# Towards a Historical Phonology of the Munda languages

**Version 0.1**

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This paper aims at presenting a historical phonology of the Munda languages. In its current state it aims for detailed information and less for readability. It still remains very much work in progress and should be taken as such.

Pinnow (1959) still state of the art for the reconstruction of proto-Munda. The book covers the historical phonology of the Munda branch and connects it with other branches of the Austroasiatic family, despite its modest title "Versuch einer Historischen Lautlehre der Kharia-Sprache" ("Attempt of a historical phonology of the Kharia language"). However, it has not received the reception it deserves. This may be partially due to the fact that this immense work was published in German and partially owed to the fact that it is a very dense text. This aims to be a less comprehensive, but more accessible update on our understanding of the historical phonology of the Munda languages.

The Munda branch consists of approximately twenty languages, some very closely related, some lexically and structurally quite distinct. Views on what variety is granted the status of a separate languages differ, but Glottolog lists 22 Munda languages: Gta?, Gutob, Remo, Juang, Kharia, Sora, Juray, Gorum, Korku, Asuri, Bijori, Birhor, Ho, Mundari, Koda, Kodaku, Korwa, Majhwa, Turi, Kol, Mahali, Santali. This can be taken a a reasonable reflection of the literature. Some subgrouping can be regarded as well established. These well established subgroups are Kherwarian, North Munda, Sora-Gorum, Remo-Gutob. Kherwarian consisting of Asuri, Bijori, Birhor, Ho, Mundari, Koda, Kodaku, Korwa, Majhwa, Turi, Kol, Mahali, Santali. The languages are normally grouped into the Santali branch – consisting of Santali, Kol, and Mahali – and a Mundari branch – consisting of Asuri, Bijori, Birhor, Ho, Mundari, Koda, Kodaku, Korwa, Majhwa, Turi. Kherwarian and Korku are generally considered to for the North Munda branch.

The remaining languages are sometimes grouped as South Munda, but its status as a monophyletic group is unproven and has been disputed (Anderson …). However, at least two groups have been identified among the southern languages: Sora-Gorum (also called Sora-Juray-Gorum) and Remo-Gutob. The other languages – Gta?, Juang, Kharia – have to be regarded as isolated branches.

The groupings Kharia-Juang and Gutob-Remo-Gta? have been proposed (CITE). The evidence for both groupings is too inconsistent to be regarded as definite. The variety Juray has been regarded as a third languages in the Sora-Gorum branch. Juray very closely related to Sora and not well documented. It remains unclear that it merits to be treated separated from other varieties of Sora.

While the differences between the branches of the Munda languages can be substantial, the similarities inside one branch can be very high.

In this reconstruction, the following branches of Munda are assumed: Gutob-Remo, Sora-Gorum, North Munda (consisting of the Kherwarian group and Korku), and the individual languages Kharia, Juang, Gta?. The term *southern languages* is used to designate all languages except the North Munda branch. In our current understanding, it constitues a paraphyletic goup.

For the current systematic reconstruction a subset of the 22 languages has been select. The main criterium was the coverage of all known subbranches of the Munda languages. However, the availability of lexical material was also important. As a result twelve languages were selected for systematic comparison: Gorum, Sora, Remo, Gutob, Kharia, Juang, Gta?, Santali, Mundari, Ho, Korwa, Korku.

The current reconstruction is based on 100 cognate sets from these languages. These sets of cognates were collected based on their reliability and th wide attestation among the twelve languages. From these sets 354 correspondence sets for phonemes were identified. Where it was possible, a proto-phoneme was posited for the correspondence set and the phonological form of the proto-Munda word was reconstructed. In some cases, regularities with the reconstructed forms in the MKCD were discussed.

**Abreviations of Lexical Resources (to be done)**

- **AG08** Griffith, Arlo 2008. "Gutob" in Anderson, Gregory D.S. (ed.) *The Munda Languages* London: Routledge. p.631-688.
- **BAHL** Bahl, Kali Charan 1967. "Korwa Lexicon." The University of Chicago, South Asian Languages Program. Typescript.
- **BDBH** Bhattacharya, Sudhibushan 1968. *A Bonda dictionary*. Poona: Deccan College.
- BMED:
- BSDV1, …
- CDES
- CDSE
- DHED
- DSBO
- DSGU
- DSJU
- DSKH
- DSKO
- DSKW
- EMV5, EMV12, EMV13
- **FR** Lexical material collected/compiled by myself
- GGEG
- **HLKS** Pinnow, Heinz-Jürgen 1959. *Versuch einer historischen Lautlehre der Kharia-Sprache*. Wiesbaden: Harrassowitz.
- HOGV
- **JLIC** Anonymous n.d. "Revised Munda lexical items list (Juang)." Typescript.
- MJTL
- MKCD
- NKEV
- PGEG
- **PJDW** Pinnow, Heinz-Jürgen n.d. "Wörterverzeichnis Juang-Deutsch-Englisch mit etymologischen Angaben." Typescript.
- **PKED** Peterson, John 2009. *A Kharia-English Lexicon.* Himalayan Linguistics Archive 5.
- **RSED** Ramamurti, Rao Sahib G.V. 1938. *Sora-English Dictionary*. Madras: Government Press. Reprinted 1986, Delhi: Mittal Publications.

- **Z1963** Zide, Norman H. 1963. “Gutob Monosyllables.” Typescript.
- **Z1965** Zide, Norman H. 1965. “Gutob verb morphemes for South Munda work.” (Papers on South Munda phonology III). The University of Chicago. Typescript.

## Comparative-Phonological Studies of the Munda languages

Gta? /æ/ might be a phonemization of an allophone of /a/, raising the possibility that Proto-Gta? had a five vowel system, as well.

Proto-Khewarian has been reconstructed with 7 (Zide and Munda 1966, Pinnow 1959) and 5 (Osada 1996) vowel phonemes. If Osada 1996 is to be believed, Proto-Kherwarian had a five vowel system.

Zide (1982) reconstructs proto-Sora-Gorum (or proto-Sora-Juray-Gorum in her nomenclature) as having a ten vowel system.

| | Front | Central | Back |
|---|---|---|---|
| Closed | *i | *ɨ | *u |
| Mid | *e(e$^2$) | *ə | *o |
| Open-Mid | *ɛ | *ʌ | *ɔ |
| Open | | *a | |

(Zide 1982, p. 656)

All but Sora and Proto-Sora-(Juray)-Gorum have five vowel systems or may have to be reconstructed as having had five vowel systems.

There is no consensus on the situation in proto-Munda. However, correspondences are so varied and numerous that we have to assume that the five vowel systems of most modern Munda languages are the result of a variety of mergers in the development of the Munda languages.

There are approximately 40 distinct correspondence sets for vowels, even if we allow for some minor variation inside one set. As a result it is extremely difficult and often impossible to identify a proto-vowel based on poorly attested etyma. A presumably Austroasiatic etymon for elephant is attested in Gorum as *ra?*, Sora as *ra?*, and Gutob as *ro?*. While the initial consonant is a clear reflex of **r*, /ʔ/ in these three languages could be either a reflex of **ʔk* or a prosodic device to produce a heavy syllable, corresponding to proto-Munda **V$^ʔ$*. Thus without further investigation of the vowel, we would already end up with two possible forms: **rVʔk* and **rVV$^ʔ$*.

If we compare the vowel reflexes with other correspondence sets we can identify two candidates **a* (as reflected in set **a$_5$*) and **ə* as attested in **ə$_1$*. Additionally, the set is compatible with an isolated reflex of unknown phological value: the second vowel of the etymon **tv$_{(19)}$ŋv$_{(25)}$n/tv$_{(19)}$nv$_{(25)}$ŋ_* ‘stand (v)’ (#0050-4 labelled VS-025 below).

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | ? | o | ? | ? | ? | ? | ? | ? | ? | ? | elephant |
| a | a | ɔ | o | o | o | o | ∅ | ∅ | ∅ | ∅ | ∅ | **a$_5$* |
| a | a(ə/o:0 | o | o | o(a) | o | wa | ę | e | e | e | – | **ə$_1$* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | (o) | o | o | o | (wa) | o | u | u | — | e | VS-025 |

This leaves us with the folowing possible reconstructions: **raʔk*, **raaʔ*, **rəʔk*, **rəəʔ*, **rv(25)ʔk*, and **rv(25)v(25)ʔ*.

MKCD 1930 **r[ ]uəs* favours **rəəʔ*, but without top-down information all six forms remain possible.

### Previous Accounts

#### Pinnow (1959)

Pinnow makes a distinction between Urmunda (proto-Munda?) and a later state that he calls *jüngeres Stadium* (younger state).

#### Proto-Munda (Urmunda)

| | Front | Central | Back | Front | Central | Back |
|---|---|---|---|---|---|---|
| **Closed** | *i | *ɨ | *u | *i: | | *u: |
| **Mid** | *ɛ | *ə | *ɔ | *ɛ: | *ə: | *ɔ: |
| **Open** | | *a | | | *a: | |

#### Proto-Munda (younger stage)

| | Front | Central | Back | Front | Central | Back |
|---|---|---|---|---|---|---|
| **Closed** | *i | *ɨ | *u | *i: | | *u: |
| **Mid** | *e | *ə | *o | *e: | *ə: | *o: |
| **Open** | *ɛ | *a | *ɔ | *ɛ: | *a: | *ɔ: |

Pinnow's younger proto-Munda has nine vowel phonemes. All vowels – except **ɨ* – have long variants that Pinnow considers phonemic (CITE).

#### Stampe (1963), Zide (1965, 1966), Munda etc

In the decades after the publication of Pinnow's Historische Lautlehre, most authors favour a seven vowel system for proto-Munda – a system more or less identical with his pre-Munda, but lacking the vowel length distinction.

| | Front | Central | Back |
|---|---|---|---|
| Closed | i | ɨ | u |
| Mid | e | ə | o |
| Open | | a | |

While the empirical base in Pinnow (1959) is abundant to the point of being confusing, the evidence for the seven vowel system is scarce or ar least unpublished.

## Phonological Profile of the Munda Languages

### Overview

### Vowels

| Inventory | Languages |
|---|---|
| /i, e, a, o, u/ | Kharia, Mundari, Ho, Korku, Gorum, Remo, Juang, Gutob |
| /i, e, æ, a, o, u/ | Gtaʔ |
| /i, e, ɛ, a, ɔ, o, u/ | Santali |
| /i, e, ɛ, ɨ, ə, a, ɔ, o, u/ | Sora |

### Gorum

### Sora

Five vowel systems are very dominant.

Sora Ramamurti:

| | Front | Central | Back | Front | Central | Back |
|---|---|---|---|---|---|---|
| **Closed** | i | | u | iː | | uː |
| **Closed** | ɪ | | ʊ | ɪː | | ʊː |
| **Mid** | e | ə | o | eː | | oː |
| **Open** | | a | | | aː | |

Stampe 1965:

| | Front | Central | Back |
|---|---|---|---|
| Closed | i | ɨ | u |
| Mid | e | ə | o |
| Open-Mid | ɛ | | ɔ |
| Open | | a | |

Sora (Anderson Harrison):

| | Front | Central | Back |
|---|---|---|---|
| Closed | i | ɨ | u |
| Near-close | | | ʊ |
| Mid | e | (ə) | o |
| Open | | a | |

**Remo**

**Gutob**

**Kharia**

**Juang**

**Gta?**

**Kherwarian**

**Korku**

## Phonological Reconstruction

**Onset**

| | bilabial | dental/alveolar | palatal | velar |
|---|---|---|---|---|
| voiceless stop | *p | *t | (*c???) | *k |
| voiced stop | *b | *d | *ɟ | *g |
| nasal | *m | *n | *ɲ | *ŋ |
| sibilant | | *s | | |
| lateral | | *l | | |
| rhotic | | *r | | |
| approximants | | | *j | |

**Coda**

| | bilabial | dental/alveolar | palatal | velar | glottal |
|---|---|---|---|---|---|
| glottalized stop | *ˀp | *ˀt | *ˀc | *ˀk | (*Vˀ?) |
| nasal | *m | *n | *ɲ | *ŋ | |
| lateral | | *l | | | |
| rhotic | | *r | | | |
| approximants | | | *j | | |

**Nuclei**

| | Front | Central | Back |
|---|---|---|---|
| Closed | *i | | *u |
| Mid | *e | *ə | *o |
| Open | *ɛ | *a | |

**Proto-Munda Vocalism, a hypothesis**

Maximally a nine vowel system /i, e, ɛ, ɨ, ə, a, ɔ, o, u/ (pM?) and maybe an epenthetic schwa /ᵊ/.

Vowel length is not consistent and seems to reflect prosodic principles in individual languages, if they do not constitute a bias of the researcher that expects phonological vowel length disctinctions in South Asian languages.

Syllable weight needs to be reconstructed.

Assigned so far /i, e, ə, a, o, u/ and the epenthetic /ᵊ/.

| | Front | Central | Back |
|---|---|---|---|
| Closed | *i | | *u |
| Mid | *e | *ə | *o |
| Open | *ɛ | *a | |

**Monophthongization**

There is no evidence for etymological diphthongs in Munda. Diphthongs are absent or rare, except for Gta?, but the diphthogs in Gta? are demonstrably (relatively late) innovations in this one particular language.

Diphthongs in MKCD do not seem to correspond any specific correspondence sets.

(check MKCD **iə*)

**Proto-Munda Consonantism**

| | bilabial | dental/alveolar | palatal | velar | glottal |
|---|---|---|---|---|---|
| voiceless stop | *p | *t | (*c???) | *k | (*Vˀ?) |
| voiced stop | *b | *d | *ɟ | *g | |
| glottalized stop | *ˀp | *ˀt | *ˀc | *ˀk | |
| nasal | *m | *n | *ɲ | *ŋ | |
| sibilant | | *s | | | |
| lateral | | *l | | | |
| rhotic | | *r | | | |
| approximants | | | *j | | |

- *$K^h$ Pinnow (1959 p.232-234) **q* etc.
- *$d^j$

The consonantism is very close to proto-AA. Major changes:

- pAA **h* > pM ∅
- pAA **ʔ* > pM ∅
- final pAA **s* > pM ∅
- pAA *CVC > pM *CVˀC

Status of **c* unclear, seems to to have merged with **s*, probaby already at the stage of proto-Munda. possibly later.

### Consonant cluster-splitting

Consonant cluster-splitting epenthetic vowel

- short $V_i$: $CCV_i(C) \rightarrow C^{\circ}CV_iC$
- long $V_i$: $CCVV^{ʔ}_i(C) \rightarrow CV_iCVV^{ʔ}_i(C)$

Four attested types of cluster-splitting epenthesis.

#### Type 1 $C_iC_{ii} \rightarrow C_iVC_{ii}$ (cluster-splitting epenthetic vowel)

- **bl* → **bVl*: MKCD **bluuʔ* → pM **buluu$^{ʔ}$* 'thigh'
- **kl* → **KVl*: MKCD **klaʔ* → pM **k$^{ə}$la* 'tiger'
- **cl* → **ɟVl*: MKCD **[c]limʔ*; **[c]liəmʔ*; **[c]laim[ ]* → pM **ɟal* 'to lick'
- **dr* → **dVr*: MKCD **d$_2$raŋ* → **d$^{ə}$raŋ* 'horn'
- **j[n]ŋ* → **sVŋ*: MKCD **j[n]ŋəl* → pM **s$^{ə}$ŋəl* 'fuel'

Variation (non-regular cluster-splitting epenthesis ):

- **ʔt* → **bVt* MKCD **ʔt$_1$uuŋ*? → pM **bVtoŋ* 'fear'
- **kt* → **lVt*: MKCD **kt$_2$uur*; **kt$_2$uər* → pM **lutur* 'ear'

These correspondences might represent intial consonantloss with later prefixation of **bV-* and **lV-*

#### Type 2a $C_iC_{ii} \rightarrow C_i$ (second consonant loss)

- **cʔ* → **ɟ*: MKCD **cʔaaŋ* ; **cʔaiŋ*; **cʔi[ ]ŋ* → pM **ɟaŋ* 'bone'
- **bh* → **b*: MKCD **bhiiʔ* → pM **bv$_{(31)}$* 'sated (v)'

#### Type 2b $C_iC_{ii} \rightarrow C_{ii}$ (initial consonant loss)

- **kd* → **d*: MKCD **kdiil*; **kdiəl*; **kdəl* → pM **dal* 'to cover'

#### Type 2c $C_iC_{ii} \rightarrow VC_{ii}$ (epenthesis and initial consonant loss)

- **pl* → **∅Vl*: MKCD **[p]laŋ*; **[p]laiŋ* → pM **Vlaŋ* 'thatch'
- **pr* → **∅Vr*: MKCD **pril*/**priəl* → pM **arel* 'hail/pebble'
- **sl* → **∅Vl*: MKCD **slaʔ* → pM **Olaa$^{ʔ}$*/**Ola$^{ʔ}$k* 'leaf' $V_1$

While consonant cluster-splitting epenthesis is a well documented phonological process, it is rare as a regular sound change in the historical development of languages (Blevins 2017). It is however very frequent with loan words and Blevins states it is a indication for a process where speakers learn a non-native language and misperceive a cluster CCV as CVCV because their native languages demands a CVC stransition.

If Blevins is correct with her assessment, it would suggest that the speakers of proto-Munda (or a significant number of speakers) were unaccustomed to initial consonant clusters and misheard or misanalysed these typical Austroasiatic clusters, giving rise

to the consonant cluster-splitting epenthesis characteristic for languages in the Munda family.

**Prosodic Restructuring**

| Language | pMunda state | step 1 | step 2 | step 3 | current state |
|---|---|---|---|---|---|
| Santali: | *kᵊˈla → | *ˈkəla → | *ˈkula → | | kul |
| Gutob: | *kᵊˈla → | *ˈkəla → | *ˈkila → | *ˈkil → | gikil |
| Gorum: | *kᵊˈla → | *kəˈlaʔ → | | | kuˈlaʔ |

There was a later resurrection of consonant clusters (or sesquisyllabic structures) in Gtaʔ (and possibly Remo).

**Vowel harmonic processes**

There seem to be some vowel harmonic processes ar work, that

**Issues**

There are several remaining issues. For some we can state why these reflexes might be problematic, for some the reasons remains completely unexplaiined.

**reflexes of epenthetic vowels: **ᵊ***

irregular correspondences

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | i | u | i | i | i | u | u | u | u | u: | u | **ə(tiger)* |

****kᵊla* 'tiger'**

kulaʔ, FR, kina:, RSED.p140, ŋku, AG08.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *kᵊla, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **kla?*

We would reconstruct **ə* (or because it is an epenthetic vowel **ᵊ*) for $V_1$ and accordingly_*kᵊla_ based on the reflexes and Shorto's **kla?* (MKCD 197). However, the set for $V_1$ is so far uniquely attested in the reflexes of this one etymon.

The set is very close to_*$u_1$_ as attested in **bul* 'drunk (v)' or in both vowels of **lutur* 'ear' among others:

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u | i | u | u | u | u | u | u | u | u |

but also to the reflexes of epenthetic *u in *buluuˀ (*$u_2$ ):

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u/i | i | u | u | u | u | u | u | u | u |

**Proto-Munda *a**

Proto-Munda *a is reasonably well understood.

- *$a_1$ general
- *$a_2$ velar coda (*aŋ and *aˀk)
- *$a_3$ palatal coda (*aɲ and *aˀc)
- *$a_4$ *aˀp coda (so far not *am)
- *$a_5$ unclear

The correspondence set *$ə_1$ is problematic. The etyma, where they do have a proto-Austroasiatic etymology, suggests that it continues Austroasiatic *a. MKCD suggests a reconstruction as *a, but this is not easily reconciled with the the sets *$a_1$, *$a_2$, *$a_3$, and *$a_4$. Especially the motivation for change of *a to North Munda /e/ is unclear, if we assume *a.

***$a_1$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a: | a | a(:) | a | a | a | a | a(:) | a | a(:) | a(:) |

Proto-Munda *a has very consistent reflexes across the whole Munda languages. The reported vowel length is irregular, but arguably not phonemic in any Munda language and either a non-phonemic lengthening in certain contexts or lexemes or an artefact of the phonological description.

***bal* 'to burn' (#0023-2)**

Go. *bal*; So. *ba:l* (RSED.p49); Gu. *bal* (GZ65.43); Gt. *ba* (PGEG.p9); Sa. *bal* (BSDV1.p1840); Mu. *bal* (BMED.p18); Ho *bal* (HOGV.p151); Kw. *ba:l* (BAHL.p1050; Ko. *ba:l* (NKEV.p292)

- Pinnow 1959 — / MKCD —

A connection to any of the etyma attested in MKCD remains unclear. The best candidate is MKCD 1671 *waar, *wər. However, neither pAA *w nor pAA *r match the reconstructed pM *b and *l.

***arel 'hail/pebble' $V_1$ (#0032-1)**

aril, FR, are:l, RSED.p39, are, BDBH.43, arel, HLKS.V225, arel, PKED.p7, aɭɛn, PJDW.p158, hare, PGEG.p24, arel, CDES.p88, a:ɽil, BMED.p10, aril, HOGV.p161, a:ril, BAHL.p10, —, —, *arel, hail/pebble, #0032, V225, 1791,

- Pinnow 1959: V225 / MKCD: 1791 **pril*; **priəl*

The reflexes of #0032-1 strongly indicate proto-Munda **a*. From our current understanding, this is incompatible with the MKCD forms **pril* and *priəl_ which suggest **ə*.

***usal 'skin' $V_2$ (#0036-3)**

usal, FR, usal, RSED.p308, usa, BDBH.173, isa:l, HLKS.V149, usal, PKED.p300, chalo, PJDW.p180, ugsa, PGEG.p6, chal, CDES.p176, , , , , , , sa:li, NKEV.p337, , skin, #0036, V149, ,

- Pinnow 1959: V149 / MKCD: —

The reflexes in Juang, Santali and Korku may belong to a separate etymon.

***ɟal 'to lick' (#0043-2)**

zaleʔb, FR, ɟa:l, RSED.p119, salep', BDBH.2523, sal, GZ63.228, jal, PKED.p82, janɔ, JLIC.v372, cca, PGEG.p14, jal, CDES.p112, jal, EM.p1965, jal, HOGV.p164, (jaɽa:ʔ), BAHL.p60, jal, NKEV.p312, *ɟal, lick (v), #0043, V13, 1409,

- Pinnow 1959: V13 / MKCD: ? 1409 **[c]limʔ*; **[c]liəmʔ*; **[c]laim[ ]*

Proto-Austro-Asiatic **[c]limʔ*; **[c]liəmʔ*; **[c]laim[ ]* seems to correspond closely to Gorum *zaleʔb* and Remo *salep'* (palatal - vowel - /l/ vowel - bilabial). The loss of final coda in all but Gorum and Remo is unexpected. Where it is preserved, it occurs as reflexes of pM **ʔp* and not **m*. Reflexes of the sequence **mʔ* are not well understood so far, though. If taken one by one **m + ʔ* should become **m + ∅*. So from Shorto's form, we would expect pMunda **ɟəlam* or **ɟəlem* and not **ɟal* or if Gorum and Remo are taken as base **ɟalEʔp*. However, maybe the sequence **mʔ* behaves different than the individual proto-phonemes.

***dal 'to cover' (#0047-2)**

ɖal, FR, dal, RSED.p73, ɖalu, BDBH.1210, ɖal, GZ65.80, ɖal, PKED.p42, ɖan, MJTL.p96, ɖa, PGEG.p16, dapal/daloɲ', CDES.p40, dapal/dālob, BMED.p35/36, dapal/dalop, HOGV.p153, —, —, da:l, NKEV.p299, *dal, cover (v), #0047, V3, 1745,

- Pinnow 1959: V3 / MKCD: 1745 **kdiil*; **kdiəl*; **kdəl*

Santali *dapal/daloɲ'* (CDES.p40), Mundari *dapal/dālob* (BMED.p35/36), and Ho *dapal/dalop* (HOGV.p153) are not straightforward reflexes of proto-Munda **dal*. Santali *dapal* and the parallel forms in Mundari and Ho suggest **dal* with an infix **-p-* or possibly the etymon **daʔp* (correspondence set #0076) with a suffix **-Vl*. Santali *daloɲ'* in turn suggests either **dal* with a suffix **-Vʔp* or **daʔp* (correspondence set #0076) with an infix **-l-* .

The consistent differences in the vowels – a-a in the case of Santali *dapal* and related forms and a-o̤/o in the case of Santali *dalop'* related forms – is interesting.

***mv$_{(4)}$raŋ* 'big' V$_2$ (#0064-4)**

—, —, maraŋ/məraŋ, RSED.p173/167, muna?, BDBH.2121, (moɖo), AG08.p663, —, —, —, —, mna?, PGEG.35, maraŋ, CDES.p17, maraŋ, BMED.p220, maraŋ, DHED.p225, —, —, —, —, *mxrxŋ, big, #0064, K107, ,

- Pinnow 1959: K107 / MKCD: —

Gta? *mna?* and Remo *muna?* are irregular reflexes of , especially the Gta? form *mna?* should be different, given our current uderstanding of the phonological developments, since a velar coda **aŋ* results in Gta? /ia/. Remo and Gta? /n/ are also inconsistent as reflexes or either **r* or **ŋ*. Gta? *mna?* and Remo *muna?* are consistently parallel to one another.

***bar* 'two' (#0078-2)**

bagu, FR, bar, RSED.p48, mba?r, BDBH.2214, umbar, AG08.p646, ubar, PKED.p205, umba, PJDW.p291, mbar, PGEG.p34, bar, CSED.p42, baria, BMED.p20, bar, DHED.p27, —, —, ba:r, NKEV.293, *bar, two, #0078, V49, 1562,

- Pinnow 1959: V49 / MKCD: 1562 **bi?aar* > **ɓaar*, Pre-Khmer **[ɓ]ir*, Pre-Palaungic &c. **?aar*

***ɟa(?t)* 'additive.particle' (#0079-2)**

za?d, FR, ɟa:, RSED.p117, sa, BDBH.2547, sa, AG08.p649, ja, HLKS.V1, ɟan, PJDW.p211, , , ja, BSDV3.p216, ja:, BMED.p77, ja:, DHED.p155, ja", DSKW.@09330, ja, DSKO.12141, *ɟa(?t), additive.particle, #0079, V1, ,

- Pinnow 1959: V1 / MKCD: —

***gam* 'say (v)' (#0080-2)**

—, —, gam, RSED.p96, —, —, gam, Z1965.121, gam, PKED.p57, gam, PJDW.p194, —, —, gam, CSED.p176, gamu, HLKS.V12, gamu, HLKS.V12, —, —, —, —, *gam, say (v), #0080, V12, ,

- Pinnow 1959: V12 / MKCD: —

***mara?k* 'peacock' V$_1$ (#0081-2)**

(marra?), FR, ma:ra:, RSED.p173, —, —, —, —, mara?, PKED.p131, marag, PJDW.p242, —, —, marak', CSED.p407, ma:ra:, BMED.p114, mara:, DHED.p225, mara:q, BAHL.p117, mara, NKEV.p324, *mara?k, peacock, #0081, V27, 416,

- Pinnow 1959: V27 / MKCD: 416 **mraik[ ]*

Gorum *marra?* 'husband' probably belongs to another etymon.

***ɲam* 'get (v)' (#0088-2)**

—, —, ɲam, RSED.p186, —, —, —, —, ɲam, PKED.p140, —, —, —, —, ɲam, CSED.p434, na:m, BMED.p126, nam, DHED.p241, ɲa:m, BAHL.p66, na, NKEV.p327, *ɲam, get (v), #0088, 5(?), 1243(?),

- Pinnow 1959: 5(?) / MKCD: —

possibly *$a_4$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | a | – | – | a | – | – | a | a: | a | a: | a | 0088-2 |
| – | – | o | o | – | ɔ | a | a | a: | a | a: | a: | 0048-2 |
| – | – | o | o | a | – | a | a | a: | a | a: | a | 0056-2 |

***a*$_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | a | a | a | a | ia | a | a(:) | a(:) | a(:) | a |

The diphthongization in Gta? occured before a velar coda (i.e. *$ŋ$ and *$^{ʔ}k$), so that in Gta? the proto-Munda coda *$a^{ʔ}k$ became Gta? *ia?* while pM *$aŋ$* became Gta? *ia*.

Defining context: velar coda – *$a^{ʔ}k$ *and* *aŋ_

***da$^{ʔ}$k* 'water' (#0001-2)**

ɖaʔ, FR, daʔ, RSED.p70, dak', BDBH.1179, ɖaʔ, ZG63.85, ɖaʔ, PKED.p41, ɖag, PJDW.p185, ndiaʔ, PGEG.p36, dak', CDES.p217, da:, BMED.p31, daʔ, DHED.p73, da:ʔ, BAHL.p87, ɖa, NKEV.p300, da(a)$^{ʔ}$k, water, #0001, V2, 274, 75

- Pinnow 1959: V2 / MKCD: 274 *$di?aak$ > *$ɗaak$

***ɟaŋ* 'bone' (#0002-2)**

z̤aŋ, FR, əɟaŋ, RSED.p6, siʔsaŋ, BDBH.2614, sisaŋ, AG08.p651, jaŋ, PKED.p83, ɟaŋ, PJDW.p210, ncia, PGEG.p36, jaŋ, CDES.p19, ja:ŋ, BMED.p80, jaŋ, HOGV.p150, ja:ŋ, BAHL.p60, —, , ɟa(a)ŋ, bone, #0002, V7, 488, 31

- Pinnow 1959: V7 / MKCD: 488 *$c?aaŋ$ ; *$c?aiŋ$; *$c?i[\ ]ŋ$

***laŋ* 'tongue' (#0003-2)**

laŋ, FR, əlaŋ, RSED.p158, leaŋ, BDBH.2423, laʔŋ, AG08.p638, laŋ, PKED.p173, elaŋ, PJDW.p191, nlia, PGEG.p36, alaŋ, CDES.p203, a:la:ŋ, BMED.p5, (leʔ), DHED.p208, a:la:ŋ, BAHL.p11, laŋ, NKEV.p322, la(a)ŋ, tongue, #0003, V14, , 44

- Pinnow 1959: V14 / MKCD: —

***Olaaʔ/*Olaʔk* 'leaf' $V_2$ (#0035-3)**

olaʔ, FR, o:la:, RSED.p192, ulak', BDBH.169, olag, AG08.p633, ulaʔ, PKED.p298, olag, PJDW.p254, uliaʔ, PGEG.p124, palha, CDES.p111, pa:lha:o, BMED.p142, pala, DHED.p259, (sakam), BAHL.pdfp129, pa:la, NKEV.p331, , leaf, #0035, V50, 230,

- Pinnow 1959: V50 / MKCD: 230 **slaʔ*

***(saŋ)saŋ* 'tumeric' (#0072-2)**

saŋsaŋ, FR, sansaŋ, RSED.249, saŋsaŋ, BDBH.400, saŋsaŋ, GZ63.226, saŋsaŋ, PKED.p176, saŋsaŋ, PJDW.p268, ssia, PGEG.p42, sasaŋ, CDES.p230, sasaŋ, BMED.p157, sasaŋ, DHED.p307, —, —, sasan, Korku.txt.24491, *saŋsaŋ, turmeric/yellow, #0072, V271, ,

- Pinnow 1959: V271 / MKCD: —

***maraʔk* 'peacock' $V_2$ (#0081-4)**

(marraʔ), FR, ma:ra:, RSED.p173, —, —, —, —, maraʔ, PKED.p131, marag, PJDW.p242, —, —, marak', CSED.p407, ma:ra:, BMED.p114, mara:, DHED.p225, mara:q, BAHL.p117, mara, NKEV.p324, *maraʔk, peacock, #0081, V27, 416,

- Pinnow 1959: V27 / MKCD: 416 **mraik[ ]*

Gorum *marraʔ* 'husband' probably belongs to another etymon connected with MKCD 183 **mraʔ* 'person'.

***laʔk* 'to scrape' (#0093-2)**

laʔ, FR, —, —, —, —, lag, Z1965.205, laʔ, PKED.p118, lag, PJDW.p235, liaʔ, PGEG.p31, lak', CSED.p359, —, —, laʔ, DHED.p203, —, —, laʔ, DSKO.17551, *laʔk, scrape (v), #0093, —, 418,

- Pinnow 1959: — / MKCD: 418 **l[a]k*

***a*$_3$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | a | a | a | a | æ | e/ę | e | e | e | ? |

Correnspondence set for pM *a in a rhyme with a palatal coda (i.e. ɲ or ʔc). South Munda has consistently *a* except Gtaʔ, which has *æ*. North Munda has consistently *e* (although there is so far no data from Korku for these etyma).

Defining context: palatal coda – *aɲ_ and **aʔc*

***taɲ* 'to weave' (#0005-2)**

taɲ, FR, taɲ, RSED.p281, taNy, BDBH.1358, taɲ, GZ65.369, taɲ, PKED.p196, —, —,

tæ, PGEG.p45, teɲ, CDES.p219, teŋ, BMED.p183, teɲ, HOGV.p187, —, —, —, —, taɲ, weave (v), #0005, V301, 898,

- Pinnow 1959: V301 / MKCD: 898 *$*t_1aaɲ$*

***da$^{ʔ}$c ‘to climb’ (#0006-2)**

ɖa$^{ʔ}$ɟ, FR, daɟ, RSED.p72, ɖaĭ, BDBH.1168, ɖaj, GZ65.79, —, —, ɖaɲ, PJDW.p186, ɖæʔ, PGEG.p16, dęc’, CDES.p32, dej’, BMED.p40, deʔ, DHED.p81, deʔ, BAHL.p89, (cuɖe), NKEV.p298, da$^{ʔ}$ɟ, climb (v), #0006, V333, ,

- Pinnow 1959: V333 / MKCD: —

***ga$^{ʔ}$c ‘to fry’ (#0096-2)**

ga$^{ʔ}$ɟ ,FR ,gaɟ ,RSED.p95 ,gaĭ ,BDBH.766 ,gaj ,Z1965.120 ,ga$^{ʔ}$j ,PKED.p165 ,gaj ,DSJU#10461 ,gæʔ ,PGEG.p19 ,gęc’ ,CSED.p184 ,geʔ ,EMV5.p1411 ,— ,— ,— ,— ,— ,— ,*ga$^{ʔ}$c ,fry/scrape (v) ,#0096 ,V15 ,(338a) ,

- Pinnow 1959: V15 / MKCD: (338a)

***$a_4$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | – | o | o | – | ɔ | a | a | a: | a | a: | a: | 0048-2 |
| – | – | o | o | a | – | a | a | a: | a | a: | a | 0056-2 |

Defining context: bilabial stop coda –*$V^{ʔ}p$

Probable reflexes of *$am$ are inconsistent. *$gam$ ‘say (v)’ (#0080-2) is clearly part of *$a_1$ while *$ɲam$ ‘get (v)’ (#0088-2) is too poorly atttested to decide whether it belongs to *$a_1$ or *$a_4$. (In my notes I have *$tam$ ‘to wash, rinse, hit’ that would fit best into _*$a_4$, but Kharia /o/ would be inconsitent with #0056-2.)

***sa$^{ʔ}$p ‘grab (v)’ (#0048-2)**

—, —, (sakab), RSED.p246, sop’, BDBH.2748, sob, GGEG.p113, (su$^{ʔ}$b), PKED.p188, sɔb, PJDW.p277, saʔ, PGEG.p42, sap’, CDES.p28, sa:b, BMED.p163, sab, DHED.p296, sa:b, BAHL.pdfp131, sa:p, NKEV.p337, *sx$^{ʔ}$p, grab (v), #0048, , ,

- MKCD 1236 *$[c]kiip$; *$[c]kiəp$; *$t[_1]kiəp$; *$ckap$; *$t_1kap$; $ckuəp$
- MKCD 1243 *cap; *caap; *ciəp; *cip; *cup

The connection to MKCD 1236 is not strong. Reflexes of *$t_1$ should remain a stop, while the reflexes of the cluster *$[c]k$ are not well understood. It could be a case of type 2a cluster splitting by second consonant loss ($C_iC_{ii} \rightarrow C_i$). Thus *$ckap \rightarrow$ *$cap \rightarrow$ *$sa^{ʔ}p$ or *$ckap \rightarrow$ *$skap \rightarrow$ *$sa^{ʔ}p$.

***$K^ha^{ʔ}p$ ‘bite (v)’ (#0056-2)**

(kuʔb), FR, (küb/kib/kaib), RSED.p144, op, BDBH.337, op, ZG63.7, hapkay, PKED.p73, —, —, haʔ, PGEG.p24, hap', CDES.p17, ha:b, BMED.p64, hab, DHED.p124, ha:p, BAHL.p146, khap, NKEV.p320, *Kʰaʔp, bite (v), #0056, V294, 1231,

- Pinnow 1959: V294 / MKCD: 1231 **kap/*kaap*

***a*$_5$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | ∅ | ∅ | o | o | ∅ | ∅ | a: | a | ∅ | a: | 0004-4 |
| a | a | ɔ | o | o | o | o | ∅ | ∅ | ∅ | ∅ | ∅ | 0014-3 |
| a | a | o | o/u | o/a | ɔ | ∅ | a | a: | a | a | a | 0038-4 |

Delineation of *$a_5$ and *$a_4$ is difficult. In both sets Sora and North Munda has consistently *a*, while Remo, Gutob, Kharia, and Juang have o/ɔ. The only difference is that in *$a_4$ Gorum has *o* and in *$a_5$ Gorum has *a* and Gtaʔ has *a* *$a_4$ and *o* in *$a_5$.

The set *$a_5$ cannot be regarded as definite, because set #0014-3, which establishes the reflex in Gtaʔ and contains a full set of reflexes for all but North Munda, lacks reflexes in North Munda completely. So far (0100), no other set, besides #0014-3, has an /a/ reflex in Sora-Gorum and /o/ in Gtaʔ.

### **kᵊla* 'tiger' $V_2$ (#0004-4)

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *kᵊla, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **klaʔ*

### **v$_{(9)}$laŋ* 'thatch' $V_2$ (#0014-3)

alaŋ, FR, əlaŋ, RSED.p158, lɔŋ, BDBH.2437, uloŋ, AG08.p644, oloŋ, PKED.p214, oloŋ, PJDW.p254, nlo, PGEG.p36, —, —, —, —, —, —, —, —, —, —, *v$_{(9)}$laŋ, thatch, #0014, V270, 749,

- Pinnow 1959: V270 / MKCD: 749 **[p]laŋ*; **[p]laiŋ*

### **sVmaŋ* 'forehead/front' $V_2$ (#0038-4)

amaŋ, FR, ammaŋ, RSED.p31, gutumoŋ, BDBH.885, sumoŋ/amuŋ, GZ65.21, somoŋ/somo/sumaŋ, PKED.p185, ɛmɔŋ, PJDW.p191, ssæ, PGEG.p44, samaŋ, CDES.p79, sa:ma:ŋ, BMED.p167, sanamaŋ, HOGV.p159, samaŋ, BAHL.pdfp130, samma, NKEV.p336, , forehead/front, #0038, V269, ,

- Pinnow 1959: V269 / MKCD: —

Gtaʔ /æ/ is treated as a reflex of $V_1$ here.

**Proto-Munda **i***

- **$i_1$*
- **$i_2$* (palatal onset or coda?)
- **$i_3$* unclear condition for differences to **$i_1$*

Main motivation to keep **$i_3$* as a reflex of proto-Munda **i* that most branches clear point to **i*.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i | i(:) | i | i | i | i | i | i | i | i(:) | i(:) | i | *$i_1$ |
| i | i | i | i | i | i/ɛ | æ | i | i | i | i: | i | *$i_2$ |
| — | i | i | i | e | ɛ | i | e | i | i | i: | i | *$i_3$ |

***$i_1$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| i | i(:) | i | i | i | i | i | i | i | i(:) | i(:) | i |

***tii*$^{ʔ}$ 'hand' (#0008-2)**

siʔ, FR, si:ʔ, RSED.p254, titi, BDBH.1370, titi, GZ65.p29, tiʔ, PKED.p199, iti, PJDW.p208, nti, PGEG.p37, ti, CDES.p89, ti, BMED.p186, ti:, DHED.p350, tiʔi:, BAHL.p63, ʈi, NKEV.p343, tii$^{ʔ}$, hand, #0008, V75, 66, 48

- Pinnow 1959: V75 / MKCD: 66 **$t_1$ii?*

***ri*$^{ʔ}$*t* 'to grind' (#0025-2)**

ri$^{ʔ}$d, FR, rid, RSED.p233, riʔ, BDBH.2276, riɽ, GZ63.15, riɖ, PKED.p169, riɖ, PJDW.p266, rig, PGEG.p4, rit', CDES.p86, ri'd, BMED.p159, riɖ, DHED.p288, ri:ɖ, BAHL.p124, –, —, *ri$^{ʔ}$t, grind (v), #0025, V76, 1056,

- Pinnow 1959: V76 / MKCD: 1056 **riit*, **riət*

***xsin* 'to boil' $V_2$ (#0046-3)**

asin, FR, əsin, RSED.p16, nsiŋ, BDBH.1641, isin, GZ65.173, isin, PKED.p81, isinɔ, JLIC.v65, nsiŋ, PGEG.p37, isin, CDES.p39, isin, BMED.p77, isin, DHED.p153, isiŋ, BAHL.p12, isin, Korku.txt.12071, *xsin, boil (v), #0046, V86, ,

- Pinnow 1959: V86 / MKCD: 1137 **ciin?* (> Pre-Bahnaric **cin*); **ciən[ ]*; **cain[ ]*; 'cooked'

***xli* 'liquor' $V_2$ (#0067-3)**

ali, FR, əli/ali, RSED.p8, ili, BDBH.120, ili, AG08.p672, —, —, —, —, —, —, —, —, ili, BMED.p75, ili, DHED.p151, —, —, —, —, *xlx, liquor, #0067, V85, ,

- Pinnow 1959: V85 / MKCD: —

***siŋi* 'sun' $V_1$ and $V_2$ (#0075-2 and #0075-4)**

—, —, —, —, siŋi, BDBH.2543, siN, AG08660, siŋ, PKED.p183, siŋ, PJDW.p244, sni, PGEG.p34, siɲ, CDES.p193, siŋi, BMED.p174, siŋi, DHED.p319, si:ŋ, BAHL.p136, —, —, *siŋi, sun, #0075, V286, 31,

- Pinnow 1959: V286 / MKCD: 31 *$t_2$ŋii?*

The reflexes of $V_2$ (#0075-4) are consistent with *$i_1$*, but not definite, while the reflexes of $V_1$ (#0075-2) are definite.

***$i_2$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | i: | i | i | i | ɛ | æ | i | i | i | i: | i | 0028-2 |
| i | i | i | i | i | (i) | æ | i | i | i | i: | i | 0091-1 |
| — | ɪ: | i | — | i | i | æi | i | i | i | i: | i | 0095-2 |

The correspondence set *$i_2$* is treated as a continuation of proto-Munda **i*. The reflexes are dominantly close front unrounded vowels. However, Juang /ɛ/ and Gtaʔ /æ/ constitute a considerable deviation from the Juang /i/ and Gtaʔ /i/ in *$i_1$*. What makes the difference to *$i_1$* problematic for a continuation of proto-Munda **i* is the fact that the lowering to an open-mid vowel can not be motivated. The reconstructed forms from Shorto open up the possibility that *$i_2$* is a reflex of proto-Austroasiatic **iə*.

More etymons belonging to *$i_2$* are needed to decide whether there are factors allowing to motivate the different reflexes of **i* in *$i_2$* as opposed to *$i_1$*.

***$si_2m$* 'chicken' (#0028-2)**

—, —, kənsi:m, RSED.p131, gisiŋ, BDBH.856, gisiŋ, AG08.p651, siŋkoy, PKED.p183, sɛŋkɔe, PJDW.p275, gsæŋ, PGEG.p23, sim, CDES.p30, sim, BMED.p173, sim, HOGV.p151, si:m, BAHL.p135, —, —, *sim, chicken, #0028, V315, 1324,

- Pinnow 1959: V315 / MKCD: 1324 **cim*; **ciim*; **ciəm*; **caim*; **cum*

***$i_2$ʔc* 'defecate (v)' (#0091-1)**

i̱j / iʔɟ, FR, gad-iɟ, RSED.p94, ik', BDBH.88, ig, AG08.p652, iʔj, DSKH#12711, (ica), DSJU#13321, æg, PGEG.p4, ic', CSED.p244, ij', BMED.p75, iiʔ, DHED.p150, i:q, BAHL.p16, ich, NKEV.p310, *iʔc, defecate (v), #0091, V81, 794,

- Pinnow 1959: V281 / MKCD: 794 **ʔic*; **ʔiə[c]*; **ʔ[ə]c*

***ɟi$_2$ŋ(k)* 'porcupine' (#0095-2)**

—, —, kənɟɪːŋ, RSED.p131, gisiŋreʔe, BDBH.858, —, —, jiŋray, PKED.p86, ɟiŋɛ, PJDW.p212, gcæiŋ, PGEG.p22, jhīk, CSED.p268, jiki, BMED.p82, jiki, DHED.p165, jiːk, DSKW@09500, jikɽa, NKEV.p313, *ɟiŋ(k), porcupine, #0095, V318, 528/1883,

- Pinnow 1959: V318 / MKCD: 528 **cu[ə]ŋ*; **cəŋ*; **ciəŋ*

Looks like a combination of MKCD 528 and 1883 **[r]kus*; **[r]kuus*; **[r]kuəs*; **[r]k[iə]s*, e.g. **ciəŋ* + *[r]kuəs*.

### **$i_3$*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | i | i | i | e | ɛ | i | e | i | i | iː | i | 0009-2 |
| — | ∅ | i | i | — | (ɛ) | i | ∅ | i | i | ∅ | — | 0070-1 |

#### **$sii_3{}^{ʔ}$* ‘louse’ (#0009-2)

(aŋi$^{ʔ}$d), FR, iʔi, RSED.p109, gisi, BDBH.855, gisi, AG08.p651, seʔ, PKED.p258, ɛsɛ, PJDW.p192, gsi, PGEG.p23, se, CDES.p116, siku, BMED.p173, siku, HOGV.p165, guhiː, BAHL.p45, siku, NKEV.p338, $sii_2{}^{ʔ}$, louse, #0009, V341, 39, 22

- Pinnow 1959: V341 UM: e,ɛ / MKCD: 39 **cii?* (& **ci?*?)

Unexplained variation of **$i_1$*, especially the constrast to *tii$^{ʔ}$_ ‘hand’ (#0008-2) is striking. Kharia /e/, Juang /ɛ/, and Santali /e/ cannot be explained. Pinnow (1959, p. 164 and p. 195) reconstructs proto-Munda **e/*ɛ*. However, positing #0009-2 as a continuation of proto-Munda **e* (*ɛ) is also not consistent. MKCD 39 **cii?* also suggests proto-Munda **sii$^{ʔ}$*.

#### **uli* ‘mango (ripe)’ $V_2$ (#0070-3)

—, —, uːl, RSED.p304, uli, BDBH.171, ili, DSGU#4032, —, —, holɛ, PJDW.p205, uli, PGEG.p7, ul, CDES.p118, uli, BMED.p192, uli, DHED.p370, uːl, BAHL.p19, —, —, *uli, mango (ripe), #0070, V144/V400e/K496, ,

- Pinnow 1959: V144;V400e;K496 / MKCD: —

If Juang /ɛ/ is genuine, #0070-3 belongs to **$i_3$*. Otherwise, **$i_1$* is also possible.

### Proto-Munda **u*

Proto-Munda **u* is consistently reflected as high back rounded vowels, except for Gutob where it is consistently reflected as /i/. The sets **$u_{1a}$* and **$u_2$* are very close to **$u_1$*. So far they are based on one etymon, **buluu$^{ʔ}$* ‘thigh’ (#0017), where the fronting of /u/ in Gutob-Remo, spreads into Remo. The $V_1$ of **buluu$^{ʔ}$* ‘thigh’ (#0017-2) is optionally fronted, while $V_2$ **buluu$^{ʔ}$* ‘thigh’ (#0017-4) is mandatorily fronted.

- **$u_1$* general reflex of **u*
- **$u_{1a}$* difference between **$u_{1a}$* and **$u_1$* derives from variance due to vowel harmony in Remo (dependent on **$u_2$*)

- *$u_{2}$ Remo /i/, difference to etyma in *$u_{1}$ unclear
- *$u_{2a}$ /o/ in Santali unique and unexplained
- *$u_{3}$ *ɲ coda
- *$u_{4}$ *m coda maybe *$u_{2}$ if Gta? /o/ secondary after shift from /m/ to /ŋ/
- *$u_{5}$ actually *ɨ? (/i/ in Gutob-Remo, Kharia and Gta?)
- *$u_{6}$ probably *$u_{2}$
- *$u_{7}$ Gutob /u/ unexplained, else compatible with *$u_{1}$ and *$u_{4}$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u | i | u | u | u | u | u | u | u | u | *$u_{1}$ |
| u | u | u/i | i | u | u | u | u | u | u | u | u | *$u_{1a}$ |
| u | u | i | i | u | u | u | u | u | u | u | u | *$u_{2}$ |
| u | u | i | i | u | u | u | o | u | u | u | u | *$u_{2a}$ |
| i | u | i | i | u | u | wi | u | ui | u | – | u | *$u_{3}$ |
| u | u | – | i | u | u | o | u | u | u | u | u | *$u_{4}$ |
| u | u | i | i | i | – | i | u | u | u | u | u | *$u_{5}$ |
| u | u | i | i | (o) | (o) | u | u | u | u | u | u | *$u_{6}$ |
| u | ʊ | u | u | u | u | ∅ | — | (u) | — | — | — | *$u_{7}$ |

***$u_{1}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u | i | u | u | u | u | u | u | u | u |

***bul* ‘drunk (v)’ (#0016-2)**

bu̯l, FR, bu?ul, Sora.txt.18922, bu, BDBH.1900, bil, AG08.p672, bul, PKED.p39, buli, PJDW.p174, busa?, PGEG.p13, bul, CDES.p58, bul, BMED.p25, bul, HOGV.p155, bubul, BAHL.p108, bubul, NKEV.p70, , drunk, #0016, V105, 1765,

- Pinnow 1959: V105 / MKCD: 1765 **ɓul*; **ɓuul*

***usal* ‘skin’ $V_{1}$ (#0036-1)**

usal, FR, usal, RSED.p308, usa, BDBH.173, isa:l, HLKS.V149, usal, PKED.p300, chalo, PJDW.p180, ugsa, PGEG.p6, chal, CDES.p176, , , , , , , sa:li, NKEV.p337, , skin, #0036, V149, ,

- Pinnow 1959: V149 / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u | i | u | ∅ | u | ∅ | — | — | — | ∅ |

The irregular ∅ reflexes are probably due to a second etymon in Juang, Santali and Korku. This would also account for the irregular palatals in Juang and Santali.

***uli* 'mango (ripe)' $V_1$ (#0070-1)**

—, —, u:l, RSED.p304, uli, BDBH.171, ili, DSGU#4032, —, —, holɛ, PJDW.p205, uli, PGEG.p7, ul, CDES.p118, uli, BMED.p192, uli, DHED.p370, u:l, BAHL.p19, —, —, *xlx, mango (ripe), #0070, V144/V400e/K496, ,

- Pinnow 1959: V144;V400e;K496 / MKCD: —

Juang /o/ is unexpected, however the whole form /holɛ/ is as a whole problematic. The initial /h/ is unexpected.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | u: | u | i | — | (o) | u | u | u | u | u: | — | 0070-1 |

***lutu(u$^{?}$)r* 'ear' $V_1$ and $V_2$ (#0073-2 and #0073-4)**

lu$^{?}$d, FR, lu$^{?}$d, RSED.p165, luntur, BDBH.2386, litir, AG08.p652, lutur, PKED.p127, lutur/lutu?, PJDW.p239, nlug, PGEG.p36, lutur, CDES.p60, lutur, BMED.p110, lutur, DHED.p216, lutur, BAHL.p128, lutur, NKEV.p324, *lutu(u$^{?}$)r, ear, #0073, V147, 1621,

- Pinnow 1959: V147 / MKCD: 1621 **kt$_2$uur*; **kt$_2$uər*

***gur* 'fall/rain (v)' (#0089-2)**

gur, FR, gur, RSED.p92, gur, BDBH.914, gir, Z1965.132, gur, PKED.p68, gur, PJDW.p200, gur, PGEG.p21, gur, CSED.p207, gur, EMV5.p1535, gur, DHED.p122, —, —, guru, DSKO#10541, *gur, fall/rain (v), #0089, V106, 1579,

- Pinnow 1959: V106 / MKCD: 1579 **guur*

***u$^{?}$t* 'drink/swallow (v)' (#0090-1)**

—, —, —, —, u?, BDBH.181, iḍ, AG08.p664, u$^{?}$d, PKED.p205, ur/uḍ, PJDW.p292, ug, PGEG.p6, ut', CSED.p674, ud', BMED.p191, uḍ, DHED.p369, u:ḍ, BAHL.p18, u:ṭ, NKEV.346, *u$^{?}$t, drink/swallow (v), #0090, V142, 1106,

- Pinnow 1959: V142 / MKCD: 1106 **hut*; **huut*; **huət*; **huc*; **huuc*; **huəc*

***u$^{?}$p* (**u$^{?}$k/*uu$^{?}$) 'hair' (#0099-1)**

—, FR, u?/(uppur), RSED.p308(307), ugbok', BDBH.135, i?bo?, DSGU#9411, (ului), DSKH#32441, —, —, ugbo?/ogbo?, PGEG.p6, up', CSED.p670, ub', BMED.p191, ub, DHED.p369, u:b, BAHL.p18, hu:p, NKEV.p310, *u$^{?}$p, hair, #0099, V143, ,

- Pinnow 1959: V143 / MKCD: —

The vowel set is consistent with *$u_1$ if Gta? /ugbo?/ is taken as the main reflex and compatible with *$u_4$ if based on Gta? /ogbo?/.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| — | u | u | i | (u) | u | u/o | u | u | u | u: | u: |

***u*$_{1a}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | u/i | i | u | u | u | u | u | u | u | u |

***bulɯɯ*$^{ʔ}$ 'thigh' V$_1$ (#0017-2)**

bulu, FR, bulu:, RSED.p64, buli/bili, BDBH.1949/1890, bili, DSGU.2681, bhulu, PKED.p32, bulu, PJDW.p174, bulu, PGEG.p13, bulu, CDES.p199, bulu, BMED.p25, bulu, HOGV.p183, bu:l, BAHL.p109, bulu, NKEV.p295, , thigh, #0017, V145, 223,

- Pinnow 1959: V145 / MKCD: 223 **blɯɯʔ*

***u*$_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | i | i | u | u | u | u | u | u | u | u |

***bulɯɯ*$^{ʔ}$ 'thigh' V$_2$ (#0017-4)**

bulu, FR, bulu:, RSED.p64, buli/bili, BDBH.1949/1890, bili, DSGU.2681, bhulu, PKED.p32, bulu, PJDW.p174, bulu, PGEG.p13, bulu, CDES.p199, bulu, BMED.p25, bulu, HOGV.p183, bu:l, BAHL.p109, bulu, NKEV.p295, , thigh, #0017, V145, 223,

- Pinnow 1959: V145 / MKCD: 223 **blɯɯʔ*

***u*$_{2a}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | i | i | u | u | u | o | u | u | u | u |

Santali /o/ is unexpected.

***K*$^{h}$*Vsu* 'fever/pain' V$_1$ (#0026-4)**

asu, FR, asu:/əsu:, RSED.p42, si?, BDBH.2610, isi, GGEG.p93, kosu/kusu, PKED.p107, kasu, PJDW.p220, a?su, PGEG.p4, haso, CDES.p135, ha:su, BMED.p67, hasu, HOGV.p147, hasu:, BAHL.p145, kaSu, NKEV.p315, *K$^{h}$xsu, fever/pain, #0026, V247, 44,

- Pinnow 1959: V247 / MKCD: 44 **[c]ɯɯʔ*

***u*$_3$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| i | u | i | i | u | u | wi | u | ui | u | ? | u |

Defining context: palatal nasal coda **uɲ*

****tuɲ* 'shoot (v)' (#0027-2)**

tiŋ, FR, tuɲ, RSED.p299, tiŋ, BDBH.1368, tiŋ, GZ63.190, tuɲ, PKED.p196, tuɲ, PJDW.p288, ʈwiŋ, PGEG.p46, tuɲ, CDES.p173, tuiŋ, BMED.p180, tuŋ, HOGV.p177, , , ʈuɲj, NKEV.p343, , shoot (v), #0027, V107, 896a?,

- Pinnow 1959: V107 / MKCD: 896a?

MKCD 896a **t₁iɲ*; **t₁iiɲ*; **t₁iəɲ*; **t₁əɲ* 'to pluck, twang' could be related. Its meaning is generally 'to pluck a (stringed) instrument' which is rather close to 'to shoot with bow and arrow.'

****u₄***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | – | i | u | u | o | u | u | u | u | u |

****gum* 'winnow (v)' (#0044-2)**

gumar, FR, gum, RSED.p105, (gite?), BDBH.864, gim, GZ63.134, gum, PKED.p67, guŋ/guɲ, PJDW.p199, goŋ, PGEG.p20, gum, BSDV2.p490, gum, BMED.p214, gum, DHED.p120, gum, BAHL.p45, gum, NKEV.p307, *gum, winnow (v), #0044, K159, 1317,

- Pinnow 1959: K159 / MKCD: 1317 **gum*; **guum*; **g[əə]m*

If Remo *gumi* 'heap of unclean paddy before winnowing' (BDBH.908) can be connected, it would connected these reflexes to **u₁*, with Gta? *goŋ* displaying exceptional reflexes of proto-Munda **u* and proto-Munda **ŋ*.

****u₅* (*i?)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | i | i | i | – | i | u | u | u | u | u | 0033-3 |
| u | u | i | i | i | – | i | – | – | – | – | – | 0034-4 |
| – | u: | i | i | – | – | i | ∅ | u | u | – | u | 0069-4 |

The set **u₅* features /u/ in North Munda and Sora-Gorum and /i/ in the other branches, while **u₅ₐ* features /u/ in Sora-Gorum and /i/ in all other branches.

***vdʲu$_5$ʔp* 'night' V$_2$ (#0033-3)**

uɖuʔb, FR, orub, RSED.p195, minɖip', BDBH.2087, noNdib, GZ65.260, iɖiʔb, PKED.p79, —, —, minɖig, PGEG.p33, ayup', CDES.p128, a:yub, BMED.p14, ayub, HOGV.p157, ayub, BAHL.p3, ayup, NKEV.p290, , night, #0033, V280, 1268,

- Pinnow 1959: V280 / MKCD: 1268 **yup*; **y[uu]p*; **yəp*

***tVru$_5$ʔp* 'cloud' V$_2$ (#0034-4)**

taruʔb, FR, tarub, RSED.p283, tirib, BDBH.1387, tirib, GZ65.416, tiriʔb, PKED.p287, — , —, trig, PGEG.p46, rimil, CDES.p33, rimil, BMED.p160, rimil, HOGV.p152, liNbir, BAHL.p127, —, —, , cloud, #0034, V285a, ,

- Pinnow 1959: V285a / MKCD: —

If /rim/ in Santali, Munda, and Ho is parallel to /ri(ʔ)b/ in Remo, Gutob, and Kharia, **tVru$_5$ʔp* 'cloud' belongs quite clearly to **bVʔt* 'sow (v)', else it could belong to **vdʲu$_5$ʔp(???)* 'night' or **bVʔt* 'sow (v)'.

***ɟəlu$_5$* 'meat' V$_2$ (#0069-4)**

—, —, ɟelu:, RSED.p123, sili/seli, BDBH.2599/2731, seli, AG08.p674, —, —, —, —, cili, PGEG.p15, jel, CDES.p120, jilu, BMED.p83, jilu, DHED.p165, —, —, jilu, NKEV.p311, *ɟəlu$_5$, meat, #0069, V228, ,

- Pinnow 1959: V228 / MKCD: —

A possibly connected MKCD etymon is MKCD 204 **[c]nlu[u]ʔ* 'edible grub' only atttested in Bahnaric.

***u$_6$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | i | i | (o) | (o) | u | u | u | u | u | u | 0074-2 |

The correspondence set is based on the etymon **muuʔ* 'nose'. Kharia *romoŋ/romoʔɖ* and Juang *motɛɟ* feature a /o/ instead of the /u/ attested in set *u$_2$*. The dental coda in both Kharia and Juang is unexplained and might indicate that these words are not straightforward reflexes of proto-Munda **muuʔ*.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | i | i | (o) | (o) | u | u | u | u | u | u | *u$_6$* |
| u | u | i | i | u | u | u | u | u | u | u | u | *u$_2$* |

***muuʔ* 'nose' (#0074-2)**

muʔ, FR, mu:ʔ, RSED.p179, nseʔmiʔ, BDBH.1653, miʔ, GZ63.262, romoŋ/romoʔɖ, PKED.p170, motɛɟ, PJDW.p245, mmu, PGEG.p34, muN, CDES.p129, mu/muhu,

BMED.p121, muwa/muʈa, DHED.p238, hu:mu:, DSKW@23180, mu:, NKEV.p327, *mxxʔ, nose, #0074, , ,

- Pinnow 1959: V387 / MKCD: 2045 **muh*; **muuh*; **muus*

***u*$_7$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | ʊ | u | u | u | u | ∅ | — | (u) | — | — | — | 0068-2 |

The one attested set where /u/ in Gorum, Sora, Remo, Kharia and Juang correlates with Gutob /u/ and not /i/. Otherwise, the set is compatible with **u*$_1$ and **u*$_4$. MCKD suggests an origin in **ə* (probably **rᵊ(N)kvʔk*)

***ruNkOʔk* 'husked rice' (#0068-2)**

ruŋk, FR, rʊŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaʈ), BMED.p163, —, —, —, —, —, —, *ruNkOʔk, husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 **rk[aw]ʔ*

**Proto-Munda **e***

Context for variation is very unclear. Maybe separate into **ɛ* and **e*? Probably best along the lines **e*$_1$ as a continuation of **ɛ*; **e*$_2$ and **e*$_3$ as a continuation of **e*.

- **e*$_1$
- **e*$_2$ **l* coda?, but #0065-3, #0054-5 are **e*$_1$
- **e*$_3$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e | e | e | e | – | i | ẹ | e | e | e | e | *e$_1$ |
| i | e/ɪ: | e | e | e | ɛ | e | e | i | i | e/i | i | *e$_2$ |
| i | e | e | e | ɛ | – | i | e | e | e | e | – | *e$_3$ |

***e*$_1$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e | – | – | e | – | – | – | e | e | – | – | 0020-4 |
| e | e | e | e | ɛ | – | i | ẹ | – | – | – | – | 0057-2 |
| e | – | – | – | e | – | – | ẹ | e | e | e | e | 0065-3 |

***səreŋ* 'stone' V$_2$ (#0020-4)**

areŋ, FR, areŋ, RSED.p39, —, —, —, —, soreŋ, PKED.p187, —, —, —, —, —, —, sereŋ, BMED.p172, sereŋ, HOGV.p175, —, —, —, —, *səreŋ, stone, #0020, V183, ,

- Pinnow 1959: V183 / MKCD: —

MKCD B42 (Palaungic) **[ ]rʔa[a]ŋ* might compare to **səreŋ*.

### **peʔt* 'blow (v)' (#0057-2)

peʔd, ped, RSED.p212, peʔ, BDBH.1759, ped, ZG65.293, pɛʔḍ, PJED.p156, —, , piʔ, PGEG.p38, phẹt', CDES.p142, —, , —, , —, , —, , *pxʔt, blow (v), #0057, V157, 1028,

- Pinnow 1959: V157 / MKCD: 1028 **puut*; **p[əə]t*

### **əsel* 'white' $V_2$ (#0065-3)

asel, FR, —, —, —, —, —, —, osel, PKED.p216, —, —, —, —, ẹsẹl, BSDV2.p343, esel, BMED.p56, esel, DHED.p102, hesel, BAHL.p149, esel, HLKS.V255, *əsel, white, #0065, V255, ,

- Pinnow 1959: V255 / MKCD: —

### **boŋtel*/**bitkil* 'buffalo' $V_2$ (#0054-5)

boŋtel, FR, boŋtel, RSED.p62, buŋte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNƫi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biƫkhil, NKEV.p294, *bxŋtxl, buffalo, #0054, , ,

North Munda /i/ has to be taken out. There is no regular sound change that will result in the southern forms and North Munda **bitkil*. When the North Munda forms are excluded, the remaining set is consistent with $*e_1$ and $*ə_2$.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e | e | e | e | – | i | (i) | – | – | – | (i) | 0054-5 |
| e | e | e | e | e | – | i | ẹ | e | e | e | e | $*e_1$ |
| e | e | e | e | e | – | i | ẹ | i | i | e | i | $*ə_2$ |

### **geʔp* 'to burn (vi)' (#0058-2)

geʔb ,FR ,tuŋge:b ,RSED.p298 ,gep' ,BDBH.967 ,geb ,GZ65.123 ,geb ,PKED.p61 ,— ,— ,giʔ ,PGEG.p19 , — ,— ,— ,— ,— ,— ,— ,— ,— ,— ,*geʔp ,burn (vi) ,#0058 , 156, ,

- Pinnow 1959: 156 / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e: | e | e | e | – | i | – | – | – | – | – | 0058-2 |
| e | e | e | e | e | – | i | ẹ | e | e | e | e | $*e_1$ |
| e | e | e | e | e | – | i | ẹ | i | i | e | i | $*ə_2$ |

***per* 'to burn (of chilies) (vi)' (#0097-2)**

per ,FR ,— ,— ,per ,BDBH.1756 ,per ,Z1975.294 ,— ,— ,— ,— ,pir ,PGEG.p38 ,pe̤ṛen ,CSED.p500 ,— ,— ,(pertol) ,DHED.p266 ,— ,— ,— ,— ,*per ,burn(chilies) (v) ,#0097 ,— , ,

- Pinnow 1959: — / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | – | e | e | – | – | i | e̤ | – | (e) | – | – | 0097-2 |
| e | e | e | e | e | – | i | e̤ | e | e | e | e | *$e_1$ |
| e | e | e | e | e | – | i | e̤ | i | i | e | i | *$ə_2$ |

***$e_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| i | e/ɪː | e | e | e | ɛ | e | e | i | i | e | i |
| i | eː | e | e | e | ɛ | e | e | i | i | i | – |
| – | e | e | – | e/i | ɛ | e | e | i | i | – | – |

Defining context: **el* (not sufficient, cf. *əsel_ 'white' in **$e_1$*)

some variation: Sora e/ɪː~e(ː), Kharia e~e/i, Korwa e~i

***bel* 'spread (v)' (#0022-2)**

bil, FR, bel/bɪːl, RSED.p56/58, be-sak', BDBH.1982, be(d), GZ65.50, bel, PKED.p18, bɛn, PJDW.p166, beʔ, PGEG.p11, bel, CDES.p184, bil, BMED.p24, bil, HOGV.p179, bel, BAHL.p111, (bi)bil, NKEV.p293, *bel, spread (vt), #0022, V221, 1761,

- Pinnow 1959: V221 / MKCD: 1761 **b[e]l* (**beel*?)

***xrel* 'hail/pebble' $V_2$ (#0032-3)**

aril, FR, areːl, RSED.p39, are, BDBH.43, arel, HLKS.V225, arel, PKED.p7, aɭɛn, PJDW.p158, hare, PGEG.p24, arel, CDES.p88, aːɽil, BMED.p10, aril, HOGV.p161, aːril, BAHL.p10, —, —, *xrel, hail/pebble, #0032, V225, 1791,

- Pinnow 1959: V225 / MKCD: 1791 **pril*; **priəl*

***tVrel* 'ebony' $V_2$ (#0083-4)**

—, —, tarel, RSED.p138, tire, BDBH.1390, —, —, ti(ɽr)(ei)l, PKED.p200, tɛrɛn, PJDW.p285, tre, PGEG.p46, terel, CSED.p626, tiril, BMED.p188, tiril, DHED.p355, —, —, —, —, *txrel, ebony, #0083, V227, ,

- Pinnow 1959: V227 / MKCD: —

$*e_3$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i | e | e | e | ɛ | – | – | e | e | e | e | – | 0077-4 |
| i | – | – | e | e | – | (e) | e | e | e | e | e | 0086-2 |
| i | e | e | e | e | – | i | – | – | – | – | – | 0053-4 |

Some variation: Kharia ɛ~e probably artefact of different descriptions.

***gəle* 'ear of corn' $V_2$ (#0077-4)**

gali, FR, gale, RSED.p96, gileker, DSBO.11781, gile, GTXT.7791, gɔlɛ, HLKS.V182, (ɔnɔ), PJDW.p255, (konto-ja), PGEG.p28, gele, CDES.p185, gele, EM.p1418, gele, DHED.p111, gele?, BAHL.p45, (kelʈa), NKEV.p317, *gxle, ear of corn, #0077, V182, 1577,

- Pinnow 1959: V182 / MKCD: 1577 **gur*; **guər*

***ten* 'trample (v)' (#0086-2)**

tin, FR, —, —, —, —, ten, Z1965.402, ten, PKED.p199, —, —, (ʈe), PGEG.p46, ten, CSED.p624, ʈhen, BMED.p185, ten, DHED.p347, ten, DSKW@1275, ten, DSKO#26831, *txn, trample (v), #0086, K306, 1153a,

- Pinnow 1959: K306 / MKCD: 1153a **$t_1$een*

Gta? *ʈe* is problematic. The retroflex /ʈ/ is unexplained and the vowel /e/ is not expected in Gta? in **$e_3$* reflex sets.

***tVme* 'new' (#0053-4)**

tẽmi, FR, tamme, RSED.p277, time, BDBH.1383, time, ZG65.410, tonme, PKED.p289, —, —, tmi, PGEG.p125, (nãwã), CDES.p128, (nawã), BMED.p127, (nama), HOGV.p168, —, —, (uni), NKEV.345, *txmx, new, #0053, V184, 144,

- Pinnow 1959: V182 / MKCD: 144 **$t_1$mi?*

**Proto-Munda **o***

In all languages /o/ except Remo consistently /u/, Gta? /u/ in **$o_1$* and /o/ in **$o_2$*.

- **$o_1$* general
- **$o_2$* so far: velar coda **ʔk* and **ŋ* (but **boŋtel*)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| o | o | u | o | o | o | u | o̤ | o | o | o | o | *$o_1$ |
| o | o | u | o | o | o | o | o̤ | o | o | o | u | *$o_2$ |

***o*$_1$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o | o | u | o | o | o | u | o̤ | o | o | o | o |

***tol* 'tie (v)' (#0024-2)**

tol, FR, tol, RSED.p292, tu, BDBH.1398, tol, AG08.647, tol, PKED.p288, tor, PJDW.p287, tu, PGEG.p46, to̤l, CDES.p201, tol, BMED.p186, tol, HOGV.p183, tol, BAHL.p84, ʈol, NKEV.p343, *tol, tie (v), #0024, V191, ,

- Pinnow 1959: V191 / MKCD: —

***ɟoˀt* 'wipe (v)' (#0029-2)**

zoˀd, FR, ɟoˀd, RSED.p126, susuʔ, BDBH.2698, sosod, GZ65.374, joˀɖ, PKED.p87, —, —, cuʔ, PGEG.p15, jɵt', CDES.p221, jod', BMED.p84, joɖ, HOGV.p88, joɖ, BAHL.p62, o:jo, NKEV.p329, *ɟoˀt, wipe (v), #0029, V190, 994,

- Pinnow 1959: V190 / MKCD: 994 **[ ]jut*; **[ ]juɯt*

***ɟo(o)ˀ* 'fruit; bear fruit (v)' (#0030-2)**

zoʔ, FR, ɟo:ʔ, RSED.p125, suʔ, BDBH.2701, —, —, —, —, —, —, cu, PGEG.p15, jo̤, CDES.p80, jo, BMED.p83, jo:, DHED.p83, joʔ, BAHL.p63, jo:, NKEV.p313, *ɟo(o)ˀ, fruit / to bear fruit (v), #0030, V188, ,

- Pinnow 1959: V188 / MKCD: —

***boŋtel* 'buffalo' $V_1$ (#0054-2)**

boŋtel, FR, boŋtel, RSED.p62, buɲte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNʈi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biʈkhil, NKEV.p294, *bxŋtxl, buffalo, #0054, , ,

North Munda /i/ has to be taken out. There is no regular sound change that will result in the southern forms and North Munda **bitkil*.

***o*$_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o | o | u | o | o | o | o | o̤ | o | o | o | u |

Defining context: velar coda – **oˀk/*oŋ*

***ɟoˀk* 'sweep (v)' (#0031-2)**

zoʔ, FR, ɟo:, RSED.p126, suk', BDBH.2624, sog, AG08.p650, joʔ, PKED.p87, ɟɛnɔg, PJDW.p211, coʔ, PGEG.p15, jɵk', CDES.p194, joʔ, BMED.p85, joʔ, DHED.p167, —, —, ju-khʈi, NKEV.p313, *ɟoˀk, sweep (v), #0031, 190, ,

- Pinnow 1959: V190 / MKCD: —

***bVtoŋ* 'fear' $V_2$ (#0039-4)**

butoŋ, FR, bato:ŋ, RSED.p55, butuŋ, BDBH.1922, butoŋ, GZ65.76, bɔtɔŋ (P), HLKS.V261, betɔŋan, JLIC.v239, bʈoʔ, PGEG.p14, —, —, botoŋ, BMED.p25, —, —, (bor), BAHL.p112, —, —, *bxtoŋ, fear, #0039, V261, 552,

- Pinnow 1959: V261 / MKCD: 552 **ʔt$_1$uuŋ*

The connection to MKCD 552 **ʔt$_1$uuŋ* (already made by Shorto) is questionable.

***soŋ* 'buy/sell (v)' (#0060-2)**

oŋ, FR, —, —, suŋ, BDBH.2635, soŋ, GZ65.370, soŋ, PKED.p185, soŋ, PJDW.p278, so, PGEG.p42, —, —, —, —, —, —, —, —, —, —, *soŋ, buy/sell (vt), #0060, K209, ,

- Pinnow 1959: K209 / MKCD: —

Pinnow (1959, p. 224) connects Pal(aung) *jʌːŋ*, *jɔːŋ* 'to sell' and Mon *swɛ̃* 'to sell'.

***o$_3$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | o | o | o | ɔ | we | o̤ | o | o | oe | o | 0051-2 |
| o | oː | (o) | o | (ɔ) | — | oe | o̤ | o | o | o | u | 0071-2 |
| (a) | (a) | i | o | o | o | we | o | oe | oːe | oe | oː | 0094-2 |

Proto-Munda **o* in context of a palatal coda (**oˀc*/**oj*; not attested so far **oŋ*). Some interesting – if not crucial – unexplained variation are the occurence of Remo /i/ in #0094-2 as oppoed to the expected Remo and Gutob /o/ as well as the different distribution of the coarticulatory diphthongization /oe/ in Kherwarian.

***goˀc/goj* 'die (v)' (#0051-2)**

(kiˀd), FR, (kajed), RSED.p133, goĭ, BDBH.975, goj, ZG65.139, goˀj, PKED.p63, gɔɟ, PJDW.p197, gweʔ, PGEG.p23, gọc', CDES.p51, goj, BMED.p61, goj, DHED.p115, goej, BAHL.p46, go, NKEV.p306, *goj, die (v), #0051, K67 , ,

- Pinnow 1959: K67 / MKCD: —

Connect MKCD 1543 **ghuuy*; **ghuəy* 'spirit, soul' or less likely MKCD 805 **guc*; **guc* 'to burn'?

***roj*/*roˀk* 'fly' (#0071-2)**

aroj, FR, əroːj, RSED.p14, (ayoŋ/ayuŋ), BDBH.39, uroj, GGEG.p93, (kɔnɖ̣i), HLKS.K356, —, —, nɖ̣roe, PGEG.p36, rọ, CDES.p76, roko, BMED.p161, roko, DHED.p291, roʔo, DSKW.19600, ruku, NKEV.p335, *roj, fly, #0071, K356, 1534,

- Pinnow 1959: K356 / MKCD: 1534 Pre-Proto-Mon-Khmer **ru[wa]y* > **ruy*; **ruuy*; **ruəy*; Pre-Proto-Mon-Khmer **ruhay*

Gtaʔ /nɖroe/ derives from pre-Gtaʔ **n(ɖ)roj*

#### **roʔc* 'squeeze/milk (v)' (#0094-2)

(ra'd), FR, (rad), RSED.p226, riʔ, BDBH.2276, roj, DSGU#2071, roʔj, PKED.p170, roɟ, PJDW.p268, rweʔ, PGEG.p41, roco, BSDV5.p98, roeʔ, EMV12.p3628, ro:eʔ, DHED.p290, roej, DSKW@19520, ro(:)c, NKEV.p335, *roʔc, squeeze/milk (v), #0094, V381, 1061,

- Pinnow 1959: V381 / MKCD: 1061 **ruut*; **ruət*; **rət*; **rat*; **rit*; **riit*; **riət*

### incomplete **o*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ∅ | ∅ | ∅ | o | o | ∅ | o̤ | ∅ | ∅ | ∅ | — | 0011-2 |

#### **b(oKʰ)VʔpA* 'head' (#0011-2)

baʔb, FR, bo:ʔb, RSED.p60, bob, BDBH.2007, bob, GZ63.50, bokoʔb, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bo̤ho̤k', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, , head, #0011, V206, 361, 38

- Pinnow 1959: V206 / MKCD: 361 **[b]uuk*

The reflexes of $V_1$ in **b(oKʰ)xʔp* 'head' (#0011) – Kharia /o/, Juang /o/,Santali /o̤/ – are too incomplete to assign the set to any correspondence set, unequivocally. #0011-2 is consistent with **o*$_1$ and **o*$_2$.

### Proto-Munda **i*

#### **i*$_1$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | ü/i | i | i | i | i | i | i | i | i | – | i | 0045-2 |

#### **biʔt* 'sow (v)' (#0045-2)

buʔd, FR, büd/bid, RSED.p63, biʔ, BDBH.1898, biʈ, GZ63.67, biʔɖ, PKED.p20, bir, PJDW.p167, big, PGEG.p11, bit', CDES.p142, bid', BMED.p22, biɖ, DHED.p35, , , biʈ, NKEV.p294, *biʔt, sow (v), #0045, V285, ,

- Pinnow 1959: V285 / MKCD: —

**Proto-Munda **ə***

- **ə₁* some unexplained variation in **ə₁* (Sora, Kharia)

**ə₂* has been moved to **ᵊ*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a(ə/o:0 | o | o | o(a) | o | wa | ę | e | e | e | – | **ə₁* |
| e | e | i/e | e | e | – | i | e | i | i | e | i | **ə₂* |

****ə₁***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | **o:/a** | o | o | o | ɔ | ua | ę | e | e | e | e | 0012-2 |
| a | a | o | o | **a** | — | wa | ę | e | e | e | e | 0013-2 |
| — | — | o | o | o | o | wa | ę | e | e | e | e | 0019-4 |
| a | a | — | — | o | — | — | – | e | e | – | – | 0020-2 |
| a | a | o | o | o | o | wa | – | – | – | – | – | 0055-3 |
| a | – | – | – | o | — | – | ę | e | e | e | e | 0065-1 |
| a | **ə** | o | o | o | o | (u)a | ę | e | e | e | – | 0021-4 |
| a | a | o | o | — | — | wa | – | – | – | – | – | 0085-2 |
| a | a | o | o | — | — | oa | ę | e | e | – | – | 0092-2 |

**ə* is a grouping of four closely related correpondece sets, all defined by Gtaʔ diphthong /ua/ (/wa/) and North Munda /e/ (Santali /ę/). The variation is restricted to Sora /o:/ (v1: #0012-2) ~ /a/ (v2 and v3) ~ /ə/ (v4) and Kharia /o/ (v1, v3, and v4) and /a/ (v2). The consistency of Gtaʔ and North munda, /a/ ing Gorum and the consistency of /o/ in Remo, Gutob, Juang and with one exception Kharia, suggest that these sets are indeed reflexes of a single proto-phoneme. The nature of this proto-phoneme remains unclear.

MKCD 1045_ *mat_ for 'eye' (*məˀt_ 'eye' **ə_v1) suggest proto-Munda* *a_, but defining the contexts that allow us to link this group of sets continuing proto-Munda **a* are unclear.

MKCD 972 **sguut*; **[s]gət*; **sgat* 'cut (v)' (**gVˀt* 'cut (v)' v2) also allows for proto-Munda **a,* but also add **u* and **ə* inti the list of likely candidates. MKCD 1723 **j[n]ŋəl* would further strengthen the case for proto-Munda **ə*.

The reflexes especially with no apparent motivation for the front vowel in North Munda makes a proto-phoneme, other than **a* more likely and

Some variation: Sora o:~a seems real, Juang ɔ~o artefact of my inconsistent treatment of PJDW, Gtaʔ ua~wa seems to be the artefact of inconsistent represeantation of the diphthong in PGEG.

****məˀt* 'eye' (#0012-2) _*ə₁_v1**

maˀd, FR, mo:ˀd/mad, RSED.p168, moʔ, BDBH.220, moʔ, AG08.p642, moˀḍ, PKED.p195, ɛməɗ, PJDW.p191, muaʔ, PGEG.p34, mẽt', CDES.p67, med', BMED.p117,

meḏ, DHED.p228, meḏ, BAHL.p120, med, ZKPM.p48, məʔt, eye, #0012, V250, 1045, 40

- Pinnow 1959: V250 / MKCD: 1045 *mat

***gəʔt* 'cut (v)' (#0013-2) _*ə$_1$_v2**

gaʔd, FR, gad, RSED.p93, goʔ, BDBH.1018, goʔ, AG08.p669, gaʔḏ, PKED.p60, , , gwaʔ, PGEG.p21, gẹt', CDES.p44, ged', EMV5.1411, geḏ, DHED.p111, geḏ, BAHL.p46, geṭ, NKEV.p306, gəʔt, cut (v), #0013, V334, 972,

- Pinnow 1959: V334 / MKCD: MKCD 972 **sguut*; **[s]gət*; **sgat*

***bVrəl* 'raw' $V_2$ (#0019-4) _*ə$_1$_v1/3/4**

—, —, —, —, buro, BDBH.1937, burol, GZ65.74, borol, PKED.p25, boron, PJDW.p171, brwa, PGEG.p14, bẹrẹl, CDES.p211, berel, BMED.p21, berel, HOGV.p185, berel, BAHL.p111, boboṛ, NKEV.p294, *bxrəl, raw, #0019, V253, ,

- Pinnow 1959: V253 / MKCD: —

***səreŋ* 'stone' $V_1$ (#0020-2) _*ə$_1$_v3**

areŋ, FR, areŋ, RSED.p39, —, —, —, —, soreŋ, PKED.p187, —, —, —, —, —, —, sereŋ, BMED.p172, sereŋ, HOGV.p175, —, —, —, —, *səreŋ, stone, #0020, V183, ,

- Pinnow 1959: V183 / MKCD: —

***xsər* 'dry' $V_2$ (#0055-3) _*ə$_1$_v3**

asar, FR, asar, RSED.p42, nsor, BDBH.1657, usor, AG08.p650, kosor, PKED.p155, kosor, PJDW.p229, nswar, PGEG.p37, —, —, —, —, —, —, —, —, —, —, *xsxr, dry, #0055, V260, 160,

- Pinnow 1959: V183 / MKCD: 160 **rɔʔ*; **rɔs*, ( **rɔs rɔs* >?) **srɔs*

***əsel* 'white' $V_1$ (#0065-1) _*ə$_1$_v1/3/4**

asel, FR, —, —, —, —, —, —, osel, PKED.p216, —, —, —, —, ẹsẹl, BSDV2.p343, esel, BMED.p56, esel, DHED.p102, hesel, BAHL.p149, esel, HLKS.V255, *əsel, white, #0065, V255, ,

- Pinnow 1959: V255 / MKCD: —

***sVŋəl* 'fuel' $V_2$ (#0021-4) _*ə$_1$_v4**

aŋal, FR, aŋəl, RSED.p37, suŋo, BDBH.2638, suõl, GZ63.216, soŋgol, PKED.p186, sɛŋon, PJDW.p276, sua, PGEG.p43, seŋgẹl, CDES.p73, seŋgel, BMED.p172, seŋgel, HOGV.p158, seNgel, BAHL.p137, —, —, *sxŋxl, fuel, #0021, V252, 1723,

- Pinnow 1959: V252 / MKCD 1723 **j[n]ŋəl*

If Gtaʔ /sua/ is to be interpreted as a /ua/ parallel to /ua/~/waʔ in the set above, $V_2$ of **sVŋVl* 'fuel' belongs to the set **ə$_1$* above only deviating reflex is Sora /ə/.

*sua/su.a* < **suŋal* < **sVŋVl* with l-loss and intervocalic ŋ-loss or *sua* < **sŋual* < **sVŋVl* with intervocalic ŋ-loss, $V_1$loss, and l-loss.

****pəʔt/*par(om)* 'cross (v)' $V_1$ (#0085-2)**

pa'd, FR, pad, RSED.p200, poʔ, BDBH.1793, poḍ, DSGU#18931, paro(m), PKED.p155, (pakea), DSJU#25131, pwaʔ, PGEG.p39, par, CSED.p474, pa:rom, BMED.p144, parom, DHED.p262, parom, BAHL.p97, pa:r, NKEV.p331, *pəʔt, cross (v), #0085, , ,

While the reflexes in Gorum, Sora, Remo, Gutob, and Gtaʔ are consistent with a reconstruction of proto-Munda **pəʔt*. The attested vowels are consistent with the correspondence sets **ə_v2 and* *ə_v3.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | o | o | — | — | wa | – | – | – | – | – |

The onset and final consonants of these forms are also consistent. So that for these forms proto-Munda **pəʔt* can be posited, confidently. If the North Munda and Kharia forms *pa(:)r(om)* are added, the reflexes do not fit any known vowel set and the final rhotics are also inconsistent with any regular reflexes. This suggests that we have to assume a second etymon **par(om)* 'cross (v)', probably of Indo-Aryan origin.

****bəʔt* 'contain/block (v)' (#0092-2)**

baʔd ,FR ,bad ,RSED.p47 ,boʔ ,BDBH.2027 ,bod ,Z1965.59 ,— ,— ,— ,— ,boaʔ ,PGEG.p11 ,bẹt' ,BSDV1.p275 ,bed' ,BMED.p21 ,beḍ ,DHED.p33 ,— ,— ,— ,— ,— ,contain/block (v) ,#0092 ,— , 1032,

- Pinnow 1959: — / MKCD 1032 **bat*; **buət*

**Superset: *ᵊ epenthetic schwa**

**ə$_2$ Superset: *ᵊ epenthetic schwa**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e | e | – | e | – | i | e | i | i | e | – | 0007-2 |
| – | e | i/e | e | – | – | i | e | i | i | – | i | 0069-2 |

close to reflexes of **e*, but rather different to reflexes of ə$_1$

****dəraŋ* 'horn' $V_1$ (#0007-2)**

ḍeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ḍereŋ, PKED.p44, —, —, ḍiraŋ, PGEG.p17, dereŋ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89,

—, —, dəraŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 / MKCD 699 **$d_2$raŋ*

***ɟəlu$_5$* 'meat' $V_2$ (#0069-2)**

—, —, ɟelu:, RSED.p123, sili/seli, BDBH.2599/2731, seli, AG08.p674, —, —, —, —, cili, PGEG.p15, jel, CDES.p120, jilu, BMED.p83, jilu, DHED.p165, —, —, jilu, NKEV.p311, *ɟəlu$_5$, meat, #0069, V228, ,

- Pinnow 1959: V228 / MKCD: —

A possibly connected MKCD etymon is MKCD 204 **[c]nlu[u]?* 'edible grub' only attested in Bahnaric.

**VS-005 **u:i* Superset: **ᵊ* epenthetic schwa**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | i | u | i | i | i | u | u | u | u | u: | u | 0004-2 |

***kᵊla* 'tiger' $V_2$ (#0004-2)**

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, **kᵊla*, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **klaʔ*

Reflexes and in particular the corresponding etymon in MKCD suggest that #0004-2 are reflexes of a cluster-splitting epenthetic schwa.

**VS-006 **a:u:e:i* Superset: **ᵊ* epenthetic schwa**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | u | — | e | — | a | e | i | i | e | — | 0007-4 |
| — | — | u | u | e | — | — | e | i | i | e | i | 0061-2 |
| a | ə | u | u | e | i | ∅ | e | i | i | e | — | 0084-2 |

This set is characterised by Pinnow as "Lautgesetzlich Kh ɛ (e), Sa e, Mu i, nur So abweichend ɑ statt e, daneben teilweise auch e." Pinnow (1959, p. 163)

Pinnow (1959, p. 164) says "Der alte Vokal **e* oder *ɛ_ im UM, aus **ɛ*,**i* im UA. Die z.T. lautlic sehr stark abweichenden Formen sind dennoh nicht zu trennen."

***dərv$_{(6)}$ŋ* 'horn' $V_2$ (#0007-4)**

ɖeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ɖereŋ, PKED.p44, —, —, ɖiraŋ, PGEG.p17, dereɲ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89,

—, —, *dərv$_{(6)}$ŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 UM: **e,*ɛ/* MKCD 699 **$d_2$raŋ*

The correspondence set #0007-4 for $V_2$ in **dərv$_{(6)}$ŋ* 'horn' is unique and not well understood. If Shorto's reconstruction **$d_2$raŋ* is correct and were continued in proto-Munda as **$d^3$raŋ* (or **dəraŋ*), regular correspondences consistent with **$a_2$* (pM **a* with velar coda) would be expected. However, the correspondences are inconsistent with **$a_2$* and do not connect well to any established proto-phoneme.

### **sv$_{(6)}$bVl* 'sweet' $V_1$ (#0061-2)

—, —, —, —, subu, BDBH.2665, subul, AG08.p651, sebol, PKED.p180, —, —, —, —, sebel, CDES.p1194, sibil, EMV13.p3943, sibil, DHED.p316, sebel, DSKW.@21820, simil, NKEV.p338, *sv$_{(6)}$bxl, sweet, #0061, V257, ,

- Pinnow 1959: V257 / MKCD —

### **sv$_{(6)}$lV$^?$p* 'gazelle' $V_1$ (#0084-2)

alu'b, FR, əle:b, RSED.p7, sulup, BDBH.2688, sulub, GGEG.p116, selhob, PKED.p180, silib, PJDW.p278, slo?, PGEG.p43, selep', CSED.p571, silib, BMED.p173, silib, DHED.p317, seleb, DSKW@21960, —, —, *sxlx$^?$p, gazelle, #0084, V233, ,

- Pinnow 1959: V233 / MKCD —

Gta? ∅ is unproblematic. Sora /ə/ is a variation contrastin with /a/ in #0007-4.

### Unassigned correspondent sets

### VS-001 **o:u$_1$* Superset: **O*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o | o: | u | o | u | o | u | – | – | – | – | – |

### **Olaa$^?$/*Ola($^?$)k)* 'leaf' $V_1$ (#0035-1)

ola?, FR, o:la:, RSED.p192, ulak', BDBH.169, olag, AG08.p633, ula?, PKED.p298, olag, PJDW.p254, ulia?, PGEG.p124, palha, CDES.p111, pa:lha:o, BMED.p142, pala, DHED.p259, (sakam), BAHL.pdfp129, pa:la, NKEV.p331, , leaf, #0035, V50, 230,

- Pinnow 1959: V50 / MKCD: 230 **sla?*

If, as assumed here, the Southern forms with initial vowel and the forms of North Munda with an inital *p* belong to distinct etyma, the set is very close to **$o_1$*.

Hypothesis: $V_1$_*u_ in the context of $V_2$_*a_? Alternatively, $V_1$_*o_ in the context of $V_2$_*a_?

### VS-002 **a:u:æ*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | (u) | u/a | o/u | ɛ | æ | a | a: | a | a | a |

***sVmaŋ* 'forehead/front' $V_1$ (#0038-2)**

amaŋ, FR, ammaŋ, RSED.p31, gutumoŋ, BDBH.885, sumoŋ/amuŋ, GZ65.21, somoŋ/somo/sumaŋ, PKED.p185, ɛmɔŋ, PJDW.p191, ssæ, PGEG.p44, samaŋ, CDES.p79, sa:ma:ŋ, BMED.p167, sanamaŋ, HOGV.p159, samaŋ, BAHL.pdfp130, samma, NKEV.p336, , forehead/front, #0038, V269, ,

- Pinnow 1959: V269 / MKCD: —

The reflexes in $V_1$ position are irregular and the material preceding **maŋ* is structurally divers. Especially, Remo *gutumoŋ* (*gutu-*), and the lack of initial /s/ in Gutob *amuŋ* and Juang *ɛmɔŋ* cannot be explained in the ssame way as the s-loss in Sora and Gorum can be explained.

Correspondence between Juang /ɛ/ and Gta? /æ/ is also attested in the **$i_2$* sets of reflexes, but the reflexes in other languages are decidedly distinct.

**VS-003 **i:u:o***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (u) | i | u | ui | u | u | o | i | i | i | i: | i | 0041-2 |
| u | u | – | – | u | – | o | i | i | i | – | i | 0062-2 |

Comparison with **tuŋ* 'shoot (v)' (#0027-2):

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | etymon |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | u | – | – | u | – | o | i | i | i | – | i | 0062-2 |
| (u) | i | u | ui | u | u | o | i | i | i | i: | i | 0041-2 |
| i | u | i | i | u | u | wi | u | ui | u | ? | u | 0027-2 |

***bVɲ$^{ʔ}$(*bVV$^{ʔ}$ɲ?)* 'snake' (#0041-2)**

bubu$^{ʔ}$d, FR, biɲ/biŋ, RSED.p59, bubuʔ, BDBH.1931, buɽbui, GGEG.p108, buɲam, PKED.p4, bubuŋ, PJDW.p172, boʔ, PGEG.p12, biɲ, CDES.p179, biŋ, BMED.p23, biɲ, HOGV.p178, bi:ŋ, BAHL.p108, biɲj, NKEV.p294, , snake, #0041, V353, 937,

- Pinnow 1959: V353; ; VW u/i; UM:i / MKCD: 937 **[b]saɲʔ*

MKCD 937 **[b]saɲʔ* less likely MKCD 1921a **ɓəs*

close back rounded vowels and the close-mid back rounded vowel in Gta? suggest a rounded vowel followed by a palatal, nasal, and glottalized coda. The best candidate for this vowel phoneme is /o/, thus **boɲ$^{ʔ}$* or maybe **boo$^{ʔ}$ɲ*. Other possibilities are **buɲ$^{ʔ}$/*buu$^{ʔ}$ɲ* or more problematic **ɨ* or **ʉ*.

***tVŋ* 'kindle (v)' (#0062-2)**

tuŋ, FR, tuŋa:l, RSED.p297, —, —, —, —, tuŋgal, HLKS.V324, —, —, toŋ, PGEG.p42, tiŋgi, BSDV5.p461, tiŋ, BMED.p187, tiɲ, DHED.p353, —, —, ʈingi, NKEV.p343, *tVŋ, kindle (v), #0062, V324, 549,

- Pinnow 1959: V324; VW i/u; UM:i/ MKCD: 549 *$t_1$*ɯɯŋ*

**VS-004 a/ə:(i):(o/u):a**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a/ə | ∅ | i | o/u | a | a | a | a: | a | a | a | 0026-2 |
| a | a/ə | (u) | — | — | — | ∅ | a | a | a | – | – | 0064-2 |

not clear that this constitutes a single correpondence set.

***K*$^h$*v*$_{(4)}$*su* 'fever/pain' V$_1$ (#0026-2)**

asu, FR, asu:/əsu:, RSED.p42, siʔ, BDBH.2610, isi, GGEG.p93, kosu/kusu, PKED.p107, kasu, PJDW.p220, aʔsu, PGEG.p4, haso, CDES.p135, ha:su, BMED.p67, hasu, HOGV.p147, hasu:, BAHL.p145, kaSu, NKEV.p315, *K$^h$xsu, fever/pain, #0026, V247, 44,

- Pinnow 1959: V247 / MKCD: 44 **[c]ɯɯʔ*

***mv*$_{(4)}$*raŋ* 'big' V$_1$ (#0064-2)**

—, —, maraŋ/məraŋ, RSED.p173/167, munaʔ, BDBH.2121, (moɖo), AG08.p663, —, —, —, —, mnaʔ, PGEG.35, maraŋ, CDES.p17, maraŋ, BMED.p220, maraŋ, DHED.p225, —, —, —, —, *mxrxŋ, big, #0064, K107, ,

- Pinnow 1959: K107 / MKCD: —

Gtaʔ *mnaʔ* and Remo *munaʔ* are irregular reflexes of **mv*$_{(4)}$*raŋ*, especially the Gtaʔ form *mnaʔ* should be different, given our current understanding of the phonological developments, since a velar coda **aŋ* results in Gtaʔ /ia/. Remo and Gtaʔ /n/ are also inconsistent as reflexes or either **r* or **ŋ*. Gtaʔ *mnaʔ* and Remo *munaʔ* are consistently parallel to one another.

**VS-007 **a:e:i:o:u***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i | e: | u | u | u | i | o | a | a | — | — | (a) | 0010-2 |

***ɟv*$_{(7)}$*ŋ* 'foot' (#0010-2)**

ziŋ, FR, ɟe:ˀŋ, RSED.p123, suŋ, BDBH.1363, suŋ, GZ63.205, juŋ, PKED.p66, iɟiŋ, PJDW.p208, nco, PGEG.p114, jaŋga, CDES.p76, jaŋga, HLKS.182, —, —, —, —,

(naŋga), NKEV.p327, , foot, #0010, V365, 538,

- Pinnow 1959: V365 / MKCD 538 **juŋ*; **juəŋ*; **jəŋ*; **jəəŋ*

unique set with unclear

Pinnow (1959, p. 169) says "…so bleibt der Vokalwechsel des Wortes für Fuß, Bein ein gänzlich ungelöstes Rätsel der austroasiatischen Sprachwissenschaft,…"

**VS-008 **a:o* Superset: **O***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | o: | o | o | o | o | a | o̤ | o | o: | o | — | 0011-4 |

****b(oK$^{h}$)O$^{ʔ}$p* 'head' (#0011-4)**

ba$^{ʔ}$b, FR, bo:$^{ʔ}$b, RSED.p60, bob, BDBH.2007, bob, GZ63.50, boko$^{ʔ}$b, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bo̤ho̤k', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, *b(oK$^{h}$)O$^{ʔ}$p, head, #0011, V206, 361, 38

- Pinnow 1959: V206 UM *ɔ/ MKCD: 361 **[b]uuk*

The reflexes suggest a mid to open central to back vowel for #0011-4. The reflexes are unique and show no clear affinity to any particular other set. The bilabial coda **$^{ʔ}$p* would suggest **a$_{4}$*, if VS-008 were a continuation of proto-Munda **a*. Pinnow (1959, p. 112) posits **ɔ* and for the complete word **bɔkɔp*, **bɔkɔk*, **bɔp*, **bɔk*. Analysing VS-008 as reflexes of either **ɔ* or **o*, maybe with a bilabial coda – so **ɔ$^{ʔ}$p* or **o$^{ʔ}$p* – is possible. However, an attestation in more than one etymon would be desirable.

**VS-009**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | ə | ∅ | u | o | o | ∅ | — | — | — | — | — | 0014-1 |

****v$_{(ə)}$laŋ* 'thatch' V$_1$ (#0014-1)**

alaŋ, FR, əlaŋ, RSED.p158, lɔŋ, BDBH.2437, uloŋ, AG08.p644, oloŋ, PKED.p214, oloŋ, PJDW.p254, nlo, PGEG.p36, —, —, —, —, —, —, —, —, —, —, —, *v$_{(ə)}$laŋ, thatch, #0014, V270, 749,

- Pinnow 1959: V270 / MKCD: 749 **[p]laŋ*; **[p]laiŋ*

Incomplete set, due to absence of V$_1$ in Remo and Gta? and the absence of this etymon in North Munda. The reflexes suggest a central or bac vowel. MKCD: 749 **[p]laŋ/*[p]laiŋ* would favour epenthetic **ə*. (The loss of initial **p* seems from the current understanding irregular.)

**VS-010**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | o | u | o | o | i | o | ọ | o | o | o | o | 0015-2 |

***ɟv*$_{(10)}$*m* 'eat (v)' (#0015-2)**

zum, FR, ɟom, RSED.p128, sum, BDBH.2667, som, GZ63.212, jom, HLKS.K274, ɟim, PJDW.p212, coŋ, PGEG.p15, jọm, CDES.p60, jom, BMED.p84, jom, HOGV.p156, jom, BAHL.p63, jom, NKEV.p313, , eat (v), #0015, V385, 1327, 55

- Pinnow 1959: V385 / MKCD: 1327 **cuum*; **cuəm*; **cəm*; (**cim cim* >) **ncim*; **ciəm* (& **nciəm*?); **caim*

Comparison with:

- **o*$_2$: **ɟo*$^{ʔ}$*k* 'sweep (v)' (#0031-2);
- **o*$_1$: **ɟo*$^{ʔ}$*t* 'wipe (v)' (#0029-2); MKCD: 994 **[ ]jut*; **[ ]juut*
- **o*$_1$: **ɟo(o)*$^{ʔ}$ 'fruit; bear fruit (v)' (#0030-2); MCKD —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **u** | o | u | o | o | **i** | o | ọ | o | o | o | o | 0015-2 |
| o | o: | u | o | o | **ɔ** | o | ọ | o | o | o | **u** | 0031-2 |
| o | o | u | o | o | — | u | ọ | o | o | o | o | 0029-2 |
| o | o | u | — | — | — | u | ọ | o | o: | o | o: | 0030-2 |

Maybe proto-Munda **o* under certain conditions? (**m* coda, cannot be **ɟ* onset)

**VS-011**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | i | e | e | i | i | i: | i | 0018-4 |

The vowels sets V-011 and VS-012 are closely related. The sets constitution VS-012 – #0061-4 and #0084-4 – are identical. #0018-4 (VS-011) differs by Gta? /e/ – as opposed to VS-012 /o/ – and Korwa /i:/ – as opposed to VS-012 /e/.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | i | **e** | e | i | i | **i:** | i | 0018-4 |
| — | — | u | u | o | — | — | e | i | i | **e** | i | 0061-4 |
| u | e: | u | u | o | i | **o** | ẹ | i | i | **e** | — | 0084-4 |

All three sets occur in bisyllabic words and the vowel patterns attested in these words are informative.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u-u | u-u | e-o | i-i | ∅-e | e-e | i-i | i-i | i:-i: | i-i | 0018 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u-u | u-u | e-o | — | — | e-e | i-i | i-i | e-e | i-i | 0061 |
| a-u | ə-e: | u-u | u-u | e-o | i-i | ∅-o | e-e | i-i | i-i | e-e | — | 0084 |

***bVlv*$_{(11)}$ 'ripe' V$_2$ (#0018-4)**

—, —, —, —, bulu, BDBH.1591, bulu, AG08.p644, belom, PKED.p19, bilim, PJDW.p167, ble, PGEG.p13, bele, CDES.p161, bili, BMED.p23, bili, HOGV.p156, bhi:li:, BAHL.p115, bili, NKEV.p293, *bxlx, ripe, #0018, V232, ,

- Pinnow 1959: V232 / MKCD: —
- MKCD 2080 **bl[ɔ]h* 'finished'
- MKCD 1878 **l?as* 'ripe'

**VS-012**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | — | — | e | i | i | e | i | 0061-4 |
| u | e: | u | u | o | i | o | ẹ | i | i | e | — | 0084-4 |

***sv*$_{(6)}$*bv*$_{(12)}$*l* 'sweet' V$_2$ (#0061-4)**

—, —, —, —, subu, BDBH.2665, subul, AG08.p651, sebol, PKED.p180, —, —, —, —, sebel, CDES.p1194, sibil, EMV13.p3943, sibil, DHED.p316, sebel, DSKW.@21820, simil, NKEV.p338, *sv$_{(6)}$bxl, sweet, #0061, V257, ,

- Pinnow 1959: V257 / MKCD: —

***sv*$_{(6)}$*lv*$_{(12)}$*ʔp* 'gazelle' V$_2$ (#0084-4)**

alu'b, FR, əle:b, RSED.p7, sulup, BDBH.2688, sulub, GGEG.p116, selhob, PKED.p180, silib, PJDW.p278, sloʔ, PGEG.p43, selep', CSED.p571, silib, BMED.p173, silib, DHED.p317, seleb, DSKW@21960, —, —, *sxlxʔp, gazelle, #0084, V233, ,

- Pinnow 1959: V233 / MKCD —

**VS-013 (=VS-006?)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | e | i | ∅ | e | i | i | i: | i | 0018-2 |

***bv*$_{(13)}$*lv*$_{(11)}$ 'ripe' V$_2$ (#0018-4)**

—, —, —, —, bulu, BDBH.1591, bulu, AG08.p644, belom, PKED.p19, bilim, PJDW.p167, ble, PGEG.p13, bele, CDES.p161, bili, BMED.p23, bili, HOGV.p156, bhi:li:, BAHL.p115,

bili, NKEV.p293, *bxlx, ripe, #0018, V232, ,

- Pinnow 1959: V232 / MKCD: —
- MKCD 2080 **bl[ɔ]h* ‘finished’
- MKCD 1878 **l?as* ‘ripe’

In all likelihood ultimately the reflects of an epenthetic schwa, **bᵊlv₍₁₁₎*.

**VS-014 (*ə?)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | o | ∅ | ę | e | e | e | (o) | 0019-2 |
| a | a | u | u | o | ɛ | ∅ | ę | e | e | e | — | 0021-2 |

$V_1$ of **bVrəl* ‘raw’ (#0019-2) and **sVŋəl* ‘fuel’ (#0021-2) are consistent with **ə₁_v3, in particular #0020-2 $V_2$ of* *sərəŋ_ ‘stone’ and #0065-1 $V_2$ of **əsel* ‘white’:

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | o | ∅ | ę | e | e | e | (o) | 0019-2 |
| a | a | u | u | o | ɛ | ∅ | ę | e | e | e | — | 0021-2 |
| a | a | — | — | o | — | — | – | e | e | – | – | 0020-2 |
| a | – | – | – | o | — | – | ę | e | e | e | e | 0065-1 |

However, all other reflexes of the set **ə₁* feature Remo and Gutob /o/, when one of these two languages provides a reflex. Furthermore, $V_2$ of **bVrəl* ‘raw’ (#0019-4) shows distinct reflexes from $V_1$ (#0019-1) and is itself consitent with _*ə₁_v1/3/4.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | o | ∅ | ę | e | e | e | (o) | 0019-2 |
| — | — | o | o | o | o | wa | ę | e | e | e | e | 0019-4 |

This raises the possibility, that the reflexes of $V_1$ and $V_2$ of **bVrəl* ‘raw’ are both reflexes of proto-Munda **ə*, only in different positions (and with different histories of stress and stress shift). We could thus posit **bərəl* or **bᵊrəl*.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u-o | u-o | o-o | o-o | ∅-wa | ę-ę | e-e | e-e | e-e | (o-o) | 0019 |
| a-a | a-a | u-o | u-o | o-o | ɛ-o | ∅-ua | ę-ę | e-e | e-e | e-e | — | 0021 |
| a-a | a-a | ∅-o | u-o | o-o | o-o | ∅-ua | — | — | — | — | — | 0055 |
| a-a | ə-a | ∅-ɔ | u-o | o-o | o-o | ∅-o | — | — | — | — | — | 0014 |

*$v_{(9)}laŋ$ ‘thatch’ $V_1$ (#0014-1) VS-009 is very close.

***bVrəl* 'raw' $V_1$ (#0019-2)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o | o | ∅ | ę | e | e | e | (o) | 0019-2 |

—, —, —, —, buro, BDBH.1937, burol, GZ65.74, borol, PKED.p25, boron, PJDW.p171, brwa, PGEG.p14, bęręl, CDES.p211, berel, BMED.p21, berel, HOGV.p185, berel, BAHL.p111, boboɽ, NKEV.p294, *bxrəl, raw, #0019, V253, ,

- Pinnow 1959: V253 / MKCD: —

***sVŋəl* 'fuel' $V_1$ (#0021-2)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | u | u | o | ɛ | ∅ | ę | e | e | e | — | 0021-2 |

aŋal, FR, aŋəl, RSED.p37, suŋo, BDBH.2638, suõl, GZ63.216, soŋgol, PKED.p186, sɛŋon, PJDW.p276, sua, PGEG.p43, sęŋgęl, CDES.p73, seŋgel, BMED.p172, seŋgel, HOGV.p158, seNgel, BAHL.p137, —, —, *sxŋəl, fuel, #0021, V252, 1723,

- Pinnow 1959: V252 / MKCD 1723 **j[n]ŋəl*

If Gta? /sua/ is to be interpreted as a /ua/ parallel to /ua/~/wa? in the set above, $V_2$ of **sVŋVl* 'fuel' belongs to the set **ə₁* above only deviating reflex is Sora /ə/.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u-o | u-o | o-o | o-o | ∅-wa | ę-ę | e-e | e-e | e-e | (o-o) | 0019 |
| a-a | a-a | u-o | u-o | o-o | ɛ-o | ∅-ua | ę-ę | e-e | e-e | e-e | — | 0021 |

***xsər* 'dry' $V_2$ (#0055-1)**

asar, FR, asar, RSED.p42, nsor, BDBH.1657, usor, AG08.p650, kosor, PKED.p155, kosor, PJDW.p229, nswar, PGEG.p37, —, —, —, —, —, —, —, —, —, —, *xsxr, dry, #0055, V260, 160,

- Pinnow 1959: V183 / MKCD: 160 **rɔʔ*; **rɔs*, ( **rɔs rɔs* >?) **srɔs*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | ∅ | u | o | o | ∅ | — | — | — | — | — | 0055-1 |

**VS-015**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a-u | a-u | i-i | i-i | i-i | — | ∅-i | — | — | — | — | — | 0034 |
| a-i | a-i | i-i | i-i | — | — | — | — | i-i | i-i | — | — | 0067 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | a-e | i-e | — | i-i/e | ɛ-ɛ | ∅-e | e-e | i-i | i-i | — | — | 0083 |

***tVru$_5$ʔp* 'cloud' V$_1$ (#0034-2)**

taruʔb, FR, tarub, RSED.p283, tirib, BDBH.1387, tiribʔb, GZ65.416, tiriʔb, PKED.p287, — , —, trig, PGEG.p46, rimil, CDES.p33, rimil, BMED.p160, rimil, HOGV.p152, liNbir, BAHL.p127, —, —, , cloud, #0034, V285a, ,

- Pinnow 1959: V285a / MKCD: —

If /rim/ in Santali, Munda, and Ho is parallel to /ri(ʔ)b/ in Remo, Gutob, and Kharia, **tVru$_5$ʔp* 'cloud' belongs quite clearly to **bVʔt* 'sow (v)', else it could belong to **vdʲu$_5$ʔp* 'night' or **bVʔt* 'sow (v)'.

***xli* 'liquor' V$_1$ (#0067-1)**

ali, FR, əli/ali, RSED.p8, ili, BDBH.120, ili, AG08.p672, —, —, —, —, —, —, —, —, ili, BMED.p75, ili, DHED.p151, —, —, —, —, *xlx, liquor, #0067, V85, ,

- Pinnow 1959: V85 / MKCD: —

***tVrel* 'ebony' V$_1$ (#0083-2)**

—, —, tarel, RSED.p138, tire, BDBH.1390, —, —, ti(ɽr)(ei)l, PKED.p200, tɛrɛn, PJDW.p285, tre, PGEG.p46, terel, CSED.p626, tiril, BMED.p188, tiril, DHED.p355, —, —, —, —, *txrel, ebony, #0083, V227, ,

- Pinnow 1959: V227 / MKCD: —

**VS-016**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | a | u | u | ɔ | e | ∅ | — | o | — | — | — | 0039-2 |
| u | ə | u | u | — | (u) | ∅ | o̤ | (o) | (o) | o | — | 0066-2 |

***bVtoŋ* 'fear' V$_1$ (#0039-2)**

butoŋ, FR, bato:ŋ, RSED.p55, butuŋ, BDBH.1922, butoŋ, GZ65.76, bɔtɔŋ (P), HLKS.V261, betɔŋan, JLIC.v239, bʈoʔ, PGEG.p14, —, —, botoŋ, BMED.p25, —, —, (bor), BAHL.p112, —, —, *bxtoŋ, fear, #0039, V261, 552,

- Pinnow 1959: V261 / MKCD: 552 **ʔt$_i$uuŋ*

***bVrV(ʔp/ʔk)* 'lung' V$_1$ (#0066-2)**

buroʔb, FR, bəro:, RSED.p46, buruk', BDBH.1936, —, —, —, —, (buku), JLIC.n49, breʔ, PGEG.p14, bo̤ro̤, CDES.p116, (borkod'), BMED.p25, (borkoɖ), DHED.p45, boro, BAHL.p112, , , , lungs, #0066, , ,

- Pinnow 1959: — / MKCD: —

**VS-017**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| o | o: | u | — | — | (u) | e | ọ | (o) | (o) | o | — | 0066-4 |

***bVrV(ˀp/ˀk)* 'lungs' $V_2$ (#0066-4)**

buroˀb, FR, bəro:, RSED.p46, buruk', BDBH.1936, —, —, —, —, (buku), JLIC.n49, breʔ, PGEG.p14, bọrọ, CDES.p116, (borkod'), BMED.p25, (borkoɖ), DHED.p45, boro, BAHL.p112, , , , lungs, #0066, , ,

- Pinnow 1959: — / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u-o | a-o: | u-u | u-o | ɔ-ɔ | e-ɔ | ∅-o | — | o-o | — | — | — | 0039 |
| u-o | ə-o: | u-u | — | — | (u-u) | ∅-e | ọ-ọ | (o-o) | (o-o) | o-o | — | 0066 |

**VS-018**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i | — | — | u | a | a | wa | a | a: | a | a: | a | 0037-2 |

The sets VS-018 and VS-019 are (so far) the only sets with Gta? /wa/ (notational variation /ua/ and /oa/) that do not seem to constinue **ə*. However, the two sets are as different from each other as they are from the goup of sets **ə*$_1$ and **ə*$_2$.

***lv*$_{(18)}$*(N)dx* 'laugh (v)' $V_1$ (#0037-2)**

liɖa, FR, —, —, (ɖoɖo), BDBH.1283, luɖo, GZ65.228, laɖa, PKED.p202, lara, PJDW.p236, lwaʔ, PGEG.p32, lanɖa, CDES.p110, la:nɖa:, BMED.p102, landa, HOGV.p166, la:Nd, BAHL.p127, lanɖa, NKEV.p322, , laugh (v), #0037, V302, ,

- Pinnow 1959: V302 / MKCD: —

**VS-019**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i | a | o | u | u | o | wa | e | i | i | — | e | 0050-2 |

***tv*$_{(19)}$*ŋVn/tv*$_{(19)}$*nVŋ* 'stand (v)' $V_1$ (#0050-2)**

tinaŋ, FR, tanaŋ, RSED.p, toŋ, BDBH.1490, tunon, AG08.p662, tuŋon, PKED.p201,

toŋon, PJDW.p287, thwaN, PGEG.p46, teŋgon, CDES.p186, tiŋun, BMED.p187, tiŋgu, HOGV.p180, —, —, ʈengene, NKEV.p342, *txŋxn, stand (v), #0050, V258, 1824,

- Pinnow 1959: V258 / MKCD: 1824 **taaw*

**VS-020**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | — | — | o | a | a | ∅ | a | a: | a | ∅ | a | 0037-5 |

The correspondence set VS-020 is

***lv*$_{(18)}$*(N)dv*$_{(20)}$ 'laugh (v)' V$_2$ (#0037-5)**

liɖa, FR, —, —, (ɖoɖo), BDBH.1283, luɖo, GZ65.228, laɖa, PKED.p202, lara, PJDW.p236, lwa?, PGEG.p32, lanɖa, CDES.p110, la:nɖa:, BMED.p102, landa, HOGV.p166, la:Nd, BAHL.p127, lanɖa, NKEV.p322, , laugh (v), #0037, V302, ,

- Pinnow 1959: V302 / MKCD: —

**VS-021 Superset: **O***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | i | o | o | e | ɛ | ue | — | — | — | — | — | 0040-2 |

VS-021 is a problematic correspondence set. Gta? /we/ (variations: /oe/ and /ue/) seems to be a reflex of **oɲ* in pre-Gta?. Gta? /we/ very conistenly correlates with /o/ in Remo and Gutob. However, no other correspondence set features Remo and Gutob /e/ as well as Kharia and Juang /e~ɛ/.

Given the presence of back vowels in Remo-Gutob and Gta? and with the palatal coda a motivation for fronting, exlaining the front vowels in Sora-Gorum, Kharia, and Juang we posit a back vowel **O* (more likely **o* than **u*).

***dO*$_{(21)}$*ɲ* 'cook (v)' (#0040-2)**

ɖeɲ, FR, diɲ, RSED.p80, ɖoNĭ, BDBH.1302, ɖoɲ, AG08.p664, ɖeɲ, PKED.p63, ɖɛɲ, PJDW.p187, ɖue, PGEG.p17, —, —, —, —, —, —, —, —, —, —, *dxɲ, cook (v), #0040, V342, 583,

- Pinnow 1959: V342 / MKCD: 583 **kɗaŋ*

**VS-022**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | e | ui | i | i | i | i | iu | i: | i: | — | 0042-2 |

VS-022 is a unique set. While Kharia, Juang, Gtaʔ and all Kherwarian except Mundari feature a close front vowel (/i/), Mundari /iu/ is a unique exception, unattested in any other set. Gutob /ui/ also occurs in #0041-2 (**bVɲ$^{ʔ}$/*bVV$^{ʔ}$ɲ* 'snake'), but does not correlate with Remo /e/ in this case nor with unrounded front vowels in North Munda.

### **sv$_{(22)}$* 'plough (v)' (#0042-2)

(or), FR, (or), RSED.p195, se, BDBH.2706, sui, AG08.p650, si, PKED.p143, si, PJDW.p276, si, PGEG.p42, si, CDES.p143, siu, BMED.p175, si:, HOGV.p170, si:, BAHL.p135, —, —, *sx, plough (v), #0042, V99, ,

- Pinnow 1959: V99 / MKCD: —

MKCD 1599 **bcuər* is not a good candidate.

### VS-023 **I$_{(23)}$*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | ə | ∅ | i | i | i | ∅ | i | i | i | i | i | 0046-1 |

VS-023 is unique and the all languages that have a vowel in this postion have an unrounded closed front vowel, except for Gorum /a/ and Sora /ə/.

### **I$_{(23)}$sin* 'to boil' V$_1$ (#0046-1)

asin, FR, əsin, RSED.p16, nsiŋ, BDBH.1641, isin, GZ65.173, isin, PKED.p81, isinɔ, JLIC.v65, nsiŋ, PGEG.p37, isin, CDES.p39, isin, BMED.p77, isin, DHED.p153, isiŋ, BAHL.p12, isin, Korku.txt.12071, *I$_{(23)}$sin, boil (v), #0046, V86, ,

- Pinnow 1959: V86 / MKCD: 1137 **ciinʔ* (> Pre-Bahnaric **cin*); **ciən[ ]*; **cain[ ]*; 'cooked'

### VS-024 *I$_{(24)}$_

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | i | i | i | i | i | — | (i) | (i) | — | i: | — | 0049-1 |

VS-024 is very close to the **i$_1$* set continuing **i*. However, Gorum /u/ is unexplained. The best candidate is currently **i*.

### **tI$_{(24)}$l* 'bury (v)'

tul, FR, til, RSED.p288, ti, BDBH.1360, til, GZ65.408, til, PKED.p199, tir, PJDW.p284, —, —, (til), RSED.p288, (til), RSED.p288, —, —, ti:l, BAHL.p82, —, —, *txl, bury (v), #0049, —, —,

- Pinnow 1959: — / MKCD: —

**VS-025**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | (o) | o | o | o | (wa) | o | u | u | — | e | 0050-4 |

VS-025

Comparison *$a_5$ (#0014-3) *$ə_1$ (#0055-3)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | (o) | o | o | o | (wa) | o | u | u | — | e | 0050-4 |
| a | a | ɔ | o | o | o | o | ∅ | ∅ | ∅ | ∅ | ∅ | 0014-3 |
| a | a | o | o | o | o | wa | – | – | – | – | – | 0055-3 |

***tv$_{(19)}$ŋv$_{(25)}$n/tv$_{(19)}$nv$_{(25)}$ŋ* 'stand (v)' $V_2$ (#0050-4)**

tinaŋ, FR, tanaŋ, RSED.p, toŋ, BDBH.1490, tunon, AG08.p662, tuŋon, PKED.p201, toŋon, PJDW.p287, thwaN, PGEG.p46, teŋgon, CDES.p186, tiŋun, BMED.p187, tiŋgu, HOGV.p180, —, —, ţengene, NKEV.p342, *txŋxn, stand (v), #0050, V258, 1824,

- Pinnow 1959: V258 / MKCD: 1824 **taaw*

**VS-026**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | e | u | — | — | — | i | i | i | i | i | i | 0052-2 |

***ɲv$_{(26)}$r* 'run (v)' (#0052-2)**

jer, FR, jer, RSED.p88, ur, BDBH.155, —, —, yar, DSKH#12601, —, —, wir, PGEG.p9, ɲir, CDES.p164, nir, BMED.p132, nir, DHED.p246, ɲir, BAHL.p66, niţe, NKEV.p328, *ɲxr, run (v), #0052, K294, 1602,

- Pinnow 1959: K294 / MKCD: 1602 **jar?*

Maybe two forms North Munda **ɲvr* and in the southern languages **jvr*?

**VS-027 **ə***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | a | i | i | o | — | ∅ | — | — | — | — | — | 0053-2 |


| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e | a | i | i | o | — | ∅ | — | — | — | — | — | 0053-2 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | i | i | ɔ | — | — | e | e | e | e | — | 0077-2 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e-i | a-e | i-e | i-e | o-e | — | ∅-i | — | — | — | — | — | 0053 |
| a-i | a-e | i-e | i-e | ɔ-ɛ | — | — | e-e | e-e | e-e | e-e | — | 0077 |

***t$^{h}$me* 'new' V$_1$ (#0053-2)**

tẹ̄mi, FR, tamme, RSED.p277, time, BDBH.1383, time, ZG65.410, tonme, PKED.p289, —, —, tmi, PGEG.p125, (nãwã), CDES.p128, (nawã), BMED.p127, (nama), HOGV.p168, —, —, (uni), NKEV.345, *t$^{h}$me, new, #0053, V184, 144,

- Pinnow 1959: V182 / MKCD: 144 **t$_1$mi?*

**VS-028**

***gəle* 'ear of corn' V$_1$ (#0077-2)**

gali, FR, gale, RSED.p96, gileker, DSBO.11781, gile, GTXT.7791, gɔlɛ, HLKS.V182, (ɔnɔ), PJDW.p255, (konto-ja), PGEG.p28, gele, CDES.p185, gele, EM.p1418, gele, DHED.p111, gele?, BAHL.p45, (kelʈa), NKEV.p317, *gxle, ear of corn, #0077, V182, 1577,

- Pinnow 1959: V182 / MKCD: 1577 **gur*; **guər*

**VS-029 **a?***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | (o:) | o | o | a(i) | (a) | we | a | a: | a: | a: | a: | 0063-2 |

Gta? /we/ suggests **o$^{ʔ}$c* (or **oj*) in pre-Gta?. This is supported by Remo and Gutob /oj/. The reflexes suggest **a* similar to **a$_4$* or **a$_5$*, however Gta? **we?* or the assumed pre-Gta? **o$^{ʔ}$c* consititutes a deviation from the attested reflexes of **a*.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | (o:) | o | o | a(i) | (a) | we | a | a: | a: | a: | a: | 0063-2 |
| — | — | o | o | o | ɔ | we | o̤ | o | o | oe | o | 0051-2 |
| o | o: | (o) | o | (ɔ) | — | oe | o̤ | o | o | o | u | 0071-2 |
| (a) | (a) | i | o | o | o | we | o | oe | o:e | oe | o: | 0094-2 |

***lv$_{(29)}$$^{ʔ}$c* 'stomach' (#0063-2) **a?***

—, —, (lo:$^{ʔ}$ɟ), RSED.p163, suloĭ, BDBH.2692, suloj, AG08.p651, la(i)$^{ʔ}$j, PKED.p119, (lai),

JLIC.n57, slweʔ, PGEG.p43, lac', CDES.p188, la:iʔ, BMED.p101, la:iʔ, DHED.p204, la:i:ʔ, BAHL.p123, la:j, NKEV.p323, *lv$_{(29)}$jʔ, stomach, #0063, K282, ,

- Pinnow 1959: K282 / MKCD: —

**VS-038 **O***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ʊ | u | u | u | u | o | — | (a) | — | — | — | 0068-5 |

VS-029 is the only set that features /u/ in Sora, Remo, Gutob, Kharia, and Juang and /o/ in Gtaʔ.

The set shows some similarity with #0062-2 of **tVŋ* 'kindle (v)'. However, if Mundari /a/ belongs to this set, Kherwarian /a/ would be in sharp contrast to Khewarian /i/ in #0062-2.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ʊ | u | u | u | u | o | — | (a) | — | — | — | 0068-5 |
| u | u | – | – | u | – | o | i | i | i | – | i | 0062-2 |

***ruNkOʔk* 'husked rice' (#0068-5)**

ruŋk, FR, rʊŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaʈ), BMED.p163, —, —, —, —, —, —, *ruNkOʔk, husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 **rk[aw]?*

Gtaʔ /rkoʔ/ is surprisingly close th Shorto's **rk[aw]?*.

**VS-030 **ə***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | a | e | — | a | (a) | — | e | e | e | e | e | 0087-2 |

Gorum, Sora, and Kharia /a/ and North Munda /e/ are consistent with **a$_3$* and **ə$_1$*. However, Remo /e/ is not compatible with any of these. In set **a$_3$*, Remo features /a/ and in **ə$_1$* /o/. Furthermore, the palatal context motivating **a$_3$* is probably absent in the case of #0087-2.

***sən* 'chase (v)' (#0087-2)**

san, FR, san, RSED.p248, sensen, BDBH.2714, —, —, san, PKED.p176, (saŋgem), PJDW.p273, —, —, sen, CSED.p572, sen, BMED.p172, sen, DHED.p311, sen, BAHL.p138, sen(e), NKEV.p337, *sən, chase (v), #0087, V300, 899,

- Pinnow 1959: V300 / MKCD: 899 **təɲ*

**VS-031**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | e | u | u | e | i | ∅ | i | i: | i: | i: | — | 0098-2 |

***bv*$_{(31)}$/*bv*$_{(31)}$*sv*$_{(32)}$ 'sated (v)' (#0098-2)**

bu?, FR, be$^{?}$, RSED.p56, busu, BDBH.1960, busu, Z1965.72, beso/u, PKED.p20, bisu, PJDW.p14, bse, PGEG.p14, bi(?), CSED.p67, bi:(?)/biu, BMED.22, bi:, DHED.p35, bi:, BAHL.p106, —, —, *bx, be sated (v), #0098, V319, 259,

- Pinnow 1959: V319 / MKCD: 259 **bhii?*

It remains unknown why #0098-2 is not a straightforward reflex. The correspondence set shows some similarity with VS-003 (#0041-2 and #0062-2), but the attested words in this group have a palatal coda. The other similar set is VS-026 (#0052-2). If we take the /u/ of Gorum as an effect

maybe via **bhii? > *bʰhii? > *bəhii? > *bəii? > *bv*$_{(31)}$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | e | u | u | e | i | ∅ | i | i: | i: | i: | — | 0098-2 |
| (u) | i | u | ui | u | u | o | i | i | i | i: | i | 0041-2 |
| u | u | – | – | u | – | o | i | i | i | – | i | 0062-2 |
| e | e | u | — | — | — | i | i | i | i | i | i | 0052-2 |

If MKCD 259 **bhii?* is correct the reflex should be consistent with **i*, but these vowels are not at all clear reflex of proto-Munda *i_.

**VS-032**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | u | u | o/u | u | e | — | — | — | — | — | 0098-5 |

***bv*$_{(31)}$/*bv*$_{(31)}$*sv*$_{(32)}$ 'sated (v)' (#0098-5)**

bu?, FR, be$^{?}$, RSED.p56, busu, BDBH.1960, busu, Z1965.72, beso/u, PKED.p20, bisu, PJDW.p14, bse, PGEG.p14, bi(?), CSED.p67, bi:(?)/biu, BMED.22, bi:, DHED.p35, bi:, BAHL.p106, —, —, *bx, be sated (v), #0098, V319, 259,

- Pinnow 1959: V319 / MKCD: 259 **bhii?*

Only in the /sV/ part attested in in Gutob, Remo, Kharia, Juang, and Gta?, probably not going back to proto-Munda, especially if MKCD 259 is the same etymon.

**VS-033 **U***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | a | i | i | i | — | i | u | u | u | — | i | 0100-2 |

Comparison to *$u_5$ and in particular *vd$^{j}$u$_5$$^{ʔ}$p_ 'night' $V_2$ (#0033-3). The difference between Korku /i/ in #0100-2, as opposed to /u/ in #0033-3, is less problematic as is Sora /a/ in #0100-2, as opposed to /u/ in #0033-3.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| u | **a** | i | i | i | — | i | u | u | u | — | **i** | 0100-2 |
| u | **u** | i | i | i | – | i | u | u | u | u | **u** | 0033-3 |

***ɲUm* 'name' (#0100-2)**

inum, FR, əɲam, RSED.p12, nimi, BDBH.1588, imi, AG.p645, (i)ɲimi, PKED.p140, —, — , mni, PGEG.p35, ɲum/ɲutum, CSED.p451/452, num/nutum, BMED.134, numu/nutum, DHED.p249, —, —, jimu, , *ɲUm, name, #0100, V279, 147,

- Pinnow 1959: V319 / MKCD: 259 **[hy]muʔ*

**Words with problematic vocalism**

- #0059-2: VS-034
- #0059-4: VS-035
- #0082-2: VS-036
- #0082-4: VS-037

***miŋam/*mayOm* 'blood' (#0059-2/#0059-4)**

miam, FR, miŋam, RSED.p177, —, —, iam, Z1963.325, iŋam, PKED.p115, iŋam/iŋɑm, PJDW.p208, mia, PGEG.p33, maNyaNm, CDES.p18, ma:yom, BMED.116, mayom, HOGV.p149, , , mayum, NKEV.p325, , blood, #0059, V303, 1430,

- Pinnow 1959: V303 / MKCD: 1430 **jhaam*; **jhiim*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| i-a | i-a | — | i-a | i-a | i-a/ɑ | i-a | a-a | a-o: | a-o | — | a-u | 0059 |

North Munda a-a/o/u Southern Languages i-a

Go-So, Re-Gu, Kh, Ju, Gt: **miŋam* NM: **mayOm*

$V_2$ in North Munda languages unique so far.

***ɟVlVN* 'long/tall' (#0082-2/#0082-4)**

zuleŋa, FR, ɟele:n, RSED.p123, sileŋ, BDBH.2601, silej, AG08.p651, jhelo(g, b, m), PKED.p92, ɟaliŋ, PJDW.210, clæ, PGEG.p15, jeleɲ, CSED.p260, jiliŋ, BMED.p83, jiliɲ, DHED.p165, —, —, —, —, *ɟxlxN, long/tall, #0082, V340, 740,

- Pinnow 1959: V340 / MKCD: 740 **jiliiŋ* (& **jiliŋ*?); **jla[i]ŋ* 'long'

The set **ɟVlVN* 'long/tall' displays unclear reflexes of a final nasal. The problems are aggravated by the fact that this might be a fused set of two or more etyma meaning *long*, *tall*, *high*, *slim*, and related concepts all based in the consonantal frame **ɟVlVN*, but with different vowels. If we assume that the character of the vowel preceding the nasal may influence the the form in certain languages, the problem of the different etyma with different vowels is fundamental for the reconstruction of the final nasal.

## Consonants

| | bilabial | dental/alveolar | palatal | velar | glottal |
|---|---|---|---|---|---|
| voiceless stop | *p | *t | (*c???) | *k | (*Vʔ?) |
| voiced stop | *b | *d | *ɟ | *g | |
| glottalized stop | *ʔp | *ʔt | *ʔc | *ʔk | |
| nasal | *m | *n | *ɲ | *ŋ | |
| sibilant | | *s | | | |
| lateral | | *l | | | |
| rhotic | | *r | | | |
| approximants | | | *j | | |

### Issues

- **K$^{h}$* Pinnow (1959 p.232-234) **q* etc., seems to konsistently reflect MKCD **k* with no apparent reason for the variation /k/$_{/h/}$∅.
- **d$^{j}$*

### Bilabials

| voiceless | voiced | glottalized | nasal |
|---|---|---|---|
| **p* | **b* | **ʔp* | **m* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| p | p | p | p | p | — | p | p(h) | p | p | p | p | **p* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| b | b | b | b | b | b | b | b | b | b | b(h) | b | **b* |
| — | — | b | b | b | — | — | b | b | b | b | m | **b$_{2}$* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔb | b | p(') | b | (ʔ)b | b | ʔ/g | p' | b | b | b/p | p | *ʔ*p* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | m | m | m | m | m | m | m | m | m | m | *$m_1$ onset |
| m | m | — | ∅ | ∅ | ∅ | m | m | m | m | m | m | *$m_2$ onset |
| m | m(m) | m | m | m | m | m/∅ | m | m | m | m | m(m) | *$m$ medial |
| m | m | m | m | m | m | ŋ | m | m | m | m | m | *$m_1$ coda |
| m | m | — | m | m | m | ∅ | m | m | m | — | m | *$m_2$ coda |
| m | m | m | m | m | ŋ/ɲ | ŋ | m | m | m | m | m | *$m_3$ coda |
| — | m | ŋ | ŋ | ŋ | ŋ | ŋ | m | m | m | m | m | *$m_4$ coda |

***p***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| p | p | p | p | p | p | p | p(h) | p | p | p | p |

Proto-Munda **p* is surprisingly poorly attested in widespread etyma. The reconstruction is exclusively based on /pVC/ verbs, no well attested intervocalic instance of **p* has been identified so far.

#### **peʔt* 'blow (v)' (#0057-1)

peʔd, FR, ped, RSED.p212, peʔ, BDBH.1759, ped, ZG65.293, pɛʔḍ, PJED.p156, —, , piʔ, PGEG.p38, phẹt', CDES.p142, —, , —, , —, , —, , *pxʔt, blow (v), #0057, V157, 1028,

- Pinnow 1959: V157 / MKCD: 1028 **puut*; **p[əə]t*

#### **pəʔt/*par(om)* 'cross (v)' (#0085-1)

pa'd, FR, pad, RSED.p200, poʔ, BDBH.1793, poḍ, DSGU#18931, paro(m), PKED.p155, (pakea), DSJU#25131, pwaʔ, PGEG.p39, par, CSED.p474, pa:rom, BMED.p144, parom, DHED.p262, parom, BAHL.p97, pa:r, NKEV.p331, *pəʔt, cross (v), #0085, , ,

Althought the initial bilabials constitute a consistent correspondence set, evidence from the vowel and the dental/retroflex second consonant suggest that we have to assume *pəʔt_ for Sora, Gorum, Remo, Gutob, and Gtaʔ and a second etymon **par(om)* 'cross (v)' for Kharia and North Munda, probably of Indo-Aryan origin.

#### **per* 'to burn (of chilies) (vi)' (#0097-2)

per ,FR ,— ,— ,per ,BDBH.1756 ,per ,Z1975.294 ,— ,— ,— ,— ,pir ,PGEG.p38 ,pẹṛen ,CSED.p500 ,— ,— ,(pertol) ,DHED.p266 ,— ,— ,— ,— ,*per ,burn(chilies) (v) ,#0097 ,— , ,

- Pinnow 1959: — / MKCD: —

***b***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| b | b | b | b | b | b | b | b | b | b | b(h) | b |

***b(oK$^{h}$)O$^{ʔ}$p* 'head' (#0011-4)**

ba$^{ʔ}$b, FR, bo:$^{ʔ}$b, RSED.p60, bob, BDBH.2007, bob, Z1963.50, boko$^{ʔ}$b, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bo̤ho̤k', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, *b(oK$^{h}$)O$^{ʔ}$p, head, #0011, V206, 361, 38

- Pinnow 1959: V206 UM *ɔ/ MKCD: 361 **[b]uuk*

***bul* 'drunk (v)' (#0016-1)**

bṳl, FR, buʔul, Sora.txt.18922, bu, BDBH.1900, bil, AG08.p672, bul, PKED.p39, buli, PJDW.p174, busaʔ, PGEG.p13, bul, CDES.p58, bul, BMED.p25, bul, HOGV.p155, bubul, BAHL.p108, bubul, NKEV.p70, , drunk, #0016, V105, 1765,

- Pinnow 1959: V105 / MKCD: 1765 **ɓul*; **ɓuul*

***buluu$^{ʔ}$* 'thigh' V$_2$ (#0017-1)**

bulu, FR, bulu:, RSED.p64, buli/bili, BDBH.1949/1890, bili, DSGU.2681, bhulu, PKED.p32, bulu, PJDW.p174, bulu, PGEG.p13, bulu, CDES.p199, bulu, BMED.p25, bulu, HOGV.p183, bu:l, BAHL.p109, bulu, NKEV.p295, *buluu$^{ʔ}$, thigh, #0017, V145, 223,

- Pinnow 1959: V145 / MKCD: 223 **bluuʔ*

***bv$_{(13)}$lv$_{(11)}$* 'ripe' (#0018-1)**

—, —, —, —, bulu, BDBH.1591, bulu, AG08.p644, belom, PKED.p19, bilim, PJDW.p167, ble, PGEG.p13, bele, CDES.p161, bili, BMED.p23, bili, HOGV.p156, bhi:li:, BAHL.p115, bili, NKEV.p293, *bxlx, ripe, #0018, V232, ,

- Pinnow 1959: V232 / MKCD: —
- MKCD 2080 **bl[ɔ]h* 'finished'
- MKCD 1878 **lʔas* 'ripe'

***bVrəl* 'raw' (#0019-1)**

—, —, —, —, buro, BDBH.1937, burol, Z1965.74, borol, PKED.p25, boron, PJDW.p171, brwa, PGEG.p14, bẹrẹl, CDES.p211, berel, BMED.p21, berel, HOGV.p185, berel, BAHL.p111, boboɽ, NKEV.p294, *bxrəl, raw, #0019, V253, ,

- Pinnow 1959: V253 / MKCD: —

***bel* 'spread (v)' (#0022-1)**

bil, FR, bel/bɪ:l, RSED.p56/58, be-sak', BDBH.1982, be(d), Z1965.50, bel, PKED.p18, bɛn, PJDW.p166, beʔ, PGEG.p11, bel, CDES.p184, bil, BMED.p24, bil, HOGV.p179, bel, BAHL.p111, (bi)bil, NKEV.p293, *bel, spread (vt), #0022, V221, 1761,

- Pinnow 1959: V221 / MKCD: 1761 **b[e]l* (**beel*?)

***bal* 'to burn' (#0023-1)**

Go. *bal*; So. *ba:l* (RSED.p49); Gu. *bal* (Z1965.43); Gt. *ba* (PGEG.p9); Sa. *bal* (BSDV1.p1840); Mu. *bal* (BMED.p18); Ho *bal* (HOGV.p151); Kw. *ba:l* (BAHL.p1050; Ko. *ba:l* (NKEV.p292)

- Pinnow 1959 — / MKCD —

A connection to any of the etyma attested in MKCD remains unclear. The best candidate is MKCD 1671 **waar*, **wər*. However, neither pAA *w nor pAA *r match the reconstructed pM *b and *l.

***bVtoŋ* 'fear' (#0039-1)**

butoŋ, FR, bato:ŋ, RSED.p55, butuŋ, BDBH.1922, butoŋ, GZ65.76, bɔtɔŋ (P), HLKS.V261, betɔŋan, JLIC.v239, bʈoʔ, PGEG.p14, —, —, botoŋ, BMED.p25, —, —, (bor), BAHL.p112, —, —, *bxtoŋ, fear, #0039, V261, 552,

- Pinnow 1959: V261 / MKCD: 552 **ʔt$_l$uuŋ*

MKCD 552 **ʔt$_l$uuŋ* is a close – but not perfect – match. Intial /b/ is attested in all languages. Shorto's initial cluster **ʔt$_l$* is not easily connected to any proto-Munda **bVt*.

***bVɲ$^{ʔ}$(*bVV$^{ʔ}$ɲ)* 'snake' (#0041-1)**

bubuˀd, FR, biŋ/biŋ, RSED.p59, bubuʔ, BDBH.1931, buʈbui, GGEG.p108, buŋam, PKED.p4, bubuŋ, PJDW.p172, boʔ, PGEG.p12, biŋ, CDES.p179, biŋ, BMED.p23, biŋ, HOGV.p178, bi:ŋ, BAHL.p108, biŋj, NKEV.p294, , snake, #0041, V353, 937,

- Pinnow 1959: V353; ; VW u/i; UM:i / MKCD: 937 **[b]saɳʔ*

MKCD 937 **[b]saɳʔ* less likely MKCD 1921a **ɓəs*

***bɨ$^{ʔ}$t* 'sow (v)' (#0045-1)**

buˀd, FR, büd/bid, RSED.p63, biʔ, BDBH.1898, biʈ, GZ63.67, biˀɖ, PKED.p20, bir, PJDW.p167, big, PGEG.p11, bit', CDES.p142, bid', BMED.p22, biɖ, DHED.p35, , , biʈ, NKEV.p294, *bɨˀt, sow (v), #0045, V285, ,

- Pinnow 1959: V285 / MKCD: —

***boŋtel/*bitkil* 'buffalo' (#0054-1)**

boŋtel, FR, boŋtel, RSED.p62, buŋte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNʈi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biʈkhil, NKEV.p294, *bxŋtxl, buffalo, #0054, , ,

Probably two separate etyma **boŋtel* and North Munda *bitkil_. The form suggests some relation, but the two forms cannot be derived from proto-Munda by regular sound change.

***bVrV(ʔp/ʔk)* 'lung' (#0066-1)**

buroʔb, FR, bəro:, RSED.p46, buruk', BDBH.1936, —, —, —, —, (buku), JLIC.n49, breʔ, PGEG.p14, bọrọ, CDES.p116, (borkod'), BMED.p25, (borkoɖ), DHED.p45, boro, BAHL.p112, , , , lungs, #0066, , ,

- Pinnow 1959: — / MKCD: —

***bar* 'two' (#0078-1)**

bagu, FR, bar, RSED.p48, mbaʔr, BDBH.2214, umbar, AG08.p646, ubar, PKED.p205, umba, PJDW.p291, mbar, PGEG.p34, bar, CSED.p42, baria, BMED.p20, bar, DHED.p27, —, —, ba:r, NKEV.293, *bar, two, #0078, V49, 1562,

- Pinnow 1959: V49 / MKCD: 1562 **biʔaar* > **ɓaar*, Pre-Khmer **[ɓ]ir*, Pre-Palaungic &c. **ʔaar*

***bəʔt* 'contain/block (v)' (#0092-1)**

baʔd ,FR ,bad ,RSED.p47 ,boʔ ,BDBH.2027 ,bod ,Z1965.59 ,— ,— ,— ,— ,boaʔ ,PGEG.p11 ,bẹt' ,BSDV1.p275 ,bed' ,BMED.p21 ,beɖ ,DHED.p33 ,— ,— ,— ,— ,— ,contain/block (v) ,#0092 ,— , 1032,

- Pinnow 1959: — / MKCD 1032 **bat*; **buət*

***bv(31)/bv(31)v(31)ʔ/bv(31)sv(32)* 'sated (v)' (#0098-1)**

buʔ, FR, beʔ, RSED.p56, busu, BDBH.1960, busu, Z1965.72, beso/u, PKED.p20, bisu, PJDW.p14, bse, PGEG.p14, bi(ʔ), CSED.p67, bi:(ʔ)/biu, BMED.22, bi:, DHED.p35, bi:, BAHL.p106, —, —, *bx, be sated (v), #0098, V319, 259,

- Pinnow 1959: V319 / MKCD: 259 **bhiiʔ*

***b*$_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| — | — | b | b | b | — | — | b | b | b | b | m |

***sv(6)bv(12)l* 'sweet' V$_2$ (#0061-3)**

—, —, —, —, subu, BDBH.2665, subul, AG08.p651, sebol, PKED.p180, —, —, —, —, sebel, CDES.p1194, sibil, EMV13.p3943, sibil, DHED.p316, sebel, DSKW.@21820, simil, NKEV.p338, *sv$_{(6)}$bxl, sweet, #0061, V257, ,

- Pinnow 1959: V257 / MKCD: —

***ʔp**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔb | b | p(') | b | (ʔ)b | b | ʔ/g | p' | b | b | b/p | p |

***vdʲu$_5$ʔp* 'night' (#0033-4)**

uɖuʔb, FR, orub, RSED.p195, minɖip', BDBH.2087, noNdib, GZ65.260, iɖiʔb, PKED.p79, —, —, minɖig, PGEG.p33, ayup', CDES.p128, a:yub, BMED.p14, ayub, HOGV.p157, ayub, BAHL.p3, ayup, NKEV.p290, , night, #0033, V280, 1268,

- Pinnow 1959: V280 / MKCD: 1268 **yup*; **y[uu]p*; **yəp*

***tVru$_5$ʔp* 'cloud' (#0034-5)**

taruʔb, FR, tarub, RSED.p283, tirib, BDBH.1387, tirib, GZ65.416, tiriʔb, PKED.p287, — , —, trig, PGEG.p46, rimil, CDES.p33, rimil, BMED.p160, rimil, HOGV.p152, liNbir, BAHL.p127, —, —, , cloud, #0034, V285a, ,

- Pinnow 1959: V285a / MKCD: —

Kherwarian *rimil* cannot be directly related to **tVru$_5$ʔp* . If /rim/ in Santali, Mundari, and Ho is related to /ɖi(ʔ)b/ in Remo, Gutob, and Kharia, the two etyma might be ultimately related. However, they cannot be derived from a common proto-Munda form. Korwa *liNbir* is probably not connected to either.

***saʔp* 'grab (v)' (#0048-3)**

—, —, (sakab), RSED.p246, sop', BDBH.2748, sob, GGEG.p113, (suʔb), PKED.p188, sɔb, PJDW.p277, saʔ, PGEG.p42, sap', CDES.p28, sa:b, BMED.p163, sab, DHED.p296, sa:b, BAHL.pdfp131, sa:p, NKEV.p337, *sxʔp, grab (v), #0048, , ,

- MKCD 1236 **[c]kiip*; **[c]kiəp*; **t[$_1$]kiəp*; **ckap*; **t$_1$kap*; *ckuəp*
- MKCD 1243 *cap; *caap; *ciəp; *cip; *cup

The connection to MKCD 1236 is not strong. Reflexes of **t$_1$* should remain a stop, while the reflexes of the cluster **[c]k* are not well understood. It could be a case of type 2a cluster splitting by second consonant loss ($C_iC_{ii} \rightarrow C_i$). Thus **ckap* → **cap* → **saʔp* or **ckap* → **skap* → **saʔp*.

***Kʰaʔp* 'bite (v)' (#0056-3)**

(kuʔb), FR, (küb/kib/kaib), RSED.p144, op, BDBH.337, op, ZG63.7, hapkay, PKED.p73, —, —, haʔ, PGEG.p24, hap', CDES.p17, ha:b, BMED.p64, hab, DHED.p124, ha:p, BAHL.p146, khap, NKEV.p320, *Kʰaʔp, bite (v), #0056, V294, 1231,

- Pinnow 1959: V294 / MKCD: 1231 **kap/*kaap*

### **geʔp* 'to burn (vi)' (#0058-3)

geʔb ,FR ,tuŋge:b ,RSED.p298 ,gep' ,BDBH.967 ,geb ,GZ65.123 ,geb ,PKED.p61 ,— ,— ,giʔ ,PGEG.p19 , — ,— ,— ,— ,— ,— ,— ,— ,— ,— ,*geʔp ,burn (vi) ,#0058 , 156, ,

- Pinnow 1959: 156 / MKCD: —

### **sVlVʔp* 'gazelle' (#0084-5)

alu'b, FR, əle:b, RSED.p7, sulup, BDBH.2688, sulub, GGEG.p116, selhob, PKED.p180, silib, PJDW.p278, sloʔ, PGEG.p43, selep', CSED.p571, silib, BMED.p173, silib, DHED.p317, seleb, DSKW@21960, —, —, *sxlxʔp, gazelle, #0084, V233, ,

### **ʔb ~ *ʔk (*ʔb/k)*

There is a small but remarkable number of etyma in which some variation between reflexes of **ʔb* and **ʔk*. It is not clear whether this is a case of coda neutralization or there is an underlying variation in proto-Munda and the etymo have to be reconstructed as having a variant with **ʔb* and one with **ʔk*.

Gtaʔ shows consistent coda neutralization as **ʔb* is generally continued as /ʔ/ or – probably a notational variation – as /g/. If etymoa are to be reconstructed

See also Pinnow (1959, p. 378)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔb | ʔb | b | b | ʔb | b | ʔ | k' | ∅ | ʔ | ʔ | — | 0011-5 |
| ʔb | ∅ | k' | — | — | (k) | ʔ | ∅ | (k) | (k) | ∅ | — | 0068-6 |
| ∅ | ∅ | ∅ | g | ʔb | b | ʔ | — | — | — | — | — | 0068-6 |
| ∅ | ʔ | g | ʔ | (∅) | — | g | p' | b' | b | b | p | 0099-2 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | B | B | B | B | B | B/V | V | ∅ | V | V | — | 0011-5 |
| B | ∅ | V | — | — | (V) | B/V | ∅ | (V) | (V) | ∅ | — | 0068-6 |
| ∅ | ∅ | ∅ | V | B | B | B/V | — | — | — | — | — | 0068-6 |
| ∅ | G | G | G | (∅) | — | B/V | B | B | B | B | B | 0099-2 |

### **b(oKʰ)Oʔp* 'head' (#0011-5)

baʔb, FR, bo:ʔb, RSED.p60, bob, BDBH.2007, bob, GZ63.50, bokoʔb, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bọhọk', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, *b(oKʰ)OʔP, head, #0011, V206, 361, 38

- Pinnow 1959: V206 UM *ɔ/ MKCD: 361 **[b]uuk*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔb | ʔb | b | b | ʔb | b | ʔ | k’ | ∅ | ʔ | ʔ | — |

***bVrV(ʔp/ʔk)* ‘lung’ (#0066-1)**

buroʔb, FR, bəro:, RSED.p46, buruk’, BDBH.1936, —, —, —, —, (buku), JLIC.n49, breʔ, PGEG.p14, bọrọ, CDES.p116, (borkod’), BMED.p25, (borkoɖ), DHED.p45, boro, BAHL.p112, , , , lungs, #0066, , ,

- Pinnow 1959: — / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔb | ∅ | k’ | — | — | (k) | ʔ | ∅ | (k) | (k) | ∅ | — |

***ruNkO(ʔp)* ‘husked rice’ (#0068-6)**

ruŋk, FR, rʊŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaƭ), BMED.p163, —, —, —, —, —, —, *ruNkO(ʔp), husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 **rk[aw]ʔ*

Gtaʔ /rkoʔ/ is surprisingly close th Shorto’s **rk[aw]ʔ*.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ∅ | ∅ | g | ʔb | b | ʔ | — | — | — | — | — |

***uʔp* (**uʔk/*uuʔ*) ‘hair’ (#0099-2)**

—, FR, uʔ/(uppur), RSED.p308(307), ugbok’, BDBH.135, iʔboʔ, DSGU#9411, (ului), DSKH#32441, —, —, ugboʔ/ogboʔ, PGEG.p6, up’, CSED.p670, ub’, BMED.p191, ub, DHED.p369, u:b, BAHL.p18, hu:p, NKEV.p310, *uʔp, hair, #0099, V143, ,

- Pinnow 1959: V143 / MKCD: —

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ʔ | g | ʔ | (∅) | — | g | p’ | b’ | b | b | p |

***$m_1$* (Onset)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | m | m | m | m | m | m | m | m | m | m |

***məʔt* 'eye' (#0012-1)**

maʔd, FR, moːʔd/mad, RSED.p168, moʔ, BDBH.220, moʔ, AG08.p642, moʔɖ, PKED.p195, ɛməɖ, PJDW.p191, muaʔ, PGEG.p34, mẽt', CDES.p67, med', BMED.p117, meɖ, DHED.p228, meɖ, BAHL.p120, med, ZKPM.p48, məʔt, eye, #0012, V250, 1045, 40

- Pinnow 1959: V250 / MKCD: 1045 *mat

***mv*$_{(4)}$*raŋ* 'big' (#0064-1)**

—, —, maraŋ/məraŋ, RSED.p173/167, munaʔ, BDBH.2121, (moɖo), AG08.p663, —, —, —, —, mnaʔ, PGEG.35, maraŋ, CDES.p17, maraŋ, BMED.p220, maraŋ, DHED.p225, —, —, —, —, *mxrxŋ, big, #0064, K107, ,

- Pinnow 1959: K107 / MKCD: —

Gtaʔ *mnaʔ* and Remo *munaʔ* are irregular reflexes of **mv*$_{(4)}$*raŋ*, especially the Gtaʔ form *mnaʔ* should be different, given our current understanding of the phonological developments.

***muuʔ* 'nose' (#0074-1)**

muʔ, FR, muːʔ, RSED.p179, nseʔmiʔ, BDBH.1653, miʔ, GZ63.262, romoŋ/romoʔɖ, PKED.p170, motɛɟ, PJDW.p245, mmu, PGEG.p34, muN, CDES.p129, mu/muhu, BMED.p121, muwa/muɽa, DHED.p238, huːmuː, DSKW@23180, muː, NKEV.p327, *mxxʔ, nose, #0074, , ,

- Pinnow 1959: V387 / MKCD: 2045 **muh*; **muuh*; **muus*

***maraʔk* 'peacock' V$_2$ (#0081-1)**

(marraʔ), FR, maːraː, RSED.p173, —, —, —, —, maraʔ, PKED.p131, marag, PJDW.p242, —, —, marak', CSED.p407, maːraː, BMED.p114, maraː, DHED.p225, maraːq, BAHL.p117, mara, NKEV.p324, *maraʔk, peacock, #0081, V27, 416,

- Pinnow 1959: V27 / MKCD: 416 **mraik[ ]*

Gorum *marraʔ* 'husband' probably belongs to another etymon connected with MKCD 183 **mraʔ* 'person'.

***m*$_2$ (Onset)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | — | ∅ | ∅ | ∅ | m | m | m | m | m | m |

***miŋam*/*mayOm* 'blood' (#0059-1)**

miam, FR, miŋam, RSED.p177, —, —, iam, GZ63.325, iŋam, PKED.p115, iŋam/iŋɑm, PJDW.p208, mia, PGEG.p33, maNyaNm, CDES.p18, maːyom, BMED.p116, mayom, HOGV.p149, , , mayum, NKEV.p325, , blood, #0059, V303, 1430,

- Pinnow 1959: V303 / MKCD: 1430 **jhaam*; **jhiim*

***m (Medial)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m(m) | m | m | m | m | m/∅ | m | m | m | m | m(m) |

***sVmaŋ 'forehead/front' (#0038-3)**

amaŋ, FR, ammaŋ, RSED.p31, gutumoŋ, BDBH.885, sumoŋ/amuŋ, GZ65.21, somoŋ/somo/sumaŋ, PKED.p185, ɛmɔŋ, PJDW.p191, ssæ, PGEG.p44, samaŋ, CDES.p79, sa:ma:ŋ, BMED.p167, sanamaŋ, HOGV.p159, samaŋ, BAHL.pdfp130, samma, NKEV.p336, , forehead/front, #0038, V269, ,

- Pinnow 1959: V269 / MKCD: —

***tʰme 'new' $V_1$ (#0053-3)**

tẹmi, FR, tamme, RSED.p277, time, BDBH.1383, time, ZG65.410, tonme, PKED.p289, —, —, tmi, PGEG.p125, (nãwã), CDES.p128, (nawã), BMED.p127, (nama), HOGV.p168, —, —, (uni), NKEV.345, *tʰme, new, #0053, V184, 144,

- Pinnow 1959: V182 / MKCD: 144 **$t_1$mi?*

***$m_1$ (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | m | m | m | m | ŋ | m | m | m | m | m |

Gta? /ŋ/ is the coda neutralization also attested in **ʔp*.

***ɟv$_{(1o)}$m 'eat (v)' (#0015-3)**

zum, FR, ɟom, RSED.p128, sum, BDBH.2667, som, GZ63.212, jom, HLKS.K274, ɟim, PJDW.p212, coŋ, PGEG.p15, jọm, CDES.p60, jom, BMED.p84, jom, HOGV.p156, jom, BAHL.p63, jom, NKEV.p313, , eat (v), #0015, V385, 1327, 55

- Pinnow 1959: V385 / MKCD: 1327 **cuum*; **cuəm*; **cəm*; (**cim cim* >) **ncim*; **ciəm* (& **nciəm*?); **caim*

***gam 'say (v)' (#0080-3)**

—, —, gam, RSED.p96, —, —, gam, Z1965.121, gam, PKED.p57, gam, PJDW.p194, —, —, gam, CSED.p176, gamu, HLKS.V12, gamu, HLKS.V12, —, —, —, —, *gam, say (v), #0080, V12, ,

- Pinnow 1959: V12 / MKCD: —

***ɲam* 'get (v)' (#0088-3)**

—, —, ɲam, RSED.p186, —, —, —, —, ɲam, PKED.p140, —, —, —, —, ɲam, CSED.p434, na:m, BMED.p126, nam, DHED.p241, ɲa:m, BAHL.p66, na, NKEV.p327, *ɲxm, get (v), #0088, 5(?), 1243(?),

- Pinnow 1959: 5(?) / MKCD: —

***m*$_2$ (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | — | m | m | m | ∅ | m | m | m | — | m |

***miŋam/*mayOm* 'blood' (#0059-5)**

miam, FR, miŋam, RSED.p177, —, —, iam, GZ63.325, iɲam, PKED.p115, iɲam/iɲɑm, PJDW.p208, mia, PGEG.p33, maNyaNm, CDES.p18, ma:yom, BMED.p116, mayom, HOGV.p149, , , mayum, NKEV.p325, , blood, #0059, V303, 1430,

- Pinnow 1959: V303 / MKCD: 1430 **jhaam*; **jhiim*

***ɲUm* 'name' (#0100-3)**

inum, FR, əɲam, RSED.p12, nimi, BDBH.1588, imi, AG.p645, (i)ɲimi, PKED.p140, —, —, mni, PGEG.p35, ɲum/ɲutum, CSED.p451/452, num/nutum, BMED.134, numu/nutum, DHED.p249, —, —, jimu, , *ɲUm, name, #0100, V279, 147,

- Pinnow 1959: V319 / MKCD: 259 **[hy]muʔ*

***m*$_3$ (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m | m | m | m | m | ŋ/ɲ | ŋ | m | m | m | m | m |

Juang /ŋ/~/ɲ/ is unclear. Gtaʔ /ŋ/ is the coda neutralization also attested in *$m_1$ and *$m_2$.

***gum* 'winnow (v)' (#0044-3)**

gumar, FR, gum, RSED.p105, (gite?), BDBH.864, gim, GZ63.134, gum, PKED.p67, guŋ/guɲ, PJDW.p199, goŋ, PGEG.p20, gum, BSDV2.p490, gum, BMED.p214, gum, DHED.p120, gum, BAHL.p45, gum, NKEV.p307, *gum, winnow (v), #0044, K159, 1317,

- Pinnow 1959: K159 / MKCD: 1317 **gum*; **guum*; **g[əə]m*

***m*$_4$ (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| — | m | ŋ | ŋ | ŋ | ŋ | ŋ | m | m | m | m | m |

Velar /ŋ/ in Remo, Gutob, Kharia, and probably Juang not a coda neutralization as it seems to be in Gta?. However, the context affecting this sound change is unknown so far.

***si$_2$m* 'chicken' (#0028-3)**

—, —, kənsi:m, RSED.p131, gisiŋ, BDBH.856, gisiŋ, AG08.p651, siŋkoy, PKED.p183, sɛŋkɔe, PJDW.p275, gsæŋ, PGEG.p23, sim, CDES.p30, sim, BMED.p173, sim, HOGV.p151, si:m, BAHL.p135, —, —, *sxm, chicken, #0028, V315, 1324,

- Pinnow 1959: V315 / MKCD: 1324 **cim*; **ciim*; **ciəm*; **caim*; **cum*

**Alveolar/Dental/Retroflex**

| voiceless | voiced | glottalized | nasal | sibilant | unclear |
|---|---|---|---|---|---|
| *$t_1$/*$t_2$ | **d* | **ʔt* | **n* | **s* (see below) | (**d$^j$*) |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| t | t | t | t | t | t | t/ʈ | t | t/ʈh | t | t | ʈ | *$t_1$ onset |
| s | s | t | t | t | t | t | t | t | t | t | ʈ | *$t_2$ onset |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ɖ | d | d/ɖ | ɖ | ɖ | ɖ | ɖ/d | d/ɖ | d/ɖ | d | ɖ | ɖ/d | *d onset |
| ɖ | — | — | ɖ | ɖ | r | ∅ | ɖ | ɖ | d | d | ɖ | *d medial |
| ɖ | r | ɖ | d | ɖ | ɖ | ɖ | y | y | y | y | y | *$d^j$ medial |

(*$d^j$ is probably spurious and baed n the conflation a etyma with a /d/ and some with /j/)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔd | ʔd | — | ʔ/ɖ/ʈ | ʔɖ | ɖ/r | ʔ/g | t’ | d’ | ɖ | ɖ | d/ʈ | *ʔt |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n | n | n/ŋ | n | n | — | ŋ? | n | n | n | n/ŋ | n | *$n_1$ coda |
| n | n | ŋ | n | n | — | ŋ | n | n | n | ŋ | n | *$n_2$ coda |

*$t_1$

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| t | t | t | t | t | t | t/ʈ | t | t/ʈh | t | t | ʈ |

***taɲ* 'to weave' (#0005-1)**

taɲ, FR, taɲ, RSED.p281, taNy, BDBH.1358, taɲ, GZ65.369, taɲ, PKED.p196, —, —, tæ, PGEG.p45, teɲ, CDES.p219, teŋ, BMED.p183, teɲ, HOGV.p187, —, —, —, —, taɲ, weave (v), #0005, V301, 898,

- Pinnow 1959: V301 / MKCD: 898 *$t_1aaɲ$

***tol* 'tie (v)' (#0024-1)**

tol, FR, tol, RSED.p292, tu, BDBH.1398, tol, AG08.647, tol, PKED.p288, tor, PJDW.p287, tu, PGEG.p46, tọl, CDES.p201, tol, BMED.p186, tol, HOGV.p183, tol, BAHL.p84, ʈol, NKEV.p343, *tol, tie (v), #0024, V191, ,

- Pinnow 1959: V191 / MKCD: —

***tuɲ* 'shoot (v)' (#0027-1)**

tiŋ, FR, tuɲ, RSED.p299, tiŋ, BDBH.1368, tiŋ, GZ63.190, tuɲ, PKED.p196, tuɲ, PJDW.p288, ʈwiŋ, PGEG.p46, tuɲ, CDES.p173, tuiŋ, BMED.p180, tuŋ, HOGV.p177, , , ʈuɲj, NKEV.p343, , shoot (v), #0027, V107, 896a?,

- Pinnow 1959: V107 / MKCD: 896a?

MKCD 896a *$t_1iɲ$; *$t_1iiɲ$; *$t_1iəɲ$; *$t_1əɲ$ 'to pluck, twang' could be related. Its meaning is generally 'to pluck a (stringed) instrument' which is rather close to 'to shoot with bow and arrow.'

***tVru$_5$ʔp* 'cloud' (#0034-1)**

taruʔb, FR, tarub, RSED.p283, tirib, BDBH.1387, tirib, GZ65.416, tiriʔb, PKED.p287, — , —, trig, PGEG.p46, rimil, CDES.p33, rimil, BMED.p160, rimil, HOGV.p152, liNbir, BAHL.p127, —, —, , cloud, #0034, V285a, ,

- Pinnow 1959: V285a / MKCD: —

***ɓVtoŋ* 'fear' (#0039-3)**

butoŋ, FR, bato:ŋ, RSED.p55, butuŋ, BDBH.1922, butoŋ, GZ65.76, bɔtɔŋ (P), HLKS.V261, betɔŋan, JLIC.v239, bʈoʔ, PGEG.p14, —, —, botoŋ, BMED.p25, —, —, (bor), BAHL.p112, —, —, *bxtoŋ, fear, #0039, V261, 552,

- Pinnow 1959: V261 / MKCD: 552 *$ʔt_1uuŋ$

MKCD 552 *$ʔt_1uuŋ$ is a close – but not perfect – match. Intial /b/ is attested in all languages. Shorto's initial cluster *$ʔt_1$ is not easily connected to any proto-Munda *$bVt$.

***tI*$_{(24)}$*l* 'bury (v)' (#0049-1)**

tul, FR, til, RSED.p288, ti, BDBH.1360, til, GZ65.408, til, PKED.p199, tir, PJDW.p284, —, —, (til), RSED.p288, (til), RSED.p288, —, —, ti:l, BAHL.p82, —, —, *txl, bury (v), #0049, —, —,

- Pinnow 1959: — / MKCD: —

***tv*$_{(19)}$*ŋv*$_{(25)}$*n/tv*$_{(19)}$*nv*$_{(25)}$*ŋ* 'stand (v)' $V_1$ (#0050-1)**

tinaŋ, FR, tanaŋ, RSED.p, toŋ, BDBH.1490, tunon, AG08.p662, tuŋon, PKED.p201, toŋon, PJDW.p287, thwaN, PGEG.p46, teŋgon, CDES.p186, tiŋun, BMED.p187, tiŋgu, HOGV.p180, —, —, ʈengene, NKEV.p342, *txŋxn, stand (v), #0050, V258, 1824,

- Pinnow 1959: V258 / MKCD: 1824 **taaw*

***t*ᵊ*me* 'new' $V_1$ (#0053-1)**

tɐ̰mi, FR, tamme, RSED.p277, time, BDBH.1383, time, ZG65.410, tonme, PKED.p289, —, —, tmi, PGEG.p125, (nãwã), CDES.p128, (nawã), BMED.p127, (nama), HOGV.p168, —, —, (uni), NKEV.345, *tᵊme, new, #0053, V184, 144,

- Pinnow 1959: V182 / MKCD: 144 **t*$_l$*mi?*

***boŋtel/*bitkil* 'buffalo' (#0054-4)**

boŋtel, FR, boŋtel, RSED.p62, buŋte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNʈi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biʈkhil, NKEV.p294, *bxŋtxl, buffalo, #0054, , ,

Probably two separate etyma **boŋtel* and North Munda *bitkil_. The form suggests some relation, but the two forms cannot be derived from proto-Munda by regular sound change.

***tVŋ* 'kindle (v)' (#0062-1)**

tuŋ, FR, tuŋa:l, RSED.p297, —, —, —, —, tuŋgal, HLKS.V324, —, —, toŋ, PGEG.p42, tiŋgi, BSDV5.p461, tiŋ, BMED.p187, tiɲ, DHED.p353, —, —, ʈingi, NKEV.p343, *txŋ, kindle (v), #0062, V324, 549,

- Pinnow 1959: V324; VW i/u; UM:i/ MKCD: 549 **t*$_l$*ɯŋ*

***tVrel* 'ebony' $V_1$ (#0083-1)**

—, —, tarel, RSED.p138, tire, BDBH.1390, —, —, ti(ɽr)(ei)l, PKED.p200, tɛrɛn, PJDW.p285, tre, PGEG.p46, terel, CSED.p626, tiril, BMED.p188, tiril, DHED.p355, —, —, —, —, *txrel, ebony, #0083, V227, ,

- Pinnow 1959: V227 / MKCD: —

***ten* 'trample (v)' (#0086-1)**

tin, FR, —, —, —, —, ten, Z1965.402, ten, PKED.p199, —, —, (ʈe), PGEG.p46, ten, CSED.p624, ʈhen, BMED.p185, ten, DHED.p347, ten, DSKW@1275, ten, DSKO#26831, *txn, trample (v), #0086, K306, 1153a,

- Pinnow 1959: K306 / MKCD: 1153a *$t_1$*een*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| t | — | — | t | t | — | (ʈ) | t | ʈh | t | t | ʈ |

Gta? *ʈe* is problematic. The retroflex /ʈ/ is unexplained, as is Mundari /ʈh/.

***$t_2$* (Onset)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s | s | t | t | t | t | t | t | t | t | t | ʈ |

*$t_2$ is not well attest enough to be reliably characterized.

- current hypothesis proto-Munda **ti* > proto-Sora-Gorum **si*

***tii*$^{ʔ}$ 'hand' (#0008-1)**

siʔ, FR, si:ʔ, RSED.p254, titi, BDBH.1370, titi, GZ65.p29, tiʔ, PKED.p199, iti, PJDW.p208, nti, PGEG.p37, ti, CDES.p89, ti, BMED.p186, ti:, DHED.p350, tiʔi:, BAHL.p63, ʈi, NKEV.p343, tii$^{ʔ}$, hand, #0008, V75, 66, 48

- Pinnow 1959: V75 / MKCD: 66 *$t_1$*ii?*

***$t_1$*/*$^{ʔ}$*t***

***lutu(u*$^{ʔ}$*)r* 'ear' $V_1$ and $V_2$ (#0073-2 and #0073-4)**

lu$^{ʔ}$d, FR, lu$^{ʔ}$d, RSED.p165, luntur, BDBH.2386, litir, AG08.p652, lutur, PKED.p127, lutur/lutuʔ, PJDW.p239, nlug, PGEG.p36, lutur, CDES.p60, lutur, BMED.p110, lutur, DHED.p216, lutur, BAHL.p128, lutur, NKEV.p324, *lutu(u$^{ʔ}$)r, ear, #0073, V147, 1621,

- Pinnow 1959: V147 / MKCD: 1621 **kt$_2$uur*; **kt$_2$uər*

***d* (Onset)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ɖ | d | d/ɖ | ɖ | ɖ | ɖ | ɖ/d | d/ɖ | d/ɖ | d | ɖ | ɖ/d |

***daʔk* ‘water’ (#0001-1)**

ɖaʔ, FR, daʔ, RSED.p70, dak’, BDBH.1179, ɖaʔ, ZG63.85, ɖaʔ, PKED.p41, ɖag, PJDW.p185, ndiaʔ, PGEG.p36, dak’, CDES.p217, da:, BMED.p31, daʔ, DHED.p73, da:ʔ, BAHL.p87, ɖa, NKEV.p300, da(a)ʔk, water, #0001, V2, 274, 75

- Pinnow 1959: V2 / MKCD: 274 **diʔaak* > **ɗaak*

***daʔc* ‘to climb’ (#0006-1)**

ɖaʔʄ, FR, daʄ, RSED.p72, ɖaĭ, BDBH.1168, ɖaj, GZ65.79, —, —, ɖaɲ, PJDW.p186, ɖæʔ, PGEG.p16, dęc’, CDES.p32, dej’, BMED.p40, deʔ, DHED.p81, deʔ, BAHL.p89, (cuɖe), NKEV.p298, daʔʄ, climb (v), #0006, V333, ,

- Pinnow 1959: V333 / MKCD: —

***dərv$_{(6)}$ŋ* ‘horn’ (#0007-1)**

ɖeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ɖereŋ, PKED.p44, —, —, ɖiraŋ, PGEG.p17, dereɲ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89, —, —, *dərv$_{(6)}$ŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 UM: **e,*ɛ/* MKCD 699 **d$_2$raŋ*

***dO$_{(21)}$ɲ* ‘cook (v)’ (#0040-1)**

ɖeɲ, FR, diɲ, RSED.p80, ɖoNĭ, BDBH.1302, ɖoɲ, AG08.p664, ɖeɲ, PKED.p63, ɖɛɲ, PJDW.p187, ɖue, PGEG.p17, —, —, —, —, —, —, —, —, —, —, —, *dxɲ, cook (v), #0040, V342, 583,

- Pinnow 1959: V342 / MKCD: 583 **kɗaŋ*

***dal* ‘to cover’ (#0047-2)**

ɖal, FR, dal, RSED.p73, ɖalu, BDBH.1210, ɖal, GZ65.80, ɖal, PKED.p42, ɖan, MJTL.p96, ɖa, PGEG.p16, dapal/daloɒ’, CDES.p40, dapal/dālob, BMED.p35/36, dapal/dalop, HOGV.p153, —, —, da:l, NKEV.p299, *dal, cover (v), #0047, V3, 1745,

- Pinnow 1959: V3 / MKCD: 1745 **kdiil*; **kdiəl*; **kdəl*

***d* (Medial)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ɖ | — | — | ɖ | ɖ | r | ∅ | ɖ | ɖ | d | d | ɖ |

***lV(N)dV* ‘laugh (v)’**

liɖa, FR, —, —, (ɖoɖo), BDBH.1283, luɖo, GZ65.228, laɖa, PKED.p202, lara, PJDW.p236, lwaʔ, PGEG.p32, lanɖa, CDES.p110, la:nɖa:, BMED.p102, landa, HOGV.p166, la:Nd, BAHL.p127, lanɖa, NKEV.p322, , laugh (v), #0037, V302, ,

***d$^{j}$* (Medial)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ɖ | r | ɖ | d | ɖ | ɖ | ɖ | y | y | y | y | y |

Unexplaint correspondence set that is characterized by a voiced alveolar sound in the southern languages and a palatal glide in North Munda. It is tempting to separate the two and posit *xdx$^{ʔ}$p for the southern languages and presumably proto-Munda and treat proto-North Munda *aju$^{ʔ}$p as an innovation. However, even if the North Munda y (/j/) is ignored, Sora /r/ is not expected in reflexes of a medial *d.

If we take MKCD 1268 **yup*; **y[uu]p*; **yəp* as the correct form of the etymon, the reflexes are best explained as proto-Munda **ju$_5$$^{ʔ}$p* with different prefixes:

- Kherwarian: **a* + **ju$_5$$^{ʔ}$p*
- Sora-Gorum and Kharia: **Vd* + **ju$_5$$^{ʔ}$p*
- Gutob-Remo and Gta?: **NVnd* * **ju$_5$$^{ʔ}$p*

***vd$^{j}$u$_5$$^{ʔ}$p 'night' V$_2$ (#0033-3)**

uɖu$^{ʔ}$b, FR, orub, RSED.p195, minḍip', BDBH.2087, noNdib, GZ65.260, iḍi$^{ʔ}$b, PKED.p79, —, —, minḍig, PGEG.p33, ayup', CDES.p128, a:yub, BMED.p14, ayub, HOGV.p157, ayub, BAHL.p3, ayup, NKEV.p290, , night, #0033, V280, 1268,

- Pinnow 1959: V280 / MKCD: 1268 **yup*; **y[uu]p*; **yəp*

****$^{ʔ}$t***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $^{ʔ}$d | $^{ʔ}$d | — | ʔ/ɖ/ʈ | $^{ʔ}$ɖ | ɖ/r | ʔ/g | t' | d' | ɖ | ɖ | d/ʈ |

There is some variation among the reflexes. Gutob ʔ/ɖ/ʈ points to a /ɖ/ that is neutralized to /ʔ/ in final position. The three values ʔ/ɖ/ʈ given in the source data can be analyzed as allophones of /ɖ/ or in the case of /ʔ/ reflexes of a final /ɖ/ merged with glottal stop allophones of other phonems into a new phoneme /ʔ/. The pair ʔ/g in Gta? seems to be the result of inconsistent phonemic represenation among the source and within single sources. The variation d/ʈ in Korku is so far unexplained.

The /r/ in Juang in the *bx$^{ʔ}$t 'sow (v)' set remains unexplained as well. Given the variantion between /ɖ/ and /r/ attested in **u$^{ʔ}$t* 'drink/swallow (v)', it seems possible, that there is no fundamental inconsistency here and that the unexplained variation is the result of our restricted knowledge of Juang in general.

***mə$^{ʔ}$t 'eye' (#0012-3)**

ma$^{ʔ}$d, FR, mo:$^{ʔ}$d/mad, RSED.p168, moʔ, BDBH.220, moʔ, AG08.p642, mo$^{ʔ}$ḍ, PKED.p195, ɛmɔḍ, PJDW.p191, muaʔ, PGEG.p34, mɛ̰ʈ', CDES.p67, med', BMED.p117,

meɖ, DHED.p228, meɖ, BAHL.p120, med, ZKPM.p48, məʔt, eye, #0012, V250, 1045, 40

- Pinnow 1959: V250 / MKCD: 1045 *mat

***gəʔt* 'cut (v)' (#0013-3)**

gaʔd, FR, gad, RSED.p93, goʔ, BDBH.1018, goʔ, AG08.p669, gaʔɖ, PKED.p60, , , gwaʔ, PGEG.p21, gɐt', CDES.p44, ged', EMV5.1411, geɖ, DHED.p111, geɖ, BAHL.p46, geţ, NKEV.p306, gəʔt, cut (v), #0013, V334, 972,

- Pinnow 1959: V334 / MKCD: MKCD 972 **sguut*; **[s]gət*; **sgat*

***riʔt* 'to grind' (#0025-3)**

riʔd, FR, rid, RSED.p233, riʔ, BDBH.2276, riţ, GZ63.15, riɖ, PKED.p169, riɖ, PJDW.p266, rig, PGEG.p4, rit', CDES.p86, ri'd, BMED.p159, riɖ, DHED.p288, ri:ɖ, BAHL.p124, –, —, *riʔt, grind (v), #0025, V76, 1056,

- Pinnow 1959: V76 / MKCD: 1056 **riit*, **riət*

***ɟoʔt* 'wipe (v)' (#0029-3)**

zoʔd, FR, ɟoʔd, RSED.p126, susuʔ, BDBH.2698, sosod, GZ65.374, joʔɖ, PKED.p87, —, —, cuʔ, PGEG.p15, jǫt', CDES.p221, jod', BMED.p84, joɖ, HOGV.p88, joɖ, BAHL.p62, o:jo, NKEV.p329, *ɟoʔt, wipe (v), #0029, V190, 994,

- Pinnow 1959: V190 / MKCD: 994 **[ ]jut*; **[ ]juut*

***bɨʔt* 'sow (v)' (#0045-3)**

buʔd, FR, büd/bid, RSED.p63, biʔ, BDBH.1898, biţ, GZ63.67, biʔɖ, PKED.p20, bir, PJDW.p167, big, PGEG.p11, bit', CDES.p142, bid', BMED.p22, biɖ, DHED.p35, , , biţ, NKEV.p294, *bɨʔt, sow (v), #0045, V285, ,

- Pinnow 1959: V285 / MKCD: —

***peʔt* 'blow (v)' (#0057-3)**

peʔd, ped, RSED.p212, peʔ, BDBH.1759, ped, ZG65.293, pɛʔɖ, PJED.p156, —, , piʔ, PGEG.p38, phɐt', CDES.p142, —, , —, , —, , —, , *peʔt, blow (v), #0057, V157, 1028,

- Pinnow 1959: V157 / MKCD: 1028 **puut*; **p[əə]t*

***uʔt* 'drink/swallow (v)' (#0090-2)**

—, —, —, —, uʔ, BDBH.181, iɖ, AG08.p664, uʔd, PKED.p205, ur/uɖ, PJDW.p292, ug, PGEG.p6, ut', CSED.p674, ud', BMED.p191, uɖ, DHED.p369, u:ɖ, BAHL.p18, u:ţ, NKEV.346, *uʔt, drink/swallow (v), #0090, V142, 1106,

- Pinnow 1959: V142 / MKCD: 1106 **hut*; **huut*; **huət*; **huc*; **huuc*; **huəc*

***bəʔt* 'contain/block (v)' (#0092-3)**

baʔd ,FR ,bad ,RSED.p47 ,boʔ ,BDBH.2027 ,bod ,Z1965.59 ,— ,— ,— ,— ,boaʔ ,PGEG.p11 ,bẹt' ,BSDV1.p275 ,bed' ,BMED.p21 ,beḍ ,DHED.p33 ,— ,— ,— ,— ,— ,contain/block (v) ,#0092 ,— , 1032,

- Pinnow 1959: — / MKCD 1032 **bat*; **buət*

***ʔt/*r* (Coda/Medial)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔd | d | ʔ | ḍ | r | — | — | r | r | r | r | r |

***pəʔt/*par(om)* 'cross (v)'**

pa'd, FR, pad, RSED.p200, poʔ, BDBH.1793, poḍ, DSGU#18931, paro(m), PKED.p155, (pakea), DSJU#25131, pwaʔ, PGEG.p39, par, CSED.p474, pa:rom, BMED.p144, parom, DHED.p262, parom, BAHL.p97, pa:r, NKEV.p331, *pəʔt, cross (v), #0085, , ,

The Sora and Gorum, Remo and Gutob, as well as Gtaʔ suggest a **pəʔt*. However, the *r* in Kharia and North Munda cannot be explained a a reflex of **pVʔt* or **pVd(Vm)*. Since the Sora, Gorum, Remo, Gutob, and Gtaʔ vowels are also consistent while the Kharia and North Munda vowels are inconsistent with any correspondece sets. This suggests that we have to assume a second etymon **par(om)* 'cross (v)', probably of Indo-Aryan origin.

***n* (Onset)**

no set for initial **n*

synchronic n~l variation in Gutob and Ho (check others)

All languages have words with initial /n/ and initial /n/ is particularly prominent in the deictical and pronominal domain. The lexemes beginning in /n/ are not well attested across the whole family.

***n*$_1$ (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| n | n | n | n | n | — | — | n | n | n | n | n |

***ten* 'trample (v)' (#0086-3)**

tin, FR, —, —, —, —, ten, Z1965.402, ten, PKED.p199, —, —, (ṭe), PGEG.p46, ten, CSED.p624, ṭhen, BMED.p185, ten, DHED.p347, ten, DSKW@1275, ten, DSKO#26831, *txn, trample (v), #0086, K306, 1153a,

- Pinnow 1959: K306 / MKCD: 1153a **t*$_1$*een*

***sən* 'chase (v)' (#0087-3)**

san, FR, san, RSED.p248, sensen, BDBH.2714, —, —, san, PKED.p176, (saŋgem), PJDW.p273, —, —, sen, CSED.p572, sen, BMED.p172, sen, DHED.p311, sen, BAHL.p138, sen(e), NKEV.p337, *sən, chase (v), #0087, V300, 899,

- Pinnow 1959: V300 / MKCD: 899 **təɲ*

***$n_2$* (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| n | n | ŋ | n | n | — | ŋ | n | n | n | ŋ | n |

***$I_{(23)}$sin* 'boil (v)' (#0046-4)**

asin, FR, əsin, RSED.p16, nsiŋ, BDBH.1641, isin, GZ65.173, isin, PKED.p81, isinɔ, JLIC.v65, nsiŋ, PGEG.p37, isin, CDES.p39, isin, BMED.p77, isin, DHED.p153, isiŋ, BAHL.p12, isin, Korku.txt.12071, *$I_{(23)}$sin*, boil (v), #0046, V86, 1137,

- Pinnow 1959: V86 / MKCD: 1137 **ciinʔ* (> Pre-Bahnaric **cin*); **ciən[ ]*; **cain[ ]*; 'cooked'

In contrast to the regular reflexes in **sən* 'chase (v)', Remo, Gtaʔ, and Korwa have *ŋ* instead of the expected *n* in *$I_{(23)}$sin* 'boil (v)'. The difference between **sən* 'chase (v)' and *$I_{(23)}$sin* 'boil (v)' is unexplained, the crucial difference is in all likelihood the **i* preceding the **n*.

***$N_3$* (Coda)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | n | ŋ | j/ɲʔ | m | ŋ | ∅ | ɲ | ŋ | ɲ | — | — |

Problematic set, maybe due to a conflation of distinct etyma with different etymological pre-nasal vowels.

***ɟVlVN* 'long/tall' (#0082-5)**

zuleŋa, FR, ɟele:n, RSED.p123, sileŋ, BDBH.2601, silej, AG08.p651, jhelo(g, b, m), PKED.p92, ɟaliŋ, PJDW.210, clæ, PGEG.p15, jeleŋ, CSED.p260, jiliŋ, BMED.p83, jiliŋ, DHED.p165, —, —, —, —, *ɟxlxN, long/tall, #0082, V340, 740,

- Pinnow 1959: V340 / MKCD: 740 **jiliiŋ* (& **jiliŋ*ʔ); **jla[i]ŋ* 'long'

The set **ɟVlVN* 'long/tall' displays unclear reflexes of a final nasal. The problems are aggravated by the fact that this might be a fused set of two or more etyma meaning long, tall, high, slim, and realted concepts all besed in the consonantal frame **ɟVlVN*, but with different vowels. If we assume that the character of the vowel preceding the nasal may influence the the form in certain languages, the problem of the different etyma with different vowels is fundamental for the reconstruction of the final nasal.

### **n* (Medial)

Reflexes of medial **n* remain unclear. The only well attested candidates are #0037 **lv₍₁₈₎(N)dv₍₂₀₎* and #0050 **tv₍₁₉₎ŋv₍₂₅₎n/tv₍₁₉₎nv₍₂₅₎ŋ*. Both have complicating factors. The nasal in #0037 **lv₍₁₈₎(N)dv₍₂₀₎* is only present in North Munda and part of cluster, while the two nasals in #0050 **tv₍₁₉₎ŋv₍₂₅₎n/tv₍₁₉₎nv₍₂₅₎ŋ* seem to under go non-adjacent metathesis obscuring the reflexes.

#### **lv₍₁₈₎(N)dv₍₂₀₎* 'laugh (v)' (#0037-3)

liɖa, FR, —, —, (ɖoɖo), BDBH.1283, luɖo, GZ65.228, laɖa, PKED.p202, lara, PJDW.p236, lwaʔ, PGEG.p32, lanɖa, CDES.p110, la:nɖa:, BMED.p102, landa, HOGV.p166, la:Nd, BAHL.p127, lanɖa, NKEV.p322, , laugh (v), #0037, V302, ,

#### **tv₍₁₉₎ŋv₍₂₅₎n/tv₍₁₉₎nv₍₂₅₎ŋ* 'stand (v)' (#0050-3)

tinaŋ, FR, tanaŋ, RSED.p, toŋ, BDBH.1490, tunon, AG08.p662, tuŋon, PKED.p201, toŋon, PJDW.p287, thwaN, PGEG.p46, teŋgon, CDES.p186, tiŋun, BMED.p187, tiŋgu, HOGV.p180, —, —, ʈengene, NKEV.p342, *txŋxn, stand (v), #0050, , 1824?,

- Pinnow 1959: V258 / MKCD: 1824 **taaw*

### Palatals

| voiceless | voiced | glottalized | nasal | | glide |
|---|---|---|---|---|---|
| (*c?) | *ʄ | *ˀc | *ɲ | *ɲˀ | *j |

Hypothesis: **c* merged with **s* (and **ʄ*) and reflexes are in **s₁* and **s₂* (as well as **ʄ*), see the correlation with data from MKCD below.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| z | ɟ | s | s | j | ɟ | c | j | j | j | j | j | *ʄ |

*ˀc (maybe mix of *ˀc, *jˀ, and *j?):

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔɟ | ɟ | ĭ | j | — | ɲ | ʔ | c’ | j | ʔ | ʔ | – | *ˀc |
| – | – | ĭ | j | ʔj | ɟ | ʔ | c’ | j | j | j | ∅ | *ˀc |
| – | ʔɟ | ĭ | j | ʔj | (i) | ʔ | c’ | iˀ | iʔ | i:ʔ | j | *ˀc |
| ʔɟ | ɟ | k’ | q | ʔj | j | g | c’ | j | iʔ | q | ch | *ˀc |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| j | j | ∅ | ? | ? | ? | ∅/w | ɲ | n | n | ɲ | n | *ɲ onset |
| ɲ | ɲ | ɲ (Ny) | ɲ | ɲ | ɲ? | ∅ | ɲ | ŋ | ɲ | ? | ? | *ɲ₁ |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ɲ | ŋ | ŋ | ɲ | ɲ | ŋ | ɲ | ŋ | ŋ | ? | ɲj | *ɲ$_2$ |
| ʔd | ɲ/ŋ | ʔ | 0 | ɲ | ŋ | ʔ | ɲ | ŋ | ɲ | ŋ | ɲj | *ɲ$^{ʔ}$ |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ɲ | — | ∅ | ɲ | ɲ | ∅ | y | y | y | — | y | *ɲ$_3$ |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| j | j | — | j | — | — | ∅? | — | — | — | — | — | *j |

### *c

The symmetry of the consonant system suggests that there was a proto-Munda *c and comparison with Shorto's reconstructions in the MKCD suggests that it was distinct from *s. However, the data is not clear on this at all. This is rather surprising, given that the reflexes of proto-Munda *ɟ – discussed in the section below — are very clear and regular.

- s-loss in Sora-Gorum unexplained which *s became ∅ (but see Zide 1987)
- merger of *s and *ɟ (and *c?) in Remo-Gutob

Unlike any other consonant phoneme, current Munda languages do not seem to have preserved proto-Munda *c as faithfully as other consonant phonemes. (holds for both voiceless stops and the other palatal stop)

see *s for sets and a more detailed discussion of proto-Munda *c.

| | | MKCD | proto-MK | proto-Munda |
|---|---|---|---|---|
| *c > *ɟ | #0002 | 488 | *c?aaŋ | *ɟaŋ |
| | #0015 | 1327 | *cuum | *ɟv$_{(10)}$m |
| | #0043 | 1409 | *[c]liəm? | *ɟal |
| | #0069 | 204 | *[c]nlu[u]? | *ɟəlu$_5$ |
| | #0095 | 528 | *ciəŋ | *ɟi$_2$ŋ(k) |
| *j > *ɟ | #0010 | 538 | *juəŋ | *ɟv$_{(7)}$ŋ |
| | #0029 | 994 | *[ ]jut | *ɟo$^{ʔ}$t |
| | #0082 | 740 | *jla[i]ŋ | *ɟVlVN |
| *c > *s | #0002 | 488 | *cii? | *sii$_3{}^{ʔ}$ |
| | #0048 | 1243 | *cap | *sa$^{ʔ}$p |
| | #0026 | 44 | *[c]uu? | *K$^{h}$Vsu |
| | #0028 | 1324 | *cim | *si$_2$m |
| | #0046 | 1137 | *ciin? | *I$_{(23)}$sin |
| *j > *s | #0021 | 1723 | *j[n]ŋəl | *sVŋəl |
| *t$_2$ > *s | #0075 | 31 | *t$_2$ŋii? | *siŋi |
| *t > *s | #0087 | 899 | *təɲ | *sɔn |
| *s > *s | #0055 | 160 | *srɔs | *xsər |

***ɟ***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z | ɟ | s | s | j | ɟ | c | j | j | j | j | j |

- devoicing and fronting (depalatalization) in Gutob-Remo; pM **ɟ* > proto-Gutob-Remo **s* (merger of **ɟ*, **s*, and probably **c*)
- fronting in Gorum pM **ɟ* > pSG > **ɟ* > Gorum /z/
- devoicing in Gtaʔ pM **ɟ* > /c/

### **ɟaŋ* 'bone' (#0002-1)

zaŋ, FR, əɟaŋ, RSED.p6, siʔsaŋ, BDBH.2614, sisaŋ, AG08.p651, jaŋ, PKED.p83, ɟaŋ, PJDW.p210, ncia, PGEG.p36, jaŋ, CDES.p19, ja:ŋ, BMED.p80, jaŋ, HOGV.p150, ja:ŋ, BAHL.p60, —, , ɟa(a)ŋ, bone, #0002, V7, 488, 31

- Pinnow 1959: V7 / MKCD: 488 **cʔaaŋ* ; **cʔaiŋ*; **cʔi[ ]ŋ*

### **ɟv(7)ŋ* 'foot' (#0010-2)

ziŋ, FR, ɟeːʔŋ, RSED.p123, suŋ, BDBH.1363, suŋ, GZ63.205, juŋ, PKED.p66, iɟiŋ, PJDW.p208, nco, PGEG.p114, jaŋga, CDES.p76, jaŋga, HLKS.182, —, —, —, —, (naŋga), NKEV.p327, , foot, #0010, V365, 538,

- Pinnow 1959: V365 / MKCD 538 **juŋ*; **juəŋ*; **jəŋ*; **jəəŋ*

### **ɟv(10)m* 'eat (v)' (#0015-1)

zum, FR, ɟom, RSED.p128, sum, BDBH.2667, som, GZ63.212, jom, HLKS.K274, ɟim, PJDW.p212, coŋ, PGEG.p15, jǫm, CDES.p60, jom, BMED.p84, jom, HOGV.p156, jom, BAHL.p63, jom, NKEV.p313, , eat (v), #0015, V385, 1327, 55

- Pinnow 1959: V385 / MKCD: 1327 **cuum*; **cuəm*; **cəm*; (**cim cim* >) **ncim*; **ciəm* (& **nciəm*?); **caim*

### **ɟoʔt* 'wipe (v)' (#0029-1)

zoʔd, FR, ɟoʔd, RSED.p126, susuʔ, BDBH.2698, sosod, GZ65.374, joʔḍ, PKED.p87, —, —, cuʔ, PGEG.p15, jǫt', CDES.p221, jod', BMED.p84, joḍ, HOGV.p88, joḍ, BAHL.p62, o:jo, NKEV.p329, *ɟoʔt, wipe (v), #0029, V190, 994,

- Pinnow 1959: V190 / MKCD: 994 **[ ]jut*; **[ ]juut*

### **ɟo(o)ʔ* 'fruit; bear fruit (v)' (#0030-1)

zoʔ, FR, ɟoːʔ, RSED.p125, suʔ, BDBH.2701, —, —, —, —, —, —, cu, PGEG.p15, jǫ, CDES.p80, jo, BMED.p83, joː, DHED.p83, joʔ, BAHL.p63, joː, NKEV.p313, *ɟo(o)ʔ, fruit / to bear fruit (v), #0030, V188, ,

- Pinnow 1959: V188 / MKCD: —

***ɟoˀk* 'sweep (v)' (#0031-1)**

zoʔ, FR, ɟoː, RSED.p126, suk', BDBH.2624, sog, AG08.p650, joʔ, PKED.p87, ɟɛnɔg, PJDW.p211, coʔ, PGEG.p15, jǫk', CDES.p194, joʔ, BMED.p85, joʔ, DHED.p167, —, —, ju-khɽi, NKEV.p313, *ɟoˀk, sweep (v), #0031, 190, ,

- Pinnow 1959: V190 / MKCD: —

***ɟal* 'to lick' (#0043-2)**

zaleˀb, FR, ɟaːl, RSED.p119, salep', BDBH.2523, sal, GZ63.228, jal, PKED.p82, janɔ, JLIC.v372, cca, PGEG.p14, jal, CDES.p112, jal, EM.p1965, jal, HOGV.p164, (jaɽaːʔ), BAHL.p60, jal, NKEV.p312, *ɟal, lick (v), #0043, V13, 1409,

- Pinnow 1959: V13 / MKCD: 1409 **[c]limʔ*; **[c]liəmʔ*; **[c]laim[ ]*

***ɟəlu*$_5$ 'meat' V$_2$ (#0069-1)**

—, —, ɟeluː, RSED.p123, sili/seli, BDBH.2599/2731, seli, AG08.p674, —, —, —, —, cili, PGEG.p15, jel, CDES.p120, jilu, BMED.p83, jilu, DHED.p165, —, —, jilu, NKEV.p311, *ɟəlu$_5$, meat, #0069, V228, 204?,

- Pinnow 1959: V228 / MKCD: —

A possibly connected MKCD etymon is MKCD 204 **[c]nlu[u]ʔ* 'edible grub' only attested in Bahnaric.

***ɟa(ˀt)* 'additive.particle' (#0079-1)**

zaˀd, FR, ɟaː, RSED.p117, sa, BDBH.2547, sa, AG08.p649, ja, HLKS.V1, ɟan, PJDW.p211, , , ja, BSDV3.p216, jaː, BMED.p77, jaː, DHED.p155, ja", DSKW.@09330, ja, DSKO.12141, *ɟa(ˀt), additive.particle, #0079, V1, ,

- Pinnow 1959: V1 / MKCD: —

***ɟVlVN* 'long/tall' (#0082-1)**

zuleŋa, FR, ɟeleːn, RSED.p123, sileŋ, BDBH.2601, silej, AG08.p651, jhelo(g, b, m), PKED.p92, ɟaliŋ, PJDW.210, clæ, PGEG.p15, jeleŋ, CSED.p260, jiliŋ, BMED.p83, jiliɲ, DHED.p165, —, —, —, —, *ɟxlxN, long/tall, #0082, V340, 740,

- Pinnow 1959: V340 / MKCD: 740 **jiliiŋ* (& **jiliŋ*?); **jla[i]ŋ* 'long'

As discussed above, this might be a fused set of two or more etyma meaning long, tall, high, slim, and related concepts all based in the consonantal frame **ɟVlVN*. The vowel alternations do not seem to affect the reflexes of the consonants **ɟ* and **l*.

***ɟi*$_2$*ŋ(k)* 'porcupine' (#0095-2)**

—, —, kənɟɪːŋ, RSED.p131, gisiŋreʔe, BDBH.858, —, —, jiŋray, PKED.p86, ɟiŋɛ, PJDW.p212, gcæiŋ, PGEG.p22, jhĩk, CSED.p268, jiki, BMED.p82, jiki, DHED.p165, jiːk, DSKW@09500, jikɽa, NKEV.p313, *ɟiŋ(k), porcupine, #0095, V318, 528/1883,

- Pinnow 1959: V318 / MKCD: 528 **cu[ə]ŋ*; **cəŋ*; **ciəŋ*

Looks like a combination of MKCD 528 and 1883 **[r]kus*; **[r]kuus*; **[r]kuəs*; **[r]k[iə]s*, e.g. **ciəŋ + [r]kuəs*.

### **ʔc*

The reflexes of the posited proto-Munda **ʔc* have more irregular correspondences than other coda obstruents. The palatal obstruent in the coda also produces more coarticulatory effects in the preceding vowel than other obstruents.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔɟ | ɟ | ǐ | j | — | ɲ | ʔ | c’ | j | ʔ | ʔ | – | 0006-3 |
| – | – | ǐ | j | ʔj | ɟ | ʔ | c’ | j | j | j | ∅ | 0051-3 |
| – | ʔɟ | ǐ | j | ʔj | (i) | ʔ | c’ | iʔ | iʔ | iːʔ | j | 0063-3 |
| ʔɟ | ɟ | k’ | q | ʔj | j | g | c’ | j | iʔ | q | ch | 0091-2 |
| (ʔd) | (d) | ʔ | j | ʔj | ɟ | ʔ | c | (e)ʔ | eʔ | ej | c | 0094-3 |
| ʔɟ | ɟ | ǐ | j | ʔj | j | ʔ | c’ | – | – | – | – | 0096-3 |

Juang and Mundari branch unclear, not enough data from Korku.

### **daʔc* ‘to climb’ (#0006-3)

ɖaʔɟ, FR, daɟ, RSED.p72, ɖaĭ, BDBH.1168, ɖaj, GZ65.79, —, —, ɖaɲ, PJDW.p186, ɖæʔ, PGEG.p16, dɐc’, CDES.p32, dej’, BMED.p40, deʔ, DHED.p81, deʔ, BAHL.p89, (cuɖe), NKEV.p298, daʔɟ, climb (v), #0006, V333, ,

- Pinnow 1959: V333 / MKCD: —

### **goʔc/goj* ‘die (v)’ (#0051-3)

(kiʔd), FR, (kajed), RSED.p133, goĭ, BDBH.975, goj, ZG65.139, goʔj, PKED.p63, gɔɟ, PJDW.p197, gweʔ, PGEG.p23, gọc’, CDES.p51, goj, BMED.p61, goj, DHED.p115, goej, BAHL.p46, go, NKEV.p306, *goj, die (v), #0051, K67 , ,

- Pinnow 1959: K67 / MKCD: —

Connect MKCD 1543 **ghuuy*; **ghuəy* ‘spirit, soul’ or less likely MKCD 805 **guc*; **guc* ‘to burn’?

### **i$_2$ʔc* ‘defecate (v)’ (#0091-2)

i̱j / iʔɟ, FR, gad-iɟ, RSED.p94, ik’, BDBH.88, ig, AG08.p652, iʔj, DSKH#12711, ij, DSJU#13371, æg, PGEG.p4, ic’, CSED.p244, ij’, BMED.p75, iiʔ, DHED.p150, iːq, BAHL.p16, ich, NKEV.p310, *ix, defecate (v), #0091, V81, 794,

- Pinnow 1959: V281 / MKCD: 794 **ʔic*; **ʔiə[c]*; **ʔ[ə]c*

***lv$_{(29)}$ʔc* 'stomach' (#0063-3)**

—, —, (loːʔɟ), RSED.p163, suloĭ, BDBH.2692, suloj, AG08.p651, la(i)ʔj, PKED.p119, (lai), JLIC.n57, slweʔ, PGEG.p43, lac', CDES.p188, laːiʔ, BMED.p101, laːiʔ, DHED.p204, laːiːʔ, BAHL.p123, laːj, NKEV.p323, *lv$_{(29)}$ʔc, stomach, #0063, K282, ,

- Pinnow 1959: K282 / MKCD: —

***roʔc* 'squeeze/milk (v)' (#0094-3)**

(ra'd), FR, (rad), RSED.p226, riʔ, BDBH.2276, roj, DSGU#2071, roʔj, PKED.p170, roɟ, PJDW.p268, rweʔ, PGEG.p41, roco, BSDV5.p98, roeʔ, EMV12.p3628, roːeʔ, DHED.p290, roej, DSKW@19520, ro(ː)c, NKEV.p335, *roʔc, squeeze/milk (v), #0094, V381, 1061,

- Pinnow 1959: V381 / MKCD: 1061 **ruut*; **ruət*; **rət*; **rat*; **rit*; **riit*; **riət*

Gorum /raʔd/ and Sora /rad/ fit better to the forms given in MKCD (in particular **ruət*, **rət*, and **rat*), but these two reflexes are clearly distinct form the remaining words clearly reflecting proto-Munda **roʔc*.

***gaʔc* 'to fry' (#0096-3)**

gaʔɟ ,FR ,gaɟ ,RSED.p95 ,gaĭ ,BDBH.766 ,gaj ,Z1965.120 ,gaʔj ,PKED.p165 ,gaj ,DSJU#10461 ,gæʔ ,PGEG.p19 ,gęc' ,CSED.p184 ,geʔ ,EMV5.p1411 ,— ,— ,— ,— ,— ,— ,*gaʔc ,fry/scrape (v) ,#0096 ,V15 ,(338a) ,

- Pinnow 1959: V15 / MKCD: (338a)

***ɲ$_1$* (Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ɲ | ɲ | ɲ (Ny) | ɲ | ɲ | ɲʔ | ∅ | ɲ | ŋ | ɲ | ? | ? |

***taɲ* 'to weave' (#0005-3)**

taɲ, FR, taɲ, RSED.p281, taNy, BDBH.1358, taɲ, GZ65.369, taɲ, PKED.p196, —, —, tæ, PGEG.p45, teɲ, CDES.p219, teŋ, BMED.p183, teɲ, HOGV.p187, —, —, —, —, taɲ, weave (v), #0005, V301, 898,

- Pinnow 1959: V301 / MKCD: 898 **t$_1$aaɲ*

***dO$_{(21)}$ɲ* 'cook (v)' (#0040-3)**

ɖęɲ, FR, diɲ, RSED.p80, ɖoNĭ, BDBH.1302, ɖoɲ, AG08.p664, ɖęɲ, PKED.p63, ɖɛɲ, PJDW.p187, ɖue, PGEG.p17, —, —, —, —, —, —, —, —, —, —, *dxɲ, cook (v), #0040, V342, 583,

- Pinnow 1959: V342 / MKCD: 583 **kɗaŋ*

***ɲ$_2$* (Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ɲ | ŋ | ŋ | ɲ | ɲ | ŋ | ɲ | ŋ | ŋ | ? | ɲj |

***tuɲ* 'shoot (v)' (#0027-3)**

tiŋ, FR, tuɲ, RSED.p299, tiŋ, BDBH.1368, tiŋ, GZ63.190, tuɲ, PKED.p196, tuɲ, PJDW.p288, ƭwiŋ, PGEG.p46, tuɲ, CDES.p173, tuiŋ, BMED.p180, tuŋ, HOGV.p177, , , ƭuɲj, NKEV.p343, , shoot (v), #0027, V107, 896a?,

- Pinnow 1959: V107 / MKCD: 896a?

MKCD 896a **t$_1$iɲ*; **t$_1$iiɲ*; **t$_1$iəɲ*; **t$_1$əɲ* 'to pluck, twang' could be related. Its meaning is generally 'to pluck a (stringed) instrument' which is rather close to 'to shoot with bow and arrow.'

***ɲ$^{ʔ}$* (Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔd | ɲ/ŋ | ʔ | ∅ | ɲ | ŋ | ʔ | ɲ | ŋ | ɲ | ŋ | ɲj |

The sequence /ɲʔ/ would be exceptional.

***bVɲ$^{ʔ}$(*bVV$^{ʔ}$ɲ?)* 'snake' (#0041-3)**

bubuʔd, FR, biɲ/biŋ, RSED.p59, bubuʔ, BDBH.1931, buƭbui, GGEG.p108, buɲam, PKED.p4, bubuŋ, PJDW.p172, boʔ, PGEG.p12, biɲ, CDES.p179, biŋ, BMED.p23, biɲ, HOGV.p178, bi:ŋ, BAHL.p108, biɲj, NKEV.p294, , snake, #0041, V353, 937,

- Pinnow 1959: V353; ; VW u/i; UM:i / MKCD: 937 **[b]saɲʔ*

MKCD 937 **[b]saɲʔ* is the prime candidate in MKCD. MKCD 1921a **ɓəs* is a less likely option.

This correspondence set differs significantly form the sets **ɲ$_1$* and **ɲ$_2$*. However, it remains unclear whether this set represents a separat proto-Munda phoneme **ɲ$^{ʔ}$* or whether the diverging correspondences reflect the presence of a glottal element in the coda and thus ultimately reflect **bVV$^{ʔ}$ɲ* or something similar. Either way, Gorum /ʔd/, Gutob /∅/ as well as Remo and Gta? /ʔ/ need an explanation.

The sequence **ɲ$^{ʔ}$* would be alluringly close to **ɲʔ* in MKCD 937. However, all evidence suggests that **ɲʔ* should simply become **ɲ* in proto-Munda.

Alternatively, two etyma – **bVɲ* and **bV$^{ʔ}$t* – could be posited.

***ɲ* (Onset)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| j | j | ∅ | — | y | — | ∅/w | ɲ | n | n | ɲ | n | 0052-1 |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| — | ɲ | — | — | ɲ | — | — | ɲ | n | n | ɲ | n | 0088-1 |
| n | ɲ | n | ∅ | ɲ | — | n? | ɲ | n | n | | j | 0100-1 |

The reflexes of **ɲ* in word initial position are decidedly different from the coda (or word final) reflexes.

****ɲvr*** **‘run (v)’ (#0052-1)**

jer, FR, jer, RSED.p88, ur, BDBH.155, —, —, yar, DSKH#12601, —, —, wir, PGEG.p9, ɲir, CDES.p164, nir, BMED.p132, nir, DHED.p246, ɲir, BAHL.p66, niɽe, NKEV.p328, *ɲxr, run (v), #0052, K294, 1602,

- Pinnow 1959: K294 / MKCD: 1602 **jar?*

Maybe two forms North Munda **ɲvr* and in the southern languages **jvr*?

****ɲam*** **‘get (v)’ (#0088-1)**

—, —, ɲam, RSED.p186, —, —, —, —, ɲam, PKED.p140, —, —, —, —, ɲam, CSED.p434, na:m, BMED.p126, nam, DHED.p241, ɲa:m, BAHL.p66, na, NKEV.p327, *ɲam, get (v), #0088, 5(?), ,

- Pinnow 1959: 5(?) / MKCD: —

****ɲUm*** **‘name’ (#0100-1)**

inum, FR, əɲam, RSED.p12, nimi, BDBH.1588, imi, AG.p645, (i)ɲimi, PKED.p140, —, — , mni, PGEG.p35, ɲum/ɲutum, CSED.p451/452, num/nutum, BMED.134, numu/nutum, DHED.p249, —, —, jimu, , *ɲUm, name, #0100, V279, 147,

- Pinnow 1959: V319 / MKCD: 259 **[hy]mu?*

****ɲ₃*** **(medial) variation ɲ**$_{j}$**∅**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ɲ | — | ∅ | ɲ | ɲ | ∅ | y | y | y | — | y |

****miɲam/*mayOm*** **‘blood’ (#0059-3)**

miam, FR, miɲam, RSED.p177, —, —, iam, GZ63.325, iɲam, PKED.p115, iɲam/iɲɑm, PJDW.p208, mia, PGEG.p33, maNyaNm, CDES.p18, ma:yom, BMED.p116, mayom, HOGV.p149, , , mayum, NKEV.p325, , blood, #0059, V303, 1430,

- Pinnow 1959: V303 / MKCD: 1430 **jhaam*; **jhiim*

****j***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| j | j | — | j | — | — | ∅ | — | — | — | — | — |

***roj/*roʔk* 'fly' (#0071-3)**

aroj, FR, əro:j, RSED.p14, (ayoŋ/ayuŋ), BDBH.39, uroj, GGEG.p93, (kɔnɖɔi), HLKS.K356, —, —, nɖroe, PGEG.p36, rọ, CDES.p76, roko, BMED.p161, roko, DHED.p291, roʔo, DSKW.19600, ruku, NKEV.p335, *roj, fly, #0071, K356, 1534,

- Pinnow 1959: K356 / MKCD: 1534 Pre-Proto-Mon-Khmer **ru[wa]y* > **ruy*; **ruuy*; **ruəy*; Pre-Proto-Mon-Khmer **ruhay*

Gtaʔ /nɖroe/ derives from pre-Gtaʔ **n(ḍ)roj*. Kharia kɔnɖɔi could derive from /kɔnrɔi/.

**Velars**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| k | k | k | k | k | k | k | k | k | k | k | k | **k* |

*$K^h$ (/k/$_{/h/}$∅): Pinnow (1959 p.232-234) **q* etc., seems to konsistently reflect MKCD **k* with no apparent reason for the variation /k/$_{/h/}$∅.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | etymon |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ? | ? | ∅ | ∅ | h | ? | h | h | h | h | h | kh | *$K^hV^ʔp$ |
| ∅ | ∅ | ∅ | ∅ | k | k | h | h | ∅ | ∅ | ∅ | ? | *$b(VK^h)x^ʔp$ |
| ∅ | ∅ | ∅ | ∅ | k | k | ∅ | h | h | h | h | k | *$K^h$xsu_ |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| g | g | g | g | g | g | g | g | g | g | g | g | **g* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔ | ʔ/∅ | k' | ʔ/g | ʔ | g | ʔ | k' | ʔ/∅ | ʔ | ʔ | ∅ | **ʔk* |

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ŋ | ŋ | ŋ | ŋ | ŋ | ∅ | ŋ | ŋ | ŋ | ŋ | ŋ | **ŋ₁* |
| ŋ | ŋ | ŋ | ? | ŋ | ? | ŋ | ɲ | ŋ | ɲ | ŋ | ŋ | **ŋ₂* |

***k***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| k | k | k | k | k | k | k | k | k | k | k | k |

***k$^{a}$la* 'tiger' (#0004-1)**

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *k$^{a}$la, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **kla?*

***ruNkO(ʔp)* 'husked rice' (#0068-4)**

ruŋk, FR, ruŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaɽ), BMED.p163, —, —, —, —, —, —, *ruNkO(ʔp), husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 **rk[aw]?*

Gtaʔ /rkoʔ/ is surprisingly close th Shorto's **rk[aw]?*.

***K$^{h}$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | etymon |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ? | ? | ∅ | ∅ | h | ? | h | h | h | h | h | kh | **K$^{h}$V$^{ʔ}$p* |
| ∅ | ∅ | ∅ | ∅ | k | k | h | h | ∅ | ∅ | ∅ | ? | **b(xK$^{h}$)V$^{ʔ}$p* |
| ∅ | ∅ | ∅ | ∅ | k | k | ∅ | h | h | h | h | k | **K$^{h}$Vsu* |
| ∅ | ∅ | ∅ | ∅ | k | k | h | h | h | h | h | k | **K$^{h}$a(a$^{ʔ}$)* |

There are a few instances of k$_{h}$∅ correspondences; see also Pinnow (1959) p.198-201. Pinnow (1959 p.232-234) **q* etc. ~

ADD: FISH 2WIND

***K$^{h}$a$^{ʔ}$p* 'bite (v)' (#0056-1)**

(kuʔb), FR, (kübʲ/kibʲ/kaibʲ), RSED.p144, op, BDBH.337, op, ZG63.7, hapkay, PKED.p73, —, —, haʔ, PGEG.p24, hap', CDES.p17, ha:b, BMED.p64, hab, DHED.p124, ha:p, BAHL.p146, khap, NKEV.p320, *K$^{h}$aʔp, bite (v), #0056, V294, 1231,

- Pinnow 1959: V294 / MKCD: 1231 **kap/*kaap*

***b(oK$^{h}$)V$^{ʔ}$p* 'head' (#0011-3)**

baʔb, FR, bo:ʔb, RSED.p60, bob, BDBH.2007, bob, GZ63.50, bokoʔb, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bǫhǫk', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, , head, #0011, V206, 361, 38

- Pinnow 1959: V206 / MKCD: 361 **[b]uuk*

### *$K^hv_{(4)}su$ ‘fever/pain’ (#0026-1) MISSING in CSV file

asu, FR, asu:/əsu:, RSED.p42, siʔ, BDBH.2610, isi, GGEG.p93, kosu/kusu, PKED.p107, kasu, PJDW.p220, aʔsu, PGEG.p4, haso, CDES.p135, ha:su, BMED.p67, hasu, HOGV.p147, hasu:, BAHL.p145, kaSu, NKEV.p315, *K$^h$xsu, fever/pain, #0026, V247, 44,

- Pinnow 1959: V247 / MKCD: 44 **[c]ɯɯʔ*

Gtaʔ *aʔsu* should have initial /h/ (so maybe *hasu*), the presence of /ʔ/ is unexplained and as is the lack of initial /h/. The two may be connected.

### **g*

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| g | g | g | g | g | g | g | g | g | g | g | g |

### **gəˀt* ‘cut (v)’ (#0013-1)

gaˀd, FR, gad, RSED.p93, goʔ, BDBH.1018, goʔ, AG08.p669, gaˀḍ, PKED.p60, , , gwaʔ, PGEG.p21, gɐt’, CDES.p44, ged’, EMV5.1411, geḍ, DHED.p111, geḍ, BAHL.p46, geʈ, NKEV.p306, gəˀt, cut (v), #0013, V334, 972,

- Pinnow 1959: V334 / MKCD: MKCD 972 **sgɯɯt*; **[s]gət*; **sgat*

### **gum* ‘winnow (v)’ (#0044-1)

gumar, FR, gum, RSED.p105, (giteʔ), BDBH.864, gim, GZ63.134, gum, PKED.p67, guŋ/guɲ, PJDW.p199, goŋ, PGEG.p20, gum, BSDV2.p490, gum, BMED.p214, gum, DHED.p120, gum, BAHL.p45, gum, NKEV.p307, *gum, winnow (v), #0044, K159, 1317,

- Pinnow 1959: K159 / MKCD: 1317 **gum*; **guum*; **g[əə]m*

### **goˀc/goj* ‘die (v)’ (#0051-1)

(kiˀd), FR, (kajed), RSED.p133, goĭ, BDBH.975, goj, ZG65.139, goˀj, PKED.p63, gɔɟ, PJDW.p197, gweʔ, PGEG.p23, gɵc’, CDES.p51, goj, BMED.p61, goj, DHED.p115, goej, BAHL.p46, go, NKEV.p306, *goj, die (v), #0051, K67 , ,

- Pinnow 1959: K67 / MKCD: —

Connect MKCD 1543 **ghɯɯy*; **ghuəy* ‘spirit, soul’ or less likely MKCD 805 **guc*; **guc* ‘to burn’?

### **geˀp* ‘to burn (vi)’ (#0058-3)

geˀb ,FR ,tuŋge:b ,RSED.p298 ,gep’ ,BDBH.967 ,geb ,GZ65.123 ,geb ,PKED.p61 ,— ,— ,giʔ ,PGEG.p19 , — ,— ,— ,— ,— ,— ,— ,— ,— ,— ,*geˀp ,burn (vi) ,#0058 , 156, ,

- Pinnow 1959: 156 / MKCD: —

***gəle* 'ear of corn' $V_1$ (#0077-1)**

gali, FR, gale, RSED.p96, gileker, DSBO.11781, gile, GTXT.7791, gɔlɛ, HLKS.V182, (ɔnɔ), PJDW.p255, (konto-ja), PGEG.p28, gele, CDES.p185, gele, EM.p1418, gele, DHED.p111, geleʔ, BAHL.p45, (kelɽa), NKEV.p317, *gxle, ear of corn, #0077, V182, 1577,

- Pinnow 1959: V182 / MKCD: 1577 **gur*; **guər*

***gam* 'say (v)' (#0080-1)**

—, —, gam, RSED.p96, —, —, gam, Z1965.121, gam, PKED.p57, gam, PJDW.p194, —, —, gam, CSED.p176, gamu, HLKS.V12, gamu, HLKS.V12, —, —, —, —, *gam, say (v), #0080, V12, ,

- Pinnow 1959: V12 / MKCD: —

***gur* 'fall/rain (v)' (#0089-1)**

gur, FR, gur, RSED.p92, gur, BDBH.914, gir, Z1965.132, gur, PKED.p68, gur, PJDW.p200, gur, PGEG.p21, gur, CSED.p207, gur, EMV5.p1535, gur, DHED.p122, —, —, guru, DSKO#10541, *gur, fall/rain (v), #0089, V106, 1579,

- Pinnow 1959: V106 / MKCD: 1579 **guur*

***gaʔc* 'to fry' (#0096-1)**

gaʔɟ ,FR ,gaɟ ,RSED.p95 ,gaĭ ,BDBH.766 ,gaj ,Z1965.120 ,gaʔj ,PKED.p165 ,gaj ,DSJU#10461 ,gæʔ ,PGEG.p19 ,gɐc' ,CSED.p184 ,geʔ ,EMV5.p1411 ,— ,— ,— ,— ,— ,— ,*gaʔc ,fry/scrape (v) ,#0096 ,V15 ,(338a) ,

- Pinnow 1959: V15 / MKCD: (338a)

***ʔk***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ʔ | ʔ/∅ | k' | ʔ/g | ʔ | g | ʔ | k' | ʔ/∅ | ʔ | ʔ | ∅ |

Hypothesis Remo /k'/ as a reflex of **ʔk* as opposed to nono-etymological /ʔ/.

***daʔk* 'water' (#0001-3)**

ɖaʔ, FR, daʔ, RSED.p70, dak', BDBH.1179, ɖaʔ, ZG63.85, ɖaʔ, PKED.p41, ɖag, PJDW.p185, ndiaʔ, PGEG.p36, dak', CDES.p217, da:, BMED.p31, daʔ, DHED.p73, da:ʔ, BAHL.p87, ɖa, NKEV.p300, da(a)ʔk, water, #0001, V2, 274, 75

- Pinnow 1959: V2 / MKCD: 274 **diʔaak* > **ɗaak*

***ɟoʔk* 'sweep (v)' (#0031-2)**

zoʔ, FR, ɟo:, RSED.p126, suk', BDBH.2624, sog, AG08.p650, joʔ, PKED.p87, ɟɛnɔg, PJDW.p211, coʔ, PGEG.p15, jǫk', CDES.p194, joʔ, BMED.p85, joʔ, DHED.p167, —, —, ju-khɽi, NKEV.p313, *ɟoˀk, sweep (v), #0031, 190, ,

- Pinnow 1959: V190 / MKCD: —

***Olaaˀ/*Ola(ˀk)* 'leaf' $V_1$ (#0035-4)**

olaʔ, FR, o:la:, RSED.p192, ulak', BDBH.169, olag, AG08.p633, ulaʔ, PKED.p298, olag, PJDW.p254, uliaʔ, PGEG.p124, palha, CDES.p111, pa:lha:o, BMED.p142, pala, DHED.p259, (sakam), BAHL.pdfp129, pa:la, NKEV.p331, , leaf, #0035, V50, 230,

- Pinnow 1959: V50 / MKCD: 230 **slaʔ*

The reflexes of **ˀk* in this set are irregular, if we assume that the North Munda reflexes and the reflexes of the other languages represent the same etymon. However, the loss of initial **p* outside of North Munda is irregular as is the correspondence set for $V_1$, suggesting two separate etymons — **xlaˀk* and North Munda *pxlx — both with (more) regular correspondences.

The *pala* forms are probably Indo-Aryan (Turner 7969)

***maraˀk* 'peacock' (#0081-5)**

(marraʔ), FR, ma:ra:, RSED.p173, —, —, —, —, maraʔ, PKED.p131, marag, PJDW.p242, —, —, marak', CSED.p407, ma:ra:, BMED.p114, mara:, DHED.p225, mara:q, BAHL.p117, mara, NKEV.p324, *maraˀk, peacock, #0081, V27, 416,

- Pinnow 1959: V27 / MKCD: 416 **mraik[ ]*

Gorum *marraʔ* 'husband' probably belongs to another etymon connected with MKCD 183 **mraʔ* 'person'.

***laˀk* 'to scrape' (#0093-3)**

laʔ, FR, —, —, —, —, lag, Z1965.205, laʔ, PKED.p118, lag, PJDW.p235, liaʔ, PGEG.p31, lak', CSED.p359, —, —, laʔ, DHED.p203, —, —, laʔ, DSKO.17551, *laˀk, scrape (v), #0093, —, 418,

- Pinnow 1959: — / MKCD: 418 **l[a]k*

***ŋ₁***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ŋ | ŋ | ŋ | ŋ | ŋ | ∅ | ŋ | ŋ | ŋ | ŋ | ŋ |

***ɟaŋ* 'bone' (#0002-3)**

zaŋ, FR, əɟaŋ, RSED.p6, siʔsaŋ, BDBH.2614, sisaŋ, AG08.p651, jaŋ, PKED.p83, ɟaŋ, PJDW.p210, ncia, PGEG.p36, jaŋ, CDES.p19, ja:ŋ, BMED.p80, jaŋ, HOGV.p150, ja:ŋ, BAHL.p60, —, , ɟa(a)ŋ, bone, #0002, V7, 488, 31

- Pinnow 1959: V7 / MKCD: 488 **c?aaŋ* ; **c?aiŋ*; **c?i[ ]ŋ*

****laŋ* 'tongue' (#0003-3)**

laŋ, FR, ələŋ, RSED.p158, leaŋ, BDBH.2423, la?ŋ, AG08.p638, laŋ, PKED.p173, elaŋ, PJDW.p191, nlia, PGEG.p36, alaŋ, CDES.p203, a:la:ŋ, BMED.p5, (le?), DHED.p208, a:la:ŋ, BAHL.p11, laŋ, NKEV.p322, la(a)ŋ, tongue, #0003, V14, , 44

- Pinnow 1959: V14 / MKCD: —

****ɟv$_{(7)}$ŋ* 'foot' (#0010-3)**

ziɲ, FR, ɟe:$^{?}$ŋ, RSED.p123, suŋ, BDBH.1363, suŋ, GZ63.205, juŋ, PKED.p66, iɟiŋ, PJDW.p208, nco, PGEG.p114, jaŋga, CDES.p76, jaŋga, HLKS.182, —, —, —, —, (naŋga), NKEV.p327, , foot, #0010, V365, 538,

- Pinnow 1959: V365 / MKCD 538 **juŋ*; **juəŋ*; **jəŋ*; **jəəŋ*

****v$_{(9)}$laŋ* 'thatch' (#0014-4)**

alaŋ, FR, ələŋ, RSED.p158, lɔŋ, BDBH.2437, uloŋ, AG08.p644, oloŋ, PKED.p214, oloŋ, PJDW.p254, nlo, PGEG.p36, —, —, —, —, —, —, —, —, —, —, *v$_{(9)}$laŋ, thatch, #0014, V270, 749,

- Pinnow 1959: V270 / MKCD: 749 **[p]laŋ*; **[p]laiŋ*

****sVŋəl* 'fuel' (#0021-3)**

aŋal, FR, aŋəl, RSED.p37, suŋo, BDBH.2638, suõl, GZ63.216, soŋgol, PKED.p186, sɛŋon, PJDW.p276, sua, PGEG.p43, sɐ̨ŋgɐ̨l, CDES.p73, seŋgel, BMED.p172, seŋgel, HOGV.p158, seNgel, BAHL.p137, —, —, *sxŋəl, fuel, #0021, V252, 1723,

- Pinnow 1959: V252 / MKCD 1723 **j[n]ŋəl*

/ŋg/ in Kharia, Santali, Mundari, Ho, and Korwas is probably secondary. Espeacially Gta? /sua/ and Gutob /suõl/ suggest that /g/ is not original.

****sVmaŋ* 'forehead/front' (#0038-5)**

amaŋ, FR, ammaŋ, RSED.p31, gutumoŋ, BDBH.885, sumoŋ/amuŋ, GZ65.21, so-moŋ/somo/sumaŋ, PKED.p185, ɛmɔŋ, PJDW.p191, ssæ, PGEG.p44, samaŋ, CDES.p79, sa:ma:ŋ, BMED.p167, sanamaŋ, HOGV.p159, samaŋ, BAHL.pdfp130, samma, NKEV.p336, , forehead/front, #0038, V269, ,

- Pinnow 1959: V269 / MKCD: —

Korku ∅ is irregular in this set and unexplained.

***bVtoŋ* 'fear' (#0039-5)**

butoŋ, FR, bato:ŋ, RSED.p55, butuŋ, BDBH.1922, butoŋ, GZ65.76, bɔtɔŋ (P), HLKS.V261, betɔŋan, JLIC.v239, bʈoʔ, PGEG.p14, —, —, botoŋ, BMED.p25, —, —, (bor), BAHL.p112, —, —, *bxtoŋ, fear, #0039, V261, 552,

- Pinnow 1959: V261 / MKCD: 552 *$ʔt_1$ɯɯŋ

Gtaʔ /ʔ/ is irregular, but probably a secondary addition to the CVCV word after the loss of proto-Munda **ŋ*.

***soŋ* 'buy/sell (v)' (#0060-3)**

oŋ, FR, —, —, suŋ, BDBH.2635, soŋ, GZ65.370, soŋ, PKED.p185, soŋ, PJDW.p278, so, PGEG.p42, —, —, —, —, —, —, —, —, —, —, *soŋ, buy/sell (vt), #0060, K209, ,

- Pinnow 1959: K209 / MKCD: —

Pinnow (1959, p. 224) connects Pal(aung) *jʌːŋ*, *jɔːŋ* 'to sell' and Mon *swɅ̃* 'to sell'.

***mv$_{(4)}$raŋ* 'big' (#0064-5)**

—, —, maraŋ/məraŋ, RSED.p173/167, munaʔ, BDBH.2121, (moɖo), AG08.p663, —, —, —, —, mnaʔ, PGEG.35, maraŋ, CDES.p17, maraŋ, BMED.p220, maraŋ, DHED.p225, —, —, —, —, *mxrxŋ, big, #0064, K107, ,

- Pinnow 1959: K107 / MKCD: —

Gtaʔ *mnaʔ* and Remo *munaʔ* are irregular reflexes of , especially the Gtaʔ form *mnaʔ* should be different, given our current understanding of the phonological developments, since a velar coda **aŋ* results in Gtaʔ /ia/ (as should /aʔ/). Remo and Gtaʔ /n/ are also inconsistent as reflexes or either **r* or **ŋ*. Gtaʔ *mnaʔ* and Remo *munaʔ* are consistently parallel to one another.

Gtaʔ and Remo /ʔ/ is irregular. Gtaʔ /ʔ/ might be explained as secondary adition to the CVCV word after the loss of proto-Munda **ŋ*, see also **bVtVŋ* 'fear'. Remo /ʔ/ cannot be explained by the same mechanism and remains unexplained.

***(saŋ)saŋ* 'tumeric' (#0072-3)**

saŋsaŋ, FR, sansaŋ, RSED.249, saŋsaŋ, BDBH.400, saŋsaŋ, GZ63.226, saŋsaŋ, PKED.p176, saŋsaŋ, PJDW.p268, ssia, PGEG.p42, sasaŋ, CDES.p230, sasaŋ, BMED.p157, sasaŋ, DHED.p307, —, —, sasan, Korku.txt.24491, *saŋsaŋ, turmeric/yellow, #0072, V271, ,

- Pinnow 1959: V271 / MKCD: —

While Sora /n/ in the first coda can be explained as a assimilation to the following /s/, Korku /n/ is unexpected and remains uneplained.

***ŋ$_2$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ŋ | ŋ | ? | ŋ | ? | ŋ | ɲ/ŋ | ŋ | ɲ | ŋ | ŋ |

This correspondence set is defined by a ŋ~ɲ variation, not found in **ŋ$_1$*. Gta? reflects **ŋ$_2$* as /ŋ/ instead of **ŋ$_1$* ∅.

MKCD 699 **d$_2$raŋ* and MKCD 549 **t$_1$uuŋ* suggest that these sets do not reflect a palatal **ɲ*, but a velar **ŋ*. However the set is substantially different from the sets grouped under **ŋ$_1$*. The difference cannot be explained. The palatalization in Santali and Ho may be explained by the front adjacent front vowels, although *sxŋəl_ 'fuel' (#0021-3) seems to be a parallel case without palatalization. Why **ŋ$_2$* does not become ∅ in Gta? is unclear.

This set shows a similar variation of *ŋ* and *ɲ* as **ɲ$_2$*. However, which languages features a velar or a palatal sound differs considerably.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ŋ | ŋ | ŋ | ? | ŋ | ? | ŋ | ɲ/ŋ | ŋ | ɲ | ŋ | ŋ | **ŋ$_2$* |
| ŋ | ɲ | ŋ | ŋ | ɲ | ɲ | ŋ | ɲ | ŋ | ŋ | ? | ɲj | **ɲ$_2$* |

****dərv$_{(6)}$ŋ* 'horn' (#0007-5)**

ɖeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ɖereŋ, PKED.p44, —, —, ɖiraŋ, PGEG.p17, dereɲ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89, —, —, *dərv$_{(6)}$ŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 UM: **e,*ɛ/* MKCD 699 **d$_2$raŋ*

****səreŋ* 'stone' (#0020-5)**

areŋ, FR, areŋ, RSED.p39, —, —, —, —, soreŋ, PKED.p187, —, —, —, —, —, —, sereŋ, BMED.p172, sereɲ, HOGV.p175, —, —, —, —, *səreŋ, stone, #0020, V183, ,

- Pinnow 1959: V183 / MKCD: —

****siŋi* 'sun' (#0075-3)**

—, —, —, —, siŋi, BDBH.2543, siN, AG08660, siŋ, PKED.p183, siŋ, PJDW.p244, sni, PGEG.p34, siɲ, CDES.p193, siŋi, BMED.p174, siŋi, DHED.p319, si:ŋ, BAHL.p136, —, —, *siŋi, sun, #0075, V286, 31,

- Pinnow 1959: V286 / MKCD: 31 **t$_2$ŋii?*

The nasalization in Gutob is unexpected, but consistent with the other sets in **ŋ$_2$* so far. Gta? /n/ is unexpected, but may be explained by assimilation to the preceding /s/. Ho /ŋ/ is unexpected and unexplained.

****tVŋ* 'kindle (v)' (#0062-3)**

tuŋ, FR, tuŋa:l, RSED.p297, —, —, —, —, tuŋgal, HLKS.V324, —, —, toŋ, PGEG.p42, tiŋgi, BSDV5.p461, tiŋ, BMED.p187, tiɲ, DHED.p353, —, —, ʈingi, NKEV.p343, *txŋ, kindle (v), #0062, V324, 549,

- Pinnow 1959: V324; VW i/u; UM:i/ MKCD: 549 *$t_1$ɯŋ

/ŋg/ in Kharia, Santali, and Korku is probably secondary, cf. also *sVŋVl 'fuel' above.

### *$ŋ_3$: irregular *ŋ/*k

#### *boŋtel/*bitkil 'buffalo' (#0054-3)

boŋtel, FR, boŋtel, RSED.p62, buŋte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNʈi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biʈkhil, NKEV.p294, *boŋtel, buffalo, #0054, , ,

Probably two separate etyma *boŋtel and North Munda *bitkil_. The form suggests some relation, but the two forms cannot be derived from proto-Munda by regular sound change.

/ŋt/ ~ /tk/

### *$ŋ_4$: irregular *ŋ/*ŋk/*k

#### *ɟi$_2$ŋ(k) 'porcupine' (#0095-3)

—, —, kənɟɪ:ŋ, RSED.p131, gisiŋreʔe, BDBH.858, —, —, jiŋray, PKED.p86, ɟiŋɛ, PJDW.p212, gcæiŋ, PGEG.p22, jhĩk, CSED.p268, jiki, BMED.p82, jiki, DHED.p165, ji:k, DSKW@09500, jikʈa, NKEV.p313, *ɟiŋ(k), porcupine, #0095, V318, 528/1883,

- Pinnow 1959: V318 / MKCD: 528 *cu[ə]ŋ; *cəŋ; *ciəŋ

Looks like a combination of MKCD 528 and 1883 *[r]kus; *[r]kɯus; *[r]kuəs; *[r]k[iə]s, e.g. *ciəŋ + [r]kuəs.

### irregular *ŋ/*n

#### *tv$_{(19)}$ŋv$_{(25)}$n/tv$_{(19)}$nv$_{(25)}$ŋ 'stand (v)' (#0050-3)

tinaŋ, FR, tanaŋ, RSED.p, toŋ, BDBH.1490, tunon, AG08.p662, tuŋon, PKED.p201, toŋon, PJDW.p287, thwaN, PGEG.p46, teŋgon, CDES.p186, tiŋun, BMED.p187, tiŋgu, HOGV.p180, —, —, ʈengene, NKEV.p342, *txŋxn, stand (v), #0050, , 1824?,

- Pinnow 1959: V258 / MKCD: 1824 *taaw

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | nasal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n | n | ŋ? | n | ŋ | ŋ | N? | ŋ | ŋ | ŋ | ? | ŋ | $N_1$ |
| ŋ | ŋ | ŋ? | n | n | n | N? | n | n | ∅ | ? | n | $N_2$ |

(Already discussed under **n*.)

### **N₃*: irregular **ŋ/*n/*∅*

#### **ruNkO(ʔp)* 'husked rice' (#0068-4)

ruŋk, FR, rʊŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaɽ), BMED.p163, —, —, —, —, —, —, *ruNkO(ʔp), husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 _*rk[aw]ʔ

The nasal cannot be reconstructed as **ŋ*, securely. The absense in some of the languages and the /ŋ/~/m/ variation in a velar context in Kharia make a reconstruction as **ŋ* problematic.

### Sibilants

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ∅ | s | s | s | s | s | s | s | s | s | s | *$s_1$ |
| s | s | s | s | s | s | s | s | s | s | s | s | *$s_2$ |

The difference between *$s_1$ and *$s_2$ is unexplained (see Zide 1987 for an proposal). The symmetry of the consonant system suggests that there was a proto-Munda **c* and comparison with Shorto's reconstructions in the MKCD suggests that it was distinct from **s*.

The working hypothesis would be that *$s_1$ and *$s_2$ are reflexes of **c* and **s*. However, which etymon can be reconstructed as **c* and which as **s* or whether the two had already merged at the proto-Munda stage is currently unknown.

#### *$s_1$* (Onset)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | ∅ | s | s | s | s | s | s | s | s | s | s |

*$s_1$ is defined by the s-loss in Sora-Gorum.

#### **sii₃ʔ* 'louse' (#0009-1)

(aŋiʔd), FR, iʔi, RSED.p109, gisi, BDBH.855, gisi, AG08.p651, seʔ, PKED.p258, ɛsɛ, PJDW.p192, gsi, PGEG.p23, se, CDES.p116, siku, BMED.p173, siku, HOGV.p165, guhi:, BAHL.p45, siku, NKEV.p338, $sii_2$ʔ, louse, #0009, V341, 39, 22

- Pinnow 1959: V341 UM: e,ɛ / MKCD: 39 **cii?* (& **ci?*?)

***səreŋ* 'stone' (#0020-1)**

areŋ, FR, areŋ, RSED.p39, —, —, —, —, soreŋ, PKED.p187, —, —, —, —, —, —, sereŋ, BMED.p172, sereɲ, HOGV.p175, —, —, —, —, *səreŋ, stone, #0020, V183, ,

- Pinnow 1959: V183 / MKCD: —

***sVŋəl* 'fuel' (#0021-1)**

aŋal, FR, aŋəl, RSED.p37, suŋo, BDBH.2638, suõl, GZ63.216, soŋgol, PKED.p186, sɛŋon, PJDW.p276, sua, PGEG.p43, sɐŋgɐl, CDES.p73, seŋgel, BMED.p172, seŋgel, HOGV.p158, seNgel, BAHL.p137, —, —, *sxŋəl, fuel, #0021, V252, 1723,

- Pinnow 1959: V252 / MKCD 1723 **j[n]ŋəl*

***sVmVŋ* 'forehead/front' (#0038-1) **$s_2$*?**

amaŋ, FR, ammaŋ, RSED.p31, gutumoŋ, BDBH.885, sumoŋ/amuŋ, GZ65.21, somoŋ/somo/sumaŋ, PKED.p185, ɛmɔŋ, PJDW.p191, ssæ, PGEG.p44, samaŋ, CDES.p79, sa:ma:ŋ, BMED.p167, sanamaŋ, HOGV.p159, samaŋ, BAHL.pdfp130, samma, NKEV.p336, , forehead/front, #0038, V269, ,

- Pinnow 1959: V269 / MKCD: —

The Remo form *gutumoŋ* is irregular and seems to be lacking the initial syllable **sx*. Gutob *amuŋ* and Juang *ɛmɔŋ* are also unexpected. Both instances might represent derivational changes and not a phonological loss of **s*. This leaves the possibility that the lack of /s/ in Gorum and Sora is also not the regular s-loss, but the result of some morphological process.

***sv*$_{(22)}$ 'plough (v)' (#0042-2) **$s_1$* or **$s_2$***

(or), FR, (or), RSED.p195, se, BDBH.2706, sui, AG08.p650, si, PKED.p143, si, PJDW.p276, si, PGEG.p42, si, CDES.p143, siu, BMED.p175, si:, HOGV.p170, si:, BAHL.p135, —, —, *sx, plough (v), #0042, V99, ,

- Pinnow 1959: V99 / MKCD: —

This etymon is unattested in Sora or Gorum. Because of this, it cannot be decided whether **sx* belongs to **$s_1$* or **$s_2$*. However, s-loss in Sora and Gorum would result in a verb root consisting of a single vowel. This would motivate the replacement of this lexeme in the two languages. For this reason, **sx* 'plough (v)' has been listed under **$s_1$*, but the available evidence und the current unerstanding of **$s_1$* or **$s_2$* does not allow for a final decision.

MKCD 1599 **bcuər* is not a good candidate.

***saˀp* 'grab (v)' (#0048-3) **$s_1$* or **$s_2$***

—, —, (sakab), RSED.p246, sop', BDBH.2748, sob, GGEG.p113, (suˀb), PKED.p188, sɔb, PJDW.p277, saʔ, PGEG.p42, sap', CDES.p28, sa:b, BMED.p163, sab, DHED.p296, sa:b, BAHL.pdfp131, sa:p, NKEV.p337, *sxˀp, grab (v), #0048, , ,

- MKCD 1236 **[c]kiip*; **[c]kiəp*; **t[$_1$]kiəp*; **ckap*; **t$_1$kap*; *ckuəp*
- MKCD 1243 *cap; *caap; *ciəp; *cip; *cup

The connection to MKCD 1236 is not strong. Reflexes of **t$_1$* should remain a stop, while the reflexes of the cluster **[c]k* are not well understood. It could be a case of type 2a cluster splitting by second consonant loss ($C_iC_{ii} \rightarrow C_i$). Thus **ckap* → **cap* → **sa$^{ʔ}$p* or **ckap* → **skap* → **sa$^{ʔ}$p*.

This etymon is unattested in Sora or Gorum. Because of this, it cannot be decided whether **sa$^{ʔ}$p* belongs to **s$_1$* or **s$_2$*.

### **soŋ* 'buy/sell (v)' (#0060-1)

oŋ, FR, —, —, suŋ, BDBH.2635, soŋ, GZ65.370, soŋ, PKED.p185, soŋ, PJDW.p278, so, PGEG.p42, —, —, —, —, —, —, —, —, —, —, *soŋ, buy/sell (vt), #0060, K209, ,

- Pinnow 1959: K209 / MKCD: —

Pinnow (1959, p. 224) connects Pal(aung) *jʌːŋ*, *jɔːŋ* 'to sell' and Mon *swɅ̃* 'to sell'.

### **sv$_{(6)}$bv$_{(12)}$l* 'sweet' (#0061-1)

—, —, —, —, subu, BDBH.2665, subul, AG08.p651, sebol, PKED.p180, —, —, —, —, sebel, CDES.p1194, sibil, EMV13.p3943, sibil, DHED.p316, sebel, DSKW.@21820, simil, NKEV.p338, *sv$_{(6)}$bxl, sweet, #0061, V257, ,

- Pinnow 1959: V257 / MKCD: —

### **siŋi* 'sun' (#0075-1) **s$_1$* or **s$_2$*

—, —, —, —, siŋi, BDBH.2543, siN, AG08660, siŋ, PKED.p183, siŋ, PJDW.p244, sni, PGEG.p34, siɲ, CDES.p193, siŋi, BMED.p174, siŋi, DHED.p319, siːŋ, BAHL.p136, —, —, *siŋi, sun, #0075, V286, 31,

- Pinnow 1959: V286 / MKCD: 31 **t$_2$ŋii?*

### **sv$_{(6)}$lv$_{(12)}$$^{ʔ}$p* 'gazelle' (#0084-1)

alu'b, FR, əleːb, RSED.p7, sulup, BDBH.2688, sulub, GGEG.p116, selhob, PKED.p180, silib, PJDW.p278, sloʔ, PGEG.p43, selep', CSED.p571, silib, BMED.p173, silib, DHED.p317, seleb, DSKW@21960, —, —, *sxlx$^{ʔ}$p, gazelle, #0084, V233, ,

- Pinnow 1959: V233 / MKCD —

### **s$_2$* (Onset)

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s | s | s | s | s | s | s | s | s | s | s | s |

### **K$^{h}$v$_{(4)}$su* 'fever/pain' (#0026-3)

asu, FR, asu:/əsu:, RSED.p42, siʔ, BDBH.2610, isi, GGEG.p93, kosu/kusu, PKED.p107, kasu, PJDW.p220, aʔsu, PGEG.p4, haso, CDES.p135, ha:su, BMED.p67, hasu, HOGV.p147, hasu:, BAHL.p145, kaSu, NKEV.p315, *K$^{h}$xsu, fever/pain, #0026, V247, 44,

- Pinnow 1959: V247 / MKCD: 44 **[c]uuʔ*

***si$_2$m* 'chicken' (#0028-1)**

—, —, kənsi:m, RSED.p131, gisiŋ, BDBH.856, gisiŋ, AG08.p651, siŋkoy, PKED.p183, sɛŋkɔe, PJDW.p275, gsæŋ, PGEG.p23, sim, CDES.p30, sim, BMED.p173, sim, HOGV.p151, si:m, BAHL.p135, —, —, *si$_2$m, chicken, #0028, V315, 1324,

- Pinnow 1959: V315 / MKCD: 1324 **cim*; **ciim*; **ciəm*; **caim*; **cum*

***usal* 'skin' V$_1$ (#0036-2)**

usal, FR, usal, RSED.p308, usa, BDBH.173, isa:l, HLKS.V149, usal, PKED.p300, chalo, PJDW.p180, ugsa, PGEG.p6, chal, CDES.p176, , , , , , , sa:li, NKEV.p337, , skin, #0036, V149, ,

- Pinnow 1959: V149 / MKCD: —

Juang and Santali /ch/ are unexpected and the lack of the initial vowel in Juang, Santali, and Korku suggest two distinct etyma.

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s | s | s | s | s | (ch) | s | (ch) | — | — | — | (s) |

***I$_{(23)}$sin* 'boil (v)' (#0046-2)**

asin, FR, əsin, RSED.p16, nsiŋ, BDBH.1641, isin, GZ65.173, isin, PKED.p81, isinɔ, JLIC.v65, nsiŋ, PGEG.p37, isin, CDES.p39, isin, BMED.p77, isin, DHED.p153, isiŋ, BAHL.p12, isin, DSKO.12071, *I$_{(23)}$sin, boil (v), #0046, V86, ,

- Pinnow 1959: V86 / MKCD: 1137 **ciinʔ* (> Pre-Bahnaric **cin*); **ciən[ ]*; **cain[ ]*; 'cooked'

***xsər* 'dry' (#0055-2)**

asar, FR, asar, RSED.p42, nsor, BDBH.1657, usor, AG08.p650, kosor, PKED.p155, kosor, PJDW.p229, nswar, PGEG.p37, —, —, —, —, —, —, —, —, —, —, *xsər, dry, #0055, V260, 160,

- Pinnow 1959: V183 / MKCD: 160 **rɔʔ*; **rɔs*, ( **rɔs rɔs* >?) **srɔs*

***əsel* 'white' (#0065-2)**

asel, FR, —, —, —, —, —, —, osel, PKED.p216, —, —, —, —, ẹsẹl, BSDV2.p343, esel, BMED.p56, esel, DHED.p102, hesel, BAHL.p149, esel, HLKS.V255, *əsel, white, #0065, V255, ,

- Pinnow 1959: V255 / MKCD: —

***(saŋ)saŋ* 'tumeric' (#0072-1)**

saŋsaŋ, FR, sansaŋ, RSED.249, saŋsaŋ, BDBH.400, saŋsaŋ, GZ63.226, saŋsaŋ, PKED.p176, saŋsaŋ, PJDW.p268, ssia, PGEG.p42, sasaŋ, CDES.p230, sasaŋ, BMED.p157, sasaŋ, DHED.p307, —, —, sasan, Korku.txt.24491, *(saŋ)saŋ, turmeric/yellow, #0072, V271, ,

- Pinnow 1959: V271 / MKCD: —

***sən* 'chase (v)' (#0087-2)**

san, FR, san, RSED.p248, sensen, BDBH.2714, —, —, san, PKED.p176, (saŋgem), PJDW.p273, —, —, sen, CSED.p572, sen, BMED.p172, sen, DHED.p311, sen, BAHL.p138, sen(e), NKEV.p337, *sən, chase (v), #0087, V300, 899,

- Pinnow 1959: V300 / MKCD: 899 **təɲ*

***bv*$_{(31)}$/*bv*$_{(31)}$*v*$_{(31)}$$^{ʔ}$/*bv*$_{(31)}$*sv*$_{(32)}$ 'sated (v)' (#0098-3)**

buʔ, FR, beʔ, RSED.p56, busu, BDBH.1960, busu, Z1965.72, beso/u, PKED.p20, bisu, PJDW.p14, bse, PGEG.p14, bi(ʔ), CSED.p67, bi:(ʔ)/biu, BMED.22, bi:, DHED.p35, bi:, BAHL.p106, —, —, *bx, be sated (v), #0098, V319, 259,

- Pinnow 1959: V319 / MKCD: 259 **bhiiʔ*

**Labials**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| l | l | l | l | l | l | l | l | l | l | l | l | *$l_1$ |
| l | **n** | ∅ | l | ɽ | ɭ | ∅ | l | l | l | l | l | *$l_2$ |
| l | l | ∅ | l | l | **n** | ∅ | l | l | l | l | l | *$l_3$ |
| l | l | ∅ | l | l | **r** | ∅ | l | l | l | l | l | *$l_4$ |

There is a consistent l-loss in final position in Remo and Gtaʔ. The reflex set *$l_2$ is only attested in one etymon – **kᵊla* 'tiger' – and the conditions for its development are not understood. The differences between *$l_1$, *$l_3$, and *$l_4$ are based on Juang. In Juang in some circumstances **l* occurs as /n/ (*$l_3$) and in some as /r/ (*$l_4$). The attested etyma for *$l_4$ are verbs with the form **tVl*.

***$l_1$***

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| l | l | l | l | l | l | l | l | l | l | l | l | |
| l | l | ∅ | l | l | l | ∅ | l | l | l | l | l | final |

The group *$l_1$* continues proto-Munda **l* consistently as /l/, except for the l-loss in final position in Remo and Gta?.

### **laŋ* 'tongue' (#0003-1)

laŋ, FR, ələŋ, RSED.p158, leaŋ, BDBH.2423, la?ŋ, AG08.p638, laŋ, PKED.p173, elaŋ, PJDW.p191, nlia, PGEG.p36, alaŋ, CDES.p203, a:la:ŋ, BMED.p5, (le?), DHED.p208, a:la:ŋ, BAHL.p11, laŋ, NKEV.p322, la(a)ŋ, tongue, #0003, V14, , 44

- Pinnow 1959: V14 / MKCD: —

### **v$_{(9)}$laŋ* 'thatch' (#0014-2)

alaŋ, FR, ələŋ, RSED.p158, lɔŋ, BDBH.2437, uloŋ, AG08.p644, oloŋ, PKED.p214, oloŋ, PJDW.p254, nlo, PGEG.p36, —, —, —, —, —, —, —, —, —, —, *v$_{(9)}$laŋ, thatch, #0014, V270, 749,

- Pinnow 1959: V270 / MKCD: 749 **[p]laŋ*; **[p]laiŋ*

### **bul* 'drunk (v)' (#0016-3)

bu̯l, FR, bu?ul, Sora.txt.18922, bu, BDBH.1900, bil, AG08.p672, bul, PKED.p39, buli, PJDW.p174, busa?, PGEG.p13, bul, CDES.p58, bul, BMED.p25, bul, HOGV.p155, bubul, BAHL.p108, bubul, NKEV.p70, , drunk, #0016, V105, 1765,

- Pinnow 1959: V105 / MKCD: 1765 **ɓul*; **ɓuul*

### **buluu$^{ʔ}$* 'thigh' (#0017-3)

bulu, FR, bulu:, RSED.p64, buli/bili, BDBH.1949/1890, bili, DSGU.2681, bhulu, PKED.p32, bulu, PJDW.p174, bulu, PGEG.p13, bulu, CDES.p199, bulu, BMED.p25, bulu, HOGV.p183, bu:l, BAHL.p109, bulu, NKEV.p295, *buluu$^{ʔ}$, thigh, #0017, V145, 223,

- Pinnow 1959: V145 / MKCD: 223 **bluuʔ*

### **bv$_{(13)}$lv$_{(11)}$* 'ripe' (#0018-3)

—, —, —, —, bulu, BDBH.1591, bulu, AG08.p644, belom, PKED.p19, bilim, PJDW.p167, ble, PGEG.p13, bele, CDES.p161, bili, BMED.p23, bili, HOGV.p156, bhi:li:, BAHL.p115, bili, NKEV.p293, *bv$_{(13)}$lv$_{(11)}$, ripe, #0018, V232, ,

- Pinnow 1959: V232 / MKCD: —
- MKCD 2080 **bl[ɔ]h* 'finished'
- MKCD 1878 **l?as* 'ripe'

***bal* 'to burn' (#0023-3) *$l_1$, *$l_3$, or *$l_4$**

Go. *bal*; So. *ba:l* (RSED.p49); Gu. *bal* (GZ65.43); Gt. *ba* (PGEG.p9); Sa. *bal* (BSDV1.p1840); Mu. *bal* (BMED.p18); Ho *bal* (HOGV.p151); Kw. *ba:l* (BAHL.p1050; Ko. *ba:l* (NKEV.p292)

- Pinnow 1959 — / MKCD —

**bal* is listed here under *$l_1$, but the lack of reflexes in Remo and Juang makes it possible that it belongs to *$l_3$ or *$l_4$.

***Olaaʔ/*Ola(ʔk)* 'leaf' $V_1$ (#0035-2)**

olaʔ, FR, o:la:, RSED.p192, ulak', BDBH.169, olag, AG08.p633, ulaʔ, PKED.p298, olag, PJDW.p254, uliaʔ, PGEG.p124, palha, CDES.p111, pa:lha:o, BMED.p142, pala, DHED.p259, (sakam), BAHL.pdfp129, pa:la, NKEV.p331, , leaf, #0035, V50, 230,

- Pinnow 1959: V50 / MKCD: 230 **slaʔ*

If the forms with intial *p* in North Munda belong to this set, Santali and Mundari /lh/ would suggest, that these correspondences constitute a separate set. However, these form probably belong to a separate set.

***usal* 'skin' $V_1$ (#0036-4)**

usal, FR, usal, RSED.p308, usa, BDBH.173, isa:l, HLKS.V149, usal, PKED.p300, chalo, PJDW.p180, ugsa, PGEG.p6, chal, CDES.p176, , , , , , , sa:li, NKEV.p337, , skin, #0036, V149, ,

- Pinnow 1959: V149 / MKCD: —

***lv$_{(18)}$(N)dx* 'laugh (v)' (#0037-1)**

liɖa, FR, —, —, (ɖoɖo), BDBH.1283, luɖo, GZ65.228, laɖa, PKED.p202, lara, PJDW.p236, lwaʔ, PGEG.p32, lanɖa, CDES.p110, la:nɖa:, BMED.p102, landa, HOGV.p166, la:Nd, BAHL.p127, lanɖa, NKEV.p322, , laugh (v), #0037, V302, ,

- Pinnow 1959: V302 / MKCD: —

***boŋtel/*bitkil* 'buffalo' (#0054-5) *$l_1$, *$l_3$, or *$l_4$**

boŋtel, FR, boŋtel, RSED.p62, buŋte, BDBH.1917, boŋtel, AG08.p647, boŋtel, PKED.p36, —, —, buNʈi, PGEG.p13, bitkil, CDES.p23, —, —, —, —, —, —, biʈkhil, NKEV.p294, *boŋtel, buffalo, #0054, , ,

Without an attested reflex of this etymon in Juang, it cannot be determined whether it belongs to set *$l_1$, *$l_3$, and *$l_4$.

Probably two separate etyma **boŋtel* and North Munda *bitkil_. The form suggests some relation, but the two forms cannot be derived from proto-Munda by regular sound change.

***sv$_{(6)}$bv$_{(12)}$l* 'sweet' (#0061-5)**

—, —, —, —, subu, BDBH.2665, subul, AG08.p651, sebol, PKED.p180, —, —, —, —, sebel, CDES.p1194, sibil, EMV13.p3943, sibil, DHED.p316, sebel, DSKW.@21820, simil, NKEV.p338, *sv$_{(6)}$bxl, sweet, #0061, V257, ,

- Pinnow 1959: V257 / MKCD: —

***lv$_{(29)}$ʔc* 'stomach' (#0063-3)**

—, —, (lo:ʔɟ), RSED.p163, suloĭ, BDBH.2692, suloj, AG08.p651, la(i)ʔj, PKED.p119, (lai), JLIC.n57, slweʔ, PGEG.p43, lac', CDES.p188, la:iʔ, BMED.p101, la:iʔ, DHED.p204, la:i:ʔ, BAHL.p123, la:j, NKEV.p323, *lv$_{(29)}$jʔ, stomach, #0063, K282, ,

- Pinnow 1959: K282 / MKCD: —

Juang *lai* is uncertain as JLIC gives the meaning navel. However, *l$_{3_}$, and **l$_4$* do not occur in inital position.

***əsel* 'white' (#0065-4) *l$_1$, *l$_3$, or *l$_4$**

asel, FR, —, —, —, —, —, —, osel, PKED.p216, —, —, —, —, ẹsẹl, BSDV2.p343, esel, BMED.p56, esel, DHED.p102, hesel, BAHL.p149, esel, HLKS.V255, *əsel, white, #0065, V255, ,

- Pinnow 1959: V255 / MKCD: —

***xli* 'liquor' (#0067-2) *l$_1$, *l$_3$, or *l$_4$**

ali, FR, əli/ali, RSED.p8, ili, BDBH.120, ili, AG08.p672, —, —, —, —, —, —, —, —, ili, BMED.p75, ili, DHED.p151, —, —, —, —, *xlx, liquor, #0067, V85, ,

- Pinnow 1959: V85 / MKCD: —

***ɟəlu$_5$* 'meat' (#0069-2) *l$_1$, *l$_3$, or *l$_4$**

—, —, ɟelu:, RSED.p123, sili/seli, BDBH.2599/2731, seli, AG08.p674, —, —, —, —, cili, PGEG.p15, jel, CDES.p120, jilu, BMED.p83, jilu, DHED.p165, —, —, jilu, NKEV.p311, *ɟəlu$_5$, meat, #0069, V228, 204?,

- Pinnow 1959: V228 / MKCD: —

A possibly connected MKCD etymon is MKCD 204 **[c]nlu[u]?* 'edible grub' only attested in Bahnaric.

***uli* 'mango (ripe)' (#0070-2)**

—, —, u:l, RSED.p304, uli, BDBH.171, ili, DSGU#4032, —, —, holɛ, PJDW.p205, uli, PGEG.p7, ul, CDES.p118, uli, BMED.p192, uli, DHED.p370, u:l, BAHL.p19, —, —, *xlx, mango (ripe), #0070, V144/V400e/K496, ,

- Pinnow 1959: V144;V400e;K496 / MKCD: —

***lutu(u$^{ʔ}$)r* 'ear' (#0073-1)**

lu$^{ʔ}$d, FR, lu$^{ʔ}$d, RSED.p165, luntur, BDBH.2386, litir, AG08.p652, lutur, PKED.p127, lutur/lutuʔ, PJDW.p239, nlug, PGEG.p36, lutur, CDES.p60, lutur, BMED.p110, lutur, DHED.p216, lutur, BAHL.p128, lutur, NKEV.p324, *lutu(u$^{ʔ}$)r, ear, #0073, V147, 1621,

- Pinnow 1959: V147 / MKCD: 1621 **kt$_2$uur*; **kt$_2$uər*

***ɟVlVN* 'long/tall' (#0082-3)**

zuleŋa, FR, ɟele:n, RSED.p123, sileŋ, BDBH.2601, silej, AG08.p651, jhelo(g, b, m), PKED.p92, ɟaliŋ, PJDW.210, clæ, PGEG.p15, jeleŋ, CSED.p260, jiliŋ, BMED.p83, jiliŋ, DHED.p165, —, —, —, —, *ɟxlxN, long/tall, #0082, V340, 740,

- Pinnow 1959: V340 / MKCD: 740 **jiliiŋ* (& **jiliŋ*?); **jla[i]ŋ* 'long'

As discussed above, this might be a fused set of two or more etyma meaning long, tall, high, slim, and related concepts all based in the consonantal frame **ɟVlVN*. The vowel alternations do not seem to affect the reflexes of the consonants **ɟ* and **l*.

***sv$_{(6)}$lv$_{(12)}$$^{ʔ}$p* 'gazelle' (#0084-4)**

alu'b, FR, əle:b, RSED.p7, sulup, BDBH.2688, sulub, GGEG.p116, selhob, PKED.p180, silib, PJDW.p278, sloʔ, PGEG.p43, selep', CSED.p571, silib, BMED.p173, silib, DHED.p317, seleb, DSKW@21960, —, —, *sv$_{(6)}$lv$_{(12)}$$^{ʔ}$p, gazelle, #0084, V233, ,

- Pinnow 1959: V233 / MKCD —

***la$^{ʔ}$k* 'to scrape' (#0093-1)**

laʔ, FR, —, —, —, —, lag, Z1965.205, laʔ, PKED.p118, lag, PJDW.p235, liaʔ, PGEG.p31, lak', CSED.p359, —, —, laʔ, DHED.p203, —, —, laʔ, DSKO.17551, *la$^{ʔ}$k, scrape (v), #0093, —, 418,

- Pinnow 1959: — / MKCD: 418 **l[a]k*

***l$_2$* (Medial/Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| l | n | ∅ | l | ɽ | ɭ | ∅ | l | l | l | l | l |

***k$^{ə}$la* 'tiger' (#0004-2)**

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɳoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *k$^{ə}$la, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **klaʔ*

***l$_3$* (Medial/Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| l | l | ∅ | l | l | n | ∅ | l | l | l | l | l |

***bVrəl* 'raw' (#0019-5)**

—, —, —, —, buro, BDBH.1937, burol, GZ65.74, borol, PKED.p25, boron, PJDW.p171, brwa, PGEG.p14, bẹrẹl, CDES.p211, berel, BMED.p21, berel, HOGV.p185, berel, BAHL.p111, boboɽ, NKEV.p294, *bxrəl, raw, #0019, V253, ,

- Pinnow 1959: V253 / MKCD: —

***sVŋəl* 'fuel' (#0021-5)**

aŋal, FR, aŋəl, RSED.p37, suŋo, BDBH.2638, suõl, GZ63.216, soŋgol, PKED.p186, sɛŋon, PJDW.p276, sua, PGEG.p43, sẹŋgẹl, CDES.p73, seŋgel, BMED.p172, seŋgel, HOGV.p158, seNgel, BAHL.p137, —, —, *sxŋəl, fuel, #0021, V252, 1723,

- Pinnow 1959: V252 / MKCD 1723 **j[n]ŋəl*

***bel* 'spread (v)' (#0022-3)**

bil, FR, bel/bɪ:l, RSED.p56/58, be-sak', BDBH.1982, be-sag, Z1965.50, bel, PKED.p18, bɛn, PJDW.p166, beʔ, PGEG.p11, bel, CDES.p184, bil, BMED.p24, bil, HOGV.p179, bel, BAHL.p111, (bi)bil, NKEV.p293, *bel, spread (vt), #0022, V221, 1761,

- Pinnow 1959: V221 / MKCD: 1761 **b[e]l* (**beel*?)

Gta? /ʔ/ is unexpected. However, DSGT#1651 (Chatterji) has *bE* 'to unroll' without a glottal stop. This form is probably best read as *bɛ* that is PGEG /be/, as opposed to DSGT#1691 *bEe* 'to send' which corresponds to PGEG /bæ/ 'to send' (from pre-Gta? **baŋ*).

***xrel* 'hail/pebble' (#0032-4)**

aril, FR, are:l, RSED.p39, are, BDBH.43, arel, HLKS.V225, arel, PKED.p7, aɭɛn, PJDW.p158, hare, PGEG.p24, arel, CDES.p88, a:ɽil, BMED.p10, aril, HOGV.p161, a:ril, BAHL.p10, —, —, *xrel, hail/pebble, #0032, V225, 1791,

- Pinnow 1959: V225 / MKCD: 1791 **pril*; **priəl*

***ɟal* 'to lick' (#0043-3)**

zaleˀb, FR, ɟa:l, RSED.p119, salep', BDBH.2523, sal, GZ63.228, jal, PKED.p82, janɔ, JLIC.v372, cca, PGEG.p14, jal, CDES.p112, jal, EM.p1965, jal, HOGV.p164, (jaɽa:ʔ), BAHL.p60, jal, NKEV.p312, *ɟal, lick (v), #0043, V13, 1409,

- Pinnow 1959: V13 / MKCD: 1409 **[c]limʔ*; **[c]liəmʔ*; **[c]laim[ ]*

Korwa *jaɽa:ʔ* with /ɽ/ is problematic. Even if it could be interpreted as parallel to Gorum and Gutob and thus reflecting **ɟalVˀp*, the form remains problematic especially since /ʔ/ is not an attested reflex of **ˀp*.

***dal* 'to cover' (#0047-3)**

ɖal, FR, dal, RSED.p73, ɖalu, BDBH.1210, ɖal, GZ65.80, ɖal, PKED.p42, ɖan, MJTL.p96, ɖa, PGEG.p16, dapal/daloƥ', CDES.p40, dapal/dālob, BMED.p35/36, dapal/dalop, HOGV.p153, —, —, da:l, NKEV.p299, *dal, cover (v), #0047, V3, 1745,

- Pinnow 1959: V3 / MKCD: 1745 **kdiil*; **kdiəl*; **kdəl*

***gəle* 'ear of corn' $V_1$ (#0077-3) *$l_1$, *$l_3$, or *$l_4$**

gali, FR, gale, RSED.p96, gileker, DSBO.11781, gile, GTXT.7791, gɔlɛ, HLKS.V182, (ɔnɔ), PJDW.p255, (konto-ja), PGEG.p28, gele, CDES.p185, gele, EM.p1418, gele, DHED.p111, gele?, BAHL.p45, (kelƫa), NKEV.p317, *gxle, ear of corn, #0077, V182, 1577,

- Pinnow 1959: V182 / MKCD: 1577 **gur*; **guər*

If Juang *ɔnɔ* is a genuine reflex of **gVlV*, it belongs to *$l_3$. However, the lack of an inital /g/ suggests that it is not connected. Accordingly, *gxlx_ 'ear of corn' can belong to *$l_1$, *$l_3$, or *$l_4$.

***tVrel* 'ebony' (#0083-5)**

—, —, tarel, RSED.p138, tire, BDBH.1390, —, —, ti(ƭr)(ei)l, PKED.p200, tɛrɛn, PJDW.p285, tre, PGEG.p46, terel, CSED.p626, tiril, BMED.p188, tiril, DHED.p355, —, —, —, —, *txrel, ebony, #0083, V227, ,

- Pinnow 1959: V227 / MKCD: —

***$l_4$ (Medial/Final)**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| l | l | ∅ | l | l | r | ∅ | l | l | l | l | l |

***tol* 'tie (v)' (#0024-3)**

tol, FR, tol, RSED.p292, tu, BDBH.1398, tol, AG08.647, tol, PKED.p288, tor, PJDW.p287, tu, PGEG.p46, tǫl, CDES.p201, tol, BMED.p186, tol, HOGV.p183, tol, BAHL.p84, ƭol, NKEV.p343, *tol, tie (v), #0024, V191, ,

- Pinnow 1959: V191 / MKCD: —

***tI$_{(24)}$l* 'bury (v)' (#0049-3)**

tul, FR, til, RSED.p288, ti, BDBH.1360, til, GZ65.408, til, PKED.p199, tir, PJDW.p284, —, —, (til), RSED.p288, (til), RSED.p288, —, —, ti:l, BAHL.p82, —, —, *txl, bury (v), #0049, —, —,

- Pinnow 1959: — / MKCD: —

**Rhotics**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| r | r | r | r | r | r | r | r | r | r | r | r | *$r_1$ |
| r | r | r | r | r | r | r | r | r | r | r | ɽ | *$r_2$ |
| r | r | r | r | r | ɭ | r | r | ɽ | r | r | — | *$r_3$ |
| — | r | **n** | — | — | — | **n** | r | r | r | — | — | *$r_4$ |
| ∅ | r | r | r | r | ∅ | r | r | r | r | — | r | *$r_5$ |

***$r_1$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| r | r | r | r | r | r | r | r | r | r | r | r |

***dərv$_{(6)}$ŋ* 'horn' (#0007-5) *$r_1$ or *$r_2$**

ɖeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ɖereŋ, PKED.p44, —, —, ɖiraŋ, PGEG.p17, dereɲ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89, —, —, *dərv$_{(6)}$ŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 UM: **e,*ɛ/* MKCD 699 **$d_2$raŋ*

***səreŋ* 'stone' (#0020-3) *$r_1$ or *$r_2$**

areŋ, FR, areŋ, RSED.p39, —, —, —, —, soreŋ, PKED.p187, —, —, —, —, —, —, sereŋ, BMED.p172, sereɲ, HOGV.p175, —, —, —, —, *səreŋ, stone, #0020, V183, ,

- Pinnow 1959: V183 / MKCD: —

***ri$^{?}$t* 'to grind' (#0025-1) *$r_1$ or *$r_2$**

ri$^{?}$d, FR, rid, RSED.p233, ri?, BDBH.2276, riɽ, GZ63.15, riɖ, PKED.p169, riɖ, PJDW.p266, rig, PGEG.p4, rit', CDES.p86, ri'd, BMED.p159, riɖ, DHED.p288, ri:ɖ, BAHL.p124, –, —, *ri$^{?}$t, grind (v), #0025, V76, 1056,

***tVru$_5$$^{?}$p* 'cloud' (#0034-3) *$r_1$, *$r_2$, or *$r_3$**

taru$^{?}$b, FR, tarub, RSED.p283, tirib, BDBH.1387, tirib, GZ65.416, tiri$^{?}$b, PKED.p287, — , —, trig, PGEG.p46, rimil, CDES.p33, rimil, BMED.p160, rimil, HOGV.p152, liNbir, BAHL.p127, —, —, , cloud, #0034, V285a, ,

- Pinnow 1959: V285a / MKCD: —

***xsər* 'dry' (#0055-4) *$r_1$ or *$r_2$**

asar, FR, asar, RSED.p42, nsor, BDBH.1657, usor, AG08.p650, kosor, PKED.p155, kosor, PJDW.p229, nswar, PGEG.p37, —, —, —, —, —, —, —, —, —, —, *xsər, dry, #0055, V260, 160,

- Pinnow 1959: V183 / MKCD: 160 **rɔʔ*; **rɔs*, ( **rɔs rɔs* >?) **srɔs*

***bVrV(ʔp/ʔk)* 'lung' (#0066-2) *$r_1$, *$r_2$, or *$r_3$**

buroʔb, FR, bəro:, RSED.p46, buruk', BDBH.1936, —, —, —, —, (buku), JLIC.n49, breʔ, PGEG.p14, bọrọ, CDES.p116, (borkod'), BMED.p25, (borkoɖ), DHED.p45, boro, BAHL.p112, , , , lungs, #0066, , ,

- Pinnow 1959: — / MKCD: —

***ruNkO(ʔp)* 'husked rice' (#0068-1) *$r_1$ or *$r_2$**

ruŋk, FR, ruŋkʊ, RSED.p239, ruŋku, BDBH.2291, rukug, AG08.p672, ruŋkuʔb/rumkuʔb, PKED.p171, ruŋkub, PJDW.p269, rkoʔ, PGEG.p41, —, —, (rukhaɽ), BMED.p163, —, —, —, —, —, —, *ruNkO(ʔp), husked rice, #0068, V139, 1820,

- Pinnow 1959: V139 / MKCD: 1820 _*rk[aw]ʔ

***roj/*roʔk* 'fly' (#0071-1)**

aroj, FR, əro:j, RSED.p14, (ayoŋ/ayuŋ), BDBH.39, uroj, GGEG.p93, (kɔnɖɔi), HLKS.K356, —, —, nɖroe, PGEG.p36, rọ, CDES.p76, roko, BMED.p161, roko, DHED.p291, roʔo, DSKW.19600, ruku, NKEV.p335, *roj, fly, #0071, K356, 1534,

- Pinnow 1959: K356 / MKCD: 1534 Pre-Proto-Mon-Khmer *ru[wa]y > *ruy; *ruuy; *ruəy; Pre-Proto-Mon-Khmer *ruhay

Gtaʔ /nɖroe/ derives from pre-Gtaʔ *n(ɖ)roj. Kharia kɔnɖɔi could derive from /kɔnrɔi/.

***lutu(uʔ)r* 'ear' (#0073-5)**

luʔd, FR, luʔd, RSED.p165, luntur, BDBH.2386, litir, AG08.p652, lutur, PKED.p127, lutur/lutuʔ, PJDW.p239, nlug, PGEG.p36, lutur, CDES.p60, lutur, BMED.p110, lutur, DHED.p216, lutur, BAHL.p128, lutur, NKEV.p324, *lutu(uʔ)r, ear, #0073, V147, 1621,

- Pinnow 1959: V147 / MKCD: 1621 *$kt_2uur$; *$kt_2uər$

Gorum and Sora *luʔd* as well as Gtaʔ *nlug* are not a regular reflex *lVtVr, but reflect *lxʔt without a final* *r_.

***maraʔk* 'peacock' (#0081-3)**

(marraʔ), FR, ma:ra:, RSED.p173, —, —, —, —, maraʔ, PKED.p131, marag, PJDW.p242, —, —, marak', CSED.p407, ma:ra:, BMED.p114, mara:, DHED.p225, mara:q, BAHL.p117, mara, NKEV.p324, *maraʔk, peacock, #0081, V27, 416,

- Pinnow 1959: V27 / MKCD: 416 *mraik[ ]

Gorum *marraʔ* 'husband' probably belongs to another etymon connected with MKCD 183 *mraʔ* 'person'.

***tVrel* 'ebony' (#0083-3) *$r_1$ or *$r_2$**

—, —, tarel, RSED.p138, tire, BDBH.1390, —, —, ti(ɽr)(ei)l, PKED.p200, tɛrɛn, PJDW.p285, tre, PGEG.p46, terel, CSED.p626, tiril, BMED.p188, tiril, DHED.p355, —, —, —, —, *txrel, ebony, #0083, V227, ,

- Pinnow 1959: V227 / MKCD: —

The variation of /ɽ/ and /r/ in Kharia is not attested elsewhere.

***gur* 'fall/rain (v)' (#0089-3)**

gur, FR, gur, RSED.p92, gur, BDBH.914, gir, Z1965.132, gur, PKED.p68, gur, PJDW.p200, gur, PGEG.p21, gur, CSED.p207, gur, EMV5.p1535, gur, DHED.p122, —, —, guru, DSKO#10541, *gur, fall/rain (v), #0089, V106, 1579,

- Pinnow 1959: V106 / MKCD: 1579 **guur*

***roˀc* 'squeeze/milk (v)' (#0094-1)**

(ra'd), FR, (rad), RSED.p226, riʔ, BDBH.2276, roj, DSGU#2071, roˀj, PKED.p170, roɟ, PJDW.p268, rweʔ, PGEG.p41, roco, BSDV5.p98, roeʔ, EMV12.p3628, ro:eʔ, DHED.p290, roej, DSKW@19520, ro(:)c, NKEV.p335, *roˀc, squeeze/milk (v), #0094, V381, 1061,

- Pinnow 1959: V381 / MKCD: 1061 **ruut*; **ruət*; **rət*; **rat*; **rit*; **riit*; **riət*

***per* 'to burn (of chilies) (vi)' (#0097-3) *$r_2$?**

per ,FR ,— ,— ,per ,BDBH.1756 ,per ,Z1975.294 ,— ,— ,— ,— ,pir ,PGEG.p38 ,pẹṛen ,CSED.p500 ,— ,— ,(pertol) ,DHED.p266 ,— ,— ,— ,— ,*per ,burn(chilies) (v) ,#0097 ,— , ,

- Pinnow 1959: — / MKCD: —

***$r_2$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| r | r | r | r | r | r | r | r | r | r | r | ɽ |

***bVrəl* 'raw' (#0019-3)**

—, —, —, —, buro, BDBH.1937, burol, GZ65.74, borol, PKED.p25, boron, PJDW.p171, brwa, PGEG.p14, bẹṛẹl, CDES.p211, berel, BMED.p21, berel, HOGV.p185, berel, BAHL.p111, boboɽ, NKEV.p294, *bxrəl, raw, #0019, V253, ,

- Pinnow 1959: V253 / MKCD: —

***ɲv$_{(26)}$r* 'run (v)' (#0052-3)**

jer, FR, jer, RSED.p88, ur, BDBH.155, —, —, yar, DSKH#12601, —, —, wir, PGEG.p9,

ɲir, CDES.p164, nir, BMED.p132, nir, DHED.p246, ɲir, BAHL.p66, niɽe, NKEV.p328, *ɲxr, run (v), #0052, K294, 1602,

- Pinnow 1959: K294 / MKCD: 1602 **jar?*

***r*$_{3}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| r | r | r | r | r | l | r | r | ɽ | r | r | — |

***xrel ‘hail/pebble’ (#0032-2)**

aril, FR, are:l, RSED.p39, are, BDBH.43, arel, HLKS.V225, arel, PKED.p7, aɭɛn, PJDW.p158, hare, PGEG.p24, arel, CDES.p88, a:ɽil, BMED.p10, aril, HOGV.p161, a:ril, BAHL.p10, —, —, *xrel, hail/pebble, #0032, V225, 1791,

- Pinnow 1959: V225 / MKCD: 1791 **pril*; **priəl*

***r*$_{4}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| — | r | n | — | — | — | n | r | r | r | — | — |

***mv$_{(4)}$raŋ ‘big’ (#0064-3)**

—, —, maraŋ/məraŋ, RSED.p173/167, muna?, BDBH.2121, (moɖo), AG08.p663, —, —, —, —, mna?, PGEG.35, maraŋ, CDES.p17, maraŋ, BMED.p220, maraŋ, DHED.p225, —, —, —, —, *mxrxŋ, big, #0064, K107, ,

- Pinnow 1959: K107 / MKCD: —

Gta? *mna?* and Remo *muna?* are irregular reflexes of , especially the Gta? form *mna?* should be different, given our current understanding of the phonological developments, since a velar coda **aŋ* results in Gta? /ia/ (as should /a?/). Remo and Gta? /n/ are also inconsistent as reflexes or either **r* or **ŋ*. Gta? *mna?* and Remo *muna?* are consistently parallel to one another.

***r*$_{5}$**

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gta? | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ | r | r | r | r | ∅ | r | r | r | r | — | r |

***bar ‘two’ (#0078-3)**

bagu, FR, bar, RSED.p48, mba?r, BDBH.2214, umbar, AG08.p646, ubar, PKED.p205, umba, PJDW.p291, mbar, PGEG.p34, bar, CSED.p42, baria, BMED.p20, bar, DHED.p27,

—, —, ba:r, NKEV.293, *bar, two, #0078, V49, 1562,

- Pinnow 1959: V49 / MKCD: 1562 **biʔaar* > **ɓaar*, Pre-Khmer **[ɓ]ir*, Pre-Palaungic &c. **ʔaar*

****ʔ/²***

Proto-Austro-Asiatic **ʔ* was probably lost in Proto-Munda. However, there are some indications that there was some glottal element in proto-Munda. Whether this is identical with the assumed **V²* discussed in the vocalism section or whether it constitues a separate phoneme **ʔ* is unclear.

****ɟV(V)²* 'fruit; bear fruit (v)'**

zoʔ, FR, ɟo:ʔ, RSED.p125, suʔ, BDBH.2701, —, —, —, —, —, —, cu, PGEG.p15, jo̤, CDES.p80, jo, BMED.p83, jo:(ʔ), DHED.p83, joʔ, BAHL.p63, jo:, NKEV.p313, *ɟx(x)ʔ, fruit / to bear fruit (v), #0030, V188, ,

**ɟV(V)²* 'fruit; bear fruit (v)' contrasts with **ɟVʔk* 'sweep (v)':

| Gorum | Sora | Remo | Gutob | Kharia | Juang | Gtaʔ | Santali | Mundari | Ho | Korwa | Korku |
|---|---|---|---|---|---|---|---|---|---|---|---|
| zoʔ | ɟo:ʔ | suʔ | | | | cu | jo̤ | jo | jo:(ʔ) | joʔ | jo: |
| zoʔ | ɟo: | suk | sog | joʔ | ɟɛnɔg | coʔ | jo̤k' | joʔ | joʔ | joʔ | ju |

Both feature a a coda with a very similar vowel and in most languages a glottal element.

Remo /ʔ/ versus /k/ seems to reflect the distinction. If this represents a genuine phonological distinction and not inconsistencies in BDBH, this would be crucial evidence for the reconstruction.

****kᵃla* 'tiger' (#0004-5)**

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *kᵃla, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **klaʔ*

****tii²* 'hand' (#0008-3)**

siʔ, FR, si:ʔ, RSED.p254, titi, BDBH.1370, titi, GZ65.p29, tiʔ, PKED.p199, iti, PJDW.p208, nti, PGEG.p37, ti, CDES.p89, ti, BMED.p186, ti:, DHED.p350, tiʔi:, BAHL.p63, ʈi, NKEV.p343, tiiʔ, hand, #0008, V75, 66, 48

- Pinnow 1959: V75 / MKCD: 66 **$t_1$iiʔ*

****sii₃²* 'louse' (#0009-3)**

(aŋiˀd), FR, iʔi, RSED.p109, gisi, BDBH.855, gisi, AG08.p651, seʔ, PKED.p258, ɛsɛ, PJDW.p192, gsi, PGEG.p23, se, CDES.p116, siku, BMED.p173, siku, HOGV.p165, guhi:, BAHL.p45, siku, NKEV.p338, $sii_{2}^{ʔ}$, louse, #0009, V341, 39, 22

- Pinnow 1959: V341 UM: e,ɛ / MKCD: 39 **cii?* (& **ci?*?)

****muuˀ* 'nose' (#0074-3)**

muʔ, FR, mu:ʔ, RSED.p179, nseʔmiʔ, BDBH.1653, miʔ, GZ63.262, romoŋ/romoˀɖ, PKED.p170, motɛʒ, PJDW.p245, mmu, PGEG.p34, muN, CDES.p129, mu/muhu, BMED.p121, muwa/muɽa, DHED.p238, hu:mu:, DSKW@23180, mu:, NKEV.p327, *mxxˀ, nose, #0074, , ,

- Pinnow 1959: V387 / MKCD: 2045 **muh*; **muuh*; **muus*

****ʒa; *ʒaaˀ; *ʒaˀt* 'additive.particle' (#0079-3)**

zaˀd, FR, ʒa:, RSED.p117, sa, BDBH.2547, sa, AG08.p649, ja, HLKS.V1, ʒan, PJDW.p211, , , ja, BSDV3.p216, ja:, BMED.p77, ja:, DHED.p155, ja", DSKW.@09330, ja, DSKO.12141, *ʒa(ˀt), additive.particle, #0079, V1, ,

- Pinnow 1959: V1 / MKCD: —

Gorum /ˀd/ and maybe Juang /n/ point to some alveolar element, but the other forms cosistenly relfect *ʒa_ or alternatively **ʒaaˀ*.

****bv(31)/bv(31)v(31)ˀ/bv(31)sv(32)* 'sated (v)' (#0098-3)**

buʔ, FR, beˀ, RSED.p56, busu, BDBH.1960, busu, Z1965.72, beso/u, PKED.p20, bisu, PJDW.p14, bse, PGEG.p14, bi(ʔ), CSED.p67, bi:(ʔ)/biu, BMED.22, bi:, DHED.p35, bi:, BAHL.p106, —, —, *bx, be sated (v), #0098, V319, 259,

- Pinnow 1959: V319 / MKCD: 259 **bhiiʔ*

## Relevant sound changes in branches or individual languages

to-be-done

s-loss: Sora-Gorum

l-loss: Remo, Gtaʔ

merger of **s* and **ʒ* (and **c*?) Remo-Gutob

palatal nasal and velar: various languages

coda neutralisation: Remo-Gutob, Gtaʔ

nasal loss in coda: Gtaʔ

diphthongisation: Gtaʔ

## List of Etyma #0001-#0100

to-be-done

#### #0001 **daˀk* 'water'

ɖaʔ, FR, daʔ, RSED.p70, dakʾ, BDBH.1179, ɖaʔ, ZG63.85, ɖaʔ, PKED.p41, ɖag, PJDW.p185, ndiaʔ, PGEG.p36, dakʾ, CDES.p217, da:, BMED.p31, daʔ, DHED.p73, da:ʔ, BAHL.p87, ɖa, NKEV.p300, da(a)ˀk, water, #0001, V2, 274, 75

- Pinnow 1959: V2 UM: **a* / MKCD: 274 **diʔaak* > **ɗaak*
- MKCD Pre-Proto-Mon-Khmer **diʔaak* > **ɗaak* (all branches), **[d]ik* (Pre-Khmer)
- Pinnow 1959: V2 UM:**a*; K89/K179d UM:**ʔ/k/g*; K398b UM:**d*

Proto-Sora-Gorum: **daʔ*; Proto Remo-Gutob: **daˀk*; Proto-Khewarian: _*daˀk

#### #0002 **ɟaŋ* 'bone'

zạŋ, FR, əɟaŋ, RSED.p6, siʔsaŋ, BDBH.2614, sisaŋ, AG08.p651, jaŋ, PKED.p83, ɟaŋ, PJDW.p210, ncia, PGEG.p36, jaŋ, CDES.p19, ja:ŋ, BMED.p80, jaŋ, HOGV.p150, ja:ŋ, BAHL.p60, —, , ɟa(a)ŋ, bone, #0002, V7, 488, 31

- Pinnow 1959: V7 / MKCD: 488 **cʔaaŋ* ; **cʔaiŋ*; **cʔi[ ]ŋ*

#### #0003 **laŋ* 'tongue'

laŋ, FR, əlaŋ, RSED.p158, leaŋ, BDBH.2423, laʔŋ, AG08.p638, laŋ, PKED.p173, elaŋ, PJDW.p191, nlia, PGEG.p36, alaŋ, CDES.p203, a:la:ŋ, BMED.p5, (leʔ), DHED.p208, a:la:ŋ, BAHL.p11, laŋ, NKEV.p322, la(a)ŋ, tongue, #0003, V14, , 44

- Pinnow 1959: V14 / MKCD: —

#### #0004 **kᵊla* 'tiger'

kulaʔ, FR, kina:, RSED.p140, ŋku, MVol.p733, gikil, AG08.p651, kiɽoʔ, PKED.p102, kiɭog, PJDW.p224, nku, PGEG.p36, kul, CDES.p201, kula:, BMED.p98, kula, HOGV.p183, ku:l, BAHL.p33, kula, NKEV.p319, *kᵊla, tiger, #0004, V281, 197,

- Pinnow 1959: V281 / MKCD: 197 **klaʔ*

#### #0005 **taɲ* 'to weave'

taɲ, FR, taɲ, RSED.p281, taNy, BDBH.1358, taɲ, GZ65.369, taɲ, PKED.p196, —, —, tæ, PGEG.p45, teɲ, CDES.p219, teŋ, BMED.p183, teɲ, HOGV.p187, —, —, —, —, taɲ, weave (v), #0005, V301, 898,

- Pinnow 1959: V301 / MKCD: 898 **$t_1$aaɲ*

**#0006 *$da^{ʔ}c$ 'to climb'**

ɖaʔɟ, FR, daɟ, RSED.p72, ɖaĭ, BDBH.1168, ɖaj, GZ65.79, —, —, ɖaɲ, PJDW.p186, ɖæʔ, PGEG.p16, dęc', CDES.p32, dej', BMED.p40, deʔ, DHED.p81, deʔ, BAHL.p89, (cuɖe), NKEV.p298, daʔɟ, climb (v), #0006, V333, ,

- Pinnow 1959: V333 / MKCD: —

**#0007 *$dəraŋ$ 'horn'**

ɖeraŋ, FR, deraŋ, RSED.p78, deruŋ, BDBH.1266, —, —, ɖereŋ, PKED.p44, —, —, ɖiraŋ, PGEG.p17, dereɲ, CDSE.p171, diriŋ, BMED.p49, diriɲ, HOGV.p162, dereŋ, BAHL.p89, —, —, dəraŋ, horn, #0007, V347, 699, 34

- Pinnow 1959: V347 / MKCD 699 *$d_2raŋ$

**#0008 *$tii^{ʔ}$ 'hand'**

siʔ, FR, si:ʔ, RSED.p254, titi, BDBH.1370, titi, GZ65.p29, tiʔ, PKED.p199, iti, PJDW.p208, nti, PGEG.p37, ti, CDES.p89, ti, BMED.p186, ti:, DHED.p350, tiʔi:, BAHL.p63, ţi, NKEV.p343, $tii^{ʔ}$, hand, #0008, V75, 66, 48

- Pinnow 1959: V75 / MKCD: 66 *$t_1ii$ʔ

**#0009 *$sii_3{}^{ʔ}$ 'louse'**

(aŋi$^{ʔ}$d), FR, iʔi, RSED.p109, gisi, BDBH.855, gisi, AG08.p651, seʔ, PKED.p258, ɛsɛ, PJDW.p192, gsi, PGEG.p23, se, CDES.p116, siku, BMED.p173, siku, HOGV.p165, guhi:, BAHL.p45, siku, NKEV.p338, $sii_2{}^{ʔ}$, louse, #0009, V341, 39, 22

- Pinnow 1959: V341 UM: e,ɛ / MKCD: 39 *$cii$ʔ (& *$ci$??)

Unexplained variation of *$i_1$, especially the constrast to *tii$^{ʔ}$_ 'hand' (#0008-2) is striking. Kharia /e/, Juang /ɛ/, and Santali /e/ cannot be explained. Pinnow (1959, p. 164 and p. 195) reconstructs proto-Munda *$e$/*$ɛ$. However, positing #0009-2 as a continuation of proto-Munda *$e$ (*$ɛ$) is also not consistent. MKCD 39 *$cii$ʔ also suggests proto-Munda *$sii^{ʔ}$.

**#0010 *$ɟv_{(7)}ŋ$ 'foot'**

zi̱ŋ, FR, ɟeːʔŋ, RSED.p123, suŋ, BDBH.1363, suŋ, GZ63.205, juŋ, PKED.p66, iɟiŋ, PJDW.p208, nco, PGEG.p114, jaŋga, CDES.p76, jaŋga, HLKS.182, —, —, —, —, (naŋga), NKEV.p327, , foot, #0010, V365, 538,

- Pinnow 1959: V365 / MKCD 538 *$juŋ$; *$juəŋ$; *$jəŋ$; *$jəəŋ$

This is a unique set with unclear reflexes.

Pinnow (1959, p. 169) says "…so bleibt der Vokalwechsel des Wortes für Fuß, Bein ein gänzlich ungelöstes Rätsel der austroasiatischen Sprachwissenschaft,…"

**#0011 *b(oK$^{h}$)V$^{ʔ}$p 'head'**

ba$^{ʔ}$b, FR, bo:$^{ʔ}$b, RSED.p60, bob, BDBH.2007, bob, GZ63.50, boko$^{ʔ}$b, PKED.p24, bokob, PJDW.p169, bhaʔ, PGEG.p13, bǫhǫk', CDES.p90, bo, BMED.p24, bo:ʔ, DHED.p40, boʔ, BAHL.p113, —, —, , head, #0011, V206, 361, 38

- Pinnow 1959: V206 / MKCD: 361 **[b]uuk*

The reflexes of $V_1$ in **b(oK$^{h}$)V$^{ʔ}$p* 'head' (#0011) – Kharia /o/, Juang /o/,Santali /ǫ/ – are too incomplete to assign the set to any correspondence set, unequivocally. #0011-2 is consistent with **o$_{1}$* and **o$_{2}$*.

**#0012 *mə$^{ʔ}$t 'eye'**

ma$^{ʔ}$d, FR, mo:$^{ʔ}$d/mad, RSED.p168, moʔ, BDBH.220, moʔ, AG08.p642, mo$^{ʔ}$ḍ, PKED.p195, ɛmɔḍ, PJDW.p191, muaʔ, PGEG.p34, mẽ̱t', CDES.p67, med', BMED.p117, meḍ, DHED.p228, meḍ, BAHL.p120, med, ZKPM.p48, mə$^{ʔ}$t, eye, #0012, V250, 1045, 40

- Pinnow 1959: V250 / MKCD: 1045 *mat

**#0013 *gə$^{ʔ}$t 'cut (v)'**

ga$^{ʔ}$d, FR, gad, RSED.p93, goʔ, BDBH.1018, goʔ, AG08.p669, ga$^{ʔ}$ḍ, PKED.p60, , , gwaʔ, PGEG.p21, gẹt', CDES.p44, ged', EMV5.1411, geḍ, DHED.p111, geḍ, BAHL.p46, geṭ, NKEV.p306, gə$^{ʔ}$t, cut (v), #0013, V334, 972,

- Pinnow 1959: V334 / MKCD: MKCD 972 **sguut*; **[s]gət*; **sgat*

Kharia *ga$^{ʔ}$ḍ* 'to reap' seems to be not widely used or even internally reconstructed from *gana$^{ʔ}$ḍ* 'sickle'. The vowel /a/ differs from Kharia /o/ in #0012 **mə$^{ʔ}$t* 'eye'.

**#0014 *v$_{(9)}$laŋ 'thatch'**

alaŋ, FR, əlaŋ, RSED.p158, lɔŋ, BDBH.2437, uloŋ, AG08.p644, oloŋ, PKED.p214, oloŋ, PJDW.p254, nlo, PGEG.p36, —, —, —, —, —, —, —, —, —, —, *v$_{(9)}$laŋ, thatch, #0014, V270, 749,

- Pinnow 1959: V270 / MKCD: 749 **[p]laŋ*; **[p]laiŋ*

Incomplete set, due to absence of $V_1$ in Remo and Gtaʔ and the absence of this etymon in North Munda. The reflexes suggest a central or bac vowel. MKCD: 749 **[p]laŋ/*[p]laiŋ* would favour epenthetic **ə*. (The loss of initial **p* seems from the current understanding irregular.)

**#0015 *ɟv$_{(10)}$m 'eat (v)'**

zum, FR, ɟom, RSED.p128, sum, BDBH.2667, som, GZ63.212, jom, HLKS.K274, ɟim, PJDW.p212, coŋ, PGEG.p15, jǫm, CDES.p60, jom, BMED.p84, jom, HOGV.p156, jom, BAHL.p63, jom, NKEV.p313, , eat (v), #0015, V385, 1327, 55

- Pinnow 1959: V385 / MKCD: 1327 **cuum*; **cuəm*; **cəm*; (**cim cim* >) **ncim*; **ciəm* (& **nciəm*?); **caim*