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## Nubian numerals

In: Blažek, Václav. *Numerals : comparative-etymological analyses of numeral systems and their implications : (Saharan, Nubian, Egyptian, Berber, Kartvelian, Uralic, Altaic and Indo-European languages)*. Vyd. 1. V Brně: Masarykova univerzita, 1999, pp. 15-27

ISBN 8021020709

Stable URL (handle): <https://hdl.handle.net/11222.digilib/122989>

Access Date: 16. 02. 2024

Version: 20220831

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## NUBIAN NUMERALS

§1. There are more models of classification of the Nubian languages:  
Thelwall 1978: 270

- |                              |   |
|------------------------------|---|
| A. Nile Nubian:              | 1) Nobiin = Mahas (& Old Nobiin) & Fadojja<br>2) Kenzi & Dongolawi              |
| B. Hill (= Kordofan) Nubian: | 1) Dair, Kadaru, Ghulfan, El Hugerat<br>2) Dilling, Western Kadaru, Karko, Wali |
| C. Birgid                    |   |
| D. Meidob                    |   |
| E. Haraza                    |   |

Thelwall 1983: 97

- |    |                          |                               |
|----|--------------------------|-------------------------------|
| A. | a) Nile Nubian:          | 1) Nobiin<br>2) Dongolawi     |
|    | b) Birgid / Hill Nubian: | 1) Kadaru, Debri<br>2) Birgid |
| B. | Meidob                   |                               |

Bechhaus-Gerst 1984: 17 (cf. already Greenberg 1963: 85)

- |                |                                   |
|----------------|-----------------------------------|
| A. Nile Nubian | 1) Nobiin<br>2) Kenzi & Dongolawi |
| B. Hill Nubian | Dilling, Kadaru, Debri            |
| C. Birgid      |                                   |
| D. Meidob      |                                   |

Bechhaus-Gerst *l.c.* calculated the lowest percentage of common cognates for the basic lexicon (102 words) between Nobiin & Birgid: 37%, Nobiin vs. Meidob follow with 40%, Nobiin vs. Hill Nubian oscilate around 42%. She dated the beginning of the divergence to 33rd cent. BP and localized the Nubian homeland in the area of Kordofan — Dar Fur (p. 113), differing two waves of migration into the Nile Valley: (1) Nobiin (before 1000 BC); (2) Kenzi-Dongolawi (2nd cent. AD).

Recently Bechhaus-Gerst (1991: 92–93; cf. already 1984: 121) has radically changed the traditional scheme:

- |                           |   |
|---------------------------|---|
| A. Nile Nubian:           | Nobiin                                  |
| B. West / Central Nubian: | a) Central Nubian: 1) Kenzi & Dongolawi |

- 2) Hill Nubian  
3) Birgid
- b) Western Nubian:    Meidob

§2. Beginning from Greenberg (1963), the Nubian languages are included in the vast Nilo-Saharan macro-family. Greenberg (1963: 85) postulated the East Sudanic super-branch, consisting of 9 coordinate branches: 1. Nubian, 2. Surma, 3. Barea = Nara, 4. Ingassana = Tabi = Gaam, 5. Nyima & Affiti, 6. Temein, 7. Tama, 8. Daju, 9. Nilotic.

According to Ehret (1993: 105–106) the internal classification of Eastern Sudanic super-branch is as follows:

- |                 |                       |                                     |            |
|-----------------|-----------------------|-------------------------------------|------------|
| 1) Astaboran:   | a) Nara = Barea       |                                     |            |
|                 | b) Western Astaboran: | (i) Taman                           |            |
|                 |                       | (ii) Nubian                         |            |
| 2) Kuliak:      | a) Ik                 |                                     |            |
|                 | b) Western Kuliak:    | So, Nyang'i                         |            |
| 3) Kir-Abbaian: | a) Jebel:             | (i) Gaam; Aka etc.                  |            |
|                 |                       | (ii) Bertha                         |            |
|                 | b) Kir:               | (i) Nuba Mountains: Nyimang, Temein |            |
|                 |                       | (ii) Daju                           |            |
|                 |                       | (iii) Surma — Nilotic:              | α) Surma   |
|                 |                       |                                     | β) Nilotic |

Bender (1992: 15–39) proposes the different model:

A) Berta

- B) Core Group:
- |    |  |
|----|--|
| 1. | a) Nubian, b) Nara, c) Nyima, d) Tama              |
| 2. | a) Surma, b) Jebel, c) Temein, d) Daju, e) Nilotic |
| 3. | a) Koman, b) Gumuz                                 |
| 4. | a) Krongo, b) Kadugli                              |

Besides significant differences, Ehret and Bender agree about a closer relationship of Nubian and Tama languages. The comparison of systems of numerals supports this conclusion.

### §3. Nubian numerals

There is no special study analyzing the Nubian numerals. Zyhlarz (1928: 114–115) collected the numerals of the first decad from 7 representative Nubian languages. Meinhof (1918–19: 99–102) has studied the Hill Nubian numerals. The Nubian numerals were confronted with the numerals of other Nilo-Saharan languages already by Reinisch (1911). Kluge's (1937) collection of the numerals of various Nilo-Saharan languages is also useful till the pres-

ent time. The first attempt to postulate the regular phonetic correspondences among Nubian languages was made by Zyhlarz (1928, 1949–50). The first version of the proto-Nubian reconstruction was presented by Bechhaus-Gerst (1984). The reconstructions of the following numerals are borrowed from her: “1”, “3”, “4”, “5”, “6”, “7”, “8”. The author is responsible for the remaining.

P-Nubian Bechhaus- Gerst	ONobiin Browne	Nobiin Werner	Kenzi Hofmann	Dongola Armbruster	Kadaru Thelwall	Dair Junker & Czermak	Kundugr Hess	Haraza Bell	Birgid Thelwall	Meidob Thelwall
1 *ber	OYEP-	wēr	wēr	wēr	berɔ	ber	bɛpɛr	fariḏkih	meelug	parhi
2 *arul	OYO(Y)-	ūrwo	owwi	ōww(ɪ)	orɔ	ora	ore	auriyah	ulug	əddi
3 *ɔssik	TOYCKO(Y)-	tūʃskɔ	toski	tósk(i)	ɔɟuk	tɔɟwá	nɔge	tɔziqih	tizzig	taasi
4 *kemji	KEMCO-	kémsɔ	keemis	kémis	kemju	keru	kinge	kinizih	keemzi	eezi
5 *dišši	Δɔ-	dij(ɪ)	diǵ	diǵ	tiɕu	t/dɪsu	tɪše	nijVh	tɪšši	tecci
6 *g'arši	ΓOΛO-	górjɔ	goriǵ	góriǵ	kwarɕu	kwardɕu	kwarʃe	kurʃabah	korʃi	korhi
7 *k'alad	KOAOΓ-	kòlòd	kolod	kólod	kwaladu	kwalád	k'oldade	kaiɔdah	koldi	ɔɔstti
8 *eddiu	ΔOYEI	idwɔ	idu	táiw	eddu	éddu	idde	adɔwah	inu	idii
9		òskòdɪ	iskòd	iskòd		wedu	*wid	askòdah	ijigoldi	upud
10 *dimun	ΔIMEΔI	dimé	dimin	dímin			weede	timinah	tummun	tímizi
*[m]uri					boɟe	buurɛ	buɾɛ			
20 *arri	APPE-. AΔw-	dróo	ari	ari						
*tarbu					tarbo	tarbu	tarbee			
100 *immil		imil	imil	imil						Immil
< *il-mil ?										

#### §4. Taman numerals

Tama MacMichael	Tama Edgar	Erenga MacMichael	Erenga Edgar	Sungor Lukas	Sungor Edgar	Miisiiri Edgar	Maraariit Lukas	Maraariit Edgar	Abu-Sharib Edgar
1 kuur	kūr	kuur	kūr	kor	kur	kan	kárra	kára / kun	kárre
2 warri	wári	warri	warri	wáree	wari	wurra	wírree	wári	werre
3 ishi	išɪ / ici	itcha	icá	íca	éca	icca	éste	íti	ette
4 kus	kús	kus	kús / kuz	kus	kús	kus / quz	kɔw	ków	kow
5 massi	mási	massi	mássɪ	másii	mási	mussa	máai	máal	maai
6 toor	tor	toor	toɸ / tuɸ	tor	tór	toɸ	toor	túur	tur
7 kal	kál	kal	kál	kal	kál	qal	kul	kul	kul
8 kimis	kim/nis	kibis	kibis	kibs	kíbɪs	qees	kákawak	kákawák	kakawak
9 uuku	úkú	uuku	úkú	úku	úkú	oq	kàrkás	karkás	karsak
10 merr	merr	merr	mer	mer	mèr	martik	tok	tòk	tok

#### §5. Comparative-etymological analysis of the Nubian numerals.

1. Within Nilo-Saharan there are no evident cognates of pNub \*ber “1”, perhaps with the following exceptions: East Nilotic: Lotuko-Masai \*-bo-“1” (Vossen) // Kuliak: Tepes *ibe* “one, only” (Ehret) // ? Maba: Kaben *faya* “1” (Nougayrol; but cf. East Nilotic: Teso-Turkana -*péé* and Central Sudanic: Kuka *fene*, Bulala *pinne* “1” ?) // Central Sudanic: Woro *'bal(a)*, Dongo *'bal*, Kresh *'bala* (Santandrea) “1”; Meinhof’s record of Kresh *gbala* “1” allows to assume an original archetype \**gwala* or sim. A related root could perhaps be recognized in pNub \**g'warši* “6”, if the analysis \**g'war-dišši* “1+5” is correct (Reinisch 1911: 77). Armbruster (1960: 178), following Reinisch, speculates about a development from \**gwar*. But the sequence \**g'wa-* does not change in

pNub *\*ba-* (cf. Bechhaus-Gerst 1984: 32). The speculative derivation *\*b-* < *\*g<sup>w</sup>-* could be valid only for a different vocalism than *\*a*, maybe front vocalism, hence *\*g<sup>w</sup>Er* > *\*gber* > *\*ber* ? The hypothetical protoform *\*gwEr* is compatible with the Taman counterpart reconstructible in the form *\*kwar*, although this phonetic correspondence cannot be supported by other parallels.

2. The reconstruction *\*auri* “2” follows Armbruster (1960: 178), postulating *\*awr-* (cf. Dongola *áuwi* after Meinhof and esp. Haraza *auriyah* after Bell vs. *awude* after Newbold), while Reinisch (1911: 78) proposed *\*arw-*. The change *\*-r- > -w-* is regular in Nobiin (Bechhaus-Gerst 1989: 93–94), while the same change in Kenzi-Dongola represents probably an influence of Nobiin. The closest cognates appear in Taman *\*warri* “2” and probably Nyima *warba* “2” (Meinhof). The other parallels appear in Fur *awu* (Beaton), *a(w)u*, *weu* etc. (Meinhof) “2” // Nilotic *\*aRyew* “2” (Dimmendaal) // Central Sudanic: Moru-Maṅbetu *\*(a)riyu* “2” (Bender) // Nara *arriga* “2” & *jariga* “7” (Thompson) // ? Bertat *ari* “7” (Marno) // Krongo-Kadugli: Mudo *kaará*, Yegang *ariya*, Kufo (*nd*)*éÉrá*, Miri, Talla, Tolibi *éÉra*, Sangali *éÉré*, Krongo *yáária*, Talasa *éÉrya* “2” (Schadeberg).

Taking into account Nile Nubian *\*arri* “20” and the external cognates, the reconstruction *\*arui* “2” seems to be preferable.

3. PNub *\*tɔssik* “3” was compared with Nilotic *\*dāk* “3” (Dimmendaal), cf. Reinisch 1911: 168; Murray 1923: 169. Bender (1981: 256, 261) postulates the Nilo-Saharan “prototype” *\*(ko-) tVs-(ig)* “3”. Among his examples, the most suggestive seem to be the parallels from Koman: Kwama *twasan*, Opo *tušuš/s* “3”. But their dental anlaut represents very probably a prefix, determining also other numerals (cf. Bender 1983: 272, 274, 276). The other parallels quoted by Bender are also rather problematic: Kanuri *yáskə*, Fur *iis*, Songhai *za*, pDaju *\*kodos* (Thelwall), Tama *tšilici*, Maraariit *tši*, Jebel: Aka *éedé* etc. But there is a promising internal etymology based on Meidob (MacMichael) *töser-uusi* “middle finger” (*uusi* “hand”) and *töser-otti* “first toe” (*otti* “foot”). This rather strange semantic difference follows probably from the original meaning *\*“protruding (finger)”*, hence “middle finger” but “first toe”; cf. also Old Nubian TOYCKO(Y)- “3” vs. TOYCKANTE- “*πρώτος*”, the first” (Browne 1989: 21). Let us mention that Brugmann (1892: 464) saw in the Indo-European numeral *\*ter-*, *\*tri-* “3” an original denotation of the “middle finger”, deriving it from the root *\*ter-* attested in Greek *τέρθρον* “Ende, Spitze”, Old Indic *tár-man-* “Spitze des Opferpfostens”.

A hypothetical cognate to the Nilotic *\*dāk* “3” could be Meidob *\*teka* used in *urpii-n deka* “third finger, middle toe” (MacMichael) where the first component corresponds probably to *orbidi* “arm” (Murray 1923: 139). In principle, it is possible to imagine a metathesis from pNub *\*tɔkiss* (cf. Dair *oši* “finger”, *oššu* “arm” by Munzinger; Gulfan *osie* “finger” by Russegger, Dilling *išii* “hands” — see Meinhof 1918–19: 180–81), supported also by

isolated Karko *tɔkise, tükise* “8” (see #9). This new analysis permits to compare the root \**tɔk-* with Nilotic \**däk*.

4. PNUb \**kemji* “4” has the closest cognate in the Taman numeral “8”: Tama *kimis / kinis*, Erenga *kibis*, Sungor *kibis* and probably Miisiiri *qees*. Here Edgar (1991: 122) assumes a similar internal structure as in Maraariit *kakawāk*, Abu-Shaarib *kakawāk* “8” < \**kow-kow-ak* \*“(4+4+pl)”. But the connection of pTaman \**kimis / kibis* “8” and \**kus* “4” is not so evident. Perhaps a more plausible solution is to presume that there was a borrowing Nubian “4” >> Tama “8”. There are probably no external parallels, perhaps with the exceptions of “Mimi” (Nachtigal) *kĩndoi* “4” and Nyima (Meinhof) *kudu* “4”. “Daju of Dar Fur” (MacMichael) *kashfei* “4” could also be taken into account. On the other hand, a pure Nubian etymology cannot be excluded. The reconstruction of the numeral can be modified into \**kemñji* or \**kemñsi* (cf. Kadaru *kemñju*). This alternative reconstruction allows to speculate about still older \**kVñ-mVsi*, a hypothetical compound where the first component corresponds with Kenzi-Dongola *kiña, kina* “small, little, less”, and the second one with pTama \**massi* “5”, hence “4” = \*“(a small five)”. A similar semantic motivation can probably be assumed for the Anatolian numeral \**meyu-* “4”, differing from the form \**k\*etwōr* common for the other branches. Heubeck (Sprache 9[1963]: 201f) derives it from the Indo-European root \**mei-* “mindern”, cf. Tocharian B *maiwe* “small, young” etc.

5. PNUb *dišši* “5” was compared with West Nilotic: Dinka-Nuer (Reh) \**dhyec* “5” (Reinisch 1911: 162; Murray 1923: 85). Greenberg (1963: 100) added South Burun *doi(k)* “5” and Daju \**-da(k) / -di(k)* and Nara *da-lja-*, determining the higher numerals. These examples must be analyzed in detail. The real form in South Burun should be *dōi*, while *doi(k)* is in Jumjum. The closest relatives appear in Mughaya *adqic*, Kurmuk *nū-doo*s, Ulu *kō-doo*s (Evans-Pritchard 1932: 29, 38). Thelwall (1981: 182–83) has reconstructed the Daju numerals as follows: \**nuxu* “1”, \**pidax* “2”, \**kodos* “3”, \**tispet* “4”, \**madək* “5”, \**aran* “6”, \**paṽṽindi* “7”, \**kosande* “8”, \**tabistanda* “9”, \**asiñ* “10”. It is evident that the numerals “7–9” (and perhaps also “6” if \**aran* < \**aranda* or sim.) are extended by the component \**-indi*, \**-ande*, \**-anda* which is undoubtedly identical with pDaju \**ande* “arm, hand” (Thelwall 1981: 175; Greenberg 1963: 101, 117 compares it with Afitti *aata* // Nara *ad* // Surma: Didinga, Murle etc. *adhīt* // Nobiin *eddi* // Central Sudanic: Mangbutu *adi*, Mamvu *edi* etc. “hand”, cf. also West Nilotic: Ulu *intu*, South Burun *ĩntu*, Jumjum *ĩnti* after Evans-Pritchard). The *-k* termination appears only in the old records of Sila (= “Dagu of Sula”) of MacMichael (1920: 198): *faktindik* “7”, *kohandak* “8”, *bistandak* “9” besides *biddak* “2”, *tishek* “4”; it is very probably a suffix. The numeral \**madək* “5” can also be segmented in \**mad-* & *-ək* in agreement with the external cognates: Nilotic \**m[ue]t* > South Nilotic \**muut* (Rottland), East Nilotic: Lotuxo-Masai \**-miet-* (Vossen) “5” // Koman

(Bender): Twampa *mínudèd*, Opo *muta-kwei*, Fungi (MacMichael) *du-budi* “5” vs. Twampa *mèð*, Kwama *mbiit, miit, bgt’*, Opo *bit- / -mit’* “hand” // Central Sudanic: Ngama, Tele, Barma, Sara, Mbai *mi*, Kenga *mii*, Bongo, Kuka *mui* “5”, and perhaps Fur: Mimi (Jungrauthmayr) *wót* // Nara (Thompson) *wiita* “5”. Reh (1985) has reconstructed two forms for “5” in West Nilotic: Dinka-Nuer *\*dhyec* and Lwoo *\*a-bic*, which appear to be quite unrelated. But Rùp-pell (1829) had recorded yet an initial cluster *vd-*; similarly Mitterutzner (1866) *wd-*: *vdiéc* : *wdyec* (modern *dhyec*) “5”; *vdetèm* : *wdetem* (*detem*) “6”, *vderòu* : *wderóu* (*dhorou*) “7”, *vdenguàn* : *wdenguan* (*dhonguan*) “9”. Accepting the change *vd-* < *\*bdh-*, the Dinka-Nuer and Lwoo forms are derivable from West Nilotic *\*bdhyec* or still older *\*bdhyek* (cf. Jumjum *doik*). The confrontation with West Nilotic *\*bthyaar* “10” (> Dinka *thyaar*, older *vtiar* = *wtyar*, Juur *apaar*, Lwoo *apar / piero*, Shilluk *pyar* etc.) allows the following conclusion: the analysis *\*bthyaar* “10” = “5 x 2” (cf. *ariou* “2”) implies that *\*bdhyek* “5” = “5 x 1”. The common root with the meaning “5” could have been inspired by the word for “hand”, cf. Lwoo *bat*, pl. *bede* “arm”, Acholi *baät / baäd* id., Jo-p-Adhola *bat* “arm, hand”, Dho-Alur *bät* “arm, thigh” etc. The second component in *\*bdhyek* can be identified with Dinka (Nebel) *tok*, Lango (Conti Rossini) *dek* “1” or with West Nilotic (Reh) *\*kel* “1”.

If the preceding suggestions are correct, a direct comparison of pNub *\*dišši* and West Nilotic *\*bdhyek* “5” is problematic. But the reconstruction *\*dišši* can reflect the older form *\*diK(V)ši* in agreement with the laws of historical phonology of the Nubian languages. This hypothetical protoform is analyzable as a compound consisting of two components: *\*diK-* corresponds to Nara (Reinisch) *toko / doko*, (Thompson) *dokku* “1” // West Nilotic: Dinka *tok*, Lango *dek* (Conti Rossini); ? East Nilotic: Bari *tɔ* “1” // Kuliak: Nyang’i (Fleming) *-odok / -dok*, (Ehret) *nardok* “1” // ? Berta: Mayu (Triulzi et al.) *d’uk’unu*, Bertat (Marno) *dogoni*, Dul (Evans & Prichard) *duguni*, Qamamyil (Cailliand) *mu-duku* “1” // Maban: Maba (Barth, Nougayrol) *tek*, (Edgar) *tɔɔ*, Kodoi (Gaufrey-Demombynes) *tek*, Aiki (Edgar) *tùwá* “1” // Fur *tɔk* “1” but *dik* when objects are counted one by one (Beaton 1968: 57) = (Meinhof) *tok* & *di(i)g*, Mimi (Gaufrey-Demombynes) *deg* “1”; cf. also Taman (Edgar): Misiiri *martik* “10” vs. Tama *merr* “10” and Maraariit *tok* “10” (sic), hence Misiiri *mar-tik* = “10 x 1”. The second component can be identified with one of the Nubian words for “hand”: Meidob (MacMichael) *usi* “hand”; Hill Nubian: Kundugr *oše*, Dair (Junker & Czermak) *ošt*, (Munzinger) *oši* “finger” vs. *oššu* “arm”, Kargo *osi*, Dilling *iššii* (pl.) “hand, arm”, Gulfan *osie* “finger” = Kundugr *ošū* id. (Meinhof 1918–19: 180–181; Murray 1923: 141 adds Tabi = Gaam *oos* “hand”). Cf. also Fur (Meinhof) *os*, (Beaton) *ɔɔ* “5”. To conclude, it is admissible to derive *\*dišši* from *\*diK-* & *\*uši* “one hand”. Let us mention that in Haraza Newbold recorded *tijjidi*, while Bell *tijjVh* and *tiggida* (Bell 1975: 11).

6. PNUb *\*gwarši* “6” was derived from *\*gwar-dišši* “1+5” (Reinisch 1911: 77; Armbruster 1960: 178). Rather puzzling are Haraza forms: *kuršaba* (Bell

1975: 12 offers the emendation /*koršaya/* or *kurtaba* (Newbold). The hypothetical identification of \**g<sup>w</sup>ar-* and \**ber* “1” is discussed above (#1). Within Nilo-Saharan languages the most promising parallels to \**g<sup>w</sup>ar-* appear in pTaman \**kwar* “1” // Central Sudanic: Kresh (Meinhof) *gbala* = (Santandrea) *'bala* “1” if it reflects an older \**gwala* or sim. // ? East Nilotic: Bari (Spagnolo) *geleŋ* “1”, *geleŋé* “once”.

But there is yet another alternative etymology. Assuming the development \**g<sup>w</sup>arši* < \**gur[a]-uši*, it is possible to identify the first component with Meidob (MacMichael) *kur-ko* “thumb”, and the second one with Meidob *usi*, Dair *oši* etc. (see #5) “hand, arm”, hence \* “thumb” & “hand” = “6”. Zyhlarz (1928: 103) compared the Meidob *kurko* with Zaghawa *gurr̄go*, pl. *gurr̄bo* id., later (1949–50: 19) he connected it with Meidob *koore* “big”, deriving them from pNub \**ḡor* “big” (Bechhaus-Gerst 1984: 59).

7. PNUb \**kwaladi* “7” (Haraza *kalūdah* allows to modify the reconstruction in \**kaludi*) can be compared with the Taman (Edgar): Tama *kāl*, Erenga, Sungor *kāl*, Miisiiri *qal* vs. Maraariit, Abu-Shaarib *kul* “7” and Fur: Mimi (Jungraithmayr) *úkél* “7”. Nyima (Meinhof) *kwalad* “7” is an evident borrowing from Hill Nubian. In spite of these striking parallels the etymology remains unsolved. Meidob *kulkerti* “first finger” = “forefinger” = “second finger [of the second] hand” > “7” cannot be taken into account directly because Meidob *k-* < pNub \**g-*.

In case of an absence of any convincing internal etymology it is quite legitimate to ask whether the numeral is not borrowed from a neighboring language with the transparent etymology. A hypothetical source could be found in the Krongo-Kadugli language family (Schadeberg, proving its affiliation in Nilo-Saharan, uses the term “Kadu”): Mudo (= Tulishi by Stevensen) *kórdáta* “7”. Confronting it with the following numerals *átá* “8”, *kórdóá* “9”, *ḡbbá* “10”, it is tempting to interpret “7” = “8 minus (1)”, “9” = “10 minus (1)”. The substitution *-rd-* > *-l-* looks quite plausibly. A closely corresponding structure appears e.g. in the Central Sudanic language Kussuvulu (Bruehl): *kadasoso* “7”, *soso* “8”, *kalbu* “9”, *bu* “10”. The borrowing hypothesis supports the localization of the Nubian homeland in Kordofan (Nuba Mountains ?).

8.1. PNUb \**eddiu* “8” was analyzed as \* “hand (without thumbs)-two” already by Lepsius (1880: 48), cf. Nobiin *èddi* “hand” & *úwwó* “2” (cf. Werner 1987: 109). But this solution probably excludes the usually accepted relationship of Nobiin “hand” and Hill Nubian: Dilling *únti*, Koldegi *ondu* “arm”, Gulfan *onto* “hand” (Meinhof 1918–19: 169). A rather strange form was recorded by Russeger in Gulfan *ebdo* “8” (see Meinhof 1918–19: 168). It reflects perhaps \**ewdo* < \**edwo*. Nyima (Meinhof) *edo* “8” is borrowed from some Hill Nubian dialect.

There is at least a hypothetical alternative possibility to isolate the root \**ed...* “3” here, based on an external comparison with various Nilo-Saharan



languages: Taman (Edgar): Maraariit *itě*, Abu-Shaarib *ette* vs. Miisiiri *icca*, Tama *ici / iši* “3” // Fur: Mimi (Jungrathmayr) *it*, Fur (Beaton) *iis* // Jebel: Aka *éedé*, Silak *eede*, Tornasi *ede*, Malkan *odo* etc.; Gaam (Marno) *oda*, Hamej (Meinhof) *ōda* “3” etc.

8.2. Meinhof (1918–19: 100, 168) analyzed the isolated Karko *tqkise*, *tük-ise* “8” as “3+5” (cf. *qōsq* “hand”?). If we allow for the possibility of metathesis, the numeral resembles the proto-language *\*tōssik* more than Karko *tqdje* “3”. More about the etymology — see #3.

9.1. Bechhaus-Gerst (1984: 76) derives Nobiin *ōskōdi* and Kenzi-Dongola *iskood* from proto-Nile Nubian *\*iskodi* “9”. Also Haraza *askūdah* (Bell) must be added. Meidob *ukuddi* (MacMichael) = *ūkkūdi* (Thelwall 1983: 99) can be related too.

The internal etymology remains puzzling. Among possible external parallels, the Taman examples must be quoted: Tama *ukku*, Erenga, Sungor *ūku*, Miisiiri *oq* “9”. Maraariit *kārkās*, Abu-Shaarib *karsak* “9” = “one subtracted from [ten]”, imply that *\*-ku* can be identified with Tama *kūr*, Erenga *kūr*, Sungor *kur* “1”.

9.2. Thelwall (1978: 278) quotes Meidob *upudi* “9” (it is remarkable in confrontation with his later record *ūkkūdi*), similarly *ūfūdi* after Bell (1975: 15). This form is compatible with Birgid (MacMichael) *ijmoldi* = (Thelwall) *ijigoldi* “9”. Meidob *p* and Birgid *m* correspond regularly, reflecting pNub *\*b*, cf. *\*ber* “1” > Meidob (MacMichael) *pirrki* = (Thelwall) *parhi / parcī*, Birgid (MacMichael) *meirti* = (Thelwall) *meelug*. The change *\*-rT-* > *-d-* is regular in Meidob, cf. Meidob *ufudi*, *upudi* “ashes” vs. Birgid *uburti*, Nobiin *oburti*, Kenzi-Dongola *uburti*, Dilling *opte* < pNub *\*opurti* (Bechhaus-Gerst 1984: 53–54) or Meidob *kada-ŋi* “tongue” vs. Birgid *natti*, Nobiin *narr*, Kenzi-Dongola *nēd*, Dair *jaldo*, Haraza *doldo* < pNub *\*jardi* (Bechhaus-Gerst 1984: 72). It means that the original form of the numeral “9” may be derived from *\*-bVr-di*, where the root *\*-bVr-* can be identified with pNub *\*ber* “1”. It remains to explain the first syllable of the numeral. The following hypothetical solution offers a common etymology for both forms of the numeral “9” discussed in ## 9.1 & 9.2. If the beginning component was derived from the verb attested in Kenzi *usuk* “to sit”, caus. Mahas *isk-ir* “to put, place”, Old Nobiin OYCKOYP, Kenzi-Dongola *usk-ir* (Murray 1923: 76, 181), the internal structure of the numeral can be reconstructed as *\*usik-ber-di* “put one [from ten?]”. The final *-di* agrees with the frequent nominal suffix (Meinhof 1918–19: 94). Bell (1975: 15) speculates on the regular correspondence *sk/lf* among Nubian languages.

9.3. In Hill Nubian, the reconstruction *\*[u]weed(-du) / \*[u]weid(-du)* is only approximate. The diphthong is also preserved in Dulman *wōidē*, Dair *weeid*, *wēd*. There Meinhof (1918–19: 94) isolated the nominal suffix *-du* here. It would also be tempting to identify in this form the same structure as in the preceding numerals (## 9.1, 9.2). But in Hill Nubian the regular reflex of

pNub *\*b* is *b*. The eventual change *\*b* > *\*w* could be caused by some unspecified combinatorial conditions but without any concrete proof it remains only a speculation.

An alternative solution can be based on Mahas *wiid*, Kenzi-Dongola *wide* “to return”, adv. “back, again” (Murray 1923: 186). In this case the semantic motivation could be *\*[one] back*”, perhaps similarly as in the case of Egyptian *psd* “9” vs. *psd* “back” (Wb. I: 558, 556).

10.1. P Nub *\*dimun* “10” continues in Old Nobiin ΔIMEΔI– (Browne), Nobiin *dīmē* (Werner) = *dimee* (Thelwall), cf. Mahas *dime(C)* & *dimer(V)* (Lepsius), Kenzi *dimini* (Thelwall) = *dimin* (Hofmann), Dongola *dīmin* (Armbruster), Meidob *timmigi* (MacMichael) = *tīmizi* (Thelwall), Birgid *timmun* (MacMichael) = *tummun* (Thelwall), Haraza *timinah* (Bell). Similar forms are very wide-spread within Nilo-Saharan: Nilotic *\*tōmōn* (Dimmendaal) // pSurma *\*tommon* // Kuliak: Ik *tomīna* // Berta: Fadashi & Mayu (Triulzi et al.) *ma-θuuma*, Fazoglo (Tutschek) *ma-doma* // Saharan: Zaghawa *timn(i)* (MacMichael); Tubu Kashirda (Lukas) *mūrdōm* “10” vs. *dīgidōm* “20” // Koman: Fungi (MacMichael) = Jebel Gule (Seligmann) *\*diman* in *diman-didin* “9” = “10–1”, cf. *didian* “1”. It is tempting to include here also Krongo-Kadugli “5”: Mudo *tūmmu*, Yegang *dūmmū*, Miri *iūđūmmu*, Talla *uūđūmmu*, Tolibi *eedūmmū*, Sangali *iūđūmmū* (Schadeberg). Gaam (Bender) *tōmōn* = (Marno) *tamann* and Hamej (Seligmann) *tūm* “1” open the possibility to derive this numeral from the original meaning “all”, attested in Nubian: Meidob (MacMichael) *tuma* // Maba *dum* // Kunama *tumma* (Greenberg 1963: 95, 117, 133). On the other hand, a borrowing from Arabic is not excluded too.

There is another alternative solution connecting the numeral “10” with Old Nobiin ΔOYM, Mahas *dumm* “to take, seize, catch” (Murray 1923: 40). Reinisch (1911: 163) compared it with Nilotic: (West) Dinka *dam* and (East) Bari *dum-un* id.

This form of the numeral “10” represents apparently an areal word diffused thanks to cultural contacts. Similar forms appear also outside the borders of the Nilo-Saharan macro-family, e.g. in Mande (Niger-Congo): Soninke *tamu*, Bozo Sorogo *tyemi*, Malinke, Vai, Kono *taŋ*, Bambara *tan* etc. “10” (Mukarovsky 1971: 143). No fewer suggestive parallels appear in Cushitic: Beja *tamin* & *tamun* “10” // pAgaw *\*-tāŋa* “-ty” // East Cushitic *\*tamman-* / *\*tamn-* “10” > Omotic *\*tamm-*. The primary source remains to be determined.

10.2. The initial *\*b-* in Hill Nubian *\*bure* “10” can reflect pNub *\*m-*, cf. Hill Nubian *\*beli* vs. Nile Nubian *\*milli* and Birgid *mattana* “bad” < *\*maldi* (Bechhaus-Gerst 1984: 33, 67). An indirect support can be found in the numeral “100”: Nobiin *imil*, Kenzi-Dongola *imil* (Bechhaus-Gerst 1984: 74), Meidob *immil* (MacMichael) = *immil* (Thelwall) vs. Hill Nubian: Gulfan (Klingenheben) *ilbūrē* (Meinhof 1918–19: 102, 183). The last form has a transparent internal structure *\*il* & *būrē* “10 x 10”, cf. Dair (Junker & Czer-

mak) *il toḏuḡ* “30”, *il kiñu* “40”, *il tiṣu* “50” (but Gulfan after Meinhof: *iil-óqra* “40”, *iil-óqra buré* “50”, *il-toḏjun* “60” !). The Gulfan form *il-búrg* allows to analyze also the Nile Nubian & Meidob *\*immil* < *\*il-mil* < *\*il-mur(-)*. The hypothetical pNub *\*muri* can be supported by the external comparison: Taman *\*martək* “10” = “10 x 1” // East Nilotic: Bari *mēre gēleḡ* “10” (Spagnolo 1933: 73 interprets it as “one mountain”!), *merya puök* “100” = “10 x 10” // ? Kuliak: So (Carlin) *mimur* “10” // Saharan: Tubu (Nachtigal) *múro* “10”, Tubu Kashirda (Lukas) *múrdəm* “10” vs. *dígídəm* “20” // Central Sudanic: Lugbara (Tucker) *mudr* “10” vs. *mēriri* “20” (*iri* “2”) etc. If the preceding words are related (cf. Greenberg 1963: 106), a common etymology must exist. Besides Spagnolo’s interpretation of Bari *mēre* “mountain” there are other semantically more promising possibilities: (i) Bari *mēr* “crown of head” >> “top [number]”?; (ii) Bari *mōrin* “fingers” // South Nilotic *\*mōrin* “finger” < Nilotic *\*mōr* (Dimmendaal); (iii) Jumjum (West Nilotic) *mōreen* “all” (Bender).

The puzzling form of Hill Nubian *\*tarbu* “20” can perhaps be derived from *\*ta-bur-* < *\*bur-ta-bur-* “10+10”; the conjunction *\*ta* is attested in corresponding Nile Nubian *\*da* “and”, cf. Kenzi *dīmin da weerum* = Dongola *dīmin do weerun* “11” (Reinisch), Old Nobiin ΔE and possibly Meidob (MacMichael) *toor*, cf. *šedded toor uddi* “22” = “20 + 2”.

10.3. Dongola *ir* forming tens, e.g. *ir toski-gi* “30”, *ir kemis-ki* “40” ....., *ir eskood-ki* “90” (Lepsius 1880: 49, 334), can perhaps be derived from the verb attested in Kenzi-Dongola *ir-* “to count”, cf. *irar* “number” (Reinisch). A relationship with Gulfan *il*, forming probably also tens or twenties, is quite plausible. A suggestive external cognate appears in Kuliak: So *ir-kon in iyon* “30” : *iyon* “3”, *ir-kon in nowa* “40” : *nowa* “4” (Carlin 1993: 109–110).

An alternative but semantically less hopeful possibility is represented by Dongola *irii* “people”, pl. of *id* “person” (Lepsius). A formal parallel can be found in Surma: Mursi (Turton & Bender) *hir kón* “20”, Bodi *hir kun-ko*, Tirma (Haberland) *ir kun* “20” = “man-one”.

Murray (1923: 74) connected *ir* & *il* with Meidob *sel* forming teens, cf. *seldási* “13”, ..., *selukoddi* “19” (MacMichael). The same root appears perhaps also in Meidob *šeddedi* “20”, if the analysis *\*sel* “10” & *əddi* “2” is correct. The etymology of *sel* remains open, perhaps Mimi (Nachtigal) *sáya* “10” or Central Sudanic: Kresh *sála*, Woro, Dongo *saal* “5” (Santandrea) could be taken into account.

## §6. Conclusion.

Confronting the system of Nubian numerals with other numeral systems of Nilo-Saharan languages, it is evident that the Nubian system is innovated. Within Nilo-Saharan there are wide-spread cognates only to the numerals “2”, ?? “3” and “10” (but here the areal diffusion could also play its role). In agreement with the present state of art of the genetic classification of Nilo-Saharan languages, the closest numeral system appears in Taman (“2”, “4” //

“8”, “7”, “9”, “10”, maybe also Taman “1” vs. Nubian “6” and Taman “5” vs. Nubian “4”).

Abbreviations: Nub Nubian, P Proto-.

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