

Explanation:

The smooth hyperbola: the really existing absolute.

The twisted hyperbola: the absolute really changed.

The thick circle: the real word.

The dotted circle: the illusory world.

The thick arrow: *relatio realis*.

The thin arrow: *relatio rationis*.

ROMAN STOPA

BUSHMAN SUBSTRATUM OR BUSHMAN ORIGIN IN HAUSA

The influence of substratum is to be assumed where the phonetic systems of two languages have some common traits, respectively some similarities, e.g. similar tendencies of pronunciation. The source of these tendencies consists in the mixing of different racial or ethnic types, the pronouncing trends of the original inhabitants being inherited by the mixed population. Grammar of both ethnic groups remains, in the main, different, however, the accepting of the phonetic system of the substratum by the conquerors can be accompanied — when the substratum population overcomes numerically the conquerors — by accepting most lexical material from the language of the subdued tribe. The Hottentot language offers a good example of such a mixture. The basic phonological and lexical features here are Bushman, while morphology and syntax are for the most part Hamitic.

When we want to investigate, whether there is any Bushman substratum in Hausa, respectively how far its influence goes, we have first of all to answer two questions:

1) Does the history of racial background of the Hausa people allow us to assume the existence of Bushman substratum in its language?

2) What is the structure of those languages like in which the Bushman substratum is undeniable?

The first question will be answered by quoting some passage from the work *Völkerkunde von Afrika* by Baumann, Thurnwald, Westermann, Essen 1941. Baumann writes there on p. 9:

„Die ältesten afrikanischen Menschenfunde sind ein... im Nyarasagraben (Ostafrika)... entdeckter Schädel... und der Homo Rhodesiensis von Broken Hill... Wir haben hier anscheinend eine

frühe Vorstufe des Neandertalers vor uns. Schlecht datierbar ist auch der Boskop-Mensch von Transvaal, bei dem es sich um den Vertreter einer heute nicht mehr existierenden Rasse handelt, die aber vor den Buschmännern Südafrika bewohnt haben muss und teilweise in ihnen aufging. ... Die von Leakey... bearbeitete Kiesel vom Oldoway — „Prächellen“ — Typus und ein menschliches Mandibula-Fragment werden von dem Entdecker in das untere Diluvium verlegt... Derselbe Forscher fand ... in Elmenteita (Kenyakolonie) mit Jung-Aurignacien zusammen Skelettreste eines langschädelligen, grosshirnigen Menschen von einem Neger — „Hamiten“ — Mischtypus („Protohamiten“, „Ur-Hamitoniloten“?).

From this brief review we see that the eastern part of Africa was, already in the remotest prehistory, the domain of Bushmen as well as of Hamites. The Negro element that does not occur in Paleolithicum either in East or in South Africa, appears only at the end of the Upper Paleolithic on the territory of Central and West Africa, e.g. in the excavation near Asselar (400 km to the North East from Timbuktu) or in the find at Fittri (South East from Lake Tchad).

These considerations become still more important and actual if we take into account not only the question of the substratum, but that of the relationship of African peoples and languages, and even that of their origin. It will appear then, that the recent discoveries of archeology and anthropology — here again Leakey's name seems to be most remarkable — point to Africa as to the cradle of mankind, to the cradle of culture, and what follows immediately, to the cradle of human speech.

Africa — says P. Murdock in his *Africa, Its Peoples and Their Culture History* — was probably the cradle of mankind. For several decades hardly a year has passed without some exciting new evidence of early man or of manlike apes in East or South Africa to strengthen this conclusion.

In this way we feel obliged to return once more to the above mentioned work. Thus, we find there the following suppositions as to the origin of Bushmen (p. 9): „Auch die Buschmänner hatten, wie wir gesehen haben, ihre Vorgänger. Ihre (khoisanische) Rassenart ist aus einer Mischung negrider, europider(?) und

offenbar mongoloider Rassenelemente zu verstehen; dazu treten Bestandteile der ... unklaren Altrassen Südafrikas... Die immer wieder in den Steppenländern Ostafrikas und des Sudan auftauchenden „pseudomongolischen“ Züge... müssen wir wohl als einen Rückstand der protobuschmännischen Steinzeitrassen ansprechen. Wenn wir über Afrika hinaus nach Verwandten sehen, so denken wir mit Menghin an die allerdings ältere Grimaldirasse, die durchaus nicht rein negrid, sondern eher buschmannähnlich gewesen sein dürfte (Boule), und vielleicht in den Kleinwüchsigen des nordafrikanischen Capsien, des portugiesischen Spättardenoisien (dolichocephal, negrid!), ja sogar im mitteleuropäischen Neolithikum weiterlebte (Egolzwil usw.).

With Proto-Bushmen Hottentots are to be connected. They came to their settlements of nowadays from the North-East, probably from the region of Great Lakes. In their anthropological type as well as in culture and language they brought some Hamitic elements that are to some degree similar to those of Hausa.

All that has been said above does not give immediate evidence for connecting Hausa culture and language with those of Bushmen. However, when we realize that both the Hottentots and the Hausa have Hamitic components in their racial, cultural and linguistic structure, the supposition of their mutual relationship becomes nearer. They differ only as to the second element of the composition, this one being Bushmenoid with the Hottentots and Nigritic with the Hausa.

The Hausa of nowadays have their seats scattered all over West Africa, being concentrated mostly to the West of Lake Tchad. However, ethnology as well as their national tradition maintain that they had come to their present habitation from the East. Culturally they belong to the province of Central Sudan, where Nigritic tribes dominate with some admixture of Ethiopian race that has strong connexions with the Hamites. Thus, Lukas is fully justified, when he includes Hausa into the linguistic group, called tchado-hamitic. One of the basic characteristics of Hamitic is the grammatical gender. Hence Prehistory as well as racial components, and even some linguistic features point to East Africa as to the cradle of the Hausa. Now according to the opinion of the ethnologists Bushmen have come to Kalahari, Namaland

and Namib from East Africa — they had left even traces of their former habitation there in the form of languages with clicks (Hadzapi, Sandawe) and those with ejectives (Amharic, Bari), both (clicks and ejectives) belonging to the main characteristics of Bushman. In this way the Bushman substratum in Hausa becomes quite a reasonable hypothesis.

2) The second question that is preliminary for our investigation, should be answered in this way:

One of the basic components of the structure of Bushman are clicks. So, if in the phonological system of a language clicks are found, then the Bushman substratum in this language is undubitable. Southern Bushman has 5 kinds of clicks, viz. the 4 typical: dental /, alveolar ≠, palatal !, lateral //, and 1 proper only to the Southern group of Bushman, viz. labial ○. Northern Bushman has also 5 clicks, i.e. the 4 typical ones and 1 proper to the Northern group (exactly to one part of it, namely !Kū), viz. retroflex ///. Central Bushman and Hottentot have only the 4 typical ones. Zulu and Kafir have 3 clicks (the typical ones without the alveolar), Pedi has only one (the prepalatal !) and Swazi also one (the dental /).

As in Hausa there are no clicks, so the only way to detect Bushman substratum in the language itself is to investigate which are beside clicks the other basic Bushman features that occur in the languages where Bushman substratum is beyond any doubt. These typically Bushman features are 7; three of them belong to the characteristics of the consonantal system, and four characterize the Bushman vowels.

The consonantal features are:

- 1) Click blocks, e.g. /k, ≠k, !k, //k
- 2) Ejective consonants, e.g. k', kχ', t', ts'
- 3) Labialization of the velar click blocks as well as of the velar expiratory consonants, e.g. !k'wa, or kwa.

The vocalic Bushman system is characterized by the existence of phonematically

- 1) pharyngalized vowels,
- 2) nasalized vowels,
- 3) vowels with semantic tone,
- 4) vowels with phonematic length (duration).

As to the phonematic value of these features we may quote some examples taken from the language /χam-ga-lk'e (S₁):

- Ad 1) !kwā: !kwā: „to be angry“ (cp. !kwā: „to be angry“)
 2) !kwā: !kwā: „to travel“, (cp. N₃ !kwa!kwa „to carry“)
 3) !kwā „leg, root“: !kwa „bone“ (cp. !kwa: „water, rain“)
 4) !kwa: !kwa „to break“ (cp. !kwa „bone“, !kwā „pot, drum“)

Another example:

- /ki „to get, take, have, possess, make, cause to do“
 Ad 2) /kī: „to make a thumping noise“
 3) /kī, /kī: „to separate, divide“
 4) /kī: „to kill, hurt“

Comparison of the phonetic systems of /Auni,
 /Auni

5 Clicks, Ejectives, Labialization					
Place of articulation	Bilabial	Dental- veolar	Prepa- latal	Velar	Glottal
Way of articulation Expiratory	(p), b	t(d)	c(ɟ)	k(g), kw	
Occlu- Ejective					'
sive Injjective					
Nasal	m	n	(ɳ)	(v)	
Fricative		s(z)		χ	h(h)
Rolled		ʃ			
Lateral					
Expiratory					
Affricative					
Ejective		ts'		kχ'	
Expiratory	w	j			
Semi-vowel					
Injjective					

Korana,

Korana

4 Clicks, Ejectives, Labialization					
Place of articulation	Bilabial	Dental-veolar	Prepalatal	Velar	Glottal
Way of articulation Expiratory	(p)b	t, d		k, g, w	
Occlu- Ejective					'
sive Injective					
Nasal	m	n			
Fricative		s			h
Rolled		r			
Lateral					
Expiratory Affricative		ts'		kχ'	
Ejective					
Expiratory Semi-vowel					
Injective					

Let us see now, which of the above seven features belong to the characteristics of the phonetic system of Hausa. In order to facilitate the comparison we have prepared the comparative table of the phonetic systems of /Auni (S₄), of the Hottentot dialect Korana, and of Hausa. We included Korana as an intermediary developmental stage between Bushman and Hausa.

This assemblage shows that out of 7 important phonetic features, which are proper to the Bushman language /Auni (S₄), 5 are also characteristic for the Korana (Hottentot) phonetic system, and 4 of them build the basic peculiarities of the Hausa phonetic system too. It results therefrom that in Hausa we have to do with Bushman substratum. This conclusion did not astonish

and Hausa (Vowels & Consonants)

Hausa

No Clicks; Ejectives, Labialization					
Place of articulation	Bilabial	Dental-veolar	Prepalatal	Velar	Glottal
Way of articulation Expiratory	b	t, d		k, kw, g	
Occlu- Ejective				k', k'w	'
sive Injective	'b	'd			
Nasal	m	n			
Fricative	f	s, z	r[ʒ], sh[ʃ]	h[χ]	
Rolled		r			
Lateral		l			
Expiratory Affricative		ts'	ch[tʃ], j[dʒ]		
Ejective					
Expiratory Semi-vowel	w		y[j]		
Injective			y'[j']		

Phonetic convergencies between /Auni, Korana & Hausa

Consonants				Vowels			
	Clicks	Ejectives	Labialized	Pressed	Nasalized	Sem. Tone	Phonemic Duration
/Auni	5 kinds	$\left\{ \begin{matrix} k', k\chi' \\ t', ts' \end{matrix} \right\} (4)$	k'w, kw	+	+	+	+
Korana	4 kinds	kχ', ts' (2)	ku [kw]	—	+	+	+
Hausa		k', ts' (2)	k'w, kw	—	—	+	—

us. During our previous studies we met so many similarities between the grammatical structures of Hausa and that of Bushman and Hottentot that the above named result of our investigation encouraged us to undertake the further study, that of some similar morphological, syntactic and formative elements.

Here we may give in short the summary of this research:

1. Both languages Bushman and Hausa apply reduplication to a great extent in building aspects of verbs as well as in building plural of noun,

e.g. S_1 *ha se tā:ē !kwain!kwain ha !noa !noa*
 „he will walk strengthening his feet“;

Hau. *ya za(yi) tafiya yana k'arfafa k'afafuwan — sa*
 „he will(go) walk he is strengthening feet — his“²;

another example: $S_1, C_2 \neq an$ „to know“ : $\neq anna$ „to know well“;

Hau. *sani* „to know“ : *sansani* „to know well (exactly)“.

2. Bound morphemes of verbs and nouns in Hausa derive from similar morphemes or from free morphemes (words) in Bushman and Hottentot (See tables I., II., III).

3. Personal and demonstrative pronouns in Hausa derive from Hottentot-Bushman pronouns or words. (See table IV).

4. There are also syntactic convergencies;

a) the same word order in the syntactic group Noun + Adjective, e.g. S_1 *//go //go + !keri* „whirlwind“ + „great“, the same in Hausa *gugu-wa + babba* or *guguwa(da) gir — ma*; in the second version we see at the same time the etymological connexion between *gugu — wa* < *//go //go —* and *gir — ma* < *!keri (!geri)*, and if we add that Hau. *da* derives from */ka* „to be with, to possess“, then we shall see in this example not only the syntactical but also the lexical (etymological) relationship of Hausa and Bushman;

b) the same fundamental word order in sentences Subject + Predicate + Object, e.g. S_1 *wa /kam, !kawi a: !kwai*: „I take egg which (is) one“; the same sentence in Hausa shows again the syntactic and etymologic relationship of Bushman and Hausa, viz. *na kama k'oi 'daya* „I take egg one“;

c) if there is sometimes an inversion (Object before Predicate) in Hausa, the same occurs in Hottentot, and it is to be assumed in Bushman too, however, as we have no example at hand, we quote

Nama-Hottentot). N. $\neq k\chiari \chiuroe ta u-h\ddot{a}$ „small thing I (am) holding“ or N. *sore-gue-ts* $\neq a tama h\ddot{a}$? „sun — sheep — you slaughter not will?“ Similar examples (inversion) in Hausa: *sunan-sa ba-n ji ba* „name — his not — I hear not“ i.e. „I did not hear his name“ or *sanduki nawa sun 'dauko* „boxes how many they brought?“, i.e. „how many boxes did they bring?“.

5. Almost all the Hausa words beginning with ejective phoneme *k'* derive from Bushman words beginning with a Click-Block (mostly *//kχ'* or *//k'*). See Appendix I. There is no space enough to give the list of the examples of correspondences for all the Hausa phonemes. Instead of this we give the list of about 250 words (taken from M. Cohen, *Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique*) with their Bushman counterparts. See Appendix IV. The final conclusion is: The Hausa language (with the whole group Hamito-Semitic) is genetically related to Hottentot-Bushman, which was to some extent (mainly Southern and Central Bushman, for Hausa especially S_1 , S_2 and S_4) the source of its origin.

Table I

Form building morphemes in Hausa

a) Verbal Aspects and Tenses

Hausa	H.-B.
1. <i>su-kan</i> — Habitualis <i>su kan-tafi</i> „they used to go“	S_1 <i>kan</i> v. will, used as v. part. denoting continuous action, a state or stressed action: S_1 <i>hiy /ne kan h\ddot{a}/na</i> „they used to be eating there“ N. <i>h\ddot{a}</i> durativum, S_5 <i>gume kan /a</i> „the oxen would come“
2. <i>su-na</i> — Progressivus I <i>mi-na-gaya muku</i> „I say to you“	S_5 <i>na</i> „to be (this, here?)“, S_2 <i>/ne</i> v. part., S_2 <i>//\ddot{o}i /ne</i> „the sun comes“, S_5 <i>na /ii, na ga t'um</i> „(it) is sharp, is blunt“ Kor. <i>m\ddot{u}-ta na</i> „I (f.) see“, lit. see -I here, cp. N. <i>ne</i> : „this“, <i>neba</i> „here“, C_2 <i>/ne</i> „this“

Table I

3. <i>su-ke</i> — Progressivus II. (<i>ke</i> „look here“) <i>na-ke zuwa</i> „I am coming“, <i>inā ki ke</i> „where are you (f.)?“ (<i>S₄ -ke</i> 'duration')	<i>S₁ ke:</i> , <i>ke</i> „to be there, be that, here, there“, <i>S₂ birike: o An-</i> <i>dres bire kie ke:</i> „goats are there, old Andries goats are there“, <i>N. gje</i> , <i>Kor. tje</i> , <i>N.</i> <i>khoib gje a gei</i> „the man is big“, <i>N. khoib gye ra ha:</i> „the man (really) comes“, <i>/Auni</i> <i>ke sa Johannesburg ≠ konaa</i> „the /Auni have gone (to) Johannesburg to beg“
4. <i>su-n</i> — Aorist I <i>sun chi</i> „they have eaten“ (<i>su na da baka</i> „they are with a bow“ — „they have a bow“)	<i>C₂ /na v</i> part. showing comple- ted action, possibly a form of <i>/na</i> „to be with“, <i>S₁ /na:</i> „to see, find, perceive, get“, often past tense; <i>C₂ tir /na ≠ ũ</i> „I have eaten“, <i>S_{2a} na /ue</i> <i>/na /khou</i> „I shoot with a bow“
5. <i>su-ka</i> — Aorist II. <i>ubanka muka gani</i> „father your we have seen“ (<i>sārikima yā kīra samāri</i>) <i>suka</i> <i>han rak'uma</i> „... and they mounted the camels“	<i>C₁ ka v.</i> part. denoting past tense, <i>C₁ tji(kwa) //gam ka</i> <i>tji (kwa) //gam</i> „I (place, somewhere) love then I (so- mewhere) loved“ <i>S_{2a} ka, kan</i> „to go on“, <i>S₂ ka</i> „then“ derived from „go on“
6. <i>su-a</i> < <i>su-za</i> , <i>suaa</i> — Futurum <i>saa tafi</i> „they will go“	<i>S₁ se</i> indicates the future or subjunctive, <i>S₁ ha se !hau</i> <i>ha tā:ē u</i> „he will afterwards, he walk away“
7. <i>za-su</i> — Ingressivus <i>shina tammaha za shi shan</i> <i>taba</i> „he was believing (that) he would smoke tobacco“ <i>cp. za</i> „to go“	<i>S₁ sa:</i> , <i>s'a:</i> , <i>sa</i> „to come, be- come“, also found as <i>se</i> , <i>si</i> . It is sometimes used as v. part. „shall, will“. <i>S₃ n sa !xe</i> „I come to cook, I will cook“, <i>S₂ //oī /ne sa, ha //ka v</i> „the sun (lets) come, it burns-me“

Table II

b) Suffixes of the Verb

-i the movement (from here) 'there' <i>yā kái kāya</i> „he carried the load“	<i>S₁ i</i> 'to go, go away', <i>S_{2c} i</i> here! <i>S_{2c} a</i> „there“, <i>S_{1, 2, 4} /ke, /kē</i> „to fetch, have, take catch...“, <i>S₁ /kā'i, /kē'i</i> 'to get, catch, follow spoor', <i>S₁ hī sin...</i> <i>/kēi hī !nwa</i> 'they will... fol- low their footprints'
-o the movement (from there) 'here' <i>yā ka-o ruwa</i> „he fetched water“	<i>S_{2c} o:</i> , <i>o</i> 'to fetch, get, find' <i>S_{2c} /hav o o: fwa</i> „the children fetch water“ (<i>o</i> 'to be')
-u Passive-Intransitive <i>dōki yā bugu</i> „the horse was beaten“	<i>N₂ !gāi !kxari ho-ga !kú</i> „the tree shade was found“, lit. tree shade found-stayed man“
-a α) neutral (tr., without Obj.) <i>yā nēma</i> 'he sought' β) applicative <i>yā saura</i> 'he tied' (<i>kāya a bāyan dōki</i> 'the load on the back of a horse')	α) <i>S_{1,2} N₁ a</i> abbreviation of <i>ha</i> „him, her, it“, <i>S₂ hn //xai-a</i> „they sift-it“ β) <i>S₁ ā:</i> , <i>ā</i> contraction of pron. and prep. often referring back to a rel. „some“, <i>han /ne //xā:</i> , <i>han /kau: a tī !gwarra: (au ka)</i> <i>!kau</i> 'he again cutting along, he puts the knife on his neck'
-e α) Intransitive. <i>tūlu yā fash-e</i> „the pot was broken (-it)“ β) transitive-limiting <i>ruḥ-e k'ofa</i> „shut-it the door“ γ) trans. with Pron. <i>nā bug-ē</i> <i>shi</i> „I beat (-it) him“	α) β) <i>S_{2a} e</i> , <i>S₁ e v.</i> part. used in narrative, may sometimes be translated by „it, he“, β) <i>S_{1b} e !gam-te, e se //kare</i> , he hits-it, he comes to skin, <i>e sa !oe ○pwe:</i> he comes to cut up meat γ) <i>S₁ e:</i> rel. & dem. „who, which, that, this“ <i>han ka si se</i> he desired (that) we should <i>tā:a //u: e: a</i> feel fatigue this here

Table II

-wa — Infinitive (or Participle) <i>yā na zaunawa</i> „he is sitting“ (Hau. <i>zau</i> < S ₁ <i>!hau</i> „to sit“)	Maingard calls the suffixes -wa, -ja emphatic, their function seems to be that of a participle or of an infinitive, e. g. S _{2a} <i>χu</i> : and <i>χu:wa</i> „stopping“, S ₁ <i>!hau</i> :, <i>!hauwa</i> „to sit“; <i>/kagən /ke !hauwa ti e</i> : „women (are) wont to sit down there“
-ya — Infinitive <i>yā na tafiya</i> „he is going“	cp. above, what has been said of -wa; S ₁ <i>ta:ē</i> , <i>ta:ī</i> „to walk, go, away“, <i>!kauruxu kan /ku ta:ē ja</i> „!kauruxu used to go“

Table III

Plural-building suffixes in Hausa

Hausa

Plain reduplication	<i>'iri</i> „kind, sort, nation“ pl. <i>'iri'iri</i>
Partial reduplication	<i>k'ofa</i> f. „door“, pl. <i>k'ofofi</i> <i>yats'a</i> m. f. „finger“, pl. <i>yats'ots'i</i> <i>kāya</i> m. „load“, pl. <i>kāyayyaki</i>
Plural in -wa -u	<i>itāche</i> „tree“, pl. <i>itātuwa</i> <i>jakāda</i> m. „messenger“, pl. <i>ja-kādū</i> <i>sā</i> m. „ox“, pl. <i>shānu</i>
Plural in -ki -i	<i>gona</i> f. „farm, meeting“, pl. <i>gōnaki</i> <i>kwāna</i> m. „day“, pl. <i>kwānaki</i> <i>bāwa</i> m. „slave“, pl. <i>bāyi</i>
Plural in -ai -ye -e	<i>'alkālī</i> „judge“, pl. <i>'alkālai</i> <i>uwa</i> f. „mother“, pl. <i>uwaye</i> <i>birni</i> m. „town“, pl. <i>birāne</i>

Table III

Hausa

Plural in -una -a	<i>sanda</i> m. „stick“, pl. <i>sanduna</i> <i>akushi</i> „dish of wood“, pl. <i>akusa</i> <i>uba</i> m. „father“, pl. <i>ubāne</i> <i>kāka</i> „grandfather“, pl. <i>kākanu</i> , -ni
Plural in -o-i	<i>jika</i> m. „grandchild“, pl. <i>jikoki</i> <i>dilā</i> m. „jackal“, pl. <i>dilōli</i>

Table III

Hottentote & Bushman

Hottentot (Nama, Korana)

Bushman (S₁, S₄, C₂)

N. <i> gū-b</i> „tooth“, pl. <i> gū- gū > gū-gu</i> , cp. N. <i>om-om-ese</i> „from house to house“; N. <i> gū-b</i> „father“, pl. <i> gū- gū > gū-gu</i> , cp. N. <i> gū</i> „to grow, be able to produce offspring“	S ₁ <i>/k'a</i> „hand“, pl. <i>/k'a /k'a</i> ; S ₁ <i>!kwe</i> „stone“, pl. <i>!kwe!kwe</i> ; S ₁ <i>/εm</i> „tip“, pl. <i>/ε-εm</i> ; !kàn „stone pipe“, pl. <i>!kan- !kàna</i>
	S ₁ <i> kwara</i> „mother animal“, pl. <i> kwa kwara</i> ; S ₁ <i>k'eni</i> „little bird“, pl. <i>k'e k'en</i> ,
<i> gū > gu > -gu</i>	S ₁ <i>bobo</i> „father“, pl. <i>bo:kən-gu</i> , -gu
N. <i>khoi-b</i> „man“, pl. <i>khoi-gu</i> , Kor. <i>khoeb</i> „man“, pl. <i>khoē-ku</i> , <i>khoē-kwa</i> ,	S ₁ <i>mama</i> „mother“, pl. <i>ma-magu</i> . S ₁ <i>koro</i> „jackal“, pl. <i>kərogu</i> , C ₂ <i>kweba</i> „man“, pl. <i>kwe kwa</i> ,
N. <i> nā- i</i> „there-to Kor. <i> nā- kχ'i</i> „there-to“,	S ₄ <i>/gwabā</i> „child“, pl. <i>/gweki</i> (<i>/gweti</i>), S ₄ <i>/kē</i> : „woman, female“, pl. <i>/ge:-ki</i> , S ₂ <i>ki</i> , <i>kí</i> „here, this, that“ -ki
	-ti(-te) -te(-ke)
N. <i>khoi-s</i> , „woman“, pl. <i>khoi-ti</i>	S ₂ <i> ke</i> :, <i> kē</i> „breasts, udders“ S _{2a} -ke, pl. e. g. <i>!kwisi</i> „bird“, pl. <i>!kwi</i> S ₁ Some plurals are formed with -de or -di, S ₆ <i> kā</i> , „horn“, pl. <i> kāte</i> ,
Kor. <i>khoē-s</i> „woman“, pl. <i>khoē-dē</i> , (-di)	

Table III

<i>Hottentot (Nama, Korana)</i>	<i>Bushman (S₁, S₄, C₂)</i>
-ni (-na) N. <i>χui</i> c. „thing“, pl. <i>χuna</i> N. <i>khoi-i</i> „person“, pl. <i>khoi-ni</i> (-na), Kor. <i>!gora-na</i> „the Korana“, <i>biri-na</i> „the Becwana“	-ni C ₂ <i>kwe</i> „a person“, pl. <i>kwene</i> C ₂ ≠ <i>ũ</i> „eye“, pl. ≠ <i>ũni</i> , S ₄ <i>/au-ri</i> „member of the tribe“, pl. <i>/Au-ni</i> , S ₅ <i>/!gwe</i> „ostrich“, pl. <i>/!gwa-ni</i> ,
-o -i Kor. <i>χiri-kwa-ni</i> „the Grigua“ (-a -i)	-o -i S ₄ <i>tu, thu, ≠ku:</i> „mouth“, ≠ <i>kui</i> „man“, pl. <i>tutos</i> < <i>tutosi</i> , (<i>tu-</i> <i>tus, tuke</i>) ‘men’

Personal Pronouns in Bushman

Table IV

S ₁₋₆	N ₁₋₃
S ₂ <i>v, n, ni, m, a</i> „I“; S ₂ <i>i</i> „to be“; S ₂ <i>v, na, -ke, -ki</i> „me“; S ₁ <i>i</i> „do“, emphasis	N ₂ <i>v, na, m, mi</i> „I“
S ₄ <i>/ka</i> „face“; S ₁ <i>a:ken</i> „thou“; S ₂ <i>a, ake</i> „thou“; S ₁ <i>au</i> (> <i>o</i>) „as, at“; N. -o	N ₃ <i>a, ahi</i> „thou“
S ₁ <i>/kai</i> „breast“, S ₆ <i>/gai</i> „woman, female“; S ₁ <i>/ai:ti</i> „woman, female, wife“; S ₂ <i>/gaiki, /gaiti,</i> <i>/ge:ki</i> „woman, female“	N ₂ <i>/ai</i> „mother“
S ₁ <i>ja</i> „him, her, it, that“, var. of <i>ha</i> ; S ₂ <i>ja</i> „it“; (Acc. only); S ₅ <i>ja</i> „to be“; S ₁ <i>ã, ï</i> „it“ (Acc. only).	N ₃ <i>ja</i> „it“ (Nom. & Acc.)
S ₄ <i>ta</i> „it“; S ₁ <i>/ka:ka</i> „women“; S ₂ <i>/ka:ke</i> „to suck“; S ₄ <i>/kana-si</i> „girl“; S ₁ <i>i-tau</i> „mother“;	N ₁ <i>tai, tae</i> „mother“; N ₂ <i>/ka + m</i> „to suck out“;
S ₁ <i>ha</i> „this, that“; S _{4b} <i>/ha</i> „what?“, S ₁ <i>/ha</i> „to come out, grow out“;	N _{1, 2, 3} <i>ha</i> , N ₃ <i>a</i> „he“;

Table IV

S ₁₋₆	N ₁₋₃
S ₁ <i>mu:mu</i> „to show, make see“; N ₂ <i>hm</i> „we“, N _{2b} <i>mu-i</i> „eye“; N ₂ <i>m, msa</i> „us“; N ₁ <i>mu</i> „I“ unusual form of <i>m, mi</i> ;	
S ₂ <i>ku</i> „you“; S ₂ <i>ku</i> „to be“;	N ₁ <i>!kü, kü</i> „person“;
S ₄ <i>si</i> „to be“; S ₂ <i>si, si</i> „this“;	N ₁ <i>sa</i> „they, their“ < <i>si sã</i> „they two“; N ₃ <i>/ha</i> „to gather“, N ₂ <i>sin</i> „they, their, them“; N ₁ <i>si</i> „they“ also used as pl. suf. to n. s. <i>sn</i> ;
S ₁ <i>ha, ha:, hã</i> „he, she, him, her, it“; (S ₂ <i>si, si</i> „this“); S ₁ <i>/ha</i> „to come out, grow out“;	N ₁ <i>sa</i> „they, their“;

Table IV

and Hausa

C _{1, 2} N.	Hausa
C ₁ <i>t/i, t/iira, t/a</i> ; S ₄ <i>/ka</i> „face“; C ₂ <i>ti, tira</i> , N. <i>ta, tita</i> < <i>/ki +</i> <i>/ka</i> „here + face“; S ₃ <i>/ki</i> „there, here, down, where?“;	<i>ni</i> „I“; <i>n + i</i> „here + is“; „this I“; <i>ni</i> „me“;
C _{1b} <i>kai:o</i> „head“ < S ₂ <i>/ka:ke</i> „to suck“; S ₂ <i>ke:, ke</i> „to be there, be that, here, there“; C ₁ <i>ka,</i> <i>ka:</i> „to eat, bite, gnaw“;	<i>kai</i> „thou“ m. cf. F.; <i>ka</i> „thee“ m.
C ₁ <i>kaa</i> „nice, pretty“?; C ₁ <i>kaa kē</i> „thou“ f.; <i>ki</i> „thee“ f.; „to suck“;	
C ₃ - <i>ja</i> ending, masc. gender;	<i>yā</i> „he“; <i>'i (yi)</i> „he“;
C ₂ <i>tā</i> „other, another“; C ₃ - <i>ta tā</i> „she“; <i>ta</i> „her“; <i>i-ta</i> „she“; „it“; C ₃ <i>i-ta</i> „it, they, them“;	
	<i>'a(n)</i> „he“ or „she“ (it);

Table IV

C ₁ , ₂ N.	Hausa
C ₁ <i>moo</i> „to see, appear, sight“; <i>mū</i> „we“; <i>mu</i> „us“; C ₂ <i>mu</i> „to see, look“;	
	<i>kū</i> „you“; <i>ku</i> „you“, Acc.;
	<i>sū</i> „they“; <i>su</i> „them“;
C ₃ <i>sa</i> „its, his, her“;	<i>shī</i> < <i>sa</i> + <i>i</i> „he“; <i>shi</i> „him“;

Appendix I

Ejective phonemes in Bushman, Hausa and Arabic (emphatic)

B.—H.	Hau.	Ar.
S ₁ <i>/kád:</i> „to resemble, be like“, S ₁ <i>/ke/ke, /kei/kei</i> „to resemble, be as if, be like, imitate“	<i>k'āk'a</i> „how, as if, be like“	<i>kam</i> „how many“
S ₃ <i>/kχ'abe</i> „rope“, cp. D. F. Bleek „Naron“, Burials S ₅ <i>/kχ'a</i> „grass“ + S ₁ <i>!gwi</i> „to wear, sling on, tie“ S ₁ <i>!gwirri</i> „turn up“	<i>k'abri, k'aburbura</i> „grave“	<i>qabr, qubur</i> „grave“
C ₁ <i>/ka/ kaba</i> , S ₁ <i>!kháu</i> „Agama“, C ₂ <i>/ka/ ka</i> „Agama“, N ₁ <i>kade</i> „small lizard“, N ₂ <i>ngoru</i> „gecko“ lizard	<i>k'adangare, k'a-dangaru</i> „lizard“	VA <i>hardun, harādin</i> „Agama stellio lizard“
S ₁ <i>/kχ'a</i> „hand, forefoot“ + S ₁ <i>!kha</i> „front“	<i>k'aša, k'afafu, k'afāfūwa</i> „foot, leg“	VA <i>qadam, aqdam</i> „foot“ Ar, <i>sāq, sāqāt</i> „leg“

B.-H.	Hau.	Ar.
S ₁ <i>!kχ'o, !k'o</i> „hole“, S ₆ <i>/ka</i> „horn“	<i>k'afo, k'a/ōni</i> „horn“	<i>bāqara</i> cow VA <i>qarn, qurān</i> „horn“
N ₂ <i>/karara</i> „to rattle“	<i>k'ara</i> „noise“	<i>qarqara</i> „to make a noise“ (<i>qarqada</i> to gnaw)
C ₂ <i>/kχ'arra</i> „to put up, build“ < <i>/kχ'a /kχ'a</i> , C ₂ <i>/kχ'a</i> „to grow fat“, N. <i>/kadī, /katsi</i> „also“, S ₂ <i>/kχ'ā:</i> „stomach, inside“	<i>k'āra</i> „complaint, exclamation, cry“	VA <i>qadīya</i> „to complain“
N. <i>/kàra</i> „strong“ + N. <i>!gi</i> „to stand hardship“ C ₂ <i>/kara</i> „raw, brutal“, S ₁ <i>!khai</i> „be above, over“ S ₄ <i>!kχ'ara</i> „to struggle“ S ₁ <i>/kχ'mi:</i> „strong“, N. <i>/karà</i> „to punish“	<i>k'arfi</i> „strength, force, power“	Ar <i>qādir</i> „powerful“ <i>qarisa</i> „rapid, severe“ VA <i>qawi</i> „strong“
S ₁ <i>/k'uri</i> , C ₂ <i>/kōri</i> , N ₁ <i>/kōre</i> „iron“	<i>k'arfe</i> „iron“	VA <i>hadīd</i> „iron“
N ₂ <i>kχ'ān, kχ'an'a</i> „to speak falsely, conceal a fact“	<i>k'arya, k'arairai</i> „a lie, telling lies“	VA <i>kidb (kizb)</i> „a lie, to tell a lie“
N ₂ <i>kχ'ari</i> „a food“ S ₁ <i>kχ'a:se</i> „to seek food“	<i>k'asa, k'asashe</i> „land, earth“, <i>k'ar</i> „earth (rustic)“	<i>qarāra</i> „earth, ground“
S ₄ <i>kχ'aa</i> „earth, ground“ N ₂ <i>kχ'a</i> „earth, ground“	<i>k'asa</i> „earth“	VA <i>asas, usus</i> „ground, basis“

H.-H.	Hau.	Ar.
C ₂ //kχ'arriba „scorpion“	k'āgúwā „crab“ k'ari „sting“	akrab, Pl, akārib „scorpion“
C ₂ /k'are, S ₆ /kari „small“ N. ≠ kari „small“, S ₃ ○pa:ri S ₅ //ani „little“, S ₁ ≠ eni „little“ S ₁ ≠ kχ'erri ○pwa „very small“	k'arami „small“ k'arama, k'ara- mōmi „id.“	(sā)gār, Pl, (sī)gār „small“
S ₅ χarri „to finish; be fi- nished“ S ₅ //kan „to finish“, N. /kha:- ri-b „the border“	k'āre „to finish, be finished“	haddun „frontier, border“
B.-H.	Hau.	
S ₃ //kχeni „small“, S ₅ //ani „little“	k'ani, k'anne „younger brother“	
S ₁ //kχ'a „to throw dust at“ S ₁ /kχ'wai:ʔi „bad, badly“	k'ank'anchi „treating badly, hu- miliating“	
N ₂ kar-du „down“	k'ark'ashi „underside, under- neath“	
S ₅ //kχ'aba „thorn“ S ₁ //kai//kai „thorns“	k'áyà „thorn“, k'áyóyí f.	
S ₁ !ai:tən!aitən „to hammer in“ S ₁ kai „hammer“ C ₁ kaie „a fet- ter, a hammer“	k'ēra „to hammer“	
S ₁ //χwatten „to cross in a slant- ing direction“	k'etare „to cross, to trespass“	
S ₃ //kχeni „small“ S ₅ //ani „little“	k'ank'ane, pl. k'an'k'anuwa, k'ank'anāna „small“	
S ₁ //ka'i „to pinch“ N. //gai, //ki „to press“	k'i „to hate, refuse“	
N ₂ fa „to fall (rain)“, „pour, bleed, flow“, S ₃ //go:wa „to be thirsty“, S ₃ fa „water“	k'ishirwa „thirst“ < k'i + fa + ruwa	

B.-H.

Hau.

S ₁ !k'o, !kχ'o „hole“ + S ₁ !kha k'ō/a, 'k'ō/ō/i „door“ „front“		
S ₆ !gwōi egg, S ₁ /kχ'Λ:gon „to k'oi, k'ōyāye „egg“ sprout, grow“		
C ₃ //kχ'ona „to kill“, S ₂ //ko'na k'ōna „to burn“ „to be hot“		
N ₁ kχ'o „to eat (meat)“ + N ₂ jin „to drink“	k'ōshi „be satisfied“	
N ₂ !khu !khwai „large flies eaten by !khuwa“	k'uda, k'udāje „fly n.“ k'uma, 'k'umōmi „flea, sandflea“	
S ₅ //kχ'oppo „to jump“		
S ₅ //kum „sand, ground“		
S ₁ //kχ'wā:i ja „very“	k'wā'rai „very, very well“	
S ₁ //kχ'worre: „to cheat“	k'wark'wara, k'warākwārai „con- cubine“	
S ₁ //kχwerriten „to converse“		
B.-H.	Hau.	Ar.
Kor. /kχ'a „to steal“	sāta „to steal“	saraq „steal“
S ₁ /χwori „to steal up to“		
N ₂ ntʃ'a: „to steal“, C ₂ ts'a „to steal“		
C ₁ ≠ kχaejo n. „laughter“	dāriya „laughter“	ḍahika „to laugh at“
C ₂ ≠ kama „take away“	kāma „to catch“	qabada „to catch“
C ₃ //ka:ata „to cut open“	k'ashe „to kill“	qatala „to kill“
N. ≠ ko:si (≠ ko:b) „bone“	k'ashi, k'asusuwa, k'asussa „bone“	'azm, 'izām „bone“
N. soreba „to drink to...“	sharba „take into the mouth with a loud sucking noise tuwo...“	šariba „to drink“
N. !kharu „to snort“ < !kha + !gū push + go	fir-fi „snorting“	(ša)hara „to snort“ (na)hara „id“ (na)-hla „bee“
(N ₁ !na:, !na:) „to scratch, bite“	sara „bite of, biting by“	
N. !khari-b „mead, honey- beer“		
N. !ga:b „slave“ + di „to do“	Audu „a man's name“	abd, abid „slave“

APPENDIX II

SANDAWÉ (HAUSA) AND HOTTENTOT (BUSHMAN)

In order to make the process of transforming click sounds into the clicklike or expiratory ones more comprehensible we apply some gradation of the difficulties of the problem. First, there will be given:

I. a comparative word list of Sandawe (where we have still some 17% of clicking words and a great variety of consonants corresponding to the variety of Click Blocks with different kinds of releasing the back closure) and Hottentot; then

II. a comparative word list of Hausa and Hottentot (Bushman) will follow (we have no Clicks in Hausa, but the existence of Ejectives in Hausa and Bushman as well as that of Injectives, being the next continuators of a clicking sound system, makes the assumption of the affinity of both sound systems more plausible; at last

III. a comparative word list of Arabic and Hottentot-Bushman will come (here some richness in Consonants, that relies mainly on the Emphatic series added to the usual Voiced and Voiceless ones, seems to be the only trace of relation with the originally clicking sound system).

In these three languages (Sandawe, Hausa, Arabic) the Hamitic component is undeniable, and the comparison with Hottentot is already justified by the existence of some Hamitic component in Hottentot too.

Finally, Bushman proves to be something like a common denominator for all these comparisons. As we have pointed out on another place, Central Bushman with Hottentot deriving itself chiefly from Southern Bushman, is to be considered as the principal source for Proto-Hamitic, however, sometimes, e.g. in the case of Hausa, also some admixture of Northern Bushman (that ultimately is connected with Southern Bushman as well) should be taken into account.

Here we may add some introductory remarks as to the position of Sandawe, because they will help to appreciate the material given below. We quote them from our work, *The Evolution of Click Sounds in Some African Languages*, Kraków 1960, p. 28:

„It is not anything strange in the fact, that we have chosen Sandawe to be a prototype of Hamitic language and sound system, though its system of consonants contains not only a good deal of Ejectives (p' , t' , k' , kx' , ts' , tl' , $tl'h$), but also the Injectives (b' , d' , g), due to some cultural contact and blood admixture of a Bantu or Pre-Bantu tribe. The clicks of Sandawe 26 are to be explained as a result of an early mixture with some Central Bushman tribe. In this way, we have in the case of Sandawe a good example of the correlation between the data of anthropology, culture and language. The above mentioned Völkerkunde von Afrika grasps it in the following way:

„Eine starke Jägerkomponente weisen auch die Sandawe auf. Sie wohnen im Bezirk Kilimatinde (20 000 Menschen). Anthropologisch können sowohl khoisanide als auch negride und äthiopische Typen festgestellt werden, und diese Mischung entspricht auch der Kulturkombination. Die Sprache zeigt mit dem Hottentottischen viel Verwandtes sie hat Schnalzlaute wie diese. Dempwolff vermutet in den Sandawe ein Mischvolk aus einer buschmannähnlichen Urbevölkerung und hamitischen Einwanderern, zu dem noch negrides Blut von Bantu in jüngerer Zeit hinzutritt. Ihre Tradition spricht davon, dass sie früher viel weiter nordöstlich saßen — vielleicht nahe den Kindiga und durch Turu in ihre jetzige Heimat zogen. Sie dürften erst in relativ junger Zeit von der Jagd zum Hackbau mit kombinierter Viehzucht übergegangen sein“.

APPENDIX II

COMPARATIVE WORD LIST OF SANDAWÉ : BUSHMAN

A) Labial Consonants: a) $ph < !g(w) : !kh$

- | | |
|--|---|
| 1) San. <i>phalo</i> 'one edged knife' | S ₁ <i>!gwara</i> , <i>!gwarra</i> 'metal, metal knife, metal arrowhead, bell'; cp. S ₁ <i>!gwa</i> : (<i>!ko'a</i>) 'to strike, beat, hit' |
| Hau. <i>bàrhó</i> : 'one edged knife' | |
| Bantu <i>-pala</i> 'to scrape' | |

- 2) San. *phera* 'edge, brink' N₂ !khala 'to burst'
 Hau. *bà:ki* 'mouth, edge, brink' S₁ !kwa:, N_{1,3} !kwà 'to break'
 Bantu *vali* 'edge' S₁ !arra 'edge of skin'
- 3) San. *pho* 'white' N₂ !kao, !k'ao 'white, light-coloured, new'
 Hau. *fà:ri* 'white' S₆ !kari 'white'
 West-Sudan *pù-* 'white' C₂ !u: 'white pale'
- 4) San, *phera* 'to grow up' S₁ !kerri, !kerri 'old, big, grown-up'
 Hau. *bé:rà* 'a girl whose mammary glands have not yet developed' N₂ !karre 'strong, grown-up'
 Ba. *-pela* 'to finish' S₁ !kuerre 'strong'

b) $p < !^k: !g(w)$

- 1) San. *pùe* 'to stamp' S₁ !um: !um: 'to stamp'
 Hau. *bùgá:* 'beat, strike, thresh' S₂ !khùva 'to beat'
 West-Sudan *puà* 'to beat' Nama !gǎv 'to go (stamping)'
 Ba. *-piya* 'to beat', *-puaya* 'to stamp' S₁ !ku, !ku: 'to fall down, dash down, strike, hit on the ground', Na. !khú 'to kill'
- Ba. *-pu-la* 'to thrash'
- 2) *pi* 'to turn' N₁ !gwi:a 'to turn the head'
 Hau. *ki-fà* 'to invert'; *ki-!gwi-* S₁ !gwi:ri 'to turn up the eyes'
- Ba. *-pi-nda* 'to turn, invert' S₁ !xwəri, !xwəni 'to turn'
- 3) San. *popovki*, *popuvki* (*bo-bonki*) 'to rob' S₁ !kǎuwi, !xau 'to steal'
- Hau. *wavara* 'to snatch at'; S !ku: 'to rob'
wa- < !gwa-
- Ba. *po-ka* 'to rob' S₄ !gwa:i 'to pack into'
- 4) San. *pona* 'to miss' S₁ !ko:wa, !kə:, !kə:wa, !kχ'o 'to miss, not find, find empty, not see'
- W.-S. *-pok-* 'empty'

- Ba. *-pona* 'to come off clear, be saved' N₂ !no, !nó: 'to be without, want, miss'
 S₁ ta^v-a 'missing'

c) $b < !n(w): !g(w)$

- 1) San. *ba'a*, *ba'e* 'great, big, greatness' S₁ !na: 'to become strong'
 Hau. *bàbbà:* 'big, adult' Na. !ná 'to be stronger, taller, overcome'
 W.-S. *-bà-* 'broad, thick, big' Na. !na:, !na: 'to scratch, bite'
 Ba. *nene* 'big' S₁ !na: !na: 'to harden, be hard upon'
- 2) San. *bara* 'to begin', *barav* 'first' S₁ !kam 'to lead, be first, return'
 Hau. *fàrá* 'to begin, be the first' S₁ !ha'm 'already, first'
 W.-S. *bà, bàl* 'to count' S₁ !ham:, !ha'm 'to do first'
 Ba. *vala* 'to count', originally 'to notch' S₁, N₂ !nwanna 'three, many'
- N₃ !na:, S₂ xwa, S₅ kwala 'to write'
- 3) San. *bàra* 'flock, crowd' N₂ !karra 'kraal'; N₁ !hā: 'to wait, stay'
 Hau. *gar-ke* 'flock' S_{2b} !arà: 'kraal, fence for cattle'
 W.-S. *-bia(-ba-)* 'place' Kor. !hàrà-b 'kraal, enclosure for cattle'
 Ba. *-vala, -vali* 'open place' N! !hará 'to watch', !hará-b 'place for cattle'
- 4) San. *buri* 'rat' N₁ !hui 'mouse'
 Hau. *bur-gu* 'rat' S₁ !kwi 'a mouse with lion coloured hair'
 Ba. *-puku* 'mouse' Kor. !aru-b 'rat'
 Na. *bóu-s* 'shrew-mouse'

d) 'b < !g(w):! ' :!h

- 1) San. 'banki (panki) 'out-side' C₂ !auka < !ain!ga 'body's back' = 'outside'; Na. !gã-i 'back'
Hau. ban'daki < bayan 'daki' 'back'
a place screened off for use S₅ !ga 'out, down'
as a „bathroom“, urinal... S₂ !gaba < !gam!ga 'back's back' = 'out, away'
(ban gida)
Swahili baya 'bad', i. e. 'the back one'
- 2) San. 'bo, 'bu 'then, afterwards' S₁ !hau, !hou 'to follow, do afterwards, used as adv. 'afterwards, later'
Hau. bayan 'afterwards'
Swahili baada (ya) 'after' S₁ !gao-kən 'to follow the spoor'
- 3) San. buli 'rainy season' S₆ !gwa, S₁ !kuv 'to follow'
Hau. rúwá: 'water, rain juice' N₂ ///gú 'water, rain'
Ba. vûla 'rain' S_{2c} du 'rain, water' (Na. tú-ba)
C₂ tu 'to rain, fall, pour, the rain'
- 4) San. 'bonki 'to quarrel, make noise' S₁ !gãu: 'to resound, make noise'
cp. San. 'bo'bonki 'to rob, sack' N₂ !gau!gaubu 'to rustle'
Hau. 'burunta 'to sack' S₁ !gau !gau buti 'son of the wind'
Hau. bútsátsà 'quarrelsome'

e) f < !kχ ' :!k(w)

- 1) San. fare, fware 'to tell lies' S₁ !koaja 'to tell a lie'
C₂ !nwafa 'to tell a lie'
Hau. k'arya 'a lie' N₂ kχ'ava, kχ'áv 'to speak falsely, conceal a fact'
Ba. veyá 'to tell a lie'
- 2) San. fogo 'be empty' S₁ !ko: !ko:wa, !kχ'o 'to miss, not find, find empty, not see'
cp. San. paponki 'to rob'
Hau. fango, kango 'empty' S₅ //a:ní 'to be empty'

B) Dental Consonants: a) t < /k:/' :#k:lk

- 1) San. ta'dara 'to be tired' S₁ ≠gara, ≠garra 'to be tired, tire of'
Hau. tatata 'the gait of a tired person' N₂ tataro 'softly, whisper, speak slowly'
- 2) San. tai 'friend, cousin' S₄ /kãi, S_{2b} /kai:ki 'cousin'
N₂ tasin, tsasin 'younger cousin, younger sister'
- 3) San. tala 'lamp' C₁ /khaa 'to shine', /khao 'clear, shining'
N₁ tara, t'ara 'to shine, lighten' (N₂ tha:pa)
- 4) San. tè 'otherwise, anyone' C₂ /e 'other, one, some'
C₂ /esa, /efa 'other'
- 5) San. teteke 'to throw out' S₁ !kaitən 'to throw up', tete:n 'throw away'
S₁ !kutē 'throw down', kuku 'to do thus'
- 6) San. ti'a 'egg' S₂ /wi, /wi:sa 'egg'
Hau. k'wai 'egg' S_{2a} ≠gwi 'ostrich egg'
- 7) San. to 'to prick' Na. ≠gò: 'to be pointed'
Hau. so-ka 'to prick' Na. ≠goe 'to prick, sting'
- 8) San. toara 'to carry on the head' S₄ !kwara 'to carry in the ka-ross'
Ba. tu-ala 'id.' C₂ !kō 'head ornament...', !ku:fa 'head'
- 9) San. tine 'to set a trap' Na. ≠hání 'a trap'
C₂ //keime 'trap (iron)'
- 10) San. tume 'to throw a spear' S₆ !kuma 'spear'
C₃ tume-ko 'spear'
- 11) San. tú 'to go out' Na. ≠úi 'to go out'
Hau. mu-tu 'to die, go out' S₁ tu: 'to breathe, pant, sigh, gò out'
- 12) San. tutu 'sleepiness' S₁ /kō /kōa 'to feel sleepy'
Hau. ruru-ma 'to take a short sleep at night' C₁ /ku 'laziness'; N₁ /ú 'shut eyes'

- 13) San. *tué* 'night, the time of sleeping' C₁ /*koe*, /*kwe* 'to sleep', N₁ /*gú* 'night'
S₁ /*nò'e* 'night'
14) San. *twindi* 'locust' S₁ /*kôî*, N₁ ≠*gwí* 'locust'
C₁ /*dzim* 'locust'

b) *th* < *th* < /*k(h)*; *th* < /*k(h)*, // *kχ*'

- 1) San. *thá* 'to run' S₅ /*ká* 'to stretch out (the legs)'
S₄ /*ka*:, /*ka* 'to turn, jump, fly'
2) San. *thatha* 'to trot' N₃ /*ka!kani* 'to run away'
S₁ /*kattən*, S₅ /*kale* 'to trot'
3) San. *thas-no* 'liver' C₂ // *kχ* 'ēisa 'liver'
C₂ /*ts'wi* 'liver'
4) San. *thé* 'tree, word' S₁ /*khi* 'umbrella-top-tree, wigatboom'
Hau. *i-ta-ce* 'tree' N₂ /*khei:χa* 'a tree with edible fruit'
5) San. *theka* 'leopard' C₂ /*koe:ba* < /*koe:kwa* 'leopard'
S_{2e} // *kebe*, S₁ // *kabe* 'leopard'
6) San. *there* 'bundle' Kor. /*kχai-khā-b* 'bundle'
Na. /*gai-kha-b* 'bundle'
7) San. *thò* 'to jump, fly' C₂ /*χwōi* 'to fly, run about'
Hau. *tu-ma* 'to jump' S₅ /*džò-e* 'to fly away' (Na. /*döë*)
8) San. *thunkase* 'short' S₁ /*χwen* /*χwen* 'short'
Hau. *ka:sa* 'short' C₂ // *kum*, // *gum*, /*gum* 'to be short'
9) San. *thwi* 'bird' S₂ /*kwî*:, /*hi*: 'bird'
Hau. *tsuntsu* S₂₂ /*hwi*: 'bird'
10) San. *thwi* 'to boil' N₁ /*kũ*, S₁ /*kũ* 'to boil'
Hau. *toya* 'to boil in oil' Na. /*gũ-i* 'to boil-it'

c) *d* < /*n*, /*n*:^k*g*

- 1) San. *doro* 'zebra' Na. /*góre-b* 'zebra' (N₂ /*ko'ro* 'to gallop')
Hau. /*dó:ki* 'horse' S_{6a} /*kon!kon* 'horse', S₁ /*k'o'n* 'to run away'

- 2) San. *dolo* 'slow(ly)' S₁ /*o:ko* 'a little, gently, slowly'
S₁ /*duru*, S₅ // *ko:ke* 'slowly'
3) San. *do* 'to wait' S₁ /*nāu*, S_{2a} /*kwa* 'to wait for'
Hau. *dako* 'waiting' N₂ /*na* 'to wait for' (S₁ /*ká*: 'to wait')
4) San. *duresi* 'iron chain for the neck' Na. /*uri-si* 'iron, metal'
S₆ /*uri* 'iron'
5) San. *din* 'stone' Na. /*ut-n* 'stones'
N₂ /*wi*: 'flint'
6) San. *dun* 'lip' S₂ /*ko:gən* 'lip'
Hau. *dum baru* 'lip' C₂ /*do be* 'lip', /*tsum-ba* 'lip'
7) San. *dinge* (*dinku*?) 'to put, set' S_{2a} /*gei-ki* 'to put'
Hau. *tanka* 'to reply, bend the bow' Na. ≠*gai-na* 'to bend (the bow)'
8) San. *diani* 'earornament' C₁ /*genane* 'earring'
C₂ /*ke*, C_{1a} /*tse* 'ear'
9) San. *dera* 'to pass the night' N₃ // *gala* 'place, courtyard'
Hau. *dare* 'night' N₁ // *gai-ka* 'at night'
10) San. *dè* 'many' N₁ /*ne/ne* 'big, much, many'
Hau. *ai-nin* 'many' S₂ /*ne*, /*nē*:, /*nea*, /*nei*, /*nai* 'many'
11) San. *danda* 'other, different' Na. /*kara* 'other'
Hau. *danda* 'anything with patches of lighter colour than that of the main body' N₂ /*tanki*, N₃ /*dole* 'other, different'

d) *d* < /*k*^k_g, ≠*g*^k

- 1) San. *'da* 'to draw' Na. ≠*gai* 'to draw'
Hau. /*já*: 'to draw, pull, drag' S₂ /*gá* 'to draw up' (S₁ /*ga*: 'to pull open')
2) San. *'da* 'to open' S₁ /*ga*: 'to pull open'
S₁ ≠*kχ'a* ≠*kχ'ã* 'to open gradually'
3) San. *'da* 'to injure, overreach' N₂ ≠*ga'v* 'to be long, tall, powerful'
Hau. /*ka-'da* 'to beat' *ka da* 'to overcome' Na. /*dán* 'to defeat', ≠*dán* 'to strike'

- 4) San. 'dako 'to cut off branches'
Hau. *datsa* 'to cut off'
- 5) San. 'dav 'be in front, to begin'
Hau. 'dauko 'to begin'
- 6) San. 'dara 'to wait'
Hau. *dakata* 'to wait'
- 7) San. 'diné 'be quiet'
- 8) San. 'dini 'brain'
- 9) San. 'dov 'chicken'
- 10) San. 'dum-be 'nasal mucus'
- 11) San. 'dongo 'container of stock'
San. /'uv/'uv 'lidlayer of the above'
Hau. *tuntsu* 'large gourd used as a milk-churn'

e) $ts < \begin{matrix} k\chi' \\ k\chi \end{matrix} : /n, \neq < \neq k\chi', !k'$

- 1) San. *tsiv*, *tsi* 'I'
C₂ *ti*, *di*, *ri*, 'I, my' S_{2a} /'v 'I'
C₁ *t/i*, S₁ *iv* 'my'
- 2) San. *tsàntsà* 'to sneeze'
Hau. *tsaf* 'emphasizes through cleansing'
S₁ /*χamma*, /*khamma* 'to sneeze, blow out'
Korana /*kχ'am* 'to sneeze'
- 3) San. *tsà* 'tears'
Hau. 'dasa 'to pour in drops'
N₁ /*nàu* < /*nàm*, *tàm* 'to drop'
S₁ *ts'am*:~ *ã* 'to drip, drop' C₁ *tsee* 'to drop'

- 4) San. *tsá* 'pot'
Hau. *kárfi* 'a large water-pot'
N₃ !*k'á* 'pot'
N₂ *tã* 'dish, pot'
- 5) San. *tsav* 'fat'
S₅ //há:, /*ãã* 'to be fat'
C₁ *tsau*, N₂ *t/av* 'to be fat'
- 6) San. *tsawa* 'wind, cold, spirit'
Hau. *sansanya* 'cold'
C₂ ≠*ába* < ≠*kχ'ába* 'wind, spirit'
- 7) San. *tsé* 'head'
Hau. *kái* < /*nái* 'head'
N₂ /*nái* 'head'
- 8) San. *tsè*, *tsèè* 'not'
N₁ /*ne* 'head, bulb, berry'
S₂ /*no*, /*ne*, /*ni* 'negative particle'
- 9) San. *tsiv* 'honey'
N₂ *tẽ*, *te* 'not to do, desist from'
- 10) San. *tsò* 'excrement'
S₁ !*kχ'oakkən* 'to decay, smell badly'
C₂ *tfo* 'to decay', C₁ *t/uo* 'to relieve oneself'

f) $ts' < /χ < /kχ', //kχ', !k < !kχ'$

- 1) San. *ts'a* 'water, waterplace'
Hau. *shá*: 'to drink'
Kor. /*kχ'á* 'to be wet'
S₂ //kχ'ã 'to drink' //kha, 'water'
- 2) San. *ts'ade* 'undressed skin'
Hau. *k'ir-gi* 'undressed ox-skin'
S₆ //kare 'to skin'
C₁ *t/aa* 'sleeping skin, mattress'
- 3) San. *ts'an-ke* 'gwineafowl'
Hau. *za-bo* 'gwineafowl'
C₂ /*χãni*, Na. /*kenà-s* 'gwineafowl'
- 4) San. *ts'é* 'hair'
Hau. *c'inke* 'hair-pin'
C₂ /*kina* 'gwineafowl'
- 5) San. *ts'è* 'to drink'
N₂ !*kχ'we*, !*kχ'wi* 'hair, bristle'
C₁ *le-tse* 'hair, braided hair'
- S₃ //kχ'ẽ (*kχ'ẽ*) 'to drink'
Kor. *kχ'à* 'to drink'

- 6) San. *ts'e* 'together, turn, twist'
Hau. *kai-fafa* 'to turn sideways'
- 7) San. *ts'i*, *t'i* 'to press'
Hau. *ma-tsa* 'to press'
- 8) San. *ts'ime* 'to press out'
- 9) San. *ts'ò* 'small'
Hau. *koko* 'gruel made with flour of grain'
- 10) San. *ts'oni* 'sting'
Hau. *k'ari* 'sting', *'dana* 'to sting, burn'
- 11) San. *ts'ov* 'rhinoceros'
Hau. *karkanda* 'rhinoceros'
- 12) San. *ts'ovko* 'vulva'
- 13) San. *ts'oro* 'seeds of grass'
Hau. *zuri-ya* 'seed', *ko-* 'every, any'
- 14) San. *ts'u-ka* 'smoke'
Hau. *tuk'ak'a* 'to fill with smoke'
- 15) San. *ts'umbu* 'navel'
Hau. *cibi* 'navel'
- C₃ /'e-ja 'rope', S₅ /χai 'rope for trapping'
- N₃ *tsani* 'cord made of sanseveria'
- S₁ //ke:ĩ, Na. //gãĩ, N₂ //kai 'to press down'
- C₂ //kae, de: 'to press'
- N₃ //kám 'to press'
- S₁ //ke:ĩ 'to press'
- N₂ !ko < !k'o 'little, small'
- S₄ *ts'ou* 'pips, seeds'
- C₃ //kχ'ona 'to kill', C₂ //kχ'oa 'stick, pestle'
- C₂ //kχ'ondi 'teeth', N₂ //ãñ 'sting'
- S₁ //koin 'rhinoceros'
- S₁ //χwagən, C₃ t'aga-te 'rhinoceros'
- S₁ //ko:ro 'vagina' seu 'uterus'
- S₁ //khau 'vulva'
- N₃ !kó, S₃ /kχuri 'seeds'
- S_{2a} ≠kou tsama 'melon', S₄ *ts'ou* 'seeds'
- S₁ /khu 'smoke'
- N₃ /kũ, N₁ /kõ 'to smoke'
- N₂ !'om, C₁ !kom 'navel'
- C₂ !num, N_{1, 2} !num 'navel'

g) $dz < \neq \frac{k}{g}, \frac{k}{g} : \frac{k}{g}, !g$

- 1) San. *dzadza* 'apron for men' N₂ ≠ka:, ≠khá 'apron for men'
- S₆ *sa:χa* 'man's apron'
- 2) San. *dzaka* 'veld' C₂ ≠ka: 'veld, steppe'
- Hau. *jeji*, *daji* 'wilderness' S_{2a} /gã 'hard, veld', S₂ /kã 'veld'
- 3) San. *dzawa* 'stick' S₂ !nwe, S₅ //nwa: 'stick'
- Hau. *i-ce* 'stick' C₁ *dzoa* 'stick'

- 4) San. *dzanga* 'raw' N₂ /káv, /Δha 'raw'
- Hau. *'danye* 'raw' N₁ *tsanase* 'raw'
- 5) San. *dzi* 'upright, erect' N₁ /gi 'come out, up, rise, swell'
- Hau. *tsibi* 'pile', *tsiba* 'pile up' N₁ ≠gi 'straight'
- 6) San. *dzidzi* 'wasp' C₂ /gina, gəni-ba 'fly' n.
- Hau. *zir-nako* 'wasp' (zir- < /gir-) N₁ /geru, C₂ /garu-ba 'wasp'
- 7) San. *dzidzin* 'spring, well' S₁ /i: 'to flow'
- Hau. *ri-ji-ya* 'a well', *jini* 'blood' N₁ /ĩ, /ĩv 'blood'
- 8) San. *dzi-gi'da* 'blood-house' = 'heart' S₁ /ĩ, /ĩvke 'heart'
- San. *gi'da* 'interior', Hau. *gida* 'house' S₅ /ingke 'heart'
- 9) San. *dzik'e* 'milk' S₁ /i: 'to flow', S_{2b} ≠gẽ, ≠ge: 'milk'
- Hau. *jik'e* 'become tinged with indigo (white)' S₂ //ke:v, //ke:gən 'milk'
- 10) San. *dzipa*, !ime 'thigh' S₁ !kui 'thighbone', N₂ //kit 'thighbone'
- Hau. *cin-nya* 'thigh' S₁ tĩ, Na. tẽ 'thigh'
- 11) San. *dzu* 'game' C_{2b} /gu:e 'wildebeest'
- S₁ Opwai: 'game, meat, flesh, body'
- 12) San. *dzugu-lala* 'to itch' Kor. ≠kχuv ≠kχuv 'to itch'
- Hau. *cakulkuli* 'tickling the armpits of children' Na. /kón 'to itch'

h) $s < \frac{k}{h}, \frac{k}{h}, \frac{k}{h}$

- 1) San. *sa* 'she' S₂ /ka-ke 'female', /ka:ke 'to suck'
- Na. -s, -si, -sa (*khoi-sa* 'woman' C₁ *sam* 'breasts')
- 2) San. *samu* 'to breathe heavily' N₂ /hã 'to pant', breathe heavily'
- Hau. *samuk'e* 'eat up a large amount of food' S₂ /Δm-sa 'breath'

- 3) San. *savka* 'contents of stomach'
Hau. *dànk'á*: 'a slight spasm of pain in the abdomen'
- 4) San. *sawasawa* 'equal, even'
Hau. *sauwa* 'in equal state, equality'
- 5) San. *sa'ga* 'something plaited'
Hau. *sak'a* 'to plait'
- 6) San. *simba* 'lion'
- Na. *hàrá-b* 'contents of stomach'
S₁ */kharra* 'contents of stomach'
- C₂ */ka:ba* 'flat land, plain' (*/ka:m*)
C₂ *≠ha* 'field, plain', Na. *≠hawà* 'broad'
- S₄ */kχ'a* 'to plait'
N₃ */hã* 'to gather'
- C₃ *seseme, seseme* 'to eat', *sa-meta* 'to devour'
N₂ */hei* 'lion'

C) Lateral Consonants: a) $t < \left\| \begin{smallmatrix} k \\ g \end{smallmatrix} : \begin{smallmatrix} \chi \\ \chi \end{smallmatrix} \right\|, kh$

- 1) San. *tarav* 'dust'
Hau. *tur-baya* 'sandy soil'
- 2) San. *ta* 'wicker-work for the door'
Hau. *'daki* 'house'
- 3) San. *tama* 'to go sideways'
Hau. *'dama* 'tauten into a curve'
- 4) San. *tana* 'horn'
Hau. *k'a:-hó*: 'a horn'
- 5) San. *tani* 'natural gap between teeth'
Hau. *ha-k'ori* 'tooth, ivory, rough surface'
- 6) San. *tanlange* 'chameleon'
Hau. *hawai-niya* 'chameleon'
- 7) San. *te* 'enough'
Hau. *k'oshi* 'enough, satisfied'
- Na. *||karà-n* pl. com. 'gravel'
Na. *tsara-b* 'earth, dust'
- Na. *||'à-b* 'door'
N₃ *dàma* 'doorway'
- S₁ *||kã:χu, ||ka:χu* 'side'
S₁ *||χã:χu, ||χã:v* 'side, neighbourhood'
- S₅ *||kan-fa, S₆ ||kã* 'horn'
Na. *||vã:b* 'horn'
- S₅ *||χani* 'teeth'
C₂ *||k'õõ, pl. ||k'õndi (||k'õ-ri)* 'tooth'
- S₁ *||khwã:setən* 'chameleon'
S₁ *||khwasi-tən < khawasi-tən* 'id.'
- C₁ *||ga, Na. ||ã* 'satisfied'
N₁ *kχ'o* 'to eat (meat)' + N₂ *jin* 'to drink'

- 8) San. *tese* 'repeatedly'
Hau. *k'ara* 'to repeat, again'
- 9) San. *tin'e* 'to build'
Hau. *gina* 'to build'
- 10) San. *to* 'to pour out'
Hau. *zù-bá < ||ho-ba* 'to flow out'
- Na. *||kadi, ||katsi* 'again'
S₁ *!kaŕa* 'again'
- C₁ *||gan* 'to build' *||gano* 'building'
C₁ *||ganthi* 'builder'
- S₅ *||ko* 'to pour'
Na. *||kò* 'to pour'

b) $d < ||n:||k:||$

- 1) San. *dani* 'arrow'
S₂ *||kẽ- ||a < ||kani-* 'arrow'
C₃ *||'ana* 'arrow'
- 2) San. *danta* 'a plant, arrowshaft of it'
Hau. *kyau-ro, shé:mè* 'reed' ('to make arrows')
- 3) San. *domo* 'to exchange'
Hau. *sau-ya < ||ham-* 'to exchange'
- 4) San. *dui* 'be behind'
Hau. *gin-di* 'buttock'
- S₆ *||'ante* pl. 'reed'
N₂ *||kau, Na. |hóme-b* 'reed'
- N₂ *||'ama* 'to barter'
Na. *||'ama* 'to buy'
- S₁ *||nũn* 'behind', S₁ *-i, i* 'there'
S₆ *||ku:n* 'back'

c) $s(hl) < \left\| \begin{smallmatrix} h \\ \chi \end{smallmatrix} : \begin{smallmatrix} k \\ g \end{smallmatrix} \right\|,$

- 1) San. *-sá, sas, sawe* 'good, beautiful, right'
Hau. *k'awa-ta* 'to beautify'
- 2) San. *sà* 'goat'
Hau. *k'a-ji* 'reed-buck'
- 3) San. *sá'a* 'to go to ruin, perish'
Hau. *hala-ka, lala-ce* 'to perish'
- 4) San. *sá'a* 'to separate, tear'
Hau. *karan-tsaye* 'the tearing of gown'
- S₆ *||χai, N₂ ||hm* 'beautiful'
N₂ *dza, za* 'nice'
- N₁ *||ka-be* 'goat'
C₃ *tχla* 'buck'
- Na. *||gào* 'to go to ruin, perish'
S₁ *||ka* 'to burn, kindle'
- Na. *||'ara* 'to separate'
C₃ *||ka||ka* 'to divide', N₂ *||ka, ||kã* 'to tear'

- 5) San. *ṣaṣa* 'to tattoo, scratch'
Hau. *shashawa* 'any tattooing...'
- 6) San. *ṣak'e* 'just so as, similar'
Hau. *haka* 'so'
- 7) San. *ṣaṣa* 'grave'
Ba. *tumbo* 'belly'
- 8) San. *ṣa'alu*, *ṣalu* 'butter, ointment'
Hau. *shafa* 'to smear on, anoint'
- 9) San. *ṣuba* 'lungs'
Hau. *huhu* 'lungs'
- Na. *||káro*, *ḡáro* 'to scratch'
N₃ *||kəla* 'to tattoo'
- S₁ *||ha:gən*, *||ha:kən*, *||ha:ka* 'to equal, rival, overcome, get up to, reach'
- Na. *||áo-s*, C₁ *||gwaa* 'grave'
S₂ *||kχ'au* 'to bury'
- S₅ *||há:*, S₆ *||ha:* 'to be fat'
S₁ *||kauru||kauru* 'dry fat'
S₅ *jãã* 'fat' n.
- S₆ *||kü-te*, S₅ *||gũ* 'lungs'
Na. *so:b(a)*, C₁ *foo*, C₂ *tsə:si* 'lungs'

d) *t'(tl') < ||k', ||k:g : ||', ||χ*

- 1) San. *t'abi-so* 'belly'
Hau. *tumbi* 'the stomach of ruminants'
Ba. *tumbo* 'belly'
- 2) San. *t'agime* 'slippers'
Hau. *takalmi* 'shoe, sandal'
- 3) San. *t'ala* 'fable, fairy-tale'
Hau. *ta'di* 'conversation, chatting'
- 4) San. *t'anga* < *||k'av||k'a* 'lizard'
Hau. *k'adanga-re* 'lizard'
- 5) San. *t'anika* 'partridge'
Hau. *k'urik'ulli* 'the common quail'
- S₆ *||ga:ban* 'belly', S₂ *||kχ'ã:* 'stomach'
N_{1a} *dub* 'belly', S₃ *||kubwa* 'stomach'
- C₁ *||kaho*, Na. *||haróbi*, *||havòbi* 'shoe'
- C₃ *kwa-tl'abena* 'shoes'
- S₂ *||kãla* 'to say', S₂ *||kàla-ã* 'to speak'
- S₅ *t'av*, *t'ana*, *tana* 'to speak, talk'
- C₁ *||ka||kaba*, N₃ *!no!no* 'lizard'
C₁ *ngolole* < *!no-* *||ka-* *||kai*
- S₂ *||kare* *||kare* 'partridge'
S₅ *||kárri* 'partridge'

- 6) San. *t'i* (*ts'i*) 'to press'
Hau. *dank'ara* 'to compress soft or sticky thing'
- 7) San. *t'inkime* 'to tread, trample'
Hau. *taka*, *take* 'to tread on'
- 8) San. *t'ò* 'medicine, remedy'
Hau. *ha-ki* 'grass'
- 9) San. *t'oxe* 'to sow, plant'
Hau. *tushe* 'the roots of a plant, a plant'
- 10) San. *t'okondo* 'mud'
Hau. *k'azanta* 'dirt'
- 11) San. *t'on'ge* 'to sting, dig'
Hau. *'dana* 'to sting', *k'ari* 'sting'
- 12) San. *t'ongo* 'stings, fever'
Hau. *'dan'da-sa* 'to sting'
Hau. *'dan kanoma* 'relapsing fever'
Kanoma 'name of a village'
- 13) San. *t'ungu* 'cloud'
Hau. *lumshi* 'cloudiness'
- 14) San. *t'we* 'magic'
Hau. *kwar-ce*, *k'warce* 'witchcraft'
- Na. *||gãi*, N₂ *||kai*, S₁ *||ke:ĩ* 'to press'
- N₃ *||kám* 'to press'; cp. S₁ *||ki* 'liquid'
- N₂ *||ku-||kχ'oa* 'to tread off'
N₂ *||ku:*, S₁ *twãna* 'to tread'
- S₅ *||χa:* 'medicine, grass', prob. 'herbs'
C₂ *tfo* 'medicine, to bewitch'
- S₁ *||ko ||ko:* 'to put in', *||ko||a* 'to put down'
- C₃ *ku-tute*, *ku-tiku* 'to put in'
- S₂ *||kχ'ore*, S₆ *||kare* 'dirt' *||χane* 'dirty'
- C₁ *||kχoo* 'dirt', C₂ *tfo* 'to decay'
- N₂ *||'áv* 'to sting', N₁ *||k'am* 'to dig'
- C₂ *ta:a* 'to sting, to bite, sting'
- N₂ *||'áv* 'to sting', N₁ *||k'am* 'to dig'
- C₃ *kl'eko*, *kl'ekwa* 'to bite'
- N₃ *||gu:*, N₂ *||gú:* 'rain'
- C₃ *ma-luntepe*, *ma-rundipi* 'clouds'
- S₁ *||kwakka* 'to understand, be wise'
- S₁ *||kwa'kkən* 'to be wise'

e) *t'(tl'h) < ||k < ||kχ': ||', |||g: ||'*

- 1) San. *t'a* 'to put hand, seize, accuse'
Hau. *ta'be* 'catching fish with the hands'
- Na. *||'áb* interj. fast!, *||ám* 'clap hands'
- N₁ *tàm* 'to finish', Na. *||ám* 'accuse', S₅ *χari*, *||kai* 'finish'

- 2) San. *f̄axe* 'to strike, cut down, fell'
Hau. *yanke* 'to cut down, slaughter' //kam //ke
N₁ //kam 'to beat, strike', //ke 'to die, be dead'
C₃ *txla* 'to hit'
- 3) San. *f̄ape* 'to beat, whip'
Hau. *da'ba*, *da'be* 'to beat floor'
N₁ //kamma 'to knock, beat, strike'
N₂ *t̄samme* 'whip', S₁ //kχ'ap 'breaking'
- 4) San. *f̄abo* 'cross-beam'
Hau. *k'yami* 'beam of the fan-palm'
C₂ //abi, //kau < //kam 'stick'
C₁ *tsamo* 'stick'
- 5) San. *f̄aga-to* 'gazelle'
Hau. *ka'bo* 'young gazelle'
N₂ //kha 'springbok, gazelle (dorcass)'
S₅ //ka //ko:pu, //ge: 'to jump'
S₆ //k̄i 'good', //χai 'beautiful'
- 6) San. *f̄i* 'to adorn'
Hau. *k'ya* 'fine', 'dani 'adornment'
N₂ *t̄ai*, S₂ *tsai:*, C₁ *kaie*, C₂ *t̄oi* 'nice'
- 7) San. *f̄oa* < *f̄oba* < //oba 'rain'
Hau. *ruwa* 'water, it rains'
N₂ //gú, N₃ //gu:, San. //o 'water, rain'
Na. *tú:b(a)* 'rain', C₂ *tu:* 'to rain'
- 8) San. *t̄uv* 'hand'
Hau. *k'ota* 'hadle of implement'
S₁ //kū 'arm', C₂ //kχ'ōa 'arm'
C₃ *u-kwa*, *u-kwa-ko* 'hand, arm'

f) *l* < //n, //h

- 1) San. *la* 'to be destroyed'
Hau. *la* 'no', cp. Ar. *la* 'not'
Na. //ná: 'to fall', S₅ //na: 'to lose'
S₁ *tat̄en*, to fall, Na. *ta* 'not'
- 2) San. *lába* 'formerly, later'
Hau. *da* 'formerly'
Na. //naba 'there', N₁ //na 'then, afterwards'
N₂ *da* 'then, so', S₃ *la* 'there, those, that'
- 3) San. *láde* 'to show'
Hau. *la'anta* 'to show person up'
Na. //nai, S₁ //ne: 'to point to, show'
S₁ //ne:ja 'to show'
- 4) San. *la'e* 'hare'
N₃ //hái, //hí 'hare'
C₃ *mo-fai-i* 'hare', N_{1a} //ai 'hare'

- 5) San. *lamolama* 'contribution, punishment'
Hau. *má-lámi* 'a teacher'
Na. //namá, //gamá 'to admonish'
C₃ *lama* 'strict, stern', C₁ //gam 'to punish'

D) Velar Consonants: a) *k* < //k, !k, ≠k

- 1) San. *ka* 'to beat, strike'
Hau. *ka'da* 'to beat'
S₁ !ka!ka: 'to knock', !gwa: 'to strike'
C₁ *kwa* 'to strike, beat'
- 2) San. *ka-kuru* 'kind of gourd'
Hau. *kur-tu* 'a gourd water pot'
N₁ !guru 'gourd on musical bow'
C₁ *guju* 'cup, gourd'
- 3) San. *ke* 'to climb, ascend'
Hau. *haye* 'to climb to'
S₁ //kai:t̄en 'to climb, ascend'
S₁ *ko:it̄en*, S₂ //ko:iv 'to ascend'
- 4) San. *keke* 'ear'
Hau. *k'ege* 'edge of native cakes, rough edge of chameleon's head'
C₂ ≠ke: 'ear', C₂ ≠ga:i 'ear'
C₂ /ke 'ear', C₁ *njeke* 'to hear'
C_{1a} *tse* 'ear', C₁ *t/ee*, 'ear'
- 5) San. *kima* 'poison'
Hau. *gu'ba* 'poison'
C₂ //kumi 'to poison', N₁ *kχ'au* 'man'
N₂ (*kχ'au*) *kum* 'a poisonous spider'
- 6) San. *kogo* 'sword'
Hau. (*ta*)-ko-bi 'sword'
N₂ ≠g:ō ≠go: 'a pointed knife'
S₄ *gōa* 'knife, spear'
- 7) San. *kumi* 'ten'
Hau. *goma* 'ten'
S_{2b} !um 'fist', Na. !omi 'hand'
N₃ *gàu*, usually //gàu 'hand'
- 8) San. *kum̄e* 'to low'
Hau. *gum-za* 'roaring'
S₁ !gum 'to roar, bellow, call'
Na. *goma-b* (*guma-*) 'ox', *gomas* 'cow'
- 9) *kuru* 'a country tortoise'
Hau. *kunkuru* 'tortoise'
N₁ !guru 'tortoiseshell'
C₁ *t̄furu*, Na. /huro-b 'tortoise'
- 10) San. *kon*//gov 'to go around'
S₁ //kχ'ōkn, //kχ'ō//kχ'ōk̄en 'to twirl'
S₁ *torok̄antorok̄en* 'to twist, whirl'

b) $g < \neq g, \begin{smallmatrix} k \\ g \end{smallmatrix} : k, /k, //k$

- 1) San. *ga* 'to put in, plant' Na. $\neq g\grave{a}$: 'to put in, plant'
Hau. *ga-nye* 'a plant' N₁ *dà'ni* 'a plant (berries are eaten)'
- 2) San. *gága* 'beads of iron' C_{2b} $\neq ga$: 'bead'
S₁ *ka:ra* 'beads', S₄ *!káró* 'beads'
- 3) San. *ganda* 'to be lean' Na. *!gára-sa* 'to be lean'
S₁ *ko'áin*, *kō'ain* 'to be lean'
- 4) San. *gawa* 'mountain' N₂ *!kālkāse* 'mountain', *!koma* 'mountains'
Hau. *hawa* 'the firmament, high up in the air' N_{1a} *u-kase* 'mountain'
- 5) San. *ge* 'to wish, want' S₁ *!ge*: 'to wish, obstinately go to'
Hau. *ke* particle of the contin. tense S₁ *ke*: 'to want, be willing', when followed by *se* indicates habitual action
- 6) San. *gi* 'to put in, make a sign' S₁ */ki |e*, S₅ */ke*, S₂ *e* 'to put in'
S₁ *!hi* 'to put in', N₁ *!ni* 'to put in'
- 7) San. *giri* 'to stop, remain standing' S₁ *!kei* 'to stop, wait for', (S₆ *!ki*:)
- 8) San. *giri-be* 'to run away' C₂ *t/yri* 'to stop', N₁ *geja* 'to stay'
Hau. *gudu* 'to run away' Na. *!gū!gū*, S₁ *!kulku-ze* 'to run'
- 9) San. *gu* 'to bend, stoop' N₂ *//kúu* 'to bend the head down, as a cow eating grass',
N₂ *//kubbi* 'be bent'
- 10) San. *guba* 'pregnancy' Na. *!góm* 'to be heavy, pregnant'
C₁ *hweaha* 'pregnant', S₁ *!kumba* 'heavy'
- 11) San. *gwara* 'hartebeest' S₁ *!k'wa:gən* 'hartebeest'

c) $g = 'g < \begin{smallmatrix} k \\ g \end{smallmatrix} : \begin{smallmatrix} k \\ v \end{smallmatrix}, \begin{smallmatrix} k \\ g \end{smallmatrix} : \begin{smallmatrix} k \\ g \end{smallmatrix}, \neq g$

- 1) San. *'ga* 'to say' S_{6a} $\neq gaggən$, S₁ $\neq kaggən$ 'to say'
Hau. *gayá* 'to say, tell' S₁ *ka*, S_{2a} *vka* 'to say'

- 2) San. *'gaba'o* 'fat of goat' N₁ *//kabe* 'goat'
Hau. *k'iba* 'fatness' Na. *góu* 'to be fat'
- 3) San. *'ga'ga* 'dog' N₁ */gwa* 'wild dog'
Hau. *ka-re* 'dog' N₁ *!kə*, *v'koa* 'dog'
- 4) San. *'galamu* 'string' S₆ *//karra* 'shoe string'
Hau. *gara-ya* 'stringed instrument' S₁ *!nu:i*, C₁ *gwii* 'string'
- 5) San. *gamaku* 'cheek' S₅ *//ka//kaman* 'cheeks'
Hau. *kumatu* 'cheeks' S₄ */kuma* 'cheekbones'
- 6) San. *'gav* 'to cross' Na. */ganú* 'to cross'
Hau. *gin-daya* 'to lie across' N₁ */ken/ kenin* 'to cross arms'
- 7) San. *'ge* 'to split' Na. *!kèi* 'to cut'
Hau. *kin-ce* 'to cut' S₄ *!einki* 'to make a cut'
- 8) San. *'gea* 'iron' C₂ *!vena* 'metal'
N₂ *!ganu* 'metal'
- 9) San. *'gen'gese* 'a certain bird' S₂ */kenjən*, *kχ'ekχ'en* 'birds'
N₂ *vgo-ganga* 'a certain little bird'
- 10) San. *'gera* 'to oversleep, miss' S₁ *!kwetən* (*!kwetja*) 'to miss, lose'
S₁ *//goetən* 'to miss, not find'
- 11) San. *'goa* 'peg, to peg' C₄ */gaa* 'a peg of wood, a block'
C₁ $\neq kaa$ 'peg'
C₁ *//kabaa*, C₂ *//gabbo* 'wings'
- 12) San. *'goba* 'wing' S₆ *kabukakabuka-te* 'wings'
Hau. *gyawa-sha* 'long wing feathers'
- 13) San. *'go'go* 'fowl' S₅ *//kokwi* 'cock'
Hau. *a-kurki* 'fowl-pen' C₃ *i-gongo-da* 'fowl'
- 14) San. *'gu* 'bast, fibre, cord' S₅ *//gole* 'bark of tree'
Hau. *i-gi-ya* 'thick cord' S₅ *gu-le* 'bark (of tree)'

d) $h < \begin{smallmatrix} k \\ g \end{smallmatrix} : \begin{smallmatrix} k \\ h \end{smallmatrix}, \begin{smallmatrix} k \\ g \end{smallmatrix} : \begin{smallmatrix} k \\ h \end{smallmatrix}, \neq k : \begin{smallmatrix} k \\ h \end{smallmatrix} :$

- 1) San. *há* 'to open the mouth' N₁ *!χa* 'to draw out, take off, out, to open, produce'
Hau. *há*: 'an expression used to induce a small child to open its mouth' N₂ */hā* 'to pant'
- Hau. *ha-ki* 'gasping, panting' S₁ */ha:*, */ha* 'to come out'

- 2) San. *hà* 'and' S₁ *he, he* 'and, then, that'
N₂ *sa* < /*ha* 'and, with' S_{2a} /*ka* 'with'
- 3) San. *ha!ga* 'to call' N₂ !*xé* 'to call out'
Hau. *haushi* 'barking of a dog' S₁ !*káu* 'to call, bark, roar' (S₁ !*ka'rro*)
- 4) San. *ha'ba* 'to bear, produce' S₁ ≠*kaube* 'to bear, give birth'
Hau. *haifa* 'to bear children' C₂ *aba* 'to bear', S₁ !*hoa* 'to lay'
- 5) San. *ha'be* 'to carry a child in the skin' S₅ /*kabe* 'to carry in the kaross'
C₂ *aba* 'to carry a child in the kaross'
- 6) San. *hakets* 'to sit down' S_{4b} !*xiki* 'to sit', S_{4b} *ts'i* 'to sit'
Hau. *hak'e* 'to sit disdainfully' S₅ //hã, C₃ *hama* 'to sit'
- 7) San. *honov* 'narrow' Na. !*hunu* 'to suck out narrow'
S_{2b} !*koranàv* 'narrow'
- 8) San. *ham-be* 'often' C₁ /*kam-u* 'often'
Na. /*gama* 'again'
- 9) San. *hama* 'to scold' Na. //àm 'to scold'
S₁ /*kwã:ɔv* 'to scold'
- 10) San. *hona* 'to flow out' Na. !*hunu* 'to be wet, become wet'
Hau. *gangara* 'to flow' Na. ≠*gón* ≠*gón* 'to be wet through'
- 11) San. *he, heo, heu, hewe* 'this' S₁ *he, he* 'this, that, these, those'
Hau. *ne* 'this' N₁ /*né* 'this', Kor. *he:*, Na. *ne:* 'this'
- 12) San. *hime* 'to stink' Na. *hamé* 'to smell'
Hau. 'am-sawa 'to smell' C₂ *ham* 'to smell', C₂ //k*am* 'to smell'
- 13) San. *humba* 'to kiss' S₅ ○*pu:m* 'shut mouth',
Hau. *sumba* 'to kiss' C₁ /*kum* 'to shut'
- S₁ /*kam, sam* 'shut mouth'

e) *k* < //k*x*://k*!kx*:!k:k*x*, /k*x*:/k

- 1) San. *k'amba* 'a male domestic animal' C₂ //k*x*'*amba* 'man, male'
N_{2c} 'auba < k*x*'*amba, aũma* 'man'

- N₁ k*x*'*au* 'man', C₂ /k*x*'*au* 'man'
C₂ /k*xam* 'mouth'
- 2) San. *k'ame* 'beer of millet' N₂ k*x*'*eri* 'sweet food from a flying insect which makes its house in a hole in the ground'
Hau. *k'ári* 'the sting of a bee, wasp...'
- 3) San. *k'are* 'youngster' S₄ !k*x*'*ari*'i 'boy, youth'
Hau. *yari-nta* 'youth' N₁ k*x*'*arri* (k*x*'*au*) 'boy',
N₂ *karre* 'young'
- 4) San. *k'arets* 'be adorned, beautiful' S₁ !*kárri* 'cock, paauw'
Hau. *k'awata, k'ayanta* 'to adorn' Na. *gáre* 'to praise'
- 5) San. *k'at* 'to dirty, soil' S₂ //k*ore* 'dirt'
Hau. *k'azanta* 'dirt' N₁ /k*x*'*au, /'au* 'dirty'
- 6) San. *k'e* 'to cry, weep' C₂ //k*x*'*e* 'to call out, bray'
Hau. *kira* 'to call' N₁ o-k*x*'*wi* 'to call', S₁ /k*wε:v* 'to call to'
- 7) San. *k'ek'a* 'reed' N₁ //k*ē*//o 'reed, arrow'
Hau. *ki-biya* 'arrow' N₃ !*kai*'*á* 'reed'
- 8) San. *k'ende* 'a kind of tortoise' S₁ /k*x*'*emmi* 'tortoise'
S₁ /k*x*'*ammi*, N₁ *dzam*, C₁ *dham* 'tortoise'
- 9) San. *k'ime* 'heat, clearness, day' S₁ //k*x*'*ōiv* 'sun, thirst'
S₁ //k*ami, //kammi* 'sun, day'
- 10) San. *k'o* 'to pierce' S₁ !k*x*'*o* 'hole', N₂ !*koro* 'hole in ground'
Hau. *k'ogo* 'a cavity in tree or rock' C₁ *koro* 'hole in tree', N₁ *doro* 'to pierce'
- 11) San. *k'oto* 'to smell' N₁ //k*x*'*o*: 'to smell', N₂ *to* 'sweet food' from a flying insect, found in a tree, N₁ k*x*'*o* 'to smell'
- 12) San. *k'otso* 'neck' C₁ /k*oti* 'neck', S₁ /k*o*: 'be near, be upon'
S_{4a} k*x*'*oe* 'neck'
- 13) San. *k'wa* 'to kill' C₂ //k*x*'*wa*: 'to thunder'
S₆ //k*wan* 'to kill'

f) $k\chi' = k\chi' < \parallel k\chi' : \parallel \begin{smallmatrix} k \\ g \end{smallmatrix}, !k\chi':!k(w)$

- | | |
|---|---|
| 1) San. k^5a 'to drive away(?)' | N ₂ $\parallel kam$ 'to drive' |
| Hau. $kora$ 'to drive away' | S ₁ $\parallel kwara$ 'to drive away' |
| 2) San. k^5av 'notch, cleft, crevice' | S ₁ $\parallel k\chi'au$, N ₃ $\parallel kau$ 'to chop, cut, split' |
| Hau. $ca'ba$ 'make edged tool notched' | C ₁ $\parallel kabe$ 'to suck blood, notched' |
| 3) San. $k^5av!a$ 'to notch, chop' | C ₁ $\parallel gabara$ 'to flap, chop' |
| Hau. $k'ire$ 'to chop off at a blow' | N ₂ $\parallel v'arru$ 'to chop at, as at a snake' |
| 4) San. k^5avk^5ara 'dark, black' | S ₁ $\parallel k\dot{a}'\dot{a}$ 'night, dark' |
| Hau. $k'irin$ 'very black' | C ₃ $kl'akl'a$ 'dark' |
| 5) San. k^5ok^5ori 'shell, dish, bowl' | C ₂ $\parallel k\chi'e \parallel k\chi'eba$ 'lower shell of tortoise' |
| Hau. $k'ok'o$ 'a small calabash' | C ₂ $\chi o\chi ori$ 'snail shell' |
| 6) San. k^5uak^5ua 'to scatter, throw' | S ₁ $!kwatt\dot{e}n$ 'to throw down' |
| Hau. $kere$ 'a curved throwing stick used by hunters' | N ₁ $!k\chi'abba$ 'to throw', S ₁ $!ku$ 'to strike, dash down, hit on the ground' |

E) Voiced Continuants (Sonants)

a) Rolled $r < \parallel \begin{smallmatrix} k \\ g \end{smallmatrix}, !\begin{smallmatrix} k \\ g \end{smallmatrix}$

- | | |
|---------------------------------------|--|
| 1) San. ron „voice“ | C ₃ $\parallel u-kwa:-ko$ 'throat' |
| San. $\parallel'ov$ „throat“ | S ₁ $\parallel hatt\dot{e}n-tu$, S ₂ $\parallel \chi re:tu$ |
| San. k^5ev „voice“ | „throat“ |
| Hau. $mu-rya$ „voice“ ($rak-wa-to$) | S ₁ $\parallel ke-ri$ „voice“ |
| | S ₁ $!xw\ddot{o}v$ „to sound like“, N ₂ $\dot{d}z\ddot{o}v$ „to sound, call“ |
| 2) San. $rogo$ „double-edged knife“ | N ₂ $\neq g\acute{o}:\neq go:$ „pointed knife“, N ₂ $\neq ku \neq ku$ „knife“, S ₄ $kuru$ „to work“ |
| 3) San. $rumbarumba$ „musical bow“ | S ₅ $\parallel g\ddot{u}mma$ „to clap hands“ |
| | S ₁ $\parallel gum:$ „to play“ |

Hau. $lumbulumbu$ „a person who seems to be straightforward, but proves a traitor“

N₃ $!k\ddot{u}ma$ „to play“, S₅ $ku:ma$ „to clap hands“

- | | |
|------------------------------------|--|
| 4) San. $rumberumbe$ „stingig fly“ | S ₁ $!kum$ $\odot mwi$ „tsetse fly“ |
| Hau. $k'u-da$ 'fly“ | C ₁ $gom \dot{d}zina$ „dungfly“ |

b) Nasal $m < m, \odot m$

- | | |
|--|--|
| 1) San. $m\dot{a}$ „a little“ | S ₅ $-ma$ Dim. ending ($-ba$) |
| Hau. $ki-ma$ „small quantity“ | S ₁ $-\odot pwa$, N ₁ $-ma$ „small“ (Dim.) |
| 2) San. $m\dot{a}$ „sweetness“ | N _{1,2} m „to eat vegetable food“ |
| San. $man-tsa$ „to eat (vegetable food)“ | N ₁ $m-sa$, $m-si$ „food (esp. vegetable)“ |
| 3) San. man/a „louse“ | S ₁ $\odot moen$, S ₂ $\odot moinja < \odot pwa-i-n/a$ „small-this-foundling“ = „a louse“ |
| 4) San. $ma-ganza$ „length“ | N ₁ $m\dot{a}$, $m\dot{a}$ „to blow“, N ₁ $/g\ddot{e}$, $!g\ddot{e}$ „to be long“ |
| | N ₂ $\neq ga'v$, $\neq gav$ „to be long, tall, deep“ |
| 5) San. $ma'e$ „to go round“ | C ₃ ma „to surround, make a round screen“ |
| 6) San. $man-dari$ „anus“ | Na. $m\dot{a} + \neq are-$ „to stand (place)“ + „buttocks“, Na. $\neq are-b$ „stinging grass“ |
| Hau. $mangare$ „kicking“ | |
| 7) San. $man!o$ „to lick“ | Na. $m\dot{a} + !on$ „to stand (place)“ + $!on$ „to suck“ |
| 8) San. $m\dot{u}$ „stomach“ | C ₁ $mu-ba$ „bellows“ |
| Hau. $mara$ „the hypogastrium“ | S ₁ $mumu$, $momo$ „court round the moon“ |
| 9) San. $mo-kwe(muke)$ „spear“ | C ₃ mo „he“, C ₁ mo „to see“, C ₂ mu „to look“ |
| Hau. $ma:su:$ $< ma + !ku(!ku)$ „spear“ | C ₃ $mu:ako$ „stick, pestle“, C ₁ $!k\chi ao$ „spear“ |

c) Nasal *n* < /*n*, // *n*, *n*

- 1) San. *na* „there“
Hau. *nan* „here“
S₁ // *na* „to stay“, used as „here, there, in, at“
Na. // *nà:* „that“
- 2) San. *nana'a* „swing“
Hau. *lab-tu* < // *nab-tu* „swinging“
N₂ // *nabbu* „to swing, sway, shake“
N₂ // *na//nani* „to shake“
- 3) San. *ni* „here, now“
Hau. *ni:* „me“
N₁ / *ni* „that, this, so here“
N₁ / *ne* „that, this, here, if“
- 4) San. *ne* „here“
Hau. *ne* „here, this, to be“
N₁ / *ne*, N₂ *ne:* „this“
S_{2b} *ne, nee* „to be“
- 5) San. *poma* „drum“
Hau. *ganga, tamba-ri* „drum“
S₁ !*kōa* „drum“, S₂ !*koā* „pot“
S₁ !*koā* „to dance, tread, step“
- 6) San. *nini* „to pour out“
Hau. *titti 'da* „to pour out from small mouthed vessel“
S₁ / *nai* „to pour in“
S₁ / *i:* „to flow“, N₁ / *i:* „to pour“
S₁ *dhiri* „to pour“, Na. / *iri* „to spit out“
- 7) San. *nondo* „hammer, hatchet“
C₁ *noto* „hammer“
- 8) San. *numa* „behind“
S₁ // *nu:v* „be behind, pass, go behind“
S₁ // *nũ*, // *nu* „to pass behind, be behind“

F) Semi-vowels

a) 'w !^k_g(w)

- 1) San. 'wa „they“
Hau. *Hausa-wa* „the Hausas“
!*kwā* > *bā* > *ba* > *wa*
S₂ !*kwa* „man, person“, S₁ !*kai* „people“
S₅ *wa* „they“, S₆ *wa* „them“
N₁ !*kwā* „man, men“, N₁ *si!ka(m.)* „they“
- 2) San. 'wa „friendship, love“
Hau. *wa* „elder brother“
Na. !*gāb(a)* „brother“, C₁ *gaba* „friend“

N₁ !*kai*- „brother-this“ = friend“S₄ *ba* < !*kwā* „men“ = „they, all“b) 'y < // *k*

- 1) San. 'ya'abe „to work“
Hau. *ya'be* „complete work of plastering, thorns interlaced in the fence“
N₃ // *kabe* „to work (the bel-lows)“, S₁ // *abba* „id“, S₅ // *kχ'a:ba* or // *kabba* „thorn“, S₁ *tāba* N₂ *taba* „to work“
- 2) San. 'ya'ya „brothers and sisters“
Hau. 'ya:ya: „offspring, children“
N₃ // *kei//kei* „brothers“
S₂ // *kē:* „female breasts“, S₂ // *ke:v* „milk“, S₁ // *kā:* „brother“, // *kaxai* „sister“

SUMMARY

(THE NUMBER OF OCCURENCES IN BRACKETS)

Sandawe		A) Labial		Hausa
1. <i>p</i> < ! ^k _g (w)	(1)	<i>b</i> (1)	<i>f</i> (1)	
2. <i>ph</i> < ! <i>kh</i> (1); <i>ph</i> < ! ^k _g (w)	(3)	<i>b</i> (3)	<i>f</i> (1)	
3. <i>b</i> < ! <i>n</i> (w) (1); <i>b</i> < ! ^k _g , ! <i>h</i>	(3)	<i>b</i> (2)	<i>f</i> (1), <i>g</i> (1)	
4. 'b < ! ^k _g (// <i>g</i>) (3); 'b < ! ^k _g	(1)	'b (1)	<i>b</i> (2), <i>r</i> (1)	
5. <i>f</i> < ! <i>kχ</i> ' (1); <i>f</i> < ! <i>k</i> (w)	(1)	<i>k'</i> (1)	<i>f</i> (1)	

Sandawe		B) Dental		Hausa
1. <i>t</i> < ! ^k _g , ! ^k _g (7); <i>t</i> < ! ^k _g , ! ^k _g	(4)	<i>t</i> (2) <i>r</i> (1)	<i>s</i> (1) <i>k'</i> (1)	
<i>t</i> < ! ^k _g	(3)			
2. <i>th</i> < ! <i>k</i> (h), ! <i>χ</i> (3); <i>th</i> < ! <i>k</i> (h), ! <i>kχ</i> , ! <i>χ</i>	(6)	<i>t</i> (3)	<i>ts</i> (1) <i>k</i> (1)	
<i>th</i> < ! <i>kχ</i>	(1)			

Sandawe	Hausa
3. $\underline{d} < /n, /' \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (8); \underline{d} < !n, !g (2)$	$\underline{d} (5)$ $t (1)$
$\underline{d} < //g (1)$	
4. $\underline{'d} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right., / \chi (4); \underline{'d} \neq \begin{smallmatrix} k \\ g \end{smallmatrix} (4)$	$\underline{'d} (2)$ $\underline{d} (2) t (1) j (1)$
$\underline{'d} < \begin{smallmatrix} k \\ g \end{smallmatrix}, !' (3)$	
5. $\underline{s} < /h, /k (5); \underline{s} < /k \chi' (1)$	$s (3)$ $\underline{d} (1)$
6. $\underline{ts} < \left \begin{smallmatrix} k \chi' \\ k \chi \end{smallmatrix} \right., /n (5) \underline{ts} < \neq' < \neq k \chi' (1)$	$ts (1)$ $s (1)$ $\underline{'d} (1)$ $k (2)$
$\underline{ts} < //h (1) \underline{ts} < !k \chi', !k', !k (3)$	
7. $\underline{ts'} < \left \begin{smallmatrix} k \chi' \\ k \chi \end{smallmatrix} \right., \left \begin{smallmatrix} k h \\ \chi \end{smallmatrix} \right. (4); \underline{ts'} < //k < //k \chi' (7)$	$c' [t'] (2)$ $ts (1)$ $sh (1)$
$\underline{ts} < !k < !k \chi' (4)$	$z (2)$ $t (1)$ $k' (k) (5)$
8. $\underline{dz} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right., !' (7) \underline{dz} < \neq \begin{smallmatrix} k \\ g \end{smallmatrix}, \neq k \chi (3)$	$j[dz] (3)$ $ts (1)$
$\underline{dz} < \begin{smallmatrix} k \\ g \end{smallmatrix}, !n (2)$	$z (1)$ $\underline{'d} (1)$

C) Lateral

Sandawe	Hausa
1. $\underline{t}(tl) < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right., // (8); \underline{t} < //kh, // \chi (2)$	$t (1)$ $\underline{'d} (2)$ $z (1)$
	$k', k (4) g (1)$ $h (1)$
2. $\underline{d}(dl) < //n, \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (4)$	$s (1)$ $g (1)$ $k (1)$
3. $\underline{s}(hl) < \left \begin{smallmatrix} h \\ \chi \end{smallmatrix} \right. (3); \underline{s} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (4)$	$s, sh (3)$ $h (3)$
$\underline{s} < // (2)$	$k', k (3)$
4. $\underline{t'}(tl') < //k' (5); \underline{t'} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right., // (8)$	$t (5)$ $\underline{'d} (3)$ $l (1)$
$\underline{t'} < // \chi (1)$	$k', k (4)$ $h (1)$
5. $\underline{t'}(tl'h) < //k < //k \chi' (7); \underline{t'} < //g: // (1)$	$t (1)$ $\underline{d} (1)$ $r (1)$ $y (1)$
	$k', k (4)$
6. $\underline{l} < //n (4); \underline{l} < //h (1)$	$l (3)$ $\underline{d} (1)$

D) Velar & Glottal

Sandawe	Hausa
1. $\underline{k} < //k, //k \chi' (3); \underline{k} < \begin{smallmatrix} k \\ g \end{smallmatrix}, !' (5)$	$k (4)$ $k' (1)$ $g (3)$
$\underline{k} < \neq k (2)$	$h (1)$
2. $\underline{g} < \neq g (2); \underline{g} < \begin{smallmatrix} k \\ g \end{smallmatrix}, !k' (7)$	$g (3)$ $k (1)$ $h (1)$
$\underline{g} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (1); \underline{g} < \begin{smallmatrix} k \\ g \end{smallmatrix} (1)$	
3. $\underline{h} < ! \chi, !k, !h (5); \underline{h} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right., \left \begin{smallmatrix} h \\ n \end{smallmatrix} \right., \odot p (5)$	$h, s (5)$ $g (1)$
$\underline{h} < \neq k, !h (1); \underline{h} < //', /k (2)$	$n (1)$ $' (1)$
4. $\underline{k'} < //k \chi', //k (7); \underline{k'} < !k \chi', !k, k \chi' (4)$	$k' (3)$ $k (2)$
$\underline{k'} < /k \chi', /k (2)$	$y (1)$
5. $\underline{k'} < //k \chi', \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (5); \underline{k'} < !k \chi', !k(w) (1)$	$k' (3)$ $k (2)$
	$c (1)$
6. $\underline{'g} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right. (6); \underline{'g} < \begin{smallmatrix} k \\ g \end{smallmatrix}, !n (4)$	$g (gy) (5)$ $k, k' (5)$
$\underline{'g} < \neq g (1); \underline{g'} < \begin{smallmatrix} k \\ g \end{smallmatrix} (3)$	

E) Voiced Continuant (Sonants)

Sandawe	Hausa
1. $\underline{r} < \left \begin{smallmatrix} k \\ g \end{smallmatrix} \right.: // (2); \underline{r} < \begin{smallmatrix} k \\ g \end{smallmatrix} (1)$	$r (1)$ $l (1)$
$\underline{r} < \neq g (1)$	$k' (1)$
2. $\underline{m} < m (8); \underline{m} < \odot m (1)$	$m (4)$
3. $\underline{n} < /n, n (3); \underline{n} < //n (3)$	$n (3)$ $l (1)$ $g (1)$
	$t (1)$

F) Semi-vowels

Sandawe	Hausa
1. $\underline{'w} < \begin{smallmatrix} k \\ g \end{smallmatrix} (w) (2)$	$w (2)$
2. $\underline{'y} < //k (//k) (2)$	$'y (1)$ $y (1)$

APPENDIX III

COMPARATIVE WORD LIST (BUSHMAN : HAUSA)

A) Labial Consonants

Bushman (Hottentot)

Hausa

1. $b < !n/w/; b < 'b < !\frac{k}{g}$

- 1) S_2 !noe „no“, C_2 !no „to blame“
Zulu !ka „no“
 $bá:$, $bà:$, $bá$ „not“
 $ba < !nwa < !noa$
- 2) N_1 !nwà „man“, !na:, !nwi „big“
Na. !na: „be bigger“, taller, stronger, overcome“
 $bà:bá$ „father“
 $bàbá < !nwà-!na$ „man-big“
- 3) S_1 !na: strong
 S_1 !na: !na: „to harden, be hard upon“
 $bàbbá: < !na: !na:$
 $babba:$ „big, older“
- 4) N_1 !nwà „man“ N_1 koa, S_1 $k\chi'o'a$ „to fear“ S_1 ko:, kə: „other, another“
 $bà:k'o$ „guest, stranger“
 $bà:k'o: < !nwà-k\chi'o$ „man-to be feared“
- 5) $N_{1,3}$!kwà, S_1 !kwa: „to break“
 S_5 !kwe „mouth“ N_1 ki-ke dem. „that“
 $bà:kí$ „mouth, edge, bank (of river)“
 $bà:kì < !kwà-ki$ „breaking-here“
- 6) Na. !gá-i „back“
 $ba:yá:$ „back“
- 7) S_1 !kwá-i-ja „to follow“
 $bí: < báí < !kwáí$ „to follow“

2. $'b < !\frac{k}{g} (!n)$

- 1) Na. !nàrí, C_2 !narri „to steal“
Na. !nari-àò- „thief“; S_1 $kāui-ja$ „to steal“
 $bàrá:wò < !nàr-á(w)ò$ „thief“

Bushman (Hottentot)

Hausa

- 2) S_1 !kwe !ko: „to lose“
 S_1 !k\chi'wakka „to be decayed, putrid“
 $bátà$ „become lost, spoiled“
- 3) S_1 !kū-i, !kyī „to rise“, used as „up“
 $bùllà$ „to appear“
- 4) S_1 !ko:, !ko:wa „to miss, not find, find empty, not see“
 S_1 !k\chi'o „to miss“
 $bó:yè$ „to hide“, $bo:yè$ „to be hidden“

3. $f < !h$

- 1) Na. !hà: „to blow out“
 $fá:$ (strengthening particle), emphasizes „sudden blazing up of inflammable material“
- 2) Na. !hùri „to be frightened“
 $fír-gítà:$ „to become terrified“
 $gí:gí:-cè$ „to become panic-stricken“
- 3) Na. !húru „to blow, pant“
 $fú:rà, hú:rà$ „to blow“

B) Dental Consonants

Bushman (Hottentot)

Hausa

1. $t < /k; t < \frac{k}{g}; t < \frac{k}{g} (\neq n)$

- 1) S_1 $ká:$, $tā:tā:$ „to touch“
 S_1 /kabbo /kabbo „to be pointed“
 $tá'bà$ „to touch, handle“
- 2) !kaba, !kabba, !ka:và „to clap hands“ Na. /lám „to clap hands“
 $tá:fà$ „to clap (hands)“
- 3) Na. /l'á: „to go“, /l'àrì „to stamp“
 N_2 /l'abba „to go along“ S_1 $tàì$ „to walk“
 $tàfí$ „to go, travel“
- 4) Na. $dà:b$, „a pace“, Na. $tàk'á:$ „a pace“; $k'á:k'á:$ „like“
 $\neq nà:$ „to dance“
Na. $dà:-éi$, Kor. $dà:-k\chi'ai$ „to tread on“

Bushman (Hottentot)

Hausa

- 5) Na. $\neq$ gai-!va „to bend the bow“ tánkà „to bend the bow“
 6) Na. /!àrè „to come together“ tà:rè „together“

$$2. d < 'd < \begin{matrix} k \\ g \end{matrix}; d < 'd < \begin{matrix} k \\ g \end{matrix}$$

- 1) Na. /ka „with, by means of“ dà „together with, by means of, and“
 2) Na. dáo, dáu, S₁ !khāua, dáfà (Ar. ṭabakha) „to cook“
 !χāua, S₂ !χame, N₁ χame „to cook“
 3) Na. !gà:b(ì) „poison“ dáfì „poison“
 4) Na. !kàrè-b „a part, one half“ dárè: „night“
 S₁ !karritən! karrita „to form a circle or half circle“ S₁ !ka!karo „moon“ N₂ !karra „to cut in two, divide“
 5) S₁ !karrakən „to move quickly, whirl“ dá:rè „to scatter“ α)
 S₁ da'rrakən „to move, quiver, shake, tap, movement, stirring“
 N₂ !kàrà „to burst open“ dá:rè „to crack“ β)
 S₂ !karro „to run“ dá:rè „to run off“ γ)
 Na. kàrè „to trot“
 7) Na. dàvā „to turn back, return“ dà:wā-yà: „to return“
 Na. dàvā „at, to, on, against“ dāvā-yà „to return there“
 8) C₂ /gira „a jackal“ dīlā: „a jackal“

$$3. 'd < \begin{matrix} k \\ g \end{matrix}; 'd < \neq$$

- 1) S₂ /ga-ba „infant, little boy“ 'dā: „a son“
 Na. /gǎa-ba, C₂ kwa-ba „son“
 Na. /góm, N₂ /gám „to suck“

Bushman (Hottentot)

Hausa

- 2) S₂ /kau „to carry“, S₃ /!kau 'dāukà „to carry (on shoulder) „to carry on shoulder“, S₁ !kau:, S₂ !gau „to carry on the hand held up“
 3) Na. $\neq$ òm-!gǎ „to trim, border“ N₂ $\neq$ um, S₁ $\neq$ im „to sew“ 'dùnkà: „to sew partly“

$$4. ts' < /k\chi'; ts < /k(!h), !k; ts < /|k(|h); ts < \neq \begin{matrix} k \\ g \end{matrix}$$

- 1) S₁ !hauwa, !hau: „to sit, be together in troops or numbers“ tsá:bà „altogether, exactly“
 2) C₂ /!kaiku „between“ (C₂ tsáká-ní „among, in the middle kwe „man, place, from), C₂ of“
 zakani-tfi „middle-aged“, C₁ gai-wa „in the middle“
 3) Na. /!kaigu-a „gravel“, Ko-rana /!kχáeku-a „gravel“ tsákú:wà „gravel“
 4) Na. /!hare „to rejoice, jump (of a dog)“ tsállé-tsállé: „jumping“
 5) Na. $\neq$ góm-ái- $\neq$ núí „to trust, confide“ tsámmá:nì „to believe“
 6) Na. !hóvā-b „worm“ tsú:tsà „worm“
 7) S₆ /ki, /kari, Na. $\neq$ kari tsìrā:rì: „few, a small number“ „small“ C₂ /kχ'orro „few“, kχ'arre „a few, a small group“, C₂ kχ'erri „little“
 8) S₁ !khe < !khai, Na. khāi „to stand“ „stop“, N₁ tsa:ra „to stop“ tsáyà „to stand“
 9) S₁ !ko!koiv, tsoro:kən, !kari tsó:fó:, tsó:hó: „an old person „old“ or thing“
 10) S₄ /!kani, /!kári „much, many, all“ S₆ /!kante, C₁ tsao „many“ tsánání: < /!kani/!kani „plenty“

5. $s < /h, /p, \neq h; s < s < /kh(!h); s < s < /k\chi', /p'h, /p'$

Bushman (Hottentot)

Hausa

- | | |
|---|---|
| 1) N ₃ /'hã „to gather“, S ₄ /'a „to set, stick in“, Na. /hãm „to put away, hide“ | sá: „to place in, set on, appoint“
sákà < /hakkən, /' akka „to place, put“
sá: „ox“ |
| 2) S ₃ !khoa „cow, ox“
S _{2e} / hoa, / owa „ox“ | |
| 3) Kor. / kχ'ái:b, N ₁ / ai:a „time, season“, S ₁ / kai „winter“ Na. / 'áib „time“ | sa'a „time, season, hour“ |
| 4) Kor. ≠hóáb(i) „news, new“ | sà:bi: (pl.) „new, young“ |
| 5) Na. /à:-mũ „sharp-see“
Na. /ami-s = /amūs „sharp-seeing“ | sà:má:, sá:mù „to find, discover, get“ |
| 6) N ₁ !hã:, N ₂ !khã, N ₁ ≠ã: „to know“, S ₁ ≠ka: „to be light, bright, visible“ | sán, sání „to know“ |
| 7) S ₁ !hau, !ha:o „to follow“
S _{4b} !hai „foot“ | sáu „foot, footprint, to follow“ |

6) $z < /', /g^k, /v (\neq v); z < z < /g^k; z < z < /', /g^k$

Bushman

Hausa

- | | |
|---|--|
| 1) Na. / 'à:, S ₁ / 'a:, tai, S ₆ /a „to go“, S ₄ / ka, S _{2a} / ga, N ₁ !ga, S _{4b} ≠a „to go“ | zà: „to go“ |
| 2) N ₁ !ka, S _{1b} !kanne, C ₁ ganee „gwineafowl“ N ₃ sumbi „fowl“ or „gwineafowl“ | zà:bi: pl. gwineafowl“ |
| 3) S ₅ / kàbbe „to pick up, carry, bring“ N ₂ sà: „to pick up from the ground“ | zà:'bè: „picking and choosing“ |
| 4) / kwánna „heat“, N ₃ khwá „hot“, S ₁ !kwá: „angry“, N ₁ khwí, C ₂ kχ'wá: „have pain“ | zá:fí: „heat, pain, anger“, fí: „to exceed, surpass (Na. !gì: „to overcome“) |

Bushman

Hausa

- | | |
|--|--|
| 5) S _{2a} !kweki, !kweike „lion“, C ₂ !kχam, S ₁ !kaan, S ₁ / khã: „lion“ | zá:kì „a lion“ |
| 6) Na. sã, /hã-i, C ₁ /ka-he „to rest“, N ₂ fã, S ₁ sãsá: „to rest“, S ₆ /nam „to sit down“, S ₅ !kam „to sit“, S ₁ !hau: „to sit“ | zám-á: „a sitting down, resting“ |
| 7) S ₂ /'ã:, /'a: „be long, old“, N ₁ /au „old“, S ₁ 'mumu „to show, make see“, S ₁ mu: ≠ en „seing know, recognize“, C _{1,2} mu, mo „to see“ | zá:màni „period, time“, San. /'amu „once, once upon a time“, zamani < /a-mu ≠ en-i „the old recognize“ |
| 8) N ₂ ≠nàm, ≠nàm(a) „to fight“, S ₁ ≠na'mmen „to eat out of cells with a stick (i. e. fighting with the bees)“ | zà:má:nì „war, enmity“ |
| 9) Na. /gǎni (gáne) „grass“, S ₄ /gabbi „dress, stuff“, N ₂ sa:n „dress“ | zà:nè, zani „a woman's body-cloth“ |
| 10) N ₁ !ko:ma „hare“ | zó:mó: „hare“ |

C) Prepalatal Consonants

1. $c[t] < /t\chi(t\chi) < /k(w); c < t\chi < /k(w)$

- | | |
|---|--|
| 1) N ₃ kwa i „there“ + N ₃ v, n „this is“ S ₅ / kwi: „there“; S ₅ / kwa „to sink, pass“ /cp. S ₅ tia „there“ | can „yonder, over there, that“ |
| 2) S ₁ / ke:, / ke: tən „to tell“ | ce: (tone is dependent on previous word) „to tell“ |
| 3) S ₂ !kwé: „to eat meat“ | ci „to eat, devour, conquer“ |
| 4) N ₃ / kwi „to be full“ | ci-ka „to fill“; ciká „be full“ |
| 5) C ₂ / kaiku „between“ S ₁ / kai:, / ka:i, / kai:e „inside, middle“ | ci-ki „inside“, ciki „the abdomen“ |

Bushman

- 6) San. *!im-a*, S₁ *!ku:i* „thigh-bone“ S₁ *tĩ*, Na. *tẽ-s* „thigh“
 7) S₁ *!kui-ja* „to flee“ *!kú* „to run“
 8) N₃ *||ki* „a certain kind of grass“ S₁ *||kχ'ábbi* „very much“
 9) S₁ *!kui!kui* „burn, pain“ *!ku:i* „to burn, pain, be burnt“

2. $j [dʒ] < \begin{smallmatrix} k \\ g \end{smallmatrix} : !$

- 1) S₁ *!ga:* „to pult open“ N_{1,2,3} *!χa* „to draw out, take off, open“
 2) N₁ *!gã*, *!ga* „to be red, be light“ N₁ *≠gã* „red, orange, brown“
 3) S₁ *!gwa* „to draw“, Na. *≠gai* „to draw“ S_{6a} (*!ke*) *!ga:va* „(people's) breast“
 4) N₁ *!kài* „veld“, N₁ *!gai* „to hunt“ Na. *!hài* „to hunt on horseback“ N₁ *!gãĩ* „tree, wood, root“
 5) S₁ *!kaukən* „children“
 6) S₁ *!kaukən* „body“
 7) S₁ *!i:*, *!i* „sleeping skin“
 8) S₁ *!ka* *!kan*, *!ka* *!kanna* redup. of *!kan*, *!kan* „to hold“
 9) N₂ *!in* „blood“
 10) S₁ *!kã:kã:* redup. of *!kã:* „to wait“
- cinyà* pl. *cunai* „thigh“
ciri „fleeing“
cì-yá:wà „any kind of grass, weeds“
cì-ya:wa < *||ki-||kχ'aba* „much grass“
cù:tá: „disease, sickness, ailment“
- já:* „to pull, draw, drag“
jà: „very red, blood red“
jà:-gàbá „a traveller's guide“
ja: „to draw“ + *gàbá:* „breast, the front“
jázzá: „an uninhabited, uncultivated, thinly wooded, piece of country; cp. Sokoto *daji*“
jí:kà „a grandchild“
jíkì „a body“
jí:mà „tanning“
jíngìnà: = *dangana* „to pledge, pawn, prop, lean against“
jíni: „blood“
jírà: (*jirata*) = *dakata* „to wait for“

Hausa

D) Lateral Consonants

1. *sh* (*ʃ*, *ʒ*) < *||h*, *||kh*

Bushman

Hausa

- 1) S₃ *||kha:*, *ʃa:*, S₄ *||kha*, *shá:* „to drink“
 S₂ *!kha* „water“ S₂ *||kχ'ã* „to drink“
 2) Na. *||hèi*, C₁ *hai-e* „to run away“ N₃ *||'hai* „to stamp“, S₅ *||ham* „to run“ S₁ *||ka* *||k'a*, *||k'á:* „to resemble, be like“
 3) C₂ *||kam*, C₂ *ham* „to smell“ *shé:k'à* „to smell, inhale“

2. $l < \begin{smallmatrix} k \\ g \end{smallmatrix}, ||v$

- 1) C₁ *||gwa*, S₄ *||ka*, S₅ *||kwa:*, *lá:* „no“
 Na. *ta* „not“ C₂ *ká:a*, N₁ *ká* „no“
 2) Na. *||navà* „to bind a load strongly“ N_{2,3} *||n'abba* „to carry a young child...“ *lábtà* „to put a load on a pack animal“ *lábtà* < *||nab-ta*
 3) Na. *||garì* „to compel, force“ S₁ *||ha:gən*, *||ha:kən*, *||ha:ha* „to rival, overcome, get up to, equal, reach“ *lák'è* „hit a person, knocking him down, overcome an enemy easily“
 4) Na. *||nau-||kha* „to lick (at)“ C₁ *tauwe* „to lick“ *là:sá:* „to lick, lick up“

E) Velar & Glottal Consonants

1. $k < \begin{smallmatrix} k \\ g \end{smallmatrix}, ||χ, ≠h, ≠k, !k, ||k$

- 1) S_{2a} *!kai'a* „on top“, C_{1b} *kái* „head, top, crest“
kai:o „head“
 2) S₁ *!ke!ketten*, *!ko!koin*, S₄ *kà:ká:* „grandfather“
χaiχa „old“

- | Bushman | Hausa |
|---|-------------------------------------|
| 3) C ₂ ≠kama „to take“, S ₁ /ká „to catch“ | kámà „to catch, seize, lay hold of“ |
| 4) N ₁ kam, kama, C ₃ koma „(to be) like“ | kàma: „likeness“ |
| 5) S ₁ /χarru, Na, 'àri-b „dog“ | kàrè: „dog“ |
| 6) Na. ≠géi-rà „to call“ (-ra durative) | kirà „to call“ |
| 7) S ₁ / ko, / koa, / kei/ kei „to be like“ | kó:yì „imitating“ (koikoyo) |
| 8) S ₁ / kóu „to teach“: S ₁ / kaí „to take notice“ | kó:yà „to teach“; ko:yà: „to learn“ |
| 9) N ₂ ≠kuru „to take care of“ | kùlà „care, mind, take notice“ |
| 10) N ₂ ≠hìras „hyena“, S ₁ /ku: „hyena“ | kù:rà: „hyena (spotted)“ |
| 11) Na. /gúsa „near“ | kúsà „nearness“ |

2. $g < \begin{matrix} k \\ g \end{matrix}, \begin{matrix} k \\ g \end{matrix}, \begin{matrix} k \\ g \end{matrix} (!h), \neq g$

- | | |
|--|---|
| 1) N ₁ /ga, /gaa, /gə'a „eye(s)“; Na. / ga: „to“ | gá „to see“; gà „to, towards“ |
| 2) S ₆ !gavà „breast“ | gàbá: „breast, the front“ |
| 3) S ₁ kau'a „east“, S ₁ /kó „to be in the east“ | gàbás „the east“ |
| 4) Na. / gà: „to attack the enemy“ | gà:bá: „enmity“ |
| 5) N ₂ /karu „pig“; N ₁ !ga: „wild boar“ | gàdú „a wart-hog“ |
| 6) N ₂ !karra „kraal, stable“, Na. !haragu-a (pl.), Kor. !harakya „kraal“ | gàrà:ká: (pl.) „place where cattle are kept at night“ |
| 7) /kwain/kwain „ants“ | gína: „large flying termites“ |
| 8) S ₂ /kwen „to build“ | gínà „to build with clay...“ |
| 9) S ₁ ≠gwāi „clay“ | gínà „to make pottery“ |
| 10) S ₁ !karri, !kerri, Na. geira „old, big, great“ | gír-má: „bigness“ |
| 11) S ₁ !kua, C ₂ ≠koäba „elephant“ | giwa „elephant“ |

- | Bushman | Hausa |
|---|--------------------------------|
| 12) Na. !hana-b „field, garden“ | gó:ná „a farm“ |
| 13) S ₁ !kan „land, veld“, S ₁ !k'aũ „ground“ | |
| 14) S ₄ / kú „neck“, N ₂ / kú „to hang up, place upon, on top of, kick“ | gú „a place“ |
| 15) C ₂ / kum „arrow“, C ₂ / kumi „to poison“ | gúbà „poison“ |
| 16) S ₁ !kurri „riverbed“ | gúl-bí: „river“; gurí: „place“ |

3. $h < h, /χ, \neq h, /||χ$

- | | |
|--|--|
| 1) S ₁ ha, N ₁ hai „he, she, it“, ha-ka „his. its“ | hákà (Ar.) „thus“ |
| 2) S ₁ / χe:ki, / χe, / ke:, / khe, Na. / gá-b „grass“ | haki „grass“ |
| 3) Na. kharu „to dig“, S ₅ / χa „digging stick“ | hák'à „to dig a hole“ (-k'a „like this“) |
| 4) S ₁ hà:, hã:, ha:, haa „to eat“ | hák'à „eat up food greedily“ |
| 5) Na. ≠hàni „to hinder, prohibit“ | hàni = hànà: „to prevent, prohibit“ |
| 6) N ₁ ≠ha, ≠ha „arm, wing, foreleg, handle“ | hànnú: „hand“ |
| 7) N ₂ !χo ≠hanna „elephant's trunk“ | hànnún giwa „trunk of elephant“ |
| 8) S ₁ ≠hãnnũ „to be happy, good, fortunate“ Na. ≠ha-nu „to be right“ | hànnú: „being fortunate“ |

F) Nasal Consonants (Sonants)

1. $m < m$

- | | |
|---|---------------------------------|
| 1) C ₃ ma („to have?“) poss. part. 'of', following thing possessed | màì „the owner or possessor of“ |
|---|---------------------------------|

Bushman

Hausa

- 2) S₂ *m-* prep. „on, of“, used before labials“ *ma-* denotes „the agent, the place of work“
 3) S₁ *mai'n* „under the arm“, C₂ *mi, mí* „to say, tell“ *mík'à* „to stretch out, hand to, spread news“

2. *n* < *n*, *//n*, *!n*, *m*

- 1) S₁ *//na* „to be here“; N₁ *nán* „here“; *nán* „there“ */né* „there“
 2) C₂ *!nú:* „far“, with high tone „very far“ C₂ *!nu:* „far, deep“; Na. *!nú:se* „far“
 3) S₁ *mu:mu* „to show, make see, see“ *nú:nà* „to show, point out“

G) Vibrant Consonants (Sonants)

1. *r* < *!v*, *!k*_g

- 1) Na. *!gāb(à)* „brother“ *rá:fà:ní* „maternal uncle“
 2) Na. *(hò) !nàb(à)* „profit, advantage“; Na. *!navè* „to find something hidden“ *rí:bà* „profit, advantage“
 3) S₁ *!no:a:* *!no:a'* „to frighten“, S₁ *!kuppəm* „to startle“, S₁ *!ko:* „to frighten“ *rú:bà* „intimidation“

2. *r* < *//k*_g, *//p*

- 1) C₂ *//ei*, *//ēi*, *//ē:ja* „to live, stay, stand“ *rāi* „life“
 2) S₅ *//an*, *//anna* „sun, day“ *rá:ná:* „sun, day“
 3) N₃ *//kùba* „to cover, wrap“ *rufà:* „closing, covering, to wrap“
 4) N₁ *//kai*, N₃ *//kei*, S₃ *//ke* *rik'à:* „to keep on doing, hold“ „to hold“
 5) N₂ *//gú:*, *///gú* „water, rain“, Na. *tú:b(a)* „storm“ *rúwá:* „water, rain“

H) Semi vowels

1. *w* < *!k*_g; cp. *b('b)*; 2. *y* < *//k*_g

Bushman

Hausa

- 1) S₁ *!gaue* „dawn“ *wá:yè* „to dawn“
 2) S₁ *!kurri* „riverbed“, N₃ *!kun* „snail“ *wúri:* „a place“; *wúri (kú'di:)* „cowrie“
 3) S₁ *!kumba* „heavy“ *wúyà:* „trouble, difficulty“
 4) S₂ *!kú* „neck“ *wúyà* „the neck“

2. *y* < *//k*_g

- 1) S₁ *//ka-xe* „elder sister“ *yá:* „elder sister“
 2) N₂ *//kwá* „to kill“, S₆ *//kwan-* *nako* „to kill“ *yánkà* „to slaughter“
 3) S_{4b} *//gau* „day“; */a //gau* *yáu* „to-day“ „to-day“

3. *'y* < *⊙p'(w)*

- 1) S₁ *⊙p'wa-xai*, *⊙pwa-xe* *'ya:* „daughter, a free-born female“ „daughter“

APPENDIX IV

PHONETIC CORRELATIONS OF BUSHMAN:
HAMITO-SEMITIC*h* < *kχ'*, *!kχ'* (*!k(g)*, *!χ*)

H. — B.

Ha. — Se. **

- S₄ *kχ'ane* „to swell, sprout“ OE * *hnhn.t* „swelling“
 N₂ *!khu* „back dress“, N₂ *!ko* „back“ OE *hʒ(hʒw)* „back“
 C₂ *kχ'e-ti* „foreheads“ (pl.) OE *hʒt* „forehead“

* OE — Old Egyptian.

** Hamito-Semitic.

H. — B.

S₁ *kx'akx'akka* „to make a hissing noise“

S₄ *kx'aa*, *kx'a*. *kx':a* „earth, ground, clay“

C₃ *kx'asa'ma* „spearheaded arrow used for rhinoceros hunting“

S₁ *kx'oro:ka* „to dry, shrivel, burn up“

S₁ *kx'orokən* „wear out“

S₁ *!kx'oé* „to complain“

S₁ *!khou:* „hiphone“

S₁ *!kx'erri* „to hurt“, N. *!khà:* „to sting“, N. *!kari-b* < *!kha-di* „honeybeer, mead“

C₂ *kx'we:* „to fill, dip up“, C₂ *!kwe:é* „to dip up“

S₁ *!kaukən*, -*ka* „to beat, strike“

S₁ *!kx'au-ro* „burnt“

S₁ *!kú*, *!khú:* „to grow“

Ha. — Se.

Ar. *hiss* „a small noise, excl. of joy, exultation“, Galla *hasaw* „to rejoice“, Pol. *hasac*

Hau. *k'asa* „earth, sand“, Bed. *haš*, Hebr. * *hšš* „sand, pebble“

Guèze *haš* „arrow“, So. *hadid?* „root, nerf, artery“

Ar. *hrk* „to burn“

OE *h₂* „to complain“

OE *hkw* „hip“

Ar. (na)-*hla* „bee“

OE *m-h* „to fill, be full“, Ar. *mu-hh* „interior of the egg“

So *hau* „to murder, kill“

Galla *haw* „fire“

OE *h₂w* „growth, increase“

h < *≠kh*, *!kh*, */kh*

H. — B.

N₂ *v ≠ha:va* „forearm“

C₂ */ka:ba(s)* „flat“

C₂ */xe:*, N. *≠gáis(a)* „leaf“

S₁ */kwarri* „dirt, scrap of skin“, S₁ *≠garrakən-sitən* „dirty“

Ha. — Se.

OE *hps* „forearm“

Ag. ** Ch. *haša* „leaf“

So *** *hār*, Af. *harā* „excrement“, Twareg *agərrag* „excrement“

* Hebr. — Hebrew.

** Ag. — Agau. Chamir.

*** So — Somali.

h < *≠kh*, *!kh*, */kh*

H. — B.

Ha. — Se.

N. *≠karú-s(-ti)* „the hind part of velum“ Akk. * *harurtu* „neck“

S_{2b} *≠khōa* „wild boar“ < *≠kx'oma* Akk. *humsiru* „boar“, Ar. *hinzir* „id.“

S₁ *≠karre:*, *≠karri* „to seek, examine“ Bed. *haruw* „to seek, want, Bed. *aray* „to choose“, Bed. *arraw* „to love“

S₁ *||kōiv !khwai*, S₁ *||kōiv* „sun“ Eg. *yohw* „sunshine, sunrise“

N. *!kharì-b* „mead, honey beer“ (+ N. *sá:* „to gather, lift, pick up“) Eg. *sht* „bee“, Bil. *sakara* „bee“

S₁ *!kurri* „riverbed“ Bil. *kūra* „river“, So *hōri* „river, stream“

C₂ *!ko:e:ta* „to run“, C₂ *!xwe* „to run away“ Ar. *hwd* „run“

S₁ (*!khwa*) *!khwai:tən* „sticks“ (pl.) Ar. *hitr* „stick, trunk, branch“

N₂ */kam* „cheek, the lower part“, C₁ */gam* „point, side“ Ar. *hadd* „cheek“, Eg. *hnt* „face“, Hau. *han-t/i* „nose“

C₁ *ho ||ke* „to reject“ < C₁ *ho* „nothing“ + C₂ *||ke* „to put in“ Ar. *hlC* „to reject“

C₁ *hwere* „a muddy pool“, S₁ */kārū*, */kānnu* „a muddy pool“ Amh. *kwere* „pool“, Ar. *hwr* „bay, gulf, creek“

* Akk. — Akkadian.

$h < \bar{h}, /h (/kh)$

H. — B.

Ha. — Se.

S ₁ /hoaka „dark, black“, S ₁ /ho: „darkness“	Bed. hawad „night, evening“
S ₁ habba:kən „to eat up, devour“	Ar. habr „meat“
S ₄ haijo interj. „hullo“, C ₁ hola „to thresh“	Ar. hll „song, cry of joy“
S ₁ /ha „husband, wife, consort“	Eg. hy (also hōy) „husband“, So hawo „desire, passion“
S ₄ /hú:i „to come down“, used as „down“	Ar. hwy „to fall“
S ₄ ha, hà „to be, stay, live“	So hay „to be“

 $\mathcal{C} < !g, \neq g, /g(/|g)$

H. — B.

Ha. — Se.

N. !gorà „bare“	Ar. Ēkr „sterile, bare“, Bil. kūrīr „sterile, impotent“
S ₄ !kausi „to make fire“	Heb. Ēśy „to make“
N. !gào-//na „cut“ + „fall“ = „to harvest“	Ar. Ēadada „to harvest“
S ₁ xappəm „to drink“ (supping with the brush... ostrich eggs), N. ab(a) „drinking“	Ar. Ēabb, gabb „to drink“
S ₁ !kui:-ja „big“	Eg. Ēo(y) „big“
S _{2b} !kate: „big“	Ar. Ēly (Ēlw) „be high, to mount“, Hau. hau „to mount“, So. Ēal „mountain“
S ₁ !go-ro „one-eyed“	Heb. Guèze Ēwr „become blind“

 $\mathcal{C} < !g, \neq g, /g(/|g)$

H. — B.

Ha. — Se.

N. ≠ga:-!na-gu „to weave, plait“	Ar. Ēašaba „to bind“, Guèze Ēašafa „to weave“
N. ≠gán — sa — !gā „cover-gather-back“	Guèze Ēašawa „to close“
N. /góu-ra „female pudenda (dual)“	Ar. Ēawra „female pudenda“
S ₂ /kou „skin“, C ₂ /kə:ti „skins“	Heb. Ēwr „skin, leather“
C ₁ /goo „to murder, kill, defeat, conquer“, drive away; war, slaughter, conquest, murder; an enemy“	So Ēol „enemy“, Heb. Ēwl „to treat badly“
N ₂ /ga:sin (pl.), N ₂ /ga: „eye“, N ₂ /gjà „id.“	Ar. Ēyn „eye“
S ₁ //goarkoa < //goara/goara „calf“	Ar. Ēiljl „calf“, Heb. Ēegēl „calf“, Amh. gəlgał, Ch. gīl-gīl „small one of animal“

 $k < /k, \neq k, !k(g), /|k(g)$

H. — B.

Ha. — Se.

C ₂ /ko „bull“	Eg. kə „bull“, also gw „sort of bull“
C ₂ /ka:ba, /ka:m „flat land, plain“	Akk. kappū „hand“, Ar. kaff, Heb. kap(p) „palm, (hand)“
N. 'am < k'am + !kháru „mouth“ + „to snore“	Ar. kafūra „snout“, Guèze kanfar „lip“, Ar. hanfōra „snout, ugly nose“
S _{2b} ≠kalu „sheep“	Heb. kar(r) „lamb“

$k < /k, \neq k, !k(g), //k(g)$

H. — B.

Ha. — Se.

S ₁ /kharra „contents of stomach“	Čara karas „stomach“
S ₅ /karoba „to be cold“	So kurəm „to be cold“
S ₆ /kari, S ₁ ts'əre, ≠eri, C ₂ /k'are „be small“	Eg. kt(t) „be small“, Hau. k'arami (-a), (-ma Bush. „small“)
C ₁ karie „be strong, grown up“	So kar „be strong“
N. !kai !gou „dark (dark-excess)“	Eg. kkw „darkness“
S ₁ !geitən !geitən „to move“	Ar. kikt „to move“, Amh. ka-takkata „to blow“
S ₁ !kwetən „wind“	
N. //garàb „shoulderblade“, S ₆ //gore „id.“	So garab „shoulder“, Ar. kafal „back“
S ₁ !ku !kui:ta „big“ pl. of !kuija „big“	Ar. kbr „big, honoured“
N. //garàb „sieve“	Guèze karabo „basket“, Heb. (talm.) kəbāra „sieve“
S ₁ //kòara „sun, summer“	Ag. kuara „sun“, Hau. kwana „day“

 $g < /g, \neq g, !g$

H. — B.

Ha. — Se.

S ₄ /ka „face“ (Comp. Voc.), S _{4a} /ke/ke „face“, „sole (of foot)“	Ethiopic gaš „face“, So jeeso „to turn, to face“
S ₅ /gum „camel“, C ₁ gabee „giraffe“	Bil. gimila „camel“, Bed. kamal „camel“
S ₁ /kum: „mist“	Amh. gum „mist“

 $g < /g, \neq g, !g$

H. — B.

Ha. — Se.

N. ≠karù-s, ≠karù-n „the hind part of velum“	Heb. gāro(w)n, grgr „throat“
S ₂ /kã „flat“, C ₂ /ka:ba „flat, land“	Ar. gābāba „flat country“
N. !garab(a) „meagreness, lean“	Aram. garmā „bone“, Ar. girm „body“
N. !'anib, C ₁ koni „side“	Ar. ġanb „side“
S ₁ !karrita, !karritən „to form a circle or half circle“	Heb. gilgal „circle“
N ₂ !kuru „to cut up“, S ₂ k'ore „id.“, C ₁ kare „to cut“	So gur, kor „to cut“, So jar „cut, chop“
N ₁ !gu „stomach, body, belly, seedpod“	Ar. ġutta „body“
C ₂ !gabiša „mountain“	Sem. gbl „mountain“
S ₂ !gau-ke „body“	Heb. gew „centre, body“, Aram. gaw „id.“, So jid-ka „body“
S ₂ !konno „cheeks“	Amh. gʷon „cheek“, Hau. gʷon „id.“
S _{2a} !koi „each other“, S ₁ !kuko: „the other, one, another person“	Heb. go(w)y „people (strangers)“

 $k < //k\chi' (k\chi'), !k'$

H. — B.

Ha. — Se.

N ₃ //k'a „pot“, N ₃ //k'o „to build...“ N ₂ //k\chi'asiv „ribs“, N. //kèib „breast“	Akk. kadu „pot“, Eg. kd „to shape, build, pot“, Ar. kašš „breastbone“
S _{2c} k\chi'ibi „ostrich eggshell“	Aram. kab „measure“, Ar. kāb, kīb „measure, quantity, space“, Ar. kub „eggshell“
C ₂ //kabi	

H. — B.	Ha. — Se.
S ₅ //kχ'aba „to get up, pick up, take“	So kab „hold, take, possess“, Ga kab „to take“
S ₃ //kχ'abe „rope“	Sem kabr „grave“
N. //gutse-//gube -s lie + and-lie + go away + she, N. //gu-dî > //gur > kur	Heb. talm. kūrḳūr „frog“
S ₅ //kχ'a, //kχ'a: „to bray, bleat, low, crow“	Heb. kṛa „to cry, recite“, So garas „to read, learn“, (S ₂ //kala'ā „to speak, language“)
S ₁ //kχ'worre: „to cheat“	Ar. krk „to cheat“, Bil. guareḥ „id.“
S ₁ //kχ'au „to chop, split“	Heb. kardōm „axe“, Ar. kad-(d)ūm „id.“
S ₁ kχ'ərokən „to dry, shrivel, burn up“	Akk. karāru „to burn, dry“, Hau. k'ona „id.“
S ₁ //ko:ro „vagina“ seu „uterus“	So kodo „genitalia“, Eg. kət „female genitalia“, Ar. kilfa, gulfa „foreskin, prepuce“
S ₅ //kχ'ame „to spit“	Ar. kls „to spit, vomit“
C ₃ //kwabbe „beads“, N ₂ kχ'wā „to bubble out, to seek“, N ₂ //kubbu „waterfall“, S ₅ kaba:la „waterbag“, C ₁ kabaa „calabash“	Ar. ḥabab „bubbles of water“, Eg. ḥbb.t „water“
N ₃ //gala „place, courtyard“	So gūri „house“, Ethopic gār „id.“, Hau. gari „town, place“
S ₁ !k'o, !kχ'o „hole“, N ₂ !koro „hole, grave“	Ar. kwr „to pierce, make a hole“, Eg. kr(r)t „excavation, hole“

H. — B.	Ha. — Se.
N. //havùb(a) „flame“	Akk. šabābu „to twinkle“, Aram. šbibā „flame“
S ₅ //χani (pl.) „teeth“	Heb. šen(n) „tooth“, Ar. sinn „id.“
C ₁ //χam „sun“ (C ₂ /kam-ja „sun“)	Heb. šemš „sun“, Ar. šams „id.“
S ₅ //hā:, S ₆ //ha: „be fat“	Heb. šemen „fat“, Bil. senā „fresh butter“
S ₁ //kwija „to pay“	Heb. šwy „to equal“
C ₂ //ko:fa „marks, spoor“, S ₁ //khabbe „to kick“	Akk. šepu „foot“, Ar. soq. šab „id.“, Hau. k'afa „id.“
S ₄ //karu, //karri „bag (with fringe)“	Copt. šaar „skin, bag of skin“, Ar. soq. širhi „skin“
S ₁ //kxurukən (//khukən), //khū „thigh bone“	Heb. šwk < //khu//khu „thigh“
S ₄ //kχ'afu „tsama food without pips“, C ₂ !kāsa, C ₁ tsama, N ₁ tāma „melon“	Akk. šammu „vegetable“
N ₂ ≠habbe „to kill fleas“, S ₁ ≠na „to kick“	Eg. smə „to kill“, Bil. sab „to pierce, kill“
S ₅ //ka/ki „satisfied“, N ₁ t/i: „to water“	Eth. sysy „to feed“, Eg. soy „be satisfied“
S ₁ //χē:, //χī „to pass“	Ar. slf „to pass“, Eg. snf „last year“
S ₁ //χagən Opwonnī „younger brothers“, S ₁ //kav brother	Eg. sn „brother“
C ₁ !χadie „muscle“, C ₂ kχ'əχo „muscle“	Heb. šor(r) „nerf, muscle, navel“

š < ≠h (≠kh), !h(!kh)

H. — B.

Ha. — Se.

N. ≠hurúba „burn for some-body“	Heb. šrp (and srp) „to burn“, Akk. šarāpu „to light fire“
N. ≠ó: „to love, be attracted“	Ar. šyo „to want, wish“, Eg. šoy „command, arrange“, Hau. so „to wish, desire“
C ₁ ≠hoa „antelope“, N _{2a} ≠ha-xab „springbok“	Amh. sasā < ≠hwa ≠hwa „a kind of antelope“
C ₂ ≠are „small“	Akk. šaru, šeru, šerru „small“, „younger, young infant“, Eg. šry „small, young“, Hau. saurayi „youngster“
S ₁ !khoró „corn“, S ₁ !horro „bran, corn“	Eg. šr.t „barley“, So sarēn „wheat, barley“
S ₃ !khoa „ox, cow“	Galla sasa „cow“, So sāo, Hau sa „ox“, Heb. še(h), Akk. šu(o)u „sheep, ram“
S ₁ !kaokən „to roast“, C ₂ //koë „to dry“	Akk. šā(o)u „to roast“, Eg. šw „be dry“, Berb. zwu „to dry“ (tr.) (N ₁ jou „to roast“)
S ₁ !khwa'kki „swartstorm, tree“	Ar. šağar „trees“, Bed. saga „a kind of tree“
S ₁ !khai, !khai: „to scratch“	Heb. šdd „to harrow“, Akk. šadādu „to draw, harrow“
S ₁ !kum „to plunge in, dip in“	Heb. šāpā(h) „lip“
N. ≠kù: „to break“	Ar. šdy „to be split“, Eg. šğ „to break“
N ₃ /hã „to gather, collect“, N ₂ //ke//ke „be like“	Hau. sak'a „to weave“, lit. „to collect“ + „so, this way“, Heb. šakk „sack, coarse tissue“, Hau. sâ: „to place in, set on, fix...“

š < ≠h (≠kh), !h (!kh)

H. — B.

Ha. — Se.

S _{2b} !kare, !kale „to take out“	Ar. šdf „to obtain“, Eg. šzp „to get, accept“
S ₁ !khi:ja „to be red“, S ₂ χre: „id.“	Heb. šrk „red“ (-k < //k', //kχ'), cp. //ke//ke: „be like“

š < !h (!kh)

H. — B.

Ha. — Se.

S ₁ !khweitən-tu(-kən-) „flower“	Bil. čaga „flower“, Gueze šage „id.“
N. !kha:s (-gɣa pl. m.) „id.“	
N. !hao „to call“	Ar. šdd „to cry, call“, Galla ġd „to say“, Eg. ġd „to say“
N. ≠gèi-dì „cry-do“	
S ₁ ≠èri, ts'are „small“	Ar. šağir „small“, Amh. təkit „small quantity“
N ₂ !χanna „duck“, (C ₂ tfaraba)	Eg. črp „goose, duck“
N. !huni „yellow“	Ar. sfr „yellow“
N. !hamì „to hunt“	Heb. šbo „to wage war“, Bil. šab „to go on expedition“
S ₁ !hurã „finger“, S ₄ !kana „id.“	Sem. šbε „finger“, Eg. ġbε „id.“, So far „id.“
S ₁ !haueta, !hauetən „to tie on, fasten on“	Heb. šrr „to bind together“, Ar. šurra „bag“
S ₁ !kaugən „to bake in a hole in the ground“	Heb. šly „to roast“, Ar. šlw „id.“
S ₁ !kwi: „to call“, N. !gó: „to low“, N. gui! „to roar“	Heb. šwh „to cry“, Eg. ġwy „to call, cry“
N ₃ !kχwe „feathers“, S ₁ /khu „hair wool, feather, quill“	Ar. šuf „wool“

s < /h, /'(kh)	
H. — B.	Ha. — Se.
C ₃ /ama „fish“, C ₃ sama „to eat“	Ar. samak „fish“
C ₂ ≠ha „field, plain“	Akk. saḫḫu „field“, Eg. šḫ.t „id.“
C ₂ /koreba „pipe“, N. /góm „to suck“	Ar. šrb „to drink“, Hau. ša „to drink“
S ₁ /xomma „clayey stone“	Aram. syon „clay, mud“, Eg. syn „clay“

z < / ^k / _g , /h (/ ['] / _g), ≠	
H. — B.	Ha. — Se.
C ₁ ze, /kwe/kwe „to fill“	Ar. zhr „to fill“ (intr.)
N ₂ ≠ne-em „to rain (beat down)“, N ₂ ≠nanuba „rain“	Bil. zuwa, So rob „rain“, Hau. rúwá: „water, rain“, Amh. zannama, zannaba „id.“
S ₄ !guma „musical bow“... + dī „to do“	Heb. zmr „to sing“, Galla sirb „id.“, So širb „to sing“ < *tsiriba
C ₁ /hum „breath, spirit“, N. /òm „to breathe“	Guèze sanbāo „lungs“, Eg. zmo „id.“, (S ₁ /kōn/kōn „lungs“)
N. ≠ú „to eat“, C ₂ ≠ũ „to eat, applied to vegetable food“	Aram. zwn „to feed“, Eg. zn „to eat (bread)“

t < ≠kh, ≠χ, ≠	
H. — B.	Ha. — Se.
S ₁ ≠xom „devour“, S _{2b} te'a:n „food“	Ar. (mahri) towū „to eat“, Akk. ta(p)āu „to bite, eat“, Eg. t (for to?) „bread, fruit“
C ₂ ≠go: „gum of trees“, C ₂ ≠go „in“	Heb. tohu „desert, chaos“ (≠go !hù), „in-dust“, Eg. to „earth, world“

t < ≠kh, ≠χ, ≠	
H. — B.	Ha. — Se.
C ₃ ≠'aka'ka „to work softening the skin (rub)“	Ar. tkk „to cut, destroy, grind“, ((S ₁ /a „to cut“ + S ₁ /kwakka „to dress (skin), rub making soft“)
C ₂ /kã „to lay“, S ₁ /kü, N ₂ /kü, N. /gũ „to boil“	Eg. tkw „flamme“, Bed. tekui „to cook“ (trans.)
C ₁ ≠khwee „to vomit“, C ₁ ≠khuu „face“	Heb. twp „to spit“, Galla tufa „id.“, Hau. tofa „id.“
C ₂ ≠kē „to be finished“	Ar. tmm „to finish“, Eg. tm „be finished“

d < ≠n, ≠k(≠g), ! ^k / _g	
H. — B.	Ha. — Se.
S ₁ ≠na: ≠na:, ≠naa, ≠na:á „to kick, dance“	Sem. dkk „to pound, grind“, Eg. dkw „to pound“, Hau. daka „id.“
C ₂ ≠kaa „to plant“, N. ≠gà: „to put in, plant“	Ar. dakira „to be green“, Eg. dgo „to plant“
N. dà, ≠nà: „to tread, dance“, S ₁ ≠na: „id.“	Eg. dgo „make a pace“, Eg. dgdg „to tread“
S ₁ ≠kurrukən, ≠kurru ≠kurru „to walk on behind, to run away, drop into“	Ar. drg „make a pace, walk“, Ar. drk „be in a hurry“
S ₁ ≠gou, ≠gau „be quiet, silent, be at peace“, S ₁ ≠gowa „id.“	Heb. dmm „be quiet, astonished“
N. /àu-b, C ₂ /ausa „blood“, N. ≠nã „to pour“	Sem. dm „blood“
S ₁ !karro, S ₄ !ka, !ka:, S ₁ !katən „to run“	Ar. darb „way“

$$d < \neq n, \neq k(\neq g), !\frac{k}{g}$$

H. — B.	Ha. — Se.
S ₄ $\neq kan$, N ₂ $\neq ke$, S ₂ $ ka:tu$ „chest“	Heb. <i>dadd</i> „the busom, breast“
S ₁ <i>!nabba</i> „to go along, to follow“	Ar. <i>ḍbr</i> „be behind“, Berb. <i>ḍfər</i> „to follow“

$$t < !k(h)$$

H. — B.	Ha. — Se.
S ₁ <i>!kaukən</i> „to beat, strike“, S ₁ <i>!kokən</i> „to strike, hit“ S ₁ <i>!ka' !kai'tən</i> „hit, strike“	Guèze <i>tḳč</i> „to strike“, Bil. <i>da-daku</i> „id.“, Hau. <i>doka</i> „id.“
S ₂ <i>!kē:n</i> „to grind“, S ₃ <i>!kan</i> „to stamp“	Ar. <i>ṭhn</i> „to grind“, Sa. <i>ḍahan</i> „id.“
S ₁ <i>!kän</i> „to feel, grope“, S ₁ <i>tan</i> „to feel“	Ar. <i>ṭčm</i> „to taste, eat“, Af. <i>ṭam</i> „id.“, Hau. <i>'dan'dana</i> „to taste“, Sa. <i>tačam</i> < <i>!ka'!kam</i> „to eat“
S ₁ <i>!kauka</i> , <i>!kaukən</i> „to beat, strike“	Guèze <i>tḳč</i> „to strike“, Bil. <i>da-daku</i> „id.“, Hau. <i>doka</i> „id.“
S ₁ <i>!khap'p</i> in phrase <i>kui !khap'p</i> „to break through“	Heb. talm. <i>tippā</i> „drop“, Guèze <i>ṣantabṭaba</i> „to drop“, Hau. <i>'digo</i> „drop“
S ₁ <i>!kwe!kwe</i> „orphan“, S ₁ <i>!kwe:</i> „id.“	Ar. <i>tfl</i> „be young, delicate, child“, Eg. <i>tfn</i> „orphan“
S ₁ <i>!kwai!kwai</i> „breasts“	Ar. <i>tiby</i> „teat“, Guèze <i>ṭabawa</i> „to suck“, So <i>tibbit</i> „teat“
S ₁ <i>!he:n</i> , <i>!hein</i> „to approach, be near“	Guèze <i>ṭaka</i> „neighbourhood“, Bed. <i>deha</i> „id.“, Bil. <i>tagat</i> „to approach“
S ₁ <i>!ko!ko</i> „to walk(?)“, N ₂ <i>!n'o:</i> „quick“	Ar. <i>dada</i> „to run quickly“

$$t < !k(h)$$

H. — B.	Ha. — Se.
S ₁ <i>!ko!ko:ka</i> „to be long“	Ar. <i>twl</i> „to be long“, Sa. <i>ḍel</i> „id.“, Qu. <i>čēr, kār</i> „be long“

$$t < \frac{k}{g}$$

H. — B.	Ha. — Se.
C ₂ <i>/gira</i> „jackal“, <i>/geirab</i> „id.“ (C ₂)	Ar. <i>tačlab</i> „fox, jackal“, Hau. <i>dila</i> „jackal“

$$d < \frac{k}{g}, |n, \neq g$$

H. — B.	Ha. — Se.
S ₁ <i>/ku</i> , S ₂ <i>tū</i> , S ₁ <i>tu, tū</i> , S ₁ <i>/kua</i> „man“, S. <i>/ku</i>	Ar. <i>ḍu</i> demonstrative pronoun, Eg. <i>z</i> „man“, <i>z.t</i> „woman“
S ₁ $\neq goba$, $\neq go:$ „springhare“	Sem. <i>ḍəb</i> „jackal, wolf“, Eg. <i>zəb</i> „id.“
S ₁ <i>/kain</i> , <i>/kainja</i> „be yellow, green, shining“	Ar. <i>ḍahab</i> „gold“, Heb. <i>zāhāb</i> „id.“
S ₁ <i>/num</i> „beard“, S ₅ <i>ʒa:ni</i> „chin“	Sem. (except Ethiop.) <i>ḍkn</i> „chin, beard“, Ar. <i>ḍačana</i> „old man, chief“

$$t(\dot{t}) < \neq k\chi, |h, !k$$

H. — B.	Ha. — Se.
N. $\neq \dot{e}i-s$ „foot“ (* $\neq k\chi eib$ „big foot“)	Ar. <i>ḍifr</i> „claw“, S ₃ <i>!karran</i> „lower leg“, Heb. <i>sippōren</i> „claw“, C ₁ <i>keba tʃa karee</i> „paw“, S ₂ <i>!kerru</i> „id.“
S ₁ <i>/ho:</i> „darkness“, C ₁ <i>/hom</i> „to lock, bar a door“	Ch. <i>šama, tema</i> „darkness“, Ar. <i>ḍlm</i> „darkness, blackness“
N ₁ <i>!kari-se</i> „shade(?)“, S ₅ <i>/kχ'an</i> „shade, shadow“	Ar. <i>ḍll</i> „shadow“, Bil. <i>čalal</i> „id.“

$\bar{d} < //k' (//g), \neq$

H. — B.

Ha. — Se.

S ₁ <i>//gabbe</i> „to turn back“	Ar. <i>ḡafaʿa</i> „to make clods of mud, to ease oneself, Twareg <i>edafi</i> „excrement“
S ₃ <i>//k'abe</i> „rope“, cp. C ₂ (Naron) burials	Bil. <i>dab</i> „to cover, bury“, Bil. <i>tab</i> „id.“, Eg. <i>ḡbo</i> „to cover, stop“
S ₃ <i>//kaba</i> „to cook“	Ar. <i>ḡbw</i> „to burn“, So. <i>dab</i> „fire“
S ₆ <i>//kare</i> „to skin“, C ₁ <i>dzoree</i> , C ₂ <i>tforaba</i> „bark...“, C ₁ <i>tfo</i> , <i>dzoruu</i> „skin“	Ar. <i>ḡarḡ</i> „skin“, Eg. <i>dhr</i> „id.“, N ₃ <i>//nali</i> „bark of tree“)
C ₂ <i>//gú:</i> „to light a fire“, (C ₂ <i>[e:]a</i> „fire“)	Ar. <i>dwo</i> „to shine, light“

 $p \text{ \& } f, p < !kw, f < !h (!g), !kh$

H. — B.

Ha. — Se.

S ₁ <i>!kabe</i> „mouse“	Ar. <i>faʿr</i> „rat“, Eg. <i>pnw</i> „id.“
S ₁ <i>!gou!gouwa</i> „stretched out“	Ar. <i>fhḡ</i> „to stretch the legs“, Eg. <i>phḡ</i> „to separate, cut“
S ₂ <i>!karu</i> „thigh“	Heb. <i>paḡad</i> „thigh“, Akk. <i>pu-riḡu</i> „leg“
N ₂ <i>!kwara</i> „to open“, C ₂ <i>!kwa</i> „to stretch“, S ₅ <i>!ka</i> „id.“	Ar. <i>faḡa</i> , <i>faḡiya</i> „to open, to stretch the legs“ (*!ḡa + !ga)
C ₂ <i>!garro</i> „to spread“	Heb. <i>ps'y</i> „to spread“, Bil. <i>faḡ</i> „to sow“
N ₁ <i>!kù !kharra</i> „to split“	Akk. <i>paṡāru</i> „to split, separate“, Heb. <i>pt̪r</i> „id.“
N. <i>!hù:ḡào xu:s</i> „plough n.“	Ar. <i>flk</i> „to split“, <i>falaha</i> „to plough“, Aram. <i>plh</i> „to plough“, Ar. <i>flḡ</i> , <i>flḡ</i> „to split“

 $p \text{ \& } f, p < !kw, f < !h (!g), !kh$

H. — B.

Ha. — Sa.

S ₅ <i>!kala</i> , C ₂ <i>!kara</i> , <i>!ko:eta</i> „to run“	Sem. <i>prpr</i> , Aram. <i>parr</i> , Ar. <i>farra</i> „run“ Amh. <i>barrara</i> „to run away“
S ₁ <i>Opwerre</i> „a fruit resembling an acorn“	Eg. <i>pr.t</i> „fruit“, (S ₁ <i>!kwaḡ:</i> „be pregnant“, Heb. <i>prō</i> „id.“
C ₂ <i>!kara</i> „to run“, S ₅ <i>!ai</i> , <i>!kala</i> „to run, away“, S ₁ <i>//ha:ka</i> „to overcome“	Akk. <i>paršuw</i> „flea“ (Ar. <i>ḡutta</i> „body“), Ar. <i>burgut</i> „flea“, Heb. <i>šwy</i> „to equal“
S ₅ <i>!kwe:</i> „mouth“, S ₆ <i>≠kue</i> , S ₄ <i>ku:</i> „id.“, C ₁ <i>≠kam</i> „id.“	Ar. <i>fam</i> „mouth“, <i>fuh</i> „id.“
S ₁ <i>!kwe</i> <i>/hin</i> „to open“ tr., S ₅ <i>!ḡe</i> „id.“ intr.	Ar. <i>fko</i> „to open, pierce“, Bil. <i>fak</i> „to pierce“
S ₁ <i>!ḡwī:</i> „to bring up wind“	Ar. <i>fsw</i> „to fart“ (French 'péter'), Ar. <i>bss</i> „to fart“, Guèze <i>fasaw</i> „fart“
S ₁ <i>!ḡai'ti</i> „to sup up“	So. <i>fūd</i> „soup, to drink soup“
N. <i>≠korà-b</i> , S ₁ <i>!koah</i> , <i>!kua</i> „elephant“, S _{2a} <i>≠khoub</i> , C ₂ <i>≠ko-aba</i> „id.“	Akk. <i>pīlu</i> , <i>piru</i> „elephant“, Ar. <i>fīl</i> , Twareg <i>elu</i> , Galla <i>arba</i> „id.“

 $b(b) < !nw, !g(k), !'$

H. — B.

Ha. — Se.

N. <i>!ari</i> „to leave“	Hau. <i>bari</i> „to leave“
N. <i>!arà</i> „waterstream (which flows in bounds)“	Ar. <i>balla</i> „to moisten, wet“
N. <i>!ara:b</i> „throat“	Twareg <i>belebele</i> „uvula“, Bed. <i>bala</i> „throat“
C ₁ <i>bela</i> „to boil“, S ₅ <i>Opwarre</i> „firewood“	So <i>belbel</i> „flame, fire“, Eg. <i>brbr</i> „to cook“

H. — B.		Ha. — Se.	
b ('b) < !nw, !g(k), !			
S ₁ !kun!kun „flour“		Bed. <i>biə</i> „flour“, Eg. <i>by.t</i> „kind of bread“	
N ₁ !nwerre „land, country“, N ₁ !nəre „id.“		Bed. <i>bu:r</i> „earth, soil, country“, Bil. <i>birā</i> „id.“, Ar. <i>br(r)</i> „field, earth“	
S ₁ !noentu „belly“, N. !na „belly, interior“		Ar. <i>baṭn</i> „stomach, interior“, Ar. <i>badn</i> „body, trunk“	
S ₆ !a:n „body“ + S ₆ //kare „skin“		Ar. <i>bašar</i> „skin, mankind“, Eg. <i>šnbt</i> „surface of the body“	
S ₆ !na „big“, S _{2a} !gàa < !gara „camel“		Ar. <i>baʿīr</i> „camel (male)“	
S ₄ !kã „big“ + S ₁ //koro „horns“		Ar. <i>baḡar</i> „ox“	
S ₁ !kaukən !kaukən „to cry as a child“		Sem. <i>bky</i> „to cry“, Afar <i>bog</i> „id.“	
S ₁ !kwoŕri „to return, to turn back“		Ar. <i>bwə</i> „return“	
S ₁ !kweitən „penis“ + S ₁ χē: „coire, swell“		Ar. <i>bwḥ</i> „sex“, Eg. <i>bəḥ</i> „sex of man“	

$$r < \begin{vmatrix} k \\ g \end{vmatrix}, \begin{vmatrix} k \\ g \end{vmatrix}$$

H. — B.		Ha. — Se.	
S ₆ //kūte „lungs“, S ₅ //gũ „id.“		Berb. <i>tarut, turt</i> „lungs“	
C ₂ !ku:fa „head“		Sem. <i>rəš</i> „head“	
S ₅ //an, S ₁ //koin, C ₃ //kōi, //uv „sun“		Hau. <i>rana</i> „sun“	
S ₅ //kōi „to see“		Ar. <i>rəy</i> „to see“, Eg. <i>rh</i> „recognize“	

$$r < \begin{vmatrix} k \\ g \end{vmatrix}, \begin{vmatrix} k \\ g \end{vmatrix}$$

H. — B.		Ha. — Se.	
S ₁ //ka://ka: „wet (to wet)“		Akk. <i>raḥāšu</i> „to moisten“, Ar. <i>rhq</i> „to wash“	
N ₁ //kabe „goat“		Af. <i>ray</i> „goat“, Galla <i>reC(reç)</i> „id.“	
N. //ai-gu „years“, N. //aib „time“		Eg. <i>rk</i> „time of“	
S ₂ !kχ'u:ka „leg“, !k'u:ka „id.“		Sem. <i>rgl</i> „foot(leg)“, Galla <i>luka</i> „leg“	
S ₁ //ka-tu „little hole“ > S ₁ //kau „back of neck“		Akk. <i>rāšu</i> „to protect“	
S ₂ !kerru „leg, paw“		So <i>rād</i> „footprint, spoor“, So <i>adar</i> „foot, leg“, Sem. <i>rdd</i> „to march, paw“	
S ₁ !kerrin „to grow“		Ar. <i>rđy</i> „to increase“, Berb. <i>irəd</i> „corn“	
S ₆ !kumma „spear“		Ar. <i>rumḥ</i> „spear“	
S ₁ //kwarre//ki „to spit“		Sem. <i>ryk, twk, wrk</i> „spittle“, //kwarre //ki > w-r-k	
S ₁ !ka!kaua „to run along“		Af. <i>rad</i> „to run“, Berb. <i>lur, rur</i> „to run away“	

$$l < \begin{vmatrix} k \\ g \end{vmatrix}, \begin{vmatrix} k \\ g \end{vmatrix}$$

H. — B.		Ha. — Se.	
S ₁ !go-ai „bull“		Ar. <i>laṣay</i> „bull (wild), buffalo“, Akk. <i>liu, lu</i> „bull (wild)“	
S _{2a} ≠garu, S ₂ ≠geru „sheep“		Akk. <i>lalū</i> „goat“, So <i>lah</i> „sheep“, Afar <i>lāh</i> „goat“	

$l < \begin{smallmatrix} k \\ g \end{smallmatrix}, \begin{smallmatrix} k \\ g \end{smallmatrix}$

H. — B.	Ha. — Se.
S ₁ !kui!kui „burn, pain, fatigue“	Sem. <i>lhb</i> „to burn“, Bed. <i>luw</i> „to burn, light (fire)“
N ₂ //ka:và „to dress“	Sem. <i>lbš</i> „to dress“
S _{2b} //arav „vulture“	Bed. <i>lale</i> „hawk“, Eg. <i>nr.t</i> „vulture“
S ₁ //kà'ā „night, dark“, S _{2a} //aa „id.“	Sem. <i>lyl</i> „night“, Eg. <i>nn</i> „id.“
N ₃ !u: „to gnaw“	Ar. <i>lwk</i> „to bite, gnaw“
S ₃ //go:wa „to be thirsty“	Ar. <i>lwb</i> „be thirsty“, Berb. <i>rūfu</i> „id.“
C ₂ !gausa „heart“	Bil. <i>labakā</i> „heart“, So <i>lab</i> „id.“
S ₄ //kwe „to fetch, take, lift“	Akk. <i>leku</i> „to take, rob“, Eg. <i>hok</i> „id.“
S ₄ //ku „run away“	

 $m < m$

H. — B.	Ha. — Se.
C ₃ <i>mana</i> , <i>man</i> „meat, body, game“	Sem. <i>mEy</i> „intestine“, Bed. <i>mana</i> „id.“
C ₁ <i>v/xuru</i> „to forget“	Sem. <i>fhh</i> , <i>fhw</i> „be weak, negligent, forget“, Eg. <i>mhy</i> „to forget“, Bed. <i>māg</i> , Sa. <i>bah</i> „be putrid“
N ₃ ≠nām + N ₃ //kām + N ₃ !χā „beat knock strike“	Heb., Ar., Guèze <i>mḥš</i> , Akk. <i>maḥašu</i> „to beat“
C ₁ <i>ma</i> „to find“ > „place“ (?)	Ar. <i>masak</i> „skin, leather, place-sleep-body“, Eg. <i>msk</i> „skin, leather, sleep“

 $m < m$

H. — B.	Ha. — Se.
S ₁ <i>Ṣmwain</i> „to kiss, fondle“ > „place“ (?)	Heb. <i>mšo</i> „to come“
S ₁ (<i>ma</i>)/i „to come“, S ₅ <i>ja</i> „to come, go“	Ar. <i>mšy</i> „to go“, Eg. <i>šm</i> „id.“
C ₁ <i>ma khopo</i> „forehead of a baboon“	Heb. <i>mešah</i> „forehead“, <i>ma</i> (place) + !khá + !kwa „front bone“
S ₁ <i>mumu</i> „to show“ + S ₁ <i>tu</i> „face“	Akk. <i>mutu</i> „husband“, Kab. <i>mā</i> „id.“, Eg. <i>mt</i> „sex of man“, Hau. <i>mutum</i> „man“, Twar. <i>middən</i> „men“ (masculine)
C ₁ <i>ma</i> „to find“, N. <i>tsərab</i> „earth“	Aram. Ar. <i>mār</i> „earth“, <i>ma</i> + <i>tsəra(b)</i>
N. //gam-i „water“, N ₂ //ka'a „to flow“	Berb. <i>aman</i> (-n suff. of pl.) „water“, Bed. <i>yam</i> „id.“
C ₂ /u:m „to shut eyes“, C ₃ <i>misi</i> „to die“	Sem. <i>mwt</i> „to die“, Hau. <i>mutu</i> „id.“
S ₅ <i>Ṣpu:m</i> „to shut mouth“	Ar. <i>māḡ</i> „to milk“, Eg. <i>mng</i>
S ₂ //kχ'ā „to drink“	„breast, busom“, Ar. <i>lḡk</i> „to lick“
C ₃ <i>ma</i> „to surround, make“	Akk. <i>mrs</i> „be ill“, Hau. <i>rasa</i> „to lack of“, Ar. <i>mrh</i> , <i>mrd</i> „be ill“
S ₁ /mav „chin“	Eg. <i>mrt</i> „chin, beard“, Berb. <i>tāmart</i> „id.“

S_{1,2} //na:, S₅ na „to be“, N₁ Sem. na „to be“, Eg. wnn,
//gā: „to stay“ Af. Sa. na „id.“

C₂ na „to stand“, n + N. χᾱb Ar. nhb „back, anus, coire“,
„penis“ Eg, nhp „to jump“, Heb.
nəp „to commit adultery“

S₅ na „to be“, S₁ kú, ku; Akk. nāku, Ar. nyk „coire“ (m.),
„to pour“ Bed. nəkui „to conceive“

S₆ //an-te pl. „tooth“, N. !ne:, Bed. nad „tooth“, Eg. nhǵt
N₂ !ne: „to bite“ „id.“

S₅ na „to be“ Ar. nuḥās „copper“, So anas
S₁ !kaʾru „copper“ „id.“

S₅ //nam „chest“ Ar. nahr „throat“, „breath“,
S₂ //χre (:tu) „throat“ Tigre nəḥār „breath“, Sa.,
Af. nahār „id.“

N. nə „to bite“ Heb. nkš (nšk) „to bite, peck“

S₅ na „to be“, S₁ /hu „to pant“, Akk. napāhu „to blow, wind,
C₂ !gum „to blow“ breathe“ < na !kwa /hu „be-
blow-pant“

S₅ na „to be“, N. !khari „ho-
ney beer“ Eg. nfr „be good, beautiful“,
Bed. nefir „be pleasant,
sweet“

S₅ na „to be“, S₁ !kweta „to
awaken“ Ar. nbh „to awaken“, Eg. nhpw
„morning“

S₅ na „be“, S₅ Opwa „flame“ Akk. nablu „flame“, G. nabal-
S₆ !χweʃama:ra „rain come
lightning“ bal „id.“

S₁ /ni:, /na:, S₆ /ne:, /na: „to
see“ Twareg əni, ənbi „to see“, G. na-
wā „indicative“

S_{4b} //nwan, „daughter“, S₁ /nai: So ina, inaw (pl. inamo) „son,
/nai:n „small ones“ daughter“, Berb. nunu „id.“,
(nursery word)

S₁ !na-//χarra „be strong Eg. nr „shepherd“, Kab. nəḥər
(bite) + drive“ „to lead, conduct“

S₅ ja „you“, S₅ ja „to be“ Ar. yā- interj. of address“, Sa
ya, Af. i „to say, be“

N. /oro, S₁ tsəro:kən „old“ Eg. yowy „be old“, Tw. eru
„id.“

S₄ titia „father“, S_{4b} /i „id.“ Eg. yt(yt/) „father“, Tw. ti, pl.
tei „id.“

S₂ //kōi, //kōe „sun, day“ Eg. ytn „sun“, Tw. atri, So
itri „stars“

S_{4b} /ā, /a: „arm, hand“ S₄ si Sem. yd < i(si) + /a „hand“
„to be (this)“

S₂ //ke:v „milk“ Aram. ynḵ „to milk“

N. //gām-i „water“ Heb. yam(m) „sea“, Ar. yamm
„id.“

N₃ /kam „sun“, S_{2b} !namu „to Eg. ymn „to the right, west“,
be right“ Hau. yamma „right“

N₂ /kam ≠nau „sunset“, N₃
≠nau „to fall“

N₁ /kam „sun, day, be thirsty“, Sem. ywm „day (24 hours)“,
N₂ /kam „sun“ Hau. yau „day“

* The above „Correlations“ have been worked out on the ground
of the work by M. Cohen, *Essai comparatif sur le vocabulaire et la
phonétique du chamito-sémitique*, Paris 1947.

H. — B. Ha. — Se.

N ₂ !ka!karriſe „young moon, moon“, N. //khāb „id.“	Heb., Aram. yrh, Sem. wrh „month, moon“, Eg. yĉh „moon“ (ĉ instead of ʕ assim.)
S ₁ !gwara „metal“	Eth. wark „gold, silver (money)“, Ar. warak „gold“, Bil. warka „gold, be yellow“
S ₁ !kwattən „to fall, stumble, throw“	Gueze warawa „to throw“, Heb. yārā(h) „id.“, Eg. wĉ „har- poon“, (ĉ for r), So waran „spear“
C ₁ !guu „near“, S ₁ !gwe „near to...“	Ar. waliya „be near“
S ₂ !kunsī „hyena“	Eg. wns „wolf“, So uššan „jackal“
S ₁ !kurruka „be hot, be in the sun“	Ar. wamida „be hot (night)“, Eg. wod „to burn“

SUMMARY

The frequency of correspondences (Consonants)

The source of their origin

k̥	57% 8 //kχ' (//k')	22% 3 //g(k)	7% 1 !kχ'	14% 2 kχ'	S 72%	C 7%	N* 21%
k	43% 6 /k	22% 3 !k	21% 3 //g	7% 1 ≠k	S 43%	C 57%	—
g	57% 8 ! ^k _g	29% 4 /k	7% 1 ≠k	7% 1 /k	S 50%	C 36%	N 14%
h	50% 7 kχ'	22% 3 !kχ'	21% 3 !kh	—	S 72%	C 21%	N 7%
ĉ	50% 7 ! ^k _g	29% 4 / ^k _g	14% 2 ≠g	7% 1 //g	S 50%	C 43%	N 7%

* S = Southern Bushman, C = Central B, N = Northern.

Continued

h	36% 5 !k(h)	29% 4 ≠k(h)	21% 3 /k(w)	14% 2 h(w)	S 50%	C 36%	N 14%
h	50% 3 /h	50% 3 h	—	—	S 100%	—	—
š	43% 6 //χ (//h)	36% 5 //k(h)	7% 1 ≠h	14% 2 !χ, /k	S 78%	C 15%	N 7%
d	75% 3 / ^k _g (/n)	25% 1 ≠ ^k _g	—	—	S 100%	—	—
t	100% 9 !k(h) (!h)	—	—	—	S 100%	—	—
s	55% 6 !h(χ)	18% 2 !kh	18% 2 !k	9% 1 ≠	S 55%	C 27%	N 18%
(t)	33% 1 !kh	33% 1 ≠	33% 1 /h	—	S 33%	C 33%	N 33%
d	67% 6 ≠n (≠ ^k _g)	22% 2 !n(!k)	11% 1 /	—	S 67%	C 33%	—
t	100% 1 / ^k _g	—	—	—	—	C 100%	—
ḍ	100% 5 // ^k _g (//k')	—	—	—	S 100%	—	—
z	40% 2 ≠n (≠')	40% 2 /h (/k)	26% 1 !g	—	S 20%	C 60%	N 20%
ś	36% 5 ≠h, ≠' (≠k)	36% 5 !kh(!h)	21% 3 !k	7% 1 / ^h	S 64%	C 29%	N 7%
t	84% 5 ≠k(h), ≠' (≠ χ, ≠g)	—	—	16% 1 / ^k	S 16%	C 84%	—
s	75% 3 /χ (/k, /')	25% 1 ≠h	—	—	S 25%	C 75%	—

Continued

<i>b</i>	39% 5 $\begin{smallmatrix} k \\ g \end{smallmatrix}$ (w)	23% 3 !n(w)	31% 4 !	7% 1 $\odot pw$	S 62%	C 23%	N 15%
<i>p & f</i>	57% 8 !k(w)	36% 5 ! χ (w), (!h !g)	—	7% 1 $\odot pw$	S 64%	C 29%	N 7%
<i>r</i>	57% 8 //k (//')	43% 6 !k	—	—	S 78%	C 15%	N 7%
<i>l</i>	50% 5 // $\begin{smallmatrix} k \\ g \end{smallmatrix}$ (//')	40% 4 ! $\begin{smallmatrix} k \\ g \end{smallmatrix}$ (!')	10% 1 $\neq g$	—	S 70%	C 10%	N 20%
<i>m</i>	57% 8 m	22% 3 /m (/-m, n/ χ)	14% 2 $\odot mw$ ($\odot$ -m)	7% 1 $\neq n-m$	S 36%	C 57%	N 7%
<i>n</i>	57% 8 n	29% 4 //n	7% 1 !n	7% 1 /n	S 86%	C 14%	—
<i>y</i>	34% 3 si	33% 3 /k (!')	22% 2 //g (k)	11% 1 j	S 56%	C 22%	N 22%
<i>w</i>	84% 5 ! $\begin{smallmatrix} k \\ g \end{smallmatrix} w$	16% 1 !k	—	—	S 84%	—	N 16%

ALICJA MAŁECKA

STRUCTURE OF A SIMPLE SENTENCE IN THE SWAHILI
LANGUAGE WITHIN THE RANGE OF A NOMINAL
PREDICATE AND NOMINAL GROUP

Swahili language, which belongs — as it is known — to the East-African group of *Bantu* languages, has become the official state's, and commercial language on large territories of East Africa from the border of Somali to Mozambique. It is characterized by agglutinative structure, a system of substantival classes, prefixed conjugation, lack of declensions and grammar gender. A dominating role is played by congruency which comprises all nominal parts of speech in a sentence, and the verb too. The word order in denotation of possession is obligatory: the object of possession precedes the subject of possession. Moreover the qualifying member usually follows the qualified one.

The present paper aims to arrange the *Swahili* language into a system of syntactic patterns within the type of sentences with a nominal predicate and nominal group. I intend to elaborate this problem in details analysing simple sentences in *Swahili* within the range of the verbal group and congruency.

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It is a great pity that my teacher Professor T. Milewski is not among the living any more at the moment when the present work, of which he is the spiritual Father, is going to appear in print. May it then be an homage paid to the memory of this learned Man to whom I owe so much. I am also indebted to Professor R. Stopa who inspired me with deep interest in African problems and for his sincere and friendly criticism.