SUDAN & NUBIA

The Sudan Archaeological Research Society

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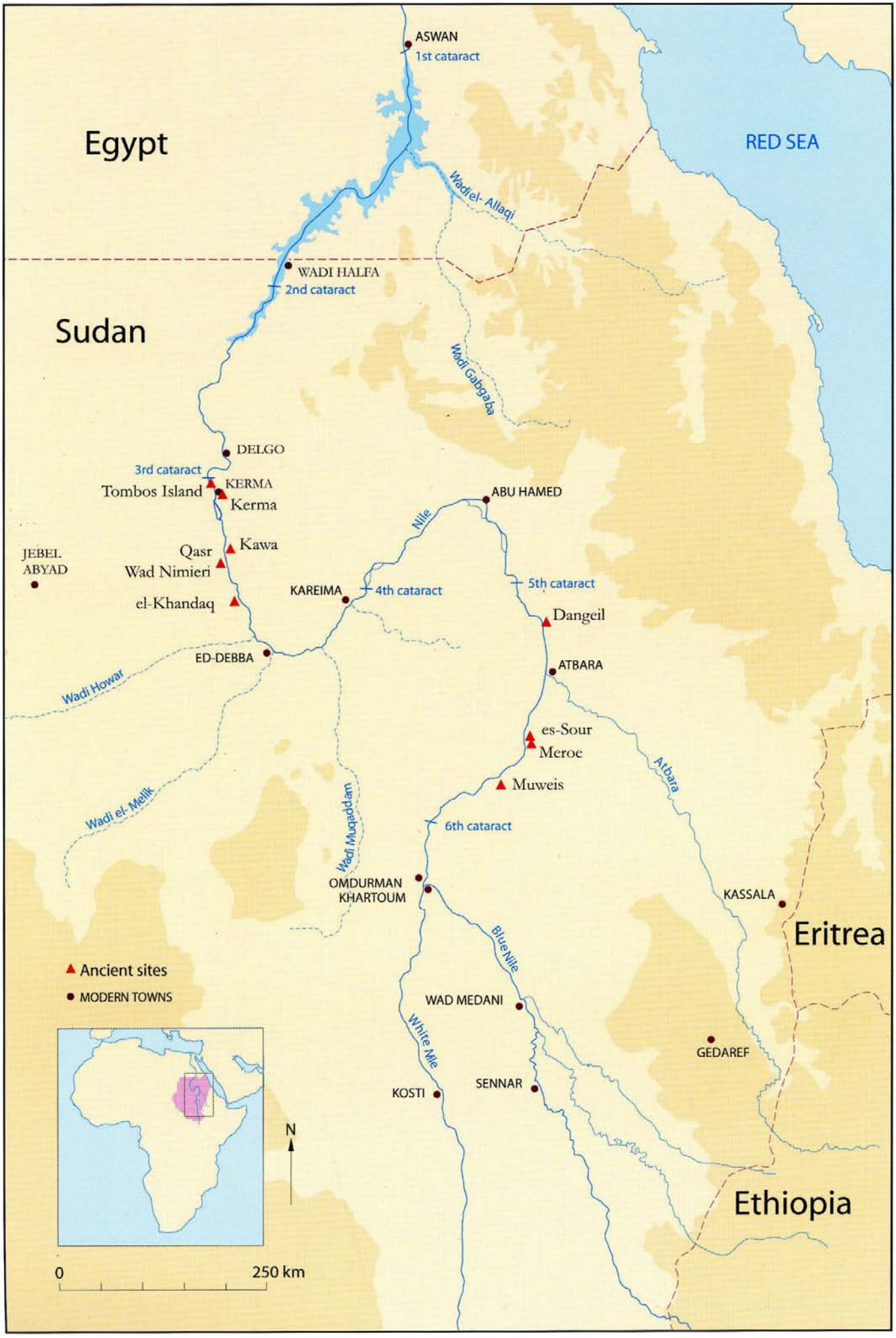
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Contents

Front cover: Rescuing rock art from the Sudan Archaeological Research Society's concession at the Fourth Nile Cataract. This collaborative project between the British Museum, Iveco and New Holland was undertaken in November 2007 and resulted in the removal, from the SARS concession, of over 50 boulders bearing rock art or used as rock gongs. The pyramid, offering chapel and enclosure wall from site 4-F-71 were also relocated. Here the work is being filmed by a cameraman from the Italian TV news channel Rei Due (photo D. A. Welsby).

Kirwan Memorial Lecture

The Linguistic Position of Meroitic. New Perspectives for Understanding the Texts

Claude Rilly

Meroitic was the language of the successive Kingdoms of Kush, the ancient name of Sudan, along the Middle Nile, roughly from the First Cataract to the region of Khartoum. The earliest traces of this language have been found in an Egyptian papyrus from the Hyksos Period (around 1570 BC), transcribing Meroitic personal names.[1] However, the Meroitic language was written with a locally developed script only from the second century BC onwards. Some 1100 texts have been published so far, but new inscriptions are found every year in excavations conducted in Sudan and in Egyptian Nubia.

In fact, two Meroitic scripts existed; a hieroglyphic script for monumental inscriptions and a cursive script for more common purposes. Both were deciphered in 1911. However, this decipherment did not provide a key to the translation of the texts, since the language could not be linked with any known language of the region, because it had disappeared in the early Middle Ages and left no descendant. It was completely replaced by Nubian, the language family of tribes originating from the western part of Sudan, who invaded the Middle Nile Valley in the 4th century AD and played an important part in the fall of the Meroitic Empire. The problem of Meroitic is very similar to that of Etruscan, which can also be read, since its alphabet is more or less the same as Latin, but which cannot be translated except for very short and stereotyped inscriptions.

The affiliation of Meroitic: a hundred-year quest

Precisely 100 years ago, a meeting took place which later proved to be of the utmost importance for Nubian studies. David Randall MacIver, the British archaeologist famous for his excavations in Great Zimbabwe, was at this time also conducting excavations in Egyptian Nubia, at Shablul and Karanog, not far from the Sudanese border. There, he discovered many Meroitic texts and decided to entrust their study to a rising star of British Egyptology, Francis Llewellyn Griffith, who had made considerable advances in the study of demotic and abnormal hieratic in previous years. The two scholars met in London in 1907 and Griffith was given excellent photographs of the inscribed Meroitic funerary stelae and offering-tables, unearthed in the Nubian sites. At the time, Meroitic scripts were still undeciphered, although several English and German scholars had made every effort to accomplish this great work. Randall MacIver's choice of Griffith proved to be the right one.

Two years later, the decipherment was nearly complete, as can be seen in his contribution to Randall MacIver's first publication, *Areika* (Griffith 1909). Four years later, in 1911, Griffith published *The Meroitic Inscriptions of Shablûl and Karanòg*, in which he was able not only to determine the phonetic values of the signs of both scripts, hieroglyphic and cursive, but also to give the meaning of a few words and a tentative sketch of Meroitic grammar. He even translated some passages of the funerary texts. Nearly one century after *Karanòg* was published, this book remains a kind of bible for anyone interested in Meroitic. Of course, some progress has been made since this publication, but hardly anything in it has been proved wrong.

Although Griffith was able to translate large parts of the funerary texts, which were numerous (roughly half of the current corpus) and very stereotyped, he was still puzzled by the rest of the inscriptions, particularly the long texts of the royal monuments such as Akinidad's Stela, found in Hamadab, near Meroe, and now displayed in the British Museum.[2] As he had found some possible links with Nubian,[3] he turned to the study of Old Nubian, the language of the medieval Christian Kingdoms of Sudan that was written with Coptic letters. Several manuscripts in Old Nubian had been found in previous decades. With the same efficacy that led him to the decipherment of Meroitic, Griffith published in 1913 *The Nubian texts of the Christian Period*, a short book that was to remain a reference on this language until the end of the 20th century. However, his hopes were not fulfilled. Old Nubian was obviously not a descendant of Meroitic. Moreover, Griffith thought that the resemblances he found between both languages probably resulted from contact and borrowing (Griffith 1916, 123). He was particularly struck by the differences in the kinship vocabulary which was considered at that time to be the most stable part of a language family. Griffith continued his work on Meroitic in the following years, but he was too busy with "pure" Egyptology to spend much time on this study.

After Griffith, it was a hard time for Meroitic Studies. The only scholar working on Meroitic in the thirties and

[1] See Rilly 2007b for a complete study of this list. A cursory study can be found in Rilly 2007a, 5-11.

[2] See Griffith 1917. For a more recent and accurate study of the Akinidad Stela, see Hofmann 1981, 279-328.

[3] Griffith 1911, 22. However, more pessimistic conclusions can be found in the Chapter "General Results" of the same book (Griffith 1911, 83), which was probably written in a later phase of the work.

forties was the notorious Austrian linguist Ernst Zyhlarz. He suggested that Meroitic was a "Hamitic" language, in current terminology an Afroasiatic language such as Egyptian, Arabic or Somali. To support this idea, he produced alleged instances of grammatical gender, which is a linguistic feature existing in nearly all the Afroasiatic languages, contradicting Griffith who had shown there was no gender distinction in Meroitic (Zyhlarz 1930, 460-461). He went so far as to manipulate the data in order to fit them into his theories, offering full translations of texts that are still today untranslatable. In the 1950s, the East German scholar Fritz Hintze launched a new start for Meroitic Studies. His first paper was a refutation of Zyhlarz's articles (Hintze 1955). It ended belief in the Afroasiatic theory for a while, although, according to an axiom well known in historical linguistics, it is possible to demonstrate that a language belongs to a linguistic family, but impossible to prove that a language does not belong to a linguistic family. In fact, Hintze had no alternative solution: in his opinion, Meroitic was probably an isolated language, with no links whatsoever to any family of living languages. Therefore, he concentrated on the internal study of Meroitic, with a special focus on syntactic structures (Hintze 1963). One of his greatest achievements was to clarify the segmentation of verbal forms, for which Griffith had not worked out a satisfying pattern (Hintze 1979, 63-87). However, until his death in 1993, Hintze had not made any dramatic advances on the translation of Meroitic.

During the International Campaign for the Salvage of the Monuments of Nubia organised in the 1960s by UNESCO, fresh excavations were conducted in Egypt and Sudan, resulting in the discovery of many new Meroitic texts and creating renewed interest in the study of this language.

An ambitious project was launched by Professor Leclant, in France, to gather together all Meroitic texts into a single publication, the *Répertoire d'épigraphie méroïtique* or REM. Its first volumes were finally released in 2000 (Leclant *et al.* 2000). In addition to the German school gathered around Fritz Hintze, several new scholars appeared in the field. One of the most promising newcomers was Inge Hofmann, a German-Austrian scholar who, up to 1991, published astute studies of Meroitic texts (Hofmann 1981). However, progress was slower than expected and its main result was to confirm and deepen Griffith's analyses. Meroitic was better and better known, but the bulk of the texts still resisted translation. Contrary to all expectation, no bilingual text was discovered in any of the Nubian excavations. Last but not least, the linguistic affiliation of Meroitic was still unsettled.

However, an interesting theory was presented in 1964 by a young Canadian archaeologist, Bruce Graham Trigger, who died in December 2006. During the previous year, the American linguist Joseph H. Greenberg had published an overall classification of the languages of Africa into four superfamilies or "phylums", namely Afroasiatic, Niger-Congo, Khoisan and Nilo-Saharan (Greenberg 1963). The last family comprised some 120 languages mostly spoken in the eastern part of the Sahelian fringe between the Sahara and the rainforest, from Chad to Tanzania. Nilo-Saharan was the least convincing of the African families postulated by Greenberg and its existence as a consistent unity has been criticized, but there has been a growing consensus among Africanists for the existence of the core of this phylum, Eastern Sudanic. This core comprises nine groups, here with their current names: Surmic, Nara, Jebel, Nyima, Temein, Taman, Daju, Nilotic and, significantly, Nubian. Significantly also, these languages are spoken mainly in Sudan, with some extensions into Chad, Eritrea and Ethiopia.

Based on several morphological and lexical resemblances to some of these languages, particularly Nubian and Nara, Bruce Trigger assumed that Meroitic belonged to the Nilo-Saharan phylum, and more precisely to the Eastern Sudanic group (Trigger 1964).

However, his theory was refuted some years later by Fritz Hintze (Hintze 1973, 323-327). He showed that the grammatical particles (for example *t-* "in") used by Trigger were too short for a convincing comparison and could be found by chance in other linguistic families as remote as Uralo-Altaic languages which includes Turkish. Moreover, Trigger was at that time a newcomer to Meroitic Studies and many of the Meroitic words he utilised in his study were naively borrowed from Ernst Zyhlarz's articles, so that they were either erroneously translated or simply forged. Once again, Hintze did not offer any alternative affiliation, but demonstrated that the question of the linguistic family of Meroitic was far from settled. After Trigger's article, some unconvincing or whimsical hypotheses were published, chiefly to resurrect the old Afroasiatic theory[4] or that even suggested some fanciful links with Sumerian, Old Hungarian or Tokharian, an extinct Indo-European language once spoken in Chinese Turkestan.[5]

Comparative Method: the most productive approach to the Meroitic problem

Why is it so important to determine the linguistic family of Meroitic? To answer this question, we will have to detail the different methods that can be used for the translation of Meroitic texts.

[4] For an alleged link with Afroasiatic, see Böhm 1986; Bechhaus-Gerst 1989, 100-118; Rowan 2006a. In this last paper, it is argued that Meroitic shares with Afroasiatic languages such as Arabic or Ancient Egyptian strict restrictions in the consonantal distribution of the verbal stems. This feature is however purely typological (just like word order for instance), and cannot be held as evidence for a genetic relation. Moreover, the Meroitic data which Kirsty Rowan used in her study are gathered from disparate sources including some unreliable studies.

[5] See respectively Sharman 1974, Laczkovics 1984 and Hummel 1992, Winters 1999; also Burlak, this volume, pp. 98-102.

The first method that comes to mind is, of course, the use of bilingual texts. Sumerian for instance was translated that way. Since it did not belong to any extant linguistic family, no help could be expected from any related language. Fortunately, Mesopotamian scribes produced not only bilingual texts, but even Akkadian/Sumerian glossaries.

The Rosetta Stone is a different case altogether. It provided clues to crack the Egyptian writing system, but the Egyptian language itself was translated from a comparison with Coptic, its direct descendant. One "Rosetta stone" would not suffice to understand Meroitic, but many such texts would be required, as was the case for Sumerian. The issue is not to know several dozen signs, but several thousand words. Unfortunately, no Meroitic "Rosetta stone" has ever been discovered and it is highly improbable that any such text will ever be found. In Ptolemaic Egypt where the Rosetta stone was inscribed, two literate communities of Egyptians and Greeks existed side by side, hence the necessity for bilingual decrees. The same situation held true for Mesopotamia, but not for Nubia, where there were apparently no substantial Greek or Egyptian communities. Actually, some rare bilingual texts have been discovered, but they are short and imprecise. One instance was found on a jar from the royal cemetery at Meroe (Figure 1). It bears in Egyptian

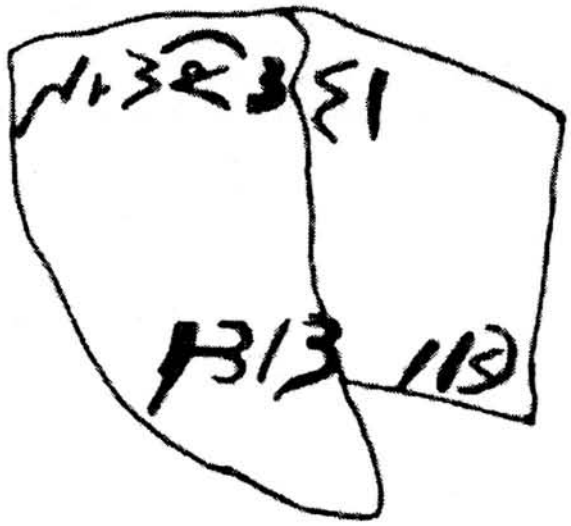


Figure 1. REM 0804D, inscription on a fragment of jar from Beg. N. 11 (after Dunham 1957, fig. 44d).

demotic the caption *jrp n Kmj* "wine from Egypt" and the Meroitic comment *Qom-o-s-o*, which can be translated as "it is from Egypt", a kind of early version of "made in Egypt". It provides the Meroitic word for "Egypt", which is borrowed from Egyptian *Kmj*, but the word for "wine" is missing. Obviously, we are still a long way from a Meroitic equivalent of the Rosetta stone.

The use of parallel texts is a second method. Egyptian culture exerted a deep influence on ancient Sudan since it was an Egyptian colony for over six centuries. Therefore it is no wonder that Meroitic scribes copied Egyptian formulae in their own texts. Until the development of the Meroitic script at the beginning of the 2nd century BC, the kings of Kush had to have their official texts written in Egyptian by local scribes, as can be inferred from some specific mistakes, for instance confusion in the use of grammatical gender.

Griffith used two kinds of parallel texts to translate the Meroitic pilgrims' inscriptions from the temple of Isis at Philae. Egyptian pilgrims used to engrave different types of graffiti on the walls of this temple. The two most frequent kinds read "The adoration of so-and-so is here in the presence of Isis" and, accompanying figures of engraved feet, "The feet of so-and-so". Griffith recognised that the Meroitic pilgrims used exactly the same formulae as the Egyptians and by comparing them, he provided the Meroitic words for "foot", which is *st*,[6] and "in the presence of", *n-l-w*.[7] Using the same method, I was recently able to translate other words such as *pwrite* "life" [8] and *tke* "to love".[9] Systematic investigations for possible parallels in Meroitic royal texts for which we have Egyptian counterparts could be fruitful, but this work has never been done thoroughly.

Another source of information in connection with the Egyptian influence is the adaptation into Meroitic of Egyptian words, especially in the cultural field. These words were of great help to Griffith. They include god-names such as *Amni* "Amun" or *Asori* "Osiris", also many titles such as *ant* "priest" (from Egyptian *ḥm-ntr*) or *apote* "messenger" (from Egyptian *wpwtj*) and even recently translated words such as *nbr* "gold" (from Egyptian *nbw*) or *yed* "silver" (from Egyptian *ḥd*).

All these approaches based on a comparison with Greek or Egyptian data are of interest, but, as we have seen, are not very productive. The most fruitful method for now is what has been called "the philological method" or "contextual studies". It consists of clearing up the obscure parts of the texts by using the parts that are known.

[6] Not *stqo*, as can be found in several publications (for instance Griffith 1912, Index A, 71). In *st-qo* (pl. *st-qo-leb*), the substantive *st* "foot" or "pair of feet" is followed by the demonstrative *qo* "this" / *qo-leb* "these". The word can be compared with Proto-Nubian *os-ti "foot", "pair of feet".

[7] Literally "by the existence (*n-*) of", pl. *n-bese-l-w* "by their existence" = "in their presence" (REM 0123). The Meroitic stem *n-* "to exist", "to be" (cf. also *-neyi* "being" in REM 1003/1-2, etc.), can be compared with Nara *n-*, Tama *ni-*, Nyimang *nɛ-*, "to be". The Proto-Nubian form is **an-*.

[8] Cf. Rilly 2001, 357-358. The word *pwrite* (probably pronounced /bawarit/, cf. Rilly 2007a, 363-365) is the Meroitic translation of Egyptian *ʿnḫ* and could possibly mean rather "vital strength"; cf. Nara *bóór-shí* "strength", Proto-Nubian **beer-i-di* "strength", "satiety".

[9] In *Mni-tke-l* "beloved of Amun" (REM 0001, 1151) or *Mnp-tke-l* "beloved of Amanap" (Cairo Museum JE 90879, cf. Hallof 2003, 254). These Meroitic royal epithets correspond to Egyptian *mry* [*n*] *Jmn* "beloved of Amun". No obvious cognate can be found for this verb among related languages.

One could compare this work to solving crossword puzzles. When several words are found in a crossword grid, solvers use both axes, across and up and down, to guess new words from the known letters. Similarly, in most Meroitic texts, one or two words, sometimes more, are known in each sentence. This information can also be used in two axes: syntax and semantics. Here is an example of syntactic context: when a word is followed by the article *-l(i)* , it is very probably a noun or a nominal phrase. An example of semantic context is when a god is urged to grant a ruler something.[10] This can be only a divine benefit such as "life", "strength", "power" or the like. By comparing the results of different investigations of this type and assuming the same results for occurrences of the same word in other texts, one can get near to the meaning of the word and sometimes manage to translate it fully. Most of Griffith's progress on the Meroitic language came through this "philological method". Since he also relied on the archaeological and iconographical context of the documents, one could rather speak of a "multi-contextual approach". The same method can also be found in Inge Hofmann's studies and I have also used it to work out the meaning of several new words.[11] However it is a painstaking and time-consuming method. Moreover, the results range from vague information (for instance, "this word is an adjective") to full translations, the former being unfortunately much more usual than the latter.

The most productive approach would, therefore, be the linguistic comparison or "comparative method". For instance, Hittite was translated this way. In 1915, the Austrian scholar Bedřich Hrozny demonstrated that this unknown language from ancient Turkey was, contrary to all expectations, an Indo-European language ("water" is for example *wātar* in Hittite). This hypothesis led him rapidly to the translation of the texts, since other Indo-European languages, especially ancient languages such as Sanskrit, Greek and Latin, could provide useful elements for understanding the Hittite grammar and parts of the vocabulary.

How does this method work? First, a connection with related languages must be established with certainty. Second, regular phonetic correspondences must be worked out, so that the words of the unknown language can be successfully compared with the words of the related languages and finally translated. Let us imagine for instance that German is, like Meroitic, a partially known language, but that the link with English has been established with certainty. By examining the numerals, one can see that each time there is an initial *t* in English, it corresponds to German *z* : "two" is "zwei" and "ten" is "zehn". This phonetic correspondence can be used to find out that German "zahm" is English "tame", "Zoll" is "toll", "Zunge" is "tongue", etc. In this case, we are dealing of course with very close languages that split no more than fifteen centuries ago. If the chronological distance between languages is greater, it becomes necessary to resort to reconstructed forms or "proto-forms". For instance, English "foot" and French "pied" have apparently nothing in common, not even a single letter. But it can be shown that both words, through different phonetic developments, are offshoots of the proto-Indo-European word for "foot", which can be reconstructed from Sanskrit, Latin, Greek, etc. as *ped- / *pod-.

This approach, alternating direct comparison with related languages or reconstructed proto-forms, is currently used with increasing success in the translation of Gaulish inscriptions (Lambert 2003). The position of Gaulish within the Celtic languages was obvious, but this was far from true for the position of Meroitic within one of the African families, as we have seen. If any relationship with current African languages was to be discovered, it could only be a remote one. If there existed a close relationship with any modern language, Griffith and his successors would not have failed in their attempts to find it. However, it must be emphasized that linguistic comparison in the case of Meroitic was previously hindered by two limiting factors. First was the paucity of basic Meroitic words for which accurate translations were available. Only basic words such as those for the body parts, common animals, some kinship terms, etc, can be compared successfully between related languages. The bulk of the Meroitic words that were known are cultural items such as "king", "queen", "priest", "general". In addition, as we have seen, many of them were borrowed from Egyptian. The number of basic Meroitic words that were securely translated some years ago amounted to no more than 16. They were too few for a comparison with not-so-close languages. Let us resume our comparison between German and English, and imagine we have for the body parts only such German words as "Leib" (body), "Kopf" (head) and "Auge" (eye). The genetic relation between German and English would be far from obvious. However, by using the different methods detailed above, I have added some new translations to this stock of basic Meroitic words, bringing it up to 30. Some of these new words have been of great help for a conclusive linguistic comparison (Table 1).

A second limiting factor – until recently – was the lack of linguistic studies on most of the Nilo-Saharan languages of Sudan, apart from some Nilotic languages and two of the six Nubian languages. However, in the last decades, many new studies have been published, especially on Nubian languages, so that I could work out in recent years a proper reconstruction of Proto-Nubian which has proven quite useful for clearing up the position of Meroitic.[12] Moreover,

[10] Many such texts can be found in the Temple of Apedemak at Naqa. Several Meroitic verbs for "grant" or "give" have been identified : *l-*, *te-*, *ḫol-*, etc..

[11] See Rilly 2003; 2005, 30-31.

[12] The first tentative reconstruction of the Proto-Nubian lexicon by M. Bechhaus-Gerst (1984/85), includes several errors on the phonetic correspondences: "dog" is for instance reconstructed *bəl instead of

Table 1. Comparison of recently translated Meroitic words with Northern East Sudanic languages.

	Meroitic	**Proto-Nubian**	**Nara**	**Tama**	**Nyimang/Afitti**
Creator	*Apede-* [1] /əbede/	*Ebed-	*Ebbéré*	–	*Abìdì*
dog	*wle* /wal/	*weel	*wòs*	*wèí*	*wùl* (Afitti)
life, vital strength	*pwrite* /bawarit(ə)/ "life"	*beer-i-di "strength", "satiety"	*bóór-shí* "strength"	–	–
milk	*yer* /era/	*er-ti "breast"	–	–	*élò* "milk"
slaughter, cut in pieces	*ked* /keda/ "slaughter"	*ŋodd- [2] "cut in pieces"	*kàd-* "slaughter", "cut"	*kídà-* "cut"	*kirè* "cut"
take (1)	*dm-* /dama/ "take", "receive"	*dumm- "take", "pick"	*nàm-* [3] "take", "catch"	–	*dúm-* "pick"
take (2)	*are-* /ar(ə)/ or /ər(ə)/ "take" , "receive"	*aar- "take"	–	*èɽɛ-* "buy" [4]	*-úr / wìr* "take away"

[1] In *Apede-mk* "Apedemak", where Meroitic *mk* is "god". The sequence enclosed in slashes, here and in the following instances, corresponds to the phonological transcription of the Meroitic words, which remains fairly hypothetical.
[2] The consonant /ŋ/ is English "ng".
[3] The initial *n* is probably a later development of original *d due to attraction of the nasal consonant *m*.
[4] In Miisiirii, a language close to Tama, this stem (ɛrɛ-ŋ) means "take away".

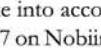
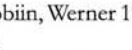
I have been personally conducting fieldwork on two languages, Nyimang in Sudan and Nara in Eritrea, for several years, so that I can rely on first-hand linguistic material.

Evidence for Meroitic being a Northern East Sudanic language

The results of my research on the linguistic position of Meroitic will be fully published in my next book *Le méroïtique et sa famille linguistique*, in 2008. There is no "sensational" discovery within this book: Bruce Trigger's theory was right, although his demonstration was scientifically inadequate. As expected, Meroitic is indeed a Nilo-Saharan language, moreover a member of the Eastern Sudanic group and more precisely of the Northern branch which I term "Northern East Sudanic" or NES. The closest language group to Meroitic is Nubian, followed by Nara, whereas Taman and Nyima are separate branches within the same family (Figures 2 and 3). I cannot, of course, summarise here an investigation which requires 500 pages to present in my book, so I will limit myself to one cogent example.

The terms for "sister" and "brother" can be included among the rare Meroitic words whose meaning is certain. "Sister" is *kdite* /kaditə /[13] or *kdise* /kadisə /, the syllable /sə / being a later development of the final element /tə / in several Meroitic words.[14] It is clearly derived from /kadi/

[12 (cont.)] *weel. In addition, it could not take into account recent studies on Nubian languages such as Werner 1987 on Nobiin, Werner 1993 on Midob, Browne 1996 and 2002 on Old Nubian.

[13] The sequences enclosed by slashes correspond to the phonological transcription of the Meroitic words (see Rilly 2007a, 286-304, 359-407).
[14] A word translated as "youth" is, for instance, *mte* or *mse*. It appears in the name of the early Napatan queen, Madiqene, transcribed in Egyptian hieroglyphs as  *md*, with the determinative "child". In Aspelta's adoption stela (lunette and l. 14), it is written 

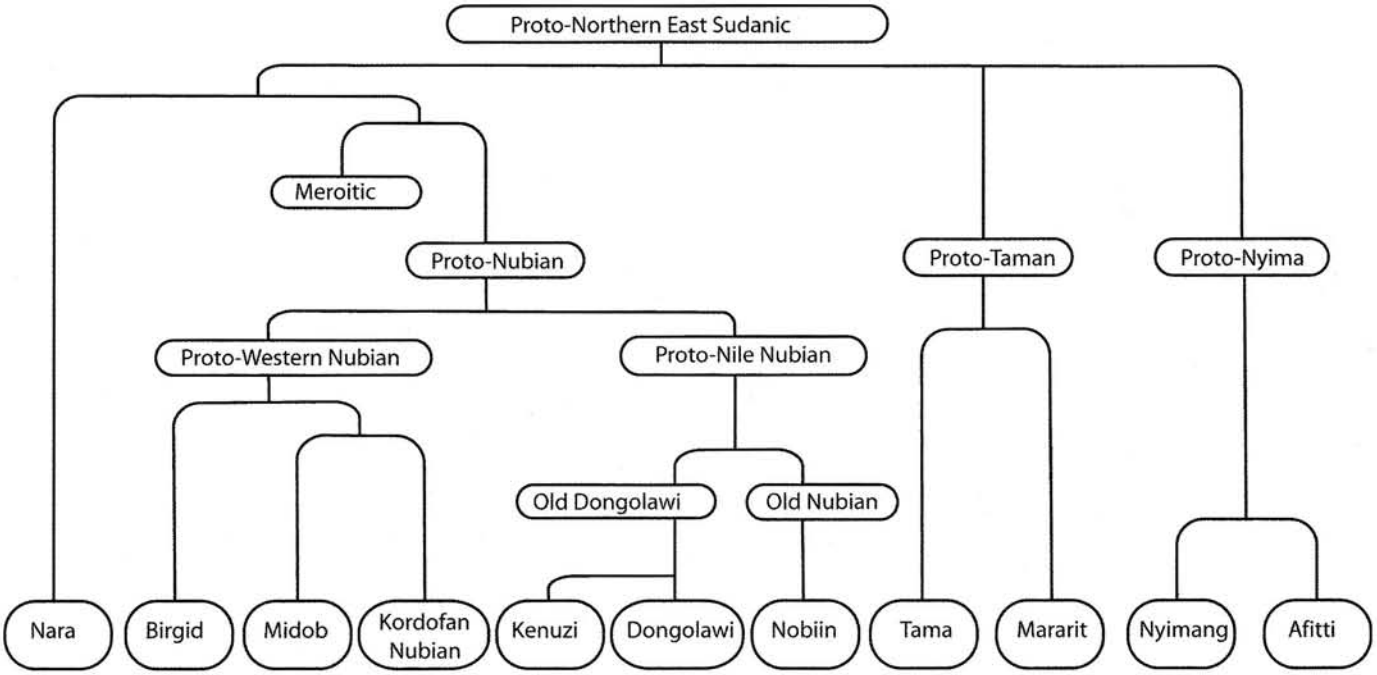


Figure 2. Tentative genealogical tree of Northern East Sudanic languages, including Meroitic.

which means "woman". In medieval and modern Nubian, the word for "sister" is a compound, varying from one language to the other and meaning either "mother's daughter" or "mother's child".[15] As proven by the differences for this word between Nubian languages, this is a recent innovation. An older word was preserved in two Nubian languages.[16] One of these languages, Dongolawi, has *kegid* as a variant word for "sister". This word, recorded as outdated, even in the earliest dictionaries, did not receive much attention from Griffith and his successors, probably because of the central /g/ which did not match the /d/ in Meroitic /kaditə/. It can be confidently reconstructed in Proto-Nubian as *kegi-di.

The /g/ is just the development of an ancient *d as an effect of dissimilation.[17] In other words, it was intended to prevent an older form *kedi-di from being contracted into *kedi [18] and to preserve in this way the final *-di, which was a momentous element originally conveying the meaning "child".

Evidence of the same development can be found in Nara, a language from Eritrea close to Nubian. In Nara, "sister" is *kàdè*. Two plural forms are known, *kàttá* and *kàttè-nná*. The latter, with its double /t/ and radical /e/, indicates that the word was originally *kàdètè.[19] In conclusion, in Proto-Nubian, "sister" was originally *kedi-di, in Proto-Nara *kàdè-tè and in Meroitic /kadi-tə/ with the original meaning "woman's child", possibly "wife's child".[20] It is difficult to find more convincing similarities.

As for "brother", the original word was replaced in all Nubian languages by a compound word meaning "mother's

[14] (cont.) *mt* with the phonetic complement *mṭn* ("path", in contemporary Demotic *myt*). Therefore, *mte* is the only form which is anciently attested.

[15] For instance Old Nubian ⲉⲛⲥⲧⲓ "sister" < Proto-Nubian *een + *asti "mother's daughter" or Proto-Kordofan Nubian *eent-an "sister" or "brother" < Proto-Nubian *een "mother" + *ti "child" + kinship suffix.

[16] Traces of this word in other Nubian languages can be found in the designation of the maternal aunt (literally "mother's sister"), or in the term for "nephew" (literally "sister's child").

[17] A frequently quoted example of dissimilation in English is "marble" from French "marbre", where original "r" switched to "l". See also two opposite dissimilatory processes in Spanish *arbol* (*_r_l*) and Italian *albero* (*_l_r*) from Latin *arbor* (*_r_r*) "tree". A similar dissimilation resulting in the development *g* < *b can be observed in Kordofan Nubian *-bag-an* "father" < Proto-Nubian *baab.

[18] This phenomenon, which is termed "haplology" in linguistics, explains for example the pronunciation of Gloucester as "Glouster".

[19] The kinship terms in Nara form their plural, as a rule, by means of a suffix *-nná* : cf. *ááfó* "grandmother", pl. *ááfònná*. The development of the word for "sister" can be reconstructed as follows: singular *kàdètè > *kàdèt > *kàdè*; plural *kàdètè-nná > kàdtè-nná > *kàttè-nná*.

[20] The compound cannot mean "female child" which would be **ti-kadi. The underlying idea was, perhaps originally, that girls are produced by the mother's body whereas boys are produced by the father's seed, but this is little more than speculation. Moreover, linguistic evidence for the second part of this interpretation is scanty. An isolated Meroitic word *abrite* occurs in a recently published epitaph from Gebel Adda, GA 19B. The context is clear enough to ensure the meaning "brother" (Millet 2005, 10-11). This word is a perfect match to *kdi-te* "sister", from *kdi* "woman", since *abr-i-te* is etymologically "man's child" (from *abr* "man"). However, the Meroitic word for "brother" in the rest of the texts is *wi-* or *wide* (see following paragraph).

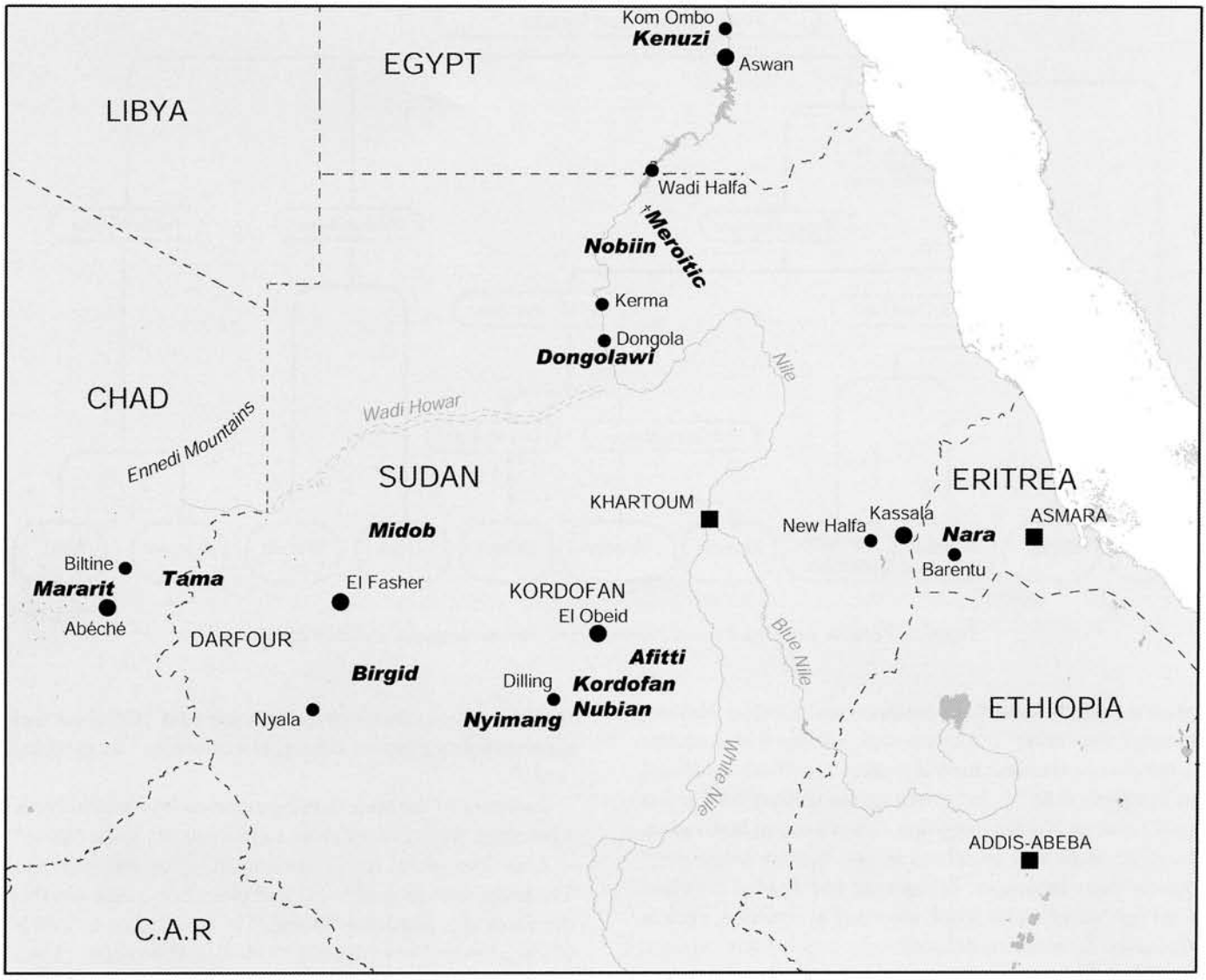


Figure 3. Map of the Northern East Sudanic languages (in bold italics).

son" or again "mother's child" in all languages[21] with the exception of a small Nubian language from Darfur, Birgid. There are only two short wordlists available for Birgid, which is now probably extinct. The earliest wordlist was published in *Sudan Notes and Records* by Sir Harold MacMichael in 1920. He recorded some words and phrases of various languages of Darfur, obviously for the use of the British administration as it includes such phrases as "you stole the cow" or "I will give you a piastre". Miraculously, MacMichael noted down a word which is not in the other wordlist published by Robin Thelwall in 1977. It is the Birgid phrase for "my brother", *im-mer-oon*. The Birgid stem for "brother" is *-mer-*. A particularity of Birgid is that it switches all the initial Proto-Nubian *w for /m/.[22] We might, therefore, expect a form *wer or the like in Nile Nubian languages, which as a rule preserve the initial *w. This word exists in Nile Nubian: *-wir* or *-wri* means "friend, comrade". Obviously, this is a secondary meaning given to the old word when new designations were coined for "brother", namely "mother's son" or "mother's child".[23] The original Proto-Nubian word can be reconstructed as *wer-i.

In Meroitic, the word for "brother" is *wi-*. No occurrence of this word in an isolated position is known: it is always used with the article *-l* in *X wi-l-o-wi* "he was the brother of X". If it included a final consonant such as /l/, /n/, or /d/, this consonant was assimilated with the article, resulting in /ll/, always spelled in the Meroitic writing-system as a single /l/.[24] That is why it has been suggested that the real

[21] For instance Old Nubian ϵρρλλ < Proto-Nubian *een + *ŋaar "mother's son" or Proto-Kordofan Nubian *eent-an "sister" or "brother", see n. 15.

[22] Proto-Nubian *weel "dog" becomes *meel* in Birgid.

[23] The Nile Nubian languages have *butti* "comrade", which might be the original word for "friend" (Proto-Nubian *bur-ti (?), cf. Midob *póor*, pl. *pòortí* "friend").

[24] Cf. Rilly 2007a, 414 (assimilation: /d/ +/l/ > /ll/; /n/ + /l/ > /ll/);

word was /wil/ (Priese 1977, 55 [2.52.1]). There is however another kinship term, *wide*, which doubtlessly means "sibling", "brother or sister". This word *wide* was pronounced /widə/ or /wid/. In all its occurrences, but one,[25] it is used for males. It is probable that *wide* was actually the full form of *wi-*, and that the diverging occurrence is a mistake, but further evidence is required. The Meroitic /d/ in intervocalic position was close to /r/,[26] as in *Medewi* transcribed as *Merw.t* by the Egyptians and "Meroe" by the Greeks. To sum up, until further information is available, "brother" is in Meroitic *wi-* and "sibling" is *wide*. In Proto-Nubian "brother" was *wer-i. Once again, the correspondence is striking. The borrowing of vocabulary is excluded, in this case, since all branches of Nubian are involved, including those that have never been in contact with Meroitic.

Comparative linguists, as a rule, consider that the most conclusive evidence for establishing genetic links between languages can be obtained from morphological comparison. The best example that is commonly given in the relevant literature is the set of Indo-European case suffixes (nominative *-s, accusative *-n, etc.), which was extant in most of the ancient languages of this family, such as Greek, or Sanskrit. In one of his latest articles on this topic, Hintze went so far as to assume that the linguistic affiliation of Meroitic with Eastern Sudanic languages could not be proven if not from morphological data (Hintze 1989). However, what is possible for languages having a "heavy" morphological system, such as the Indo-European languages, is nearly impossible for languages with a "light" morphology such as Northern East Sudanic languages. For instance, declension is a feature which exists in this family, but nominative is marked with a zero-ending, *g- is the common accusative/dative marker but is followed by a varying vowel,[27] genitive is frequently indicated only by word order,[28] etc. As for verbal morphology, so little is known of the Meroitic system that comparison with other languages is out of our reach for the time being.

When it comes to languages with light morphology, conclusive evidence for linguistic relation can, however, be obtained from vocabulary, but vague resemblances cannot be sufficient. Phonetic similarities between words have to be numerous enough to dismiss any chance resemblance. One word, provided of course that borrowing from one language into another is excluded, can even suffice. The best example is the word for "widow" in Indo-European languages: Sanskrit *vidhavā*, Old Prussian *widdewu*, Latin *vidua*, and of course, English *widow* (Meillet 1925, 36-37; Nichols 1996, 50). According to Nichols' calculation, the probability for two languages to have for this word the letters *w, y, dh* and *w* in the same order are less than one in 100,000.

Now let us go back to Meroitic and make the same statistical calculation. The words for "sister" and "brother" are not independent terms, but constitute a semantic pair or "closed set" in the jargon of statistics, exactly like two successive throws of dice. What is the chance for two different languages to have for this pair of words close forms such as those I have just established for Meroitic and Proto-Nubian? [29] To that end, I am using the method of the comparative linguist Johanna Nichols in her aforementioned article.

If we assume that the Meroitic word for "brother" is merely *wi-* (this is the "low hypothesis"), the chance for "brother" and "sister" to be so close in two languages that are chosen at random is 1 in 400,000.[30] If we assume that

[24 (cont.)] 302-304 (geminate consonants written as single or haplography).

[25] An offering-table from Karanog (REM 267), dedicated to two people who were sisters of the same official.

[26] More precisely, it was a retroflex consonant, *i.e.* pronounced with the tip of the tongue curved against the palate: cf. Rilly 2007a, 368-369. The assumption that this particular articulation of /d/ was restricted to intervocalic position is adapted (with modifications) from Rowan 2006b, 67 and can explain most of the problems encountered in my former interpretation of this phoneme.

[27] In Meroitic, the accusative/dative marker is *-ẖ*, pronounced /ɣa/, in which the velar consonant is a regular development of an earlier /g/ (Rilly 2007a, 8-9). It occurs mainly in former pronouns ("to him", "to them") which were later integrated as "dative suffixes" in verbal forms (Rilly 2007a, 553-554).

[28] There are two genitives in Meroitic, an indirect genitive (possessee + possessor + suffix *-se*) and a direct genitive used for kinship terms, which is marked only by the word order (possessor + possessee). The former probably resulted from a later development (see Rilly 2007a, 518-527).

[29] It must be re-emphasised that the Meroitic and Proto-Nubian words for "sister" and "brother" cannot be borrowed from one language into the other, since the Proto-Nubian terms can be found in Nubian languages such as Birgid, which has never been in contact with the Nile Valley (see Rilly 2008). Loanwords from Medieval Nile Nubian languages have recently been evidenced in some languages from Darfur, including a local Nubian language, Midob (Rilly 2006). One of these loanwords, Midob *pàssàr* "sun", "sundisk", was borrowed from Old Nubian ⲙⲁⲥⲱⲗⲁ, which was borrowed from Meroitic *ms-l* (= /masala/) "the Sun". However, Old Nubian had already lost the original Proto-Nubian words for "sister" and "brother" at the time it became influential on Darfur languages (see n. 15 and 21 above).

[30] There are in Meroitic at least 13 consonants (assuming that *y* is a dummy sign and *p* is /b/, see Rilly 2007a, 292-295 and 363-365), divided into four orders (bilabials, coronals, velars and labiovelars) and five vowels (probably six in reality, but let us take a low hypothesis), divided into three positions (front, central and back). As Proto-Nubian (hereafter PN) had 14 consonants and five vowels, the calculation will be based on the smallest set, namely 13 consonants and five vowels. In these two words, /w/ in "brother", /k/ and /d/ in "sisters" are identical in both languages (one chance in 13 for each of them); Meroitic /t/ in "sister" and /d/ in PN belong to the same order (one chance in four); the second vowel in "sister", /i/, is identical in both languages (one chance in five); in "brother", the radical vowel /i/ in Meroitic and /e/ in PN share the same front position (one chance in three). Moreover, the Meroitic and PN words for "sister" comprise similarly three consonants (one chance in three). The final result is, therefore, one chance in (13 x 13 x 13 x 4 x 5 x 3 x 3), thus one chance in 395,460. Yet, the chance for "sister" to be a compound word in which the first element is consonant + vowel +

the Meroitic word for "brother" is *wide* (this is the high hypothesis), the chance jumps up to 1 in 3,200,000.[31] The level of conclusive statistical significance is fixed by Nichols, who is probably the most demanding specialist in the field, to 1 in 100,000.[32]

In conclusion, the similarities between Nubian and Meroitic for this pair of words are more than enough to demonstrate the genetic relation of the two languages. Other examples such as these will be presented in my forthcoming book. The linguistic position of Meroitic can, therefore, be considered as settled.

Impact of this discovery on the translation of the texts

Nonetheless, there is still hard work to be done, first on the extant languages of the NES-family, for which no satisfactory fieldwork has ever been conducted, second on the reconstruction of the Proto-NES language, the common ancestor of the family, and finally on the application of comparative procedures for the translation of the Meroitic words. Although all these tasks are still in progress, I will conclude with a concrete example of the use of the comparative method for the translation of Meroitic texts.

The funerary stela of the Viceroy Abratoye (Plate 2), who ruled Lower Nubia on behalf of the king of Meroe around AD 270, was discovered by Jean Leclant in 1961 but not published until recently (Carrier 2001). In line 16 of this text the following passage appears,[33] which I have underwritten with the translations established by my predecessors:

br	*lḫ*	*41*	*ked*	*kdi*	*anese*
man	big	41	?	woman	?
m-	*25*	*kelw*	*aroḫe*	*-bḫ*	
?	25	also	?	them	

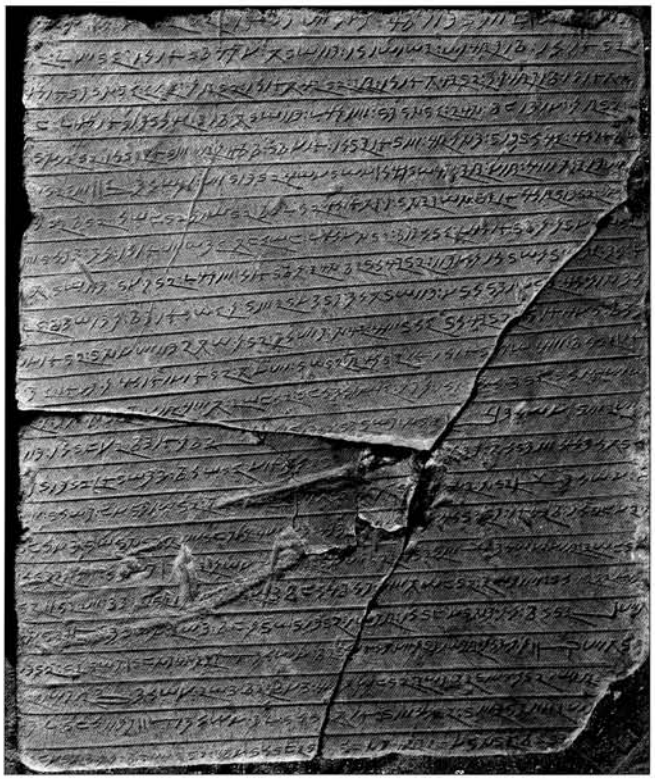


Plate 2. REM 1333, funerary stela of the Viceroy of Nubia Abratoye (courtesy of Prof. Leclant).

As can be seen, many elements are known, starting with the numerals. However, the passage as a whole does not make sense. The "41 big men" are not "grown-up people", as suggested by Inge Hofmann (Hofmann 1981, 298, 328), but "great men", i.e "chiefs". Enemy chiefs, in Napatan texts written in Egyptian, are termed as *wr* "big, great", which is the common Egyptian word to designate foreign kings. The element *ked-* is actually a verb. It frequently occurs in royal chronicles where it is, as a rule, preceded by the word *abr* "man" plus a numeral, as is the case here. In accordance with this context, Griffith suggested it meant "to slaughter", assuming that such passages included accounts of military campaigns, during which male enemies were killed (Griffith 1917, 167, 173). More recently, Inge Hofmann objected to the translation of this verb, and proposed rather "to appoint (to a position)" (Hofmann 1981, 297-298). However, her arguments were based on syntactic and lexical misinterpretations.[34] Comparison with Proto-Nubian

[30 (cont.)] consonant + vowel and the second comprises only one consonant can hardly be estimated and was, therefore, not taken into account in this calculation. This chance is, however, so small that it could probably suffice by itself to prove the genetic relation between Meroitic and Proto-Nubian.

[31] The calculation is the same as in n. 30, but a further similarity is added for "brother" between /d/ in Meroitic and /r/ in PN (both are coronal consonants: one chance in four). Furthermore, both Meroitic and PN words for "brother" comprise two consonants (one chance in two). The final result is therefore one chance in 395,460 x 4 x 2, thus one chance in 3,163,680.

[32] "I will assume that a probability of occurrence of one in 100,000 or less is individual-identifying [*i.e.* conclusive for establishing genetic relation between languages] at a statistically significant level, and a probability of one in 10,000 is at least interesting and borderline useful" (Nichols 1996, 49).

[33] The three signs [*m dḫ*] are erased in the middle of the passage. They were restored by comparison with a very similar sentence in line 21. The restoration is supported by the faint traces of the erased signs in line 16.

[34] Hofmann assumed that *aroḫe* (see our analysis of the text, *in fine*) was a title and not a verb, in spite of cogent evidence for the latter category. Moreover, basing on a similar passage from Amanirenas and Akinidad's stela [REM 1003/11-12 : *abr-se-l: ye-ked: kdi-se-l: ar-se-li: tkk: emoqe: qebese-wi: yerki:* "I killed each man, I took captives each woman and each youngster, I seized their property (?)"], Hofmann considered that the possessive *qebese* "their" referred to the prince and the Candace as possessors of the men, women, etc. If so, it seemed a nonsense for Meroitic rulers to "kill" their own slaves. Actually, *qebese* is attached only to *emoqe* (property, cattle?) and refers to the enemies,

*ŋod- [35] "cut in pieces" and Nara *kàd-* "slaughter" proves Griffith right. The element *m-* which is attached to *dḫe* is curious, because prefixes are very rare in the NES-languages – whereas suffixes are overwhelmingly frequent. However, one of the rare prefixes that can be found in these languages is the Proto-NES negative particle *m(a)-. For instance, in Proto-Nubian, *m-oon- is "hate", whereas *oon- is "love"; in Proto-Taman, *ma-ange is "few", whereas *ange is "full". The Meroitic compound *m-dḫe*, which can only be an adjective because it is inserted between the noun *kdi* "woman" and the numeral "35" means, therefore, "having not given birth",[36] in other words a "virgin". The noun *anese*, which can be read /ansə/, /unsə/ or /onsə/ (the initial *a-* had several vocalic values),[37] can be compared with Proto-Nubian *an-ti or *on-ti "donkey".[38] The Proto-Nubian nominal suffix *-ti corresponds to Meroitic *-te* or *-se*, as we have seen in *kdite* or *kdise* "sister" (see also n. 14). Finally, the last compound *aroḫe-bḫ* is a verbal form.[39] The stem *aroḫe* is a derivative of the simple verb *are-*, which means "take, receive" (Rilly 2003) and which can be compared with Proto-Nubian *aar- "take, seize".[40]

It is now possible to suggest a global rendering of the passage since all its elements can be translated:

br	*lḫ*	*41*	*ked*	*kdi*	*m-*	*dḫe*
man	big	41	slaughter	woman	not	give birth
35	*anese*	*25*	*kelw*	*aroḫe*	*-bḫ*	
35	donkey	25	also	seize	them	

[34 (cont.)] so that Hofmann's objection is unfounded. Parallel passages can be found in the annals in Egyptian of the late Napatan rulers Harsiotef and Nastasen, in which the enemies are killed and **their** women and cattle seized (FHN II, 449, 451, 486, 488-491).

[35] /ŋ/ is English *ng* in "king".

[36] The same translation, without its comparative aspects, was already suggested by Millet in his study of this sentence among other similar passages (Millet 1996, 603, 604).

[37] For instance, Meroitic *Asori* "Osiris", from Egyptian *Wsjr*, was pronounced /usuri/ or /osori/, *apote* "envoy", from Egyptian *wpwtj*, was pronounced /uputə/ or /upute/. It is, however, unclear if the vowel /o/ existed in Meroitic and, in that case, if scribes used the same sign(s) as for /u/. See Rilly 2007a, 286-292 and 402-406.

[38] Cf. Proto-Kordofan Nubian *ɔndu "donkey" (Rottland-Jakobi 1991) and Dongolawi *hanu* (with non-etymological *h-*, cf. *hooŋgi* « bray »). The first reconstruction *an-ti accounts better for the Dongolawi word. The second, *on-ti > *ondi, is the same as the word for "male". If the latter form is the correct one, it probably designated the male donkey and became the common noun for "male", preserved as *ondi* in all Nubian languages. For a similar semantic extension, cf. English "cock" used not only for the rooster, but also for all male birds, or "bull" for the males of many large mammals.

[39] *-bḫ* or *-bḫe* is an accusative/dative plural marker, integrated in the verbal form: "them", "to them" (see above n. 27). It is rarely used for accusative. Here, the scribe obviously wanted to emphasise that the object of the verb was not only the closest noun phrase ("25 donkeys"), but also the previous one ("35 maidens"), although he already used the coordination particle *kelw* "also".

[40] In other texts such as the amuletic oracular decrees, it seems that the meaning of *aroḫe* can extend to "protect" (Rilly 2000, 108 and n. 15).

As Griffith already presumed, this kind of text is indeed an account of military campaigns. Comparison with the earlier parallels in Egyptian tends to suggest that the verbs are in the past tense and in the 1st person singular, resulting in the following translation:

"I slaughtered 41 chiefs, I seized 35 maidens and also 25 donkeys."

Therefore, the Stela of the Viceroy Abratoye includes accounts of his military campaigns, especially against the Nubians from Western Sudan who were planning to invade the Nile valley, as they eventually did less than one century later.

If progress towards the decipherment of the Meroitic language continues at the same pace, we can expect many texts which are obscure today to be translated in the next few years. Let us just hope it will not require another century.

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