

CULTURE AND COSMOS

A Journal of the History of Astrology and Cultural Astronomy

Vol. 9 no 1, Spring/Summer 2005

Published by Culture and Cosmos
and the Sophia Centre Press,
in partnership with the University of Wales Trinity Saint David,
in association with the Sophia Centre for the Study of Cosmology
in Culture,
University of Wales Trinity Saint David,
Faculty of Humanities and the Performing Arts
Lampeter, Ceredigion, Wales, SA48 7ED, UK.

www.cultureandcosmos.org

Cite this paper as: Kurtik, Gennadij and Alexander Militarev, 'Once More on the Origin of Semitic and Greek Star Names: an Astronomic-Etymological Approach Updated', *Culture and Cosmos*, Vol. 9 no 1, Spring/Summer 2005, pp. 3-43.

British Library Cataloguing in Publication Data
A catalogue card for this book is available from the British Library

All rights reserved. No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission in writing from the Publishers.

ISSN 1368-6534

Printed in Great Britain by Lightning Source

Copyright © 2018 Culture and Cosmos
All rights reserved

Once more on the origin of Semitic and Greek star names: an astronomic-etymological approach updated

Gennadij Kurtik and Alexander Militarev

Abstract

The contribution is a new version of the paper "From Mesopotamia to Greece: to the Origin of Semitic and Greek Star Names" once written by a Sumerologist (L. Bobrova) and etymologist (A. Militarev), and recently revised, updated and corrected in most part by a historian of the Mesopotamian astronomy (G. Kurtik). The present paper analyzes Sumerian and Akkadian (Babylonian) names of 34 celestial bodies, and their equivalents in other Semitic languages (Arabic, Hebrew, Syrian Aramaic, and Ge'ez, or ancient Ethiopian) and in Greek and Latin. Its main goal is to demonstrate the importance of Sumerian and Babylonian celestial body names as a source of corresponding terms in other cultures, up to the conventional inventory of modern astronomy, and to reveal four strategies by which other cultures drew ideas for name-giving from the treasury of Mesopotamia's lexicon of celestial bodies. Whereas one of these strategies -- echoing, or full translation, of a Sumero-Akkadian term -- is axiomatic, the other three -- shift of meaning or interpretation of a Sumero-Akkadian term; lexical, or "material" borrowing; and, especially, folk etymology, or misinterpretation -- are understudied and practically unnoticed. The authors do not focus on such complicated matters as a historical background of Mesopotamian influence, direct or indirect, on Greek culture; a direction and routes of inter-borrowing between different speaking areas other than Akkadian and their contacts with the Greek world; a chronology of all kinds of cultural contacts and influences; probable connections between the early pre-Islamic Arabic and Babylonian traditions; or the problem of identification of Mesopotamian constellation and stars. However, the data presented may give a certain impulse to further investigation of these matters, while feasible etymologies and relations established between names can even throw some light upon debatable identification cases.

Our present contribution was stimulated by the previous paper on the same subject in which A. Militarev was one of the authors (while G. Kurtik, the other of the present authors, participated as a consultant on the

Kurtik, Gennadij and Alexander Militarev, 'Once more on the origin of Semitic and Greek star names: an astronomic-etymological approach updated', *Culture and Cosmos*, Vol. 9 no 1, Spring 2005, pp. 3-43

history of astronomy), namely: *Bobrova L., Militarev A. From Mesopotamia to Greece: to the Origin of Semitic and Greek Star Names / Die Rolle der Astronomie in der Kulturen Mesopotamiens.* Hrsg. H.D.Galter. Graz 1993. S. 307-329. The goal of this contribution was, while preserving the main ideas and structure of the previous paper, at the same time to update and correct the data on the Mesopotamian, Greek and Arabic astronomy and, partly, on their linguistic component.

The fundamental and pioneering role of ancient Mesopotamian cultures in the history of astronomy is widely and duly recognised. However, the importance of Sumerian and Babylonian celestial body names as a source of corresponding terms in other cultures, up to the conventional inventory of modern astronomy, is, in our view, underestimated.

In the present study, a series of more or less known cases of full coincidence of meaning, by no means haphazard, between Sumero-Babylonian star, planet and constellation names, on the one hand, and Greek, Latin and Semitic (besides Akkadian) names, on the other hand, is analyzed and updated. It is also enlarged with instances where the Mesopotamian origin of later or modern terms either has not, though easily recognizable, drawn due attention of the students, or is not evident or even completely disguised and can be revealed only by a special etymological analysis.

There are at least four strategies, that are probably universal, by which other cultures drew ideas for name-giving from the treasury of Mesopotamia's lexicon of celestial bodies:

- (1) echoing, or full translation, of a Sumero-Akkadian term,
- (2) shift of meaning or interpretation of the latter,
- (3) lexical, or "material" borrowing,
- (4) folk etymology, or misinterpretation.

One should also take into consideration such additional factors in the name-giving as: (1) the constellation figure and its location on the heaven sphere; (2) a constellation deity and the corresponding mythological

notions; 3) certain astronomic laws of celestial bodies' motions. These factors do not render the above-mentioned strategies irrelevant but add complexity to the whole process.

In the present study, we are not engaged into such complicated matters as a historical background of Mesopotamian influence, direct or indirect, on Greek culture; a direction and routes of inter-borrowing between different speaking areas other than Akkadian and their contacts with the Greek world; a chronology of all kinds of cultural contacts and influences. Some of these questions, like Arabic lexical loans in Geʿez or a Greek influence upon the late (scientific, after P. Kunitzsch) Arabic tradition, are well studied and present few difficulties. Others, like very probable connections between the early pre-Islamic (indigenous, after Kunitzsch) Arabic and Babylonian traditions remain obscure. The data presented here may give a certain impulse to further investigation.

The problem of identification is not the main purpose of this paper. In most cases, we rely upon the recent studies in the history of Mesopotamian constellations and stars. A mere partial coincidence in shape and location of Mesopotamian and Greek constellations is no obstacle to relating corresponding names. As it will be demonstrated, the ancient ways of borrowing astronomical notions and terms, with all kinds of metamorphoses they could undergo, were also far from being precise and direct.

On the other hand, we hope that feasible etymologies and relations established between names can by themselves throw some light upon debatable identification cases.

Several Hausa (Chadic), Ahaggar (Berber) and Coptic examples are quoted to demonstrate how the same strategies go on working through time and space, at least in the Afro-Asiatic/Afrasian/Semito-Hamitic speaking world.

1. Sum. ^{mul}ab.sín 'The Furrow' [G. 4], [BPO 2 10]; the eastern part of Virgo including α Vir and others stars [ibid], [Koch, 1989, 80-85]; the same word was sometimes used only for α Vir, the main star of this constellation [PW 320 K2], [Koch 1992 58].

Akk. (1) ^{mul}*absinnu(m)* 'furrow' [CAD a1 65], [AHw 7]; a loan from Sumerian; not attested in astronomic texts.

There is a following identification in MUL.APIN I ii 10: ^{mul}ab.šín ^dŠa-la šu-bu-ul-tum 'The Furrow, Šala, the ear of corn' [HP 33]. The ear of corn is a part of the constellation ab.šín image; we see on it the figure of a standing woman who has a large spike of corn in her hands [Weidner 1967, Taf. 2], [Weidner 1927, Taf. V, 3], [AUWE 19 27, No 107].

Note that the goddess Šala has no attributes of a maiden: she has a husband(s) and a son(s) [Tallqvist 453]. One wonders if *šer?u* misinterpreted as *šerru* 'child' could have imparted the notion of virginity to the feminine image. Cf. Sem *šaʿVr- > Aram. 'barley' which may have given rise to the 'ear of corn' element.

(2) ^{mul}*šer?u* 'The Furrow' [CAD š₂ 327], [SpTU III 228: 109], an Akkadian translation of a Sumerian name.

Gr. (1) Parthenos, lit. 'maiden, girl, young woman' [LS 1414], [Hei II 102]; the name is probably derived from Mesopotamian depiction of this constellation interpreted mythologically.

(2) Stakhys 'the ear of corn', name of the main star of this constellation - αVir [LS 1635], [Hei II 102, 16].

Ar. (1) *al-ʿadrāʿ* 'virgin', [Kun. 1986 100, 262-263], the sci-A translation of Greek name;

(2) *as-sunbula* 'the ear of corn' [Kun. 1961 22, 108, Nr. 275], [Kun. 1986 101-102, 261-263]; this ind-A star name used for the whole constellation, rather follows the ancient Mesopotamian tradition (see MUL.APIN I ii 10) than the Greek one, where Stakhys 'the ear of corn' always designated only one star. In the Arabic tradition, *as-sunbula* is related to Virgo, and Spike as a star name is attested only in the translated versions of Almagest (see in this connection also [Kun. 1993 83b]).

Hbr. *šibbōlāt* 'ear (of corn), spike' [HAL 1394], (modern) 'Spica' [Alcalay 2528].

Syr. *šabbālā* 'spica, Virgo' [Brock. 752].

Ge'ez *sanbulā*, *əsanbəlāh*, etc. 'Virgo' (< Arabic *as-sunbula*) [Leslau 505].

Hausa Zangaraniya 'Head of Corn' [Hiskett 175].

Lat. (1) Virgo, lit. 'maiden', a name of constellation and zodiacal sign.

(2) Spica 'the ear (of corn)', the brightest star in Virgo (α Vir).

2. Sum. (1) ^{mul}al.lul (^{mul}al.lub) 'The Crab' [G. 14]; [BPO 2 10]; located in the area of modern Cancer. Interpreted as al.lub (al.lu₅) 'crayfish' or 'crab' [SD A III 153].

(2) ^{mul}NAGAR [G. 294]; [BPO 2 13]; widely used in New Babylonian and later astronomic texts (but also attested in the OB lexical text [MSL XI 143, col. x 27]) as a name of constellation and zodiacal sign 'Cancer' [MSL VIII/2 93], and likely read as 'alla'. It is well known that one of the readings of NAGAR in a non-astronomic context was alla [CAD A1 354, *allanu*], [Lambert 1968 595]. In an astronomic context it may have been a reduction of *alluttu* 'crab'.

(3) ^{mul}kušú - is an alternative reading of ^{mul}NAGAR, accepted in some publications (see, for example, [Schaumb.; ACT; SpTU]) but considered outdated by most modern authors. According to Landsberger, *kušú* could denote two different animals, a crab and a shark (cf. [MSL VIII/2 89- 93]). According to [AHw 517], *kušú* = *kušú* 'Taschenkrebs' translated as 'aquatic animal' in [CAD k 602]. In [Cohen 1973] *kušú* is identified as a kind of turtle, while previous identifications are rejected. However, [LBAT 1502:19] quotes a syllabic version *ku-šú* instead of the expected ^{mul}alla, i.e. Crab (see [Dombaz-Koch 76]. Cf. also [SpTU III, Nr. 104, 105], which suggests that *kušú* might itself also mean some variety of crabs.

The main meaning of NAGAR is 'Schreiner, Tischler' [AHw 710]. Its alternative reading 'alla' phonetically close to *alluttu* ('crab') accounts for NAGAR used to denote the Zodiacal sign Crab (Cancer). The alternative explanation of the fact that NAGAR was used instead of al.lul is similarity between the cuneiform signs *kušú* and *nagar* differing by one vertical wedge only (cf. Landsberger in [MSL VIII/2 93]). Both associations may have supported each other. {} Folk etymology.

Akk. (1) ^{mul}*alluttu(m)* 'crab, the Constellation Cancer' [CAD a1 360], [AHw 38] (e.g. [SpTU III 227]). {} A loan word from Sum.

(2) ^{mul}*kušú* 'crab' (?) {} An echoing of a Sumerian term.

Gr. *karkinos* 'crab; lobster' [LS 878], [Hei II 94]. {} A loan

translation.

Arb. *ʔal-saraṭān* 'the Crab' (sci-A) [KS 21], [Kun. 1986 270-271], [Kun. 1993 83a]. {} A loan translation. Considered a loan from Aram. [Brock 499].

Hbr. pB. *sarṭān* 'crab; Cancer' [Ja. 1025]. {} A loan translation.

Syr. *sarṭānā* 'cancer; n. sidus' [Brock. 499]. {} A loan translation.

Lat. Cancer.

3. Akk. ^{mul/d}*Anunītum*, the name of a goddess, probably of Amorite origin, associated with Inanna; always written syllabically [G. 27], [BPO 2 10], [Selz 2000 34-35]; located in the eastern (or north-eastern) part of modern Pisces; its connection with water is seen from its identifications in the star lists: *mul.id₂.idigna* = ^da-nu-ni-tum [MSL XI 40: 22] (*id₂.idigna*, Tigris)].

Note that in a later text [SpTU III 228, line 110], ^{mul}nu.nu is strangely placed into the Sumerian column (as the Sumerian prototype for Anunitu) as if the compiler took this word for a Sumerian one, which is very unlikely since *nūn-* is the main term for 'fish' in both Akkadian and Aramaic. Anyway, this identification seems to point to the water elements in Anunitu's image. The symbol of this goddess was evidently fish in the late period; see images on the Seleucid seals [AUWE 19, p. 156], [Wallenfels, Fig. 12, 19, 21, 22].

4. Sum. ^{mul giš}apin 'The Plow' [G. 39]; the northern part of the modern constellation Triangulum + α Andromedae, according to D. Pingree [BPO 2 10], 'Dreieck aus $41\chi\beta\gamma$ Andromedae', according to J.Koch [Koch 1989 105-110]. This identification implies that in the Mesopotamian heaven, ^{mul giš}apin was located either within the area of the constellation Triangulum or in its neighborhood.

Akk. ^{mul}*epinnu(m)* 'The Plow' [SpTU III 228: 107]; a loan from Sumerian.

Gr. *trígōnon* 'The Triangle' [LS 1818], [Hei II 82].

In the Mesopotamian plow, the plow-beam, the share and the fastening peg form a triangle, cf. [Salonen 1968, Taf. VI-VII], which would account for of this constellation's shape and name in Greece.

Ar. *al-mutallaṭ*- 'The Triangle' [KS 55]; [Kun 1986 78-79, 282-283]; sci-A translation of Greek name.

Lat. *Triangulum* 'The Triangle'. {} A loan-translation from Greek.

5. Sum. ^{mul}AŠ.GAN₂, ^{mul}AŠ.IKU, ^{mul}iku, literally 'a unit of measurement (of field)' [CAD I 69], usually translated simply as 'field' [G. 110], [BPO 2 11]. Commonly considered (v., e.g. [BPO 2 11]) to be located in the area of the modern Pegasus and Andromeda; cf., however, [Koch 1989 86-103] locating it within Andromeda only.

Akk. ^{mul}iku(m) 'Field' [AHw 370] (e.g. [MSL XI 30:27], [SpTU III 227: 80]). {} A loan translation.

Gr. [híppos] 'Horse' [LS 835], [Hei II 76-81]. {} A loan translation.

Arb. (1) *ʔal-faras*- "Pferd" [Kun. 1986 289]; sci.-A name for Pegasus.

(2) *ʔal-faras ʔal-kāmil (at-tāmm)* "Vollständige Pferd" = "The Complete Horse" [Kun. 1961, Nr. 89]; ind.-A name for Pegasus. The epithete 'complete' refers to the constellation shape opposing to two Ptolemeus' constellations representing the front part of the horse body only. Likely a loan from Greek.

(3) *ʔal-farasu-l-ʔaʕzam*- "The Great Horse" [BK 2 568].

(4) *ʔal-farasu-mmuḏannaḥ*- "The Winged Horse" [Бируни II, 285, 581].

Hbr. *ha-ssūs ha-məʕōpēp* "Pegasus, winged Horse (also in astronomy)" [Alcalay 741].

Lat. *Pegasus* 'Pegasus' {} A loan translation.

The misinterpretation of Babylonian - or Sumero-Akkadian, if the reading (aš).iku is correct - *ikū* by Greeks, probably as early as in the Mycenaean-period, as 'horse', cf. linear B *i-go* 'horse' < Indo-European **ek'wo*, the form that should have rendered something like *iku/eku/iko/eko* in any other *centum* Indo-European language, which also might have happened to be a mediator for this folk etymology.

There are of course certain reservations about this striking hypothetic case of folk etymology, with its purely linguistic background; normally

similar cases of shift in constellation names can be explained either from the picture of a corresponding constellation or a related deity. Besides, the Mesopotamian Heaven knows its own constellation named Horse (^{mul}ANŠE.KUR.RA) whose identification is highly problematic. Pingree [ASM 273] and other authors locate(s) it within Cassiopeia. At the same time, Koch locates it within Pegasus [Koch 1995 61, Anm. 20], which would imply a natural explanation of the Greek name from the Mesopotamian one. Note, however, that no reliable data for identifying ^{mul}ANŠE.KUR.RA are available so far.

6. Sum. (1) ^{mul}giš^{érin} 'The Scales' [G. 368], [PW]. Attested in late astronomical texts as a name of constellation and zodiacal sign Libra.

(2) ^{mul}zi.ba.an.na 'The Scales' [G. 176], [HP 33], [BPO 2 16]. {} A loanword from Akk **zibana* [CAD z 100].

Akk. (1) ^{mul}*zibānītu(m)* 'The Scale'; it was 'a type of balance differing from the simple *gišrinnu* by being provided with an otherwise unknown part or mechanism called **zibana*' [Wallenfels 285]; 'the constellation Libra; a type of scale or balance' MB on [CAD z 99-100] (representations of the Seleucid period, v. [Wallenfels 285], [AUWE 19, p. 155]). The damaged picture of this constellation on the so called 'planisphere' (K8538) see [Koch 1989 56, 77-79]. A variant form ^{mul}*zibānū* 'The Scales' derived from ^{mul}zi.ba.an.na according to [CAD z 100] is attested in only one Seleucid text BRM 4 20:5, 20 [Ungnad 258-9].

There is also Akk. *gišrinnu* 'balance (for weighing)' SB [CAD g 107] borrowed from Sum; to our knowledge, not used in astronomical texts.

Important for the later history of this constellation name is the following identification in MUL.APIN I ii 11: ^{mul}ZI.BA.AN.NA SI ^{mul}GÍR.TAB = *zibānītu karan zuḳāḳīpi* 'The Scales, the horn of the Scorpion' [HP 33]. Cf. No. 7,

Gr. (1) *khēlai* 'The Claws (of the Scorpion)'; was used in early Greek astronomy as a name for the constellation Libra (by Eudoxus, Aratus, Pseudo-Eratosthenus and the others) [LS 1990].

(2) *zygós* 'The Balance', lit. 'balance, beam of balance, yoke, lever' [LS 757]; first mentioned as the name of a constellation in Greek

texts going back to the 3rd century B.C. [Hei II 267], [GB 473].

In Ptolemy's *Almagest* both names occur, the former as a constellation name, the second as a zodiacal name (mainly in tables).

Arb. (1) *az-zibānā* 'Claws (of the Scorpius)', *ʔal-zubānayān* 'The Both Claws (of the Scorpius)', ind-A name of 16-th lunar mansion (α , β Librae) and zodiacal constellation Libra [Kun. 1961, Nr. 322 a, b, c], [Kun 1986 103-105, 257], [Kun. 1993 83b]; {} a loanword from Akkadian.

(2) *ʔal-mīzān* 'The Scales' [Kun. 1986 103-5, 257]; sci-A translation from Greek.

Hbr. pB. *mō(ʔ)znayim* 'balances; Libra' [Ja. 722].

Syr. *matqālā* 'libra, trutina; sidus librae' [Brock. 831].

Hausa Ma 'auni 'Balance' [Hiskett 174].

Lat. Libra 'The Scales'.

The two names of the same constellation, "the Scales" and "the Horn (or Claws) of the Scorpion" pose a grave problem in view of an evident formal coincidence between the Akk. and Arb. terms which cannot be qualified other than homonyms. According to CAD z 100, "*zibānītu* ... (probably a Kulturwort) is preserved as a Sumerogram in Hitt. ZI.BA.NA, phonetically written as ZÉ.PA.NA...The relationship of the word **zibana* to Ugar. *mznm*, Heb. *mōznayim* and Arabic *mizānun*, as well as to Syr *zeban* "to buy", etc., remains problematical". According to Kaufman, "there must be some connection between this word and the common word for "to buy" in Aramaic, *zbn* [Kaufman 112]. Cf. further Jud. *zəban* 'to bargain, buy', Pa. 'to sell' [Ja. 379], Mnd. *zabanīta* "scales, balances" [DM 156], which may be an Akkadism, and Arb. *zabana* 'vendre les fruits sur l'arbre', *zābana* 'vendre en bloc' (cf. also *zibr-* 'quantité nécessaire, autant qu'on en a besoin') [BK 1 972], (dial.) *zabūn* 'client, chaland' [Belot 285]. The common Sem. verb **zbn* seems to convey the idea of making a special sort of bargain, with a derived noun *zibānītu* (and **zibana*?) in Akk (and *zabanīta* in Mnd. unless an Akkadism) denoting a specific type of scale or balance used for this sort of bargain; its further connections with Eg *dbn* 'weight, part of a scale'

suggested in [Kaufman 112] and [BM 319] are problematic as, beside this and a parallel example, Sem. *wzn 'to weigh' ~ Eg. (OK) *wdn* 'schwer sein', *wdnw* 'Gewicht des Waagelotes' [EG I 390], there are no reliable cases of the correspondence Sem. *z ~ Eg. *d. As to the Arb. *ʔal-zubānayān*, the whole problem depends on a fact which is hard to check, namely, whether the word combination *zabāniyā-I-ʔaqrab* 'les cornes (du scorpion)' [Belot 285; Freitag 2 224; neither in BK nor in Dozy] was really attested in Arabic in a non-astronomic context, or was only a constellation name. In the former case, the problem remains unsolved (our previous explanations given in [BM 323-324] look far-fetched); in the latter, this is a typical case of folk etymology: the Arabs knew both Akkadian names, but not understanding the meaning of the first of them, *zibānītu*, they interpreted it by means of the second, *zibānītu qaran zuqāqīpi* perceiving the whole word combination as "*zibānītu*, i.e. *qaran zuqāqīpi*" = "*zibānītu* is a horn (or claw: *qarnu*, besides 'horn' means 'pincers of the scorpion' [CAD q 135-7]) of a scorpion". This perception could be suggested or confirmed by the phonetic similarity of the Akk. *zibānītu* and the Arb. *zubān-/zabān-* 'dardre d'insecte' (see [Dozy 1 580], where this term is regarded as a Persian loan, which is hardly so: the Persian *zābān* is 'tongue', not 'sting', which, in case of insects, not snakes, has nothing to do with 'tongue'). Cf.

7. (?) Sum. ^{mul}ka.keš 'circumference' [CAD *k*, 397b], [G. 210]; the name occurs in a single Sumerian star list dated to the first half of the second millennium B.C. [MSL XI 108: 390]; the exact identification is unknown.

Akk. ^{mul}*kippatu* (^{mul}GAM-*ti*) 'loop, hoop, tendril; circle, circumference' from OB on [CAD *k* 397], [G. 65], [PW 321: P1], [Koch 1992 59], [Schaumb. 228 : III]. A star cluster in Corona Borealis; in the lists of *ziqpu*-stars of the middle of the 1st millennium B.C. it is usually a name of the star α Coronae Borealis (Gemma).

Gr. *Stéphanos bóreios* 'The Northern Crown' (lit. 'wreath, crown, circle') [LS 1642], [Hei II 52]; admittedly, the translation from Akk. with a partial shift of meaning.

Ar. (1) *ʔal-iklīl al-šamalī* 'The Northern Crown' [Kun. 1986 45,

325]; the sci-A translation from Greek.

(2) *al-fakka*, ind-A name for the constellation Corona Borealis [ibid.]; derived from the root *f-k-k*, 'to separate, break up' and possibly referred to this asterism shape: an incomplete circle [Kun. 1961, Nr. 85], [KS 30];

(3) *ṣaḥḥātu-l-masākīn* 'Dish of the Poor', another ind-A name of this constellation possibly derived from its round shape in Greek or Mesopotamian tradition [Shumovsky 8r]. The same name is used by al-Bīrūnī in *Qānūn al-Masʿūdī*, IX [Бирюни II, 274].

Syr. *kəlīṭā* 'corona, diadema; nomen sideris' [Brock. 327]. Acc. to Brockelmann, from Akk. *kilīlu(m)* ('circlet, headband' [CAD k, 358]); acc. to [Kaufman 63-64], the two terms would appear to be only cognates.

Lat. Corona Borealis. {} A loan from Greek.

8. Sum. ^{mul}gīr.tab 'The Scorpion' [G. 94], [BPO 2 12]; located in the area of the modern constellation Scorpio.

Akk. ^{mul}zukaḳīpu 'The Scorpion' [CAD z 163], [AHw 1538-9] (syllabic attestation less frequent than a logographic one, cf. [zu]-ḳa-ḳi-pi [Cavigneaux 1981, 105: 8]). {} A loan translation.

Gr. skorpios 'the Scorpion' [LS 1615], [Hei II 108]. {} A loan translation.

Arb. *ʔal-ʔaḳrab* 'the Scorpion', ind.-A and sci.-A. [Kun. 1961 S. 22], [Kun. 1986 252-253], [Kun. 1993 83b]. {} A loan translation.

Hbr. pB. *ʔaḳrāb* 'scorpion; the constellation Scorpio' [Ja. 1109]. {} A loan translation.

Syr. *ʔeḳarbā* 'scorpio; nomen sideris zodiaci' [Brock. 544]. {} A loan translation.

Ge'ez. *ʔaḳrab*, *ʔaḳrāb* 'scorpion; Scorpio' (in the meaning 'Scorpio' borrowed from Arb.) [Leslau 68]. {} A loan translation.

Lat. Scorpio. {} A loan translation.

9. Sum. ^{mul}gaba ḡir.tab 'the Chest of the Scorpion', α Sco. [PW 315].

Akk. ^{mul}irat zukaḳīpi [HP 38] "The Chest of the Scorpion"; syllabic

writing is not attested, to our knowledge, in astronomical texts.

Gr.: Ptolemy distinguishes three stars on the Scorpion's body, of which the middle one is known as Antares (α Sco) [LS 150], [Hei II 111, 6-8]; the notion of the middle star in the body seems to have given rise to the Arabic name of the same star.

Arb. *ḳalb ʔal-ʔaḳrab* 'Heart of the Scorpion', the ind-A (and sci-A) star name of α Sco [Kun. 1961, Nr. 216b], [KS 53]. {} Likely named in correspondence with the Greek description of this star's position in the Scorpion's body. Note, however, a conspicuous parallelism between the Sumero-Akkadian and Arabic descriptions of the star's position.

The Arabic 'heart' in this case is likely to mean 'middle'; no meaning 'chest of the scorpion' could be preserved in Arabic as in both Arabic and Greek traditions the Skorpion was always depicted from the back. (It is not known exactly how Scorpius was depicted in Mesopotamian astronomy; the meaning 'chest' in Sum. *gaba* implies that the "scorpion's chest" was visible).

10. Sum. SI ^{mul}*ḡir.tab* 'the Horn of the Scorpion' [HP 33]; γ Scorprii = σ Librae according [PW 321], σ Scorprii according [Koch 1992, 58].

Akk. ^{mul}*ḳaran zuḳākīpi* [HP 33], lit. 'the horn of the Scorpion'; according to B.Landsberger it is the standard Akkadian term for scorpion's claws [Fauna 137]. {} Syllabic writing, as far as we know, is not attested in astronomical texts.

Gr. *khēlaí* 'The Claws (of the Scorpion)' [LS 1990]; {} A loan translation. In early Greek astronomy and in Ptolemy's *Almagest* this term was used as a name for the constellation Libra [GB 473], [Hei II 106].

Arb. *az-zubānā, al-zubānayān* 'Both Claws (of the Scorpion)', ind-A lunar mansion identified with α, β Librae [Kun. 1961, Nr. 322 a, b, c], [Kun 1986 105, 257], [KS 43]; {} A loan translation with a partial meaning shift.

11. Sum. ^{mul}*gu.la* 'The Great One', 'The Giant' [G. 81], [BPO 2 12]; located in the area of the modern Aquarius.

Akk. *rabū* 'The Great One'; a syllabic writing is probably attested in a

single text [MSL XI 49:64]. The aquatic character of the Giant follows from the Astrolabe text: ^{mul}GU.LA = ^dEN BE ^dÉ-a 'The Great One = The Lord of the Springs, Ea' [WH 30, line 28]. The constellation was often symbolized as a man in a long dress with two streams flowing from his shoulders or from a jug pressed to his breast; in some of the pictures the two streams flow into two jugs. The earliest known images of the Giant go back to the third millennium B.C., cf. [Porada]; the images on seals of the Seleucid period see in [AUWE 19 31-33, 155, Nos. 126-141]; [Wallenfels 286-287].

Gr. hydrokhóos, lit. 'water pourer' [LS 1845], [Hei II 118-124]; the name is derived from the symbolized figure of the Mesopotamian constellation: the Greek Aquarius was depicted, as a rule, with a stream of water flowing from a jug into the mouth of the Piscis Austrinus, cf. [Hyginus. Astron. III 28], [Eratosthenus. Catast. 26].

Ar. (1) *?al-dalw* 'The Well Bucket', lit. 'the (leather) bucket (which was lowered into a well with a cord)'; a name of ind-A constellation identified with the so-called 'Square of Pegasus' (α , β , γ Peg + α And) located to the north in the immediate vicinity from the modern Aquarius; the same name was also used as ind-A name of the zodiacal constellation Aquarius [Kun. 1961, Nr. 72], [Kun. 1986 114-115, 118-119, 240-241], [KS 17], [Kun. 1993 84a]. The name was apparently derived from the Mesopotamian constellation symbol.

(2) *ḥāmil ?al-dalw* 'The Carrier of the Bucket', name of this constellation [Kun. 1986 118], [Kun. 1993 84a], adding to the ind.-A name (above) an anthropomorphic element likely accounted for by the Greek influence.

(3) *sākib ?al-mā?* 'The Water Pourer' [Kun. 1986 115, 241], [KS 17]; sci-A translation of Greek name.

(4) *al-farġ al-muḳaddam* (var. *al-awwal*) 'The Foremost (var.: The First) Sink' (or 'Outlet'); the name of the 26-th lunar mansion (α , β Peg); [Kun. 1961 57, Nr. 92b].

(5) *al-farġ al-mu?ahḥar* (var.: *al-tānī*) 'The Rearmost (var.: The Second) Sink'; the name of the 27-th lunar mansion (γ Peg, α And) [Kun. 1961 57, Nr. 93b], [Kun. 1993 84a]; both names were possibly connected

with 'bucket' (*ʔal-dalw*) or with the symbol of the Mesopotamian constellation.

It should be noted that the Mesopotamian Aquarius (GU.LA, Enki-Ea) is always depicted with *two* streams of water (see above), which implies the origin of the Arabic tradition in (4) and (5) in the Mesopotamian rather than in Greek images (the latter ones depicting only one stream).

Hbr. pB. *dālī, dālī* 'Bucket; Aquarius' [Ja. 310]. Either a reflection of the Mesopotamian constellation symbol or a loan translation from Arabic or Greek.

Syr. (1) *dawlā* 'situla; sidus aquarii' [Brock. 145]. Either a reflection of the Mesopotamian constellation symbol or a (loanword?) translation from Arabic.

(2) *ʔašed mayʔ* 'aquarii sidus'; *ʔešad* 'effudit, profudit' [ibid. 52] ('pouring water'). Either a reflection of the Mesopotamian constellation symbol or a loan translation from Arabic or Greek.

Geʿez *dəlw, dalāwi, dalu* 'Aquarius' [Leslau 133]; acc. to Leslau, from Arb.

Hausa *Guga* 'Bucket' [Hiskett 174] (a loan-translation from Arb.)

Lat. Aquarius 'The Water-carrier'.

12. Sum. (1) ^{mul}gu₄.an.na 'The Bull of Heaven' [G. 77], [BPO 2 12]; located in the area of the modern Taurus, usually identified with Hyades.

(2) ^{mul}GIŠ.DA 'The Jaw of the Bull' [G. 96], [AHw 389]; a part of the constellation Taurus including α Tauri with the Hyades; rarely attested in the texts of the second half of the first millennium B.C.; pseudo-sumerogram, a loan from Akkadian. The standard meaning of ^{giš}da in Akk. is ^{giš}lêʔu 'tablet' [AHw, 546-47]; the usage of ^{giš}da for *is lê* is accounted for by a double coincidence, namely: (1) *is* and ^{giš} are graphically the same sign, (2) *lê* (from *lû, lîʔu* 'bull') [AHw, 560] is phonetically close to *lêʔu* 'tablet' [3 Erg., 336; G. 77, 96].

Akk. (1) *alû* 'The Bull (of Heaven)', rarely attested in astronomical texts [AHw 39], [CAD 377], [Horowitz 1993, 154].

(2) *is lê* 'The Jaw of the Bull' [G. 200], [CAD i 188], [AHw 389]; the most frequently used Akkadian equivalent for ^{mul}gu₄.an.na.

(3) *la-ḫe-e al-pi* 'The Jaw of the Bull' [CAD I 44], [AHw 389].

There are a few images of lying or jumping bull-zebu (with a hump) on the tables and seals, which are likely to represent the figure of this constellation, cf. [Weidner 1927, Taf. V, 1]; [TU, 47 rev.]; [AUWE 19 110-114, Nos. 841ff., 154; Wallenfels, Fig. 2, 3, 18, 23]; [Sarkisian, Fig. 9]. Since all known terms referring to this constellation figure in astronomical and astrological texts refer to a forepart of the bull's figure only (*is lē, la-ḥe-e al-pi, zappu*), it could be surmised that Mesopotamian astronomers distinguished only a forepart of the bull's figure, which is corroborated by the same perception in the Ancient Greek tradition [Куртик 2002 94-95].

Gr. *taūros* 'The Bull' [LS 1761], [Hei II 86]; the Greek astronomers used only a forepart of the bull, the so called *protomé*, as a figure of the constellation, the tradition going back to Mesopotamia (?).

Ar. *ʔal-tawr* 'The Bull' [Kun. 1986 278-279], [Kun. 1993 83a]; sci-A translation from Greek.

Hbr. pB. (late) *šōr* 'bull' [HAL 1451-3], (modern) 'Taurus' [Alcalay 2574], *mazal šōr* 'Stiergestirn' [Stein 1119].

Syr. *ʔeglā* 'vitulus; cognomen tauri zodiaci' [Brock. 509] ('calf').

Ge'ez *sawr* [Leslau 521], *tawr* [ibid. 582] 'Taurus (name of a zodiacal sign)' < Arabic *tawr*.

Hausa Sa 'bull' [Hiskett 174].

Lat. *Taurus* 'The Bull'.

13a. Sum. ^{mul}lu^{lu}ḥun.ḡa 'The Hired Man' [G. 244], [BPO 2 13]; a constellation located in the area of Aries; from the middle of the first millennium B.C. was abbreviated as ḥun.ḡa, ḥun, lu and lú, where lu is a homophonic substitution for the rarely used abbreviation lú, cf. [SpTU II, 43 : 20]. The abbreviation ^(mul)lu was widely used in astronomical and astrological texts of the Seleucid period as a name of the corresponding zodiacal sign [ACT 475], [Ungnad 256, Anm. 37]; the earliest example is attested to our knowledge in the astronomical diary of -384 [SH I 72 : 10].

Akk. (1) ^{mul}agru(m) 'The Hired Man'; a syllabic writing attested only in star-lists, cf., for example, [Cavigneaux 1974 134: Rs. 23'], [SpTU III

228 : 121]. A loan translation from Sum.

13b. Sum. lu (a homophonic substitution for lú, see above) = udu 'The Ram'; the lu-sign can be read as udu 'ram, sheep' to account for the origin of this name, which may be due to a folk etymology or to the fact that, in the period when the above abbreviations were introduced, it was already a ram that symbolised ^{mul}lu_hun.ġa.

Akk. *immeru* 'The Ram'. We know of only one instance of this term used in describing the constellation ^{lu}h_hun.ġa (MLC 1866 col. I 14, unpublished). See also a few calendar and ritual texts containing Sum. udu.nitá 'ram' as a name of the constellation ^{mul}lu_hun.ġa symbol (?) ([SpTU II, 43 : 1], [SpTU III, 104: 1, 14, 27; 105: 11, 24], [Foxvog 107]); the depictions of a ram as a symbol of the Aries (a ram with the head turned back) are found on the Seleucid seals [AUWE 19 116-117, Nos. 887-894; Wallenfels 282-283].

Gr. kriós 'The Ram' [LS 996], [Hei II 84-86]; the Greek name has certainly the Mesopotamian origin as it corresponds to the symbol of the Mesopotamian constellation ^{lu}h_hun.ġa supported by its alternative designation lu = udu = *immeru*.

Ar. (1) *al-ḥamal* 'The Lamb, The Ram' [Kun. 1986 78-89, 282-283], [KS 18], [Kun. 1993 83a]; ind-A and sci-A name of the constellation Aries.

(2) *ʔal-kabš* 'The Ram' [KS 18]; another ind-A and sci-A name of Aries; both names may be traced to the Mesopotamian tradition.

The ind.-A constellation known as *al-ḥamal* or *ʔal-kabš* was much larger than the Greek Aries and included part of Taurus (Pleiades) [Kun. 1993 83a].

Hbr. (mod.) *ṭālā* 'lamb, Aries' [Alcalay 870].

Syr. *ʔemərā* 'agnus; aries (zodiaci)' [Brock. 26] ('lamb').

Geʿez *ḥamal*, *ḥaml* 'ram, a sign of the Zodiac' < Arabic [Leslau 232].

Lat. Aries 'The Ram'; a loanword from Greek.

14. Akk. *kakkabu(m)* 'the star' as an epithet of Ishtar [CAD k 47], [AHw 421]; the planet Venus. According to [Kun. 1995 97b],

'reduplication of a basic root *KB* "to burn, to shine", which is a wrong etymology as the Akk. *kakkabu(m)* continues the common Semitic **kabkab-* 'star' (Ugaritic *kbkb*, Hbr. *kōkāb*, Ar. *kawkab-* etc. [HAL 463]).

Hbr. pB. *kōkābāt* 'the planet Venus' [Ja. 619]; 'star', feminine, or 'she-star'.

Syr. *kawkabā* 'stella veneris' [Brock. 321] (fem.).

The use of 'the star' as an epithet of Venus in postbiblical Hebrew and Syrian may be influenced by Akkadian, but may have an independent origin in view of Venus' outstanding position in the sky (note also a feminine gender both in Hbr. and Syr. versus a masculine gender in Akk.). On the masculine and feminine Ishtar as the morning and evening star in the Mesopotamian tradition see [BPO 2, Text IV 6-7a + Parallels], [Heimpel 1982 14-15], [Selz 2000 29-33].

Copt. cogpot 'Venus'; cog-, ciog 'étoile, astre' < Egyp. (Pyr.) *sb* 'étoile' [Vycichl, 200]; pot is unidentifiable.

15. Sum. ^{mul}ku₆ 'The Fish' [G. 218], [BPO 2 13]; located in the area of the modern Piscis Austrinus.

Akk. ^{mul}nūnu 'The Fish' [BPO 2 13]; for syllabic attestations, see [Emar VI/4 151:178; SpTU III, S. 331, 114A v 59, autography].

Gr. ikhthys nótios 'The Southern Fish' [Hei II 166]. {} A partial loan translation.

Arb. (1) *ʔas-samakāt ʔağ-ğānūbīyyat* 'The Southern Fish' (sci.-A name) [Kun. 1986 164-167, 184-5].

(2) *ʔal-ḥūt- ʔ ağ-ğānūbīyyat* 'The Southern Fish' (sci.-A name) [ibid.; KS 50].

Hbr. pB. *dāg* 'Fish' [Ja. 279].

Lat. Piscis Austrinus.

16. Sum. ^{mul}lugal 'The King' [G. 240], [BPO 2 13]; the star Regulus (α Leo).

Akk. (1) *šarru* 'The King' [CAD š1 105]; however, all the examples quoted [ibid.] are Sumerograms and no cases of this term used in an

astronomic context in a syllabic form are attested.

(2) There is a following identification in MUL.APIN I i 9: MUL šá ina GABA ^{mul}UR.GU.LA GUB-zu ^{mul}LUGAL 'The star which stands in the breast of the Lion: the King' [HP 20]. This description gave rise to a series of star names in various traditions.

Gr. (1) Basilískos 'A Little King', lit 'princelet, chieftain' [LS 310].

(2) ο ἐπὶ τῆς καρδίας καλοῦμενος Βασιλίσκος [Hei II 98, 6] '(The star) on the heart, called 'Regulus''. This description in Ptolemy's *Almagest* fully corresponds to MUL.APIN's formulation save for replacing 'breast' for 'heart'.

Arb. (1) *?al-kawkabu-llādī fi-l-ḳalbi wa-ismī ?al-mulayku* "Der Stern auf dem Herz, er wird genannt 'der kleine König'" [Kun. 1986 94, 266].

(2) *ḳalb al-asad* 'The Heart of the Lion' [Kun. 1986 97, Anm. 1], [KS 41].

Lat. Stella regia 'the Royal Star'; Regulus 'little king'.

17. Sum. ^{mul} (gīš)mar.gīd.da 'The Wagon' [G. 258], [BPO 2 13]; this constellation was located in the area of the modern Ursa Major.

Akk. ^{mul}erikku 'The Wagon' [AHw 238], [CAD e 296-297], [SpTU III 227: 106].

Gr. (1) hámaksa 'The Wagon' [LS 76]; this name was already mentioned by Homer (Il. XVIII 487). The loan from the Sum.-Akk. meaning of the term.

(2) hártos megalē 'The Great Bear' [LS 242], [Hei II 38-42]; this name seems to have a Greek origin, since 'bear' is not attested in the Mesopotamian astronomical nomenclature. Hypothetically, it might be a partial phonetic similarity between Akk. *erikku* and Gr. hártos that accounts for the misinterpretation by the Greeks of Akk. *erikku* as 'bear'. This hypothesis, however, runs counter to the notion shared by some modern scholars that "the bright stars in Ursa Major are identified widely throughout Eurasia and North America as a bear, and this connection can be made only by groups carrying the myth during their migration across the Bering Strait at the time of the last Ice Age" (cf. [Schaefer 334]). These considerations are thought to be a guarantee against borrowing of the connection between a bear and the stars of Ursa Major from modern

European languages (like Russian or English); they imply that the Greeks must have known the name of Great Bear long before their acquaintance with the Mesopotamian tradition.

Arb. *al-dubb al-akbar* lit. 'the great (constellation) of a bear' [Kun. 1986 34-35, 338-339]; the sci-A loan from Greek.

Hbr. pB. *ʕāgālā* 'wagon, the constellation called Charle's Wain' [Ja. 1041]; the loan from Sum.-Akkadian.

Syr. *ʕāgalatā* 'currus, plaustrum; nomen sideris ursi minoris' [Brock. 510], 'wagon'; it is hard to say why Brockelmann translated this term rendering in Peshitta the Hebrew *māzārōt* (Job 38:32) as 'nomen sideris ursi minoris', cf. [HAL, 566].

Lat. (1) *Currus, Plaustrum* 'The Chariot'.

(2) *Ursa Majoris* 'The Great Bear'; both names are loans from Greek.

17a. Probably related to the present issue is the following interesting case:

Syr. *ʕeglā* 'stellarum duarum in corpore ursi minoris' [Brock. 510] is named after the main meaning of the same word, 'vitulus' [ibid.]; this star name was undoubtedly calqued by the Arabs as *ʔal-farḳad-ān-* 'the Two Calves' ("die beide Kälber... [= βγ Ursae Minoris]" [Kun. 1961 No. 96]. The Syrian star name seems to have no motivation. However, the fact that it has the same triconsonantal root as *ʕāgalatā* 'the Wagon' is suspicious. One wonders whether it may be another case of folk etymology.

18. Sum. (1) ^{mul}maš.tab.ba 'The Twins'; there are three constellations on the Mesopotamian heaven named 'Twins': (i) ^{mul}maš.tab.ba.gal.gal 'The Great Twins', (ii) ^{mul}maš.tab.ba.tur.tur 'The Little Twins', (iii) ^{mul}maš.tab.ba *šá ina igi-it* ^{mul}sipa.zi.an.na 'The Twins which stand opposite the True Shepherd of Anu', cf. [G. 267-269], [HP 19, 31], [BPO 2 13], [Koch 1993]; all three were located either in the area of modern Gemini or in the immediate vicinity of it; for the exact identification see [Koch 1993], [ASM 276].

(2) ^{mul}maš.maš 'The Twins' [AHw 631]; attested in texts of the first millennium BC, cf. [SpTU III 227].

(3) ^{mul}sipa, abbreviation of ^{mul}sipa.zi.an.na 'The True Shepherd of Anu' (the modern Orion); rarely used in the late texts as a name of the constellation and zodiacal sign Gemini, cf. [SpTU III, Nr. 104, 105].

Akk. (1) *tū(?)amū* 'Twins' [SpTU III 227; BPO 2 44; Hor. 1997-8 178]. {} A loan translation.

(2) *māšū* 'Twins' [SpTU III 227] {} A loanword from Sum. [AHw 631].

Gr. *didymoi* 'The Twins' [LS 422], [Hei II 92]. {} A loan translation.

Arb. (1) *ʔal-tawʔamān* 'the Twins' [Kun. 1986 90-91, 273], [KS 46]. {} Sci-A loan translation;

(2) *al-ǧawzāʔ*, ind-A name of anthropomorphic figure located in the area of Greek Orion and also used as a name of Gemini [Kun. 1961 S. 23-24], [Kun. 1986 126-131, 226-227]; the latter arises apparently to Mesopotamian tradition. Part of this constellation figure, namely, the "head" (the 5th lunar mansion) was located in the zodiacal belt; see in this connection [Kun. 1993 83a].

Hbr. pB. *təʔōmīm* (pl.) 'twins; Gemini' [Ja. 1642]. {} A loan translation.

Lat. Gemini. {} A loan translation.

19. Sum. MUL.MUL 'The Star(s)' [G 279], [BPO 2 13]; Pleiades. Usually interpreted as 'The Stars' in plural, which is very likely in view of its correspondence to seven Sumerian deities (^dINIM.BI, lit. 'The Seven Gods'; the name also occurs in Hittite texts, see [Puhvel 1245f]); there is also fragment in MUL.APIN II iii 32 referring to four stars in MUL.MUL [HP 112]. There are arguments, however, in favor of the interpretation as 'The Star', in singular: the first sign in MUL.MUL may be understood as a determinative, which is natural for lexical texts (such as [MSL XI 107-8], where *every* first sign in the list is a determinative); besides, the lexical series H_h XXII contains the equations: mul.mul = mul, *kakkabu*, см. [MSL XI 30: 23'-24'], [SpTU III, 114A v 11-12]; in the normal star list, MÚL.MÚL is used for a single star, η Tauri [SH I 17]. In this connection, see also [Horowitz 1998 160].

Akk. (1) ^{mul}*zappu* 'The Bristle' [BPO 2 13]; "the star cluster Pleiades (conceived as the "mane" of the constellation Taurus)" [CAD z 50]; the name is accounted for by the place of this asterism on the figure of the Mesopotamian 'The Bull of the Heaven'. @ For the etymology of *zappu* v. SED I No. 297.

(2) *ilū sibitti* (= ^dimin.bi) 'The Seven Gods' [CAD s 230-31].

Gr. *pleiades* 'The Pleiades' [LS 1414]; an asterism of seven stars in Taurus (mentioned already by Homer; Il. XVIII 486; Od. V 273). Corresponds to seven mythological characters. This correspondence, and the coincidence in the star number with the Mesopotamian tradition may point to the latter's influence. Less probably, this coincidence may be explained by observations. In this connection, see also [Puhvel].

Arb. (1) *ʔat-turayyā*, ind-A name of the Pleiades (the 3rd lunar mansion) [Kun. 1961, Nr. 306] (dimin. of *tarway* 'grand nombre, abundance' [BK 1 223]). May be a translation of Hebrew-Aramaic **kīm-* (below).

(2) *ʔan-naġm* 'The Star', ind-A ancient name of the Pleiades [Kun. 1961 Nr. 186], [BK 2 1208]; the absence of the version in singular of the Pleiades name in Greek and its attestation in Hh XXII make one think of a connection with the Mesopotamian tradition.

Hbr. *kīmā* 'Pleiades' [HAL 472: in Am 5:8, Job 9:9].

Syr. *kīmā* 'Plejades' [Brock. 325: in Peshitta Am 5:8, Job 9:9].

Jud. *kīmtā* 'Pleiades' [HAL 472].

Mnd. *kīma* 'Pleiades (?)' [DM 213].

Geʿez *kemā* 'Pleiades' [LGz 285: from Syr.].

Tigre *kema* 'Pleiades' [ibid.; from Geʿez].

Lat. Pleiades {} The loanword from Greek.

The same name of 'Pleiades' in several Semitic languages is rather accounted for by a chain of borrowings (Hbr. > Jud., Syr. and Mnd.; Syr. > Geʿez > Tigre). However, a common Hebrew-Aramaic constellation name **kīm-* going back to the first half of the 2nd millennium cannot be ruled out; its meaning is derived from the common Semitic root 'multitude, large number, heap, community' etc., cf. Akk. *kimtu* 'family,

kin' [CAD K 375], Ar. *kūm* 'troupeau de chameaux', *kūm-at-* 'monticule, colline, tertre; tas de décombres, de grains, etc.' [BK 2 945], *kīm-* 'compagnon' [ibid. 950], Tigre *kom* 'heap, herd' [LH 394], Tigrinya *kom* 'community', *k^wāma* 'hill, hillock' [Kane 1580]. This root of a great chronological depth is of common Afrasian (Afro-Asiatic, Semito-Hamitic) origin, cf. East Cushitic **kum-* 'thousand' [PEC 25], South Cushitic: Iraqw *kuma* id. [HRSC 246]. Omotic: Gamu Yemsa Shinasha *kuma* id., Wolayta Gamu Zaysse *kum-* 'to be full', Yemsa *akama* 'many' [Lamb.-Sot. 412].

20. Sum. ^{mul} (d) *muš* 'the Snake' [G. 284], [BPO 2 13]. This Mesopotamian constellation was located approximately in the area of modern Hydra; for the exact identification, see [PW 219-220], [ASM 276], [Koch 1989 80-85].

Akk. (1) *Niraḥ*, a Sumerian snake deity identified with ^{mul} (d) *muš* in lexical texts (cf., e.g., [SpTU III 228], cf. also [McEwan]). As a faunistic term, *nirāḥu* means 'little snake' [CAD n 259] (considered a Sumerism [ibid.]).

(2) *ṣerru* 'Sternbild (Hydra?)' [AHw 1093], [G. 284] (poorly attested).

Another Akk. constellation name sometimes identified with Sum. ^{mul} (d) *muš* is ^(mul) *mušḥuššum* (cf. [G. 284], [Weidner 1957-59, 73]). However, these are rather different constellations; this identification is not attested in astronomical texts; it is known that the Akk. *mušḥuššum* is borrowed from Sum. *muš.ḥuš* [AHw 683], [Fauna 55-57], [Labat 374].

Note the absence of the water aspect in both Sumerian and Akkadian names of Mesopotamian "snake" constellation located in the area of Hydra.

Gr. *hýdros* 'a small water-animal, water-snake', so in masculine in Ptolemy's *Almagest* [Hei II 152], but it is feminine (*hýdra*) in Aratus' *Phaenomena* 444, cf. also [LS 1844-45], [PA 391, note 114].

Arb. *aš-šūžāʿ* 'Hydra' [Kun. 1986 146-8]; ind-A (and sci-A) name of this constellation. {} The loan translation. Note that as a non-astronomic term, *šūžāʿ* (and the variant forms *šažāʿ* and *šīžāʿ*) means '(a kind of) a snake' ('serpent', cf. *ʔašžāʿ* 'espece de serpent venimeux' [BK 1

1194]), but not 'water-snake'.

Lat. *Hydra, Anguis* 'a water-snake'.

21. Sum. (1) ^{mul} ^dnin.si₄.an.na 'The Bright Queen (or Lady) of Heavens', or 'The Red Lady of Heavens' [G. 320], [BPO 1], [Heimpel 1982]; an epithet of goddess Inana/Ištar identified with the planet Venus.

(2) ^dnin.an.na 'The Queen (or Lady) of Heavens' [Gelb 1960], [Selz 2000], [Tallqvist 399]; may be an abridged version of the first name or have an independent origine.

Akk. (1) *šarrat šamê* 'The Queen of the Heavens' [Tallqvist 239];

(2) *bēlet šamê* 'The Lady of the Heavens' [ibid. 64]; both names have the same meaning as the Sumerian (2).

Hbr. *mələkāt ha-ššāmayim* 'the queen of heaven' Can. Ashera, Ashtarte, †Anat; Babylonian Ishtar [HAL 593], pB. an epithet of Venus [see Ja. 619]; a calque from the Mesopotamian term.

Arb. *zuhar-at-* 'Venus, planete' [BK 1 1020] derived from *zhr* 'briller, être brillant' [ibid. 1019]. The name may of course be accounted for by its natural brightness; cf., however, Sum. (1).

22. ^{mul/d}pa.bil(bíl).sağ [G. 358]; identified with modern Sagittarius. The deity from the environment of Ninurta; in [BPO 2, p. 14] the name is not translated. The translation for pa.bíl.sağ proposed in [Falkenstein I, 8] is 'Grossvater' (see also "Presbyter" in [SAA VIII, p. 350b]), but this meaning is hardly related to this constellation symbol. Ungnad reads the name pa.bíl.sağ as sig₃.gi₉.sağ = *maḥiṣ uṣṣi*, lit. 'shooting with an arrow, archer' [Ungnad 257, note 48] referring to the deity representation on *kudurru*-stones and seals as a shooting centaur with a scorpion's tail. The Akkadian *maḥiṣ uṣṣi*, however, is not attested in any texts in connection with this deity.

Gr. *toksotēs* 'The Bowman, The Archer' [LS 1805], [Hei II 112-116]; a description of symbol used in Mesopotamia.

Ar. (1) *?al-qaws* 'The Bow' [Kun. 1961, Nr. 224], [Kun. 1986, 108-111, 250-251], [KS 51]; ind-A name which may have reflected the Mesopotamian deity depictions directly [Kun. 1993 83-84] or through the

Greek, Syrian or Hebrew tradition.

(2) *?al-rāmī* 'The Archer' [ibid.]; sci-A translation of Greek name.

Hbr. pB *kaššāt* 'archer; Sagittarius' [Ja. 1433].

Syr. *kašāṭā* 'sagittarius (sidus)' [Brock. 349-50].

Geʿez *qaws* 'arc, n. of the Zodiac' < Arabic [LGz 456].

Hausa (1) Baka 'Bow' [Hiskett 174].

(2) Jin dadi 'Feeling good' [ibid. 173]. An obvious folk etymology, or misinterpretation, of the Arabic *?al-naʿāʾim* 'the Ostriches', the name of several stars belonging to Sagittarius (the 20th mansion), cf. [Kun. 1961, Nr. 179], mistaken for a term derived from *naʿama* 'to be well-off' or *naʿima* 'to rejoice at'.

Lat. Sagittarius 'The Archer'.

23. Sum. ^{mul}*sim.maḥ* 'The Big Swallow' [G. 389], [BPO 2 14]; located in the western (or south-western) part of modern Pisces including the western part of Pegasus [BPO 2 14], [ASM 276].

Akk. (1) *šinūnūtu(m)* 'The Swallow' (MUL.APIN I iii 7) [HP 45]; according to [AHw 1243], lit. 'ein grosse Schwalbe'; cf. also [CAD š₂ 55-6], [Salonen 1973 248-249].

(2) *sinuntu(m)* 'The Swallow', syllabic attestation see [SpTU III 228], [Cavigneaux 1974 134 Rs.24']; this term means not only 'swallow' but also 'swallow-fish', i.e. 'flying-fish' [CAD s 295-6], [Salonen 1970 223-224], [AHw 1048] (cf. also [ibid. 1243-4]). The association of *sinuntu(m)* with water is sustained by the identification in the star lists: *mul.id₂.buranum* = *si-nun-tum* [MSL XI 40, line 23] (*id₂.buranum*, Euphrates).

Hitt. MUL *ša-am-ma-ah* 'The Swallow' [BPO 2 2].

Gr. *khelidonias ikhthus* 'The Swallow-Fish' [LS 1987]; a name of the more northerly fish of the constellation Pisces according to Chaldeans in scholium to Aratus' *Phenomena* {} it is apparently describing the Mesopotamian constellation's symbol in which the southern and the northern fishes are mixed up.

24. The constellation Pisces was formed on the basis of two Sumerian constellations considered in Nos. 3, 23.

Sum. (1) ^{mul}KUN^{mes} 'The Tails' [G 221]; first mentioned in MUL.APIN I iv 36 [HP 68] and in Assyrian letter [SAA X 160:14].

(2) ^{mul}ZIB^{me} 'The Tails' [G 175]; pseudo-sumerogram, a loan from Akk. This meant not tails of the fishes, but tails of a fish (the symbol of Anunitu) and a bird (swallow) or a flying-fish; see images of this constellation on the Seleucid seals [AUWE 19 156, Nos. 984-87], [Wallenfels, Fig. 12, 19, 21, 22].

A band connecting the tails was part of this constellation's figure; hence the names:

DUR *šá* SIM.MAH 'Band of the Swallow' [SH I 50-51],

DUR *šá* A-nu-ni-tu₄ 'Band of Anunitu' [ibid.],

MÚL KUR *šá* DUR nu-nu 'The Bright Star of the Ribbon of the Fishes' (η Piscium) [ibid. 17].

Akk. ^{mul}*zibbātu* 'The Tails'; though unattested in syllabic writing as a constellation name, obviously a source for Sum. ^{mul}ZIB^{me}.

Gr. *ikhthýes* 'Fishes' [LS 846], [Hei I 124-6]; in Greek sources the constellation was depicted as two fishes with bands connecting their tails. Ptolemy and other Greek authors mention 'Bands of Pisces' as part of Pisces, v. [Hei II 124: 18, 126: 11], [Pseudo-Eratosthenes, *Catast.* 21], [Aratus 240-245], [Hyginus, *Astron.* III 29].

Arb. (1) *ʔal-ḥūt* 'The Fish' [Kun. 1961, Nr. 126a], [KS 50]; indigenous Arb. constellation located in the area of Andromeda and Pisces. The 28th lunar mansion, *batn al-ḥūt* 'belly of the Fish', was associated with that constellation [Kun. 1993 84a]. Though possibly formed under the Greek influence, it is likely directly connected with the Mesopotamian tradition, because the latter depicted only one fish, the figure of Anunītu, in this area, while the Greek tradition always distinguishes two fishes.

(2) *ʔal-rišāʔ* 'The Cord' is the name of the central star (βAnd) of this constellation [Kun. 1961, Nr. 252]. Originates from the 'bands' connecting the tails either in the Mesopotamian or Greek tradition.

(3) *ʔas-samakātāni* 'The Two Fishes'; sci-A name of the constellation Pisces [Kun. 1986 235], [Kun. 1993 84a].

Hbr. pB *dāgīm* 'fishes; *Pisces*' [Ja. 279].

Hausa Kifi 'Fish' [Hiskett 174].

Lat.: Pisces.

25. Sum. ^{mul}suḫur.máš^{ku6} 'The Goat-Fish' [G. 344], [BPO 2 14]; identified with the modern Capricornus.

In Sumerian, suḫur.ku₆ = means a kind of carpfish, 'ein Grosskarpfen' [AHW 880] (cf. also [Salonen 1970 216, 225]); suḫur.máš.ku₆ = *bitrû* is 'ein prächtiger (Karpfen-) Fisch' [Salonen 1970 170, 225], [CAD b 279]; suḫur.máš.ku₆ = *purādu* [AHw 1055a], [CAD s 351a]. In mythology, the latter name denotes a character of the environment of Enki/Ea [CAD s 351a] depicted on *kudurru*-stones and seals as a goat-fish [Seidl 1968 178f.]. The same image was also used as a constellation symbol. We assume that the notion of a goat-fish originated not only in the ancients' fanciful vision but in their etymological imagination. Really it was another meaning of máš/máš = *urišu*, 'Bock, Böcklein' [AHw 1430b], [Heimpel 239], that gave rise to the 'goat' component, the whole name having developed eventually into 'the goat-fish' causing a corresponding image to exist (note that in most Mesopotamian goat-fish images, the rearmost part of it, in fact, resembles that of a carp-fish, the so called *Barbus esocinus*), cf., for example, [Salonen 1970, Tafel XIX].

Akk. *suḫurmāšu* 'The Goat-Fish'; see the syllabic attestation in [BPO 2 42, III 28b]; a loanword from Sumerian.

Gr. *aigokērōs*, lit. 'goat-horned' [LS 35], [Hei II 116-118] (*aigeos* - 'goat' and *kēras* - 'horn'); apparently, an incomplete correspondence of the Mesopotamian symbol, with the 'fish' component lost.

Ar. *dū ḡarnay-l-ʕanzi* 'der mit den beiden Ziegenhörnern' [Kun. 1986 112-115, 244-245]; the sci-A calque translation of the Greek term.

ʔal-ʕady 'The Kid' [Kun. 1986 112-115, 244-245], [Kun. 1993 84]; the sci-A very approximate parallel of the Greek name. The shift of meaning coinciding with that in the Aramaic and Middle Hebrew terms is hard to explain in any of these languages.

Hbr. pB *gədī* 'kid, young animal; the Capricorn' [Ja. 211].

Syr. *gadyā* 'hoedus, nomen siderus' [Brock. 104] ('kid').

Jud. *gədī* 'kid; the Capricorn' [Ja. 211].

Mnd. *gadia* 'kid, young goat, Capricorn' [DM 73].

The fact that the meaning 'kid', having no visible motivation, is

common to Ar., Middle Hebrew and Aramaic can be theoretically accounted for either by a common origin (from proto-Central @ Semitic dated to the middle 3rd millennium B.C. which is quite unlikely) or by the appearance of this term in one of these languages (Syrian? Or common Aramaic dated to the early 1st millennium B.C.?) with a subsequent spread into other languages in question (from Jud. to Middle Hebrew, and from Syr. to Ar.).

Hausa Dan akuya 'Kid' [Hiskett 174] (*ákūya* = *ákwīya* 'she-goat' [Abr Hs 16], cf. *ḏāḡ akwīya* 'billy goat' [ibid. 183].

Lat. Capricornus 'The Goat-horn'.

26. Sum. ^{mul}šū.pa [G. 385]; according to D. Pingree, it is a name of the constellation located in the area of the modern Boötes [BPO 2 15], [ASM 276]; an Akkadism? (see below Akk. *šūpu*).

Akk. (1) *šūpu*; this Akkadian word (not attested in astronomical contexts) meaning 'manifest, brilliant, shining, etc.' [CAD š 328] (<*wapūm*, 'deutlich gemacht, herrlich' [AHW 1281] with a sound Semitic etymology, cf. Hebrew *yāpā* 'beautiful' [HAL 423], Syrian *pʔy* 'to be beautiful' [ibid.; Brock. 554]) is likely what the Sumerian name was derived from (cf. [G. 385] and [HP 125] referring to Oppenheim, with a reservation), which is an argument against Lambert's idea that 'The name written šū.pa is almost certainly to be read ^{su}pa (*Šullat*)' [Lambert 94].

(2) ^{mul}*namru* 'The Shining' [HBA 52: 52].

Ar. *ʔal-simāk ʔal-rāmiḥ* 'The Lance-bearing *simāk*' (the meaning of *simāk* is unknown) [Kunitzsch 1986, 42, note 5; 326], [KS 20]; the ind-A name for Arcturus. The interpretation as 'The Lance-bearing *simāk*' appears to be a case of folk etymology; rather to be translated 'elevated (and) brilliant': *simāk*- is formed after the Past Participle Passive pattern of the verb *samaka* 's'élever, monter, élever dans les airs' [BK 1, 1141], while *rāmiḥ*- is the Present Participle Active of *ramaḥa* 'briller (se dit des éclairs)' [ibid., 921], probably echoing the Akk. *šūpu* and *namru*.

27. Sum. ^{mul}šudun 'The Yoke' [G. 379], [BPO 2 15]; another name

for the same constellation related sometimes to its most bright star - α Boo (Arcturus) [Schaumb.]; [PW 321], [Koch 1992, 59], [Horowitz 1994 96].

Akk. ^{mul/d}*nīru* 'The Yoke' [Horowitz 1993 156], [AHw 794].

Gr. Boōtēs 'Ox-driver' or 'Ox-ploughman' (<būs + ōthēō ?) [LS 327], [Hei II 48-51]; attested already in Homer (Od. V 273). Obviously reflects the Mesopotamian name ^{mul}šudun = ^{mul}*nīru* = 'the Yoke', which may account for the motifs of ploughing or driving the oxen attested in Greek myths related to the Boötes (Hygin. Astron. II, 4).

Ar. (1) *al-baqqār* 'The Ox-driver' [Kun. 1986 41, 327]; the sci-A translation of Greek boōtēs;

(2) *al-ʔawwāʔ* 'The Howler' ('der Schreier') [Kun. 1986 42, 326]; according to Kunitzsch [ibid. 42, note 3], the translation of Greek name in which boētēs is written instead of boōtēs [ibid. Anm. 3].

Lat. Boötes 'Ox-driver'; a loanword from Greek.

28. Sum. ^{mul}ti/te₈^{mušen} 'The Eagle' [G. 2], [BPO 2 10]; located in the area of the modern Aquila.

Akk. ^{mul}*erū(m)*, *arū (m)* 'Sternbild Aquila' [AHw 247] (e.g. [SpTU III 228:115] [Cavigneaux 1974 134:21']). {} A loan translation.

Gr. aetos 'the Eagle' [LS 29], [Hei II 72]. {} A loan translation.

Arb. (1) *ʔal-nasr ʔal-ʔāʔir* lit. 'the Flying Eagle' [Kun. 1961 Nr. 194a], [Kun. 1986 68-69, 294-295], [KS 17-18]; ind.-A name for the asterism α , β and γ Aql; the attributive 'Flying' probable has the Mesopotamian origins relating to the constellation figure.

(2) *ʔal-nasr* 'the Eagle', sci-A [Kun. 1986 68-69, 294-295]; {} A loan translation.

Syr. *nešrā* 'aquila; nomen sideris' [Brock. 451]. {} A loan translation.

Lat. Aquila. {} A loan translation.

29. Sum. ^{mul}u₄.zal.le 'The Morning Star' [Bruschweiler 105-106]; the planet Venus as a morning star.

Akk. *kakkab namari* 'The Morning Star' [SpTU III 228 : 130]; [MSL XI 31]; has the same meaning as the Sumerian term.

Gr. Eōsphóros 'The Morning Star', lit. 'bringer of morning' [LS 752];

the term, though semantically coinciding with the Mesopotamian one, is more likely of independent origin in view of the fact that Venus *is*, indeed, *the* morning star; however, an influence of the Sum.-Akk. term cannot be completely ruled out.

Egyp. (*P*)-*ntr-dw:y* 'the morning star' [EAT III 181], lit. 'the deity of the morning (star)', the name of Venus in the late Egyptian astronomical texts from Edfu. Cf. *dw:y* 'der morgentliche Stern = Morgenstern' (Pyr.) [EG V, 423]. The term is evidently of independent origin.

30. Sum. ^{mul/d}u₅.r₁.in, attested in the "Great Star List" only [Koch-West. App. B: 223]; von Soden identifies it with *urinnu* 'eagle' [AHw 1430], an Akk. term borrowed from Sum. (no Sem. cognates available; absent from a complete list of Sem. faunal terms in SED II); cf. also [Salonen 1973 185-187]. Traditionally, though with no convincing argumentation, considered an occasional synonym of ^{mul}sipa.zi.an.na 'The True Shepherd of the Heavens' identified with Orion [G. 164; 3. Erg. 307 Anm. 1]. The identification of u₅.r₁.in with Gr. *ōriōn* is indirectly confirmed by a phonetic similarity between the two terms.

Gr. *ōriōn* 'Orion' [LS 2037], [Hei II 132]. Present as early as in Homer. One wonders whether Sumerian u₅.r₁.in (or [o].r₁.in?) can be eventually the source of the unmotivated Greek *ōriōn*.

31. Sum. udu.idim.saġ.uš 'The Constant Planet' [G. 333], [BPO 2 14]; planet Saturnus. The description of Saturnus (saġ.uš) as 'longlasting, constant' [AHw 420] may refer to its longest revolution period (for the most recent discussion v. [Brown 56, 68-70]) and is echoed by the Akkadian, Syrian and both Ar. terms.

Akk. ^{mul}kay(y)amānu(m) 'normal, regular, usual, steady (also a name of Saturn)' [CAD k 36-38], [G. 333], [AHw 420]; echoing the Sumerian term.

Ar. (1) *kaywān*- 'Saturne (planète)' [BK 2 946]; likely < Syr.

(2) *zuḥal*- 'Saturne, planète', also 'qui cesse de travailler, qui quitte l'ouvrage' [BK 1 979]. Probably conveying the same notion of Saturnus

as 'falling behind, lagging' and 'lasting', cf. *zhl* 'être fatigué, las et rester en arrière' [ibid. 978] and *zahūl* 'qui se prolonge' [ibid. 979].

Hbr. *kiyyūn* 'Saturn' [HAL 472: Am 5:26] referred to by Gössmann [G. 333]. Meaning debatable.

Syr. *keʔwān*, *kewān*, *kēwān* 'Saturnus planeta' ex. acc. *kayawānu* [Brock. 322]. This is hardly so: since not only the planet's name but the adjective 'normal, regular, usual, steady' is also *kayyamānu* in Akk. (a form with a secondary *-m-* <**kayyawānu*, but not with *-w-* counter to HAL 472, Brock. 322 and DM 212 all erroneously quoting Akk. *kayyawānu* as a form attested in the texts from OB on), the Syrian term is not a loan from Akkadian, but rather a form derived from the verb *kwn* 'fuit; firmus, stabilis fuit' [Brock. 321] (< Semitic **kwn* 'to be, to stay, to stand firm') echoing the Akkadian and, eventually, Sumerian name for Saturnus.

Mnd. *kiuan* 'Saturn' [DM 212].

This case most likely represents a chain of calque translations (from Sum. into Akk. into Syr. into Ar. *zuḥal-*) and direct borrowings (from Syr. into Ar. *kaywān*).

32. Sum. ^{mul}uga^{mušen} 'The Raven' [G. 132], [BPO 2 15]; this constellation is identified with modern Corvus.

Akk. ^{mul}āribu 'The Raven', for a syllabic fixation in astronomical contexts, see, e.g., [MSL XI 31 f], [HP 32, I ii 9] {} A loan translation.

Gr. koraks 'The Raven' [LS 980], [Hei II 156]. {} A loan translation.

Arb. *ʔal-yurāb* 'The Raven', sci-A [Kun. 1986 198-199]. {} A loan translation.

Lat. Corvus. {} A loan translation.

33. Sum. (1) ^{mul}ur.gu.la 'The Lion' (lit. 'big dog') [G. 162], [BPO 2 16]. This constellation was located in the area of modern Leo.

(2) ^{mul}ur.maḥ 'The Lion' (lit. 'big dog') [G. 168], [BPO 2 16]. This name has a much more limited attestation than the first one.

These two constellations are sometimes regarded as identical [BPO 2 16]; however, to our knowledge, it is not quite so. There are texts containing both names denoting two different constellations, see

[Weidner 1927]; (cf. also [Heimpel 1987 85]).

Akk. (1) *nēšu(m)* 'The Lion', syllabic attestation see, e.g. [MSL XI 31 b].

(2) ^(d)*Latarak*, an anthropomorphic deity with a lion head identified with constellation ^{mul}ur.gu.la or ^{mul}ur.maḥ in lexical and astronomical texts, cf. MUL.APIN I i 8 [HP 20], [Cavigneaux 1981 105: 10], [SpTU III 227: 95].

(3) ^{mul}*Urgulû* 'The Lion' (?) [AHw 1429]; unattested in astronomical texts (cf., however, [HP 20], where *Urgulû* is given as akkadian equivalent for ^{mul}ur.gu.la). This term denotes a lion and, specifically in Neo-Assyrian magic, a protective figurine of a lion. {} A loanword from Sum.

Gr. *Léōn*, *Léontos* 'the Lion' [LS 1043], [Hei II 96].

Ar. *ʔal-ʔasad* 'the Lion' (ind-A and sci-A name of this constellation) [Kun. 1961, S. 22-24], [Kun. 1986 286-287], [Kun. 1993 83]. The Arabic Lion occupied on the ecliptic much more space than its Mesopotamian and Greek prototypes extending from Gemini to Virgo.

Hbr. pB *ʔārī*, *ʔāryē* 'the Lion, Leo' [Ja. 118].

Syr. *ʔaryā* 'leo, nomen sideris' [Brock. 48].

Mnd. *aria* 'lion; the zodiacal sign Leo' [DM 37].

Geʿez: (1) *ʔasad* 'a sign of the zodiac (Leo) < Arabic [LGz 41];

(2) *ʔerəhu* 'name of a star', perhaps < Syr. *ʔaryā* 'Leo' [LGz 38]; cf. Geʿez *ʔarwe* 'wild animal'.

Hausa: *Zaki* 'Lion' [Haskett 174].

Lat. *Leo*.

34. Sum. ^{mul}ur.idim 'The Mad Dog' [G 168], [BPO 2 16]; located in the area of Lupus, and partly, Scorpio [PW 321], [Koch 1992 59].

Akk. ^{mul}*uridimmû* 'ein mythischer Wildhund' [AHw 1429]; there is a syllabic version of this Akk. name in the star list: ur.idim = [u]r-dim-mu [Cavigneaux 1981 105].

Gr. *thērion* 'The Beast' [LS 800], [Hei II 162]. {} A loanword with partly shift of meaning.

Arb. *ʔas-sabuʔ* 'The Wild Beast' [Kun. 1986 156-9, 190-91]. {} A

sci-A translation from Greek.

Lat. Lupus 'The Wolf'.

References

- Бируни I, II. *Бируни* (Беруни). Канон Мас'уда / Вступ. статья, пер. и коммент. П.Г.Булгакова и Б.А.Розенфельда при участии М.М.Рожанской, А.А.Ахмедова, С.А.Красновой, Ю.П.Смирновой. - В кн.: Бируни. Избранные произведения. Ташкент: Фан.- 1973, Т. V, Ч. 1; 1976, Т. V, Ч. 2.
- Куртик 2002. *Куртик Г.Е.* О происхождении названий греческих зодиакальных созвездий // Вопросы истории естествознания и техники. 2002. № 1. С. 76-106.
- ACT. *Neugebauer O.* Astronomical Cuneiform Texts. Vol. I-III. London 1955.
- AfO. *Archiv für Orientforschung.*
- AHw. *Akkadisches Handwörterbuch.* Unter Benutzung des lexikalischen Nachlasses von Bruno Meissner bearbeitet von Wolfgang von Soden. Wiesbaden, 1965-1981.
- Alcalay. *Alcalay R.* The Complete Hebrew-English Dictionary. Tel-Aviv-Jerusalem, 1965.
- ASM. *Hunger H., Pingree D.* Astral Sciences in Mesopotamia. Leiden-Boston-Köln, 1999.
- AUWE 19. *Wallenfels R.* Uruk. Hellenistic Seal Impressions in the Yale Babylonian Collection. I. Cuneiform Tablets. Mainz am Rhein: Verlag

- Philipp von Zabern, 1994 (Ausgrabungen in Uruk-Warka Enberichte 19).
- Belot. *Belot J.B.* Vocabulaire arabe-français à l'usage des étudiants. Beirouth 1929.
- BK Biberstein-Kazimirski A. de. Dictionnaire arabe-français. Paris, 1860. Théophile Barrois.
- BM. *Bobrova L., Militarev A.* From Mesopotamia to Greece: to the Origin of Semitic and Greek Star Names / Die Rolle der Astronomie in der Kulturen Mesopotamiens. Hrsg. H.D.Galter. Graz 1993. S. 307-329.
- BPO 1. *Reiner E., Pingree D.* Enūma Anu Enlil, Table 63: The Venus Tablets of Ammišaduga. Malibu 1975 (Babylonian Planetary Omens: Part One).
- BPO 2. *Reiner E., Pingree D.* Enūma Anu Enlil, Tablets 50-51. Malibu 1981 (Babylonian Planetary Omens: Part Two).
- Brock. *Brockelmann C.* Lexicon Syriacum. Halis Saxonum 1928.
- Brown *Brown D.* Mesopotamian Planetary Astronomy-Astrology (Cuneiform Monographs 18). Groningen, 2000. STYX.
- Bruschw. *Bruschweiler F.* La déesse triomphante et vaincue dans la cosmologie sumérienne. Leuven 1987.
- CAD. The Assyrian Dictionary of the Oriental Institute of the University of Chicago. Chicago 1961-.
- Cavigneaux 1979. *Cavigneaux A.* // Baghdader Mitteilungen.

1979. Bd. X. S. 132-134.
- Cavigneaux 1981. *Cavigneaux A.* Textes scolaires du temple de Nabû ša Harê. Bagdad 1981.
- Cohen 1973. *Cohen M.E.* The identification of kušû // JCS. 1973, V. 25, No 4, p. 203-210.
- DM. *Drower E.S., Macuch R.* A Mandaic Dictionary. Oxford 1963.
- EAT III. *Neugebauer O., Parker R.A.* Egyptian Astronomical Texts. Vol. III. Providence-London, 1969.
- EG *Erman A., Grapow H.* *Wörterbuch der aegyptischen Sprache* I-VII. Berlin, 1957-71. Akademie Verlag.
- 3 Erg. *Kugler F.X.* Sternkunde und Sterndienst in Babel. 3. Ergänzungsheft zum ersten und zweiten Buch von J.Schaumberger. Münster in Westfalen, 1935.
- Falkenstein *Falkenstein A.* Grammatik der Sprache Gudeas von Lagash. Bd. I. 2. Aufl. Rom, 1978.
- Fauna. *Landsberger B.* Die Fauna des alten Mesopotamien nach der 14.Tafel der Serie Har-ra = *hubullu*. Leipzig 1934.
- Foxvog. *Foxvog D.A.* Astral Dumuzi / The Tablet and the Scroll. Near Eastern Studies in Honor of W.W.Hallo. Bethesda 1993. P. 103-108.
- G. *Gössmann P.F.* Planetarium babylonicum. Rom 1950 (Deimel P.A. Šumerisches Lexikon. Teil IV, Bd. 2).
- GB. *Gundel H., Böker R.* Zodiacos // Pauli-Wissowa, Realencyclopädia der classischen

- Altertumswissenschaft. Bd. X A. München 1972. Kol. 462-709.
- Gelb 1960. Gelb I.J. The Name of the Goddess INNIN // JNES. 1960. Vol. 19, No 2. P. 72-79.
- Ges. 17th ed. Gesenius W., Buhl F. Hebräisches und aramäisches Handwörterbuch über das Alte Testament. Leipzig 1915 (seventeenth edition).
- HAL Koehler L., Baumgartner W. *The Hebrew and Aramaic Lexicon of the Old Testament*. I-III. Leiden, New York & Köln. IV-V. Leiden, Boston & Köln, Brill. 1994-1996, 1999-2000.
- HBA. Weidner E. Handbuch der babylonischen Astronomie. Bd. 1. Leipzig 1915.
- Hei I, II. *Claudii Ptolemaei Opera quae extant omnia*. Vol I. Sintaxis Mathematica / Ed. J.L.Heiberg. Pars I, II. Leipzig: Teubner, 1898, 1903.
- Heimpel 1969. Heimpel W. Tierbilder in der sumerischen Literatur. Rom 1968.
- Heimpel 1982. Heimpel W. A Catalog of Near Eastern Venus Deities // Syro-Mesopotamian Studies. 1982. Vol. 4, Issue 3.
- Heimpel 1987. Heimpel W. Löwe // RIA. 1987. Bd. 7, Lief. 1-2. S. 80-85.
- Hiskett. Hiskett M. The Arab Star-Calendar and Planetary System in Hausa Verse // Bulletin of the School of Oriental and African Studies. 1967. Vol. XXX. Pt. 1.
- Horowitz 1993. Horowitz W. The Reverse of the Neo-Assyrian Planisphere CT 33, 11 / Die Rolle der

- Astronomie in der Kulturen Mesopotamiens.
Hrsg. H.D.Galter. Graz 1993. S. 149-159.
- Horowitz 1994. *Horowitz W.* Two New Ziqpu-Star Texts and Stellar Circles // JCS. 1994. Vol. 46. P. 89-98.
- Horowitz 1997-98. *Horowitz W.* The 30-Star-Catalogue HS 1897 and The Late Parallel BM 55502 // AfO. Bd. XLIV-XLV. S. 176-185.
- Horowitz 1998. *Horowitz W.* Mesopotamian Cosmic Geography. Winona Lake, 1998.
- HP. *Hunger H., Pingree D.* MUL.APIN. An Astronomical Compendium in Cuneiform. Horn. 1989 (AfO. Beiheft 24).
- HRSC *Ehret C.* *The Historical Reconstruction of Southern Cushitic Phonology and Vocabulary.* Berlin, 1980, Dietrich Reimer.
- IMIN KIENGL. *Hübner B., Reizammer A.* INIM KIENGL. Sumerisch-Deutsches Glossar. Marktredwitz 1985-6.
- Ja. *Jastrow M.* A Dictionary of the Targumim, the Talmud Babli and Yeryshalmi, and the Midrashic Literature. N.Y.- Berlin 1926.
- JAOS. Journal of the American Oriental Society.
- JCS. Journal of Cuneiform Studies.
- Kane *Kane T. L.* Tigrinya-English Dictionary. Springfield, 2000. Dunwoody Press.
- Kaufman *Kaufman S.* The Akkadian influences on Aramaic. Chicago 1974.
- Koch 1989. *Koch J.* Neue Untersuchungen zur Topographie der babylonischen Fixsternhimmels. Wiesbaden

- 1989.
- Koch 1992. *Koch J.* Der Sternkatalog BM 78161 // Die Welt des Orients. 1992. Bd. 23. S. 39-67.
- Koch 1993. *Koch J.* Das Sternbild ^{mul}maš-tab-ba-tur-tur / Die Rolle der Astronomie in der Kulturen Mesopotamiens. Hrsg. H.D.Galter. Graz 1993. S. 185-198.
- Koch-West. *Koch-Westenholz U.* Mesopotamian Astrology. Copenhagen, Museum Tusculanum Press, 1995.
- KS. *Kunitzsch P., Smart T.* Short Guide to modern star names and their derivations. Wiesbaden 1986.
- Kun. 1961. *Kunitzsch P.* Untersuchungen zur Sternnomenklatur der Araber. Wiesbaden, 1961.
- Kun. 1986. *Ptolemäus C.* Der Sternkatalog des Almagest. Die arabisch-mittelalterliche Tradition. Teil I. Die arabischen Übersetzungen / Hrsg. u. Übers. von P.Kunitzsch. Wiesbaden 1986.
- Kun. 1993. *Kunitzsch P.* Miṭṭaḳat al-Burūdġ // Encyclopaedia of Islam. 1993. Vol. 7. P. 81-87.
- Kun. 1995. *Kunitzsch P.* Al-Nudġūm // Encyclopaedia of Islam. 1995. Vol. 8. P. 97-105.
- Labat. *Labat R.* Manuel d'épigraphie akkadienne. Paris 1976.
- Lambert 1969. *Lambert W.G.* Review of Limet H. L'anthroponymie sumérienne dans les document de la 3^e dynastie d'Ur. 1968 // Bulletin of the School of Oriental and African Studies. 1969. Vol. 32, pt. 3. P. 594-595.

- Lambert 1987. *Lambert W.G.* Babylonian Astrological Omens and Their Stars // JAOS. 1987. Vol. 107. P. 93-96.
- Lamb.-Sot. *Lamberti M., Sottile R.* The Wolaytta Language. *Studia Linguarum Africae Orientalis*, Bd. 6. Rüdiger Köppe Verlag. Köln, 1997.
- LGz *Leslau W.* Comparative Dictionary of Ge'ez (Classical Ethiopic). Wiesbaden 1987. Otto Harrassowitz,
- LH *Littmann E., Höfner M.* Wörterbuch der Tigrē-Sprache. Wiesbaden, 1956. Franz Steiner Verlag GMBH.
- LS. *Liddell H.G., Scott R.S.* A Greek-English Lexicon. Oxford: Clarendon Press. 1996.
- McEwan. *McEwan G.J.P.* ^dMUŠ and Related Matters // *Orientalia*. 1983. Vol 52, Fasc. 2. P. 215-229.
- MSL XI. *Materials for the Sumerian Lexicon. Vol XI. The Series Har-ra=hubullu. Tablets XX-XXIV. Ed. E.Reiner with the coll. of M.Civil. Roma 1974.*
- PA. *Ptolemy's Almagest.* Transl. and Annot. by G.J.Toomer. N.Y. - Berlin - Heidelberg- Tokio, 1984.
- PEC *Sasse H.-J.* The Consonant phonemes of Proto-East-Cushitic (PEC): a first approximation. *Afroasiatic Linguistics* 1979, 7/1, 1-67.
- PW. *Pingree D., Walker Ch.* A Babylonian Star-Catalogue: BM 78161 / A Scientific Humanist. *Studies in Memory of Abracham Sachs.*

- Philadelphia 1988. P. 313-322.
- RIA. Reallexikon der Assyriologie. Berlin-Leipzig, 1932-.
- Puhvel. *Puhvel J.* Names and Numbers of the Pleiad / Semitic Studies in honor of Wolf Leslau on the occasion of his eighty-fifth birthday. Vol. II. Ed. by. A.S.Kaye. Wiesbaden, 1991. P.1243-1247 (republ. in Jaan Puhvel. *Epilecta Indoeuropaea* / Innsbucker Beiträge zur Sprachwissenschaft, 2002. Vol. 104. P. 152-156 with add. notes p. 308).
- SAA VIII. *Hunger H.* Astrological Reports to Assyrian Kings. Helsinki 1992 (State Archives of Assyria, Vol. VIII).
- SAA X. *Parpola S.* Letters from Assyrian and Babylonian Scholars. Helsinki 1993 (State Archives of Assyria, Vol. X).
- Salonen 1968. *Salonen A.* Agricultura Mesopotamica. Helsinki 1968.
- Salonen 1970. *Salonen A.* Die Fischerei im alten Mesopotamien nach Sumerisch akkadischen Quellen. Helsinki 1970.
- Salonen 1973. *Salonen A.* Vögel und Vogelfang im alten Mesopotamien. Helsinki 1973.
- Sarkisian. *Sarkisian G.Ch.* Chastnye klinopisnye kontrakty selevkidskogo vremeni iz sobrania Gosudarstvennogo Ermitazha // Vestnik Drevnei Istorii. 1955. Vol. 54, Vyp. 4. S.136-170.
- Schaumb. *Schaumberger J.* Die Ziqpu-Gestirne nach neuen Keilschrifttexten // ZA. 1952. Bd. 50

- (N.F. 16). S. 214-229.
- SD. *The Sumerian Dictionary* of the University of Pennsylvania Museum. Ed. A.W.Sjoberg. Vol. I A Pt. III. Philadelphia, 1998.
- SED I *Militarev A., Kogan L.* Semitic Etymological Dictionary. Vol I. Anatomy of Man and Animals. Münster, 2000. Ugarit-Verlag.
- SED II *Militarev A., Kogan L.* Semitic Etymological Dictionary. Vol II. Animal Names. Münster, 2005. Ugarit-Verlag.
- Seidl 1968. *Seidl U.* Die babylonischen Kudurru-Reliefs // Deutsches Archäologisches Institut, Baghdader Mitteilungen. 1968, Bd. 4. S. 1-220.
- Selz 2000. *Selz G.J.* Five Divine Ladies: Thoughts on Inana(k), Ištar, In(n)in(a), Annunītum, and Anat, and the Origine of the Title "Queen of Heaven" // *Journal of Gender Studies in Antiquity*. 2000. V. 1. P. 29-62.
- SH I. *Sachs A., Hunger H.* Astronomical Diaries and Related Texts from Babylonia. Vol. I. Vienna, 1988.
- Shumovsky *Аҳмад ибн Маджид.* Книга польз об основных правилах морской науки. Том 1-2. / Критический текст, перевод, комментарий Т.А. Шумовского. М., 1985. (Aḥmad Ibn Māǧid. Kitābu-l-fawāyidi fī ʔuṣūli-l-baḥri)
- SpTU II, III. Spätbabylonische Texte aus Uruk. Teil II-III. Bearb. von E. von Weiher. Berlin, 1983, 1988.
- Stein *Штейнберг О.К.* Полный русско-древнееврейско-немецкий словарь. Вильна, 1902.

- Tallqvist. *Tallqvist K.* Akkadische Götterepitheta. Helsingforsiae 1938.
- TU. *Thureau-Dansin F.* Tablettes d'Uruk. Paris, 1922.
- Ungnad. *Ungnad A.* Besprechungskunst und Astrologie in Babylonien // AfO. 1941-1944. Bd. 14, Heft 5/6. S. 251-284.
- Vycichl. *Vycichl W.* Dictionnaire étymologique de la langue copte. Leuven 1983. Peeters.
- Wallenfels. *Wallenfels R.* Zodiacal Signs among the Seal Impressions from Hellenistic Uruk / The Tablet and the Scroll. Near Eastern Studies in Honor of W.W.Hallo. Bethesda 1993.P. 281-289.
- Weidner 1927. *Weidner E.* Ein Beschreibung des Sternenhimmels aus Assur // AfO. 1927. Bd. 4. S. 73-85.
- Weidner 1957-59. *Weidner E.* Fixsterne // RIA. 1957-1959. Bd. 3, Lief. 1-2. S. 72-82.
- Weidner 1967. *Weidner E.* Gestirn-Darstellungen auf babylonischen Tontafeln. Wien 1967.
- WH. *Walker C.B.F., Hunger H.* Zwölfmaldrei // Mitteilungen der Deutschen Orient-Gesellschaft. 1977. Bd. 109. S. 27-34.
- ZA. Zeitschrift für Assyriologie.