ḫābūr in various phases of pre-Hellenistic times. More specifically, my scope in this contribution will be, to present and evaluate some aspects of the information concerning the productive “profile” of Dūr-Katlimmu which derive from archaeological and archaeometrical studies, while attempting to integrate them with the data provided by the cuneiform texts of Middle Assyrian date from the site⁷.

* University of Udine, Italy. The present study was written in the framework of the research program “Dictionary of Food Practices in the Ancient Near East”, directed by L. Milano (Venice), and financed by the Italian Ministry of the University and Research. During the period of financing (dec. 2006-feb. 2009), the author has been head of the local research unit of the University of Udine, dealing with textual and archaeological evidence from the 2nd and 1st millennium BC.

1 Radner 2002. Texts therein will be quoted as BATSH 6 + number.

2 Röllig 2008 (=BATSH 9).

3 Cancik-Kirschbaum 1996 (=BATSH 4).

4 Kühne 2008. A previous collection of studies of similar type was Kühne 1991.

5 Maul 2005.

6 Shibata 2008.

7 A further contribution, to be published in *Studia Chaburensia*, will deal with the texts of Neo-Assyrian date in cuneiform and Aramaic.

The Middle Assyrian (MA) textual material at present available from Tall Šēḫ Ḥamad / Dūr-Katlimmu is constituted by 106 well-preserved administrative documents and 46 letters (of which only 22 fully legible). On the basis of attested eponym dates, the former have been attributed by the editor, W. Röllig, to the approximate half-century between 1254 and 1211, i.e. between the late part of the reign of Shalmaneser I (1273-1244 BC) and the early part of the reign of his successor Tukulti-Ninurta I (1243-1207 BC)⁸. On the other hand, the few eponyms named in the letters published by E. Cancik-Kirschbaum belong to the reign of Tukulti-Ninurta I, thus to the latter part of the 13th century⁹.

In practice, both of these corpuses refer back to the high point of territorial domination of the Syrian Jezireh on the part of the still young Assyrian state, which had conquered lands reaching to the Middle Euphrates riverbank downstream from the Ḥābūr-Euphrates intersection, and at least as far as the banks of the Balikh upstream –albeit with many an “empty quarter” open to the roaming of West Semitic and Hurrian armed groups¹⁰. From the institutional point of view, since the time of Shalmaneser I, a *sukkallu rabiu* (“Grand Vizier”, but in fact a sort of viceroy)¹¹ was empowered over the Jezireh, while subordinate officials named *qēpus* acted as links between him and the king¹². The inner territory of this westernmost area, on the other hand, is to be viewed as a “network empire”¹³ formed by interconnecting “islands” of Assyrian control, for which the designation *pāḫutu*, “region” (with a *bēl pāḫete* at the head of each) or, with some overlapping, the Hurrian word *ḫalsu* (“fortified district”), is used¹⁴; the settlements within these Assyrian areas, which could be in charge of minor officials, such as the *abarakku*, are dubbed according to their size or their more or less fortified nature, as *ālu*, *birtu*, *dunnu*.

As has been remarked by a number of authors¹⁵, only limited data concerning the status of Dūr-Katlimmu after the reign of Tukulti-Ninurta I and during the following three centuries are available, but they prove sufficient to draw a few essential guidelines. It is safe to say that a first phase of decline of Assyrian political and military power in the Jezireh –presumably

8 Röllig 2008, 3.

9 Cancik-Kirschbaum 1996, 9-12. In the context of the neighbouring archival finds from the second part of the II millennium BC, the Middle Assyrian texts from Tall Šēḫ Ḥamad thus appear to be chronologically later than the documents in Middle Babylonian ductus from Tall Munbāqa/*Ekalte* (14th century: cf. Mayer 2001, 16-17), and partially contemporaneous to the texts from Meskene/*Emar* (13th-12th century: cf. Adamthwaite 2001, *passim*), but older than the 12th-century tablets from Tell Sabi Abyad, as yet unpublished (cf. Akkermans – Wiggermann 1999; http://www.sabi-abyad.nl/tellsabiabyad/resultaten/index/0_38/38_43/?language=en). Finally, the Tall Šēḫ Ḥamad texts are by and large contemporaneous with the 12th-11th century official and administrative documents from Tell Ṭāban/Ṭābētu (official texts published by Maul 2005; administrative texts provisionally presented in Shibata 2008), but older than the 11th-century texts couched by the ruler of Ṭābētu Aššur-ketti-lešer both in the capital city and at Tell Bderi/ *Dūr-Aššur-ketti-lešer* (Maul 1992) and by his presumed successors (cf. fn.19, below).

10 Cf. Kühne 1995, 72-76; Morandi Bonacossi 1996, 58-59; id., 2000, 355; Wilkinson et al 2005, 25. On Middle Assyrian settlement on the area to the south of the Ḥābūr-Euphrates confluence, cf. Tenu 2005. On the presence of a *bēl pāḫete* of Tuttul from Tukulti-Ninurta’s reign in a text from Tell Sabi Abyad, cf. Jakob 2003, 9-10, fn. 71.

11 This official was also dubbed *šar māt Ḥanigalbat* after Tukulti-Ninurta’s integration of the Hurrian state within Assyrian overlordship (cf. Jakob 2003, 9).

12 Cancik-Kirschbaum 1996, 25ff.; see also Liverani 1988, 90-91.

13 The term was coined by Liverani 1988.

14 Cf. Jakob 2003, 18-19.

15 Cf. Liverani 1988, Morandi Bonacossi 1996, 50ff., Jakob 2003, 11-13.

marked by the earliest infiltrations of West Semitic nomadic groups dubbed traditionally as “Suteans” or innovatively as *Aḥlamû*¹⁶—lasted for almost a century until the reign of Tiglath-pileser I (1115-1077 BC). This king again made the Euphrates into the western border of *māt Aššur*, by attempting to rid the left bank, from Sūhu to Karkemish, of the—by now apparently vast—hordes of West Semitic nomads, and even crossing the river to attack the strongholds of these peoples on the Jebel Bishri¹⁷.

After Tiglath-pileser, the onset of a second and probably more severe phase of Assyrian decline and territorial abandonment may be recorded, in combination with a strong offensive on the part of Aramean gentile groups, which were in the process of reoccupying a number of fortified emplacements, turning them into their own strongholds. The ensuing retreat of the Assyrians eastwards¹⁸, so as to defend the cities of their heartland, which were even at a certain point (under Aššur-bel-kala, 1074-1057 BC) directly menaced, should have stopped under later kings but was not fully overcome until the reigns of Adad-nirari II (911-891 BC) and Tukulti-Ninurta II (890-884 BC), when the gradual reappropriation of the Jezireh was effected.

Somewhat in opposition with this historical framework of Assyrian retreat and decline, the late 11th-century inscriptions of the ruler of Ṭābētu, Aššur-ketti-lešer (found both at Tell Bderi and at Tell Ṭāban) and even of his heirs and successors¹⁹, as well as the cylinder of Bel-ereš, a *šangû* of Šadikanni, who was a contemporary of Aššur-rabi II (1013-973 BC) and Aššur-reš-iši II (972-968 BC)²⁰ would seem to indicate that, at least in specific enclaves of the Lower Ḥābūr, the political connections with the Assyrian state were never entirely cut off²¹. At Dūr-

16 On the *Aḥlamû*, cf. most recently Fales 2002; Lawson Younger 2007, 135-137; Herles 2007.

17 RIMA 2, 23: 44-63.

18 In the “Broken Obelisk” (RIMA 2, 99ff.) attributed to Aššur-bel-kala, the Assyrians are described as fighting the Arameans in sites near the sources of the Balikh and the Ḥābūr, or directly on the riverbanks themselves. Dūr-Katlimmu is named as site of a military clash following one at Magrisu (=Hassaka) and before a further one at Sangaritu on the Euphrates, thus implying—despite the Obelisk’s victorious tones—a factually unchecked progress of the Aramean troops toward S-SE (RIMA 2, 102: 21-23). From later mentions we learn that Ashur-rabi I (1013-973) had lost the town of Ana-Aššur-ūtīr-ašbat, on the upper Euphrates, near the mouth of the Sagura, the present-day Sajur—which had been conquered by Tiglat-pileser I along with Mutkinu on the eastern bank—and that Tiglat-pileser II (967-935) had lost Gid/tara in Hanigalbat. And it might be asked whether the later note by Adad-nirari II that the city of Apqu (present-day Tell Abu Marya on the Jebel Sinjar) had been reduced *ana tilli u karme*, “to hillocks of ruins” (RIMA 2: 149: 36-38), should not indicate that Aramean destruction had reached even this area, very close to the main political centers of Assyria.

19 A fragmentary tribute list from Nineveh, BM 122635, mentioning Adad-apla-iddina, a ruler from Ṭābētu (*Ṭābētāyu*) in connection with a *nāmurtu* of wine, is very uncertain in its dating to the 12th or the 11th century BC (cf. most recently Maul 2005, 15 fn. 61,62, with refs.). For the inscriptions of Aššur-ketti-lešer and his forebears on the throne of Ṭābētu at least as far back as the reign of Tukulti-Ninurta I, cf. Maul 1992, 2005, *passim*. On the other hand a grandchild of Aššur-ketti-lešer, whose name is lost, is attested in some fragmentary inscriptions from Tell Ṭāban (cf. Maul 2005, 15 and nos. 39, 40, 50); his presence would bring the dynastic continuity at the site theoretically down to the mid-10th century—i.e. barely a half-century before the “parade” expedition of Adad-nirari II (911-891 BC) to mark the Assyrian reappropriation of the Ḥābūr.

20 A photo of the clay cylinder bearing the text is given by Kühne 1995 (Pl. I between pages 86 and 87).

21 Šadikanni and Ṭābētu prove to have played the role of non-hostile tributaries all through the Neo-Assyrian phase of reconquest of the Ḥābūr, possibly with the aim of warding off the main dangers of an Aramean invasion. This dependence is graphically indicated by the use of the iconography of the god Aššur on the seal of Mušeziḫ-Ninurta, scion of the Šadikanni dynasty of *šangûs*, found in the Assyrian city of Sherif Khan/Tarbisu, where he might have been deported around 808 BC (RIMA 3, 392-393), as well as by a number of 9th century Assyrian sculptures discovered at Šadikanni itself (cf. Kühne 1995, 76-77).

Katlimmu itself, no archaeological evidence of disturbance in the overall pattern of culture during the “dark age” of Assyria is hitherto apparent, and the reaffirmation of Assyrian power in the late 10th -early 9th century seems to have brought the city quite smoothly again under the political sway of the Mesopotamian reign –as a surface find of an orthostat in the “classic” style of the sculptures of Aššurnāṣirpal II might exemplify²².

Climate and production in the Middle Assyrian period: Duara and Dūr-Katlimmu

In order to bring forth the general “profile” of the rural landscape around Tall Šēḫ Ḥamad in Middle Assyrian times we may begin –as one so often does– by talking about the weather. Through the combination of paleoclimatic observations with textual information, it has been suggested that the period in question, and more widely the phase from approx 1500 to 1300, was marked by a certain coolness in temperature, which in its turn should have been specifically correlated with a greater abundance in winter rainfall –to the opposite of a later phase (1200-900 BC), which was distinctively drier²³. Now, all palaeo-ecological and geo-morphological indicators point to the fact that, despite slight periodical fluctuations northwards or southwards, the isohyet of 200 mm of annual rainfall –which is considered the critical lower limit for rain-fed farming or dry farming– has lain constantly “astride” the area of the lower Ḥābūr, some 100 kms. to the north of Tall Šēḫ Ḥamad²⁴. In this light, a critically located site such as Tall Šēḫ Ḥamad would have certainly profited from moister conditions –to the extent that they actually occurred during the Middle Assyrian period²⁵– by obtaining not only regular crops but presumably also somewhat larger yields than average, and by an extension of the cultivated sectors to outlying areas.

The complexities of crop cultivation in an area of generally high aridity such as the Lower Ḥābūr may be at present checked more in depth against the data attested in the Middle Assyrian administrative and epistolary documents. In particular, a group of the administrative records, which are relevant to yearly yields of barley and wheat, points to a satellite site of Dūr-Katlimmu called Duara²⁶. For Duara, all the economic indicators taken into account by the local administration –from the overall area under cultivation to the yields per unit of land to the rations given out for animals and personnel– appear to be markedly lower than those attested for Dūr-Katlimmu proper. It is common belief that Duara lay in the Wadi ‘Aḡṭḡ basin in the Jezireh some 40 kms eastward from Tall Šēḫ Ḥamad, and that it should be identified with the site of Tall Umm ‘Aḡrēbe, on the ancient road connecting Dūr-Katlimmu and As-

22 Cf. Kühne 1995, p. 77 (illustration on Pl. II facing p. 87).

23 Neumann-Parpola 1987, 162; cf. most recently Kirleis – Herles 2007, for data and discussion on this later phase, for which increased aridity seems confirmed in the majority of available pollen diagrams.

24 Cf. e.g. the map in Wilkinson 1996, 485. The essential climatological stability of the Lower Ḥābūr area through the millennia, or at least from the Late Bronze Age onward, is underscored by. Ergenzinger-Kühne 1991, 166; and see now Kühne 2008a, 216.

25 Cf. also Morandi Bonacossi 1996, 51, for the suggestion that the climate of Dūr-Katlimmu was relatively moist in the MA period, on the basis of the comparison of the barley yields in the 13th -century texts with the lower ones from the Hassaka region in recent years.

26 On the site, cf. specifically Röllig 2008a.

sur, which has been investigated in depth by the Tall Šēḫ Ḥamad archaeological team²⁷. The Wadi ‘Aḡīḡ basin represents the main artery of a complex drainage system which collects the winter/spring rainfall waters of the western sector of the Ġabal Sinḡar, lying to the north, as well as those from other heights lying to the north and west of the basin itself; this feature, added to a naturally high water table, makes this otherwise arid and inhospitable steppic area actually favorable for cultivation²⁸.

In practice, Duara lay in an area where not even dry farming is feasible –since the annual rainfall of the Wadi ‘Aḡīḡ basin is approx. 120 mm per year– but where cereal crops may in point of fact be obtained, especially in the wadi basins where the water table is highest and where wells may be easily dug, and where even spontaneous resurgences (Arabic *qadīr*) occur. Only approx. 36 hectares of land were placed under cultivation at Duara, against the area devoted to agriculture around Dūr-Katlimmu, 3,5 to 5 times superior²⁹; and, possibly because the wells in the steppe carry with them the permanent risk of water with high saline content³⁰, the yields from Duara prove to have been quite low in comparison with those of the areas around the river. In general, the overall link between general weather conditions and the yields of Duara must be considered a direct one: although obviously some years led to no yields at all in the steppic location, on the other hand particularly high yields are attested for at least two texts, and in one of them (BATSH 9, 60) a high yield is given for Dūr-Katlimmu as well, coupled with a maximally extended area under cultivation. Thus, as Röllig rightly concludes, this document should refer to a year of exceptionally abundant winter rainfall, which had affected even the deflux of water in the wadis of the steppe³¹.

Moving now to Tall Šēḫ Ḥamad / Dūr-Katlimmu proper, the yearly accounts testify to the cultivation of a surface between 126 and 180 hectares of cornland, divided up in a limited number of plots of 100 *ikū* each, assigned to each of the “head farmers” (*rab ikkarāte*) who were directly responsible vis-à-vis the royal representative (*qēpu*)³². From this overall surface, the agricultural personnel involved was expected to draw (a) a fixed quantity of seed to be employed for the following crop, (b) fodder for the animals (the plough oxen but perhaps also other types of livestock, cf. below), (c) rations for the personnel itself³³, with the (d) remainder being put in storage in a number of granaries located in the town –presumably for local consumption in times of need but also for the requirements of the state organization

27 Pfälzner 1993, 96. It may on the other hand be recalled –with Röllig 2008a, 194– that the textual data on Duara offer no actual indication of it being a site in the steppe, or that it could have been placed on the road linking Dūr-Katlimmu and Assur. In these MA documents, Duara is merely singled out as being a location different from Dūr-Katlimmu itself.

28 Morandi Bonacossi 1996, 146-147.

29 Röllig 2008, 22, §4.1: 100 *ikū* (= approx. 36 ha) cultivated in Duara against 350-500 *ikū* (=approx. 126-180 ha) in Dūr-Katlimmu.

30 Morandi Bonacossi 2000, 352-353.

31 Röllig 2008, 24.

32 *Ibid.*, 19-28.

33 The rations for the *šiluhlu*-personnel are discussed *ibid.*, 27. It is of some interest to note that the amount of 3 *sūtus* per month (= 1 *qū* per day) assigned to adult workers in these texts, is identical to the one that the Assyrian administration doled out to deportees in the later NA documentation (cf. Fales 1990, 29). A daily ration of 1 *qū* corresponds to 0,8 kgs of grain, i.e. to 600/650 grams of bread, i.e. again to 2-3 medium-sized loaves.

based at Assur³⁴. The overall output or yield (measured in the proportion of harvest to seed) of the cereal crops from Dūr-Katlimmu may be estimated as varying between a minimum of 1::1,1 - 1::1,5 and a maximum of 1::7,5 and 1::9,8, with an average of 1::3 – 1::4³⁵.

We may at this point ask: which agricultural techniques were used to cultivate these expanses of public cropland at Dūr-Katlimmu during the Middle Assyrian period? Could the relevant yields have mainly depended on dry farming –perhaps aided by the adjacency of some of the plots to the riverbank– or could they, on the other hand, have enjoyed the benefits of some form of short-to-medium-range irrigation, constituted by man-made canals, such as are clearly attested for later periods? Or should other solutions yet be envisaged? In his recent edition of the Middle Assyrian administrative documents, W. Röllig suggests that “dry fields” and “watered fields” coexisted in the lists; the presence of the latter is postulated on the basis of higher yields but also of specific terminology, albeit of very uncertain interpretation³⁶. However as this may be, the size of such “watered fields” would have been restricted to a mere 50 *ikū* (= 18 hectares), whereas the “dry fields”, while certainly much vaster in extension, would have provided much lower yields. On the other hand, Röllig’s wider conclusions are, that water-raising activities for land not immediately adjacent to the Ḫābūr would have been difficult and uneconomical, since the river flowed in a deep entrenchment of the terrain around Tall Šēḫ Ḫamad; he thus invokes the existence of a regional irrigation system along the eastern basin of the Lower Ḫābūr as a possible solution for the problem³⁷.

Dūr-Katlimmu: canals, dry farming, or moist environment?

Cropping up again –as it does– in a very recent work, Röllig’s suggestion allows us to review the overall question of the existence of such a regional irrigation system in Middle Assyrian times, as the result of some twenty years of collective discussion. In 1991, building on previous territorial investigations by Poidebard (1934) and van Liere-Lauffray (1954-55), and on the basis of a detailed study of the archaeological remains of canal beds which still clearly mark the steppeland around the Lower Ḫābūr, H. Kühne –with P. Ergenzinger– made a strong case for the existence of the earliest regional canal on the eastern bank of the river

34 Cf. e.g. the letter BATSH 4:1, an order for distribution of 40 *emārus* of “the barley of the palace of Dūr-Katlimmu” to a third party *kī rīmutte*, “as a gift”; and BATSH 4, 14, for a shipment of barley measured in different ways.

35 Cf. Morandi Bonacossi 1996, 50, for these figures. Unfortunately, W. Röllig, in his otherwise accurate monograph of 2008, does not deal in detail with the overall yields (whether in ancient or in modern measures) and with comparative yields from other Ancient Near Eastern contexts. Cf. on the other hand id. 2008a, 191, where an average yield of approx. 60 *emāru* per 100 *ikū* (i.e. 138 kg/ha), “was die jeweiligen Ausgaben nur knapp überstieg”, is singled out.

36 Röllig 2008, 22-23. Uncertainties surround, in particular, the exact interpretation of the term EZEN-*e’/e’/e-’/ú* which follows the dimensions of specific agricultural areas. Röllig first suggests reading EZEN as *ḫir* and relating the term to the verb *ḫerû*, “to dig”, but then opts for a reading *šir* on the basis of the partially/fully syllabic writings EZEN(?)*-ra-’e* and *ša šir-re-’e-e*. The latter equivalence seems plausible, save for the fact that the ensuing translation, with *šer’u*, “furrow” or at most “cultivated field” (CAD Š/2, 327b-330a), has nothing to do with the presence of water!

37 *Ibid.*, 23.

in the Late Bronze Age³⁸. However, the surface survey of the canal beds themselves did not lead to a collection of pottery and/or small finds with such distinctive characteristics as to provide a definite *ante quem non* or *post quem* date for the structures. Moreover, the authors were forced to admit that, in the general dearth of written sources relevant to canals from the Middle Assyrian archives, no actual attestation of regional watercourses in this area could be summoned³⁹. Rather, it was the regularity of the settlement pattern along the riverbank (on which cf. below) that allowed them to postulate the existence of an administrative organization on a regional scale at this time, such as could justify the possible existence of a regional canal⁴⁰. Moreover, mentions of artificial waterworks at Kar-Tukulti-Ninurta in the coeval texts from Mesopotamia were invoked as supportive proof⁴¹.

An opposite position was taken in 1996 by D. Morandi Bonacossi. On the basis of a comparative analysis of the settlement patterns of Middle Assyrian and Neo-Assyrian date, this author argued that the very limited quantity and the thinly spread distribution of the Middle Assyrian settlements along the Lower Ḥābūr (cf. below) would rule out the factual possibility of accomplishing a regional system of waterworks. To the contrary, only the Neo-Assyrian period, and specifically the last two centuries of this phase, could have actually brought about the demographic and organizational conditions for the realization of such a vast hydraulic system in the Ḥābūr alluvium⁴².

As may be seen, the two views are based on a common premise, albeit interpreted in entirely opposite ways: viz., that the settlement pattern of the Ḥābūr river valley may in itself constitute a decisive clue for the presence/absence of a regional canal during the Middle Assyrian period—since the matter cannot be proved one way or the other on purely archaeological grounds. Thus, while the Ergenzinger-Kühne approach underscored the linear distribution of sites along the eastern riverbank, Morandi Bonacossi's perspective was centered on the generally low density of human occupation in the overall area of the Lower Ḥābūr, as well as on the tendency of the extant sites for the period to be concentrated in the northernmost sector, where—in connection with the presence of the 250-mm. isohyet—the possibilities for regular/more abundant rainfall were highest.

We may at this point take a look at the essential data concerning the settlement pattern on the Lower Ḥābūr in the Late Bronze Age. It is a fact that, in the entire Lower Ḥābūr area between Tall Šēḥ Ḥamad and Hassaka, only 9 settlements are recorded for the Middle Assyrian phase, extending northwards from Dūr-Katlimmu at roughly regular intervals of 20-40 kms⁴³, with an aggregate site settlement area estimated at approx. 75 ha and a presumed overall population of some 7500 souls⁴⁴. These topographical and quantitative data would not seem to present a particular accretion vis-à-vis the previous Mittanian period—and in fact,

38 Ergenzinger-Kühne 1991, 166f.

39 In point of fact, at least two of the Middle Assyrian letters from Tall Šēḥ Ḥamad edited in 1996 give indications on the existence of watercourses other than the Ḥābūr itself: cf. BATSH 4, 8 and BATSH 4, 17 (and see fn. 57, below).

40 Ergenzinger-Kühne 1991, 185-186. Cf. further Kühne 1995, 72, for the wider notion that the MA domination of the Jezireh followed the pattern of a “territorial empire”, against Liverani's “network empire”; but see on the other hand Pfälzner 1997, 341, who upheld Liverani's reconstructive model from an archaeological point of view.

41 Ergenzinger-Kühne 1991, 188.

42 Morandi Bonacossi 1996, 200; id. 2008, 193-195.

43 Morandi Bonacossi 2000, fig. 1, nos. 173, 175, 177, 196, 218, 237, 238, 243, plus Tell Bderi.

44 Morandi Bonacossi 1996, 179; id. 2000, 359.

would testify to merely limited demographic and productive growth on all previous phases, back to the 3rd millennium BC. Moreover, not counting Dūr-Katlimmu itself, it may be noticed that one-half of the remaining settlements (i.e. 4 out of 8) deserve to be considered of urban size/importance from the archaeological point of view, and are as such identifiable with ancient toponyms known from texts of this very period or slightly later: Hassaka/*Magrisi*, Tell Ṭāban/*Ṭābētu*, Tell ‘Aḡaḡa/*Šadikanni*, Tell Fadḡami (or Tell Ašamsani)/ *Qatni*⁴⁵. Further, one of the last four remaining mounds, Tell Bderi, has also yielded written documents allowing its identification as *Dūr-Aššur-ketti-lešer*; although this site did not correspond to the capital city of its territory (which was Ṭābētu, lying some 12 kms. downstream⁴⁶) in the 11th century it had attained some importance, taking the name of the local ruler Aššur-ketti-lešer, who swore allegiance to Tiglathpileser I⁴⁷.

More widely, from intimations here and there in a number of sources of official or “every-day” nature from the same general period, it may be suggested that all these identifiable urban sites along the Lower Ḥābūr enjoyed mutual commercial and economic relationships in various ways, and that their common political reference-point (whether through direct dependence or indirect allegiance) was the Assyrian state based at Assur. Specifically, it may be presumed that a certain number of goods of primary but also secondary production found their way from this or that city on the Lower Ḥābūr toward the Assyrian capital through donkey trails or routes cutting through the Jezireh⁴⁸. Admittedly, therefore, it is curious to observe that these sites, although obviously of a certain importance from the point of view of the production of staples for the Assyrian state, would seem to have been by and large devoid of a substantial rural hinterland in the 13th century BC –or, at least, of a rural hinterland which may be archaeologically retrieved on the river terraces immediately adjacent to the sites themselves⁴⁹.

On the other hand, if one takes into account the exploitation of the Wadi ‘Aḡīḡ basin on the part of the Dūr-Katlimmu administration, it might perhaps not be too far-fetched to postulate that other, more northerly, areas located deep in the steppeland eastward of the Ḥābūr, and equally characterized by high water tables and seasonally abundant runoff wadis, could have been similarly exploited for agricultural purposes by the local administrations of *Qatni*, *Šadikanni*, and *Ṭābētu*. In other words, these urban sites located upstream on the Ḥābūr from Dūr-Katlimmu might have been similarly endowed with their own (and even better rain-fed) “Duaras”. And perhaps it was actually the intensive exploitation of such an outlying satellite territory on the part of the rulers of *Ṭābētu* which prompted them to take on the double title of “king of *Ṭābētu* and of the land of *Māri*”⁵⁰.

45 *Qatni* was of course the MA version of the toponym known as *Qatunān* in the Mari texts, and attested as *Qatīnē* in one NA conveyance text from Nineveh; on these grounds, the equivalence of the site with Tell Fadḡami has been considered preferable by various authors on that with the neighboring Tell Ašamsani (cf. Radner 2002, 3 fn. 15, with previous bibl.). Cf. however, most recently RIA XI, 3 / 4, 171-172, for a renewed identification with the latter site.

46 The Tell Bderi inscription locates the town as being *ina ellān Ṭābēte*, “above/upstream from Ṭābētu”: cf. Maul 2005, 10.

47 Maul 1992.

48 For a bird’s-eye view of the sources from the 13th century centered on the Lower Ḥābūr, cf. Morandi Bonacossi 1996, 53-59. For the direct route connecting the Lower Ḥābūr to Assur, cf. Faist 2006, map on p. 149. A shipment of clothes from *Ṭābētu* to Assur is recorded in TabT05A-623, a text transliterated in Shibata 2008.

49 Cf. the map in Morandi Bonacossi 2008 [1995], 204.

50 On the toponym *Māri*, cf. Maul 1992, and now Maul 2005; Durand-Marti 2005.

However as this may be, we have it that, in accordance with Morandi Bonacossi's view, the limited and thinly spread settlement pattern of the Lower Ḫābūr in Middle Assyrian times would not seem to justify *per se* the existence of a regional system of artificial waterways running eastwards of the river and in parallel to it at this time. On the other hand, as implied above, the Middle Assyrian administrative documents from Dūr-Katlimmu show barley yields which, while being much lower e.g. than the ones known from 16th century Nuzi (1::5 - 1::10)⁵¹, are still much higher than the present-day ones obtained through dry-farming in the same region⁵². Thus, if no regional canal existed yet, how are we to explain this situation of relative agricultural prosperity?

The issue is further complicated by the inscription of the governor of *Šadikanni*, Bel-ereš, retrieved at Assur, which should be dated to the very last years of the 11th century BC or to the very beginning of the following century –i.e. in a historical phase which should be essentially characterized by an Assyrian withdrawal from the Lower Ḫābūr area, as said above. I evaluated this inscription in 1995, providing a new translation, and compared it to the later text of Šamaš-reš-ušur, the 8th century governor of Suhu and Mari, noting that both texts –despite their distance in time and space– described the restoration of existing canals for purposes of irrigation (and at least in the more recent case, navigation) in the general region of the Middle Euphrates⁵³. A largely similar appraisal of both inscriptions was independently offered by A.M. Bagg in 2000, in the context of an exhaustive and extremely thorough study on Assyrian waterworks⁵⁴.

At present, however, in the light of the progress of the debate during the last 15 years regarding water availability on the Lower Ḫābūr in Middle Assyrian times, I would like to voice a more cautious assessment than the one I made in 1995. The Bel-ereš inscription surely refers to an artificial waterway (*atappu*⁵⁵) centered on *Šadikanni*, thus proving beyond reasonable doubt that the water availability of the Ḫābūr was, to some extent, enhanced for purposes of agricultural prosperity by means of irrigation canals, which already in the Late Bronze Age entailed collective maintenance and control of the seasonal floods through waterworks (a “dam” is mentioned)⁵⁶. On the other hand, the inscription is in no way clear as to whether (a) such a waterway lay parallel to the river or, alternatively, led away from it into

51 Zaccagnini 1975, 183-185.

52 Morandi Bonacossi 1996, 50-51, quotes a yield for Hassaka for the dry year 1984 which represents less than one-half of the lowest yield to be deduced for MA Dūr-Katlimmu.

53 Fales 2008 [1995]. For the sake of convenience, I reproduce here my translation (*ibid.*, 181): “[1] I, Bel-ereš, “vice-regent” of [...], faithful of the god Samanuha [...]. [3] At the time of Aššur-rabi, [king of Assyria, son of Aššurnasirpal], [for n]+3 years, I really(?) [...], Aššur to extract[...]. [6] At that time the god Sama[nuha ...] the banks of the river Habur fro[m ... to ...] took in hand, [and] the banks of the river Habur the ‘vice-reg[ent]’ repaired].

[10] At that time, the god Samanu[ha ..., and] with his exalted strength, 300[0 ‘reeds’ I uprooted]. The abandoned canal (*a-tap-pu na-di-tu*) which [flows] from the land of [...], in it [water] no longer flowed [...], [14] I built a dam. The aba[ndoned] flats/meadows [...] and the waters of the[...] the city of Šadikanni”. The quoted article may be checked for the relevant philological notes.

54 Bagg 2000, 56-59.

55 For discussion on the term *atappu* in this context and in that of the later inscription, cf. Fales 2008 [1995], 182; Bagg 2000, 57-58.

56 Just for the sake of completeness, it may be recalled that artificial waterways seem to be present also in the largely contemporary documentation from Emar: cf. Mori 2003, 115-117.

the adjacent steppeland, and whether (b) this was a fully local project, or one already bearing the marks of a regional organization⁵⁷.

In any case, and to a certain extent independently from the problem of whether artificial waterways existed or not, Hartmut Kühne has recently presented –in a review of ongoing research– a fully innovative picture of the ecological characteristics of Dūr-Katlimmu⁵⁸. According to Kühne, the overall availability of water at Tall Šēḫ Ḥamad in Middle Assyrian times should be analyzed in connection with the two wadis which bordered the site respectively to the north and south, the Wadi Sa’ib Ḥamad and the Wadi Ġaribe. The confluence of the Ḥābūr with these two seasonal waterways would have created in general –and of course especially in years/phases of greater rainfall– a sort of “oasis”-type ecological condition for Dūr-Katlimmu, with high waters and swampy sectors as the main consequences: the city itself might even at times have been completely surrounded by water on its distinctive spur of land, as if it were an island⁵⁹. In this light, then, the relatively high Middle Assyrian yields of barley would be justified –more than by any other factor – by a situation of general and diffuse moisture of the soil on the lower valley terrace, to such an extent as to allow a reproduction of the conditions of dry farming, even in years of low rainfall.

Plants and animals at MA Dūr-Katlimmu

In practice, then, Kühne’s recent evaluation of the natural environment yields the picture of a small “Eden” for Tall Šēḫ Ḥamad during the moister climatic phase of the 13th century; and it may be noticed that such a characterization seems to find support in studies on the ecological “profile” of Dūr-Katlimmu during the Middle Assyrian period proceeding from carbon remains and pollen analyses. In effect, the results of these studies indicate that the river valley was heavily forested in the immediate adjacency of the Ḥābūr, with deciduous or evergreen trees typical of Near Eastern riverbanks, such as poplar (*Populus euphratica*), tamarisk (*Tamarix jordanis*), Planetree (*Platanus orientalis*), Elm (*Ulmus*), Ash (*Fraxinus*), Box (*Buxus*), and a type of willow (*Salix safsaf*)⁶⁰, to which various types of shrub, herbs, grasses, sedges,

57 It may be noticed that two letters from 13th century Dūr-Katlimmu itself would also seem to refer to artificial waterways on the Lower Ḥābūr. The first one (BATSH 4, 8) seems tied to a context of warfare, with mentions of all sorts of foreign entities (Hurrians, Hittites, Suteans), and to the wounding of the high official Ilu-īpadda, but is not at present completely understandable. In particular, in a passage (Obv. 31’-33’) referring to the arrival of (perhaps hostile?) *ḥurādu*-troops near Dūr-Katlimmu, the writer affirms: “I will cut the water; both the water of the moat and the water of the *naqquru*-waterway, all (will be?) reduced”. The second one (BATSH 4, 17) presents a clear clause, for which, however, the context is unclear (Obv. 11-14): “At the big canal (*i-na pal-gi GAL-e*) we will make available (lit. ‘give’) 7 men, and at the small canal (*i-na pal-gi TUR*) we will give 7 men. [Seven (?) men] from the campaign troops (KASKAL-*ni*) and 7 men from the ... we will give”.

58 Kühne 2008a.

59 Cf. *ibid.*, 216, where the flooding of 1987 –truly exceptional for a river regime which was already then in its death throes, and would have led to the factual drying out of the Ḥābūr in the year 2000 – is recalled, also with the aid of eloquent photographs.

60 Ergenzinger-Kühne 1991, 166; Becker 2008, 65-66, 112; Kürschner 2008, 150. A contemporaneous text (Fales 1989, 54, Rev. 2) mentions “groves (^{GISTIR}MES) of *šaššugu*-trees” in Dūr-Katlimmu: the term might refer to a type of willow or ash (*ibid.*, 58).

and wetland reeds (*Phragmites*, *Typha*) should be added⁶¹. Beyond this presumably dense “green belt”, lay the Syrian steppeland of the northern Jezireh, of which only the areas lying on the lowest river terrace were presumably cultivated.

The Middle Assyrian fields should have been located on the eastern bank of the river, i.e. close to the city itself, whereas the western riverbank was presumably still scarcely employed for agricultural purposes in comparison with the Neo-Assyrian period. On the other hand, a text dated to Tukulti-Ninurta I from an Italian private collection mentions a small area reserved for vineyards in connection with Dūr-Katlimmu⁶²; one may thus wonder whether this type of cultivation would not have been particularly suited to the slopes of the Ġabal Maaza, a basalt plateau of some 400 metres of maximal height lying at a handful of kilometers from the western riverbank⁶³.

Taking up once more the recently published administrative texts, barley and –in much smaller quantities– wheat were the main cereal crops in the Dūr-Katlimmu agricultural landscape. The range of operations described in these documents comprise the ploughing and sowing of the fields⁶⁴, and then the harvesting, cleaning⁶⁵, heaping, and storage of the cereals in a series of *bīt karmes* and other types of buildings located in various places at Dūr-Katlimmu (including a tower used as a silos and a temple granary)⁶⁶, from where they were subjected to further processing (bread, beer) or distribution by the local authorities⁶⁷. Other plants described in the texts are sesame –which was subjected to regular cultivation and harvesting, albeit in reduced quantities, for its oil⁶⁸– and a number of vegetables and spices, such as bitter vetch(?), red turnips(?), black cumin, mint⁶⁹. These products, plus others not mentioned in the texts, such as onions, lentils, and peas, were surely to be found in orchards and gardens located in the wetter areas around the Ḫābūr.

The data from the administrative texts may at this point be compared with the information to be drawn from letters of the same period, although they refer at times to the environment of adjacent areas. Here we learn –from random but extremely vivid notations– that locusts were one of the main menaces for the crops along the riverbanks⁷⁰; that chickpeas were also a sta-

61 A letter of this age (BATSH 4, 2: 7) makes an explicit mention of canebrakes, which however should be on the Balikh.

62 Fales 1989, 53:U.E. 2-3, *ti-lu-tu / ša* GEŠTIN.

63 Cf. Morandi Bonacossi 1996, 91, 217.

64 In a measure of 3 *sutus* for each *ikū* of land for barley, but only 2 *sutus* for wheat; cf. RIA VII, 488, for the latter (20 *qūs* per *ikū*) as a widespread standard of sowing in the 2nd millennium BC.

65 The expression *ših̄tu madādu*, which is found in these texts as well as in other MA corpuses, is understood to mean “to free from spelt”, i.e. as an operation involving washing and drying of the barley, to free it from associated elements of spelt :cf. Röllig 2008, 23.

66 On the storage structures in MA administrative texts, with ample reference to the ones from Dūr-Katlimmu, cf. Jakob 2003, 320-328; Röllig 2008, 25-26.

67 Cf. fn. 34, above. From random quotes of the still unpublished Sabi Abyad texts, we learn that beer was produced in the Balikh area, and consumed on ceremonial occasions: cf. Faist 2006, 151. On beer at Mari, cf. Sasson 2004, 191-192.

68 Röllig 2008, 25. Sesame seeds were retrieved both in MA and NA contexts at Dūr-Katlimmu as well as Tell Sabi Abyad (Van Zeist 2008, 135-138). It may be noticed that sesame is still nowadays cultivated at Tall Šēḫ Ḫamad (Smettan 2008, 11).

69 On these plants, cf. in detail Röllig-Tsukimoto 1999.

70 BATSH 4, 2 and 4. As recalled by Sasson 2004, 193, fn. 44, locusts (or at least some types of the animal) were considered prize morsels in the Mari documentation (cf. already Lion – Michel 1997) and in the Neo-Assyrian palace reliefs.

ple crop, and were subjected to exhaustive grinding after being picked⁷¹; that millet flanked barley and wheat as a secondary cereal crop⁷²; that flax was raised and regularly harvested, essentially for its fibers⁷³; and finally that salt was gathered and brought to town (from the nearby steppe or elsewhere), possibly with the aid of Sutean transporters⁷⁴.

But a further important source of information on cereal growth in Middle Assyrian Dūr-Katlimmu derives from the charred remains of a large supply of barley found in Room A of the Palace of the Assyrian governor, which was presumably used as one of the *bīt karmes* mentioned in the coeval documents⁷⁵. It may be useful to recall that agricultural yields in any time and place may vary not only depending on quantity of rainfall and rainfall distribution, on timing in sowing, and on soil quality, but also on variety selection, pest infestation, and weed infestation; certainly, some of the last-named factors come to the fore in the Room A material, which had, as such, a few surprises in store for the researchers. First of all, the Middle Assyrian crop was composed of the expected *Hordeum distichum*, albeit largely infested by *Hordeum spontaneum* or wild barley –i.e. with an admixture that would probably have been better digestible as animal fodder than as a component of human nutrition⁷⁶. Further, the crop was also replete with weed seeds, from *Aegilops* to *Lolium* to lesser-known varieties, indicating that the barley had been harvested low on the straw, and –especially– that no cleaning operations (*šihṭu madādu* in the Assyrian texts) had been performed, perhaps even to the extent of leaving the harvest unthreshed, and storing it in sheaves⁷⁷. And finally, the small size of many of the barley grains indicated a bad quality of the crop, such as could occur in conditions of absence of moisture. In conclusion, it would seem that this barley crop, harvested with little care and stored in this *bīt karme* as fodder(?), was the output of a particularly dry year –but it is hard to say whether the overall “profile” of the Room A deposit should refer back to the environment of the river valley or of the adjacent terraces, or even (although less likely) to Duara⁷⁸.

Animal husbandry at MA Dūr-Katlimmu is also well represented in the administrative texts published by W. Röllig: almost three score lists deal with herds of oxen, donkeys, and sheep/goats of the local administration, which were inspected and counted under the responsibility of different herders for the yearly *mašartu*, “inventory/muster”⁷⁹. The livestock was listed according to gender (ox/cow, donkey/jenny, ram/ewe, goat/nanny) and to age. While sheep and goats were merely subdivided between adults and young (lamb or buck), the bovids and the equids were classified in much greater detail. In decreasing order, a “grown” age was followed by a number of year-notations (cows and jennies between 3

71 BATSH 4, 2 and 3.

72 BATSH 4,4. This must have been broomcorn millet (*Panicum miliaceum*), widespread in the Near East already in the 2nd millennium BC (cf. van Zeist 2008, 138).

73 BATSH 4,3.

74 BATSH 4, 15. For salt quarries and salt ponds in the steppe east of Tall Šāḥ Ḥamad, cf. the references given by Cancik-Kirschbaum 1996, 189.

75 Van Zeist 2008. For a plan of the structure, also showing the Room A deposit, cf. e.g. Jakob 2003, 324.

76 Van Zeist 2008, 134.

77 *Ibid.*

78 *Ibid.*, 136.

79 BATSH 9, nos. 1-59, and Röllig 2008, 5-17. Cf. already Jakob 2003, 353-381 on animal husbandry in the Middle Assyrian period, with ample references to the (then unpublished) Dūr-Katlimmu texts.

and 1 years of age; oxen between 5 and 1 years of age; donkeys between 7 and 1 years of age), with the young of both species (i.e. both calves and foals) classified as “suckling”⁸⁰. As for donkeys, the descriptive term *umzarḫu*, “native” was employed, in opposition to ANŠE ša KUR.Ḫa-at-te, “North-Syrian donkey”. This difference of types, which finds no explanation in the texts themselves⁸¹, might have been tied to the size of the animals: in point of fact the osteological data (on which cf. below) show that the *Equus asinus* from Dūr-Katlimmu was of very small size, even slightly shorter than the animals known from Tell Brak, which reached a mere 112 cm in height⁸². From the dead and/or butchered heads, pelts or skins, sheep wool, goat hair, and sheep/goat ghee were derived; these formed part and parcel of the inventories themselves, in which, on the other hand, no meat products were recorded⁸³.

The *mašartu* would seem to have been a preliminary measure for the transfer of the animals (whether live or as regards their products) from Dūr-Katlimmu to the central administration – as a few notations (“for the Palace”), and one explicit mention of Assur make clear – or to other provincial centers, such as Tuttul or Nahur⁸⁴. The reckoning of the heads (*nikkassu*) implied the count of live animals in each herder’s account, starting from their original amount, from which the “deficits” due to missing (*ḫul(lu)qu*, “lost”) or dead animals were subtracted (a clause to be found more than once concerns the drowning of donkeys in flash floods) and their compensation through a specific number of skins or other items was calculated. Finally, a calculation of the growth of the herds during the year, but rather centered on the target values of expected offspring (*tālittu*) than as an actual count of heads, was presented to the administration.

All in all, the herds (*sugullu*) prove to have been of quite variable size, as for the individual species, and as regards the grand totals. The highest recorded total is 116 oxen + 331 donkeys + 1162 sheep and goats = 1609 heads (BATSH 9, 23), while the lowest is 51+61+213 = 325 heads (BATSH 9, 14). Viewing the sizes by categories, a specific herd, described as *sugullu ša ekalle*, “herd of the Palace”, shows a fluctuation of oxen between 14 and 182 heads, of donkeys between 31 and 331 heads, and of caprovids between 58 and 1065 heads⁸⁵. In practice, we find a year to year fluctuation by five times taking into account full herds, but even by ten times as for the oxen and donkeys, and even by twenty times regarding the caprovids, without a clear rationale behind such shifts. Naturally, a possible connection with the varying availability of local grazing areas in drier/damper years should not be totally ruled out⁸⁶.

The information from the animal lists may be functionally compared with the osteological material from Tall Šēḫ Ḥamad now made fully available by C. Becker, and specifically from the bones retrieved during the excavation of the Citadel, and thus to be considered fully con-

80 Röllig 2008, 10-11. As noticed by Jakob 2003, 367, fn. 49, the administration was essentially interested in age-levels of the caprovids, whereas markings by wool color or qualitative evaluations of the heads were not recorded

81 Röllig 2008, 12, who notes: “Worin sich diese Rassen voneinander unterschieden, entzieht sich unserer Kenntnis”.

82 Becker 2008, 78.

83 Röllig 2008, 15.

84 *Ibid.*

85 *Ibid.*, 10.

86 *Ibid.*

temporaneous to the texts –but here, again, a number of intriguing differences in the relevant data come to light. Sheep and goats formed the overwhelming majority (84.1%) of all MA bones of livestock, followed by pigs (8.4%), oxen (5.3%), and dogs, of which at least some should have been of the *Saluki*/Persian greyhound type (1.9%)⁸⁷. On the other hand, donkey bones were quite rare, and some of them referred to hybrids between the domesticated and the wild donkey (onager). Finally, a few bones of Bactrian camels –of the two-humped variety, as depicted e.g. in the later “Black Obelisk” of Shalmaneser III– were present⁸⁸. Moving to wild animals, game was mainly represented by the steppe-based onager, prized for its meat⁸⁹ (36.1% in its group), and smaller-sized mammals rather tied to the local humid environment, such as fallow deer⁹⁰ (33%), gazelle⁹¹ (17%) and hare⁹² (10%). Among non-mammals, only bones of large-sized soft-shelled turtles (*Tryonix euphraticus*) were attested in significant quantities, thus implying the possibility that the beasts could have represented a delicacy, as is still the case today at the Hassaka fish-market⁹³, while remains of wild fowl, as well as of fish and molluscs from the Ḫābūr, were quite scarce⁹⁴.

Thus the bone sampler has, in point of fact, little to do with the administrative lists from the statistical point of view, but the two sets of data may be said to yield interesting comparative information. Some species of livestock were decidedly not part of the food chain and were bred merely for traction, transport (equids, Bactrian camels) or other utilitarian purposes such as hunting (dogs), whereas some other species were raised exclusively for local consumption and did not form part of the herds of the State (pigs). Only sheep and goats fit, in fact, both sets of data as the best-attested species; and the statistics regarding bones also roughly match those of the administrative inventories by showing a 3:1 proportion of *Ovis* over *Capra*⁹⁵. True, oxen were also more or less similarly represented –vis-à-vis the caprovids– in the bone sampler and in the texts, but calculations regarding bone types show that beef must have been consumed on a low-priority basis. The prevailing employment of bovids as beasts of burden is confirmed by specific pathologies and damages of the ribs and joints⁹⁶, while an average kill-off age of more than 2,5 years also indicates that the beasts were exploited for their traction capacities more than for their nutritional value⁹⁷. All said and done, then, the overall picture presented by the oxen is not very different from that of the donkeys: both species of livestock were, in the main, reared for administrative and economic purposes which had little to do with the requirements of the local population in terms of day-to-day production and consumption.

87 Becker 2008, 87-88.

88 *Ibid.*, 85-86.

89 *Ibid.*, 95-100.

90 *Ibid.*, 93-95.

91 *Ibid.*, 90-92.

92 *Ibid.*, 108.

93 *Ibid.*, 112, with reference to Krupp-Schneider 1991, 73.

94 *Ibid.*, 67 and table 6:2 (the percentages are mine). For fowl in the Mari texts, cf. Sasson 2004, 193 fn. 44.

95 *Ibid.*, 70.

96 *Ibid.*, 75 and fig. 6:11.

97 *Ibid.*

Provisional conclusions

Despite enormous advances in overall knowledge during recent years, it is still a quite rare occurrence to be able to observe in depth a single local context of the Ancient Near East on the two historical levels represented by written records concerning the administration of State-based agriculture and breeding, as well as by archaeologically-derived information on day-to-day, and small-scale, activities of food production, from gardening to hunting to fishing. But the textual information from Middle Assyrian Dūr-Katlimmu, taken together with a series of climatological theories, and then further checked against the palaeobotanical and palaeo-osteological record from the contemporaneous levels of the Citadel, allows in fact this double option: to derive a general historical picture of the use of land and animals for primary production, as well as a parallel but separate profile of the –interestingly varied– nutritional habits and opportunities among the residents of the city in the earlier period of its flourishing.

The Tall Šēḫ Ḥamad expedition is thus to be highly praised for having provided through the years such a multi-faceted and multi-layered image of the site in its wide-ranging and rich publication series. As things stand now regarding the Middle Assyrian period, it may be said that the administrative texts tell us one “story”: that of a relatively well-organized provincial outpost with precise institutional and economic functions within the Middle Assyrian state organization. The contemporaneous letters, in their turn, give us a number of other hints: not only concerning the strategic function of the site, and of the political events concerning it, but also as regards some aspects of the local ecological habitat during a historical phase of cooler temperatures. And finally, integrated bioarchaeological studies (palaeo-botany, palaeo-osteology) paint a detailed picture of production and consumption which at times confirms the textual data, other times belies them, thus allowing us to refine our comprehensive evaluation of the historical context in matters of agricultural and breeding techniques, and as concerns everyday nutritional habits.

At Dūr-Katlimmu during the 13th and 12th centuries BC, the locals may well have “reaped what they had sown” (of course, to a varying degree depending on the weather), but they did not merely eat what they had reaped (or raised). Undoubtedly, bread and other staples were derived from barley, although wheat should have also entered the diet as a secondary component. As regards meat, however, apart from mutton and goat, the locals would seem –all said and done– to have preferred venison (mainly onagers and cervids) over beef and pork. Other, albeit much rarer, sources of meat came from small game (hares, fowl) or from riverine species (turtles, fish). Complementary sources of nutrients (protein, sugar, etc.) were represented by leguminous plants of various types, e.g. lentils and chickpeas, and presumably also by *Liliaceae*, such as onions, garlic, and others, which must have been grown in small plots along the riverbank. Means of food seasoning and conservation (which could have been employed for a certain part of the meat produce) were provided by salt –which seems to have been imported, perhaps from salt ponds in the open steppe– and especially sesame (the oil of which should have been also in part shipped to the Palace at Assur), as well as mint and cumin. The greatest absence in the Middle Assyrian documentation, for the moment, is represented by fruit trees: however we know that fig, prune, and pomegranate seeds were attested –even if in quite limited quantities– in the

later Neo-Assyrian palaeobotanical samplers⁹⁸. Wine was available in the area, although the degree of its diffusion and use vis-à-vis beer escapes us, differently from earlier and later periods⁹⁹.

In a nutshell, then, an attempt, such as the present one, to reconstruct the primary production and food habits at Dūr-Katlimmu in the Middle Assyrian age indicates, in the first place, that this apparently well-watered site between two wadis on the Lower Ḥābūr must have adequately fulfilled its function as a provincial productive centre for the provisioning of the Assyrian state in terms of food staples –barley and wheat– and livestock. In the second place, it may be suggested that this overall economic activity, which surely culminated in a series of regular shipments of produce on the 240-km long thoroughfare linking the Jezireh to Assur, allowed the local ruling class and its attendant personnel –for a presumable total of less than 1,000 souls¹⁰⁰– to draw or set aside sufficient resources for a relatively agreeable lifestyle, which comprised comparatively rich and varied nutritional options. Perhaps exactly for this reason, as H. Kühne has suggested¹⁰¹, Tukulti-Ninurta I was keen to pass through the riverine town with the defeated Babylonian ruler Kashtiliash IV, his wife, and his retinue which also comprised numerous women, as we learn from the letter of an Assyrian high official, who was –typically– in a frenzy concerning the provisions to be retrieved for this large group of royalty and courtiers¹⁰².

98 Van Zeist 2008, 137.

99 On the cultural and productive “frontier” between wine and beer, cf. Milano 1994; on beer and wine at Old Babylonian Mari, cf. Sasson 2004, 191-192.

100 I derive this total through a very crude calculation, i.e. by dividing the estimated total population of 7500 people for the entire Lower Khabur area during this period (cf. fn. 44, above) by the 9 sites which are attributed to Middle Assyrian times.

101 Kühne 2008a, 217; cf. Faist 2006, 155.

102 BATSH 4, 10.

Bibliographical References

- Adamthwaite, M.
2001 *Late Hittite Emar: The Chronology, Synchronisms, and Socio-Political Aspects of a Late Bronze Age Fortress Town*, Louvain.
- Akkermans, P.M.M.G. – Wiggermann, F.A.M.
1999 La forteresse de Tell Sabi Abyad, *Archéologia* 358 (1999), 56-65.
- Bagg, A.
2000 *Assyrische Wasserbauten. Landwirtschaftliche Wasserbauten im Kernland Assyrien zwischen der 2. Hälfte des 2. und der 1. Hälfte des 1. Jahrtausends v. Chr.*, Mainz.
- Becker, C.
2008 Die Tierknochenfunde aus Tall Šēḫ Ḥamad/Dūr-Katlimmu – eine zoogeographisch-haustierkundliche Studie, in Kühne 2008, 61-125.
- Bernbeck, R.
1993 *Steppe als Kulturlandschaft. Das 'Aḡḡ-Gebiet Ostsyriens vom Neolithikum bis zur islamischen Zeit*, Berlin.
- Cancik-Kirschbaum, E.
1996 *Die mittelassyrische Briefe aus Tall Šēḫ Ḥamad*, Berlin
2008 Emar aus die Perspektive Assurs im 13. Jh.v. Chr., in L. d'Alfonso – Y. Cohen – D. Sürenhagen (Eds.), *The City of Emar among the Bronze Age Empires: History, Landscape, and Society*, Münster, 90-99.
- Durand, J.M. – Marti, L.
2005 Chroniques du Moyen-Euphrate, 5. Une attaque de Qatna par le Sūhum et la question du «pays de Mari», *RA* 99(2005), 123-132.
- Ergenzinger, P. – Kühne, H.
1991 Ein regionales Bewässerungssystem am Ḥābūr, in Kühne 1991, 163-190.
- Faist, B.
2006 Itineraries and Travellers in the Middle Assyrian Period, *SAAB* 15(2006), 147-160.
- Fales, F.M.
1989 A Middle Assyrian Text Concerning Vineyards and Fruit Groves, *SAAB* 3 (1989), 53-59.
1990 Grain Reserves, Daily Rations, and the Size of the Assyrian Army: a Quantitative Study, *SAAB* 4 (1990), 23-34.
2002 The Djezireh in Neo-Assyrian Sources, in M. al-Maqdissi *et al.* (Eds.), *The Syrian Jezira. Cultural Heritage and Interrelations*, Damas, 181-199.
2008 [1995] Canals in the Neo-Assyrian Rural Landscape: A View from the Ḥābūr and Middle Euphrates, in Kühne 2008, 181-186.
- Herles, M.
2007 Zur geographischen Einordnung der *aḥlamû* – eine Bestandaufnahme, *AoF* 34 (2007), 319-341.
- Jakob, S.
2003 *Mittelassyrische Verwaltung und Sozialstruktur: Untersuchungen*, Leiden.
- Kirleis, W. – Herles, M.
2007 Climatic Change as a Reason for Assyro-Aramean Conflicts? Pollen Evidence for Drought at the End of the 2nd Millennium BC, *SAAB* 16 (2007), 7-38.

- Krupp, F. – Schneider, W.
 1991 Bestanderfassung der rezenten Fauna im Bereich des Nahr al-Ḥābūr, in Kühne 1991, 69-85.
- Kühne, H.
 1991 (Hrsg.), *Die rezente Umwelt von Tall Šēḫ Ḥamad und Daten zur Umweltrekonstruktion der assyrischen Stadt Dūr-Katlimmu*, Berlin.
 1995 The Assyrians on the Middle Euphrates and the Habur, in M. Liverani (Ed.), *Neo-Assyrian Geography*, Rome, 69-85.
 2008 (Hrsg.), *Umwelt und Subsistenz der assyrischen Stadt Dūr-Katlimmu am unteren Ḥābūr*, Wiesbaden.
 2008a Umwelt und Subsistenz der assyrischen Stadt Dūr-Katlimmu am unteren Ḥābūr –was wissen wir wirklich?, in Kühne 2008, 215-220.
- Kürschner, H.
 2008 Hölzer und Holzkohlen der Grabung Tall Šēḫ Ḥamad und ihre Bedeutung für die Rekonstruktion der Umweltbedingungen in Nordost-Syrien, in Kühne 2008, 149-153.
- Lawson Younger, Jr., K.
 2007 The Late Bronze Age/ Iron Age Transition and the Origins of the Arameans, in K. Lawson Younger, Jr. (Ed.), *Ugarit at Seventy-Five*, Winona Lake 2007, 131-174.
- Lion, B. – Michel, C.
 1997 Criquets et autres insectes à Mari, M.A.R.I. 8 (1997), 707-724.
- Liverani, M.
 1988 The Growth of the Assyrian Empire in the Habur / Middle Euphrates Area: A New Paradigm, SAAB II (1988), 81-98.
- Maul, S. M.
 1992 *Die Inschriften von Tell Bderi*, Berlin.
 2005 *Die Inschriften von Tall Ṭābān (Grabungskampagnen 1997-1999). Die Könige von Ṭābētu und das Land Māri in mittellassyrischer Zeit*, Tokyo.
- Mayer, W.
 2001 *Tall Munbāqa – Ekalte – II. Die Texte*, Saarbrücken.
- Milano, L.
 1994 Vino e birra in Oriente. Confini geografici e confini culturali, in L. Milano (Ed.), *Drinking in Ancient Societies*, Padova, 421-440.
- Morandi Bonacossi, D.
 1996 *Tra il fiume e la steppa. Insediamento e uso del territorio nella bassa valle del fiume Ḥābūr in epoca neo-assira*, I-II, Padova.
 2000 The Syrian Jezireh in the Late Assyrian Period: A View from the Countryside, in G. Bunnens (Ed.), *Essays on Syria in the Iron Age*, Louvain-Paris-Sterling, 349-396.
 2008 [1995] Betrachtungen zur Siedlungs- und Bevölkerungsstruktur des Unteren Ḥābūr-Gebietes in der neuassyrischen Zeit, in Kühne 2008, 189-214.
- Mori, L.
 2003 *Reconstructing the Emar Landscape*, Roma.
- Neumann, J. – Parpola, S.
 1987 Climatic Change and the Eleventh-Tenth-Century Eclipse of Assyria and Babylonia, JNES 46 (1987), 161-182.

- Pfälzner, P.
 1993 Die späte Bronzezeit: Tall Umm 'Aqrēbe, in Bernbeck 1993, 70-96.
 1997 Keramikproduktion und Provinzverwaltung im mittellassyrischen Reich, in H. Waetzoldt – H. Hauptmann (Hrsg.), *Assyrien im Wandel der Zeiten*, Heidelberg, 337-345.
 2005 Die Ausgrabungen von Tall Bderi/Dur-Aschur-ketti-lescher. In: *Orte und Zeiten. 25 Jahre Forschung in Syrien 1980-2005*, Berlin, 143-147.
- Radner, K.
 2002 *Die neuassyrischen Texte aus Tall Šēḫ Ḥamad*, Berlin.
- Röllig, W.
 2008 *Land- und Viehwirtschaft am Unteren Ḥābūr im mittellassyrische Zeit*, Wiesbaden.
 2008a Duara - Die Satellitenstadt zu Dūr-Katlimmu, in: D. Bonatz, R. M. Czichon, F. J. Kreppner (Hrsg.), *Fundstellen, Gesammelte Schriften zur Archäologie und Geschichte Alt Vorderasiens ad honorem Hartmut Kühne*, Berlin, 189-196.
- Röllig, W. – Tsukimoto, A.
 1999 Mittellassyrische Texte zum Anbau von Gewürzpflanzen, in B. Böck – E. Cancik-Kirschbaum – T. Richter (Hrsg.), *Munuscula mesopotamica. Festschrift für Johannes Renger*, Münster, 427-444.
- Sasson, J.M.
 2004 The King's Table: Food and Fealty in Old Babylonian Mari, in C. Grottanelli – L. Milano (Eds.), *Food and Identity in the Ancient World*, Padova, 179-215.
- Shibata, D.
 2008 Middle Assyrian Administrative and Legal Texts from the 2005 Excavation at Tell Taban: A Preliminary Report, in H. Numoto (ed.), *Excavations at Tell Taban, Hassake, Syria. Preliminary Reports on the 2005 and 2006 Seasons of Excavations, and the Study of Old Babylonian and Middle Assyrian Texts*, Tokyo, 169-180 (=Al Rafidan 28 [2007], 63-74).
- Smettan, U.
 2008 Bodenpotenziale in Nordost-Syrien – Region Tall Šēḫ Ḥamad, in Kühne 2008, 7-26.
- Tenu, A.
 2006 Le Moyen Euphrate à l'époque medio-assyrienne, in Kepinski, C. - Lecomte, O. - Tenu, A. (Eds.), *Studia Euphratica: Le moyen Euphrate iraquien révélé par les fouilles préventives de Haditha*, Paris, 217-244.
- Van Zeist, W.
 2008 Comments on Plant Cultivation at Two Sites on the Ḥābūr, North-eastern Syria, in Kühne 2008, 133-149.
- Wilkinson, T.J.
 1994 The structure and dynamics of dry-farming states in Upper Mesopotamia, *Current Anthropology* 35 (1994), 483-520.
- Wilkinson, T.J., J. Ur, E. Barbanes Wilkinson, M. Altaweel
 2005 Landscape and Settlement in the Neo-Assyrian Empire, *BASOR* 340 (2005), 23-56.
- Zaccagnini, C.
 1975 The Yield of the Fields of Nuzi, *Oriens antiquus* 14 (1975), 181-225.