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Review of KOZUH, M., The Sacrificial Economy. Assessors, Contractors, and Thieves in the Management of Sacrificial Sheep at the Eanna Temple of Uruk (ca. 625-520 B.C.), Explorations in Ancient Near Eastern Civilizations 2, Eisenbrauns, Winona Lake, 2014

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KOZUH, M. — *The Sacrificial Economy. Assessors, Contractors, and Thieves in the Management of Sacrificial Sheep at the Eanna Temple of Uruk (ca. 625-520 B.C.)*. (Explorations in Ancient Near Eastern Civilizations, 2). Eisenbrauns, Winona Lake, 2014. (26 cm, XII, 324 + DVD). ISBN 978-1-57506-278-5. \$ 69.50.

In this book, a published and revised version of his doctoral thesis, Michael Kozuh presents the system of sheep and goat management in the Eanna temple of Uruk between 625 and 520 B.C. This volume constitutes a very valuable contribution to a topic which had not yet been fully explored. The demonstration is grounded upon 950 cuneiform texts of the Eanna archive, 75 of which are edited in this volume, including 35 texts previously unpublished. Black and white photographs of these 35 tablets are provided on a DVD. The author is willing to make available online the other

unpublished documents of his corpus. The volume includes an index of the texts cited, an index of topics and a bibliography.

According to M. Kozuh, the main goal of the Eanna's livestock management was to produce lambs for the sacrifices. The actors of the breeding system were divided into two spheres. In the external sphere, Eanna's herds were entrusted to outside contractors, while in the internal sphere, the Eanna's dependant personnel was preparing the lambs chosen to be slaughtered for the gods. The Eanna's livestock represented a major economic weight. Therefore, the issue of managing the external contractors through the administration's bookkeeping system was crucial, in order to "extract" the young animals and to collect the wool and goat hair, all due to the temple.

The purposes of the study are outlined on page 1: "to analyze the economic organization of this entire system of sheep and goat maintenance and utilization, to explore the economic and social relationships between the Eanna and its herdsmen, and to integrate the study of the Eanna's animal economy into the developing picture of the Neo-Babylonian temple economy as a whole". M. Kozuh raises important questions about the nature of the cuneiform documentation, the relationship between the Eanna and the external world, the role played by debt in the economic management, the efficiency of the system in case of unusual pressure, and the contacts between the temple and the Crown.

When answering these questions, the author often discusses the previous literature and proposes new interpretations, sometimes radically opposed to previous ones. Therefore, the readers may want to consult the previous studies in order to fully grasp the extent of the debates.

The first chapter of the volume, after having introduced the topic, outlines the fundamental distinction already stressed by Govert van Driel between an external system of livestock management, whereby external herdsmen, contractually linked to the Eanna, were responsible of the flocks, and an internal system managed directly by the temple through a dependant personnel, paid with rations, in charge of the preparation of the animals for the sacrifices.¹⁾ In this chapter, the author argues, against previous studies, that Eanna's herds were managed primarily for meat and not for wool.²⁾ His main argument is that the female animals vastly outnumbered the males (1:18), as in a herd managed for meat, whereas a herd managed for wool would have contained more (castrated) males. M. Kozuh then proposes a new estimation of the size of Eanna's livestock (between 74.000 to 90.000 animals), and of its local capacity of animal storage (1400 animals). This discrepancy explains why the herds had to be entrusted to external herdsmen. The livestock calendar is included at the end of this chapter.

The second chapter includes a presentation of the Eanna archive, the methodology of the author and historiography,

¹⁾ G. Van Driel, "Neo-Babylonian Sheep and Goats", BSA 7, 1993, p. 219-258.

²⁾ The importance of wool as the main cash crop in the Eanna's economy has been stressed by K. Kleber in M. Jursa, *Aspects of the Economic History of Babylonia in the first millennium BC, Economic Geography, Economic Mentalities, Agriculture, the Use of Money and Problem of Economic Growth*, AOAT 337, Münster Ugarit-Verlag, p. 595-615. See on this question the review of M. Tamerus, who answers M. Kozuh on the role of wool production for the Eanna, in a forthcoming *Zeitschrift für Assyriologie*.

before turning to a typology of the written evidence and a discussion about sheep and goat terminology. Regarding the documentation, M. Kozuh reassesses the typology of livestock texts elaborated by G. van Driel. He then focuses on the "herd assessment" texts, which he divides in the following way:

1) The assessments texts of single livestock managers.

a) Audits: these texts list the total of animals entrusted to an "offering shepherd" (*rē'i sattukki*) (3 texts) or to an external herdsman (3 texts), they record the debits and credits in a given period of time and calculate the difference. Against previous studies, the author proposes that the herdsmen's audits would be a comparison between a modeled herd's growth and actual animals. This new interpretation is the basis for the author's important arguments on the livestock management.

b) Livestock inventory texts (185 texts): they list animals by category and can be divided into simple inventories, inventories with a mention of a "balance" (*rēhu*) and inventories with the "extractions". The author argues that these lists are not made yearly but only when the herd is entrusted to the herdsmen or after a significant reorganisation. This document is the basis from which the Eanna calculated the future growth of its herds, maybe with wax-covered wooden ledgers perhaps recording annual births and extractions.

c) Scribal worksheets (11 texts): they record a single herd and extractions (animals and wool) inside a table prepared upfront. Some aspects of these documents remain obscure.

2) Assessments of multiple individuals.

a) Tabulated assessments of multiple individuals or scribal daybooks (30 texts): written at the shearing, they start with a table recording grown-up animals and extractions in lambs and wool for several herds, before moving on to the total of each category compared to the general totals of all the herds sheared at this time. The texts are of great interest because they enable the author to evaluate the lambing rate (59% of the number of ewes), the proportion of lamb extraction and the difference between the wool due and the wool actually collected.

b) Non-tabulated assessment of herdsmen (2 texts). They list herdsmen with their balance (*rēhu*).

The third chapter is dedicated to the herdsmen (*nāqidu*). According to the author, these were "businessmen with financial interests in both livestock and agriculture" (p. 67), and hired subordinated shepherds (*rē'û*) to take care of their herds. The relationship between the external herdsmen and the temple was based upon a contract, whether written or not. Only one contract has been found - YOS 6 155 - the application of its rules is manifest in the livestock documentation. Its terms are: per year, for every 100 female sheep and goat, 66 2/3 young animals have to be given away to the temple, 1.5 minas of wool per adult sheep and 5/6 mina of goat hair per adult goat are requested, and 10% of death are allowed. The author compares these rules to their application in the herdsmen's audits. These texts (one already published, NBC 4897 and the others NBC 4846 and NBC 4847 edited by the author) record the evolution of one herd during several years in a table listing the number of animals in the herd, the dead ones, the animals given as *idû* (salary), the quantity of wool and animals extracted at the shearing. Against previous studies, M. Kozuh argues that these documents do not record the actual evolution of a herd, but are mathematic calculations

of the herd's growth.³⁾ Instead of interpreting the last entry of the table, introduced by *rēhu*, as the deduction of a part of a herd (inspected and extracted) from the main herd entrusted to the herdsman, M. Kozuh thinks that it represents the difference between the calculated size of the herd at the term of the period (debit) and the actual animals presented by the herdsman at the inspection (credit). The wool amounts (named "wool numbers", p. 46) listed in the rightmost column of these texts would not be the wool actually collected but the missing wool.⁴⁾ He also considers that the number of new-born animals in these texts was calculated from the number of ewes from the previous years minus dead ewes and extractions, without taking into account the she-lambs now fertile. As the number of male lambs recorded are about half the number of the female ones, M. Kozuh doubles the number of males, which raises the estimation of the offspring to 78-92%. This, he concludes, means that the temple overestimated the lambing rate. However, we may point out that if one calculates the offspring of one year from the number of ewes of this very year, one finds an offspring of 66%, after doubling the number of males, which fits into the herding contracts' rules. Whereas previous scholars interpret the 50% missing lambs as extractions for the sacrifices, M. Kozuh proposes that it was a mathematical technique to reflect the actual composition of the herds, in which the males were less numerous than females counterparts. He shows that even when subtracting half of the males, the result still overestimates the number of males, and therefore the quantity of wool due, plunging herdsman into debt. M. Kozuh explains the huge *rēhu* carried out by the herdsman of these texts (50-80% in wool and 72-77% in animals) by the fact that they had been missing the audit for several years.

Chapter four discusses the word "*rēhu*", for which the author proposes a new translation, "balance". After debating the previous translations, he suggests that the scribes were using the word with two meanings.⁵⁾ First: "*rēhu* was the difference between models and actualities, as in the audit texts" (p. 92). Secondly, it "describes tangible assets in animals, which can be brought to the Eanna, branded, and transferred from one herd to another" (p. 92), as in YOS 7 43 or in the texts mentioning the "*nāqīdu ša rēhi*". According to the first definition, the *rēhu* animals would be non-existing animals, while the second reading refers to *rēhu* as actual animals. M. Kozuh shows that the *rēhu* of one herdsman could vary a lot from one year to another (fluctuating balance), sometimes increasing, sometimes decreasing, and he tries to find reasons for these developments. He shows that the commutation of balances against other valuables (slaves,

houses and lands, animals, silver), was attested but rare. Furthermore, these commutations were not necessarily seizures for non-payment. He concludes the chapter arguing that the Eanna overestimated the *rēhu* in a way that every herdsman ended the year with a debt, but that the Eanna rarely confiscated goods against it. Therefore, he assumes that the temple "disregarded the inevitable yearly balances of the herdsman" (p. 118), maybe by extra-contractual negotiation. The herdsman would be sanctioned only in case of missing payments, bad faith, or abuses.

The following chapter examines the discrepancy between the herd growth model and the actual results of the herdsman, demonstrating that the herdsman never reached the quota of the herding contract. M. Kozuh calculates from the scribal daybook that the herdsman produced an average of 1,12 mina of wool per sheep. According to the author, the missing amount was not claimed by the temple, because very few texts mention payment against *rēhu* in wool. According to M. Kozuh, the 1.5 minas of wool claimed by the Eanna was a voluntarily high quota in order to collect the whole wool yield. The author then examines the process of branding. Branded animals were Eanna's property, protected by the temple, they could not be sold, but they could be entrusted (*paqādu*) to another individual by the herdsman. M. Kozuh calculates from the scribal daybook that the Eanna collected only 25% of the he-lambs at the shearing. He also estimates, from the total of sacrificial animals (4500) by year and the total of animals in Eanna's herd (40000-50000), that in total only 1/3 of the he-lambs were taken off by the temple for sacrifices. As the actual herds count 1 male for 18 females, the author suggests that the missing males were not branded and sold by the herdsman for profit.

In the sixth chapter, M. Kozuh turns to the role of the herd supervisor (*rab būli*). At least 4 *rab būli* were in activity at the same time. They were responsible for the animal extractions from the herds of their subordinated herdsman, and they organized the recruitment of herdsman for the royal bow service. The author then examines the function of *ša muḥḥi rēhāni* and its single holder: the famous fraudster Gimillu. The author reconsiders the Gimillu affair showing that he was appointed by the royal power primarily in order to inform it on the Eanna's livestock assets, through the lists of "*rēhu*" of the temple's herdsman. M. Kozuh notes that the texts mentioning *rēhu* date back to Gimillu's time (end of Nabonidus, beginning of Achaemenid).

Chapter seven is about debt, and is introduced by this statement: "The textual record seems to show livestock entrepreneurs continually in debt to the Eanna temple, but at the same time we know that temple operations ran as usual, the same indebted entrepreneurs continued to do business with the temple, and the word for the debt itself - *rēhu* - seems to have taken on a new meaning" (p. 179). The *rēhu* ("balance") would have taken the meaning of the "live exploitable capital in storage by means of which the Eanna could extract herd products in lambs and wool" (p. 187, bottom). The formula "*ina rēhi*" means "collecting the rent". M. Kozuh then argues that, as the herdsman could not make profit from the yields of the wool, they managed the herds for meat, selling the non-extracted lambs (at the exclusion branded lambs kept in the herd for reproduction). The author shows how the risk was equally shared between the Eanna and its herdsman. The temple protection gave to the herdsman an access to bigger pasturelands, and to the temple

³⁾ G. Van Driel and K. R. Nemet-Nejat, "Bookkeeping Practices for an Institutional Herd at Eanna", JCS 46, 1994, p. 47-58 and S. Zawadzki « Bookkeeping practices at the Eanna temple in the light of the text NBC 4897 » in JCS 55, p. 99-123.

⁴⁾ P. 88-89, "Given that the total of the rightmost column in wool is listed as the remainder — that is, as the difference between what was owed and what was actually delivered — the rightmost column itself must mark deficiencies in payment of wool from year to year."

⁵⁾ For previous discussions about *rēhu* see G. Van Driel, *op. cit.*, M. San Nicolò, "Materialien zur Viehwirtschaft in den neubabylonischen Tempeln IV", *Or.* 23, p. 361; M. Jursa "Auftragsmord, Veruntreuung und Falschschaffungen: Neues von Gimillu", *WZKM* 94, 2004, p. 122-125, E. Gehlken *Uruk: Spätbabylonische Wirtschaftstexte aus dem Eanna-Archiv. Teil I: Texte verschiedenen Inhalts*, Mainz am Rhein: P. von Zabner, 1990, p. 20-21 and 181.

judicial system. In the last part of this chapter, the author tests the solidity of Eanna's system in case of stress, studying the consequences of the unusual demand in animals for the king's banquet at Abanu, the 6th year of Cambyses. The system appears to be fragile: the temple took 18 months to recover, intensifying the coercion methods to extract lambs from its herdsmen and reorganizing the internal allocation of animals for the sacrifice.

The next chapter focuses on the internal livestock management, comprising two separate branches - the "offering shepherd" (*rē'i sattukki*) and the fattening stable (*bīt urî*). Their role was to prepare the male lambs for the sacrifices, and the difference between them may lie in their feeding methods. In this chapter, M. Kozuh presents their functions, studies the origin of the lambs they received (mainly the external herds, but also the *irbu* entries and the royal offerings), and examines where they redistributed animals (mainly to the *sattukku* and *ginû* offerings, but also for other ceremonies, and more rarely for secular uses). 4300 animals were slaughtered for sacrifice every year, 9 on normal days and up to 90 on festival days.

The last chapter summarizes the main arguments of the author about the Eanna's livestock management system, through the example of two herdsmen, the Lāqīpu brothers. The book ends with the question of the relationship between the temple and the royal power. M. Kozuh remarks that despite the absence of traces of royal taxation on the Eanna's herd, the royal administration was "heavily involved in high-level Eanna affairs, by appointing officials, influencing decisions, and benefiting from temple ritual" (p. 305). The royal power provided 20% of the sacrificial lambs, it brought important amounts of wool to the Eanna, it was involved in the herding contracts, guaranteeing their fulfilment (through the clause of the king's punishment) and eventually, appointed Gimillu to obtain information about the Eanna's assets.

This book comprises interesting theories about the management of Eanna's livestock and raises fundamental questions about the operation of the temple economy. At the end of the reading, the system described by M. Kozuh seems to work without conflicts: the temple did not sanction the herdsmen who had not delivered their entire quotas in animals and wool, except in cases of manifest abuse, and furthermore allowed them a significant profit through selling lambs. Would the herdsmen not have the temptation to take advantage of the goodwill of the temple, and at what level of debt did the temple sanction them? The rich work of M. Kozuh fosters a lot of questions, for instance about the functioning of the meat market whose existence is assumed by the author, the polysemy of the administrative terminology in the Eanna's bookkeeping, or the reason why the royal power was so interested in collecting information about the Eanna's assets, even though it was not taxing them.

Considering that, in this volume, the author often addresses former interpretations proposed by scholars (about *rēhu*, *babtu*, the audit texts, the debt etc...), and bases a lot of his major conclusions on these reviewed interpretations, this contribution will open a good space for fruitful debates.