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**SPECIAL ISSUE (MT-SPECL)
OCTOBER 1999**

By the Association for the Study of
Language In Prehistory

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The Association for the Study of Language In Prehistory (ASLIP) is a nonprofit organization, incorporated under the laws of the Commonwealth of Massachusetts. Its purpose is to encourage and support the study of language in prehistory in all fields and by all means, including research on the early evolution of human language, supporting conferences, setting up a data bank, and publishing a newsletter and a journal to report these activities.

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Welcome to the Special Issue which is focused on South Asia or Greater India, pursuant to our long term interests there but also to much of the recent material published in MT-II and MT-III. The contents of the Special Issue are, as follows:

Electronic Channels: A hardworking team has broken through the passive resistance of the old guard and finally makes available to our colleagues multiple e-mail addresses and Web sites. The material explains itself. Michael Witzel and Mary Ellen Lepionka deserve special thanks for being the prime movers of this gain.

Michael Witzel's long article on South Asian prehistory through the Rig Vedas and other evidences of linguistic strata. Witzel's paper forms the main course of this repast and there is a great deal to chew on. Non-linguists are urged to read it, skipping the linguistic details (as you wish) and concentrating on the very meaty and exciting conclusions which he presents. Not least of these is a bold attempt to identify the language(s) spoken in the Indus Valley Civilization. Probably not Dravidian. More likely related to Munda. This would have pleased Igor Diakonoff greatly!

Feedback on South Asian sub-strates. Six colleagues agreed to comment on Witzel's paper. All but George Van Driem restricted themselves to two pages but George's contribution was so strong that we allowed nine! Asha Mundla, as the main author of MT-II, also got a bit extra. We thank the commenters because their thoughts will help Witzel and the rest of us deal with the vast complexity of Greater India. Also un-Trask-like they were polite and even generous in their treatment of Witzel, despite some quite trenchant things to point out! Three colleagues -- Zide, Diebold, Anttila -- did not respond for various reasons, though they may later in the Newsletter.

Among other things the commentators present a long-overdue look at the notion of sub-stratum, whose two facets differ in their results and interpretations. As (a) just borrowings from an earlier language in an area, or (b) adoption of an alien and intrusive language by an earlier population which eventually loses its own language. E.g., (a) Algonkian words in English, and (b) Egyptians drop Coptic to adopt Arabic.

New Taxonomy and Prehistory of Austronesian. Robert Blust strikes again in a masterful set of hypotheses. We reduced 60 pp to two!

Book Reviews

Daniel McCall reviews the one work in our joint endeavour to actually make some Best Seller lists. Guns, Germs, and Steel by Jared Diamond is tremendously interesting for ethnological historians like Dan McCall because of its comprehensiveness. Dan raises some astute points about the aims of 'history'.

C. John DiCara undertook a labor of love in trying to figure

out an ultra complicated book -- which this editor gave to him because I could not understand it. Just like the first volume of Chomsky, the whole problem is to understand the message. The subject lies at the interface between religion and psychological evolution. The issues are definitely not trivial!

Sue DiCara, eager to help us out, donated some material on Hopi (Amerind) origin myths which remind one of an old Near Eastern myth or two. Fascinating! We thank both DiCaras!

Some ASLIP Business

Many of you will find a small invoice type message deep in the heart of your issue. Most colleagues have yet to pay their 1999 dues and a considerable number have yet to pay those of 1998. The present treasurer, Peter Norquest, has been nice and kind, as is his inclination, so you have not been dunned regularly as you were when the fierce Fleming was collecting the money.

But there will be no MT-V, if you don't pay your dues. Simple as that. We have gone a way out on a limb to produce this Special Issue because we thought Witzel's theses were so important and should not wait another half year for publication. We need money. As so many of you have been generous in gifts, we would not mind if you did it again!

Malheureusement, we have the opportunity to select three new Fellows for the Council of Fellows. Members should send their nomination(s) for Fellows to Peter Norquest. Later on, he may arrange for a vote, as we had originally for these Fellows.

As everyone knows, Carleton Hodge left the Council for greener pastures, leaving a hole in our midst. Now we have to report two more equally bad bits of news. Thanks to Alan Bomhard for the first:

Karl-Heinrich Menges of the University of Vienna died at the age of 91 last month. He was an expert on Central Asia but also a hero of the German resistance to Nazism. He was a strong supporter of Mother Tongue almost from the beginning. There is an obituary in the New York Times of September 25th, 1999 or thereabouts, depending on which edition you read. Personally, I thought Dr. Menges was already 100 because he was so 'spry at 90', or so some of us thought from the Michigan conference in 1987.

Hardly less staggering, coming within a month of the Menges news, Michael Witzel told us the other one:

Igor Diakonoff of St. Petersburg (Russia) died sometime last Spring but the dates are confused as between several sources. Igor was more familiar to Long Rangers because of his numerous contributions to our discussions, the last being his Sumerian and Munda hypothesis which Witzel's work has perhaps supported.

I feel these three deaths quite deeply, since I regarded each as part of our core. And as friends. Time to mourn again!

10/1/99 ANNOUNCEMENT TO ASLIP MEMBERS

Through the efforts of Michael Witzel of Harvard University's Department of Sanskrit and Indian Studies, and others, ASLIP has a NEW WEB SITE up and running. Please see it at:

<http://www.fas.harvard.edu/~witzel/aslip.html>

and tell us what you think.

Especially, please alert us to any needed content changes, to features that you like and don't like, and to additional elements you would like to see.

Your comments, questions, and suggestions will guide further development of the web site. You may answer online or respond using the email addresses below of the members who have been instrumental in helping to build and actualize the new web site.

Your ideas for ways that you might contribute personally to the web site in the future are most welcome.

The web site exists to serve you, ASLIP's members, as well as to interest new members. How can our presence on the Internet best further the cause of explaining language origins through long-range linguistic comparisons in conjunction with theories and evidences from related fields of study?

In addition, please add your email address to the list below for ASLIP use, and mail it to Mary Ellen Lepionka, 17 Hammond St., Gloucester, MA 01930, USA. Alternatively, email your email address to Mary Ellen at **mlepionk@ma.ultranet.com** and to Peter Norquest at **norquesp@u.arizona.edu**.

If you would like to share your name and email address (or other contact data) with other members, please send the information to Michael Witzel at **witzel@fas.harvard.edu**, who will publish your information in the Member List on the web site. Also, do you have an inquiry you would like to make of members and/or visitors to the site, or an announcement, or information of interest to long rangers? Please send it to Michael.

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Early Sources for South Asian Substrate Languages

by

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*Ut somniorum interpretatio,
ita verborum origo;
pro cuiusque ingenio iudicatur**
Augustinus, 354-430 AD

*Es war die etymologische Arbeit,
was am Anfang der Linguistik
als Wissenschaft stand***
V.I. Abaev, 1952 CE

The recent articles in *Mother Tongue* on the isolated South Asian languages Burushaski, Nahali, and Kusunda offer a welcome peep into the complicated linguistic prehistory of the subcontinent. South Asia is, also in its genetics (L. Cavalli-Sforza 1994), a text book case for the continuing coexistence of many subsequent levels of immigrants. In fact, the subcontinent offers a virtual laboratory of linguistic, cultural and social systems. To echo H.C. Fleming, *MT* II 74: "... given India's role as cultural diffusion cul-de-sac of Asia, ... we may have missed the lower strata of prehistory after all!" Such items have kept me occupied, on and off, over the past few years. I offer some additional data here, and I will draw attention to some other remnants of ancient South Asian languages, most of which have come down to us only as substrates. In the following pages I will be brief with regard to cases that have been noticed before (Burushaski, Nahali and Kusunda, *MT* II and III), but I will add data from substrates not yet adequately recognized. Obviously, the more remote data we can acquire in this fashion, the better our chances will be for the reconstruction of the early settlement of (South) Asia and for the languages spoken by the first modern humans that entered the area several ten thousand years ago (see Cavalli-Sforza 1994).

I will concentrate on those areas of the subcontinent that are best known from early sources (the Vedas), that is the Panjab and parts of the Gangetic plains, and I will pay special attention those items that allow us to place such linguistic data in *place and time*. For there is

* "Just as the interpretation of dreams, thus the origin of words : it is determined according to one's own inclination (or, 'talent')."

** "It was etymological work that constituted the beginning of linguistics as a science", p.39 in: V. I. Abaev, *Die Prinzipien eines etymologischen Wörterbuchs*. Österreichische Akademie der Wissenschaften, Phil.-Hist. Kl., Sitzungsberichte 368, Heft 11, 1980, 29-45. German translation of the Russian paper in *Voprosy Yazykoznaniiya* 1952/5, 50 sq. -- I thank J. Bengtson, H. Fleming, and R. Wescott for their very careful reading of a slightly earlier version of this paper, and for many suggestions and improvements in style and substance. Any remaining errors are, of course, of my own making. I also thank the discussants of the same earlier version; the paper was written, indeed, to facilitate such discussions of the traditionally multilingual South Asia; such cooperation is sorely needed.

testimony enough for a number of additional languages that are of importance in this early period; they indicate that we have to rethink the substrate and adstrate relationships of the South Asian languages, even those belonging to the three major language families (Indo-European, Dravidian, Austro-Asiatic) found there.

All are in need of more detailed study by area specialists, who should provide the philological and linguistic background information so that comparativists can make use of them. I propose to do so, incrementally, for a few of the substrate languages mentioned below, especially those found attested in early texts (Vedic, Epic Sanskrit, and Pali).

These texts provide our most ancient sources for non-Indo-European (that is, non-Indo-Aryan) words in the subcontinent. The Vedas were orally composed (c. 1500-500 BC) in northern Pakistan and northern India. They are followed by Dravidian sources represented by the ancient Tamil "Sangam" (*Caṅkam*) texts of South India (from the beginning of our era); these are virtually unexplored as far as non-IA and non-Drav. substrates and adstrates are concerned. From a slightly earlier period come the Middle Indo-Aryan (MIA) Pali canon and the Epic texts (*Mahābhārata*, *Rāmāyaṇa*).

Since I am not a Dravidian specialist, I will concentrate on the Vedas, which are earlier than Drav. texts by at least a thousand years, and contain a host of so far comparatively little studied data. This procedure also has the advantage that the *oldest* linguistic data of the region are used, which is important because of the quick changes that some of the languages involved have undergone. Such changes obscure the relationships and make comparisons, based on later attested forms, more difficult (cf. below, §8, on Semitic loans, and cf. P. K. Benedict, *MT* III 93). So far, linguists have concentrated on finding Dravidian and Munda reflexes, especially in the oldest Veda, the *Ṛgveda* (RV). These studies are summed up conveniently in the etymological dictionaries by M. Mayrhofer (Indo-Aryan; *KEWA*, *EWA*), Th. Burrow - M.B. Emeneau (Dravidian; *DED*, *DEDR*), and in the work of F.B.J. Kuiper (Munda/Austro-Asiatic; 1948, 1955, 1991, Pinnow 1959). In addition, it has especially been F. Southworth who has done comparative work on the linguistic history of India (IA, Drav., Munda) during the past few decades; his book on the subject is eagerly awaited.

Sources

The oldest text at our disposal is the *Ṛgveda* (RV), in archaic Indo-Aryan (Vedic Sanskrit). It is followed by a number of other Vedic texts, usually listed as *Samhitās*, *Brāhmaṇas*, *Āraṇyakas* and *Upaniṣads*. Linguistically, however, we have to distinguish five distinct levels: *Ṛgveda*, other *Samhitās* (Mantra language), *Yajurveda Samhitā* prose, *Brāhmaṇas* (incl. *Āraṇyakas* and *Upaniṣads*) and the late Vedic *Sūtras* (Witzel 1987, 1997; for abbreviations of names of texts, their dates and their geographical location see attached list).

At the outset, it must be underlined that the Vedic texts excel among other early texts of other cultures in that they are "tape recordings"¹ of this archaic period. They were not allowed to be changed: not one word, not a syllable, not even a tonal accent. If this sounds unbelievable, it may be pointed out that they even preserve *special* cases of main clause and secondary clause intonation, items that have even escaped the sharp ears of early Indian grammarians. These texts are therefore better than any manuscript, and as good -if not better- than any contemporary inscription.

¹ A restricting factor is the middle/late Vedic redaction of the texts in question. However, this influenced only a very small, well known number of cases, such as the development : *Cuv* > *Cv*.

Consequently, these texts are invaluable as early sources for non-IA loan words in Vedic Sanskrit. Recently, F.B.J. Kuiper (1991) has prepared a very valuable collection of some 380 'foreign' words found in the RV. However his intention, in this particular book, was not to present etymologies but to demonstrate their non-IA type by phonetic and structural analyses. Some words indeed stand out immediately because of their non-IA phonetical shape (Burrow 1976), for example *busa* 'chaff, fog?' RV (cf. Pinnow 1959: 39), *ṛbīsa* 'oven/pit with coals, volcanic cleft' RV, *Bṛsaya* 'name of a sorcerer or demon' RV, *musala* 'pestle' AV, *kusīda* 'lending money' KS, TS, *Kusurubinda* 'name of a clan' TS, *Kosala* 'name of the Oudh territory' ŚB, etc. In IA, *s* is not allowed after (long or short) *i, u, e, ai, o, au, ṛ* and *k*. Many of the other words investigated by Kuiper (1991) are clearly of non-IA origin, but often neither of Munda or of Drav. origin. Kuiper occasionally gives Drav. and Munda etymologies but he also cautiously states that the word in question must belong to some unknown language. I think we can proceed further on this basis by adding a growing number of words from the later Vedic texts, especially from the more popular Atharvaveda, which contains several hundred sorcery spells abounding in non-IA words. The ensuing periods of Yajurveda Saṃhitās, Brāhmaṇas, Upaniṣads, and Sūtras, (see Witzel 1987, 1989 for geographical spread and chronology) have a large number of so far little studied loan words.

In the sequel, I will proceed geographically, region by region, indicating, in each case, the source of our knowledge. (Vedic accent marks are omitted, as they play no role in foreign words, see Kuiper 1991.)

§1. The Northwest

This is the area of the first Indo-Aryan influx into the subcontinent reflected by the hymns of the RV. It includes the mountainous regions of Afghanistan and Northern Pakistan as well as the plains of the Panjab. In the Veda we find few place names; river names, as ancient tribal boundaries, are much better attested. However, the R̥gvedic area is characterized by an almost total substitution of local river names by those of IA type, such as *Gomatī* 'the one having cows' (mod. *Gomal*), *Mehatnu* 'the one full of fluid', *Asiknī* 'the black one' (now *Chenab*).

Tribal names, much more difficult to locate, complement this account. Next to typical IA ones (*Druhyu* 'the cheaters', *Bharata* 'the ones who carry (sacred fire?).') There are many that have no plausible IA etymologies, including names such as: the *Gandhāri* tribe of *Gandhāra*, the area between Kabul and Islamabad in Pakistan; *Śambara*, a mountain chieftain; *Vaiyū* and *Prayiyū* (chieftains on the *Suvāstu*, modern Swat); *Mauja-vant*, a Himalayan peak. This is the typical picture of an intrusive element, the IA, overlaying a previous population. Unlike Northern America for example, only a few pre-IA river names have survived, such as: *Kubhā* (mod. Kabul river), *Krumu* (mod. Kurram), and maybe even the *Sindhu* (Indus); these have no clear or only doubtful IA/IE etymologies (see below).

North of this area, at the northern bend of the Indus (Baltistan/Hunza), Burushaski is spoken. However, the language and the tribal name are indirectly attested in this general area ever since the RV: **m/bruža* (mod. *burušo*) > Ved. *Mūja-vant*, Avestan *Muža* (see below).

However, already the RV contains a few words which are still preserved in Bur., such as Bur. *kilāy*, Ved. *kīlala* -'biestings, a sweet drink' RV 10.91.14, (note AV 4.11.10 next to the loan word *kīnāśa*, see below); *kīlala* cannot have a IA etymology (EWA I 358 'unclear'); continuants are found in Dardic (Khowar *kīlāl*), Nuristani (*kīlā* etc.), in later Skt. *kīlāṭa* 'cheese', cf. DEDR 1580 Tam. *kīlāṇ* 'curd'). For details see Kuiper 1955: 150f., Turner, CDIAL 3181, Tikkanen 1988. Further the following words (mostly treated in some detail further below),

• *mēṣ* 'skinbag', CDIAL 10343 < Ved. **maiṣiya* 'ovine', *meṣa* 'ram' RV,

- *gur* 'wheat' pl. *guriñ/gureñ* < **yorum, gurgán* 'winter wheat', cf. Ved. *godhūma*,
- *bras* 'rice', different from *briú* 'rice' (< Shina *briú*), cf. Ved. *vṛhi*,
- *bus* 'sheaf', CDIAL 8298, cf. Ved. *busa, br̥st* 'chaff'
- *ku(h)á* (Berger *yúá*) 'new moon', cf. Ved *kuhū* 'deity of new moon'.
- *yupas* (Berger *gupás*) 'cotton', cf. Ved. *karpāsa*, Kashm. *kapas*,
- *baluqa* 'stone' (in a children's game), cf. *báltaş* 'stone thrown at someone', cf. Ved. *paraśu* '(stone) ax', Greek *pélekus*, see EWA II, 214; J. Bengtson, by letter of 4/19/99, draws my attention to PEC **bilgwi* 'hammer' > Chechen *berg* 'pickax', Archi *burk* 'hammer'; as for *baluqa, báltaş* he also draws attention to PEC **bəHəɪV* 'hill, mountain' > Rutul *bäl* 'rock', etc.
- *bañ* 'resin of trees' ~ IIr *bhaṅga* 'hemp, cannabis', cf. Khowar *boñ*, or rather, with J. Bengtson (by letter) to be compared with PEC **bñiñkwV* 'pine tree' > Ingush *baga* 'resinous root of pine tree'.

In Proto-Burushaski (or in its early loans from the lowlands) and in the pre-Vedic Indus language there is interchange of *k/ś*, and retention of *-an-* (not > *-o-*, see below): Bur. *kilāy* : Ved. *kīlāla*, but *šon* 'blind one-eyed' : Ved. *kāṇa*;

- *yoro* (Berger *yuró*) 'stone, pebbles', cf. Ved. *śar-kara*, cf. also (Witzel 1999) *yoqares*, Berger *yókurac* 'raven', Ved. *kāka*; Ved. *yaśú* 'onion', cf. Ved. *laśuna*, Shina *kaśu*; J. Bengtson informs me, by letter of 4/19/ 99, of the following Caucasian connection: PNC **lēmžǐ* 'garlic' > Andi *raži*, Lak *lač:i*, or alternatively also Bur. *yaśú* and Basque *hausin* ~ *asun* 'nettle'; -- cf. also (?) Bur. *yon*, Berger *yúun* 'quail' with Ved. *laba*?

Most of the words from IA languages in Turner's CDIAL that have Bur. correspondences are, however, late loan words from the neighboring Dardic languages, especially from Shina and Khowar (cf. Lorimer 1937, Berger 1959, 1998). I merely mention those which are restricted to the Northwest and may have local substrate origins:

- *bəru* CDIAL 11313 < Ved. *varaṭa, barāṭa* 'seed of safflower' GS,
- *chomar, chumer, chumər* 'copper' 14496 : Skt. *cīmara-kāra*, Nur. (Ashkun) *čiməkāra*, Khowar *čúmur*, Shina *čiměr* etc.
- *ḍīru* 14547 < Shina *ḍīru, diḍu* < **ḍhidḍha* 'belly'
- *gindāwər* 4199 < Shina *gunēr* 'small tree with red berries', Skt. *gundra* 'Saccharum sara'
- *gupás* 2877 < Kashm. *kapas*, etc., Late Ved., Skt. *karpāsa* 'cotton plant'
- *kuyōc* 'subjects of a ruler' 14404 < Shina *kuōc, kuiōch*, **kūpatya*
- *mēṣ* 'skinbag' 10343 < **maīsiya* 'ovine', Ved. *meṣa* 'ram'
- *sinda* 13415 < **sind* (> Shina *sin* 'river', Dumaki *sina* 'river'), Ved. *sindhu*
- *taṣay* 5626 < Shina *tagá* 'mud' **tagga* 'mud'

Unfortunately the new dictionary by H. Berger does not contain etymological annotations going beyond CDIAL. For some initial ideas, see Witzel 1999. Further early evidence comes from the names in the Gilgit inscriptions and the Gilgit manuscripts of the later first mill. CE. (see v. Hinüber 1980, 1989, cf. Tikkanen 1988).

It has occasionally been maintained that Burushaski extended into the Panjab in earlier times (L. Schmid 1981, Tikkanen 1988), but the Vedic evidence does not support this. We cannot be sure exactly how far R̥gvedic geographical knowledge extended northwards, and how much practical interaction existed between RV and Proto-Burusho people. Yet, the RV knows of some small right side contributory rivers of the Indus that are located north of the confluence with the Kabul River; they have IA names: RV 10.75.6. *Tr̥ṣṭāma* '< *tr̥ṣ* 'the rough, (or) the dried up (river)', *Susartu* 'the one running well', *Rasa* 'the one full of sap', *Śveti* 'the white one'.

While it is questionable how far south Burushaski territory extended at this early time, some of the loan words mentioned above indicate that there was early contact. That extends perhaps also to medicinal and other herbs (cf. below on *Kirāta*), for it may be that the name of the *Burušo* is reflected by the RV mountain name *Mauja-vant* "having *Mūja* (people)", cf. the east Iranian equivalent, Avestan *Muža*. This is the mountain where the best Soma, a hallucinogenic plant, comes from. The RV and E. Iranian (Avestan) forms look like adaptations of the local self-designation, **Mruža*, Vedic *mūja-*, Avest. *muža*, and are attested since the middle of the first millennium in early Tib. *bru-ža*, Sanskritized *puruṣa* (von Hinüber 1989, 1980), local 10th cent. inscriptions *prūśava* (Jettmar 1989: xxxvii), mod. Bur. *Burušo*.

Phonetic reflexes of Bur. have been seen (Tikkanen 1988) in the Vedic (and Dravidian) retroflex consonants that have otherwise found a number of explanations, from a Dravidian substrate to an internal East Iranian and Vedic development. The occurrence of these sounds clearly reflects an areal feature that is strongest in the Northwest, but extends all the way to Tamil in the South, and has also influenced Munda to some extent. Below, it will be shown that it is an ancient feature of the Indus language as well, and that it must not be traced back to Bur. influence, which seems to have been limited, even in Ṛgvedic times, to the upper Indus valley.

Some early syntactic influence by Burushaski on Vedic in the formation of the Absolutive has been assumed by Tikkanen (1988); it is found already in earliest RV but only as past verbal adverb/conjunctive participle. This clearly S. Asian feature, unknown in the sister language of Vedic, Old Iranian, is also found in various degrees in Drav. and Munda, and may have been an early regional feature whose ultimate origin remains unclear (cf. Witzel 1999)

§2. Khowar

Another modern language in the same area is Khowar which belongs, along with Kashmiri, Swati, etc. to the Dardic branch of IA. In its phonetics and vocabulary, however, it shows a strong local substrate, similar to Burushaski. Unique for Khowar, however, is a particular substrate whose origin remains unclear so far. It seems that the Khowars are a late immigrant group who have taken over a Dardic language. Substrate(?) words in Khowar which are neither IA nor Burushaski include (Kuiper 1962: 11, cf. Morgenstierne 1947: 6, Lorimer 1935 : xxi): *yec* 'eye', *ap'ak* 'mouth', *krem* 'back', *camoṭh* 'finger', *iskī* 'heel', *askār* 'lungs'.

Kuiper (1962: 14) compares *yec* 'eye' with Bur. *yai(c)-*, *y'i-*, *ye-ic-* 'to appear, seem, be visible', and with *g'e-* 'to look, seem, appear', *da-g'e-* 'to peer' of the Munda language Sora and with Parengi *gi-* 'to see'. (Differently, Morgenstierne, FS Belvalkar, 2nd section p. 91.)

For Bur. loans in Dardic and in Nuristani see Tikkanen 1988: 305 (*cumar* 'iron', *ju* 'apricot', etc.), cf. Fussman 1972 II, 37 sqq.; Lorimer 1938: 95, Morgenstierne 1935: xxi sqq., 1947: 92 sqq.; Schmidt 1981, Berger 1998.

Finally, one must be open to assume the influence of other substrate languages in the Hindukush/Pamir areas. There are local personal names such as RV *Śambara Kaulitara* and his father **Kulitara* who are 'in the mountains', *Prayiyu* and *Vayiyu* in Swat; names of demons (as always, intentionally confused with those of real, human enemies) such as *Cumuri*, *Namuci*, *Uraṇa*, *Arbuda*, *Pipru*, *Śambara*; tribal names such as *Gandhāri*, *Dṛbhika(?)*, *Varcin(?)*; river names such as *Gandhāra*, *Krumu*, *Sindhu(?)*. Note also that the Avesta (V.1) speaks about some of these areas, notably *Varəna* (Varṇu) as *an-airiia* 'non-Aryan'.

§3. The Kashmir substrate.

The prehistory of Kashmir is little known. In the Neolithic, there were relations with Central Asia and China, but the influence of the Indus civilization (2600-1900 BCE) is strong and long-lasting; of course, this does not tell us anything about the language(s) spoken then. Unfortunately, the Vedic texts, which know of the neighboring Indus valley do not mention Kashmir by name. It is first mentioned by name only by the grammarian Patañjali (150 BCE). The native Kashmiri texts (Rājatarāṅgiṇī, Nīlamata Purāṇa, cf. Witzel 1994, Tikkanen 1988, L. Schmid 1981), however, know of the previous populations, the Piśāca 'ghouls' and the Nāga 'snakes' (that can change into human shape at will). These are common Indian names for 'aboriginals'; cf. the Tib.-Burm. Naga tribe on the Burmese border. Yet, these designations may retain some historical memory. The chief of the Piśāca is called *Nikumbha* (*Nikumba* in Milindapañho), and the Nāgas have such 'foreign' names such as *Karkoṭa*, *Aṭa*, *Baḍi*, *Bahabaka*, *Cāṭara*, *Cikura*, *Cukkaka*, etc. The list of some 600 Kashmir Nāga names in the local Nīlamatapūrāṇa contains many such non-Sanskritic names; they have not been studied (see Witzel, in press).

An interesting case is that of a tribe in or near Kashmir that is attested only in 550/600 CE: the *Kīra* (Bṛhatsaṃhitā 14.29, c. 550 CE). Its name is close to that of the *Kirāta* who are attested in the early inscriptions of Nepal (464 CE sqq.) but who already appear in the Atharvaveda (c. 1200 BCE). Hsuan Ts'ang, Hsiyuki (c. 600 CE, cf. T. Funayama 1994: 369) knows of them as *Kilito* (Karlgren 1923, no. 329-527-1006), a people in Kashmir who had their own king shortly before his time. The *-ta/ -ṭa* suffix is common in many North Indian tribal names (Witzel 1999, cf. below).

The rich medieval Kashmiri literature in Skt. has preserved other substrate words, such as the river and place names: *Ledarī*, a river in the SE of the Valley (also in the place name *Levāra* < *Ledarī-agrahāra*); *-muṣa*, a 'suffix' in the names of several villages: *Khonamuṣa* (mod. Khun^amoh), *Katīmuṣa*, (mod. Kaimoh, next to *Kati-kā*), *Rāmuṣa* (mod. Ramuh); also, the *Pañcāla-dhāra* mountain, (mod. (Pir) *Pantsāl* range, south of the Valley), may reflect an old name, cf. the Ved. tribal name *Pañcāla*, and Grierson, Dict. of Kashmiri III : 744; cf. Nepali *himal* 'Himalaya range', CDIAL 14104. Such names have not been studied in detail (cf., however, L. Schmidt 1981, Witzel 1993).

Just as in Northern India and Nepal, most river and place names in Kashmir have been Sanskritized, or they have been transmitted in their Middle Indian forms (e.g., the *Mahurī* river in N. Kashmir < Skt. *madhurī* 'the sweet one'. Frequently, like many Indian place names, they have been "telescoped" beyond recognition (e.g. Ved. *Kāpiṣṭhala* > Kaithal, *Rohitakakūla* > Rohtak, Class. Skt. *Pāṭaliputra* > Patna, *Nāgapura* > Nagor, *Indrapaṭṭana* > Indarpat, or the river (Pali) *Sundarikā* > Sai); thus we have, in Kashmir: *Kuru-agrahāra* > Skt. *Kuruhāra*, *Levāra* (above). Such shortening is not unheard of elsewhere (e.g., New Orleans [nɔ'ɔrlɪnz] or [aʃəberg] for Aschaffenburg near Frankfurt; Worcester [wʊstə], or as John Bengtson tells me, Engl. Featherstonehaugh [fæɪnʃɔ], Cholmondeley [çɒmli], cf. further below, on Nepal); however, this feature seriously affects the interpretation of river and place names in S. Asia when we do not have early sources.

The Kashmiri language itself has not been thoroughly scrutinized for more substrate materials, cf., however, the report by L. Schmidt (1981), who assumes that 25% of the vocabulary and toponymy belong to a pre-IA substrate. A. Parpola (Tikkanen 1988: 305) thinks of a Proto-Tib. or Sinitic substrate. However, the peculiar phonology of Kashmiri (and Dardic in general) sustains the assumption of a strong *northwestern* substrate influence.

We now turn to a region for which we have larger amount of early sources, the Greater Panjab.

§4.1. The Greater Panjab

The RV reflects the Panjab and its immediate surroundings of c. 1500-1200 BCE., most clearly visible in its river names, extending from the Kabul River to the Yamunā (mod. Jamna) and even the Ganges (*Gaṅgā*, mentioned only twice).

In order to use the linguistic evidence contained in this text properly, it is important to realize that it has been composed not just in two layers ('main' and 'late', as found in the handbooks), but in *three* clearly distinguishable, and very roughly datable layers (Witzel 1999, J. R. Gardner, Thesis Iowa U., 1998, Th. Proferes, Ph.D. Thesis, Harvard U., 1999, Witzel 1995):

- I. the *early Rgvedic period*: c. 1700-1500 BC, especially the hymns in books 4, 5, 6 (and maybe book 2);
- II. the important *middle Rgvedic period*, c. 1500-1350 BC: RV 3, 7, parts of 8.1-66 and 1.51-191;
- III. the *late Rgvedic period*, c. 1350-1200 BC: RV 8.67-103; 1.1-50; 10, 8.49-59.

It is important to note that level I has no Dravidian loan words at all (details, below); they begin to appear only in level II and III.

Instead, we find some three hundred words from one or more *unknown* languages, especially one working with prefixes. Prefixes are typical neither for Drav. nor for Burushaski (cf. Kuiper 1991: 39 sqq., 53). Note that the "prefixes" of Tibeto-Burm. (Benedict 1972) do not agree with those of the RV substrate either. Their presence apparently excludes also another unknown language which occasionally appears in the RV and more frequently later on with typical gemination of certain consonant groups (perhaps identical with Masica's "Language X" (1979), see below; cf. Zide and Zide 1973:15). The prefixes of the RV substrate are, however, close to, or even identical with those of Proto-Munda; taking my clue from Kuiper (1962: 51,102; but see now Zide MT II, 1996, 96), I will therefore call this substrate language *Para-Munda* for the time being.

§4.2. Para-Munda loan words in the Rgveda

We can start with the convenient list of Kuiper (1991), who does not, however, discuss each of the 383 entries (some 4% of the hieratic RV vocabulary!) This list has been criticized by Oberlies (1994) who retains "only" 344-358 words, and minus those that are personal names, 211-250 'foreign' words.² One can, of course, discuss each entry in detail (something that cannot be done here), but even Oberlies' lowest number would be significant enough, in a hieratic text composed in the traditional poetic speech of the Indo-Iranian tradition, to stand out, if not to surprise. It is much more difficult to discern Munda/Austro-Asiatic words, and to distinguish them from those of an unknown local substrate (remnants of the Gangetic

² Oberlies' criticism is written from an IE-centered point of view similar to that of Mayrhofer (EWA). This is fine from the point of view of someone who has to write an etymological dictionary of OIA; however, due to the clear attestation of cultural, ethnical and religious amalgamation of Ilr/IA and local elements visible already in the oldest IA text, the RV, the existence of such a large number of 'foreign' words must not be minimized in its importance. Nor does Oberlies offer an explanation or analysis of the remaining 250 words; they are simply 'non-IA'. In a similar vein, R.P. Das has written a much more 'engaged', nit-picking review of Kuiper's book, tellingly entitled 'The hunt for foreign words in the Rgveda' (*IJ* 38, 1995, 207-238), which induced Kuiper to write a well-deserved, rather scathing reply in the same volume ("On a Hunt for 'Possible' Objections". *IJ* 38, 1995, 239-247). It is difficult to understand, in view of the well-known evidence (added to in this paper), how one can regard the language (and religion, culture) of the Rgvedic Arya as 'relatively free from foreign influences' (Oberlies 1994: 347). "Pristine" languages and cultures do not exist, nor did they at c. 1500 BCE.

"Language X"), or the still unknown language of the Indus inscriptions than to establish IA or Dravidian etymologies, as an etymological dictionary of Munda is still outstanding (in preparation by David Stampe et al.). One can also sympathize with Kuiper (1991: 53): "Burrow and Emeneau understandably and rightly ignore the Pan-Indic aspects, but ... their dictionary [DEDR], by omitting all references to Munda, sometimes inevitably creates a false perspective from a Pan-Indic point of view." Nevertheless, one can, for the time being, make use of Pinnow's reconstructions of Proto-Munda in his investigation of Kharia (1959), Bhattacharya's short list (1966: 28-40), Zide & Zide's discussion of agricultural plants (1973, 1976), and Kuiper's relevant studies (especially 1955, 1991; his 1948 book is still useful, in spite of his own disavowal of it, as a collection of relevant materials). By way of caution, it must be stressed that neither the commonly found Drav. nor Munda etymologies are up to the present standard of analysis, where both the root and all affixes are explained. This is why most of the subsequent etymologies have to be regarded as preliminary.

Among the c. 380 'foreign' words of the RV, those with certain prefixes are especially apt to be explained from Munda (viz. directly from Austro-Asiatic). Instead of finding Munda prefixes just everywhere in Skt., as was done earlier in this century, we have to be more cautious now: "Owing to the typological change that has taken place in these languages, only some petrified relicts remain" (Kuiper 1991: 39). Typical prefixes in modern Munda are such as *p-*, *k-*, *m-*, *ro-*, *ra-*, *ma-*, *a*, *ə-*, *u-*, *ka-* (Pinnow 1959:10 sqq.; cf. also the plural suffix *-ki* in Kharia, p. 265 §341a, 211 §145c); some of them are indeed attested in the c. 300 'foreign words' of the RV.

Of interest for the RV substrate are especially the prefixes *ka-*, *ki-*, *kī-*, *ku-*, *ke-*, which relate to persons and animals (Pinnow 1959: 11; cf. p. 265 §341a) and which can be compared, in the rest of Austro-Asiatic, to the 'article' of Khasi (masc. *u-*, fem. *ka-*, pl. *ki-*, cf. Pinnow 1959: 14). The following words in the RV are important, even if we cannot yet find etymologies. (In the sequel, Sanskrit suffixes and prefixes are separated from the substrate word in question).

- *ka-*:
 - *kakardu* 'wooden stick', 10.102.6 EWA I 286 'unclear';
 - *kapard-in* 'with hair knot', Kuiper 1955: 241 sqq.; EWA I 299 'non-IE origin probable'
 - *kabandh-in*, *kavandha* 'barrel' Kuiper 1948: 100. EWA I 327 'unclear'
 - *kavaṣa* 'straddle-legged', probably Drav., EWA I 327 'unclear'; cf. Kuiper 1948: 130.
 - *kakambtra* 'a certain tree', EWA I 334 'unclear'
- *ki-*:
 - *kimīd-in* 'a demon', 10.87.24; 7.104.2, 23 (late); EWA I 351 'unclear'; cf. *śimida*, *śimida* 'a demoness', Kuiper 1955: 182
 - *su-kimśu-ka* 'a tree, 'Butea frondosa', CDIAL 3149 and Add., EWA I 348 'not clear'
 - *kiyāmbu* 'a water plant' 10.116.13, AV 18.3.6, PS 18.69.4 *k[i]yāmbu*, EWA I 352 'not clear'; with Kuiper 1955: 143 connected with Up. *ambu* 'water', Nur. *abu*, cf. CDIAL 576, *V[i]-yāmbura* 'a demon'; Drav. according to DEDR 187, Kur. *amm* 'water', Malto *amu*, Tam. *am*, *am*; Austro-As.: Sant. *um* 'to bathe', Khasi *um* 'water', etc. (Berger 1959: 57), more likely because of prefix *ki-*
 - *kilāsa* 'spotted, leprous', 5. 53.1, EWA I 354 'unclear'; Kuiper 1955: 170 'derivation unknown'
 - *kilbiṣa* 'evil action', 5.34.4, 10.71.10; EWA I 354 'not sufficiently clear', Kuiper 1955: 175 compares TS, VS *kalmāṣa* 'spotted' and Epic *kalmāṣa*, Pkt. *kamaḍha* (cf. Pinnow 1959: 379 sqq., Kuiper 1991:36 sqq.), Kuiper 1948: 38, 138 on prefixes *kal-*, *kil-*, *kar-*; Sant. *boḍor*, *bode*,

murgu'c 'dirty', with adaptation -ṣ-/ḍ- into Ved. similar to *Vipās*-/Vibal-/**Vipaž*, cf. Kuiper 1948: 6, 38

- *kikaṭa* 'a tribe' 3.53.14; EWA 'foreign name of unknown origin'; prefix *kī-* points to Austro-As.; cf. Sant. *kaṭ-* 'fierce, cruel', or common totemic tribal name (like *Mara-ṭa* PS : Munda *marā* 'peacock' IA *Matsya* 'fish', *Kunti* 'bird') ~ Sant. *katkom* 'crab'? cf. Shafer 1954: 107, 125
- *kikasā* (dual) 'vertebra, rib bone' 10.163.2, EWA I 355 'unclear'; "formation like *pi-ppala*, etc. and connected with lex. *kaśeruka*..." Kuiper 1955: 147
- *kīja* 'implement, spur?', 8.66.3; EWA I 355 'loan word possible'; KEWA I 214 and Kuiper 1955: 161, 165: 'doubtful Drav. etym.' (Burrow, BSOAS 12: 373)
- *kīnārā* dual, 'two ploughmen' 10.106.10; EWA I 356 'probably artificial for *kīnāśa*', rather *ś/d/r*, Kuiper 1948: 6, 38, 1991: 30-33, and 1955: 155f., 1991: 26 on suffixes *-āśa/-āra*, (cf. also *-na/-ra* in *rāspina/rāspira*); on *ś* as hyper-Sanskritization for *ṣ/r* cf. *Vipās*; Kuiper 1991: 46 on suffix *-śa*; if *kīnāra-* contains a suffix, then probably no prefix *kī-*.
- *kīnāśa* 'plough man' 4.57.8 (late), AV; Kuiper 1955: 155, 1991: 14, 26, 46 see *kīnāra*; EWA I 356 'unclear'.
- *kīlāla* 'biestings, a sweet drink' 10.91.14; in AV 4.11.10 next to *kīnāśa*; EWA I 358 'unclear'; discussion, above: Khovar *kīlāl*, Nuristani *kīlā* etc., Bur. *kīlāy*, Kuiper 1955: 150f., CDIAL 3181.
- *kīsta* 'praiser, poet' 1.127.7, 6.67.10, to be read as [*kisətasaḥ*] Kuiper 1991:23, 1955:155; the unusual sequence *-īs-* (see introd.) points to a loan word (Kuiper 1991:25); EWA I 358 'not clarified'; cf. Kuiper 1991: 20, 23, 25; to be compared with RV *śīṣṭa* 8.53.4 with var. lect. *śīṣṭeṣu*, *śīrṣṭeṣu*, *śīrṣṭrēsa*, Kuiper 1991: 7, 71; this is Sanskritization of **k'īsateṣu*, Witzel 1999; cf. EWA II 644
- *ku-*:
 - *kuṇāru* 'lame in the arm?' 3.30.8; EWA I 362 'unclear'; Kuiper 1948: 53f., 1955: 175, 176 on a Drav. and Munda explanation
 - *kupaya* 'shimmering?' 1.140.3, in a 'intentionally ambiguous hymn' (Geldner), EWA I 366; Kuiper 1991: 56 compares *kupaya* with other formations in *-ya*.
 - *kumāra* 'boy, young man', 4.15.7 etc. EWA I 368 'not convincingly explained'; cf. CDIAL 3523, 13488; Kuiper 1955: 146f. compares Tel. *koma* 'young', Tam. *komma*, etc.; note, however, *śi(m)śu-māra* (see below), cf. Munda *māndra*, *mār* 'man'.
 - *kurīra* 'women's hair dress', 10.92.8, EWA I 371 'unclear', Kuiper 1955: 152, 1991: 14, 29-31 compares Tam. *koṭu* 'horn, coil of hair', DEDR 2200
 - *kuruṅga* 8.4.19, name of a chieftain of the Turvaśa (cf. Kuiper 1991: 6, 17); EWA I 371 'unclear'; however, cf. *kuluṅga* 'antelope', and the frequent totemistic names of the Munda
 - *kulāya* 'nest' 6.15.16; EWA I 373 'unclear'; 'foreign', Kuiper 1991:14
 - *kuliśa* 'ax' 3.2.1, 1.32.5, EWA I 374 'not securely explained'; Kuiper 1955: 161, 163 compares Tam. *kuḷir* 'battle ax'; Skt. *kuṭhara*, *kuddāla* 'hoe', and Sant., Mundari *kutam* 'to beat, hammer', Mundari, Ho *kutasi* 'hammer', Kan. *kuṭṭu* 'to beat, strike, pound'; cf. Kuiper 1991:14; Berger 1963: 419 **kuḍiśa*, from **kodeś* in Kharia *khonḍe*'j 'ax', Mundari *konḍe*'j 'smaller kind of wood ax', with prefix *kon-* and Kharia *te*'j 'to break'
 - *kuśika* name of a poets' clan, RV 2 etc.; EWA I 379 'not clear'; cf. Kuiper 1991: 7
 - *kuṣumbhaka* 'poison gland of an insect' 1.191.15-16; EWA I 381 'unclear'; if not one of the common IA animal names in *-bha* (*śara-bha* etc.), then: **ku-ṣumb(h)*.

• Double prefixes in *Cər-*.

More important, perhaps, are the so-called 'double prefixes' in Austro-Asiatic, composed of a prefix (e.g. *k-*) followed by a second prefix (mostly *-n-*, see Pinnow 1959: 11). The use of *k-n-* is clear in names of domesticated animals, in Sora *kin-sod* 'dog' : Kharia *solog* 'dog'; Sora *kim-med* 'goat' : Remo *-me*'; *kəm-bon* 'pig' : Juang *bu-tae* (see Pinnow 1959: 168, cf. Jpn. *buta*, Austr. > Sino-Tib. **mba*(*ɣ*)); Sora *ken-sim* 'chicken' : Mundari *sim*; Remo *gi-rem* 'cat' : Sora *ram-en*. Such double prefixes seem to be rarer in Munda now than in Eastern Austro-Asiatic; cf., nevertheless, Kuiper 1991: 94 on *śar-varī* 'night': *śa-bala* 'variegated'; Kuiper 1948: 38 on the prefixes *kal-*, *kil-*, p. 138 on the 'Proto-Munda prefix *k-*', 1948: 49f. 'prefix *kər-*, *kar-*, and *gala-*'; further cf. above, on *kuliśa*, Kharia *khon-ḍe*'j. Note also the prefixes of Sora *kār-dol* 'being hungry' (D. Stampe, oral communication, June '99) and Skt. *ṣṛ-kaṇḍu* 'itch', Khasi *śyr-toñ* 'comb', Stieng *sər-luot* 'sweet' (F.B.J. Kuiper, letter 8/24/98; *tur-/tər* also in Ved., Khasi, Senoi, and Austronesian (Kuiper, 1/29/99).

The clearest Vedic case is, perhaps, *jar-tila* 'wild sesame' AV : *tila* 'sesame' AV (cf. *tilvila* 'fertile' RV, Kuiper 1955: 157, *tilpiñja*, *-ī* 'infertile sesame' AV, *tilvaka* 'a tree'; on Sumer. connections s. below). Double prefixes, however, are typical for the R̥gvedic loans, especially formations with consonant-vowel-*r* = *Cər-*, and due to the common Vedic interchange of *r/l*, also *Cəl-*, that were adapted in Vedic with various vowels (*ṛ*, *ur*, etc., see Kuiper 1991: 42 sqq.; cf. below §9, on Nepalese substrate words for similar substitutions). The cases with *Cər* (note also *Cən-*, *Cəm-*), include:

- *karañja* name of a demon, 1.53.8, *karañja-ha* 10.48.4; EWA I 310 'unclear', cf. the tree name *karañja*, DEDR 1507 Kan., Tel. *kānagu*, Konda *karañ maran* etc.; CDIAL 2785.
- *karambha* 'gruel', for a discussion, see below; Kuiper 1991: 51 sqq., 63 compares loan words with *-b-* > *-bh-* (Pkt. *karamba* 'gruel'); -- rather prefix *kar-* and popular etymology with *ambhas-* 'water' RV, or *ambu* 'water' Up., Mbh. Kuiper 1991: 63; cf. also Kurukh, Malto *amm* 'water', but also Tamil *am*, *am* DEDR 187
- *karkandhu* later, a tree name 'Zizyphus Jujuba', but personal name in RV 1.112.6; EWA I 313 'not clear'; the Drav. word the meaning of *karkandhu*, DEDR 475, 2070, 3293.
- *karkari* 'lute' 2.43.3 (late), probably onomatopoeic, but from which language? Cf. the echo words of IA, Drav., Munda (Sant. *karkur*, *gargaṛ*, *gargor*, etc.); cf. also Kuiper 1948: 55f. on Class. Skt. *karkarī* 'water jar', Epic *gargara/-ī* (based on the body of string instruments), therefore with CDIAL 4043, CDIAL 2817 *karkaṭa* 'name of various plants, curved roof of a plant', NIA 'cucumber'
- *karotara* 'sieve, filter' 1.116.7, EWA I 341 'not clear'
- *khargalā* 'owl' 7.104.17 (late), EWA I 448
- *a-kharva* 'mutilated' 7.32.13, EWA I 448; cf. Avest. *kauruua*, then not a loan word; see, however, Kuiper 1955: 176.
- *kalmāṭk-in* 'shining' 2.33.8; EWA I 325 'unclear'; however, cf. *kalmāṣa* 'spotted', Kuiper 1948: 38; see above on *kilbiṣa*

Further: *kṛ-* [*kər-*] see Kuiper 1991: 40 sqq., 23;

- *kṛkadaśa* 1.29.7, unclear meaning, personal name? cf. *kṛkalāsa* YV?; EWA I 388 'unclear'
- *kṛpīṭa* 'bush, brush' 10.28.8 EWA I 394 'unclear', cf. also *kṛmuka* 'faggot, wood' KS, CDIAL 3340a; 'unexplained' Kuiper 1955: 160
- *kṛśana* 'pearl' 1.35.1, 10.68.11, 10.144.2 *ardhva-* 10.144.2, *kṛśanā-vat* 1.126.4, EWA I 396 'not securely explained'; Kuiper 1955: 152 compares *kṛ-śana* with other words for 'thick, round', such as Skt. lex. *śāni* 'colocynth?'

• *khrgala* meaning unclear: 'staff, crutch, amulet, armor, brush?' 2.39.4; EWA I 494; cf. *khargala* 'owl', above, *Khargali* PB? -- Kuiper 1948: 49f. 'well-known prefix *kər-*, *kar-*, and *gala-*'

Due to the frequent interchange *k[k']/ś*, (see below) the prefix *śar-/śal-* belongs here as well (cf. *kar-koṭa-ka* RVKh ~ *śar-koṭa* AV):

• *śaryāta* name of a person, 1.112.17, *śaryāta* 1.51.12, 3.51.7; EWA II 615 compares *śara* 'arrow'

• *śarvarī* 'night' 5.52.3, *api-śarvara* 3.9.7, 8.1.29; EWA II 621 compares **śarvar*, *śarman* 'protection'; Kuiper 1955:144 u. 1955: 170 compares *śambara*, *karbura*, Kuiper 1991: 30 *śabala* 'variegated' with simple prefix, as compared with prefix + infix ("double prefix") in *śambara* (cf. Kuiper 1948: 136)

• *śalmali* name of a tree, 'Salmalia malabarica', EWA II 622 'probably not to be separated from RV 3.53.22 *śimbala*', CDIAL 12351 (not related Tib.-Burm. **siñ* 'tree'); Kuiper 1991: 65 on cases with *-lm-* for *-mm-*: 'different dissimilations of **śamma/śimmal*'.

• *śrñjaya* a name of a person 6.27.7 (next to *Turvaśa*), 4.15.4 (next to *Daivavant*), *sārñjaya* 'descendent of S.' 6.47.25; EWA II 743 supposes connection with *śrjaya* 'a certain bird' KS, which would agree with the totemistic names in Munda; cf. Kuiper 1991: 7, on non-IA tribal names in RV

• *śrbinda* name of a demon 8.32.2; EWA II 744 with Kuiper 1991: 40,43 (and earlier) on names such as *Ku-surubinda* TS, PB, ŚB, *Kusur-binda* JB and *Bainda* VS 'member of the tribe of the Binds' (probably also the name of the Mountain range, post-Vedic *Vindh-ya*), *Vi-bhindu* RV 8.2.41, 1.116.20, *Vi-bhindu-ka*, *Vi-bhindu-kīya* JB §203; (cf. Kuiper 1939 = 1997: 3 sqq., 1955: 182, Witzel 1999).

In the same way, the prefixes *jar*, *tar*, *nar*, *par*, *bar*, *śar*, *śr* = [*jər*, *tər*] etc.: *jarāyu*, *jarūtha* (cf. also Ved. *jar-tila* : *tila*); *taranta*, *tarukṣa*, *trkṣi*, *trṭsu*, *nār-minī*, epithet of a fort; *nār-mara*, probably the area of or the chief of *Ūrjayantī*; *parṇaya*, *parpharī-ka*, *parśāna*; *prakaṅkata* (next to: *kaṅkata*), *prakala*, *parpharvī*, *pramaganda*, *pra-skaṅva*, *pharva-ra*, *phariva*; *pr̥thi*, *pr̥thī*, *pr̥-daku* [*pər-dak-u*] < Munda *da* 'k' 'water'?, *barjaha*; (cf. also *Nār-śada* RV, *Nār-vidāla*, *Nār-kavinda* PS and **ku-bind* in: Ved. *ku-sur(u)-binda*, *bainda*, *vi-bhindu*, *vi-bhindu-kī-ya*).

Furthermore, the formations with other vowels that are adaptations of [-*ər*] as above in [*kər*]: *tirindi-ra*, *turīpa*, *turphari*, *turva/turvaśa*?, *turvīti*, *tūrṇāśa*, *sūrmī*.

Instead of *Cər*, the much more common double prefix of Munda, *Cən-*, *Cəm-*, is found as well: *kaṅkata*; *śamba*, *śambara* (cf. *śabala*!), *śambara*, *śiṃśapā*, *śiṃśumāra*, *śiñjāra*, *śimbala*, *śimbāta*, *śimyu*. Compare also the prefixes in *Cəs-*: *puṣkara*, *puṣya*, *rāspina*, *rāspira*.

Kuiper (1991: 39 sqq.) also discusses other prefixes, such as *ā-*, *i-*, *u-*, *o-*, *ni-*, *bhṛ-*, *ma-*, *sa-*, *śa-*, *hi-*. Among them, the old prefix *u-* (*o-*) would be of special interest; however, is found in the RV only in some 5 or 6 cases.

A very clear case is *śa-kunti(-kā)* 'bird' RV, *śa-kunta* 'bird' AV, Ved. *śa-kunta-ka* 'bird', *Śa-kuntalā* 'name of a nymph', Ved. *Kunti* 'a tribal name', next to the *Matsya* (IA, 'the Fishes'). The Ved. words belong to *Kharia kon-the'd*, *Sora on-tidən*, etc.; *Korku ti-tid* 'a certain bird', Ved. *tit-tir-a* 'partridge', Pinnow 1959: 160 §336; cf. however RV *śa-kuna* 'a (larger) bird', *śa-kuni* 'bird (of omen)' (Kuiper 1991: 44).

Munda-like prefixes are thus very common in the RV. One has to agree with Kuiper 1991: 39f: "According to some scholars Munda was never spoken west of Orissa, Bihar, Madhya Pradesh and eastern Maharashtra... The obvious occurrence of Old Munda names in

the R̥gveda points to the conclusion that this statement should be revised." If (some of) these words should not go back directly to Proto-Munda, one may think, especially in the case of the untypical formation *Cər*, of an *unknown* western Austro-Asiatic language, "Para-Munda" (cf. Kuiper 1962: 51, 102).

If this initial interpretation is correct, several far-reaching conclusions can be drawn. The very frequency itself of non-Drav. loan words in the early (as well as in the later) RV is remarkable: it indicates a much stronger *non-Drav. substrate in the Panjab than usually admitted*. Because of the great similarity with Austro-Asiatic formations and because of some already established (Para-)Munda etymologies (such as *śa-kunta* ~ Kharia *kon-the'd*, etc., Pinnow 1959 160 : 336), this substrate is likely to be an early form of western Austro-Asiatic (cf. below, at the end of §4.3.)

Is the Indus language therefore a kind of Proto-Munda? Against this may speak first of all, as Kuiper states (1991), that the RV substrate does not have infixes like Munda. However, *-n*-infixes can perhaps be adduced in *ka-bandha/ka-vandha* 'headless rump', *kar-kandhu* 'name of a tree, *Zizyphus jujuba*', *gandhā-ri* 'name of a tribe in N. Pakistan', *pra-maganda* 'name of a chieftain of the Kīkaṭa non-Aryans', *śa-kunti* 'bird' < PMunda **śa-kontid*, *sr-bindā*, and in post-RV, e.g., *ku-sur(u)-bindā*, *baindā*, *vi-bhindu*, *vi-bhindu-kī-ya* 'name of a tribe'. Yet, the substrate may be a very early form of Munda (or another variety of Austro-Asiatic) which still used prefixes actively, just like the eastern Austro-As. languages, e.g. Mon, Khmer, do even today (cf. also below, on Sumerian). Further, the infixes may have developed from prefixes which had found their way into the root (Pinnow 1959: 15). Among these, one can include 'double' prefixes such as *kə-r-*, *śə-r-*, *pə-r-* etc. (Pinnow 1959: 11). If this is correct, then R̥gvedic Proto-Munda represents a *very* old stage of Austro-Asiatic indeed.

§4.3. Munda and Para-Munda names

However, direct contact of the non-Indo-Aryan words in the RV with predecessors of present day Munda languages is more problematic. Some of the substrate words may, at least in part, have entered the RV through the *intervention* of the Indus language (*laṅgala* etc., see below). Yet, there also are a few *direct* correspondences with reconstructed Proto-Munda (*śa-kunta* < **kon-ti'd*) which indicate the archaic character of the para-Mundic Indus language. For example, the name of *Pramaganda*, the chieftain of the Kīkaṭa (RV 3.53.14) who lived south of Kurukṣetra (cf. Witzel 1995). Both words are non-Indo-Aryan and they show clear indications of Mundic character: *maganda* can be explained as *ma-gand* with the old, now unproductive Munda prefix *ma-* that indicates possession. The word *gand* may belong to Munda **gad/gaḍ*, *ga-n-d/gaṅḍ* (Pinnow 1959: 351 §498) that is also seen in *Gaṅḍa-kī*, *Gaṅḍā* (Witzel 1999, if not modeled after the tribal names *Aṅga*, *Vaṅga*, see below), W. Nepali *gaḍ* (as 'suffix' of river names, Witzel 1993) and apparently also in *Ma-gadha* (with Sanskritization > *dh*). Kuiper 1991: 43f. (8, 21, 96, also 1955) has explained the prefix *pra-* [*pər*] (cf. prefixes such as *kər-/śər-*) from Munda, which looks perfectly Indo-Aryan but in this case certainly is 'foreign'. The tribe of chief *Pra-maganda* (*pər* 'son of?' Kuiper 1991: 43), the Kīkaṭa, has either the typical 'tribal' suffix *-ṭa* (see below) or the old Austro-As. plural prefix *ki-*, or maybe both. Cf. further the prefix *kī-/ki-* in: *kīnāśa/kīnāra* 'plough man', *Kimīdin* 'a class of demons', *kīkasa* 'vertebra, breast bone', *kīlāla* 'biestings', *kiyāmbu* 'a water plant', all of which may be compared with the Munda prefix *k-* for designation of persons (and the plural prefix *ki-* of Khasi; note that in RV, *k-* also applies to items merely *connected* with humans and animals).

Further RV substrate names of persons, tribes and rivers include some exactly from the areas where Indus people are to be expected: in their late/post- Indus new settlement area (J. Shaffer 1995: 139) in the eastern Panjab, in Haryana (Kurukṣetra), and especially east of there, well into the Gangetic plains. Even during the middle/late Vedic period, the local rivers of E. Panjab are still designated by non-Indo-Aryan names: the famous Bharata chieftain Sudās crosses (RV 3.33) the Śutudrī and Vipāś and settles on the Sarasvatī. They are not explainable from IA:

Śutudrī (Satelej) < *šə-tu-da'/? from Munda *tu 'float, drift', Kharia *thu'da'* < *tu-da' (da' 'water'), Khasi *pər-ttu* 'outflow', (note the later popular etymology *Satadru* 'running with a hundred streams'); for the Ved. substitution of 'k/' by r cf. *kul-do' 'tiger' > *kulitar-a?* and *ganda' > *gandhār-i?* -- Vipāś < *vipāž/*vibāl (cf. *Vibālī* RV 4.30.11-12), and note that the Sarasvatī still has a similar name, *Vaiśambhalyā* (with many variants, always a sign of foreign origin: TB 2.5.8.6, -bhalyā, -pālyā, -balyā ĀpŚS 4.14.4, -bhalyā Bhāradvāja Śikṣā; cf. also RV *viśpalā?*) < *viśambaž, *viśambāl, probably with the prefix *śam/k'am-* (as in *Sam-bara*, *Kamboja*) from *(vi)-śam-bāž (note the popular etymology from *vi-śambala* 'having widespread blankets').

The land of *Tūrghna* (TĀ), north of this region, has no Indo-Aryan etymology either (see EWA), and *Khāṇḍava* (TĀ) with its suspicious cluster -ṇḍ- (K. Hoffmann 1941), south of Kurukṣetra, is inhabited by the *Kīkaṣa* under their chieftain *Pra-maganda*. Note also, in the same area (Kurukṣetra), the appearance of Pinnow's *u*-suffixes in 'foreign words', e.g. *Khāṇḍava*, *Kārapacava*, *Naitandhava* (Pinnow 1953-4).

The Greater Panjab names of *Gandhāra*, *Kubhā*, *Krumu*, *Kamboja* may be added. -- *Gandhāri* RV, *Gāndhāra* Br., OP *Gaⁿdāra*, Herodotos *Gandārioi*, EWA I 462, cf. Munda *ga(n)d 'river', the river names of the Gangetic plains, *Gaṇḍakī* and *Gaṅgā*, the *Gandhina* people on its upper course, and Nep. -gād in river names. *Gandhāra* is formed with the common suffix -āra, -āla (Witzel 1993, 1999); -- *Kubhā*, cf. Skt. *kubja* 'bent', Kuiper 1948: 42f., Sant. *kubja* which belongs to Munda *ḍui'j*, *kəb-ḍuj* etc. (Pinnow 1959: 21, 91: §108, 249 §286 Kharia *ḍui'j* 'bend', Santali *kəbḍuj* 'ugly', *kəbḍuju'd* 'crooked', p. 435e Santali *kəbnūj* 'bent', etc.) -- *Krumu* from Munda *kə-rum 'luke warm'?? cf. Kharia *rum* 'to burn', Sant. *ur-gum* 'luke warm', Mon *uj-ruṅ* 'humid, warm'; --The *Kamboja* (AV, PS < *ka-mboj*??) settled in S.E. Afghanistan (Kandahar); cf. OP *Ka^mbujīya* (or *Kambaujīya?*) 'Cambyses'; however, their name is transmitted as *Ambautai* by Ptolemy (Geography 6.18.3), without the typical prefix; cf. also *Bulitai*). This change in the first syllable is typical for Munda names (see below *Aṅga* : *Vaṅga*, *Kaliṅga* : *Teliṅga*; *Kulūṭa* : *Ulūṭa*, etc.) - Mundas that far west cannot be excluded (Kuiper 1991: 39).

It may be asked, how far Austro-Asiatic speakers extended westwards during and before the RV period. Until now, the *present* distribution of the Munda languages has led to rather far-going conclusions, for example by Burrow (1958, cf. Southworth 1979: 200). Starting from the modern settlement areas of the Mundas in Eastern India (Bihar, Orissa, W. Bengal) and on the River Tapti (in northwestern Maharashtra and Madhya Pradesh) he regarded it as impossible that the Munda could ever have settled in the Panjab. Kuiper, however, has been of a different opinion (1955: 140, 1991: 39, see also 1948: 8, cf. Witzel 1980, 1993 on the substrate in Nepal, and 1999 for the Panjab area). The cases discussed above indicate a strong Austro-Asiatic substrate in the Panjab, and there are some hints which point to Munda influence in the Himalayas (Konow 1905, Witzel 1993, see below) and even in E. Afghanistan (*Sambara*, *Kamboja*).

An important result therefore is, *that the language of the Indus people, at least those in the Panjab, must have been Para-Munda or a western form of Austro-Asiatic.*

In view of the recent comparison by the late I. M. Diakonoff of Munda and Sumerian (MT III, 54-62, but note the criticism by P. Bengtson MT III 72 sq., and cf. still differently, A. R. Bomhard, MT III 75 sqq.) this characterization of the pre-IA Panjab acquires special importance (cf. already Przyludski 1929: 145-149). If Munda were indeed related to Sumerian, names such as *Ki-kaṭa*, *Ki-nāša*, *Ki-rāta* may no longer surprise, cf. Sum. *ki* 'country'. To follow up, the role of compound nouns in Sumerian versus old 'prefixes' in Munda would need further investigation. Consider, as a very vague possibility, Para-Munda *pər-* (*pra-magandha*, *pra-skaṇva*) and Sum. *bala* 'term of office, reign, dynasty'. In this regard, it should be noted that Sumerian has 'implosive' (unreleased) consonants, just as Munda, Khasi, Khmer, the Himalayan language Kanauri, the Kathmandu Valley substrate, and Sindhi, all of which may point to a S./S.E. Asian areal feature (For 'implosive', unreleased stops including labials, in Munda and Eastern Austro-Asiatic, see Pinnow 1959: 313 sqq, 316, cf. Zide 1969, 416 sq. The final consonants *j*, *ḍ*, *d*, *g*, which are also called 'checked consonants', are preglottalized *and* unreleased in Munda.)

If Diakonoff's proposal was borne out, the Ṛgvedic Para-Munda substrate in the Panjab of c. 1500 BCE would represent an early link to Sumerian. Notably, Sumerologists, though without any firm reasons going beyond some vague mythological allusion to more eastern territories (Dilmun, etc.), think that the Sumerians immigrated from the east, from the Indus area.

If a relationship with Munda could not be confirmed by obvious etymologies, a minimal position would be to define the c. 300 non-Dravidian loan words as coming from an unknown, prefixing language of the Greater Panjab, which might be called, for lack of a self-designation, after its prominent geographical features, the Gandhāra-Khāṇḍava or perhaps better, Kubhā-Vipāś or simply, the Harappan language.

Finally, in reviewing the evidence of the Ṛgvedic Para-Munda, it should be taken into account that Northern and Southern Munda differ from each other in many respects, the southern version usually being more archaic (Zide 1969: 414 sq., 423), though much less known, and that both this difference as well as the shift of Munda from a prefixing language with mono-syllabic roots to one working, in typical South Asian fashion, with suffixes, may have been influenced or even may have been due to a north Indian substrate such as Masica's "Language X".

§4.4. Other substrates

If the Indus language is a kind of Para-Munda, a 'western' Munda, it cannot, however, be excluded that one or more *unknown* languages are involved (cf. Zide and Zide 1973:15) in the Ṛgvedic substrate. From the older RV onwards, we find a number of words that cannot be determined as Para-Munda. Examples include the words with geminates (see below) e.g. *pippala* RV 5.54.12 and an undetermined number of the c. 300 'foreign words.' Some of them can be traced as being loan words from more distant eastern (Austro-As.) or western (Near Eastern) languages; the path the loans have taken is clear (see below) in the case of RV *laṅgala* <-- Indus **langal* (<-- Sumer. *níg-gala_{x+1}* or *níg-gál* 'sickle?', see §5.3), <--> PMunda **ṅan-keḷ*, Austric (Makassar) *naṅkala* (see §5.3); Ved. *vr̥thi* < Indus **vrijhi* <-- PMunda (c. 1500 BCE) **ərig*/ Tib./Malay (')*bras* <-- S.E. As. ***əβərij* (?); Ved. *mayūra* 'peacock' <-- N. Indus **mayur* <-- PMunda *mara'k* 'crier' <-- Austr. (Malay) *merak* --> Sino-Tib. **raka* 'cock'. Note also the various substrates in Burushaski, Nahali and "Dhimal" (Kiranti languages in E.

Nepal) discussed in *MT* II, III and by Kuiper 1962: 14 sqq., 40, 42, 46f, 50f., Berger 1959: 79; and cf. those of the Kathmandu Valley and Tharu (s. below).

In short, the Panjab is an area of a Pre-Ṛgvedic, largely Para-Munda substrate that apparently overlays a still older local level which may be identical with Masica's "language X" found in the Gangetic plains (Hindi). In general, the vocabulary of Para-Munda and "language X" words is limited to local flora and fauna, agriculture and artisans, to terms of toilette, clothing and household; dancing and music are particularly prominent, and there are some items of religion and beliefs as well (Kuiper 1955, 1991). Since no traces of the supposedly Dravidian "Trader's Language" of the Indus civilization (Parpola 1994) are visible in the RV, the people who spoke this language must either have disappeared without a trace (cf. below on Meluḥḥa) or, more likely, the language of the Panjab was Para-Munda already during the Indus period (2600-1900 BCE).

The large number of agricultural words alone (Kuiper 1955) that have no Dravidian explanation indicates that the language of the Indus people cannot have been Dravidian (cf. also Southworth 1988: 663). Their successors, the Indo-Aryans, preferred to tend their cattle and they spoke, like their brethren in spirit, the Maasai, about their sedentary non-Indo-Aryan neighbors in southern Kurukṣetra in this fashion: "what is the use of cattle among the Kikāṭa?" (*kīm te kṛṇvanti Kīkāṭeṣu gāvaḥ*, RV 3.53.14).

As we can no longer reckon with Dravidian influence on the early RV (see immediately below), this means that the language of the pre-Ṛgvedic Indus civilization, at least in the Panjab, was of (Para-)Austro-Asiatic nature.

This means that *all proposals for a decipherment of the Indus script must start with the c. 300 (Para-)Austro-Asiatic loan words in the RV* and by comparing other Munda and Austro-Asiatic words. (For the Indus script see Fairservis 1992: 14, Parpola 1994: 137 sqq., Possehl 1996b). The decipherment has been tried for the past 35 years or so mainly on the basis of Dravidian. Yet, few Indus inscriptions have been "read" even after all these years of concerted, computer-aided attempts, and not yet in a fashion that can be verified independently (cf. a summary of criticism by Zvelebil 1990). Perhaps that is not even attainable, due to the brief nature of the inscriptions (7 signs on average and hardly more than 20). Yet, Kuiper's '300 words' could become the Rosetta stone of the Indus script.

Further, investigations of the South Asiatic linguistic area (*Sprachbund*) must be reformulated accordingly, for example the question of the retroflex sounds, see Tikkanen 1988, and cf. Zvelebil 1990: 71 on the distinction between true retroflex sounds (domals, 'cerebrals') and cacuminals. In the RV they cannot go back either to Proto-Drav. influence, as usually assumed, because they are already found in the older part of RV (books 4,5,6) where no Drav. loans are present; they also cannot go back to Proto-Munda influences because Munda originally had no retroflexes (Pinnow 1959, except for *ḍ*, an isolate in the reconstructed consonant system, see Zide 1969: 414). The clear increase of the retroflexes in RV books 1, and especially in 10 is remarkable. In the older RV one can only detect very few cases of not internally conditioned, original and clearly non-IA retroflexes: RV 6: *kevaṭa* 'hole'; *reṇu-kakāṭa*; *rāṇḍya*, *śaṇḍa*, (*hiranya-*)*piṇḍa* (late hymn), RV 4, 5: *krī-*; RV 2: *śaṇḍika*, *māntāṇḍa*, *pipīle* (from *piḍ*, < Ir **piḍd*); cf. also *jaṭhāra* in RV 1,2,3,5,6,9,10. None of these old words is Dravidian (see below). In short, the people of the (northern) Indus civilization must have spoken with retroflexes.

Almost the same situation exists with regard to another item of suspected substrate influence, the innovation in Vedic of the grammatical category of absolutes (not found in Old Iranian!, see below). They occur in RV 4 with 1, RV 6 with 1, RV 2 with 4 cases (a relatively high number in this short book!); equally, in RV 3 with only 1, RV 7 with 4, RV 8

(Kāṇva section) with 0, RV 8 (Āṅgīrasa section) with 2, RV 9 with 4; even RV 1 (Kāṇva section) only with 5. - Really innovating are only the late books RV 1 (Āṅg.) with 34, and RV 10 with 60 forms.

§4.5. Dravidian in the Middle and Late Rgveda

As has been repeatedly mentioned, there are no traces of Dravidian language in the Panjab until c. 1500 BCE, not even of the supposedly Dravidian speaking traders and rulers of the Indus civilization; however, Drav. loan words suddenly appear in the RV texts of level II (books 3, 7, 8.1-66 and 1.51-191) and of level III (books RV 1.1-50, 8.67-103, 10.1-854; 10.85-191). These include personal and tribal names, as well as cultural terms.

For comparisons, we are limited to Burrow-Emeneau's DEDR, and a few lists from old Tamil texts, but scholars usually work directly with Tamil, Kannada, Telugu (etc.) comparisons; a reconstruction of Proto-Drav. forms is but rarely given.

To begin with, many words that have been regarded as Drav., are now explained as coming from Munda or another substrate language, for example, *mayūra* 'peacock' whose correspondence in Munda **ma-ra*' still has an appellative meaning, 'crier'; (PMunda **ra*'k 'to cry,' Pinnow 1959: 76 §57). However, this is not so for the Drav. designation, where 'peacock feather' is reconstructed at a level earlier than 'peacock' itself. Indeed, many of the 26 words attested in the RV that Burrow (1945, 1946, 1947-48, 1955, cf. Southworth 1979 sqq.) originally listed as Drav., as well as those added by Southworth (1979) and Zvelebil (1990) cannot be regarded as early Dravidian loans in Vedic.

Even if one would regard *all* of them, for argument's sake, as Dravidian, only *kulāya* 'nest' 6.15.16, *karambha* 'gruel' 6.56.1, 6.57.2, *ukha-cchid* 'lame in the hip' 4.19.9 occur in early Rgvedic. These words can, however, no longer be explained as Dravidian:

- *karambha* 'gruel' CDIAL 14358, no longer in DEDR; Kuiper 1955: 151 Drav. etym. as 'doubtful', EWA I 310 'unclear'; Kuiper 1991: 51 sqq. compares loan words with *-b-* > *-bh-* (Pkt. *karamba* 'gruel').
- *kulāya-in* 'nest-like' 6.15.16, cf. *kulāyayat-* 7.50.1; from Drav. CDIAL 3340, cf. DEDR 1884 Tam. *kuṭai*, DEDR 1883 Tel. *gūḍa* 'basket', but word formation? and Drav. **-ḍ-* > Ved. *-l-?*; EWA I 373 'not clear', comparing N.Pers *kunām*, East Baluchi *kuḍām* < *kudāman*, with the same problems; 'foreign word', Kuiper 1991: 14.
- *ukha* 'pan, hip' in *ukha-cchid* 'breaking the hip, lame' 4.19.9, cf. MS 4, p. 4.9 *ukhā* (dual) 'hips'; DEDR 564 'particular part of upper leg': *ukkam* 'waist' Tulu *okka* 'hip'; for sound change Drav. *k:* Ved. *kh*, s. Kuiper 1991: 36, cf. 1995: 243; EWA I 210 compares Latin *auxilla* 'small pot', Lat. *aulla* 'pot' (Pokorny 88), but declares 'not sufficiently explained'. As RV 4.19 is not seen as a late hymn, this might be the oldest Drav. loan in Vedic (RV I).

Only cases in the middle and late RV remain: In the early RV (2,4,5,6) possible Drav. words are found only in some additional, late hymns (insertion after the initial collection of the RV, c. 1200 BCE, cf. Witzel 1995):

- *-phala* 4.57.6 'fruit' DEDR 4004, Tam. *paḷu* 'to ripen', *paḷam* 'ripe fruit', etc., see Zvelebil 1990: 78 with literature, Parpola 1994: 168; CDIAL 9051, 9057; EWA II 201 doubts Drav. origin, and derives it from IA *phal/r* 'to coagulate, condense', but finds 'origin of IA **phal/p^har* not explained'; that means, a Middle RV loan from Drav. remains possible, or from Munda: Sant. *piṭiri* 'swelling of glands as in mumps', Sora *pēl* 'to swell, grow in bulk (seeds)'; cf. Kuiper 1955: 144, 158, 183 (cf. also, 1948: 163, Kharia *poṭki* 'to sprout', *potri* 'pregnant'); Pinnow 1959:173, §378.

- *phala* 'plough share' 4.57.8, Turner, CDIAL 9072, connects *phalati*, Iran. **spāra*, and thinks that it has been influenced later on by Drav./Munda; not in DED(R); EWA compares N.Pers. *supār*, Pashto *spāra*, Iṣkaṣmi *uspir* < **spa/ārya*?

- -*piṇḍa* 6.47.23 'ball, dumpling'; the many divergent NIA forms speak for a loan word, see CDIAL 8168 and add.; Drav., Burrow 1946: 23; Munda, Kuiper 1948: 142, 162, cf. 1991: 14; DEDR 4162 Tam. *piṇṭi*, Konda *piṇḍi* etc. 'flour'? - EWA II 128 'unexplained'; cf. also K. Hoffmann 1941: 380 sqq. and perhaps Armenian *pind* 'compact, firm' < Iran. (< Ved.?)

In middle RV (3,7,8):

- *kunāru* 3.30.8 'lame in the arm?', or name of a person, see EWA I 362 'unclear'; perhaps connected with Epic *kunī* 'lame', *kunṭa* 'defective'; however, compare Drav.: Kan. *kunṭa* 'cripple', Mal. *kunṭan* 'cripple', etc., CDIAL 3259-60, DEDR 1688

- *mayūra* 3.45.1 DEDR 4642, 'peacock' PS, *mayūrī* 'pea hen' RV 1.191.14, *mayūra-roman* 'having hair like peacock (' feathers)' RV 3.45.1, *mayūra-śepya* 'a peacock-like tail' RV 8.1.25; generally regarded as Drav.: DEDR 4642 Tam. *maññai*, *mayil*; northern Kasaba dialect of Irula *muyiru*, Tulu *mairu*, Konda *mṛṭlu*, *miril*, (**mayil/mayir*, see Zvelebil 1990: 77, with discussion and lit.). However, originally from Munda: PMunda **mara* 'crier', Kharia *mara*, Santali, Mundari, Ho *mara*, Kurku *mara*, Sora *mārān* 'peacock, Pavo cristatus', see Pinnow 1959: 205 §90; cf. also Skt. *marūka* (lex.) 'peacock, deer, frog, Curcuma Zerumbet', and Khotanese Saka *murāsa* 'peacock' (EWA II 317, KEWA II 587, CDIAL 9865, add. 9865, DEDR 4642, Bagchi 1929: 131, Southworth 1979: 191 sqq., 200, cf. Zvelebil 1990: 77, Hock 1975: 86). The rare tribal name *Mara-ṭa* PS 5.2.1, 12.2.1 (Witzel 1999) belongs here; the Marāṭa probably lived south of the Ganges and north of the Vindhya. The above may indicate that the Dravida entered into contact with some groups of Munda speakers fairly early (before the Middle RV); however, just as in the Vedic case, one or two intervening language(s) (**mayil* / **mayur*) must delivered the word to Drav. and Vedic, for example the "Language X" or rather a Northern and Southern Indus language; in the south, this must have occurred before Sindh was practically deserted in the post-Indus phase (Allchin 1995: 31 sqq.). The Ved. form *mayūra* may have been influenced by *māyu* 'bleating'.

- *phala* 3.45.4 see above

- *kāṇa* 7.50.1 'one-eyed' EWA I 336 'unclear'; cf. Avest. *karəna* 'deaf' : *karəna* 'ear' and cf. DEDR 1159 Tam. *kaṇ* 'eye' and 1443 *kāṇ* 'to see', both now without reference to Skt.; Zvelebil 1990: 79 compares DEDR 1159 and finds, 'rather speculative', the Drav. negative suffix *-a/-ā*; cf. Kuiper 1991: 79. --However, cf. Burushaski *śon*, *śōn* 'blind' (see above, with northwestern interchange of Ved. *ś/k*, Witzel 1999); note also that *kāṇa* is found as hapax RV 10.155.1 next to 'mountain', a 'foreign' name and an onomatopoeic: *girim gaccha* 'go to the mountain!', *Śirimbiṭha*, *budbud-* 'making bubbling sounds' (cf. Sant. *buḍu'c buḍu'c* 'to bubble up').

- *kulpha* 7.50.2 'ankle', CDIAL 4216, from Drav.; cf. DEDR 1829 *kuḷampu* 'hoof?'; EWA I 376 'completely unclear', Kuiper 1955: 148 loan word because of AV *gulpha* and points (1991: 35) to variant forms in Ved. (*gulpha*) and MIA (*goppaka*, *guppha*, *gompha*).

- *daṇḍa* 7.33.6 (late) 'stick', DEDR 3048 Mal. *taṅṭa* 'forearm, arm', Tel. *daṇḍa*, etc., cf. DEDR 3051, CDIAL 6128; Munda, Kuiper 1948: 76: Sant. *ḍaṅṭa* 'thick stick, club', *ḍa(ṅ)ṭiṭit* 'stem (of mushrooms)', *ḍaṅḍi* 'stick, staff, stalk', cf. Mundari *ḍāṅḍi* 'small stick'; EWA I 691 'not explained'

- *kuṇḍa-* 'vessel' 8.17.13 can be compared with Avest. *kunda/-i*, *kundiḷa*, the name of demons; Dravid., DEDR 1669 Tam. *kuṭṭam* 'deepness, pond', Tel. *kuṅṭa*, *kuṅḍu*, Kur. *xoṇḍxā* etc., DEDR 2082; Kuiper 1948: 76 Drav., 1991:14 'foreign'; CDIAL 3265; EWA I 363

points to the difference in meaning between Drav. and Ved. and concludes 'unclear, perhaps loan word'

- *mayūra* 8.1.25, see above
- *naḷa* 8.1.33 'reed', *naḍa/nala/nada*, EWA II 7 from Iir. **nada* (Nuristani *nō* < **nada*, Parthian *nad* 'flute', N.Pers. *nāy* 'flute') < IE **nedo* (Hitt. *nata* 'reed', Armenian *net*), however without actual explanation of the variation **d* > *ḍ* (cf. Mayrhofer 1968); DEDR 3610 compares, strangely, Tam. *nal* 'good' with the Skt. name *Nala*, idem Zvelebil 1990: 82; however, *Nala* is found in Vedic, ŚB 2.3.2.1-2 *Naḍa Naiṣidha*, and in Mbh. *Nala Naiṣadha* as king of the (probable) Munda tribe of the *Niṣidha/Niṣadha* = Ved. *Niṣada* (MS, VS, see below); cf. Kuiper 1991: 33 on *d/d*, and p. 19 *naḷi* 10.135.7 'flute, pipe' (cf. 1948: 82).
- *kānuka* 8.77.4; (poet: Kurusuti Kāṇva) next to *saras* 'pond'; unclear in meaning and etym., EWA I 336; Kuiper 1991 as foreign.

In late RV (1, 10):

- *ulākhala* 1.28 'mortar' DEDR 672 Tam. *ulukkai*, Kan. *olake*, Koḍagu *oḷake*, and Kota. *oḷka*, *oḷkal kal* '(stone) mortar', Malto *lorā* 'stone to grind spices' (S. Palaninappan, by letter); EWA I 231 'problematic'; cf. Zvelebil 1990: 79 with lit., Kuiper 1991: 14, 41 'still unexplained', compares loan words with prefix *u-*; note Sumerian *ur5* 'millstone', Proto-South Drav. **ur-al* 'mortar' (Blažek and Boisson 1992: 24); is there a connection with *khala* 'threshing floor' RV 10.48.7?
- *vriś* 1.144.5 'finger', DEDR 5409 Tam. *viral*, Go. *wirinj*, now without reference to Skt. *vriś*; EWA II 597 from IA **vreś* 'to bend', Avest. *uruuvaēs* 'to bend, curve'
- *bila* 1.11.5, 1.32.11 'hole, cave' CDIAL 9245 'Dravid.'; DED 4459 = DEDR 5432 now without reference to Skt., cf. also DEDR 4194; Kuiper 1991:14 'foreign', EWA II 225 'not clear'
- *a-phala* 10.71.5 'without fruit', see above;
- *phal-intī* 10.97.15 'having fruits', see above;
- *mayūra* 1.191.14, see above;
- *piṇḍa* 1.162.19, see above
- *kūta* 10.102.4 'hammer' DEDR 1651, 1655, 1883, app. 29; previously explained by Burrow as Drav., later explained by him as IE (German *hau-en*), but see EWA I 384 'unclear'
- *phāla* 10.117.7 'plough share', see above
- *phala* 10.146.5 'fruit', see above
- *kāṇa* 10.155.1, see above
- *kaṭu(ka)* 10.85.34 'pungent'; CDIAL compares *khāṭṭa* 'pungent'; EWA I 290 Lithuanian *kartūs* 'bitter'? or DEDR 1135 Tam. *kaṭu* 'to pain; pungent; cruel, harsh, bitterness', Kurukh *xarxa* 'bitter', Malto *qarqe* 'bitter', Brahui *xarēn* 'bitter' etc.
- *bala(?)* RV 1,3,5,6,7,9,10 'strength, force'; EWA compares Latin *de-bilis* etc., IE **belo-*, otherwise not found in Iir. (perhaps in Osset./Sarmatian); see, however, Kuiper 1990: 90, on the rare IE (initial) *b-*, and on the impossibility of an IE etymology; cf. CDIAL 9161; now, against Drav. origin Burrow, see EWA II 215; cf., nevertheless, DEDR 5276 Tam. *val* 'strong', Kurukh *balē* 'with the help of', Brahui *balun* 'big'.

The same is the case with some words that have later on been added and discussed (Sanskrit Index of the DEDR, p. 759-763) and elsewhere. Most of them are too late to be of interest here. In DEDR we find:

Early RV: *phalgu* 'minute, weak' 4.5.14, *kalaśa* 'vessel' 4.27.5, 6.69.2, 3.32.15, 7.69.6; and later: *taḍit* 'flash' 2.23.9 (late), 1.94.7 *phala* 'plough share' 4.57.8 (late); -- middle RV:

ukhā 3.53 'pan, hip' (late), *kavaṣa* 'straddle legged', a personal name 7.18.12, *kāla* 'slope, bank' 8.47.11. -- late RV: *ukhā* 'pan, hip' 1.162.13,15; *khala* 'threshing floor' 10.48.7.

Of these, only *phalgu* 'minute weak' (RV 4) remains as a possible early loan into IA, if it indeed belongs to DEDR 4562, Tam. *pollu* 'empty husk of grain'; EWA II 203 has an IE etymology. Again, all other words regarded as Dravidian appear only in the *middle* and especially in the in *later* RV.

Southworth (1990, 1995) adds the following examples of early contact between Drav. and Indo-Ar., however, without ordering the texts historically.

- *car-*, *carati* RV : Tamil *cel* 'to go, flow, pass, be suitable' (already Perunkunrūr Kilār, c. 160-200 CE); DEDR 2781 "probably from IA", CDIAL 4715; IA, without problems from IE **kwel(h)*; perhaps accidental agreement with Drav. *cel*.
- *māyā* 'confusion, wonderment, awe' RV (found in all of RV, just as *māy-in*, *mayā-vat*, *mayā-vin*), = Avest. *māiiā* 'awful power' :: Tam. *maya-* 'mistake, misunderstand'; *mayakku-* 'bewilder, confuse, intoxicate, alcohol' etc.; DEDR 4706, without comparison with Skt.; the Skt. and Drav. meanings do not agree; also, as attested that early in the RV and Iran., Drav. origin (only Middle-RV Drav. influence!) is unlikely, -- unless it would have taken place in Iran (Southworth 1979: 196f.: "high degree of contact ... at the earliest period for which we have records and possibly before"); however, see below, on *tanū*.
- Southworth 1979: 203, 228 f., 1990: 222-3, 1995 reconstructs as further indication of early contact between Drav. and Indo-Ar. in Iran, a word **tanu* 'self', Tamil *tān/tan* 'oneself', *tanū* RV 'body, self/oneself', for this meaning see now J. R. Gardner, U. of Iowa Ph.D. thesis, 1998. The variation in vowel length in the Drav. pronoun (Tam. *tān/tan* 'oneself') is old (Krishnamurti 1968). However, next to the RV instances, there is Avest. *tanū* 'body, self', OP *tanū* 'body', however, they all have no clear IE etymology. Pokorny 1959: 1065, 1069 derives them from IE **ten* 'to stretch', in other IE languages the meaning mostly is 'thin'; EWA II 622 connects *tan-ū* '*Ausdehnung, ausgespannte Hülle' with *tan*. The comparison of the Ir. and Drav. words would presuppose a very close relationship between Drav. and (pre-)Indo-Ar. tribes, as pronouns are not taken over easily. Such early Drav.-IA relationships are not found otherwise: there are no early loans in designations of material culture, e.g. pastoralist terms in Vedic/Drav.: horse: *āsva* : *ivulī*, *kutira*, cow: *gau-* : *ā(n)*, sheep: *avi* : (*y*)*āṭu*, *korī*, goat : *aja* : (*y*)*āṭu*, *korī*, dog: *śvan* : *nāy*, *nāi*. This would rather point *against* a neighborly relationship of both languages in any pre-South Asian context.
- *garda-bha* 'donkey' RV late, only 1.23.5, appendix hymn 3.53.23 next to *rāsa-bha* 'donkey'!, RV Valakhilya 8.56.3 :: Tam. *kaḷutai*, Gondi *gārḍi*, etc., to which DEDR 1364 compares Skt. *gardabha*; CDIAL 4054; EWA I 473 cf. *gard* 'to cry shout', not from Drav.
- *piśaca*, *piśaci* AV, *piśaci-* 'demon' RV late: 1.133.5 :: Tam. *pēy-* 'devil, goblin, madness' DEDR 4468, without comparison with Skt., and without suffixing *-śaci-*, only: *pēytti*, *pēycci*, *pēcci* 'demoness'. -- Ved. *piś-* may derive from Tam. *pēy* etc. if, with Zvelebil 1970: 111, Drav. *-c-* > *s* > *y*.
- *śava* (not in RV, diff. Southworth 1979: 197), only AVP : Tam. *cā-* 'to die' (Kural), Ko. *ca-v-* 'corpse' DEDR 2426 compares Skt. *śava*; EWA II derives *śava* from *śav* 'to swell' AVP; CDIAL 12356 not from Drav. As the word is early in Drav., perhaps accidental look-alike.
- *paṭhati* 'to recite' RVKh., TĀ, Up. : Tam. *pāṭu* 'sing, chant', *pāṭṭu* 'song', attested already in Perunkunrūr Kilār, DEDR 4065 without reference to IA; EWA II 69; CDIAL 7712 < **prṭhati*; Drav. <-- Indo-Ar., Burrow-Emeneau 1962: 46, no. 242. Rather to be derived from MIA pupil's slang Ved. *prath* 'to spread out (a text, in recitation)'; compare the frequent loan

words in the context of Vedic teaching and learning: *maṇḍala*, *kaṇḍa*, *kāṇḍa*, *prapaṭhaka*, *paṭala*, *daṇḍa*, MIA: *orimika* 'a section of KS' etc.

• *nagara* 'town' TĀ, but cf. already *nagar-in* JB :: Tam. *nakar* 'house abode, town, city'; cf. EWA II 5, CDIAL 6924; DEDR 3568 IA --> Tam. *nakar* 'house, town, etc.' But why *nakar* from Skt.? There is no IA etymon, nor is there one in Drav. and Munda. Drav. for settlements: DEDR 3568 *nakar* 'house, town', 1655 *kuṭi* 'home', 3868 *paṭṭi* 'cow stall, village', 5393 *viṭu(ti)* 'temporal residence', 2007 *cēri* 'street, village', 752 *ūr* 'village', 4362 *pūṇṭi* 'town, village', 4047 *pakkam* 'seaside village', 4646 *maṭappam* 'agricultural town', 807 *eyil* 'fortress'; 4064 *paṭi* 'town', 4112 *pāli* 'temple, town', 4555 Kan. *poḷal* 'town', 5549 *vai*, 3911 *pati*, 2814 *cēr*; 3638 *nāṭu* 'open country' (opp. *nakaram*); -- cf. also Skt. *haṭṭa* 'market'~ Santali, Mundari, Ho *hatu*, Korwa *watu* < PMunda **watu* Pinnow 1959: 79 §69.-- In short, the word may be a loan from the southern Indus language or one from the Malwa area.

Thus, the words added by Southworth are post-Ṛgvedic (*śava*, *paṭhati*, *nagara*), or they are attested in relatively late RV sections (*gardabha*, *piśaci*), or they are of dubious nature (*car*, *māyā*, *tanū*). Therefore, it is not possible to suppose, with Southworth, an *early* close contact, *even in Iran*, and on all levels of society, of Dravidas and Indo-Aryans. Rather, one has to agree with Kuiper, who stresses the very hesitant acceptance of non-Indo-Aryan words and forms in the high level, poetic language of the RV. The words collected by Southworth in his second list can have been taken over into Drav. at *any* time after the RV, e.g. *accu* 'axle' < *akṣa* RV.

Furthermore, most of the c. 800 words in the list provided by DEDR, p. 759-764 are attested only in the Epics or in class. Skt. Of the c. 61 words listed in the appendix of DEDR which are supposed to come from Indo-Aryan, only a few can be regarded as (possible) early loans; they all should be checked in early Tamil before something that even approaches a final decision can be made.

Finally, among the words in Zvelebil's recent list (1990: 77-82) of 22 "early" Drav. loans into Skt., most have already been discussed above; yet, none of them nor the ones newly mentioned are Ṛgvedic: 8. *bilva* 'Aegle marmelos, Bel tree' AV, 10. *kuṇapa* 'corpse' AV, 11. *kurkura* 'dog' AV, 12. *arka* 'Calatropis gigantea', ŚB, 12a. *candana* 'sandal wood, paste' Nirukta, 13. *kavaca* 'armor' PS, ŚB, *kavacin* AV, 13a. *jaṭa* 'matted hair' GS, 13b. *māla* 'flower necklace', GS, *mālya* RVKh, 13c. *eḍa* 'sheep' KSS, *eḍaka* JB, *aiḍaka* ŚB. The rest of the words are only post-Vedic.

Zvelebil's summary is: "as Emeneau (1971) writes, 'We end, then with a small, but precious handful of Vedic forms for which Dr. etymologies are certain and acceptable as may be expected in this field of areal linguistics, adding, though that no chronology of the borrowings is possible' (Zvelebil 1990: 81; similarly Parpola 1994: 168). According to what has been said above, this has to be modified drastically: Ṛgvedic loans from Drav. are visible, but they also are now datable *only* to middle and late Ṛgvedic (in the Greater Panjab), and they can both be localized *and* dated for the Post-Ṛgvedic texts (Witzel 1987, 1989).

Of all the words mentioned so far that have been regarded as Drav., only the following few are possible, though not uncontroversial, for the early RV :

ukha[-chid] 'hip[-breaking]' 4.19.9; *phalgu* 'minute' 4.5.14, *aṇi* 'lynch pin' 5.43.8 (whose ultimate source is unclear, and, very tentatively, *bala* 'force' 5.57.6, 5.30.9, probably from IE, cf. Latin *de-bilis*).

Whether this is enough to ensure the presence of (even a small number of) speakers of Dravidian in the Panjab during early RV times may remain in the balance. These few village type words would constitute a strange legacy of the c. 700 years of the great Indus civilization,

had it been speaking Dravidian. From the middle RV, however, come: *kavaṣa* 'straddle legged', (a personal name) 7.18.12, *kūla* 'slope, bank' 8.47.11 and perhaps also *kunḍa* 'vessel' 8.17.13. Burrow (1955, 1958) regards the Drav. element in Vedic as having come from Northern Drav., but cf. Zvelebil 1990: 46.

If the middle and late RV words mentioned above are accepted as Drav. and even if some of the words *excluded* above for the early RV should be accepted, this would not change the general picture: There is *very* little Dravidian, but there are about 300 words of the Indus substrate.

For it *cannot* be said, conversely, that there were, during the older and middle RV, clear indications (or: "a precious handful", Zvelebil) of a strong Drav. substrate in the Panjab. At best, one can speak of a few very isolated cases which have been taken over into the RV; clearly this indicates an adstrate rather than a substrate.

This result is important for the time of the immigration of speakers of Dravidian into the Panjab and it specifically underlines that the Indo-Aryans *did not at once* get into contact with speakers of Drav. but only much later, when the tribes speaking IA were already living in the Panjab and on the Sarasvatī and Yamunā. Apparently, Dravidian speakers began influencing the Panjab *only at this moment in time* (cf. Allchin 1995: 31 sqq., see above). *Consequently, all linguistic and cultural deliberations based on the early presence of the Drav. in the area of speakers of IA, are void or they have to be reinvestigated.*

It cannot be argued that the immigration of the Dravidians into the Panjab should have taken place *earlier* than discussed above, for the simple reason that Drav. words do not exist in that early period; the same is the case if only the upper class such as traders (cf. *vaṇij* 'trader?' RV 1.112.11, 5.45.6, AV, (*pra-*)*vāṇa* 'trade?' 4.24.9, see Kuiper 1955: 168) and administrators of the Indus Civilization was composed of Dravidian speakers (Parpola 1994, Fairservis in: Southworth, 1979: 208, 228; contra, Hock 1975: 87f., cf. Southworth 1992: 663), and that in consequence, the Indus inscriptions should be read as Dravidian. In this case, one would expect, after some 400-700 years of the flourishing of the Indus civilization, cases of bilingualism. Consequently, much more Drav. influence should have been retained than visible in the few (late) words found in the c. 380 'foreign' words. One would expect at least a few important loan words from the fields of trade, handicraft or state organization (at least, from the post-Indus, village level type cultures). This, again, is *not* the case. *Paṇi* '(rich) foreigner, demon' cannot be connected with 'trader' inside the RV, and *paṇ* 'to barter' appears first only in (post-Ṛgvedic) KS, *pra-paṇa* 'trade' AV, *prati-paṇa* 'exchange' (see EWA II 69, DEDR 3884 does not help: *paṇ* 'work, service', *paṇikkaṇ* 'carpenter'; cf. Kuiper 1955: 168, on *vāṇa*, *vaṇij*.) In addition, there are not many designations of RV artisans, except for IA *takṣan* 'carpenter', etc. (see below). Even if Drav. had been the traders' language, one would be at loss to answer the question why Drav. influence is only seen in the middle and late RV as well as later one (AV+).

Summing up, *early* Dravidian influence in the Panjab can be excluded, but must be *explained* for the following middle and later RV periods (cf. also Kuiper 1997: 7 sq). This is best done by the scenario mentioned above: middle and later RV immigration of Drav. speakers from Sindh. Incidentally, it must be noted that in *all* of the RV, there are no typical Drav. words for agriculture which should be expected if the Indus people of the Panjab had been speakers of Dravidian. This agrees with the reconstruction of Fairservis (1995), Southworth (1979, 1988, 1990: 663 'an "Indus" or "Harappan" language or group of languages'), and McAlpin (1979) of early Dravidian: an originally pastoral society that acquired agriculture only in South Asia. All of this indicates that we have to take a closer look at the regions bordering the Panjab in the South, especially Sindh.

§5.1. Greater Sindh

In contrast to the clear picture of the Panjab in R̥gvedic times, the situation in Greater Sindh is much more vague and the following results must remain tentative. The RV does not mention this area as such, yet there are some indications that Sindh and neighboring Baluchistan were known. First of all, the *Bhalānas* tribe took part in the Ten Kings' Battle (RV 7.18) that settled the suzerainty of the Bharata chieftain over the Panjab tribes. The *Bhalānas* are identified with the *Bolān* pass and river near Quetta in Baluchistan. Unfortunately, southern local rivers are not mentioned anywhere in the RV south of the Gomati (Gomal River).

However, data from RV book 8 may supplement our scanty information. Book 8 has long been connected with Eastern Iran: K. Hoffmann (1940 = 1975: 1 sqq.) has pointed to Iranian looking names such as *Kaśu* ~ Avest. *Kasu-* (EWA I 330), *Kaśu Caidya* 8.5.37, *Kanīta* ~ Scythian *Kanītēs*, cf. further *Tirindira* 8.6.46 ~ *Tiridatēs* ~ Avest. *Tīrō.nakavθβa*, *Kṛśa* 8.59.3 ~ *Kērāsāspa*, *Parśu* 8.6.46 ~ OP *Pārsa* 'Persian', *Paktha* 8.22.10 (mod. Pashto, Paktho), *Varo Suśāman* 8.60.18 (with unusual Sandhi), *Arśasāna* 8.12.9, 2.20.6, etc., *Anarśani* 8.32.2 ~ Iran. *əršan-*? All such names, if Iranian, belong to pre-Iranian tribes that spoke a dialect close to the one that later developed to E. Iranian (cf. the similar case of the Mitanni-Aryans, below). Book 8 also knows of camels (*uṣtra* 8.4.21-24, 31, 46-48, O. Iran. *uṣtra*, as in *Zaraṭ-uṣtra*), that are first attested archaeologically in S. Asia in the Bolān area, at Pirak, c.1700 BCE.

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The area west of Sindh, Makran or Gedrosia, is known in Old Persian as *Maka* and its people as *Maciya*; this continues the old Mesopotamian designation *Makan* (Sumer. *Má-gan*, Elam. *Ma-ak-qa*, Akkad. *Ma-ak*, Greek *Mákai*) which included the other coast of the Gulf, in Oman. It may be that indigenous populations held on in this area for a long time as it is altogether missing in the list of "Aryan" countries in the Avesta (V. 1). Along this coast and the few rivers flowing into the Gulf, there were many Indus settlements. Further inland, the oasis along the Bampūr river was known to the Mesopotamians as *Marhaši*, an area that no longer belonged to the Elamite speaking lands which extended from Susa and Anšan to Simaški (Tepe Yahya/Shahdad).

Now, apart from RV 3 and 7, Drav. words occur first in the Middle RV book 8, more specifically in its Kāṇva section (RV 8.1-48, and 8.49-59, 60-66); they include *kuṇḍa-* 8.17.13, *mayūra* 8.1.25, *naḍa/naḷa* 8.1.33 (see below); note also the many words in RV 8 with retroflexes (Kuiper 1991: 17, Hoffmann 1941, 1975:16, Kuiper 1967: 84 n. 18, 86 n. 26).

If one takes all of this seriously and locates at least the Kāṇva sections of book 8 in East Iranian lands, that is in (S.W.) Afghanistan and Baluchistan, one can also adduce the very name of this clan of poets. K. Hoffmann (and I) have connected the name with *kṛ* 'to act magically, to do sorcery' (Hoffmann 1975: 1 sqq., Witzel 1983-5). Kuiper (1991: 80) has correctly objected there also is *Pra-skaṇva*, with the common Indus prefix *pra-* *[p̥ər-]. This

may mean that the Indus language extended to Eastern Iran, especially to the area west of Sindh, to Baluchistan, and to Makran with its many Indus settlements. Book 8 would then represent an amalgam of Dravidian and Para-Munda influences (including some pre-Iranian?).

Dravidian influence in Middle Ṛgvedic (the time of king Sudās) can be traced back, with some probability, to the areas from Arachosia to Sindh as well. It is here that Drav. place names are assumed to appear first (cf. L.V. Ramaswamy Iyer 1929-30). These names (showing MIA development $p > v$) extend from Sindh via Gujarat and Maharashtra to the South: Sindhi *-vali*, Gujarati *-wārī/warī* (Sankalia 1949), Mar. *-oli*, all from a Drav. word for 'village' (Tam. *palli* 'hamlet', Kan. *palli*, *halli*, Tel. *palli* 'village', Kur. *palli* DEDR 4018, CDIAL 7972, see Parpola 1984, 1994: 170 sqq., 1997; Southworth 1995: 271, see further, below).

A similar view has been proposed, on the basis of linguistic and archaeological observations, by Zvelebil (1972, 1990: 48, 123), Southworth and McAlpin,³ and Fairservis (1992: 17, 21). It has to be underlined, however, that McAlpin's reconstruction of an Elamo-Dravidian language family has not been accepted by Dravidologists. Fairservis and Zvelebil think of an immigration by Drav. speaking tribes at c. 4000/3500 BCE, from the mountainous lands of East Iran into the Indus valley. Both underline data that characterize the Dravida as originally pastoral hill tribes.

In sum, we may reckon with early Drav. pastoralists (Fairservis 1992, 1997) in Baluchistan and later on, after a period of acculturation with the Indus people, we may encounter Drav. farmers (Southworth 1979, 1990, 1995) who practiced intensive rice (Kenoyer 1998: 178, Jarrige 1985) and millet cultivation in Sindh.

§5.2. The languages of Sindh

In addition to these western (Dravidian, pre-Iranian) elements there also are local 'Sindh' ones. First of all, it is precisely in this area that rice was first introduced into the Indus civilization. It occurs first as *odana* 'rice gruel' in the (partly E. Iranian) Kaṇva book (RV 8) in the *Emuṣa* myth, which clearly smacks of 'foreign' origin: RV 8.69.14, 8.77.6-11, 8.77.10, (cf. also 8.96.2, 1.61.7, and in *vy-odana* 8.63.9; summary and discussion by Kuiper 1991: 16 sqq.) He had explained it earlier on (1950) as Austro-Asiatic, but is more cautious now (Kuiper 1991: 18f., cf. below). On closer observation, we can notice a mixture of an IA, Austro-Asiatic and possibly Drav. myth.

Kuiper (1991) now shows that the Kaṇvas, non-IA local sorcerers, introduced this myth into the RV. At any rate, the motif is unusual for the RV. Its hero is a divine bow shooter (probably seen on an Indus copper plate, only at Mohenjo Daro, in Sindh, Parpola 1997: 39; cf. also Avesta, Yt. 8.6,37 *ərəxša*, Kṛṣānu RV 4.27.3, Rudra, and Murukan in S. India; for 'bow' see KS *dalbhūṣī*, MS *drumbhūṣī*; with PDrav *-r-* > [l] / [ž], Kuiper 1991: 26). This bow shooter splits a mountain, finds the *odana* rice gruel and kills the boar *Emuṣa*. The myth is an imitation of the well known Ṛgvedic Vala myth (splitting the mountain cave containing the cows/dawns), but is otherwise completely alien to the RV.

Now, the suffix *-uṣa* (Kuiper 1991) of *Emuṣa* clearly indicates a name taken from the (Para-Munda) Indus language. This points to a *late* myth (because a latecomer, rice, is

³ McAlpin 1981 is based on the lexico-statistic calculation of P. Gardner 1980; he distinguishes:

Proto-Drav.: South Drav./Central Drav. - Brahui 4100-3000 BC

PDr-1 : SDr/CDr - Kurukh-Malto 2800-1900 BC

PDr-2 : SDr - CDr (Kolami, Naiki, Parji) 1500-1100 BC

PDr-3 : SDr I - SDr II (Tamil, Telugu) 1000-900 BC.

important), adopted from the local southern or southwestern Indus region and from beyond.⁴ Second, the word for 'rice' occurs in a Sindh and a Panjab variety (see below). The Sindh version, closer to Dravidian, has been transmitted further west, along the southern trading route to Fars and has entered western languages from there (Greek *oryza*).

Whether rice was otherwise known to the Ṛgveda is doubtful. Rice was introduced towards the end of the Indus civilization in its southern areas, in Sindh (Kenoyer 1998: 178, in Pirak, along with newly introduced sorghum and millet, and also horse, donkey, camel). In this case, we have again to reckon with a (West-)Munda word: *odana* is connected with *odi(kā)* 'wild rice' (lex., CDIAL 2546) and Santali *hoṛo*, *huṛu* 'rice plant' (EWA I 280) and explained as Munda loan (Berger 1963: 420, Kuiper 1950: 179; but cf. Zide and Zide 1973: 8-9 on Mundari *kode*, Kharia *kuda* 'millet, ragi'). Together with the introduction of rice its *charter myth* (Malinowski) may have been taken over as well. As has been mentioned, the Dravidians originally had neither a word for 'rice' nor for the staple food of the Indus civilization, wheat.

In sum, it can be said that we may have to reckon with a combination of several factors in the southern Indus area: with the (Para-Munda) Indus language, with some more eastern Munda influences, with immigration from E. Iran in the person of Vasiṣṭha (RV 7) and of (pre-)Old Iranian tribes into Baluchistan and the neighboring Kachi plain of the Indus valley (e.g. at Pirak, 1700 BCE), and with Dravidian immigration.

As mentioned above, Zvelebil (1970, 1990) is of the opinion that the Dravida entered South Asia from the Iranian highlands. Their oldest vocabulary (Southworth & McAlpin) is that of a semi-nomadic, pastoral group, not of an agricultural community. They are thus not expected to have their own word for 'wheat'. Wheat, however, was the staple of the Indus civilization, and was called in Dravidian by an adaptation of a local word: **gō-di* 'low red plant' (Southworth 1988, 1979, 1990) which is quite different from the Panjab word **go-dum* > Vedic *godhūma* 'cow smoke' (details below). If the Dravidians acquired agriculture only in the hills bordering S. Asia, they may very well have been inhabitants of Baluchistan at the time. At any rate, neighboring Sindh, just as Gujarat and Maharashtra, show place names that are explainable from Dravidian **palli* (see above). Then, according to archaeology, a large section of the population of Sindh left this area towards the end of the Indus period. They moved further east, to Gujarat, where we find a late, local phase of the Indus civilization (Rangpur phase IIb, IIc, see Allchin 1995: 32 sqq., Kenoyer 1998: 173 sqq.), and, again, Drav. place names.

It is indeed possible that the Dravida constituted a first wave of central Asian tribes that came to Iran before the IA, just as the Kassites came to Mesopotamia before the Mitanni-IA. In that case they knew the horse already in Central Asia, but would not have taken it over directly from the Indo-Iranians (as may be indicated by Brahui (*h*)*ullī*, O.Tam. *ivulī* 'horse', etc., different from IIr. *aćva*). In other respects as well, they have not been influenced by the Indo-Iranians.

One can even assume that the early testimony of the introduction of horse and camel from the Iranian plateau into Sindh (Pirak and Kachi plain in western Sindh) is due to the Dravida (c. 1700 BCE, Kenoyer 1998: 178; Allchin 1995: 31). In that case, it must be investigated why they apparently did not preserve a word for 'camel'. In this fashion, that is through the mediation of the Dravida in Sindh, Drav. **variñci* 'rice' must have reached Iran

⁴ It has to be observed that the boar does not play a role in the Indus civilization: "apparently not domesticated, not used in Indus economy" Kenoyer 1998: 165; this rather seems to be an eastern phenomenon (thus Munda?); cf. below Munda and Sino-Tib. 'pig' and cf. the ancient boar cult on the Nicobar Islands.

(> M.Pers. *brinj*), that is not, as otherwise common, via the northwestern Khaiber Pass, as in this region another form of the word is found, with **vrijhi* > Pashto *wrižē*, etc. (see below).

This may mean, on the one hand, that the Dravida themselves were immigrating at the time of the older RV, or that they only influenced the Panjab in the later, Middle R̥gvedic period, coming from Sindh. This is perhaps supported by archaeological facts, for Sindh was practically deserted by its population in the post-Indus phase (Allchin 1995: 31 sqq.) It is from this Southern basis that they suddenly appear in mid-level RV, with names such as *Kavaṣa* 'straddle legged' (*K. Ailūṣa* RV), cf. *Śailūṣa* "dancer, singer" VS (EWA II 655, Kuiper 1991:20, 25, 42) which Kuiper 1991: 24 explains with reference to Dravidian: initial *c-* is often dropped in South (!) Dravidian; further examples in RV are : *Śirimbīṭṭha* : *Irimbīṭṭhi* EWA II 639, cf. also *śiriṇā* 'hiding lace, night?' : *irīṇa* 'salt pan, hiding place (for gambling)' (Witzel 1999).

Ailūṣa is important, as it was this poet who was an important priest, on the side of the opponents of the Bharata. (These opponents included the Bhalānas). His great-grandson Tura Kāvaseya, however, is an important priest of the Kuru realm that succeeded the Bharata 'kingdom'; he developed the Agnicayana ritual (Th. Proferes, Harvard Ph.D. thesis 1999). This case shows the inclusion of a Dravidian into the fold, and underlines the important role a new 'convert' to Ārya religion could play in its very development (that of the post-RV, classical Śrauta ritual, see Proferes). Further, he was not classified as Śūdra but obviously as a Brahmin who had learned to compose RV hymns in the traditional poetic IA language! All of this is indicative of a high degree of amalgamation and language acquisition at this time, during the middle and late R̥gveda period (see below).

§5.3. The Southern Indus language: Meluhhan

However, there are indications that another language was prevalent in Sindh before the immigration of the Dravida. The trade of the Indus civilization with Sumeria and later Mesopotamia has left us a number of words that are not Dravidian. It is perhaps best to call this language "Meluhhan" after the name the Sumerians gave to the country, Meluḥḥa. Its language was also sufficiently different from Elamite or Sumerian to require a 'translator from Meluḥḥa' (Possehl 1996a: no. 2), whose name is *Šu-ilišu* (Parpola 1994: 132). In fact, "the language of Marhaši [Bampur area, just west of Iranian Baluchistan] is different from that of the Simaškians [Tepe Yahya in southern Central Iran], and only very partially Elamite-related." (Vallat 1985: 52). This indicates that there was a language boundary, somewhere to the west of the present Iran-Pakistan border. Possehl identifies the area of Meluḥḥa (1996a, 1997) as having a center in the hills and mountains of Baluchistan, closer to the population center of the early Indus civilization, which allows for a hypothetical identification of the Marhaši language with that of Meluḥḥa and makes a thorough investigation of the data of RV 8 (see §5.1.) even more important. There are men with *Meluḥḥa* as a personal name, thus apparently, 'the Meluḥḥan'; several persons, among them *Urkal* and *Ur-d̄lama*, are called 'the son of *Meluḥḥa*'. There also is a 'village of Meluḥḥa', from where a person called *Nin-ana* comes. The products of Meluḥḥa include *giš-ab-ba-me-lu-ḥḥa* (*abba* wood, a thorn tree), *mēsu* wood ('of the plains'), ships of Meluḥḥan style (*magilum* boat) (Possehl 1996a). In total, there are some 40 "Indian" words transmitted to ancient Mesopotamia, some of which may have been coined by Dilmun (Bahrain) traders. They include: Sindh wood *sinda* (*si-in-da-a*, *si-in-du*), date palm, the 'red dog of Meluḥḥa', *zaza* cattle (zebu?), elephants, etc. (cf. Landsberger, *Die Welt des Orients* 3. 261). As coming from Dilmun (Bahrain), we may add the Meluhhan(?) trees *giš-ḥa-lu-ub* or *ḥaluppu* wood, *giš-mes-makan* or *mēsu* wood of Magan, and the *gišgišimmar* wood (cf. above **šimmal* in *šimbala*, *šalmali* 'Salmalia

malabarica!') A slightly later(?) loan-word relationship is seen in Sumer. *ili* 'sesame', Akkad. *ellu/ūlu* 'sesame oil', which is only found in South Drav. with *eḷ, ellu* 'Sesamum indicum' (D. Bedigian 1985); the word can be compared, however, with Ved. *tila* and *jar-tila* 'sesame' which shows the typical Para-Munda prefix *Cər-* (cf. Kuiper 1955: 157 for a Munda origin). The ultimate source, **(t)il*, however, is unclear (cf. Blažek and Boisson 1992 on Sumer. loans in Dravidian, see below §6).

The word *meluḥḥa* is of special interest. It occurs as a verb in a different form (*mlecha-ti*) in Vedic only in ŚB 3.2.1, an eastern text of N. Bihar where it indicates 'to speak in barbarian fashion'. But it has a form closer to *Meluḥḥa* in Middle Indian (MIA): Pali, the church language of S. Buddhism which originated as a western N. Indian dialect (roughly, between Mathura, Gujarat and the Vindhya) has *milakkha, milakkhu*. Other forms, closer to ŚB *mleccha* are found in MIA **mliccha* > Sindhi *milis*, Panjabi *milech, malech*, Kashmiri *bričhun* 'weep, lament' (< **mrech-*, with the common *r/l* interchange of IA), W. Pahari *melēch* 'dirty'. It seems that, just as in other cases mentioned above, the original local form **m(e)luḥ* (i.e. *m(e)lukh* in IA pronunciation, cf. E. Iranian *bāxδī* 'Bactria' > AV **bahli-ka, balhi-ka*) was preserved only in the South (Gujarat? > Pali), while the North (Panjab, Kashmir, even ŚB and Bengal) has **mlecch*. The sound shift from *-ḥḥ-/-kh-* > *-cch-* is unexplained; it may have been modeled on similar correspondences in MIA (Skt. *akṣi* 'eye' ~ MIA *akkhi, acchi; kṣetra* 'field' ~ MIA *khetta, chetta*, etc.)

The meaning of *Mleccha* must have evolved from 'self-designation' > 'name of foreigners', cf. those of the Franks > Arab *Farinjī* 'foreigner.' Its introduction into Vedic must have begun in *Meluḥḥa*, in Baluchistan-Sindh, and have been transmitted for a long time in a non-literary level of IA as a nickname, before surfacing in E. North India in Middle/Late Vedic as *Mleccha*.⁵

Further examples of the Southern Indus (Sindh) language include the designations of plough, rice, wheat, and millet.

Plough

The old agricultural word *laṅgala* 'plow' (RV, 4.57.4, a late hymn) is found, in a divergent form, in Tam. *ṅāṅcil, nāṅcil*, Kan. *nēgal*, Gadba *nāngal* (DEDR 2907). Southworth (1988; 1979: 200, 205; 1995: 268, cf. Kuiper 1948: 127, 1955: 156, Przyłudski BSL 24, 118 sqq., cf. Parpola 1994: 168) assumes a popular etymology PDrav. **ṅān-kal, *ṅān-kel* 'earth stone' and traces the term back an Austro-Asiatic source, Munda **ṅa-kel, ṅan-kel* (Zide & Zide 1973: 5), Santali *nahel*, Khasi *lynkor* [*lənkor*] < **lēnkol*, Khmer *aṅkal*; cf. also the Austronesian forms, Malay *tengala*, Makassar *naṅkala* (Bagchi 1929, 9). V. Blažek and C. Boisson (1992: 17-19) add cognates from Austroasiatic (Vietnamese *cay* < **kaḷ*, etc.), Austronesian (Cham *langal, langar*, Batak *tingala*, Bugi *rakala*), Sino-Tibetan (Kanauri *haloṅ*) etc.; they think of a

⁵ Pali *milaca* is influenced by a 'tribal' name, Piśāca, as is Sindhi *milindu, milidu* by Pulinda; the word has been further 'abbreviated' by avoiding the difficult cluster *ml-*: Prakṛt *mecha, miccha*, Kashmiri *mī.c(h)*, Bengali *mech* (a Tib.-Burm tribe) and perhaps Pashai *mecə* if not < **mēcca* 'defective' (Turner, CDIAL 10389. -- Parpola 1994: 174 has attempted a Dravidian explanation. He understands *Meluḥḥa* (var. *Melaḥḥa*) as Drav. **Mēlakam* [*mēlaxam*] 'high country' (= Baluchistan) (= *Ta-milakam*) and points to Neo-Assyrian *baluḥḥu* 'galbanum', *sinda* 'wood from Sindh'. He traces *mlech, milakkha* back to **mleḷḷ*, which is seen as agreeing, with central Drav. metathesis with **mlēxa = mēlaxa-m*. Kuiper 1991:24 indicates not infrequent elision of (Dravid.) *-a-* when taken over into Skt. -- Shafer 1954 has a Tib.-Burm. etymology **mltśe*; Southworth 1990: 223 reconstructs PDrav. 2 **muḷi/miḷi* 'say, speak, utter', DEFR 4989, *tami* 'Tamil' < 'own speech'.

Sumerian, and ultimately perhaps even an Afro-Asiatic origin of this widespread word of culture: Sumer. *nīg-ḡala_{x+1}* or *nīg-ḡál* 'sickle' ('the semantic shift ... may seem far-fetched', 1992: 19), and Afro-As. **nigal* 'to reap; reaping sickle'.

However, the Munda words do *not* agree with Ved. *laṅgala*, though one can easily assume dissimilation of *n-l*. The word underlying RV *laṅgala* must have come from an intermediate language, in short, the Panjabi form of the Indus language (Para-Munda), with **laṅgal*. This form cannot have been that of the Southern Indus language (Meluhhan) as this has resulted in Drav. **ñāṅkal*, *ñāṅkel*. While the difference is small here (*g/k*, *n/l*), it is more substantial in other agricultural words.

Rice

The word for 'rice' shows a difference between a Northern form, approximately *(ə)βərij, versus a southern one, **vari*, (*v*)*ariki*, *variñci*. Note that this indicates the same difference in tenuis/media as met with in the word for 'plough':

N. **laṅgal*, **vəriji* :: S. **naṅkal*, **variñci/variki*.

Still another form exists in Proto-Munda **ə-rig*; it has provided Dravidian *(*v*)*ari*, *variki* > Tam. *arici*, *ari*, Kan. *akki* (DEDR 215), and also Tam., Tel. *vari* (DEDR 6565).

Though rice is indigenous to S. Asia, the domesticated version can be traced back to S.E. Asia and S. China.⁶ It has been found in India since the 3rd millennium BCE (Glover & Higham 1996, Kajale 1991), and appeared late in the southern Indus civilization, at Pirak c. 1700 BCE. However, it appears first (as *vr̥hi*) only in post-RV texts (AV, c. 1200 BCE), though it probably was an ingredient in the RV offerings *puroḍāśa* 'rice cake' and *odana* 'rice gruel'. The older IA grain is only *yava* 'barley', but later on we have 7 or 10 agricultural products: in the Yajurveda Samhitās, the 'seven agricultural plants' (*sapta grāmyā ośadhayaḥ*); ŚB 14.9.3.22 has even ten: *vr̥hī* *Oryza sativa* L.; *yáva* *Hordeum vulgare* L. subsp. *hexastichum* (L.) Schinz et Kell.; *tīla* *Sesamum indicum* L.; *māśa* *Phaseolus mungo* L. var. *radiatus* = *Phaseolus Roxburghii*; *āṇu* *Panicum miliaceum* L.; *priyāṅgu* *Setaria italica* (L.) Pal. Beauv. = *Panicum italicum* L.; *godhūma* *Triticum aestivum* = *Triticum sativum* Lam.; *masūra* *Lens culinaris* Medic. = *Ervum lens* L.; *khálva* *Phaseolus radiatus* L. a variety of *Phaseolus mungo* L. = *māśa*(?); *khalá-kula* *Dolichos biflorus* L. (W. Rau 1997: 203-206).

Southworth (1979, 1988: 659-660) supposes an Elamo-Dravid. origin: **var* 'seed, grain', Elam. *bar* 'seed', PDrav (stage 1, c. 2000 BCE) **vari* 'rice grain'. (McAlpin 1981, Tyler 1968, Southworth 1988). Achaemenid Elam. *umi* 'grind (grain)', **um* 'to process grain', PDrav1 **um* 'husk, chaff' DEDR 637; (this should be compared with **gant-um-a*, *gandh-um-a*!). However, the Elamo-Drav. family has not been proven to the satisfaction of Dravidianists (McAlpin (*et al.*) 1975, Krishnamurti 1985, Zvelebil 1985), and the N. Drav. language Brahui, seen as a link by McAlpin, is a late-comer to Baluchistan (Elfenbein 1987). Southworth (1988: 664) stresses the difference between northern (Gangetic) and southern rice, which might have been dry land rice.

On the other hand, Southworth later on mentions that PDrav *(*v*)*ariki* DEDR 215, has been taken over from PMunda at c. 1500 BCE: **ərig* 'millet, *Panicum militare*' (Zide & Zide 1973: 8) --> **ariki*(*i*) 'staple grain' (Southworth 1988: 660), because the South Drav. sound

⁶ The earliest archaeologically found rice is said to come from Koldihwa near Allahabad (c. 5440/5430 BCE or even earlier); this has been doubted. A more probable date is c. 4000 BCE, at Chirand in Bihar. -- Some trace the terms for rice back to Sino-Tibetan (see Blažek and Boisson 1992: 27 n. 40).

change $k > c$ took place only between the second and third stage of Drav. (Krishnamurti 1969); thus: Munda **ərig* --> Drav. *(*v*)*ariki* > Tamil *ari*, *arici*. This South Dravidian form *arici* has been transmitted westwards, probably by sea trade, Greek *óryza*, *óryzon* and Arab. *ruz*, Engl. *rice* etc. (Southworth 1979: 202, cf. EWA II 598).

Southworth also reconstructs PDrav. **vari*, **variñci* DEDR 5265. This, too, was transmitted westwards, but via the Baluchistan-Bampūr trail, to Old Iranian as **brinj*, M.Iran. *brinj*, N.Pers. *birinj*). It must have been this form that was the basis of the word in the late Southern Indus civilization.

The northern track westwards is attested by Ved. *vr̥thi* < pre-IA **vrijhi*- and reflected in the E. Iran. (and N. Iran.?) languages: Pashto *wrižē*, (but Khotan. *rr̥ysua* [*r̥izua*]!), Nuristani *wrič*, *rič*. (cf. Fussman 1972).

The Northern Indus dialect had **vrij* > Ved. **vrijhi* > *vr̥thi*, Nuristani *wrič*, Pashto *wrižē*. The Southern dialect is indicated by M.Pers. *brinj*, N.Pers. *birinj*, going back to **vəriñji*, Dravidian **variñci*, a form with "infixed" -*n*-, found in central Dravidian: Gondi *wanj̄t* (Pengo *verci(l)*, Gadba *vasil*, DEDR 5265). The form with -*n*- points to Munda origin and to a relatively far-reaching influence or expansion of the Munda in this early period (cf. Kuiper 1955: 140, 1962: 14, 51, 1991: 39f.) Again, this distribution also suggests a difference between, on the one hand, northern or north-western form, including the northern Indus language, and on the other, the southern Indus language and the rest of the subcontinent.

However, these forms have to be reconciled with Tibetan '*bras* [*əbras*] > mod. Tib. [*jɛ*], Purik *bras*, with the neighboring, linguistically isolated Burushaski *bras* (Kuiper 1962: 40, 1955: 143 n. 17, Tikkanen, 1988: 303-325), Dumaki *bras*, and even with some Austronesian forms such as Malay *bəras*--> Somali *baris*?; cf., however, Dayak *bari*, Malegasy *vare*, *vari* --> Bantu *wari*, *wali* (Nurse 1983, Southworth 1988: 664, Witzel 1995) and O.Jpn. *uru-shine*, (cf. mod. Jpn. *uru-chi* < **uru-ti*). Both *bras* and pre-Vedic **vrijhi* must go back to a source such as ***əβərij* (Witzel 1997b).

In the study of the Asian words for 'rice' we have to take into account words from S., S.E. and E.Asia:

- S. Asia: Ved. *vr̥thi* < **vrijhi*,
- Burushaski *bras*⁷, Tib. '*bras*,⁸
- Drav. **arici*, **variñci*;⁹
- Munda **ə-rig*,
- Tib.-Burm. **dza*-¹⁰ < Austr. **C_samaq*

⁷ Southworth 1990: 229, n.10: PIA **camala/cāvala* < TB *ca*-? (*dza*); cf. Southworth 1974, with an early Drav. substrate in the northwest and in the Gangetic plains: < Tib.-Burm. **ca* + *vāl/vār* < Drav. *vari*? -- Other IA words for 'rice' (*oryza sativa*): OIA *taṇḍula* < Drav. (Southworth 1988: 660); OIA *śāli* < Tib.-Burm. *cau-* / Austr. *C_samaq* (Benedict 1990); P.Drav.1 **manji(k)* DEDR 3790, 'rice plant', but also 'seed' in Kurukh.

⁸ Benedict 1972: 123 [*əbras*, '*əbras*]; cf. also TB **mruw* 'grain, seed' Benedict 43: no.150 Tib. '*bru* 'grain' (and Nepal. inscriptions, with -*brā*, -*bā*, see below), and (?) Lushai *buh* 'boiled rice'

⁹ Southworth 1990: 229 n. 9. - In Drav. the word for 'rice' cannot be reconstructed for the early stages (PDrav. 1), where only the meaning 'seed' is found: Kurukh *manj̄t* 'seed in general' and Tamil *arici* 'seed' in: *elav-arici* 'cardamom seed' DEDR 768. -- Cf. also Guj. *var̄t* "particular kind of grain", Mar. *var̄t* 'grain Coix barbata', Pkt. *varaia* 'a kind of rice'; CDIAL 11328 *var̄t*, -- all on the Drav. trail South from Sindh.

¹⁰ Ved. *vr̥thi* has been supplanted in NIA almost everywhere by Tib.-Burm. CDIAL 4749 **cāmala/cāvala*, Pkt. *caulā* (pl.), *cavala*, and NIA *bhāt* 'cooked rice' (Southworth 1988: 666); for this see Benedict 1972: 28 no. 66 'to eat', Kanauri *za*, Garo *t̄sha* 'eat', Lushai *fa'*, *fāñ*, Bahing *dz'a*, Newari *jā* 'cooked rice', *jāki* 'uncooked rice' (cf. Lushai *caw*

Kusunda *cusum* 'rice in husks', *kādiyun* 'cleaned rice'

- S.E. Asia: Munda **ruŋ-ku*'g (Zide & Zide 1973: 17)

Austr. **C₅amaq*

Austrones. **pajay*;

Austrones. **i-may*

Thai **xau* > *khaw* (Haudricourt, in Shafer 1966-7: 522)

Austro-Thai **kru-may* (> Jpn. *kome*)

- E. Asia: Chin. **miər*, Tib.-Burm. **may*¹¹

The distribution of the various words for 'rice' points to an old (South)East Asian word of culture. Just as in the modern spread of the E. Asian word 'tea', several routes of distribution have to be distinguished:

1. an approximate reconstruction of the S.(E.) Asian word **əvrj(h)i/*əbras*, probably < ***əβərj*,¹² which is spread out in a wide arch between
2. E. Asian **may*, **xau*, **krumay* (< **kru*-**may*?)¹³ and
3. S. Asian **ə-rig*¹⁴, **ruŋ-ku*('g).

PMunda **ruŋ-ku*('g) (Zide & Zide 1973: 17, *(*r*)-(n)-*ku*, Kuiper 1962) may be an Austro-Asiatic form with prefix *r*-. This might be connected, via metathesis, with Benedict's Austro-Thai-Japanese **krumay* (> Jpn. *kome*, *kuma-shine*), a word that may be composed, if Sino-Tib. (Benedict 1972: no. 65, 128, 149, 192, 193) **may*, Austrones. *i-may* and Thai **xau* are compared, of **kru*-**may*. In the end, one may think of a Proto-form ***kru* as the ultimate source for 'rice' in S.E. and E. Asia (Sino-Tib., Austro-As., Austro-Thai; cf. Blažek and Boisson 1992: 27 n. 40).

'cooked rice', *caw ciar*); the Tib.-Burm. word apparently is a loan from Austro-Thai: **C₅amaq*, s. Benedict 1990: 175.

¹¹ Benedict 1972: 149 n. 408, 491-2 Tib.-Burm. **may* as early loan-word from Austro-Thai, e.g. Indones. **imay* 'rice' (but O.Jpn. *yōne*, Jpn. *ine*, *-shine* 'rice plant' < **yinai*, according to Benedict 1990: 234; cf. also *ne* 'root'); Chin. *miei* < **miər* 'rice (paddy)', Bodo-Garo **m[a,e]y*; Karen **may*; cf. Tib.-Burm. **s-min* 'ripe, cooked') Benedict 1972: 106 § 432 (< Proto-Miao-Yao **snañ* 'cooked rice'?, see Benedict 1992: 234).

¹² Benedict 1990: 43 reconstructs Proto-W.-Malayo-Polynes. (Hesperonesian) **pajay* (Malay *padi*, Javanese *pari*, cf. the Engl. loan *paddy*; however he also has (1990: 77) Proto-Austrones. **pagr[ə]y*, that differs from the S. Asian/Central Asian cluster **vrjhi/bras* by a transposed(?) -r-, (perhaps: Austric ***βə-rəji* / **pa-Cj/gṛəy* > **pagrəy*, **pajay*??).

¹³ Benedict 1990 assumes Proto-Austro-Thai **krumay*, whence Jpn. *kome*, *kuma(-shine)*. In connection with the Tib.-Burm. and Sinitic forms (**mi*, *may*, Benedict 1972) a compound ***kru* + ***may* may be construed. The proto-form ***kru* seems to be the source for the words for 'rice' in Sino-Tibetan, Austro-Asiatic and Austro-Thai (including Austronesian).

¹⁴ The Austro-Asiat. words still are very close to those in Austro-Thai: PMunda **ruŋ-ku*('g/'b) < Austro-As. **ərig*, 'millet, *Panicum militare*'. Pinnow 1959: 96 § 139 derives **ruñ* from Kharia *ḍuruñ* 'to pound rice' etc. (p. 92 § 116), and *-ku*('b) from Sant. *hoṛo*, Mundari *huṛu* etc. (p.122 § 244), cf. also Kharia *khōsṛō pe*' etc. (p. 171 § 370). -- In Munda there is, next to Kharia *romku*'b, also Juang *ru(n)kū*, Sora *ruñkū-n*, Bondo/Remo, Parengi *ruñku*, Gutob *rukū* (Pinnow 1959: 96), and in eastern Austro-As.: Khasi *khau*, Mon *unko*, Khmer *oñkor*; - Thai *khāu* may be a loan word from Austro-As.? Further: Palaung *ra-kō*, Kuoi *añkau*, Sue *rañkao*, Palaung *ra-kō*, Palaung-wa *unko*, Sakai: Krau (Ketiar) *uñ-kuok*, Sakai also: *cənroñ* 'husked rice', Krau (Kuala Tembeling) *rə-kua*' etc. (Pinnow 1959: 96, Kuiper 1962: 51f.). The variation in Austro-As., already observed by Kuiper, points to a proto-form *(*r*)(n)-*k(h)u*. - Thus, Dhimal (= Tib.-Burm. Kiranti, eastern Himalaya) *añkhū* 'rice', according to Kuiper < Munda **ruñku*.

The origin of O.Jpn. (Wamyōsho) *uru-shine* (cf. *kuma-shine*), Jpn. *uru-chi* < **uru-ti* remains problematic. It seem to belong to the S./Central Asian group **vrij(h)i/*bras* and could have been introduced from (S.)China to Japan along with the domesticated plant. The proto-form might have been something like ***(ə)βərij; the difficult initial cluster **βr- has received various treatments: Drav. *va-/ a-*, Proto-Jpn. **wuru-* > *uru*, *βərij > **vrijhi* > Ved. *vr̥thi* as *b* is relatively rare in IA and is often replaced by *v* in foreign words.

Wheat

Further dialect differences between the northern (Panjab) and the southern (Sindh) forms of the Indus language can be observed in the designation of 'wheat'. Though some claim that wheat, the staple of the Indus civilization, is a local domesticate (cf. Allchin 1995: 46, cf. Allchin & Hammond 1978, Kenoyer 1998), it is a western import, as it originated west of the Zagros and south of the Caucasus. In S. Asia it is found as early as the 7th millennium BCE. This leaves several thousand years before the attestation of the S. Asian words for 'wheat', Ved. *godhūma*, Kan. *gōdi* etc.

These are clearly related to Near Eastern ones, e.g. (according to Berger 1959, EWA II 499) **qend* > Hitt. *kant*, Old Egypt. *xnd*, PSEmit. **ḥant* (Arab. *ḥinṭatum*). The individual track of the loan word differs, however, just as in the case of the word for 'plough'. A form **gant-um* (note also PKartv. **ghomu*), that has entered via the northern Iranian trade route (Media-Turkmenistan-Margiana/Bactria-Aratta/Sistan) has resulted in Avest. *gantuma* and the later Iranian forms: M.Pers. *gandum*, Baluchi *gandīm*, Pashto *yanəm* < **gandūma?*, Yigdha *gondum*, Shugni *žindam*; Khotanese *ganama* < **gandama*, etc. (see Berger 1959: 40f, EWA II 498). The Iranian form has also been taken over by the Drav. newcomer in the region, Brahui: *xōlum* < IA **γolum* (CDIAL 4287), according to Berger (1959: 42), however, from Bur. However, Bur. *guriñ*, *gureñ* (pl.), *yárum* < **yor-um* < ***yund-* (Berger), rather seem to have been borrowed from the Indus language. (Berger thought of a loan *from* Bur. into the Panjab area languages; cf. also Bur. *gur* 'barley, wheat colored', *bur* 'buck wheat' Berger 1959: 43. However, J. Bengtson informs me, by letter of 4/19/99, of the following Macro-Caucasian links: Bur. *gur* 'wheat' ~ Basque *gari* 'wheat' < PEC **ḡōl'e* 'wheat' > Tindi, Karta *q̄eru*, Archi *qoqol*, etc. (Note that Harmatta, EWA II 499, thinks of an Anatolian **ghond[ū]*, but cf. Klimov's PKartv. **ghomu*). How these can be linked to general "Near Eastern" **qend/kant/gand* remains to be seen. The question of the domestication of einkorn, wheat, etc. in the Near East would play a role in determining when the word could have existed (in PEC) and/or spread east - and westwards.

When this word entered the Panjab it must have changed its initial syllable (**gan-*) to *go-*, thus **godum*, a change echoed by the Southern Indus language (**godi*). Vedic has *godhūma* and similar continuants (Turner, CDIAL 4287). This is a clear folk etymology: the unfamiliar **gantum/gandum* > **godum* was analyzed as *go-dhūma* 'cow smoke'.

Another form of the Near Eastern word that has come via the Southern route (Elam/Anšan - Simaški/Tepe Yahya - Marhaši/Bampūr) has resulted in Meluhhan **gōdi*. This is retained in Drav. **gōdi* (Kan. *gōdi*, Tam. *kōti*, cf. DEDR 1906). The change from *-an-* > *-o-* is not unfamiliar in Sindh (see below). A pre-Iranian **gantum* must have become **go-tum* or **go-dum* in Sindh.

The Drav. word, too, seems to be a popular etymology of the unfamiliar **godum*: 'low red plant', reconstructed by Southworth (1988: 658, 660) as PDrav. 3 at c. 1000 BC as **kō-tumpai*. Maybe he thought of DEDR 3334 Tam. *tumpai* etc. 'nettle, weed' etc. (cf. Tam.

kōtumam, Mal. *kōtambu?*). The exact development from **tumpai* > -*di* would then not clear; (at this supposed late date *kōtumpai* could even be based on RV *godhūma!*)

Obviously, in *this* case both the Northern and Southern Indus language have changed -*an-* > -*o*, while the Northern language otherwise retains -*an-* (see below). The northern form, based on Pre-Iranian **gantum* would have resulted in Vedic ***gan-dhūma* or perhaps ***gandha-dhūma* 'perfume smell', cf. CDIAL 4020 Skt. (lex.) *gandhalu* 'fragrant rice', Pashai *gandār* 'a kind of grain'. The Southern (Meluhhan) **godi* must have influenced a northern **gantum/gandum* that facilitated a later Vedic popular etymology as 'cow smoke'. The mechanism of this influence is unclear. It may be due to Dravidian influence on the Panjab in the Middle/Late R̥gvedic period; note that *godhūma* appears only in early post-RV texts.

In short, the inhabitants of the northern Indus region (Panjab) thus must have called their wheat something like **godum* and those in the Southern Indus region (Sindh), **godi*.

§5.4. Further dialect differences

However, the strange sound change **an* > *o* is not isolated. It also occurs in the migrant word of culture for 'hemp': Ved. *śaṇa* (AV 2.4.5, PS 2.11.5 *śaṇa*), M.Pers., N.Pers. *šan*, Khotanese Saka *kaṃha* (but Gāndhārī > Niya Pkt. *ṣaṃṇa*), Osset. *gæn*, *gæno*, (Greek *kánnabis*, EWA II 605; Engl. *hemp*, etc.). It appears, again, in Dravidian with popular etymology, as Tel. *gōnu*, *gō:gu*, cf. *gōṅūra*, Kan. *gōgi*, 'hibiscus cannabinus' (DEDR 2183). The original northwestern form is guaranteed by the North-Iranian (Ossete), Greek and Germanic forms of the loan word: *kanna-bis*, *hemp*, etc. The northwestern dialect has preserved *-*an-*, for example in the R̥gvedic, yet certainly pre-Indo-Aryan tribal name of the *Gandhārī* (and in the later Vedic country *Gandhāra*). The northwestern name *Šambara* (in the Afghan. hills), too, has not been changed to **Šobara*, but note the name of a poet in the more southern RV 8, *Sobhari Kāṇva*.

We have a clear distinction between N. Indus -*an-* and Southern Indus -*o-*. (Note that original *-*an-* appears in post-RV texts further east and south, in Dravidian, as -*o-*). This is again a point that may turn out to be of importance for the decipherment of the Indus script which indeed has several features (special signs) that are different in Harappa (N) and Mohenjo Daro (S), (see B. Wells 1998).

This is the opportune moment to briefly discuss another northwestern peculiarity, the interchange of *k/ś* in Vedic. This has occasionally been observed, even one hundred years ago in the case of *Karkoṭa/Śarkoṭa*, but it has not been put into proper relief (Kuiper 1991: 41, 42, 44 as Proto-Munda, cf. KEWA III 309, Witzel 1999). The interchange of *k* and *ś* is not related at all to the well-known Indo-Ir. development of IE **k'* > Ved. *ś*, as the present variation occurs only in 'foreign' words; (note also the curious development, in post-RV Skt., of *kśā* > *khyā*, Witzel 1989).

The name of the snake demon *Śarkoṭa* (AV) appears also as *Karkoṭa(-ka)* RVKh 2.14.8, and locally especially in Kashmir and Nepal; cf. Bur. *hergin* (Berger *hargin*) 'dragon' or rather *yārqa* (Berger *yārqa*: CDIAL 3418?) 'lizard', Skt. *karkaṭa* 'crab', Mundari *kaṛkom* etc. (Pinnow 1959: 341 §483d). The prefix *śar-/kar-* can be connected with [*śar-*] of the '300 foreign words' (Kuiper 1991: 40-1, 1948: 121), for example in *Śṛbinda* (Kuiper 1939 = 1997: 3 sqq.), *Ku-sur(u)-binda*, *bainda* (the mod. Bind tribe; probably also the name of the Mountain range, post-Vedic *Vindh-ya*).

Further materials include *kambala/Šambara* 'blanket/name of a demon', *kabara/śabara*, *kīsta/śīṣṭa* 8.53.4 (with var. lect. *śīṣṭ-*, *śīṣṭ-*, *śīṣṭr-*, see above), *Kimīdin/śimidā-*

'demon/a demoness', *kambu/śambu* 'shell' (Kuiper 1955: 182), cf. *Ka-śamba*, *Kau-śamba* 'name of a person', cf. *ki-śora* 'filly' AV, 'youth' CDIAL 3190 : *śi-śu* 'baby', *śi(m)-śu-māra* 'Gangetic dolphin', *śiśūla* 'dolphin' RV (EWA II 641-2; Lévy, in Bagchi 1929: 121 sqq.), *Kirāta/Cilada* 'a mountain tribe', *kiknasa* 'ground grain' AB: *cikkasa* 'barley meal' lex., Bur. *šon* ~ Ved. *kāṇa* 'blind' RV.

The realization [k'] or [ś] of an unknown phoneme (probably k') would easily unite such words as *Sam-bara* : *Kam-bala*, *śabala* : *kabara*; it would also offer a better candidate for Pinnow's unexpected reconstruction for the Munda and Mon-Khmer self-designation **Šqawar* > *Śabara* AB, and in the tribal names > *Sōrā*, *Hor*, *Kora*, *Kherwar*, *Koro/Korku*, *Khmer* etc., Pinnow 154 §311); rather from **k'awar*, **k'amwar*.

In consequence, Vedic loan words with the interchange of ś / k may go back to a phoneme K' with realization close to [k'] or [ś] in the *Indus language*.

Millet

Another dialect difference can be observed in the "new" import at the time of the Indus civilization, millet. This domesticated plant has originated in China and another variety in Africa (Southworth 1988: 665, Randhawa 1980: 504; Nurse 1983, summarized by Cavalli-Sforza 1995, see now Meadow 1998). The Archaic Chinese words have no similarity to the Indian ones (Karlgren 1923, no. 543 **liang* < ,*liang* 'millet, sorghum', 1095 *,*tsi* 'common millet', 1051 *,*tsi* < *tsiək* 'panicked millet, god of agriculture', 903 *,*śu* < *d'z''iuet* 'glutinous millet', 135 **si^wok* 'rice, millet', 914 **si^wo* 'glutinous millet'), and the source of the Indian words has not been established so far: any language between the Sahel belt and Baluchistan is possible.

Millet is important as it can be grown outside the winter period (wheat, barley), during the monsoon. The onset of its cultivation in S. Asia coincides with the increasing spread of rice (Kenoyer 1998: 163, 173, 178, Glover & Higham 1996) which has markedly influenced the archaeologically attested emigration of the Indus people towards the Gangetic plains, and towards Gujarat. Even a middle Vedic text, *Aitareya-Brāhmaṇa* 3. 45, still knows about this (Witzel 1987: 185).

However, the original source of the S. Asian word in Africa or in one of the intermediary languages has not been determined. It has to be noted, that in the case of this comparatively late import, -an-, -am- has been preserved both in Proto-Munda **gaṅgay*, Dravidian DEDR 1084 *kaṅgu* (Tam. *kaṅku*), DEDR 1242 *kampu*, Ved. *priyaṅgu*, OIA dialects **kaṅkuna*, **kaṅguna*, **taṅguna* (which may provide some indication of the time frame for the words discussed above).

Even though comparisons between the various words for 'millet' can be made, they cannot be traced back, as is the case with many widely spread loan words, to a single source. Hindi *kaṅgnī* can be compared with OIA **kaṅkunī* CDIAL 2606, with Tamil *kampu* DEDR 1242 and with Munda **gaṅ(-)gay* (Southworth 1988: 660, Zide & Zide 1973: 8). The source of these words may have had a form such as ***kaṅ*-CV. From this, Ved. *priyaṅgu* (EWA II 190) can be derived as well, as it seems to have been changed by popular etymology, like several other agricultural terms: prefix **pər-* (Kuiper 1991: 42f.) > **priya+gu* 'dear cow'. Other IA designations of millet are: Ved. *aṅu* and **aṅuni* CDIAL 195. All of this points to a contamination or cross of **kaṅgu* and *-(k/g)*aṅgu* --> IA *aṅu*; (**al* 'to mill' EWA I 55; rather a Munda change, Pinnow 1959: 198f., k/*q > 0 typical for Sora, Kharia k : Sora 0; thus: *kaṅgu* : **aṅgu* --> Ved. *aṅu*, cf. Kuiper 1991: 38). In short, all major language families of S. Asia have taken over the word from an unknown, but not exactly the same source.

Nevertheless, a clear difference between Northern and Eastern/Southern forms is visible: PDrav. **kampu* is opposed to PMunda **gaṅgay* (Zide & Zide 1973), while the IA forms stand in between the two. The usual IA form is Ved. *aṅu* (cf. Old Indo-Aryan **aṅunī*, Turner, CDIAL 195). However, based on Ved. *pri-yaṅu* < **pər-gaṅu*? and the reconstructed OIA forms **kaṅkunī*, **kaṅgunī*, **taṅgunī* (CDIAL 2606), a northwestern Indian **kaṅkun*, a central-northern **kaṅgun*, a more eastern North Indian **taṅgun* can be reconstructed for the pre-Vedic period, while the Southwest must have had, next to Drav. **kampu* DEDR 1242 (= Skt. *kambū* Hemādri) also a form **kaṅgu* CDIAL 2605, DEDR 1084. The northern Indus language should have had **kaṅku(n)*, its southern dialect (Meluhhan), **kaṅgu*.

The modern languages also do not agree: In Hindi (Masica 1979: 76 sqq., 135f.) we find various terms for the many varieties of millet: *kaṅgnī* (**kaṅkunī* CDIAL 2606); *kuṭkī* (Masica from Skt. *kuṭakā*, not found in the dictionaries; cf. *kuṭaka* 'a kind of tree' KauśS.); *kodoṅ* (CDIAL 3515 *kodrava* 'grain eaten by the poor' Mbh., cf. *koradūṣa* 'idem' Suśr., -*ka* KŚS; DEDR 2163 Tam. *kural*, Kan. *koṛale*, *korle*; Konda *koṛen* 'a grain'); *khil* (Masica: from Skt. *khīḍ*), *junhār*, *j(u)wār*) (**yonāla* > *yavanāla* > *juār*, < Drav. **coṅṅel*, DEDR 2359, DEDR 2896, CDIAL 10437); *bājra* (Vedic: HŚS *varjari*, CDIAL 9201 **bājjara*); *ma(ṅ)ṛūa* (CDIAL 9728 < *maḍaka* 'the small grain Euleusine corocana'); *sāṅwāṅ* (Ved. *śyāmaka* VS, CDIAL 12667). Some of them belong to the c. 30% of agricultural vocabulary in Hindi that comes from Masica's "Language X".

Finally, the word for 'peacock' must go back to a northern Indus form **mayur* > Ved. *mayūra* RV level II, and to a southern form **mayil/r* > Drav.: Tamil *mayil*, Irula *muyiru*, Tulu *mairu*, Konda *mṛīlu*, *miril* etc.

In summing up, it can be stated that in the north-west and also in the Panjab, as represented by loan words in most of the RV, original northwestern **-an-* is opposed to southern *-o-*. The same relationship is also found in north-western *ś* : subcontinental *k*, north-western *-ñ-* : subcontinental *zero* in the word for 'rice'. We can discern a clear difference between the Panjab (-->Vedic) and Sindh/Gujarat (--> Dravidian) forms of the Indus language.

Dialect differences between Panjab and Sindh seem even to be indicated in the Indus inscriptions themselves. Seals and plates from Harappa (Panjab) differ in a number of items from those found at Mohenjo Daro (Sindh), for example in the sign for 'container, quantity' which looks like a V; this is almost only found at Harappa (B. Wells 1998). The same applies to some 'suffixes' in the inscriptions (Wells, by letter 1999).

It can be concluded that the Meluhhan variety of the Indus language was the 'original' language of Sindh. Was it also the Indus trading language? In that case, it has disappeared, just like Sumerian and Elamite, and traces may at best be found in Sindhi -- a step that has not been taken. There is no etymological dictionary of Sindhi.

§6. Dravidian immigration

The observations about the early linguistic evidence from Sindh, made above, indicate that Dravidians were not a primary factor in the population of the Indus civilization, even of Sindh, and that they were immigrating into the Panjab only in middle R̥gvedic times. But when could they have entered South Asia?

Earlier scholars (Heine-Geldern 1964, Pinnow 1954: 15) thought that they entered S. Asia (sometime as late as the early 1st millennium BCE) and proceeded via Baluchistan, Sindh and Gujarat to S. India (Zvelebil 1970, 1990: 48, 123). Indeed, their tracks are still visible in certain place names in Sindh, Gujarat and Maharashtra (see above). According to Southworth and McAlpin, however, the semi-nomadic speakers of Dravidian who even had contacts in

Iran with the pre-immigration Indo-Aryans (Southworth 1979: 203, 228 f., 1990: 222-3, 1995), came to S. Asia relatively late, but early enough to participate in the Indus civilization, from which they acquired agriculture and the accompanying vocabulary. This scenario, if applied just to Sindh, explains why the c. 300 foreign words of the RV (in the Panjab) with their (agricultural) vocabulary are relatively free of Drav. influence.

According to the indications given above, the Dravidians apparently were just as foreign to Sindh and its agriculture as the Indo-Aryans to the Panjab. As the Northern Indus language (Para-Munda/Harappan) differs considerably from the Southern one (Meluhhan), it seems likely that the speakers of Indo-Aryan entered the Panjab and acquired local words from the Northern dialect (*śaṇa, lāṅgala, vr̥thi, godhūma, kaṅgu, Gandhāra*), and that the Dravidians entered Sindh at or about the same time and acquired such words from the southern dialect (*gōnu, nāñcil, variñci, godī, kaṅku/kampu*). It may even be the case that the first who made horses statues at Pirak (1700 BCE) were Dravidians, not the IA Bhalānas. For the first use of horses must not necessarily be linked to speakers of an IA language.

The Drav. words for 'horse' underline this: DEDR 500 Tam. *ivuli*, Brah. (*h*)*ullī*, 1711 Tam. *kutirai*, Kan. *kudire*, Tel. *kudira*, etc., 3963 Tam. *pari* 'runner', 4780 Tam. *mā* 'animal' (horse, elephant), Tel. *māvu* 'horse, (cognates mean 'deer' etc. in other Drav. languages), cf. Nahali *māv* 'horse'. These words are quite different and independent of IA *aśva* 'horse' and various words for 'runner' (*arvant, vājin*, etc.), etc.

On the other hand, the technical terminology for chariots is IA and IE. It has been taken over into Drav.: *akṣa* 'axle' RV > Parji-Kolami *accu* 'axle'; *aṇi* RV (of unknown origin) > *aṇi* 'lynch pin', *ara* RV > *ar* 'spoke' (cf. Southworth 1979: 230 n. 14). Note that the earliest IIR **ratha* 'chariot (with two spoked wheels)' (Gening 1977, Pigott 1992, Anthony u. Vinogradov 1995, cf. Littauer u. Crouwel 1996) is found about 2000 BCE, near the Volga (North Iran. **Rahā* > Greek *Rhā* = Avest. *Raṅhā*, Ved. *Rasa*). The IIR word for 'chariot', however, is old enough to have resulted in the archaic compounds Ved. *rathe-ṣṭhā*, Avest. *raṭaē-ṣta-* 'chariot fighter', cf. Old Avestan *raṭi*, RV *rathī* 'chariot driver.' Dravidian has nothing of this, but words for 'wagon' or 'bullock cart'.

An early wave of Dravidian speakers might very well have preceded the IAs into Iran and S. Asia. (Note the strange absence of *Maka* in the list of "Aryan countries" in the Avestan records, such as V. 1, cf. Herodotos 3.94). A few IA loans in Proto-Drav. would settle the case, but culturally decisive words, such as for the newly introduced horse, the chariot, or other pastoral terminology do not exist. The Dravidians hardly had any previous contact with the Indo-Aryans while still in Iran. Contra Southworth (1979: 196f.), there is little secure evidence for *early* loans from IA into Drav.; such words can have been taken over any time between the RV (1200 BCE) and the earliest attestation of Tamil at the begin of our era (see above, on Drav. evidence in Vedic). There are only a few questionable loans that might have come from the pre-immigration period, that is from hypothetical contact when still in Iran; these remain speculative; cf. perhaps, Ved. *garda-bha* EWA I 473, Drav. *kaḷu-tai* DEDR 1364 'donkey'. -- On the other hand, several agricultural terms in Dravidian are in a close loan word relationship with Sumerian and sometimes beyond, with Afro-Asiatic (Blažek and Boisson 1992). These include words for plough-tail, -handle, plough share, to plough, mortar, threshing floor, and to grind; this close link may point to a more western path of immigration of Proto-Drav. speakers than that of those of pre-Vedic IA (see below §15).

§7.1. Eastern Panjab and Upper Gangetic Plains

We return now to the epicenter of post-Indus developments, the area of Eastern Panjab-Haryana-Uttar Pradesh, in other words, the lands from the Pakistani border up to Allahabad. In the early post-RV texts, its hub is the Kurukṣetra area, northwest of Delhi.

This is the realm of the middle Ṛgvedic Bharata and the late Ṛgvedic Kuru (Witzel 1997). The Bharata tribe and its successor, the new tribal union of the Kuru, represent a new wave of IA immigrants from the other side of the Indus (Vasiṣṭha RV 7, JB 3.238-9 §204), which brought new linguistic traits with them (*kuru* for older *kṛṇu*, *sarva* for *viśva*, etc., Witzel 1989). The Kuru dialect is remarkably more modern than the language of the bulk of the RV. However, RV book 10 often reads already like the next level, that of the AV and other Mantra texts of the Kuru period.

The Kuru confederation, supplanting the 50-odd Ṛgvedic clans and tribes, became the center of linguistic (Witzel 1989), religious and social (Witzel 1997b) development. They formed, together with partly IA acculturated Indus people (*ārya*-tribes such as the Anu-Druhyu, Yadu-Turvaśa) and with the new addition of Dravida speakers, a new society with a new *elite kit* (Ehret 1988). This included pastoralism (cattle, horse, sheep, goat), IA ritual and acculturated customs, IA religion and ritual, but also post-Indus type agriculture (barley, wheat, rice, millet) and local artisans (potters, etc. see below). The new culture, Vedic orthopraxy and social system (with four classes) then spread eastwards into the Gangetic plains, and ultimately to Bihar.

Because of the amalgamation of the three groups (IA, Para-Munda, Drav.) we have to suppose a large degree of bilingualism and even trilingualism, and the forming of pidgins. A Vedic pidgin must have been used at home, and proper Vedic Sanskrit was learnt 'in school', at the time of initiation of boys (cf. Kuiper, A bilingual Ṛṣi, in press). While the lingua franca was a form of late/post-Ṛgvedic IA, pockets of the Para-Munda Indus language, of the newly arrived Dravidian as well as some remnants of the Gangetic Language "X" must have survived as well.

Among the post-Ṛgvedic texts, especially the AV is full of non-IA, 'popular' words of plants, animals, demons, local deities, and the like. Their character still is, by and large, Para-Munda, with some words from the 'local' language ("X"), and with some Drav. words included; all of which is clearly visible in the increase of words with retroflexes.

The linguistic situation is reflected, among other items, in the mixture of IA and other river names in the area. The famous Sarasvatī is also called Vaiśambhālyā / Vaiśampālyā / Vibālī; these names and that of the nearby Vipāś < *vipal/vipāž all seem to go back to a local word, *vi-śam-paž, (Witzel 1999). However, and typically, there are no Dravidian river names in the whole Kuru area.

A hint of how Drav. influence on Vedic was exerted is contained in the name of the Śūdra. From the late RV (10.90) onwards, this designates the fourth, non-Ārya class; it was added to the three 'Ārya' classes of Brahmins, Kṣatriya (nobility) and Vaiśya ('the people') only at this time. However, Greek sources of Alexander's time still place the *Sudroi* people at the confluence of the Panjab rivers with the Indus; this may still indicate their origin in Sindh/Baluchistan.

Drav. words first appear in Middle and Late Ṛgvedic, in RV 3, 7, and 8, especially in the Kāṇva section. Interestingly, it is Tura Kāvaṣeya, the great-grandson of the Drav.-named *Kavaṣa* 'straddle legged', a priest on the 'wrong side' in the great Bharata battle (RV 7.18) who becomes an influential priest in the Kuru realm and who developed the new, post-Ṛgvedic (*śrauta*) rituals (Proferes 1999).

It has been stressed by Burrow (1973 : 386) that the post-Vedic texts have more Dravidian words; indeed, the evidence of Para-Munda words, too, is not diminishing but increasing during the Vedic period. This is the case right from the Mantra texts, and includes the Yajurveda Saṃhitās whose territory can be easily established (Witzel 1987, 1989, 1997) as that of the area between E. Panjab (Lahore), Allahabad and the Chambal River area (Ujjain).

A complete discussion of the c. 200 longer or shorter Vedic texts must be postponed to a separate paper (for some lists, see below). In the mean time, one can compare the word index to the AV (Whitney 1881), or Vishva Bandhu's Vedic Word Concordance (in Devanagari script), in conjunction with EWA, KEWA (and DEDR).

§7.2. The Post-Ṛgvedic period

The new tribal union of the Kuru (and their more eastern allies, the Pañcāla), with their new social set-up and solemn rituals expanded, incorporating the surrounding tribes, eastwards into the Gangetic plains, in a partly military, partly peaceful fashion until it reached northern Bihar (Witzel 1995, 1997). The eastern tribes were at first regarded as half-barbarian (JB 1.337 §115) or '*asurya*' (demonic).

The same is seen in archaeology: late Harappan people emigrated towards the Upper Gangetic plain (the only movement of people the archaeologists allow for the whole period under discussion here, Shaffer 1995: 139, cf. Allchin 1995: 33-35), a fact reflected in the Vedic texts as well. The emigration was possible due to a new type of agriculture, permitting cultivation of rice during the monsoon (Kenoyer 1998: 163) as well as wheat and barley in winter, resulting in a food surplus. The settlement at first occurred along the river banks, (Witzel 1987, 1995), in half-nomadic treks (*grāma*, Rau 1997). This is reflected by the Painted Gray Ware culture, with their clear elite pottery whose regional motifs indicate the split into western Kuru and more eastern Pañcāla, something that is also seen in the Vedic dialects they use (Witzel 1989).

Not everybody is included: The non-IA *Kīkaṭa* (3.53) or the *Paṇi* are clearly described as foreigners (late hymn 6.45.31), and even later, in the Mantra and YV Saṃhitā period, the *Niṣāda* in the Chambal area (MS 2.9.5 etc.) and other *dasyu* 'enemies' (JB, Witzel 1997b: n.161, 163, 278); in RV 10.61.8 as well the South (i.e. the area south of Kurukṣetra) still is the land to banish someone.

As has already been indicated, the features of the Ṛgvedic substrate language are also found in post-Ṛgvedic texts that were composed further east in the Kurukṣetra and in western Gangetic plains, as well as in the Chambal area. These words are not just the same as found in the RV, but there are many new ones.

In the Mantra period, starting with YV (MS, KS, TS) and AV/PS, we can clearly distinguish all three linguistic elements:

- Indo-Aryan with some already incorporated north-western elements such as Nuristani *kāca* 'shining piece of jewelry' or Burushaski *kilāy* ~ RV *kīlala*, *ṣon* ~ RV *kāṇa*, *bus* ~ RV *busa*, etc.;
- The Indus substrate (Para-Munda), that also is found in the Ganges area (next to some elements of language 'X'), such as RV *kuṣika*, *karaṅja*, *kaṅkata*, *śiṃśapā*, *śiṃśumāra*, *puṣkara*, *puṣya*, especially the words with prefix *Cər* (*pər/kər/sər-*), *kar-koṭa-ka* RVKh ~ *śar-koṭa* AV, *tila* AV: *jar-tila* KS, *kalmaśa* MS, KS, *kal-māśa* PS, *kul-māśa* Up. : *māśa* AV, with the *-ṭa*, *-śā/ṣa* suffixes, and with *-ṇḍ-*: *ka-maṇḍalu* : *maṇḍa-la*, *kaṇṭha?* PS, etc.
- The Middle and Late Ṛgvedic Drav. element also is found in the Ganges area: *godhūma* AV (Hindi *gehū* etc., Kusunda *gabun*), *kunāpa* AV, *kurkura* AV, *cūḍa* ŚB, *coḍa* TS, *eḍaka* JB, *arka* ŚB, *bilva* AV 20 (Kuiper 1991:66), *-nīra-* ŚB, etc.

In short, the upper class IA language (of the Vedic priests) used in the upper Gangetic plains contains the same substrate elements as seen in the late Ṛgvedic period of the Panjab. However, due to the increasing stratification of society and increasing specialization among occupations, many words from the sphere of the artisans and from technology were added; furthermore many names of persons, localities and rivers.

Their affiliation can still be ascertained to some extent. With regards to agriculture, Kuiper's RV list (Kuiper 1991: 8, 21, 96, see already Kuiper 1955) contains quite a number of such terms (*kīnāśa*, *lāṅgala*, *bija*, etc.) Especially among the artisans there is an increasing number of non-IA designations; many of them first appear in the Horse sacrifice (Aśvamedha ritual) (MS *kevarta*, *kaivarta* TB).¹⁵ Some of them are, in line with the increasing specialization, new Indo-Aryan formations (*anucara* 'servant', *grāma-ṇī* 'leader of a trek, wagon train' etc.), but especially those of fishermen (*kevarta/kaivarta*, *dāśa*, *dhīvan*, *daivara*, *puñjiṣṭha*, *pauñjiṣṭha*, *bainda*, *maināla*) are non-IA (often until today). Furthermore, non-IA specialists are: musicians (*talava* 'musician', *ādambara-aghāta* 'drum beater', *dundubhy-aghāta* 'drum beater' (cf. *dundubhi* RV), *vīṇa-gāthin* 'lute player', *vīṇa-vāda* 'lute player', cf. *vīṇa* 'lute' KS (EWA II 568), artisans (*kaṅṭakī-kārī* 'worker in thorns', *bidala-kārī* 'female splitter of bamboo', also *kulāla* 'potter', and the *pālāgala* 'messenger' (cf. *pālāgalī* 'fourth wife of a chieftain'), *gaṇaka* 'astrologer' (cf. *gaṇa* 'troop, number' RV) and 'money lender' (*kusṭidin*, *kusṭida* KS).

Such words come up not only in the eastern parts of North India (Bihar, area of VS/ŚB) but also everywhere from the Panjab (RV) and the Delhi area (MS, KS) eastwards, e.g. *kīnāśa* 'plough man' RV, *gaṇa* 'troop' RV, *dundubhi* 'drum' RV, *vīṇa* 'lute' KS, *kusṭida* 'money lending' KS. The newly attested words have the same 'foreign' grammatical formations as seen in the RV: prefixes (*ke-/kai-*, *dun-dubhi?*), retroflexes (*ādambara*, *kaṅṭakī-*), initial *b-* (*bidala*), suffix *-āla* (*pal-āla*, *main-āla*, cf. Oberlies 1994: 341).

Similar data could be supplied for the spheres of material culture and the surrounding nature: agriculture and domesticated plants, local animals and plants, many items of food, illnesses and poisons, implements and utensils, and ornaments; this would lead to far afield in present context (see the lists in MacDonell-Keith, Vedic Index, Delhi 1967 [1912] 517-92). For more examples, one can consult Mayrhofer, EWA and for non-IA details especially

¹⁵ Details: *kīnāśa* 'plough man' EWA: 'non-IE'; *kīnāra* only RV 10.106.10; -- the following words all mean 'fisher' *kevarta/kaivarta* VS/TB; Pali, Pkt. *kevaṭṭa*, **kevaṭṭa*, CDIAL 3469 and add., 3479; Drav. according to Burrow, KEWA I 566, DEDR 1252 Tam. *kayal* 'carp', Mal. *kayal* 'a fish', etc.; *kai-* in *kevarta*; -- *dāśa* VS, *dāśera* lex. CDIAL 6314 a *Jat* tribe: *ḍaha*; -- *daivara* VS, see *dhi*, CDIAL add. 6819 NIA, Kuiper, KEWA II 105 ~ *tivara* (lex.) = tribal name? -- *puñjiṣṭha* also 'bird catcher?', MS, VS, *pauñjiṣṭha* AV; no NIA etym.; -- *bainda* ~ *Sṛbinda*, Kuiper 1991, EWA; -- *maināla* < Drav. *mīna* 'fish'; --- *śauṣkala* ~ *śuṣka* 'dried up'? -- Further: *talava* 'musician' VS ~ *taḍ* Epic 'to play a musical instrument'? Kuiper ZII 8, 1931, 251; -- *ādambara-aghāta* 'drummer' VS, a- ŚB; Kuiper 1948: 85f. from Proto-Munda, *dundubhy-aghāta* 'drummer' (RV), ŚB EWA: onomatopoeic, Kuiper 1948: 84 Munda; *vīṇa-gāthin* 'lute player', also in Iran?, see EWA, Mayrhofer 1968, CDIAL 12048; *vīṇa-vāda* 'ditto'; -- *pālāgala* 'messenger' ŚB, -*kālī* ŚS. no NIA continuants; -- *kaṅṭakī-kārī* 'worker in thorns' VS; *kaṅṭaka* 'thorn' ŚB, Iran?, Greek *akantha*? -- *bidala-kārī* 'basket maker' VS, EWA "not clear", but cf. DEDR 5432 *vil* 'to split'; -- *sīrtin* 'weaver?' only RV 10.71.9 (Ved. Ind. 585-6); -- *gaṇaka* 'astrologer' VS: RV, *gaṇa*, **gr̥na*, CDIAL 3993 and add.; Greek *ageirō* 'collect'; Kuiper 1948: 54 Munda; -- *kusṭidin* 'money lender' ŚB, *kusṭida* KS, TS; Pali *kusṭita* 'lazy', etym.? *ku+sad* > Pali *ko-sajja*? -- *parṇaka*? a tribal name? VS "Bhilla" in later commentary, EWA ~ *paṇi*? -- *paulkasa*? VS a mixed tribe, Kuiper 1948: 54ff. -- Indo-Iran.: *malāga* 'washer man' < AV, *mala*: IE **mel*; -- *upala-prakṣinī* from IA *upala* 'mill stone' TS: *kulāla* 'potter' MS, KS, VS; EWA ~ RV *kula* 'hole, hollow', in *mahākula*, Pashai *kōlāla* 'potter' CDIAL 3341; -- *kṛṣṭi-vala* 'agriculturist' RV, a-, AV *kṛṣṭivāṇa* : suffix variation!; -- *vañij* RV, *vañija* KS 'trader' < *van-ij* 'winning goods' according to EWA, Mayrhofer 1968.

KEWA; these may serve, in connection with CDIAL, DEDR, Kuiper 1948, 1955, 1991 and Pinnow 1959 as a first orientation.

§7.3. The Para-Munda substrate in Post-Rgvedic.

Prefixes with *ka-* are found in the AV, YV and the Brāhmaṇas (here follow only a few proposals for etymologies; it is to be expected that not *all* of the following words can be divided in the way proposed below; ultimately this depends on a fitting etymology):

- *kapaṭu* 'mushroom' AV, PS, cf. Sora *pud-ən*, Sant. *o'd* etc. (Pinnow 1959: 121 §237;
- *kapāla* 'potsherd, skull' AV;
- *kapiñjala* 'partridge' PS;
- *kapola* 'cheek' RVKh, cf. Sant. *puṭi* 'to swell', Kharia *poṭki* 'to sprout' etc. (Pinnow 1959: 173 §378, Kuiper 1948: 148) ~ *puṭa* 'bundle, bag' MS, BSS;
- *kaphauḍa/kaphoḍa* 'clavicle, elbow?' AV, see Kuiper 1948: 44;
- *kamaṇḍalu* 'water jar' KS cf. *maṇḍala* 'circle' etc.;
- *karīra* 'bamboo shoot' MS, KS;
- *karīṣ-in* 'having dung' AV;
- *karuma* 'epithet of certain spirits' AV;
- *karūkara* 'vertebra of the neck and spine' AV;
- *kalāp-in* 'having a bundle of arrows (or 'peacock feathers')' ŚS;
- *kalīṅga* 'the name of Orissa' AB, cf. Skt. *tri-liṅga* (mod. Telingana), etc., see Kuiper 1948: 45;
- *kavaca* 'armor' PS (but see above, Zvelebil's no. 13);
- *kaśambhūka* 'name of a mythical being' Suparṇākhyāna;
- *kaśipu* 'cushion' AV;
- *kaśīti* 'name of a man' JB;
- *kaśoka* 'name of certain demons' AV;
- *kaśmaśa?* " " , 'confusion, agitation?' AV, see Kuiper 1948: 39;
- *kaṣāya* 'astringent sap, red' ŚB;
- *kaṣkaṣa?* 'a certain damaging worm' AV;
- *kasarṇīla* 'a certain snake' AV, cf. *sarṇīka* 'water?' TS/*sṛḍīka* 'water?' MS (cf. *sṛḍaku* 'snake, lizard' ?);
- *kasāmbu* 'name of an extract derived from the *devadāru* a tree?' AV, etc.;
- *kastūpa* 'hair tuft', *kastūpa-stopinī* 'woman wearing a hair tuft' PS, cf. *stupa* 'hair tuft, top knot' KS / *stuka* 'hair tuft' RV;
- *kahoḍa* 'name of a teacher, belonging to the Kauṣītaki clan' ŚB, JB.

With 'double prefix' *Cər-/Cəl-* there are the following words in which the many variants of the prefix in *kər-* stand out:

- *karkandhu* 'the tree Zizyphus jujuba' MS, KS;
- *karkī?* 'white (cow)' AV;
- *karkoṭa-ka* 'name of a snake demon, *Nāga*' RVKh ~ *śarkoṭa* 'name of a snake demon' AV, PS, cf. Mundari *kar-kom* (Pinnow 1959: 341 §483d), Kuiper 1991: 41, 44, 1948:121, Bur. *yarqas* 'lizard';
- *kardama* 'dirt, mud' KS, cf. Munda *ko-dil*, *ə-dil* 'dirty' (Pinnow 1959: 87 §101);
- *karpāsa* 'cotton shrub' Suśruta, *kārpāsa* 'made of cotton' ŚS;
- *karśapha* 'name of certain demons' AV, PS : *śapha* 'hoof?' RV (note that *śapha* has a clear IE etymology, EWA II 608), cf. *Śaphala* 'a tribe' BSS;

- *garmut* 'wild beans' TS, *gārmuta* 'wild beans' MS (Kuiper 1948: 146, CDIAL 4063: Sindhi *gamu* 'a sort of grass');
- *kalkuṣṭi* 'a bone of the lower arm' PS; ŚB,
- *kalmali* 'shimmering (of stars)? AV;
- *kalmāṣa* 'spotted, variegated' MS, KS, *kalmāṣa-grīva* 'with spotted neck' ŚS, PS;
- *kārṣmarya* 'the tree Gmelia arborea' KS;
- *kharjūra* 'date palm' KS;
- *gulma?* 'shrub, bush' Samh.;
- *jar-tila* 'wild sesame' KS : *tila* 'sesame' AV;
- *jarvara* 'name of a person' PB;
- *jalāṣa* 'an ingredient used in medicine, healing?' PS (or *-āṣa* suffix, Kuiper 1991: 26);
- *palala* 'crushed sesame' Sū.,
- *palāli* 'straw' AV;
- *palāva* 'chaff' AV;
- *palījaka* 'a certain demon' AV;
- *barkara* 'lam' ŚS;
- *barbara* 'having curly hair' KS;
- *barhiṇa* 'peacock' ĀpDhS;
- *bharūjī* 'a certain noxious animal' AV;
- *marīca* 'pepper corn' ĀpDhS;
- *markaṭa* 'monkey' KS
- *markaṭaka* 'a type of grain' ĀpŚS, CDIAL 9884, Shina *makari* 'large millet', Bihari *makra* 'the grass Eleusine aegyptica'; cf. CDIAL 9879 *markaka* lex. > NIA *makari*, *makai* 'maize'
- *śarkara* 'sand, pebbles' AV, cf. Bur. *ḡoro* 'stones' ?;
- *śarkoṭa* 'name of a snake demon, Nāga' AV, PS (see above *karkoṭa*);
- *sardigr̥di* 'part of the female sexual organs' TS.

Double prefix *Cən-/Cəm-*:

- *kaṅkūṣa* 'part of the head' AV, PS ~ *śaṅku*;
- *kaṅṭha?* 'neck' PS, (*saha*)-*kaṅṭh-* AV, cf. Kharia *konko*, Khmer *ko*, Mon *ka* 'possibly old compound', Pinnow 1959: 132 §276;
- *kāṇḍa?* 'section, piece, section of bamboo, grass' AV, cf. Kharia *koṇḍen* 'bamboo', (Pinnow 1959: 132 §275);
- *kāṇḍūy-?* 'to scratch' KS;
- *kandhara* 'neck' Up., cf. *kaṅṭha*;
- *kambala* AV 'woolen blanket, clothes' ~ *śambara?*;
- *kambūka* AV 'chaff' ~ *śambūka*;
- *kamboja* 'name of a people in SE Afghanistan' PS, cf. Greek *Ambautai*;
- *kāmpīla-* 'name of a particular dress, skirt' KS;
- *jāmbila* 'saliva' KS, TS;
- *taṇḍula* 'rice grain, husked rice' AV;
- *talaśa?* 'a particular tree' AV (if not with *-āśa* suffix);
- *parūṣaka* 'a type of plant, Grewia asiatica' ŚS;
- *palāṇḍu* 'onion' ĀpDhS;
- *palāśa* 'leaf' TB (if not with *-āśa* suffix);
- *palījaka* 'a certain demon' AV;
- *palpūlana* 'lye, washing water' AV (if not onomatopoeic);

- *palvala?* 'pool, small pond' Sū;
- *pālāgala* 'messenger, runner' ŚB, -ī 'fourth wife of a chieftain' ŚB;
- *barśa?* 'knot' KS,
- *barśva?* 'gums, alveolus' KS;
- *balāsa* 'a certain illness' PS (cf. *kilāsa* 'leprosy');
- *balkasa* 'sediment, residue' ŚB;
- *balbaja* 'a type of grass, Eleusine indica' RV;
- *balbūtha* 'name of person' RV;
- *bhalānas* 'name of a tribe' (of the Bolan Pass area ?) RV.

From the post-Ṛgvedic materials come words with other prefixes in *Cər-* and with other vowels, etc.:

- *kirika* YV, *girika* MS 'sparkling';
- *kirmira* 'variegated' VS, etc.;
- *kul-māṣa* 'an inferior type of grain' Up., cf. (*kal*)*māṣa* 'spotted, variegated' AV;
- *ku-ṭaru* 'rooster' YV, etc.;
- *sṛdaku* 'lizard', etc., lex., *sṛdaku/-gu* MS, *sṛdara* 'snake', etc. Mayrh. ZDMG 110, 6189 Munda prefix *sṛ-* + *da'k* 'water', see KEWA s.v. *sṛdaku*, etc.;
- *kaśmaśa?* '?' 'confusion' AV, Kuiper 1948: 39;
- *kaṣkaṣa?* 'a certain type of noxious worm' AV;
- *jāṣkamada* 'a certain animal' AV;
- *maṣnāra* 'name of an area' AB;
- *masūra?* 'lentil' KS, *masura* TS;
- *prakubrata* '?' ŚB, *prakudrata* '?' ŚBK,
- *pramota* '?' 'deaf, blind?' AV etc.;
- *tilvaka* 'name of a tree, Symplocos racemosa' ŚB, *tailvaka* 'belonging, stemming from *tilvaka*' MS, etc.;
- *tumbara* 'a certain tree, Disopyros embryopteris?' KauśS etc.

Further Vedic words which are suspected of a Para-Munda origin are, among others:

- *me-khala* 'girdle' AV: *śṛ-ñ-khala* 'chain, fetters' Skt.;
- *khaḍga* 'rhinoceros' MS, EWA 443, cf. N.Pers. *karka-dān*, Arab. *karkaddan*, Aelianus *kartázōnos* (**kargazōnos*) 'Indian rhinoceros', cf. Kuiper 1948: 136 sqq.;
- *karta/garta* 'hollow/'seat' to be compared with Kharia *gaṛha* 'river', Mundari *gaḍa*, *gaṛa* 'pit, trench, grave, water course, stream, river'; Sant. *gaḍa* 'hollow, pit, excavation, trench, river'; etc. (Pinnow 1959: 351f. §498);
- *tittira* 'partridge' KS, MS cf. Korku *titid*, Santali *sengel titi* 'Guinea fowl': Kharia *khonthē'd*, Sora *on-'tid-ən* (Pinnow 344 §488a); probably also:
- *musala* 'pestle' AV;
- *jala?* RVKh, PS;
- *dhūkṣṇa/dhluḥṣṇa/dhḷkṣṇa* 'a bird' PS ~ *dhvāṅkṣa* 'crow' AV, *dhūṅkṣṇa* 'white crow' TS; *jhaṣa* ŚB: *jaṣa* AV, TS: *caṣa* 'a large fish' VādhB;
- *drumbhūli* MS / *dālbuḥṣī* KS / class. *dambholi* 'bow of Indra' see Kuiper 1991: 26 (cf. p. 18, 47, 61, 75).

Para-Munda suffixes.

In order to characterize the substrate, certain typical suffixes can be used. Kuiper (1991: 45 sqq.) has isolated the following in the substrate of the RV: *-āla*, *-āṣa*, *-īṣa*, *-ūṣa*/*-āśa*,

īśā, -ūśā, -ṭa, -nas, -ya, -ra, -śa/śa, -ha. Among the suffixes are to be underlined in this context are those often found in personal and tribal names, in *-ṭa* (*Kīkṭa* 'a tribe', *krpīṭa* 'brush', *biriṭa* 'crowd', *kevaṭa* 'hollow' RV / *avaṭa* 'hollow' SV), and the ones in *-ala/-āra* (*kīlala* 'biestings', *caśāla* 'snout'; *maināla* 'fisher' VS, cf. IA *karmāra* RV 'smith'; *Gandhāri* 'a tribe' RV, *Gandhāra* 'a country in N. Pakistan', *Abhisāra* 'a region north of Gandhāra' etc., cf. Witzel 1999).

Such suffixes also appear in post-Ṛgvedic time in the texts of the Mantra period and in the Yajurveda-Saṃhitās, e.g. *kalmāśa* 'spotted' VS, TS; *niškāśa* 'scraping' MS, KS; *yevāśa* AV, *evaśa* MS 4.8.1:107:16, *yavāśa* 'manna plant' KS 30.1, KpS 46.6 (*vṛśaś ca yavāśaś ca*); *ṛjīśa* a name of Indra, RV, 'residue of Soma' AV; *uṣṇīśa* 'turban' AV; *karīśa[-ja]* PS, 'dung', *karīśin* AV, *karīśa* ŚB, (cf. the frequent *purīśa* 'dung'); cf. also *tūśa* 'border of garment' KS; later also: *palāśa* 'leaf' TB, ŚB, *ni-palāśa* ŚB, *śiriśa* 'Acacia sirissa' ŚaḍvB, etc.; cf. also *jhaśa* 'a certain large fish', ŚB *jaśa* AV, TS, *caśa* VadhB.

Para-Mundas in Kurukṣetra and in the Gangetic plains.

The words mentioned above clearly show that also in post-Ṛgvedic, i.e., in the Mantra texts (AV, SV, RVKh, YV), in Yajurveda Prose, and in the Brāhmaṇas, such Para-Munda words can still appear for the first time. Therefore, they had either already existed in Vedic colloquial speech or they entered Brahmanical High Vedic at that particular point in time from the sphere of village life or of the artisans. The area of the early post-Ṛgvedic texts (Mantra texts, YV Prose) can be localized fairly well (Witzel 1987, 1989): it contains Kurukṣetra (i.e. more or less, modern Haryana) and the western Ganga-Yamunā-*doab* (i.e. the Gangetic plains of western Uttar Pradesh).

In these areas, where no modern groups of Munda speakers survive, the same Ṛgvedic substrate with its typical prefixes can be found. That means Haryana and Uttar Pradesh once had a Para-Munda population that was acculturated by the Indo-Aryans.

If the late Vedic texts (such as the Jaiminīya Br. and Śatapatha-Br.) are added, the area in question is further enlarged to include the regions south of the Ganges and east of Uttar Pradesh. Here, new Munda words appear as well; however, these regions include those where even today Munda languages are spoken.

In short, a strong Austro-Asiatic substrate is found both in the early Panjab (RV, c. 1500 BC) as well as later on in the Ganges valley (YV Saṃhitās, Brāhmaṇas, c. 1200 v. - 500 BC.), a fact that can also be shown in the names prevailing in these areas (Witzel 1999).

As examples, I mention the river names Gaṅgā (popular etymology of Munda *ga(n)d*), Gaṅḍak-ī (see below), *Narma-dā*, and tribal names such as *Maraṭa*, *Vibhindu* (and *Vibhindukīya*, cf. *Nār-ka-vinda* PS 12.2.3, *Sṛ-binda* RV Kuiper 1991: 40-43, 1997, *Ku-suru-binda* TS, TB, ŚB, *Ku-sur-binda* JB, *Bainda* VS, cf. Munda *bid* 'insert, plant, sow', Pinnow 1959: 143 §285), *Śabara* (**Ṣqawar*, cf. Pinnow 1959: 154 §31; rather from **K'awar/Śawar*), *Punḍra*, *Aṅga/Vaṅga* (cf. also *Gaṅgā?*; further: *Pra-vaṅga*), *Kaliṅga* (cf. *Teliṅga/Triliṅga*, see S. Lévy in Bagchi 1929: 100, cf. Shafer 1954: 14, 122 as Tib.-Burm.; Kuiper 1948: 45 compares *kuliṅga* 'fork-tailed shrike' Mbh., and **liṅ* in Munda, Khasi, Mon, Khmer, Malay); *Ikṣvāku* (RV, emigration from the Panjab eastwards, Witzel 1997b: 307 sqq., 321, 1989: 237), *Niśada/Niśadha/Naiśadha*, *Mucīpa/Mūṭiba/Muvīpa*, *Magadha* (cf. *Pra-maganda*), *Śaphāla* cf. *Śavasa*, *Vasa* etc.

However the truly eastern words (Uttar Pradesh, Bihar) are, next to some remnants of language "X", of Munda nature: there are many personal and place names (Witzel 1999), e.g. that of the river *Gaṅḍak(ī)*, or even that of the Ganges, with popular etymology: *Gaṅgā*, a

sort of intensive formation of *gam* 'to go' (if not modeled after the tribal names *Aṅga*, *Vaṅga*). Pinnow (1953-4) has pointed out many river names, from the *Gaṇḍakī* to the *Narma-da* which contain the Munda element *-da*, **-da*'k 'water' (Pinnow 1959: 69), for *gaṇḍa(kī)* cf. Santali *gāda*, Ho *gāda* 'river' (Pinnow 1954: 3).

The *Gaṇḍakī* is not attested in Vedic, and is referred to as *Sadāntra* 'always having water'. Apart from the Epic, it appears in local context, the early Licchavi inscription (464 CE), Sanskritized as *Gaṇḍakī* and in other Skt. texts: *Kala-Gaṇḍika*, *Gaṇḍarika*, *Apara-*, *Pūrva-*; the shorter version, *Gaṇḍī*, appears from the Epic onwards, and several times early on in Nepal as *Gaṇḍī-(gulma-viṣaya)* (998, 1092, 1165 CE, see Witzel 1993). The *Gaṇḍaka* appear as people in Mbh. as well.

Further, tribal names such as *Pulinda*/Pali *Bāli*, Pali *Moriya* (from Skt. *mayūra* 'peacock') and also *Mara-ṭa* (PS), from Munda *mara* 'peacock'), *Kuntī* from Munda *kon-ti*'d 'bird' (note that Munda *kom* is a children's word!), cf. RV *śa-kuntī*, Epic *Śa-kuntalā*, etc. (contrast the IA *Matsya* 'fish' RV, a tribe just west of the Kuntī), *Mūtiba* (var. *Mūcīpa*), *Sabara* (mod. *Saora*?), *Puṇḍra* (Bengal), the *Aṅga*, at the bend of the Ganges, and the neighboring *Vaṅga* (Bengal). The prefix change in *Aṅga* (AV) / *Vaṅga* (AB) is indicative of a Munda formation (Kuiper 1991: 43). Mundas may also have lived in the hills and valleys of the Sub-Himalayas, for example in the Kathmandu Valley (see below, Witzel 1993).

Other typical words of the Gangetic plains are, from west to east: *sardigrdi* 'part of female sexual organs' TS, *palāśa* 'leaf' TB, *palāṇḍu* 'onion' ĀpDhS, *tumbara* 'a certain tree' KauśS, *kaṣṭī* 'name of a man' JB, *kirmira* 'variegated' VS, *kaṣaya* 'astringent sap, red' ŚB, *prakudrata* '?' ŚBK, *pra-kubrata* '?' ŚB, *ka-hoḍa* 'name of a man' ŚB, JB, *kul-māsa* 'an inferior type of grain' Up. etc. Especially informative for regional dialect features of the substrate, from W. to E.: *jaṣa* AV, TS : *caṣa* VādhB : *jhaṣa* ŚB 'a certain large fish'.

The *Ṛgvedic* substrate thus has the same grammatical structure as the words in the *Yajurveda-Saṃhitās* and the *Brāhmaṇas* that newly appear from the substrates of the *Kurukṣetra* (Haryana) and *Ganges* regions (*doāb*, Uttar Pradesh). It is of great importance that we can detect the same *Indus* substrate as found in the RV. In other words, the *Ṛgvedic Panjab* as well as the *post-Ṛgvedic Gangetic Plain* were largely settled by speakers of *Para-Munda* (including remnants of Masica's 'Language X'). They had been joined, in the early *Ṛgvedic* period, by speakers of *Indo-Aryan* and, in the later *Ṛgvedic* period, by those of early *Dravidian* (see above).

Dravidian

In the new IA speaking, culturally Vedic "eastern territories" of the Gangetic plains some Drav. words occur for the first time in literature, e.g. *nīr* 'water' in the name of the eastern river *Sadāntra*, the modern *Gaṇḍak* (Witzel 1987), or the verb 'to speak in barbaric fashion', *mleccha-ti*. However Drav. *nīr* is not found in the neighboring N. Drav. languages (Malto, Kurukh), but is only found in Baluchistan (Brahui *dīr*, DEDR 3690). This may be accidental, but it may also indicate that Brahmanical educated speech of the Kuru with their IA-Drav.-Munda symbiosis and acculturation had incorporated some Drav. words which appear only now in the texts. The word *mlecch* has been discussed above. Its appearance in the eastern context is not surprising. From the point of view of the Brahmins, the easterners are 'foreigners', *mleccha*. The word may at first have designated only the southern (Sindh) foreigners, and later on all others. These central and eastern North Indian territories, however, have no Dravidian names; the river names belong to other substrates.

A study of present and medieval north Indian places names has not been undertaken in earnest. We will have to account for such names as that of the town of Goṇḍ(a) in Uttar Pradesh, some 180 km north of Allahabad. The name Goṇḍ appears nowadays only on the Central Indian Vindhya mountains, and is not known in U.P. from medieval and classical sources. (For some supposedly Drav. river names such as *Sadā-nīrā* from Drav. *nīr* 'water' see above, and for the *Varaṇāvati* at Benares, see Witzel 1999.)

There are, as always, wrong leads, such as the river name *Kankai* in the Eastern Nepal Terai, which looks like the Tamil form of the name *Gaṅga* (Witzel 1993); there are, however, no traces of an earlier S. Drav. occupation in the area. The Dravidian Kurukh living in the Terai now have recently been imported as laborers from Central India (K.H. Gordon 1976) where they are known as Kurukh or Oraon.

For a different view of early Dravidian settlements in N. India, see R. Shafer 1954, Parpola 1994: 168, and Burrow 1973: 386. Burrow points to the fact that most of the Drav. loan words are found in post-RV texts and concludes: "the influence took place in the central Gangetic plain and the classical Madhyadeśa." Therefore, "the pre-Aryan population of this area contained a considerable element of Dravidian speakers". If that had been the case, we would expect some Drav. river names in the Gangetic plains. However, only Munda (and Tib.-Burm.) names are found (Witzel 1999).

§8. Substrates of the Lower Gangetic Plains

Next to the Mundas, there must have been speakers of other languages, such as Tibeto-Burmese, who have left us names such as *Kosala*, *Kauśikī* (mod. Kosi), perhaps also *Kāśi* and *Kauśāmbi* (mod. *Kosam*) (from Himalayan *khu*, *ku*, see Witzel 1993). In IA they also have left such words as the designations for cooked rice IA **cāmala* and probably also PS *śali* 'rice'.

In Uttar Pradesh and North Bihar (attested in Middle and Late Vedic texts, c. 1200-500 BCE) another apparent substrate appears in which the 'foreign' words do not have the typical Para-Munda structure, with the common prefixes, as described above (§4.2). Masica (1979) called this unknown substrate "language X". He had traced it in agricultural terms in Hindi that could not be identified as IA, Dravidian or Munda (or as late loans from Persian, S.E. Asia, etc.). Surprisingly some 30% of the terms are of unknown, language "X" origin, and only 9.5% of the terms are from Drav., something that does not point to the identity of the Indus people with a Drav. speaking population.

However, only 5.7% of these terms are directly derived from Munda. Obviously, the pre-IA population of the Gangetic plains had an extensive agricultural vocabulary that was taken over into all subsequent languages. F.B.J. Kuiper has pointed out already in 1955: 137-9 (again in 1991: 1) that many agricultural terms in the RV neither stem from Drav. nor from Munda but from "an unknown third language" (cf. Zide & Zide 1973: 15). This stratum should be *below* that of Para-Munda which is the *active* language in the middle and late Vedic texts.

Again, it has been Kuiper who has pointed the way when he noted that certain 'foreign' words in the Vedic substrate appear with geminate consonants and that these are replaced in 'proper' Vedic by two dissimilar consonants (1991: 67). Examples include: *pippala* 'fig' RV (1.164.20,22; 5.54.12, *su-* 7.101.5) : *piṣpala* AV (in Mss.) 9.9.20,21; 6.109.1,2; *su-piṣpala* MS 1.2.2:11.7, *guggulu* 'bdellion' AV, PS : *gulgulu* KS, TS, *kakkaṭa* PS 20.51.6, KSAśv. : *katkaṭa* 'a bird' TS, cf. Pali *kakkaṭa* 'a large deer'. Kuiper adds many other cases of Vedic words that can be explained on the basis of words attested later on.

In RV geminates also occur in 'onomatopoeic' words: *akhkhalī-kṛ* 'to speak haltingly' or 'in syllables?', apparently not attested again in IA until, now Nahali *akkal-(kāyini)* '(to cry)

loudly in anguish' MT II 17, L 33 (*kayni* < Skt. *kathayati* 'to tell' CDIAL 2703, cf. 38) MT II 17; cf. also *jañjan-* RV 8.43.8 etc., *ciccika* 10.146.2 'a bird?', and cf. also *aśvattha* 1.135.8 : *aśvatha* a personal name, a tree, 6.47.24, with unclear etymology, (Kuiper 1991: 61, 68).

Post-RV, new are: *hikkā* PS 4.21.2, *kakkata* PS 20.51.6 (MS *kakuṭha*, TS *katkaṭa*! 'a type of bird'), KSAśv in YV: *kikkiṭa* KS, TS, *kiṭkiṭa* kṛ 'call to attract birds' JB, *kukkuṭa* 'rooster' VS, *pilippila* 'slippery' TS 7.4.18.1, MS, VS; cf. also TS *akkhidant*, *prakkhidant* TS 4.5.9.2, *ājya* 5.2.7.3.

Especially interesting is the early gemination **dr* > *ll*: *kṣullaka* AV 2.32.5, TS 2.3.9.3 *kṣullaka*, < *kṣudra* 'small' (a children's word?); later on, among others, *bhalla-akṣa* ChU4.1.2, *bhalla* Br., MBh (with variants *phala*, *phalla*! EWA s.v.); JB *Malla* 'a tribe' (in the Indian desert, Rajasthan; cf. DEDR 4730), etc.

Though certain geminates, especially in word formation and flexion (-*tt-*, -*dd-*, -*nn-* etc.), are allowed and common, they hardly ever appear in the stem of a word (Sandhi cases such as *anna*, *sanna* etc. of course excepted). Until the late Brāhmaṇa texts, other geminates, especially *bb*, *dd*, *gg*, *jj*, *mm*, *ll*, but also *kk*, *pp*, etc., are studiously avoided, except in the few loan words mentioned above (*pippala* 'fig', *gulgulu* 'bdellion', *katkaṭa* 'a bird' etc. 1991: 67 sqq.).

It will be readily seen that Kuiper's seminal observation reflects a tendency that can be observed throughout the Vedic texts. Geminates, especially the mediae, apparently were regarded, with the exception of a few inherited forms such as *majj* 'to dive under', as 'foreign' or 'barbaric'. They did not agree with the contemporary Vedic (and even my own) *Sprachgefühl*.

However, starting with Epic Sanskrit, forms such as *galla* 'cheek', *malla* 'wrestler', *palla* 'large granary', *bhallāka* 'bear' (CDIAL 9415, cf. Nahali *bologo*, MT II: 41, III, 48, but note Marathi etc. *bhālūk*; -- Nahali *bologo cikin* 'caterpillar' MT II: 21 would be 'bear insect') are normal and very common (however, -*mm-*, perhaps regarded as Drav.(?) remains rare); such words, in part derive from normal MIA developments, in part from the substrate.

This tendency can be sustained by materials from various other sources. In the language 'X' only a few of Masica's agricultural substrate words that do not have a clear etymology (1969: 135) contain such geminates: Hindi *kaith* < Skt. *kapittha* 'a tree, Feronia elephantum, wood apple' CDIAL 2749 (Mbh), *pipli/pipla* < *pippala* (RV), *roṭi* < **roṭṭā*, *roṭika* 'bread' 10837 (Bhpr.); *karela* < *karella/karavella* 'a gourd, Momordica charantia' 3061, *khāl* < *khalla* 'leather' 3838-9 (Suśr.); to these one can add the unattested, reconstructed OIA forms (Turner, CDIAL, see Masica 1969: 136): **alla* 'a tree or plant' (Morinda citrifolia) CDIAL 725, **uḍidda* 'a pulse' 1693, **carassa* 'raw hide' 4688, **chācchi* 'buttermilk' 5012, **bājara* 'millet' (see, however, OIA **bājara*, 9201 *bājara* HŚS: *varjari!*), **balilla* 'ox' 9175, **maṭṭara* 'pea' 9724, **suppara* 'areca nut' 13482, **sūjji/sōjji* 'coarse white meal' 13552. However, these words have come into NIA via MIA, and that their geminates may go back to a consonant cluster without geminates (see below, on Turner's reconstructs).

All of these tendencies are reconfirmed by what we can discern in the other substrate languages. While there still are but a few cases in the northwest, the substrates located further east and south all have such geminates, (for details on these languages see §8). (Incidentally, the northwest has retained the original, non-geminate consonant groups, such as -*Cr-*, to this day, cf. Ved. *bhrātā* 'brother' > Khowar *bhrar*, Balkan Gypsy *phral*, W. Panj. *bhra*, E. Panj. *bh(a)ra* : Hindi *bhāī*, etc.).

In the unstudied substrate of the Kathmandu Valley (inscriptions, 467-750 CE, see below), geminates are found in the following place names: *gamme*, *gullatamga*, *gollam*, *jajje-*,

dommāna, *daṅkhuṭṭā*-, *bemmā*, cf. also *bhumbhukkikā* (onomat. with double consonant: < **bhumbhum-ki-kā?*); cf. also village names such as *joṅjon-diṅ*, *tuṅ-catcatu*, *thumtum-rī*, *daṅdaṅ-(gum)*.

In the substrate of modern Tharu which is spoken in the swampy lowlands of the foothills of Nepal and U.P.: e.g. *gēṭṭī*, *ghaṭṭī*, *ṭippā* (?), *ubba*; cf. also 'onomatopoetic' words such as *jhemjhemiyā* 'small cymbal or drum', *bhubhui* 'white scurf', *gula-gula* 'mild' (with the usual middle Vedic, OIA, Tamil, etc. form of the "expressive" and onomatopoetic words: type *kara-kara* versus older Vedic *bal-bal*).

In Nahali (spoken on the Upper Tapti River) Kuiper 1962: 58 sqq.) the following substrate words can be found, though apparently various types of consonant groups are allowed: *bekki* 'to reap', *betto* 'to die', *bokko* 'hand', *coggom* 'pig', *cutṭi* 'to pound', *joppo/jappo* 'a clan name', *kaggo* 'mouth', *kāllen* 'egg', *maikko* 'bee', *oṭṭi* 'to pull out, to burn', *poyye* 'bird', *unni* 'to take'. Additions to this list can easily be supplied now from that of A. Mundlay (MT II) which are not obviously from NIA include 8 *aḍḍo* 'tree', 91 *attú* 'to stretch', 221 *bijjok* 'to lay in wait for prey', 232 *biṭṭhāwi* 'union, horizon', 255 *buddi* 'to set (sun)', etc.

In the Drav. Nilgiri languages (Zvelebil 1990: 63-72) there are a few isolated geminating words that go back to a pre-Drav. substrate, e.g. Irula *mattu* 'lip', *ḍēkkada* 'panther', *muṭṭ(u)ri* 'butterfly', *vutta* 'crossbar in a house'.

The Vedda substrate contains the same type of words: *cappi* 'bird', *potti* 'a kind of bee', *panni* 'worm' (de Silva 1972: 16).

It can be stated, therefore, that the substrate languages outside of the extreme northwest indicate broad evidence for original geminates. Differently from IA (cf. below, on Turner's reconstructions), these words have not been pushed through the 'filter' of MIA, that means their original consonant clusters have not been 'simplified' (e.g. *kt* > *tt*, *kṣ* > *kkh*, etc.) The tendency probably has worked on IA from the beginning, as for example in the early example AV *kṣullaka* < *kṣudraka*. In Drav. various consonant groups are allowed, including geminates (Zvelebil 1990: 10 sqq.:. e.g., *kakku* 'to vomit', *kaccu* 'to bite', *kattu* 'to tie', *kattu* 'to screech', *kappu* 'to overspread', *kammu* 'to become hoarse'; (cf. also the interchange *p*- :: -*pp*- /-*v*- :: -*p*/-*u*).

One can therefore put the question whether this old substrate tendency has already influenced the Para-Munda of the RV. In Munda itself, such geminates are very rare (cf. Kuiper 1991: 53), and open syllables are common. However, there is a tendency in the Munda languages to eliminate consonant groups caused by vowel loss in prefixes (Pinnow 1959: 457); this does not cause geminates in such cases but is in line with the similar developments from Old to Middle and New IA (e.g. *akṣi* 'eye' > *akkhi* > *ākh*, *rakta* 'colored, red' > *ratta* > *rāt*, etc.). One may therefore explain many of the 'foreign' words with geminates in Vedic and post-Vedic, excluding Drav. loans, in the same way.

For the same area that is covered by Masica's language "X", and for N. India in general, one may also adduce the many words in NIA that are not attested in Vedic, Classical Skt. or the various MIA languages such as Pali but that occur only in their NIA form. They have been collected and reconstructed by V. Turner in his CDIAL. These include the starred forms, appearing in their reconstructed OIA form, and those words that do not appear in Ved. but are more or less accidentally attested in late Skt. texts, and the substrate words dealt with by Turner. They have a typical, often non-IA structure, including the very common clusters -*ṅḍ*- and -*ṭṭ*-. Their root structure follows the following pattern. (C = any consonant, ə any vowel)

*Cəkkh, Cəg, Cəgg, Cəcc, Cəcch, Cəjj, Cəñc, Cət, Cətt, Cəñth, Cəd, Cədd, Cədg, Cənd, Cədd, Cən, Cəpp, Cəmp, Cəbb, Cəmm, Cər, CərC, Cəl, Cəll, Cəv, Cəs, Cəśś, Cəh.

In Turner's CDIAL there are only a few forms such as *Crək, Crəc, Crəñt, Crəll, Cləkk; this does not surprise as all reconstructed words have passed through the filter of MIA and have lost such clusters, -- except in the extreme northwest (Lahnda and Dardic).

Double consonants at the end of roots may go back to complicated clusters that can no longer be reconstructed, for example *Cəkkh < **Cəkş (cf. RV *kṣvinkā* 'an animal, vulture?', *ikṣvaku* 'name of a person, tribe' (class. Skt. 'bitter pumpkin'), and compare Ved. clusters such as *matkuṇa* 'bed bug', *matkōṭaka* 'white ant', *kruñc* 'curlew'). Consonant clusters with various realizations in pronunciation may also be hidden in many Vedic loan words (Kuiper 1991: 51 sqq., Ved. cases p. 67 sqq.)

Prehistoric Semitic loan-words?

In passing, a few notes on Cyrus Gordon's and Liny Srinivasan's discussion of Semitic loans in NIA, MT 1, 203-206. Most of them are 'disguised' derivatives of earlier stages of IA, a warning to be heeded when comparing S. Asian words with their long literary tradition with other languages (see above, introduction and cf. P. K. Benedict, MT III 93). I had a talk with C. Gordon about that time, but unfortunately we only discussed the Mitanni Aryan words (see MT I 206.)

I briefly list all their words (except for a handful that I could not yet explain) that cannot be derived from a Canaaitic source but stem from earlier forms of IA (Vedic, Class. Skt., Prakrit, NIA). Turner's CDIAL discusses the stages of development from OIA > NIA.

- *ṣār* 'bull' < MIA *saṃḍa(ka)* < Ved. *saṃḍa* MS, *ṣaṃḍha* CDIAL 13331
- *sita* 'winter' ~ Ved. *śīta(la)* 'cold', etc. CDIAL 12485-8; -t- in *sita* remains a problem; it requires a compound with *śīta-*
- *gol* 'round' < Ved. *golika* 'little ball', Skt. *gola* 'ball'; origin unknown, CDIAL 4321
- *mita* (= *mitā*) 'friend' < Ved. *mitra* CDIAL 10124
- *celi* 'purple red ritual garment' < Ved. *cela* 'clothes', Skt. *celika* 'bodice'
- *folā* 'swelling' < Ved. *phala* 'fruit', etc. CDIAL 9051 and PHAL 'burst', note Bengali pronunciation of *a* [ɔ], *ph* [f].
- *tham* 'to stop' cf. MIA *ṭhape-*, *ṭhava-* < *sthāpaya-* 'cause to stand, establish', MIA *thāma* < Ved. *sthāman* 'station', cf. Gujarati *ṭhām* 'place' CDIAL 13756-65
- *hoi*, *haya* 'is, are' < MIA *bhavaï*, *hōi* < Ved. *bhavati* 'to become, be' CDIAL 9416
- *bagan* 'garden' < NIA, Hindi *bagīcā* < Persian
- *bas* 'cloth' < Ved. *vas* 'to clothe', *vasana* 'dress' CDIAL 11437
- *thoka* 'drive in a nail' ~ cf. MIA *thaddha* < Ved. *stabdha* 'firmly fixed' CDIAL 13676; the form requires OIA **sthabdha-ka*, like CDIAL 13675 *stabaka* 'tuft' > MIA *thavaya-* > Beng. *thok*
- *Abhītra* : these tribes (or unknown origin) appear in S. Asia only at the beginning of our era; but the connection of Mitanni Aryan speech with pre-Vedic Skt. is beyond doubt (p. 204).
- *bana*, *banā* 'build' < Ved. *vana-* 'to desire, gain, make ready' CDIAL 11260
- *dha* 'run quickly' (for Beng. *dhāoyā?*, Oriya *dhāi-bā*) < Ved. *dhava-* 'to run' CDIAL 6802
- *tola* 'draw up water' < Ved. *tolaya-* 'lift up' CDIAL 5979
- *gada* 'cause mental anxiety'; cf. CDIAL 3960 MIA *gaṃja-* 'to oppress, rebuke' < **gañj* 'to press, ram'??

- *dhakal* 'trouble, misery' CDIAL 5581 < **dhalati* 'bend over, fall'? (note extension with -kk- in Hindi *dhalaknā* 'to lean over', Beng. *dhalkā* 'to get loose'; or rather CDIAL 6701 **dhakk* 'push, strike', Hindi *dhakelna*).
- *chalak* 'smart, diplomatic' probably ~ Ved. *cal*, *cālaya-* 'to move' CDIAL 4772 (with common -ka suffix).
- *chamara* 'a low caste' < Epic Skt. *carma-kāra* 'leather-worker'
- *dhapas* 'fat, inert', cf. CDIAL 5580 **dhappa* etc. 'lump', Beng. *dhepsā* 'swollen', Marathi *dhēbus* 'lump'
- *karat* 'saw' < MIA *karapatta* < Ved. *kara-pattra* 'saw' CDIAL 2795
- *pala* 'to flee' < Ved. *palāya-* 'go away, flee'
- *pa-char* 'to disperse' < *pra-cala-* 'move forward?' CDIAL 8489
- *sach* (= *sāc*, *sācā*) 'pure, true' < MIA *sacca* < Ved. *satya* 'true' CDIAL 13112
- *kena* 'to buy' < MIA *kiṇa-*, *kiṇa-* < Ved. *krīṇa-* 'to buy' CDIAL 3594

§9. Tibeto-Burmese

Still, this is not all as far as the Gangetic plains are concerned. The eastern section of the North Indian plains (E. Uttar Pradesh and N. Bihar) provides some indications of Tib.-Burm. settlements. The name of the Avadh (Oudh) area north of Benares in late Vedic texts is *Kosala*; this form should not appear in Vedic/Skt.; it should have been **Koṣala* or **Kośala* (as is indeed found in the Epics). The word clearly is foreign, and should belong, together with the slightly more eastern river name *Kauśiki* (post-Vedic, mod. *Kosi*) to a Tib.-Burmese language. Such designations for 'river' are indeed found in eastern Himalayish: R. *Kosi*, many Rai river names in -ku, -gu, in medieval Newari (*kho*, *khu*, *khwa*; *ko* 'river' in the unpublished Newari Amarakośa) and modern Newari (*khu*, *khusi* 'streamlet, creak') in and near the Kathmandu Valley, where it is already found in Licchavi time inscriptions, 464-750 CE, as: Cullaṃ-khu, Theñ-khu, Japti-khū, Hudi-khū, Pi-khu-, Vihliṃ-kho-srota, Ripśiṃ-ko-setu. It is perhaps derived from Tib.-Burm. **kluñ* (details in Witzel 1993).

Perhaps one may add the name of the tribe around Benares (*Kāśi*) whose older, Vedic form is *Kāśi* (AV), and its western neighbor, the *Kūśāmba*, *Kauśāmbi* (the later town *Kauśāmbī*, mod. village of *Kosam* near Allahabad). R. Shafer (1954) has a host of names, taken from the list of peoples in the much later Mahābhārata Epic that must be taken with caution (redaction only c. 500 CE, where even the Huns are included with *Hūṇa*, *Harahūṇa*, - they have become a Rajput clan!)

Indeed, early evidence for mountain tribes which might have been Tib.-Burm. is found in the Vedic texts all along the Himalayas. These mountain tribes, probably of Himachal Pradesh and Western Nepal, lived on the border of the Vedic settlement. They are first encountered in AV (1200 BCE) under the names *Kirāta*, in the western Himalayas where they appear as herb collecting mountain girls (*kairatikā kumarikā* PS 16.16.4, ŚS 10.4.14., *kailāta* PS 8.2.5). The more eastern text VS 30.16 has them as living in caves; cf. also the popular form *Kilāta* PB, JB, ŚB; (for details see Witzel 1993, 1999, and cf. KEWA I 211, EWA I 352, and also EWA I 311, s.v. KAR, and Prakṛt *Cilada*).

An alternate form of the name, *Kīra*, may have been retained in Kashmir, at 500 CE (see above). Since the RV, tribal names are found have the suffix -ta/-ṭa (Witzel 1999), e.g. *Kīkaṭa*, *Bekanaṭa* (certainly a non-IA name: b-, -ṭ-), *Marāṭa* PS 5.21.3, 12.2.1, *Kirāta* AV, PS, *Āraṭ(ṭ)a* BSS (cf. Sumer. *Aratta*, an Eastern country!), *Kulūṭa*, *Kulūta* (MBh), *Kulū-ta(ka)*, (but also: *Kolūta*, *Kaulūta*, *Kuluṭa*, and even *Ulūṭa*, *Ulūta*, see Kuiper 1991: 38 (cf. Pinnow 1959: 198f., cf. S. Lévy, JA 203, 1923, 52 sqq. = Bagchi 1929: 119 sqq.), finally *Kuḷu* in W.

Pahari, CDIAL 3348, with the typical prefix change of Munda; *Virāṭa*, a king of the Matsya (Mbh) and a country in Bṛhatsamhitā, Pkt. *Virāḍa*, mod. Berar.

However, names in *-ta* (and *-nda*) are restricted to the Himalayan mountains while those with *-ṭa* (and *-ṇḍa*) occur all over the northern Indian plains (Witzel 1999). As for the origin of the suffix *-ṭa*, compare the plural suffix *-ṭo* in Nahali (Berger 1959, Mundlay MT II, 1996, 5, cf. Kuiper, 1991: 45 on 'Dravidian' *-ṭa*).

Beyond this, the early texts do not allow us to decide on the language and appearance of the Kirāta. (The Epic calls them gold-colored). However, MS and ŚB list them with the Asura ('demons') *Kilāta-Akuli*.

Apart from these Vedic sources for (possible) early Tibeto-Burmese, the earliest datable, and so far not utilized evidence is found in Nepalese inscriptions (467 CE+)¹⁶. The inscriptions are in classical Sanskrit, but contain a host of place names, some personal and tribal names, and even a number of non-Sanskritic, traditional local names for government offices which must be considerably older than c. 200 CE.

A note on the transcription of 'foreign' words in Sanskrit and in Indian alphabets is in order here. Just as in the case of adaptation of 'foreign words' to the R̥gvedic phonetical pattern, the local words of the Kathmandu Valley had to be adapted to the possibilities of Sanskrit pronunciation and of spelling them in the Gupta (Nāgarī style) alphabet.

- several vowels are used intermittently: *i/e*, *i/ṛ*, *u/ū/o* (also *va/o*), *ṛ/ri/o* [ə,ɔ];
- there is variation in some consonants as well, notably:

d/ḍ (no retroflex!), *tt/ḍ*, *k/kh*, *b/bh*, *ll/ l*, *s/ś* (no *ṣ* ?); *jñ* (common N. Indian pronunciation: *gy?*); note aspirated *m*, *n*, *r* [*hm*, *hn*, *hr*].

Typical is the spelling of the government office *śolla/śulli/śulti* or of the name of the town of Bhaktapur in Licchavi inscriptions: *Khṛpuṅ*, *Khopṛṅ* [*khɔpṛiṅ*], (*Mā-*)*kho-*, > medieval *Khvapo*, *Khvapva(m)*, *Khvapa*, *Khapva*, *Khopva* [*khɔpa*] > mod. *Khvapyā* [*khɔpe*], (for medieval names see Witzel 1999, 1993).

Of importance is a variation (just as in Kanauri) that indicates implosive (unreleased) consonants: *co/cok/cokh*. On the other hand, final *-k* must, at least in part, still have been pronounced in the late middle ages as it has been taken over into Nepali during the 17th and 18th centuries, e.g. *Jama-cok*, *Pul-cok*, or cf. the Patan toponym Nep. *Nugal* < New. *Nugaḥ* < O.New. *Nogvala*, *Nogola*, *Nogala*; or the Nep. loan word *jhyal* "window". -- For all such variant spellings in the Licchavi inscriptions, see Witzel 1980: 327, n. 60,69, 72, 74, 75, 87, 1993: 240 sqq., 248, n. 171-3, and 1993, n. 120, 152.

The actual attribution of the locally spoken language and its substrate found in the Licchavi inscriptions remains in the balance. It may be early Newari or a predecessor, the Kirāta language of the so-called Kirāta dynasty (see below) that reigned in the valley well before 200 CE and has left us with names of government offices such as *śulli*, *kuthera*.

If it is indeed early Newari, it is a very archaic form, characterized by a large numbers of *initial* clusters (*Cr-*, etc.), which differ even from the oldest attested Newari texts (names, occasional words or phrases in early Newari in documents, of 983 CE.) Such consonant clusters are very rare in medieval and certainly in modern Newari.

A clear case for Tib.-Burm. is *ti* 'water'; I have compared (1980 n. 90, n. 94) *co(kh)-*, *bu-*, *dol/dul*, *khu*, *gal/gvala* of the Licchavi inscriptions with mod. New. words: *-co* "hill, mountain top", mod. New. *cwa*, *cwak-*, cf. Kaike *chwang*, Khaling *cong*; (note also *cuk*

¹⁶ Now there is one still older inscription which indicates Sanskritization of the valley already around the time of Jayavarman, c. 200 CE (see Tamot and Alsop *Asian Arts*, July 10, 1996, at: www.asianart.com/index.html).

"mountain range" in Gilyak); -*bu*, 'land'; O.New. *bu/bru*, cf. Tamang *pū*; -*gaa* '*village'? cf. Mod. New. "classifier for round objects, part of Kathmandu", O.New. *gvala(m)*, but note Skt. *gola(ka)*, 'ball, globe'; perhaps cognate with Tib.-Burm. (Benedict, 1972: 444) **r-wa* / **g-wa*; cf. 91 **wal* 'round'; -*ko* 'slope', *kwa*, *kwaa* 'down'; *pā-kā* 'slope of a hill'; cf. Thakāli *koh-plen*. (K. P. Malla has explained some of such place names as being of Newari origin (1981: 17).

In the following list of names, place names are not specially marked, words ending in - continue with Skt. words such as -*adhikāra* 'office', -*kara* 'tax', -*grāma* 'village', -*draṅga* 'fortress', -*nadī* 'river', -*pāñcalī* 'association', -*vāstu* 'area'.

ajika-(monastery), aśiñ-ko (area) (*ko* 'river?' or *ko* 'slope?'), añlābaka-(association), uṭṭane, uḍanehuśa, uḍra, etañ- (village), kañkā-vaṭṭikhā (Skt. *vaṭṭika* 'garden?'), kañku-lam (area) (*lam* 'road?'), kaḍam-priñ (area) (*priñ* = *prñ*), kapiśā (river), kampro-yambi (see *jamayambi*), kambilampra, karvaṭa (hamlet), kalopi- (village), kādalaka- (village), kāduñ- (village), kici-priciñ- (village), kuthera-(office), kurpāsi- (village), kuhmum-(area) (see *hāhmuñ*), kekhā, keṭumbāṭa (name of a Kirāta official), koñ-ko (village), koli (cf. *dakṣiṇa-koli-grāma* 'Southern Koli village'), kośī (river), khakam-priñ, khaḍuka, kharjurikā-(monastery), khaḍabramśai, khādyām, khārika, khārevalga-co (*co*, *cok* 'pass'), khāhri-co, khuḍū-(deity), khula-priñ- (village), khṛpuñ- (village), khainaṣpu (area), kho-prñ- (village) (see *mākho-*), gamprondiñ (village), gañiduñ (village), gaṇḍakī (river), gamme (area), gāñsul (village), gī-gval- (association), giṭā- (association), gīnuñ, guñḍī-maka (village) "hill-water"?, guḍan-dul (area) (*dul* 'river?'), gumpadvṛs (area), gullatamga-(village) (see *gollam*), gechimjāka, gollam (river), gohala- (village), gvalam (~*gollam*?), (catur-)bhalatāsana- (monastery), citalāñ, ciśimaṇḍa (*tila-maka*), cu-priñ- (river), custuñ- (village), custun- (river), cuhuṅgapedā, cullam-khu (~ *collam*?), cokh-parā (*cokh* 'mountain pass'), chūma-kūṭī, cho-guṃ- (village), jama-yambi (s. *kampro*), jayapallikā-(village), jaya-lambha (cf. *lambā*), jajje- (association), joñjondiñ- (village), jol-priñ- (village), jñātikhr̥n (river), ṭistuṅga, ṭe-gval (village) (see *tegval*), ḍolāji-prathā, tam-brū? (cf. *Lalita-b(r)umā* name of Patan; cf. -*bū*?), tāṭṭanakam, tavecekha, tāñ-, tim-brū (cf. *ma/mittam-brū*, *priti-brū*), tila-(river) (= *tila-maka*? 'irrigation channel?'), tila-maka, (śrī)-tukhāṇa, tuñ-catcatu- (village), the-khuṃ-dul (river) (cf. Tib.-Burm. *dul* 'dust', local meaning 'sandy river?'), tegvañ-, te-gvala (see *tegval*), te-gvala-(association), teñ-khu, tepula (office), testuñ- (village), thumtuṃ-rī- (fortress), thasam-prin- (deity), thambi-dul, tham-bū- (village) (Tib.-Burm. *bū* 'rice paddy'? Benedict 135, *bu(d)/pu* "open land" Ben. 260), theñ-co, (dakṣiṇa-)koli- (village), (dakṣiṇa-)tilaḍu-ku (*tila*='grain?'), dañkhuṭṭā- (street, tax), daṇḍaṅ-guṃ, dumprañ- (village), dumlañ- (village), duprañ, dommāna, dolā-(śikhā) (deity), dova- (village), dhelan-tī (river) (cf. Tib.-Burm. *tī* 'water'), nara-priñ- (village), nālaṅga- (village), nim-brū (Tib.-Burm. *bū* "rice paddy?"), nīlī-śālā, pañkuṭī, panapphu (area), pan-(river), parikhā, palāṇḍu- (tax), pākhuśī, pā-guṃ-maka, pāsīnkhyā, pikañkūlaka (area), pikhū- (village), pīṭaljā-(office), pumdaṭṭa (village), puṭham-priṅga, puṇḍri-(palace), putti- (river), putti-(deity), punu-(association), pṛcchi-brū, poṇḍī-(shrine?), prañ-priñ, prañālī-dī-maka (Tib.-Burm. *tī* 'water?'), prayiṭṭikhā (area), pritu-brū (Tib.-Burm. *bū* 'rice paddy?'), promjñam-bu, proñniprañ, proñprovāñ, phāṃśinpral (river), phalanju (corvee), phavadrañ-(village), phṛthula (area), phathula (area), pherañ-(fort), bugā-yūmī- (village), bunlu- (river), bem mā (area), brahmuñ (office), brā-dul (river), brem-guṃ-co (pass), bhumbhukkikā-(deity), bhel-bū, bhoṭṭa- (corvee), bremgu-co, mā-kho-dulum, mā-kho-prñ (fortress), mā-gvala, mātiṅga- (village), mātin-(temple), māthañ- (village), māp-cok-(office) cf.

-co(k/kh) 'pass', māśa, miñ-ko, mittim-brū?, miṃdi-co (pass), mekaṇ-di-dul (tilamaka) (Tib.-Burm. *ti* water?), mo-guṃ-co (co 'pass'), yaku, yā-priñ- (village), yāvī- (village), yū-gvala-(association) (cf. *gola*), yū- (village), yūvisāmā- (village), yebramkhara, roṭā-(association), rogamācau (watchman), lakha-maka, lamkhulām uṭṭane, lañja-gval-(association), laḍitama-(deity), liñ-gvala- (office), lunśrī-(area), lumbañ-co, lulju (river), lemdu (area), lembaṭī-(fortress), lo-priñ- (village), lo-priñ- (association), vāditra-(association), valasokṣi-(temple), viñvoca-(shrine), vilivikṣa (area), vihliñ, vihliñ-kho (river, Tib.-Burm. *khu* 'river?'), vṛjika, vṛjika- (street, highway), vemprā- (village), (vaidya-)madgudi (village), vottarino?, voddi- (province), śaktibāṭa (corvee), śaṅgā-(village), śaṭammi (area), śalamkhā, (śiva)-gal- (temple), śīṭāṭī, śulhmuñ (office), śolla (office), śulli (office), śuli (office), sañ-ko, sattvaumā-lambā (area) (cf. *lambha*), sapelā-(association), salam-bū (palace), siṃ- (tax), sindrira (watchmen), subram-ko (area), surisimbatti, stharu- (fortress), hasvimavalli- (village), hāhmuñ- (place), hima-? (river), huḍi-khū (Tib.-Burm. *khu* 'river'), hus-prinduñ (village), hnā-guṃ, hmas-priñ-(village), hnu-priñ, hrīm-ko (area).

There also is a traditional list of local kings, 32 in all, called the Kirāta dynasty (transmitted only in a manuscript of 1389 CE, the Gopālarājavamśāvalī), it runs:

Elam, Pelam, Melam, Caṃmiṃ, Dhaskem, Valumca, Humtiṃ, Huramā, Tuske, Prasaphuṃ, Pavam, Dāsti, Camba, Kaṃkaṃ, Svananda, Phukoṃ, Śiṃghu, Julam, Lukam, Thoram, Thuko, Varmma, Guṃjaṃ, Puska, Tyapami, Mugamam, Śasaru, Guṃṇam, Khimbuṃ, Girijaṃ, Khurāṃja, Khigu.

Some of these names obviously are Sanskritic: *giri-ja-* 'born in the mountains'; Svananda (*svananda* or *sv-ānanda*); *Varmma* (*varmā*, the designation of Kṣatriyas and kings); note that a new Kathmandu inscription of c. 200 CE is already one of *Jaya-varman*; consequently, this list will go back to at least 200 CE. The rest looks Tib.-Burm; note the initial clusters *pr-*, the internal clusters *-sk-*, *-st* and the final nasals: these features agree with the phonetic shape and the syllable structure of the place names recorded in the Licchavi inscriptions.

All these data have not yet been exploited for Tib.-Burm. linguistics. (For place names, see Witzel 1980, 1993; for relations between the eastern Himalayan languages and Munda, s. Kuiper 1962: 42, with Nahali, p. 46f; cf. Laufer 1916-18, 403 sqq.).

The Kathmandu Valley, however, seems to have has its own strange substrate, below this Tib.-Burm. level. It is visible in some place names which definitely do not look Tib.-Burm. Some of them are characterized by the geminates studied above: *gamme*, *gullatamga*, *gollam*, *jajje-*, *dommāna*, *dañkhuṭṭā-*, *bemma*, cf. also *bhumbhukkikā* (onomatopoeic with double consonant < **bhumbhum-ki-kā?*)

Our task would be simplified if we had an etymological dictionary of Newari, but so far we only have a limited dictionary of O.New. (by H. Jørgensen, A dictionary of the Classical Newari, København 1936) and an equally limited one of modern Newari by Th. Manandhar (Newari-English Dictionary, Delhi 1986); most of the older New. texts have not even been edited. The next step would be to eliminate all Skt. loan words; (they are often difficult to determine due to diverse and far reaching sound changes, and to telescoping: who would derive *punhī* 'full moon' < Skt. *pūrṇimā*, or *yege* (ṃ) 'offering' < Skt. *yajña*, *ācāgu* 'yearly meeting of all Kathmandu Bajrāchārya priests' from Skt. *ācārya-goṣṭhikā?*) Only then, we can be sure as to what is Newari, and what not and can proceed to eliminate Tib.-Burm. and other loan words in order to trace the substrate language of the Kathmandu Valley. A shortcut, for the time being, is provided by those untypical words with geminates mentioned above.

§10. Himalayan Languages

§10.1. Early IA settlements in the Himalayas

D. D. Sharma, Old-Indo-Aryan element in Kinnauri (in: R.K. Sharma et al. (eds.), *Dr. B. R. Sharma felicitation Volume*, Tirupati 1986, 149-155) describes older elements in the Kōchī dialect (of LSI 9, 4: 613-6), classified by Grierson as a subgroup of the Kiūmṭhali Group (= Simla dialects, p. 549 sqq.). It is spoken in the western part of the former state of Bashahr, along the upper Satlej River (Sharma's Lower Kinnaur, including the Kalpa, Nichar and Sangla Valleys), while in the eastern part (Sharma's Upper Kinnaur), up to the Tibetan border, the Tib.-Burm. language Kanauri (Kanāw^{arī}) is used.

Sharma states that Lower Kinnauri has 'a substantial portion of Tibeto-Himalayan vocabulary' and that it has 'various linguistic elements in its sub-strata ... whose origin is sought elsewhere'. One of these substrata is, in his opinion, an Aryan element that cannot have come from the (Vedic) OIA of the plains (*Madhyadeśa*), since he regards linguistic and other contact impossible ("unthinkable"; this can of course, be doubted, as we now have early iron age civilizations in these hills and contacts with the plains).

He links his 'Lower Kinnauri' with "an independent group of Aryans in the prehistoric days" ... the "Khaśa and Yakṣa" who spoke the Aryan language of the pre-Vedic period." He also sees a "conspicuous absence of Brahmans and Brahmanical culture" (which, incidentally, is quite typical for most of the upper Himalayan regions with NIA languages). Or, this form of Aryan is seen by Sharma as that of the Khaśa people "who form the bulk of the populace of this region now-a-days.... The existing OIA elements are the remnants of language of these Khaśas". He thus is on a trail quite similar to that taken later on by Zoller (see below).

The vocabulary given by Sharma, however, shows traces of OIA, MIA and NIA -- as might have been expected. One curious feature of L.Kin. is the division of nouns in animate (suffix -s) and inanimate (suffix -ñ) which he compares to that of the Munda languages, while he links the endings to OIA masc. -s, neuter -m.

However, his materials represent a mixture of OIA, MIA and NIA forms that have to be separated. Typically, we find OIA *kvath* 'to boil' preserved as *kwath* or *grāma* 'village' as *grāma-ñ* (as opposed to NIA *gaū/gaō* etc.); next, forms which represent a MIA stage such as *sappa-s* 'snake' < *sarpa*, and NIA forms such as *bāya* 'brother' < *bhrāta*, *tau* 'heat' < *tāpa*, *dauya-ñ* 'curds' < *dadhi*, *ana-ñ* 'food' < *anna*, or *māmā* 'maternal uncle.'

Then, there are earlier and later loans directly from Sanskrit (*tatsama*). The earlier ones have undergone some sound changes typical for this NIA language. Direct loans include *śāstra-ñ* < *śāstra*, *rākṣa-s* < *rākṣasa*, *bāga-ñ* 'part, share' < *bhāga*; older ones must be: *dhaura* 'religion' < *dharma* has preserved *dh* (otherwise > *d*, a typical Dardic trait), or *akhaura* < *akṣara* 'letter'. There are several cases of "Gāndhārī metathesis" as well: *trāma-ñ* 'copper' < *tāmra*, cf. *grota-ñ* 'cow urine' < *gomūtra* etc.

In short, several layers have to be distinguished very carefully; Dardic influences and medieval loan words from Skt. have to be separated, and finally, true OIA survivals must be isolated, -- all of which cannot be done here. This Pahari language thus contains many loan words from the levels of OIA and MIA and NIA.

The case is of interest as it shows, just as that of early Burushaski, the interaction of plains and mountain people (cf. also, below, on Bangani). The present case also provides some indication of the early date of such interaction between IA and Tib.-Burm. speakers; this may be reflected even in AV, if the *Kirāta* indeed are Tib.-Burm. speakers, and if the name has not been passed on from an unknown earlier population (cf. the Kashmiri *Piśaca*, *Nāga* traditions, above) to Tib.-Burm. speakers.

However that may be, from at least 1100 CE onwards, we see an increasing Aryanization of the western Himalayas and W. Nepal with the spread of the *Khaśa* tribe (found already in Manu's law book); by 1150 CE they are still mentioned in the *Rājatarāṅgiṇī* as settling southwest of the Kashmir Valley. *Khas kurā* is the self-designation of what was called the "language of the Gurkhas" (in Newari called *khaṁy* < *khas*); they have substituted the name Nepali only in this century. By 1150 CE they had established the W. Nepal/C. Tibetan Malla kingdom; by 1769 they had conquered the Kathmandu Valley; and by 1900 they had settled, mixed with Gurung, Magar, and other Tib.-Burm. tribes speaking Nepali as lingua franca, in Darjeeling, Sikkim, S. Bhutan and some parts of Assam. This movement is indicated by their renaming of river names all across the Himalayas (Witzel 1993).

Some part of the Himalayas may also have been occupied by the pre-Tibetan language of W. and Central Tibet, Zhang Zhung. (See the list of Zhang Zhung words, Thomas 1933, Beckwith 1987; for recent archaeological discoveries of Zhang Zhung settlements in the area before the spread of Buddhism in the 7th c., see Bellezza, 12/17/98, at: www.asianart.com/index.html.)

The history of the settlement of the Himalayas is far from clear. (For some details, based especially on hydronymy, see Witzel 1993, and cf. now van Driem <http://iias.leidenuniv.nl/host/himalaya/>). For example, the Thāmi tribe who live higher up in the Tāma Kosi valley east of Kathmandu belong, as their language shows according to Shafer (1964: 3 n.1), to the Western Himalayish group of the Bodic division of Tibeto-Burmese (Kanauri, etc.); cf. however, Starostin 1989. Indeed, the Thāmi claim to have immigrated from Humla in northwest Nepal. This is one indication among others (Witzel 1993) that there was a west-east flow of population and languages, similar to the much later one of the Nepālī speaking Khas tribe.

§10.2. Bangani

The intriguing question of Bangani has not been entirely resolved. Bangani is spoken just east of Kinnauri, in the western-most tip of Garhwal, Uttar Pradesh. Zoller (1988, 1989) has reported a non-IA substrate in this otherwise typical NIA language found high up in the western Himalayas. Surprisingly, this substrate is a strange western variety of IE with words such as *ɔgnɔ*~ 'unborn' (not Skt. *a-ja*) and *gɔŋɔ* 'give birth' (not Skt. *jan*), *kɔtrɔ* 'fight' (not Skt. *śatru*), *dɔkru* 'tear' (not Skt. *aśru*); the initial *d-* is W. IE, cf. Greek *dakru*, Engl. *tear*, as opposed to E. IE : Skt. *aśru*, Avest. *asru*, Lithuanian *ašara*. This claim has been disputed by G. van Driem (1996, 1997), but has been sustained by research carried out in Bangani by Anvita Abbi of Delhi University (see H.H. Hock [On Bangani] <http://www-personal.umich.edu/~pehook/bangani.html>, with further discussion). Anvita Abbi recognizes three layers in Bangani: words of the type *dɔkru*, *lɔktɔ*, *gɔsti*, the general NIA Pahari level, and recent loans from Hindi, etc.

In principle, bands or tribes who have 'lost their way' and turn up in unexpected areas are not altogether unknown. Tokharian, the easternmost IE language, has western characteristics (*kānt*, *kānte* '100'), and the North Iranian Alani, ancestors of the Ossetes, traveled all the way through Central Europe, Spain and North Africa with the Germanic Vandals, to settle in Tunisia.

§10.3. Kusunda

Tib.-Burm. is, however, not the first language in the Central Himalayas. In Nepal it has been preceded by the language isolate of Kusunda. (The language of the nomadic hunter-gatherer group, the Raṭe, is Tib.-Burm., though; see D.B. Bista, 1976, J. Reinhard 1974).

Kusunda has recently been treated at length in MT II and III (cf. Shafer, 1966: 145; 1954: 10 sqq.), and I can therefore be brief. Personally, I deeply regret not having investigated the language when I worked at Kathmandu (1972-8), at a time when this was still possible; I thought that the Summer Institute of Linguistics (T. Toba 1970) and J. Reinhard (1969, 1970) were on the trail. At that time, some Kusunda still lived in the Mahabharata Range west of Kathmandu, in the village Satobati on the river Kar Khola, west of Gorkha. This is, however, a fairly recent settlement, and we should investigate whether other sections of the tribe have survived elsewhere. One of my Nepalese friends, J.R. Acharya, tells me that some decades ago, Kusunda used to come to his village near Tanahuñ. Children were threatened by their mothers with exclamations such as "Kusundā ayo!" ("the Kusunda have come... they will take you away!") It is important to note that Reinhard reports them from another area, the Dāng plains (south of Gorkha). Their possible survival should therefore be investigated urgently -- though the question remains whether various groups of hunters called Kusundā in Nepal (such as those at Tanahuñ) do/did indeed speak this language. The language is reported to have died out by now. The Summer Institute's web site (www.sil.org/ethnologue/), misclassifying them as Tib.-Burm., says: "KUSANDA (KUSUNDA) ... Tanahun District, Gandaki Zone, western hills, Satto Bhatti west of Chepetar and possibly jungle south of Ambhu. Kireni, near Kumhali. ... Last speaker died recently (1985). Extinct." Therefore, Reinhard's taped material of c. 500 words and sentences, deposited in the Phonogramm-Archiv, Vienna, should be (re-)investigated.

It is also important to point out the difference between Hodgson's (1848, 1880) and Reinhard's (1969, 1970) Kusunda, a point also mentioned by P. Whitehouse MT III : 31; however, these differences extend beyond the grammatical forms cited to the basic vocabulary, e.g. *gipan* 'hand' H(odgson) : *aibi* R(einhard); *ing gai* 'star/night' H : *sā'nām* R (cf. *ing*, *ing ying* 'sun'); *jum* 'moon' H : *nihō* R; cf. also smaller variations: *toho* 'tooth' H : *uhu* R; *gitān* 'skin' H *gitat* R.

It goes without saying that, for a thorough investigation of Kusunda, the loans it has received from Nepali and some of the neighboring Tib.-Burm. languages such as (Kham-)Magari, Gurung, Chepang, Newari, etc. must be taken into account, and that its relation to the nearby substrate in Tharu (and Masica's "Language X") needs to be evaluated.

S. M. Joshi's dictionary (*Paryācavācī Śabda Koś*, 1974) unfortunately has no Kusunda lists; on p. *kha* of the introduction he says (here translated from Nepali, with my notes enclosed in []): "... there also exist two leftovers of these families: Jhangar of the Dravida family, and Santhali or Sartar of the Āgneya [= Munda] family. [Note that the 1961 Census has both Dhangar = Kurukh in Dhanusha Dst., and Jhangar, see Zvelebil 1990: xxiv, n.24; Santali and Sartar are both spoken in the extreme southeast of Nepal]. Again, there are also such languages about which certainty of their language family has not been reached, such as the Kusundā language. In the Census the language of a tribe, wandering about in small numbers and either living in village houses or not, and of other languages have been separated. Thus, the language of the Kusundā (a tribe found here and there in the Gandaki district) and of the Raṭe people (found in Rapti, Bheri, Karnali and Seti districts) [Tib.-Burm.] cannot be seen [in this dictionary]. But, from the point of view of anthropology and linguistics, the language of some such tribes is important."

§10.4. A Munda substrate in the Himalayas?

In passing, the old theory of a Munda substrate in the Himalayas should be revisited. It goes back to S. Konow 1905, 117-125. This has been denied by P.K. Benedict 1972:7, n. 23 and G. van Driem, Rutgers 1993, J.J. Bauman (1975), Turin 1998 (see website: <http://iias.leidenuniv.nl/host/himalaya/individ/kirmor.html>).

Nevertheless, it must be remembered that the name of the R. Gaṇḍakī can be traced back to Munda. It is found all over Central Nepal, where the major rivers are called "the seven Gaṇḍakī". How far into the Nepalese hills did the settlements of a Munda speaking people reach? Even in exclusively Nepali speaking W. Nepal, the common hydronomical 'suffix' *gaḍ* denoting 'river' may be connected with the Munda word *da'k*, *ganda'k* (Witzel 1993, 1999; further materials in Kuiper 1962: 10, with lit.; and already B. H. Hodgson (1880, 1848).

A further hint may be provided by the implosives (unreleased stops) found in the substrate of the Kathmandu Valley (*cokh/cok/co*, see above) and in Kanauri (see Grierson, LSI on Kanauri). We may see here an areal feature of implosives that has influenced both the Tib.-Burm. languages in Kinaur (Kanauri) in the western Himalaya and in the Kathmandu Valley. Apart from Munda and Sindhi, this feature is otherwise not found in S. Asia. There are indications in the eastern Himalayas of a pre-Tib.-Burm. population (Witzel 1993). Anecdotally, it may be mentioned that the Kulunge Rai, a Tib.-Burm. tribe in E. Nepal has legends about the earlier settlers of the Hongu valley, the *Rungsiupa*.

Even today, the Munda languages Satar and Santali are actually spoken in the extreme south-east of Nepal (probably, like the Kurukh, recent imports). Other Munda speakers are, after all, found south of the Ganges, only about a hundred miles south of Eastern Nepal.

§10.5. The Tharu substrate

Finally, there are the various Tharu tribes who live in the foothills of the Himalayas, from the Rāṅgaṅgā river in U.P. (India) to the eastern border of Nepal, and in some bordering hill tracts, such as in the Rāptī Valley (Chitawan, just 50 miles SW of Kathmandu).

They practice slash-and-burn agriculture and nowadays speak a form of one of the neighboring NIA languages, just like the Nahali or Vedda (see below); however, I believe that we can find, again, a so far unstudied substrate from a pre-IA, Pre-Munda language.

Although often referred to as an archaic, remnant group, they have been little studied (cf. the bibliography in Leal 1972, see now Krauskopf (1989). G. Grierson (Linguistic Survey of India, 5.2: 311) reports the opinion of W. Crooke (1906) that they were formerly Dravidians who intermarried with Himalayan people. Indeed, rarely, some of the vocabulary looks Tib.-Burm.: for example Tib.-Burm. *ti-* 'water' in Tharu *suiti* 'small river.' (For *-ti* in Himalayan river names, see Witzel 1993).

And indeed, D. N. Majumdar (1944) reports blood group types 'predominantly Mongoloid.' This is now supported by recent, more advanced genetic studies. The Tharu are very isolated within S. Asia (L. Cavalli-Sforza 1994: 84, 239 with fig. 4.14.1).

In Nepal, the Tharu have also consistently been reported to be immune against malaria. Their area was heavily infested until the use of DDT, in the Sixties and early Seventies; and no non-Tharu traveler stopped in this "8 *kos*" jungle belt overnight as to avoid catching the "mountain fever". L. Cavalli-Sforza 1995:125 gives a genetic reason for immunity. The anecdotally high Tharu immunity rate should be compared to the generally low Indian 'immunity gene' rate.

As for the suspected substrate, D. Leal (1972), provides an example of the influence of their original non-NIA language, i.e. the difficulty the Chitawan Tharu have to pronounce aspirated mediae (*bh* > *bəh*; cf. above, on the Kathmandu Valley substrate) and mentions as another ("Dravidian") substrate influence the simplification of the possessive case suffix Hindi *-kā*, *-ke*, *-ki*, Nepali *-ko*, *-kā* to *-k*.

I list some examples of suspected substrate evidence from the Tharu word list in S. M. Joshi (1974); this contains lists of 2914 words, starting from the Nepali entry. As in Grierson and Leal, most Tharu words in this dictionary are close to Bhojpuri and Nepali; a cursory check has resulted in the following words (cf. Witzel 1999, n. 43) which are neither related to

the surrounding IA languages (Nepali, Awadhi, Bhojpuri, Maithili) nor to the nearby Tib.-Burm. ones (Magar, Chepang, Newari, Tamang). I propose a more detailed study in a later issue of MT. Some interesting words are:

- *ubba* 'small box'
- *koñhila* 'tiger'
- *khūdi* 'sugar cane' (cf. Ved. *ikṣu* 'sugar cane', MIA *ikkhu*, *icchu*, Maithili, Bhojpuri *akhi*, + Tib.-Burm. *ti* 'water' ??)
- *gukha* 'shaman'
- *gulagula* 'mild'
- *gēṭṭi* 'splinter'
- *jhemjhemiyā* 'small cymbal or drum'
- *ṭippā* 'mountain top' (probably NIA)
- *ta* 'small'
- *tīra* 'afterbirth'
- *tīlvā* 'whore house'
- *nimak* 'salt'
- *bhubhui* 'white scurf'
- *yedi* 'brick'.

But the agricultural terms are NIA: *bajra* 'millet', *dhān* 'rice', *makai* 'maize', *gehūm* 'wheat', as well as most of their basic vocabulary.

All these cases indicate that we probably can discover more substrates if more work along these lines would be done. But we lack etymological dictionaries for most NIA languages (apart from Turner's great work, CDIAL), not to speak of Munda (in preparation by D. Stampe et al.) and Tib.-Burm.; (see, however, those on the internet: Starostin et al., accessible from: <http://starling.rinet.ru/>). For example, it may very well be that the Bihari languages have more Tib.-Burmese substrate words. There is, after all, *cāmal* 'cooked rice' in Nepali, *cāwal* in Hindi, etc. which can be connected with Tib.-Burm. **dza* 'to eat', Newari *jā* 'cooked rice, etc.' Yet, nobody in Indian Studies is looking for such substrate material.

§11. Nahali (Nihali).

Turning further South, it may very well be that Rajasthani has a strong Bhili (and Nahali) substrate; Koppers (1948: 23, Kuiper 1962, 1966, 1991) and Shafer (1940, 1954: 10) thought that the Bhils once spoke Nahali as well. The Bhils are now widely spread between the Ārāvālā (Aravalli) Mountains, the Vindhya Mts. and the Tapti River (Khandesh area); they now speak Gujarati-like IA.

Again, as extensively treated in MT II and III, it should be underlined that Kuiper (1962: 51) distinguished 4 levels in this isolate language: some 25% substrate, then a Munda, Dravidian and finally a NIA layer. The vocabulary given by Mundlay in MT II should be reinvestigated by specialists of IA, Drav., and Munda. From the point of view of IA some words stand out, even if they have not come directly from Marathi or a Hindi dialect or not, whether they have been marked as L (loan-word), as the case of *akkal-kāyṇi* (above) shows: MT II p. 45 no. 161, p. 70 no. 10 *sanu* 'younger brother', belongs to CDIAL 12732 Ved. *ślakṣṇa* 'slippery, tender' > NIA: Panjabi *nannhā* 'small, young', Nepali *sānu* 'small', *nāni* 'little girl', Oriya *sāna* 'small, youngest', Hindi *nanh* 'small, light', Marathi *sānā* 'small' etc., or MT II: 36 no. 1274 *parayn* 'river', is other than maintained in MT II: 64 no. 17, a simple look-alike of Nostratic **bihra*, as *parayn* (Kuiper 1962: 96, 1966: 78) is a borrowing from its neighboring

language, Marathi *parhya* 'streamlet, brook', and its dialect Konkani *parāy*, < *Skt. parivāha* 'overflow of a tank, water channel' *CDIAL* 7878, cf. *MT* II: 36.

Berger (1959) was of the opinion that the Nahals were identical with the well known Niṣāda of the Chambal, Malwa and Bandelkhand areas. He discussed their mythology as found in the Mahābhārata; however the Niṣāda (and once, the variant *Niṣadha*) are found already in the Middle Vedic texts (see below).

The people called Nihāl or Nahal are found (Berger 1959: 35) in many medieval texts, such as in Hemacandra's Grammar (c. 1200 CE) as *lahala*; in Padma Pur. *nāhalaka*, together with the *Bhilla*, as mountain/jungle tribe; in Puṣpadanta's *Harivaṃśapurāṇa* as *ṇāhala*, synonym of *bhilla*, *savara* (another jungle tribe : modern Saora); also in Vikramaṅkadevacaritra of Bilhaṇa (c. 1150 CE), and in Rājaśekhara's drama *Balarāmayāṇa* (on the R. Narmadā). Berger wanted to identify them with the *dahāla* as well; they are found in inscriptions of the Kalacuri dynasty of Tripurī and in Albiruni (1030 CE). All of their territories are c. 400 km away from the modern eastern Nahalis near *Nimar*.

He thus derived Nahal/Nihāl from a form such as **neśad* reflected by Ved. *Niṣāda*. Indeed, the word is found in early post-RV texts: KS, MS, and with the typical sound changes in 'foreign' words: *Niṣāda* : **Niṣidha* : ŚB 2.3.2.1-2 *Naḍa Naiṣidha*, (apparently the Vedic 'ancestor' of the Epic *Nala Naiṣadha*); thus, *d*: *dh* (as in *Magadha* : *Pra-magandha*, etc.). The name certainly is a popular etymology (however, the modern self-designation of the Nahals is *kalṭo*, du. *kalṭih-ṭel*, pl. *kalīṭṭa*; < stem **kalīṭ-o*, s. Kuiper 1962: 82, 17, 27, Mundlay *MT* II 5-7, no. 858 *kalṭo*, pl. *kolṭa*). The Niṣāda are described in Vedic texts (first MS 2.9.5 =KS 17.13, TS 4.5.4.2, VS 16.27) as being "neither wilderness (*araṇya*) nor 'wagon trek, settlement' (*grāma*)" who are "given over to the earth." (*asyām eva paritṭāḥ*), next to *jana* '(foreign) tribe' PB, other non-Brahmins (JB), and *samānājana* "one's own people" (cf. PB 16.6.7-9); cf. also KB 25.15, LŚS 8.2.8 on temporary residence in a *naiṣāda* settlement.

Similarly, MS 2.9.5 describes the Niṣāda, among the names of the fearsome god Rudra and his people, together with hunters and other low caste people (=KS 17.13, TS 4.5.4.2, VS 16.27); -- AB 8.11 as robbers in the wilderness; similarly the *dasyu* JB 2.423:§168, where the text insists on Kṣatriya accompaniment during travel, necessary to keep the Dasyu at bay and turn them *madhu* 'sweet', cf. AB 8.11 where the *dasyu* rob a wealthy man or a caravan in the wilderness.

Acculturation is seen at MS 2.2.4, where their chief (*sthapati*) is allowed to offer sacrifices, cf. KŚS 1.1.12. The inclusion of the headman of the Niṣāda reflects the well-known process of upward social movement, called "Sanskritization." (Witzel 1997a)

Their Vedic designation obviously is a popular etymology "those who sit at home." However, they are more frequently described as robbers (still a favorite occupation of the Nahals in early British times) -- against whom one had to guard when traveling through uninhabited territory. Their chieftains (*sthapati*), however, were allowed into the Aryan fold and could perform solemn Vedic sacrifices, clearly an early form of Sanskritization.

In passing, as has been first seen by Shafer and Kuiper, Nahali has connections with Aino, etc. (see now Bengtson, *MT* II 51-55), remnants of the earliest substratum of modern *Homo Sapiens sapiens*' move from the Near East all the way to E. Asia (and S.E. Asia, Australia); note however, the differing views of V. Blažek, H. Fleming, and I. Peiros in *MT* II.

§12. Dravidians in the Vindhya Range

Both North Dravidian languages, Kurukh (Oraon, on the borders of Bihar/Orissa/Madhya Pradesh; the settlement in Nepal and Assam is recent) and Malto (on

the bend of the Ganges in S.E. Bihar) are late-comers to Munda territory as many loans from Munda languages indicate. Brahui in Baluchistan has returned to E. Iran only a few hundred years ago (Elfenbein 1987); it has no older Iranian loans (from Avestan or Pashto, just from their symbiotic neighbors, the Baluch).

In the Vindhya Mountains we find such names as the following: the *Vidarbha* people, in the area around Nagpur, (the mod. *Barhād*, *Berar* < *Virāta*, Mbh) are mentioned (JB), along with their fierce *mācala* dogs 'that kill even tigers' (note that this is an area with early iron and horses). *Vidarbha* seems to be a popular etymology *vi-darbha* 'with widely spread *darbha* (grass)', especially if connected with Munda *da'b* 'to thatch' (Pinnow 1959: 69), cf. *vi-bhindu* in the Gangetic plains (above). The name of the Vibhindus is related to that of the *Bainda* tribe (derived from **bind*) that still survives in the Vindhya today, and names such as *Ku-sur(u)-binda* (above). The very name of the Vindhya (post-Vedic) can be related, with typical Sanskritizing interchange of *d* : *dh*, as in *Pra-maganda* : *Magadha*, (above). East of these mountains, we have the *Kaliṅga* (cf. *Triliṅga* south of Orissa) and *Aṅga*, *Vaṅga*. All of these are names that hardly have a Drav. etymology, but which look Austro-Asiatic because of their prefix changes.

However, all around *Vidarbha*, the first Drav. river names are met with : the *Pūrṇā* (< **pēṇ*) west of it, the *Vēn-gaṅgā* east of it, and the *Pain-gaṅgā* south of it. They all are adaptations of a Drav. term for rivers, DEDR 4160a. **pēṇ-*: **pēṇ-V-* 'to twine, twist'. It seems that the area which still has a Munda name in the Vedic middle period (*Vidarbha*) has also received a Dravidian overlay. This is confirmed by Drav. place names in *-oli* in Maharashtra and in *-palli*, *-valli*, *-pal* in Bastar, just east of the *Vidarbha* area (now southernmost Madhya Pradesh) where they range from 21% in the south to only 0-4% as one approaches the Raypur plains. The south and southwest of Bastar is occupied by Gonds, all other regions by Chattisgarhi Hindi speakers. (For an overview of studies in (South) Indian place names see the paper by M.N. Nampoothiry 1987: 1-47, --- including a good bibliography, also of unpublished Indian theses).

§13. The South

The South is frequently supposed to have been Dravidian from times immemorial. However, in the refuge area of Nilgiris with their isolated Drav. tribes (Toda, etc.), we find a substrate, see Zvelebil 1990, 63-70. Isolated words indicating this pre-Drav. substrate (Zvelebil 1990: 69f., Zvelebil 1979: 71f.) include the Irula words

- *mattu* 'lip',
- *ḍökēṇē*, *ḍēkēne*, *ḍēkena*, *ḍēkkada* 'panther',
- *ovarakaṅku*, *ḍrakaṅku*, *ḍraṅgeku*, *ḍraṅge*, *ḍrapodu* 'tomorrow' (unless DEDR 707 Tam. *uṛaṅku* 'to sleep'),
- *bunḍri* 'grass hopper' (unless DEDR 4169),
- *mutṭ(u)ri* 'butterfly' (unless DEDR 4850 miṭṭ 'locust'),
- *vutta* 'crossbar in a house'.

These instances should encourage Drav. specialists to look for substrates in Tamil, Telugu, Kannada, etc. However, just like the propagators of indigenous "Aryans" in the North, Dravidians of the South frequently think that they are autochthonous.

§14. Vedda

Finally, in Sri Lanka, the remnant population of the Vedda now speaks Sinhala. (De Silva 1972).

The substrate that they may have preserved is in urgent need of thorough study, carried out by comparing Pali, Sinhala and Tamil words. Some typical words, interestingly many with geminates, that cannot be linked either to Sinhala or to Tamil are:

- *cappi* 'bird'
- *mundi* 'monitor lizard'
- *potti* 'a kind of bee'
- *panni* 'worm'
- *rukula* 'home, cavity'

(see de Silva 1972 : 16; his vocabulary, pp. 69-96, does not contain etymologies).

Finally there is Andamanese, but unlike the Austro-As. Nicobarese, so isolated that it can only be compared in long-range fashion, something entirely beyond my competence.

§15. Indo-Iranian substrates in Central Asia and Iran

By way of addition, attention may be drawn to the northwestern borders of the subcontinent. Nuristani or Kafiri, as it was formerly called, is (differently from the older handbooks which lump it together with the Dardic branch of IA) a third branch of the Indo-Iranians (G. Morgenstierne, *Irano-Dardica*. Wiesbaden 1973). It has survived in the mountains of East Afghanistan and in neighboring Chitral (N.W. Pakistan). The Kalasha (Chitral) subgroup have even preserved their ancient non-Hindu and non-Iranian religion. Nuristani has preserved such sounds as Ilr. *é* that has been changed even in the RV > *ś* (c. 1500 BCE) and in Old Iranian > *s*. It has transmitted at least one loan word into Vedic, Nur. **kat's'a* > Ved. *kāca* 'shining piece of jewelry' (K. Hoffmann 1986, EWA I 335).

Beyond this, in Proto-Ilr., there is a host of unstudied words found both in IA and Old Iranian that do not have an IE etymology and must represent old, Bactria-Margiana (BMAC culture 2100-1900 BCE), or other Central Asian substrate(s). They include plants, animals, and material culture, such as found in Ved. /Avestan:

- *uṣtra* / *uštra* 'camel', middle and new Akkadian *udru* "Bactrian camel" is a loan from Iran, see EWA I 238, KEWA III 652, cf. Diakonoff in *JAOS* 105, 1985, 600; the camel was introduced into the BMAC area from Central Asia only in the late 3rd mill. BCE;
- *khara* / *xara* 'donkey', cf. Toch. B *ker-ca-po* < **karca-bha?*, with the common Indian animal suffix *-bha* (as in *garda-bha*, *śara-bha*, *ṛṣa-bha*); the word ultimately may be a late 3rd mill. Near Eastern loan, cf. Akkadian (Mari) *ḫarum*, *ajarum* 'male donkey', EWA I 447. Note also the overlap with Dravidian (denied by EWA 473): Drav. **garda* > Tamil *kaḷutai*, etc., one of the few possible links of a Central Asian substrate with Dravidian (and with Vedic);
- *iṣṭi*, *iṣṭikā* / *iṣṭiia* 'brick', *zəmōiṣṭuua* 'clay brick'; OP *iṣṭi*, MP., NP. *xiṣṭ*; cf. Toch. *iṣcem* 'clay'?
- *sthūna* / *stūnā*, *stunā*, OP *stūnā* 'pillar', unless it belongs to Ved. *sthūra* 'tall, thick', Avest. *-stura*, Khot. *stura* (thus EWA II 768);
- *yavyā* / O.P. *yauviyā* 'channel', > MP., NP. *jō*, *jōy* 'stream, channel', Parachi *žī* 'rivulet', EWA II 405; both words, typical for loans, do not go back to exactly the same source;
- *godhūma* / *gantuma* 'wheat' from a Near Eastern language, cf. P-Semitic **ḫnt*, Hitt. *kant* and Egyptian *xnd* (EWA II 499, Kuiper *III* 34, 1991, 119)
- *parša* / *parša* 'sheaf', see EWA II 101;
- *bīja* / OIran. **bīza* (in names), 'seed, semen', Buddh. Sogdian *byz'k*, Parachi *bīz* 'grains';

- *śana / kana* 'hemp', MP. *šan* 'hemp' (with northwestern interchange *k/ś*, see above), Khot. *kaṃha*, Osset. *gœn*, *gœnce*, Russ. Church Slavic *konoplja*, Gr. *kánnabis*, itself a loan from Scythian, as also the early loans into Germanic (before **k* > *h*): Old High German *hanaf*, Dutch *hennep* < **kanap*;
- *bhaṅga / banga* 'hemp, hashish', if the word does not belong to *bhañj* 'to break';
- **sinšap* 'mustard': Ved. *sašarpa* 'mustard', Khot. *śśaśvāna*, Parthian *šyš-d'n*, Sogdian *šywšp-δn*, MP. *span-dān* 'mustard seed'; Greek *śinapi*; < pre-Iran. **sinšapa* < ***sinsap* (Henning *s1ens2ap*); cf. also: Malay *sawi*, *səsawi*, or Austro-As. **sapi*, *sV(r)-sapi*; further EWA 712, 727: *śimśápā* RV+ 'Dalbergia sissoo' NP. *śīšam*, Pashto *šəwa* < **śīšampā*, CDIAL 12424), Elam. *še-iš-śá-ba-ut* = /*šeššap*/;
- *kaśyapa / kasiiapa* 'turtle', Sogdian *kyšph*, NP. *kašaf*, *kaš(a)p* 'tortoise'; cf. Kashaf Rūd, a river in Turkmenistan and Khorasan;
- *pard/pandh* 'spotted animal, panther' : Ved. *pr̥daku* 'snake' RV, *pr̥dakū* AV, *pr̥dākhu* BŚS (EWA II 163), with Para-Munda prefix *pər?*; Khowar *purdum* < **pr̥dhūma?* KEWA II 335, CDIAL 8362; Bur. (Yasin) *phúrdum* 'adder, snake'; later Skt. 'tiger, panther'; NP. *palang* 'leopard' < O.Iran. **pard-*, Greek *párdalis*, *párdos*, *leo-pardos* 'leopard' (EWA II 163), all < ***pard* 'spotted, wild animal?'; Henning reconstructs ***parθ* (but note Greek *pánthēr*), which may have been close to the Central Asian form;
- **kar(t)ka* 'rhinoceros', Ved. *khadga* 'rhinoceros' MS+, EWA 443, cf. N.P. *karka-dān*, Arab. *karkaddan*, Aelianus *kartázōnos* (**kargazōnos*) 'Indian rhinoceros', all from a pre-Aryan source; however, cf. Kuiper 1948: 136 sqq.
- *bheśaja / baśsaziia* 'healing'; Ilr **bhiš-aj* > Ved. *bhiš-aj*; the root **bhiš* may be a loan word (cf. EWA s.v.),
- *vīnā* 'lute': Ved. *vīnā* Khot. *bīna* 'harp, lute', Sogdian *wyn* 'lute', MP. *win* 'lute', Armenian *vin* 'lute', unless loans from India, cf. EWA II 568;
- **kapauta* 'blue': Ved. *kapota* 'pigeon', O.P. *kapauta* 'blue'; Khot. *kavūta* 'blue', MP. *kabōd* 'grey-blue', *kabōtar* 'pigeon'; EWA I 303, Kuiper 1991;
- **kadru* 'brown': Ved. *kadru* 'red-brown', *Kadrū* 'a snake deity', Avest. *kadruua.aspa* 'with brown horses', NP. *kahar* 'light brown';

The following words may be of still older origin and may have been taken over either in E. Europe or in Northern Central Asia:

- **medh/melit* 'sweet, honey': IE. **medhu* 'sweet' is found in Ved. *madhu* 'sweet, honey, mead', Avest. *maδu*, Sogdian *mδw* 'wine', (cf. Bur. *mel* 'wine, from grapes'), Toch. B *mit* 'honey', Gr. *méthu* 'wine' etc.; it has spread to Uralic **mese*, *mete*, Finnish *mete*, Hungarian *méz* 'honey'; Chin. *mi* < **mi^het*, Sino-Korean *mil*, Jpn. *mitsu* < **mit(u)*; Iran. **maδu* > Turkic, Mongolian *bal* 'honey'; Arabic *mādi?*, and to > Toch. B *mot* 'intoxicating drink'. --- From another source **melit*, Greek *mélit-*, Hitt. *milit*, Latin *mel*, *mell-*, Gothic *miliθ*. In Nostratic (Illich-Svitych, *Opyt* II, Moskva 1976: 38sq.) both forms are united under **majλa* > *Uralic *majδ'a*, Drav. *maṭṭ*, *miṭṭ*, Altaic /*m/ala*, *bala*; cf. also, still further afield, in Polynesia: Samoan *meli*, Hawaiian *mele*, *meli*; *mele*, *melemele* 'yellow', Maori *miere*; Tongan *melie* 'sweetness, sweet, delicious', Rarotongan *meli* 'honey', Mangareva *mere* 'honey'.
- **sengha/singha* 'lion' : Ved. *siṃha* 'lion' < **sinj'ha* < **sing'ha* differs from Proto-Iran. **sarg*: Khorasmian *sary*, Parthian *šarg*, Khot. *sarau*; Henning reconstructs ***s1eṅgha*; -- loans into nearby languages, such as Toch. A *śiśäk*, B *śecake* 'lion'; Tib.

senge, Chin. **suân-ŋei* (Henning, EWA), note, however, Karlgren 1923, no. 893 Arch. Chin. *,*si*, Jpn. **si* > *shi*(-*shi*); cf. perhaps Armenian *inc*, *inj* EWA II 727, KEWA III 447; the western IE languages have received the 'lion' word from a different source, Gr. *līs*, *leon(t)*-, Latin *leon*-.

In short, western and central Iran must have been inhabited by archaeologically well attested people of non-Ir speech. However, their languages have left few remains in Iranian. Apparently, Elamian was spoken up to Simaški (Kerman/Bandar Abbas area), while Aratta (Sistan) and Marhaši (W. Baluchistan, Bampur region) apparently had other language(s), (Vallat 1980); note also the loan word links between Sumerian and Drav. (above, §6.) All of these data need to be studied in greater detail, especially the early Ir substrate language(s).

§16 Conclusion

In short, the early linguistic picture of South Asia in the second and first millennium BCE is as complex as (or even more so) than its modern counterpart. Some of the examples adduced above indeed indicate that we are in for surprises, once more information is received. The RV hapax *akhhkhalī kr* 'to speak haltingly, to bleat' would have remained one -- if not for A. Mundlay's list in *MT* II, 17 with Nahali *akkal*-(*kayni*) '(to cry) loudly in anguish'. This excludes other etymologies recorded in EWA, ingenious as they may be. This example also indicates that even the oldest literary tradition has retained important information on the (lost) substrates. What may we still find in the Tamil Sangam texts? Yet, as expressed above: nobody is looking!

On the other hand, it is important to know the location and time frame of the first occurrence of substrate words in order to evaluate them properly, and to avoid comparing accidental look-alikes by using derivatives that may have been possible, e.g., only a thousand years later. The Canaaitic words or Nahali *parayn* and *sanu* (see above) are cases in point. P. Benedict's warning (*MT* III: 93) on EFPs needs to be heeded.

The few etymological dictionaries available so far do not provide geographical and historical information, though Mayrhofer's EWA now gives a general idea, for the specialist, of the historical levels, but hardly of the geographical spread. DEDR does not have any such information yet, and we need to check the on-line dictionary at Cologne (http://www.uni-koeln.de/phil-fak/indologie/tamil/otl_search.html); and the KWIC Concordance of Classical Tamil texts (<http://www.uni-koeln.de/cgi-bin/SFgate>). A Munda etymological dictionary is still under preparation.

We need much more philological and linguistic study in a number of areas for further comparisons inside and outside South Asia. In this undertaking, the ancient Vedic and Tamil texts still hold out a lot of important and interesting data, but they have not yet been tapped properly. Even in the well-studied IA sector we do not yet have enough reliable information on the geographical spread and time frame of the texts (except for the Veda, see Witzel 1987, 1989, 1997). The various levels and the geography of the Pali and Epic texts still need much more sorting out. In the Dravidian field, we need, especially, a detailed historical grammar and dictionary of Tamil that covers the past two millennia or so in a comprehensive fashion. In Munda, a new reconstruction that pays more attention to S. Munda is eagerly awaited, not to speak of a comparative or etymological dictionary of the various languages and dialects involved. For the remnant languages such as Burushaski, Nahali, Kusunda, and the various substrates the lesser said the better. Even the extensive new Burushaski dictionary of Berger (1998) contains few etymological notes, and they are restricted to the northwestern languages and to Urdu. All major Indian languages, north or south, are lack historical and etymological dictionaries. Even in the well researched field of Indo-Aryan, Turner's CDIAL and Mayrhofer's EWA are only of limited help for our purpose, restricted as they are, to words

derived from OIA or reconstructable as OIA. Mayrhofer's 'unexplained, difficult, unclear' words and Turners 'starred' words may be a help, at least, to highlight possible loan and substrate words; even then, Mayrhofer's marked tendency to explain virtually everything as IE needs constant attention. Unfortunately, in similar vein, Burrow-Emeneau's DEDR only compares only inside Drav., and outside the family refers only IA and not to Munda or to other S. Asian languages, so that "their dictionary, by omitting all references to Munda, sometimes inevitably creates a false perspective from a Pan-Indic point of view" (Kuiper 1991: 53).

Even then, it is my hope that this brief survey will induce comparative linguists to pay closer attention to the rich materials found in the early Indian texts, and that even this still rather limited list will provide some useful materials for further study. More lists are in preparation.

In sum, not only is the linguistic situation of northern South Asia in the second millennium BCE much more complex than usually admitted, the materials adduced above also indicate that, even with the addition of the modern descendants of Proto-Burushaski, -Nahali and -Kusunda, we have to reckon with, and make use of, a number of other substrate languages such languages as Tharu, Masica's "Language X", the substrate of the Kathmandu Valley, and the Panjab and the Sindh varieties of the Indus language.

However, except for the few items pointed out for Vedda and the Nilgiri languages, the prehistoric linguistic situation of South India (before Dravidian) is entirely unclear: in this respect, a lot of spade work needs to be done by Dravidian specialists; the same applies to the reconstruction of Munda and the possible substrates of the eastern and central parts of India; yet, just as in the modern North Indian languages, no progress has been made in all these respects over the past few decades. The Himalayan languages that are finally studied in greater detail by the Linguistic Survey sponsored by the German Research Association and by the Himalayan Languages Project at Leiden, may still surprise us with remnants of pre-Tib.-Burm. substrates.

All of this, and to a small degree even the summaries of substrata given above, provide a multitude of data for the many waves of immigration and amalgamation that have swept over the Indian subcontinent. Ultimately, these substrates will hint at the first wave of immigrant groups of *Homo Sapiens sapiens*, which may have left us some remnants in the deep substratum of languages such as Nahali, Vedda and Kusunda.

*** ** *

ABBREVIATIONS

Note: for ready reference, the five historical levels of Vedic are indicated by numbers (1-5), followed by their geographical location, W: western North India = Panjab, Haryana, C: central North India = Uttar Pradesh, E: eastern North India = N. Bihar; S: southern N. India = between the Jamna/Ganges and the Vindhya mountains).

AA	Austro-Asiatic
AB	Aitareya Brāhmaṇa (4, W & E)
Akkad.	Akkadian
ĀpDhS	Āpastamba Dharmasūtra (5 C)

ĀpŚS	Āpastamba Śrautasūtra (5 C)
Armen.	Armenian
Austro-As.	Austro-Asiatic
AV	Atharvaveda Saṃhitā (2 C)
Avest.	Avestan
AVP	Atharvaveda Saṃhitā, Paippalāda version (2 W)
Beng.	Bengali
Brah.	Brahui
BSL	Bulletin de la société de linguistique de Paris
BŚS	Baudhāyana Śrautasūtra (4-5 C)
Bur.	Burushaski
CDIAL	Turner 1966-69
DED	Burrow, T. and M.B. Emeneau 1960
DEDR	Burrow, T. and M.B. Emeneau 1984
Drav.	Dravidian
ep.	Epic Sanskrit
EWA	Mayrhofer 1956-76
Gr.	Greek
GS	Gr̥hyasūtra(s) (5)
Guj.	Gujarati
HŚS	Hiraṇyakeśi Śrautasūtra (5 C)
Hitt.	Hittite
IA	Indo-Aryan
IE	Indo-European
IJ	Indo-Iranian Journal
Iir	Indo-Iranian
Indo-Ar.	Indo-Aryan
Iran.	Iranian
JB	Jaiminiya Brāhmaṇa (4 S)
Jpn.	Japanese
Kan.	Kannada, Canarese
Kaśm.	Kashmiri
KaṭhĀ	Kaṭha Āraṇyaka (4 W)
KauśS.	Kauśika Sūtra (5 C)
KB	Kauśitaki Brāhmaṇa (4 C)
KEWA	Mayrhofer 1986-96
Khar.	Kharia
Khot.	Khotanese Saka
KS	Kaṭha Saṃhitā
KŚS	Kātyāyana Śrautasūtra (5 E)
Kur.	Kurukh
LŚS	Lāṭyāyana Śrautasūtra (5 S)
Lit.	Lithuanian
Mal.	Malayalam
Mar.	Marathi
Mbh.	Mahābhārata
MIA	Middle Indo-Aryan
MP.	Middle Persian
MS	Maitrāyaṇi Saṃhitā (2-3 W)

MT	Mother Tongue
Mund.	Mundari
Nep.	Nepali
New.	Newari
NP.	New Persian
NIA	New Indo-Aryan
Nir.	Nirukta (5)
Nur.	Nuristani (Kafiri)
OP	Old Persian
Osset.	Ossetic
Panj.	Panjabi
Pkt.	Prakrit
PS	Paippalāda Saṃhitā (2 W)
PSK	Paippalāda Saṃhitā, Kashmir MS.
RV	Ṛgveda Saṃhitā (1, Greater Panjab)
RVKh	Ṛgveda Khila (2 W)
ṢadvB	Ṣadvimśa Brāhmaṇa (4 W)
Samh.	Saṃhitā(s)
Sant.	Santali
ŚĀ	Śāṅkhāyana Āraṇyaka (4 C)
ŚB	Ṣadvimśa Brāhmaṇa
ŚB	Śatapatha Brāhmaṇa (4 E)
ŚBK	Śatapatha Brāhmaṇa, Kāṇva recension (4 C)
ŚS	Śrautasūtra (5)
Skt.	Sanskrit
Sum(er).	Sumerian
Sū.	Sūtra(s) (5)
Suśr.	Suśruta
SV	Sāmaveda Saṃhitā (2 W)
Suśr.	Suśruta
StII	Studien zur Indologie und Iranistik
TĀ	Taittirīya Āraṇyaka (4 C)
Tam.	Tamil
Tel.	Telugu
TB	Taittirīya Brāhmaṇa (4C)
Tib.	Tibetan
Tib.-Burm.	Tibeto-Burmese
Toch.	Tocharian
TS	Taittirīya Saṃhitā (2 C)
Up.	Upaniṣad(s) (4)
V.	Videvdā
VādhB	Vādhūla Brāhmaṇa (Anvākhyāna) (4 C)
Ved.	Vedic
Ved. Index	Macdonell - Keith 1912
VS	Vājasaneyi Saṃhitā (2 E)
YV	Yajurveda (-Saṃhitā) (2)
ZDMG	Zeitschrift der deutschen morgenländischen Gesellschaft

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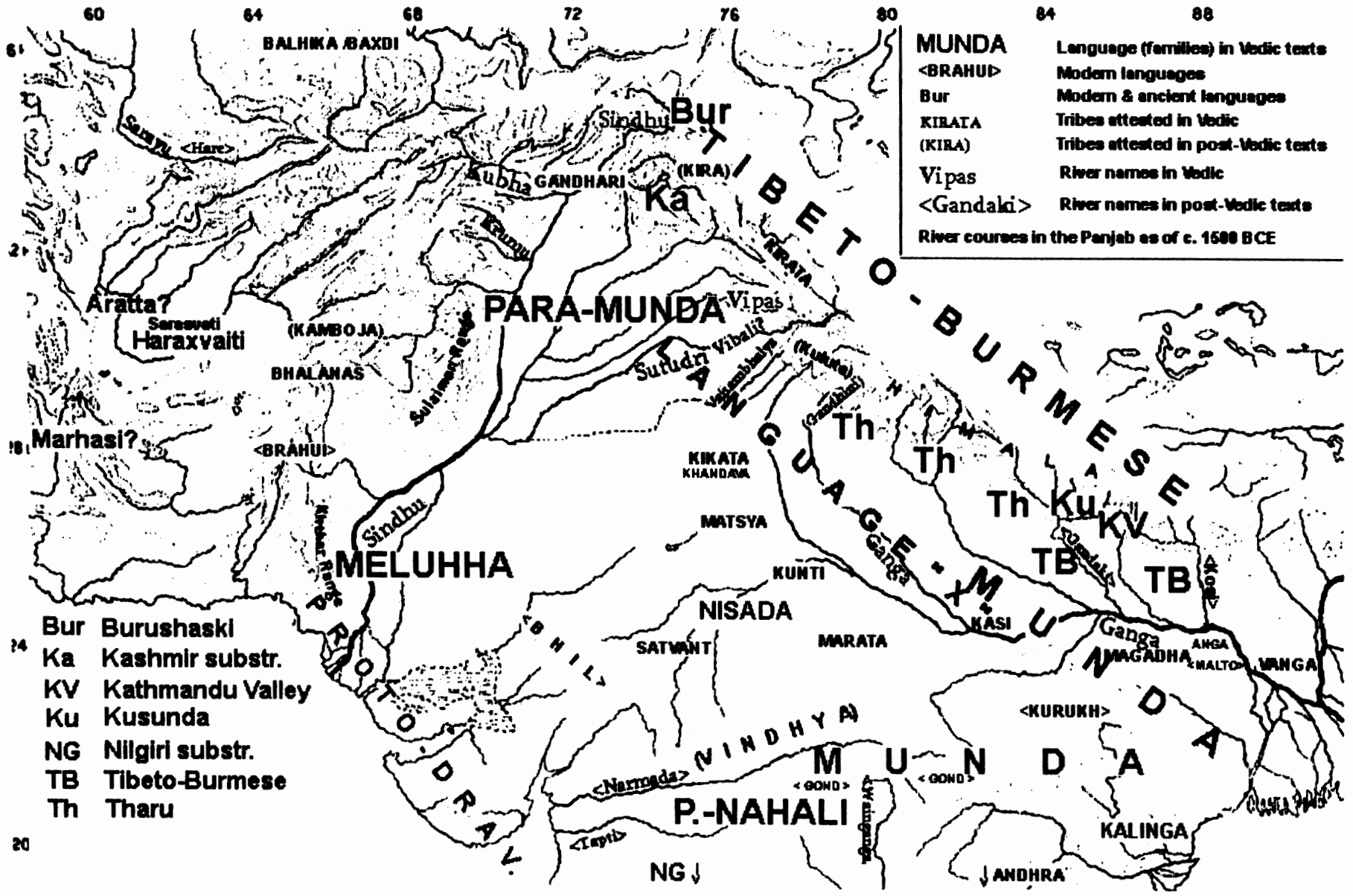
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MUNDA
 <BRAHU> Language (families) in Vedic texts
 Modern languages
 Bur Modern & ancient languages
 KIRATA Tribes attested in Vedic
 (KIRA) Tribes attested in post-Vedic texts
 Vipas River names in Vedic
 <Gandaki> River names in post-Vedic texts
 River courses in the Panjab as of c. 1500 BCE

24
 Bur Burushaski
 Ka Kashmir substr.
 KV Kathmandu Valley
 Ku Kusunda
 NG Nilgiri substr.
 TB Tibeto-Burmese
 Th Tharu

On the Linguistic Prehistory of South Asia.

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Michael Witzel's article: *Early Sources for South Asian Languages* is a rich compilation of all the latest proposals for substratum retentions in South Asian languages and, as such, is a fascinating read. That it promises more than it delivers is as much down to difficulties of presentation as to the deficiencies of the data. Sometimes this is merely the consequence of it being a preliminary draft – and my own over-dependence on the visual may also be to blame – but other niggles are perhaps more endemic to the field as a whole.

Specifically, although there are repeated references to the 380 or so substrate words present in the Rgveda, there is no comprehensive list for us comparativists to get our teeth into. Nor is this available elsewhere. Kuiper's 'convenient list' is entirely in Sanskrit, which is not my definition of 'convenient'. Indeed, on many occasions Witzel himself discusses Sanskrit words without giving their meanings. I know it is easy for the specialist to forget how little non-specialists know of their specialities (and how few of us know Sanskrit), but please can we have articles written in one language only.

Unfortunately, this makes it difficult to evaluate the central plank of Witzel's argument, the presence of 'Para-Munda' prefixes in much of the non-Indo-European Sanskrit vocabulary. Firstly, much of the evidence is contained in articles by Kuiper *et al.*, and is merely alluded to here. Where 'Para-Munda' prefixes are cited, most of them are not explained. Where there are explanations we find prefixes 'which relate to persons and animals' attached to Sanskrit words for 'axe', 'shimmering', 'barrel', 'wooden stick' etc. With the exception of the two (admittedly plausible) items linked to Munda 'water', we are given no indication as to how each prefix fits into the corresponding Sanskrit word as a whole. It is therefore not obvious that these are even prefixes at all (let alone Munda prefixes), as opposed to initial syllables that happen to sound the same as Munda prefixes.

The presence or absence of prefixes is binary, with a fifty-fifty chance of any two linguistic entities being either both with or both without, so the presence of prefixes *per se* is of minimal diagnostic value. But even if they share the *same* prefixes, it can be misleading, as in the case of Ma'a (Mbugu), a South Cushitic language which was originally treated as a mixed language on account of its heavy accumulation of Bantu grammatical elements. I would be reluctant to put too much faith in the Para-Munda prefixes as so far outlined, in the absence of other evidence. Other typological features such as the presence or absence of retroflex or geminated consonants are equally binary and, as such, are equally unreliable guides to genetic affiliation.

As for the support offered by the Munda affiliation of Sumerian, Diakonoff's case for this is much weaker than the case for connecting Sumerian either to Nostratic or Dene-Caucasic. My own preliminary researches, admittedly using a very limited Sumerian database, suggest that it aligns more closely with both of these than with Austric or any other phylum to the South-East. Incidentally, I was interested to learn that Sumerian 'has implosive consonants'. I did wonder whether perhaps the Sumerian consonantal system had contrasts to which the Akkadian speaking scribes who wrote the language down were indifferent or oblivious.

But if Witzel's Sanskrit substratum is not 'Para-Munda', then what is it? Witzel provides good evidence for it not being either Dravidian or Burushaski, which is progress in itself. For a start it suggests that attempts to decipher the Indus Valley inscriptions *via* Dravidian or Burushaski will not work. The dialect differences he seems to have identified between the Northern and Southern Indus substrate,

meanwhile, offer a new starting point for attempts at decipherment. Even the 'Para-Munda' thesis, whilst it has yet to convince me, deserves to be tried on the Indus inscriptions. There is no *a priori* reason why an Austroasiatic language can *not* have been spoken in the Indus Valley.

Unfortunately, without the full list of substrate words and their meanings I am in no position to offer an alternative affiliation for them. This is equally true of the other intriguing cases Witzel raises, such as Irala, Vedda and Khowar. Of the handful of words listed I was unable to match a single one to any other family – and there are two compelling reasons why I might not have been any more successful even with the full lists.

There are two ways in which evidence for the original languages of South Asia may have been preserved. Firstly, the languages themselves may survive. Nihali and Kusunda are examples of this, and in each case it is the core vocabulary (body parts etc.) that survives beneath layers of more recent borrowings. It is within this core vocabulary that the evidence for deeper relationships may be sought, as I attempted to show in my recent article (Mother Tongue III).

Secondly, aboriginal communities may adopt the languages of more recent arrivals but incorporate some elements of their ancestral languages in the process. In these cases, however, the core vocabulary of the resulting language is that of the recent arrivals, while the retentions are limited both in number and in range. Generally the latter are cultural items reflecting differences of lifestyle or environment. This accounts for the presence of the non-Indo-European agricultural vocabulary in Hindi, retained from Masica's 'Language X'. The problem here, from a taxonomic point of view, is that cultural items are also the items most prone to borrowing. Witzel presents some very interesting evidence illuminating the development and transmission of agriculture in South Asia. This is historically very important (particularly what it says about the coming of the Dravida), but what it doesn't do is illuminate the wider genetic relationships of the languages concerned.

The second serious limitation on our knowledge of South Asian linguistic prehistory is the complexity of the pre-agricultural scene. Though Witzel himself also uses the word 'complex' to describe this, I believe he underestimates the likely degree of that complexity. It is inconceivable that the precursors of modern Indian languages have been spoken in South Asia for less than 40,000 years. My preferred figure would be twice that. Such a time scale allows for extreme diversity to develop, and I consider it likely that pre-agricultural South Asia must have exhibited a degree of linguistic variation comparable to that found in New Guinea – but on a larger scale. In other words, there could have been hundreds of languages as different from each other as are Nihali, Kusunda and Burushaski, spread between scores of similarly disparate families.

This means that the chances of a substrate language being closely related to any other surviving 'Old Indian' language are very slim, while the chances of being able to identify more distant relationships are, in the absence of residual core vocabulary, slimmer yet. It further means that for the most part the earliest linguistic prehistory of South Asia is lost to us for ever.

But we must not allow such pessimistic considerations to prevent us looking. Witzel mentions several languages in which substratum vocabulary has been identified, and gives ground for hope that there may be many more. As long as we have the data (preferably complete lists of words and their meanings) there is hope that some glimmer may yet reach us from the depths of this otherwise impenetrable darkness. This is important because, by virtue of its geographical position, South Asia and its languages are crucial to our understanding of the Human language family as a whole.

On the Austroasiatic Indus Theory

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The problem in a nutshell

The idea that the ancient Austroasiatic homeland lay somewhere in India is an old one. Linguistic facts about Austroasiatic have always supported an Indian homeland for Austroasiatic. First of all, as Heinz-Jürgen Pinnow observed, 'the Munda languages undoubtedly are more similar to Proto-Austroasiatic than the other members of the family' (1963: 150), which suggests that the Munda peoples, who reside in India, have been subjected to less upheaval through migration than have other Austroasiatic groups, such as the Nicobarese and the various Mon-Khmer groups. Secondly, toponymical evidence has been adduced in support of the hypothesis that the Austroasiatic *Urheimat* lay in South Asia or, at least, that the Austroasiatic linguistic area was once far more widespread in South Asia than it is today. Toponyms and particularly river names in the Himalayan region, such as *Gaṇḍakī* which may derive from a Munda word for 'river', have suggested to researchers such as Hermann Berger and Manfred Mayrhofer that Austroasiatic is an old ethnic substrate in the north of the Indian Subcontinent and that its presence antedates the advent of Tibeto-Burman peoples in the Himalayan region. Thirdly, Przyluski (1922, 1923), Lévi (1923), Bloch (1925, 1930), Lévi, Przyluski and Bloch (1929) and Kuiper (1948, 1950, 1954, 1955, 1991) advocated the idea that an Austroasiatic substrate existed in Vedic Sanskrit, but perhaps not all of the evidence adduced to date is equally cogent (cf. Emeneau 1954: 291-292).

The competing theory that the Austroasiatic homeland lay in Southeast Asia was put forth by Robert von Heine-Geldern, whose theory was an interpretation of archaeological findings based on anthropological findings and the modern geographical distribution of Austroasiatic speaking peoples. He interpreted the Munda peoples as the result of 'die Einwanderung mongolider austroasiatischer Stämme in Vorderindien' and of their 'Mischung mit Dravida und Urbevölkerungselementen'. The original inhabitants of India were a 'mehrrassige Urbevölkerung' which inhabited the Subcontinent in palaeolithic times (1928, 1932). This theory has remained influential to the present day. It must be kept in mind, however, that, in interpreting the archaeological record with the idea of reconstructing an ancient linguistic intrusion, the linguistic evidence holds primacy above the archaeological evidence.

In his fascinating and exciting paper 'Early sources for South Asian substrate languages', Michael Witzel provides new evidence for a special variant of the Indian homeland hypothesis and even goes as far as to suggest that the people behind the Indus Valley civilisation could have been Austroasiatic. In so doing, Witzel suggests that the old theory of a Munda substrate in the Himalayas has been denied by various people including myself (p. 48). This is not altogether precise. What I disbelieve is that the verbal agreement morphology observed in Tibeto-Burman languages of the Himalayas, such as the Kiranti languages in eastern Nepal, the recently discovered Gongduk language in central Bhutan, Dhimal in the Nepalese Terai, etc., can be attributed to a Munda substrate, as some scholars had been inclined to believe ever since Wilhelm Schmidt misidentified such languages as 'tibetobirmanisch-austrische Mischsprachen' (1906). James John Bauman's study definitively put this idea to rest, at least as far as Kiranti verbal flexion is concerned (1975). Subsequent studies have borne out that the desinences and individual agreement etyma, a subset of which are grammaticalized pronominal elements, are reconstructible to the Tibeto-Burman level and demonstrably native to that family in the sense

that they are well reflected in far-flung branches of the family, even to the northeast of the Himalayan divide, e.g. van Driem (1990, 1991a, 1991b, 1992, 1993a, 1993b, 1993c, 1994a, 1994b, 1995, 1997b, 1997c), Rutgers (1993), Kepping (1994), Turin (1998). In passing, I cannot help but wonder from which dialect Witzel draws his modern Tibetan forms, e.g. [yɛ] 'eight' for literary Tibetan *brgyad* (p. 39), but since he provides a proper transliteration of the native spelling, this point is not material to his argument.

It is fair and fitting that I state my own point of view on the subject at the outset. Although I believe in the antiquity of an Austroasiatic presence in the north of the Subcontinent, I do not currently subscribe to the hypothesis of an Austroasiatic Indus. None the less, I strongly feel that Michael Witzel's new evidence for the Indian homeland hypothesis for Austroasiatic merits serious consideration and that his Austroasiatic Indus is a highly intriguing hypothesis. His past studies on toponyms, particularly on Himalayan hydronymy are of the greatest interest in this context. Last month I had occasion to discuss Michael Witzel's fascinating article with my friend Asko Parpola, whom I visited in Kyōto. Parpola, author of the lovely study *Deciphering the Indus Script* (Cambridge, 1994), has given much thought to the material presented by Witzel, and he kindly shared his thoughts with me in Japan. Parpola's objections deal mainly with the weakness of a number of the etymologies proposed by Witzel, and I shall not deal with this topic here.

Witzel points out that three chronological layers can be identified in the Ṛgveda. This division into an 'early', 'middle' and 'late' layer is well accepted. Roughly speaking, the classical division is that Books 2 through 7 and Book 9 represent the old portion. Book 8 and the first part of Book 1 represent the middle layer, followed by the second part of Book 1. Book 10 represents the late layer. On the basis of recent investigations, Witzel has now assigned Books 3 and 7 to the middle layer, and he has reassigned to the late layer the first part of Book 1, the second part of Book 8 and the later accretion in the first part of Book 8 running from lines 49 through 59. Witzel remains tacit on the status of Book 9. It is generally accepted that editorial revisions to the Ṛgveda, particularly in composition, were introduced later, probably on the Gangetic Plain, where later texts such as the Brāhmaṇas were most probably composed. Witzel points out that there is little Dravidian in the oldest layer of the Ṛgveda, which he dates to the period 1700-1500 BC, perhaps arguably none, and that Dravidian loans are only to be found in the later strata of the Ṛgveda.

The crux and simultaneously the Achilles' heel of Witzel's argument is that he maintains that the Ṛgveda was first composed in the Punjab and later on the Gangetic Plain. The idea that much of the Ṛgveda took shape in the Punjab is relatively well accepted because the geography reflected in the text involves rivers flowing from north to south. However, a good number of scholars, including Asko Parpola, believe that the oldest layers of the Ṛgveda were composed in more northerly areas, perhaps even as far north as modern Afghanistan. Witzel's argument hinges upon his ability to convincingly demonstrate that the oldest hymns of the Ṛgveda were composed in the Punjab and not in more northwesterly parts of what today is Pakistan and Afghanistan. Little new compelling evidence has been adduced to substantiate this claim. The presence of a non-Dravidian, non-Aryan component in the oldest layer of the Ṛgveda has long been recognized, and Witzel, with his mastery of a large corpus of data, drives home this point strongly. This fact does not, however, necessarily militate against the conventional theory of a Dravidian Indus.

Conventionally, the ancient Indo-Iranians are identified with the Andronovo culture, a blanket term for a number of similar local cultures which occupied the entire west Asiatic steppe from the Ural river to the Yenissei between 2000 and 900 BC. The split between the Indo-Aryans and the Proto-Iranians is believed to originally have been a north-south split with the Proto-Iranians to the north of the Indo-Aryans, who led the vanguard south down through

Bactria and Margiana. Thence the Indo-Aryans spread both east into the Indus Valley as well as west to the Fertile Crescent, where they became the Mitanni ruling class of an ancient kingdom in the Jazirah in upper Mesopotamia in the XVth and XIVth centuries BC, and succeeded in imposing their Indo-Aryan religion and deities upon their Hurrian subjects, although it was the language of the subjected Hurrians which ultimately prevailed. In the east, the Indo-Aryans were to be more successful, and the languages which derive from their original tongue are today the major languages of northern India, Bangladesh and Pakistan. The Indo-Aryans were followed by the Proto-Iranians.

Three weaknesses and an alternative explanation

I believe that there are at least three reasons why the facts adduced by Witzel more aptly argue against an Austroasiatic Indus and for a Dravidian Indus. First of all, Alexander Lubotsky has recently examined lexical items which qualify as Indo-Iranian isolates in that they are attested in Iranian and Indo-Aryan but in no other branches of Indo-European. This lexical component in Indo-Iranian is evidently a loan layer characterized by a shared phonological and morphological shape which is uncharacteristic for words of Indo-European stock, such as the presence of voiceless aspirates and long middle syllables. These loans show sound correspondences which are, in part, irregular between Iranian and Indo-Aryan. This points either to later borrowing of these items between Indo-Aryan and Iranian or to borrowing of these items from the substrate language into both Indo-Aryan and Iranian at different times. These Indo-Iranian isolates appear at this early stage of investigation to correspond to the old non-Dravidian loan layer in the R̥gveda. Lubotsky's findings indicate that this oldest loan layer must therefore antedate the arrival of the Indo-Aryans on the fluvial plains of the Indus and the large, now largely dry river bed of the Ghaggar-Hākrā. The ancient language from which this substrate layer was borrowed was probably spoken on both sides of the Hindu Kush and may, in fact, represent the language which the Indo-Iranians encountered as they descended from the steppes onto the people who inhabited the Bactria Margiana Archaeological Complex. Significantly, some of the isolated Indo-Iranian vocabulary is religious in nature and includes terms dealing with the soma or *Ephedra* cult, which Viktor Sarianidi claims was a feature of the urban civilisation of Margiana (1991, 1998a, 1998b). Lubotsky's findings suggest that the ancient Indo-Iranians were first infected with their religion or, at least, with certain key elements thereof as they passed through Bactria and Margiana on their march to the south.

Secondly, the sociolinguistically most obvious and foremost thing for a conquering people to do is not necessarily to borrow words extensively from the language of a subjugated populace. Borrowing is more likely to have increased as the subjugated populace was assimilated and a form of coexistence and peaceful interaction had come into being. Although some borrowing may already have occurred in the earliest phases of contact, it is reasonable to assume that it would have taken some time for such alien words to enter the elevated, formal language of native oral tradition. If the hypothesis of a Dravidian Indus is correct, then the Indo-Aryans would not necessarily have encountered the Dravidians until they had descended from the mountains and actually entered the Punjab in what today is Pakistan, and the later date of the Dravidian loans is precisely what we should expect.

Thirdly, any solution to the Austroasiatic homeland problem must satisfy several criteria. One of these is what Jim Mallory calls the 'total relationship' principle, whereby the origins for any single Austroasiatic group cannot be resolved independently of other Austroasiatic groups. This criterion is often overlooked in the case of Austroasiatic, for scholars have put the Austroasiatic homeland as far east as the eastern seaboard of China and as far west as the Punjab. The origins of Munda cannot be resolved without taking into account the linguistic ancestors of the

Nicobarese and speakers of Mon-Khmer languages as far flung as Vietnamese. The Punjab is not only far away from the geographical centre of gravity of modern Austroasiatic language communities, the Punjab in the far northwest is beyond the range of any modern or historically attested Austroasiatic language community. The present distribution of Austroasiatic language communities makes an early Austroasiatic presence in the north of the Subcontinent plausible, but the distribution of Mon-Khmer language communities in mainland Southeast Asia (including Khasi in the Meghālaya) and Nicobarese in the Andaman Sea suggests that the Austroasiatic homeland lay in the northeast along the Brahmaputra and around the Bay of Bengal, perhaps extending as far west as the Gangetic Plain. The presence of Aryanized 'scheduled castes' and possibly originally Austroasiatic groups such as the Bhils, Thāru and Musāhār could suggest an Austroasiatic presence even further west, but the original linguistic affinity of these groups is, to be precise, unknown. A real problem is that there are too many miles and too many peoples between the Hindu Kush and the Bay of Bengal, and the distinctness of the neolithic assemblage in eastern and northeastern India and the neolithic traditions elsewhere in the Subcontinent is a very well-established in Indian archaeology.

In summary, some indologists hold that the oldest layers of the Ṛgveda were composed in areas to the northwest of the Punjab, and compelling evidence has not yet been adduced to demonstrate that this is not the case. Lubotsky's findings indicate that the non-Dravidian loan layer in the Ṛgveda is too early to be traced to the Punjab and that the same source language is already reflected in Indo-Iranian. The fact that Dravidian loans are to be found in the later layers of the Ṛgveda is precisely what we should expect if we entertain the hypothesis of a Dravidian Indus. Finally, the geographical distribution of Austroasiatic language communities and the well-established distinctness of the neolithic assemblage in eastern India from the neolithic traditions elsewhere in the Subcontinent renders the hypothesis of an Austroasiatic Indus implausible. In this connexion, Witzel's para-Munda source becomes meaningful, for the hypothesis of a lost western branch of Austroasiatic is an intriguing possibility. However, much is contingent on the soundness of the proposed etymologies and on how much leeway is permitted by the necessarily nebulous nature of para-Munda. In view of the ethnolinguistic composition of the north of the Subcontinent, Kusunda or para-Kusunda might be a more obvious place to look for the source of early loan layer in Vedic. On the other hand, it may be that the language from which the early loan layer entered into Vedic and, for that matter, Indo-Iranian may have been lost forever in the sands of Bactria and Margiana. Therefore, even if Witzel's Austroasiatic Indus theory is incorrect, the large body of analysed data which he has adduced will be of lasting value to Vedic studies.

Related issues

Finally, I shall address a number of issues germane to Witzel's argument. The first and foremost question is just how Austroasiatic is the source language for the early borrowings seen in the Ṛgveda and — as Alexander Lubotsky has recently argued — in Indo-Iranian. We know that Frans Kuiper already thought that items in the early loan layer exhibited elements which he identified with Austroasiatic prefixes, only relicts of which he believed could be found in Munda but many of which were still found intact in Malay. Here we have arrived at another core problem, for which Michael Witzel can in no way be held accountable, i.e. the state of the art in Austroasiatic linguistics.

Malay is one of many Austronesian languages, whereas the Munda, Nicobarese and Mon-Khmer languages together make up the Austroasiatic language family. Wilhelm Schmidt is the father of the old Austric theory, which posited a language family consisting of Austroasiatic and Austronesian. Schmidt's Austric was a very inclusive group, which later even included

Japanese as a predominantly Austric 'Mischsprache' consisting of an 'austroasiatische' and an 'ural-altaische' layer (1906, 1930). The late Paul Benedict, who himself still entertained the Austric theory during the war, facetiously pronounced this proto-language 'extinct' in 1991, but his pronouncement was premature. Gérard Diffloth has found that the lexical evidence for Austric is largely negative (1994), but Lawry Reid has kept the idea alive by adducing a meagre but tantalizing handful of Austric morphemes (1994). Reid relates the Proto-Austroasiatic causative morphemes *⟨pa- ~ -ap-⟩ and *⟨ka-⟩ to the Proto-Austronesian causative prefixes *⟨pa-⟩, *⟨ka-⟩ and *⟨paka-⟩, the Proto-Austroasiatic agentive marker *⟨ma- ~ -am-⟩ to the Proto-Austronesian agentive *⟨mu- ~ -um-⟩, and the Proto-Austroasiatic instrumental infixes *⟨-an-⟩ and *⟨-in-⟩ to the Malayo-Polynesian instrumental prefix *⟨paN-⟩ and Proto-Austronesian instrumental morpheme *⟨ni- ~ -in-⟩. Finally, Reid proposes a not very convincing correspondence between a Nancowry Nicobarese nominalizer suffix ⟨-a⟩ and a Proto-Austronesian 'objective' suffix *⟨-a⟩. There are several problems with the proposed morphological parallels: Most Austroasiatic languages are grammatically hardly documented, and the epistemological basis for Austroasiatic reconstructions is feeble. Internal reconstruction and informed comparison require detailed grammatical descriptions and a sound understanding of morphology and phonology. The infixation of segments containing liquids and nasals is such a widespread phenomenon in Austroasiatic that it is easy to find apparent formal parallels elsewhere for these semantically still poorly defined grammatical categories. Finally, Reid draws heavily upon Nicobarese for his morphological parallels and not on the grammatically more conservative Munda languages. Comparing Malay prefixes with a hypothetical Austric source language for early loans in the Ṛgveda is therefore a fanciful exercise. But even if we dispense with 'Austric' and just deal exclusively with Austroasiatic, or more particularly with Munda, as Michael Witzel has judiciously chosen to do, we are still a long way from an historical grammar of Austroasiatic, and this is a severe limitation on such work.

My four remaining remarks deal not so much with linguistics, but more with archaeology and population history. First, in relation to the Northern or Kashmir Neolithic, Witzel says that the influence of the Indus civilization 'is strong and long-lasting' (p. 5). This is not the view held by archaeologists. In fact, one of the remarkable features of the Kashmir Neolithic is that this culture, to put it concisely, 'is distinct and stands aloof from that of the rest of India' (Ramachandran 1989: 52). In particular, archaeologists recognize that the Kashmir Neolithic represents a separate and independent tradition from that of the Indus civilization despite its geographical proximity to the latter. Certainly, there was trade, and the stray find of imported Kot Dijian pottery appearing quite out of context at one neolithic site in Kashmir has not diminished the view that the Kashmir Neolithic as an archaeological assemblage is closely affiliated with the Mǎjǐyáo culture in Gānsù and with sites such as mKhar-ro south of Chabmdo in eastern Tibet, and not with the Indus tradition. I have discussed the archaeological context and the likely antecedents of the Northern or Kashmir Neolithic elsewhere (1997a, 1998).

A second point is word of caution regarding cultivated plants, especially in connexion with millet. Any grass with round edible seeds is called millet in English, and cultivated millets belong to a variety of distinct genera and have very different geographical origins. As an example, let us take the cultivar that is called 'millet' in Nepal, where it goes by the Nepali name of *kodo*. Whereas *Setaria* and *Panicum* millets were first cultivated in the Yellow River basin, the 'ragi' or finger millet *Eleusine coracana* cultivated by Tibeto-Burman peoples in Nepal ultimately originates from Africa, where the wild tetraploid form, which crosses freely with the cultivated variety, is still to be found. Although the latter is called *kodo* in Nepali, this is an altogether different plant from what in Hindi is known as *kodo* or *kodō* and therefore in English as 'kodo millet', i.e. *Paspalum scrobiculatum*, viz. 'ditch millet' or 'birds' millet'. The

stories on individual millets are often complex, and names for such cultivars should be treated circumspectly.

A third issue of immediate relevance to the population history of the Subcontinent is, or was, the Baṅgānī enigma. On this point Witzel gingerly says that the question ‘has not been entirely resolved’ (p. 47), and he mentions a website with postings about Baṅgānī, an Indo-Aryan language ostensibly bearing an early substrate layer from a kentum language. In good conscience, I can say that the question of a kentum substrate in the western Himalayas has been entirely resolved. The only kentum language to leave indelible traces in India today is English. I looked over the website mentioned once and, although this was some time ago, I saw nothing there that I should choose to dignify with a response or comment. What Suhnū Rām Sharmā and I have said on the topic is readily available in institutional libraries, and it will suffice here to refer to our published reports (van Driem and Sharmā 1996, 1997).

In the theory of a Dravidian Indus, the Brahui are conventionally treated as a remnant of the original Dravidian population of the northwest. Jules Bloch once expressed skepticism about the northern provenance of the Brahui, but Georg Morgenstierne cogently argued against a southern provenance for the Brahui (1932: 5-7). Bloch’s old hypothesis of a northbound migration by the forebears of the Brahui along this coastal route was revived and defended by Josef Elfenbein. Elfenbein’s argument involved native traditions of the Kurukh and Malto. In advocating a southern provenance for the Brahui, Elfenbein was hard pressed to dismiss the evidence for an early presence of Brahui speakers in Kalat and Baluchistan. Moreover, Elfenbein acknowledged that attempts to identify earlier Iranian loans in Brahui are ‘greatly bedevilled by the nature of Balochi, extremely archaic and conservative in its phonology as it is’, so that by consequence ‘borrowings from Middle Iranian into Brahui are bound very often to be indistinguishable from borrowings from Balochi’. Elfenbein attempted to explain away the older Iranian loans in Brahui listed by Georg Morgenstierne as being ‘representatives of dialect forms of Balochi’. None the less, even Elfenbein accepted an etymology, first proposed by Denys Bray (1934, III: 74), whereby ‘*birēna* “womb” could represent a genuine Middle Persian survival in Brahui’, for whereas Brahui preserves the older meaning, ‘the Modern Persian descendant, *birīna*, means “hole, crevice”’ (1987: 219). I deal with this question in greater detail in my handbook *Languages of the Himalayas*, but this question really is far from resolved. At any rate, I am presently disinclined to believe Elfenbein’s theory about a southern provenance for the linguistic ancestors of the Brahui.

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Dear Dr. Fleming:

I was told by Norman Zide that you would like a response to Prof. Witzel's paper from a Burushaski perspective. I have conducted field-work on Burushaski and have published a couple of articles on the language and have several unpublished papers on it as well as many recorded hours of Burushaski. I hope that you will be happy with my short comments on the aforementioned paper. If there are any questions or problems, please do not hesitate to contact me at the addresses above. Thank you very much

Sincerely,

Gregory D. S. Anderson

M. Witzel's "South Asian Substrate Languages" from a Burushaski Perspective

- 1) Typos, etc.: (p. 3) *kīlāy* 'biestings' should be *kiláay* with a short vowel in the initial syllable, a first-mora stressed long vowel in the second syllable, and the characteristically Burushaski sound [y] not plain [y] word-finally; also *taɣay*.¹ *meéš* has a second-mora stressed long vowel; similarly *kuyoóc* [Berger 1998b: 249]. It is important to distinguish the two types of long-vowels in Burushaski, which Witzel does not. The forms *gindáwər* and the second² citation of *gupás* have short stressed vowels, not long vowels [Berger 1998b: 153, 161]. The forms *yoqares* and *yon* (and *yupas*) are not labeled Yasin Burushaski or Werchikwar forms which they are [Berger 1998b: 177, 183, 161]. This is a divergent dialect/closely related language and when forms are cited, they are generally marked as such in Burushaski studies.
- 2) Witzel comments (p. 6) that "prefixes are typical neither for Dravidian nor Burushaski". To be sure, prefixes are atypical of Dravidian structure, and the elaborate systems of prefixal and infixal derivational morphology characteristic of South Munda and many other Austroasiatic languages are not generally a part of the morphological machinery for either Dravidian or Burushaski; however, it is far from the case that prefixes are alien to Burushaski, which has a range of inflectional prefixes seen in verbs, including up to four prefixes in a single verb form [NEG-D-PERSON-CAUS].

- (i) *a-tí-mi-s-man-u-w-á-i-a*
 NEG-D-1PL-CAUS-become-ST-CNCTV-AUX-I-Q
 'has he not given birth to us?'
 [Tikkanen 1995: 491]

There is even a common converb/participial form marked by a prefix in Burushaski (or a suffix/circumfix as well, at least in certain allomorphs); see (ii). Prefixes can be found in nominal forms in Burushaski as well (iii).

- | | | | | |
|------|--------------------------|-------|----------------|--------------|
| (ii) | <i>nu-ku-či-n</i> | (iii) | <i>gu-lčín</i> | <i>go-s</i> |
| | CV-2-give-CV | | 2-eye | 2-heart |
| | 'having given it to you' | | 'your eye' | 'your heart' |

¹ Note that this stem alternates with *-láyay* which suggests that. Contra Witzel (p. 3), the direction of the borrowing may therefore have been from Burushaski to Dardic

² But not the first citation, which is cited correctly.

Prefixation seems to have once played a limited derivational function in Burushaski as well:

- (iv) *--r* 'send' *d--r* 'send here', *su ~ dusu-* 'bring', *--squel* 'roast' *d--squel* 'roast veggies, onions' [Berger 1998: 107, 109]
- 3) *bras* 'rice' (p. 25), if related to Vedic *vr̥hi* it is therefore also related to Thracian *briza* 'grain crop, rye' [Čašule 1998: 21], and an Indus Valley substratal explanation becomes less likely (unless the Paleobalkanic substratum is a sister to the Indus Valley substratum). All this aside, the immediate source for this word in Burushaski is probably Balti (Tibetan).
- 4) *gur* 'wheat', more specifically the plural form *guri/enj*, is related by Wirtzel to Vedic *godhuma*, both reflecting the Indus Valley substratum language (p. 27). The correspondence of the nasal in the Vedic form (–m-) and the regular class-IV plural marker in Burushaski (–in) is not only irregular but highly unlikely given the status of the latter element in Burushaski.³

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³ Čašule [1998: 51] considers the PIE root *gʷr̥(ə) 'grind flour' (cf. Lithuanian *gīrmū* 'grindstone') to be a likely source for this element in Burushaski, which he considers to be among a set of elements which reflect an ancient Indo-European substratum in Burushaski.

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U.S.A.

Dear Dr Fleming,

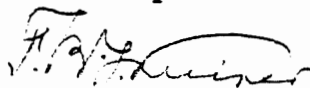
I have stopped publishing because of my age (92) and because I have had to part with my books (consulting the University Library at near-by Leiden is no longer an option).

Still, I felt obliged to react to Michael's article. Apart from our longstanding friendship and our common interest in these problems, this was an occasion for me to show my gratitude for your generously sending me a free copy of Mother Tongue.

For long-rangers this is a collection of minutiae, but describing my dilemma will hopefully induce others to point out how my short-sightedness has caused me troubles and that there is no dilemma at all.

Looking forward to their light in my darkness I am sending you my two pages.

Sincerely



Michael Witzel's work in the past two decades has marked an enormous step forward in that he, relying on an intimate knowledge of the Vedic texts, tries to determine exactly the place and time of the linguistic phenomena. This first attempt at a synthesis of the cultural aspects of prehistoric India is a challenge. If every one contributes his own little piece of the jigsaw puzzle, we may perhaps arrive (as far as it is possible in 1999) at an over-all picture of the Indian world, as it was c. 1500 BC. In addition to the cultural aspects (which comprise also archaeology), the types of blood groups (p. 49) will of course have to say their own important word, thus completing the total view.

There are two preliminary remarks. On p. 6 Michael warns that I denounce the Proto-Munda Words of 1948 (in fact, I denounce much more from 1946-1951!), but he adds that the book is still useful as a collection of relevant materials. My advice would be to delete all references to K. 1948, because only an expert linguist would be able to sift out what is still usable. Incidentally, turváśa-, cited among the non-Aryan words (K. 1991,92 etc.), is Indo-Aryan.

As for the terminology: Munda is so far the only branch of Austroasiatic in India that we know of. It is true that Dhimal unkhu 'rice' and some Nihali words pose a curious problem but as long as these traces of non-Munda Austroasiatic ('Para-Munda') are confined to a few words (K. 1962, 38, 52), it would seem wise not to complicate matters beyond necessity and to avoid terms as 'Austroasiatic' and 'Para-Munda' (pp. 10, 12, map). As I see it, 'Munda' will do.

I will confine myself to what to me is one of the most striking conclusions: the Dravidian immigration (p. 30). Since I am unable to consult Southworth's articles, this comment cannot be more than a marginal note, which describes my dilemma. As is well known, Indo-Aryan must have been influenced by one or more languages in the NW area of India and has introduced three innovations, viz. a new set of phonemes (retroflexes), a new category of the verb (gerund) and a new use made of the inherited word íti (linguistic calque). These innovations were characteristic of the area in general. Therefore Indo-Aryan will have adopted them on Indian soil, after the immigration into the subcontinent. The innovations, which drastically changed the character of the language, must have started with bilinguals who were in daily contact with non-Aryans. It must have taken a considerable time before the whole community accepted the innovations and (still later) before the highly traditional language of the poets had conformed to the new reality. To some extent this process can still be detected in the text. The introduction of the retroflexes must have been pre-Vedic and /ṭ/ and /ḍ/ must have been phonemicized before *iṣṭa- 'desired' and *niṣṭa- 'nest' could become ista- and *niṣṭa- (and later on nīṣṭa-, the Rigvedic form). If the earliest date of the Rigveda is put at c. 1700 BC (M.W. and others), the contact with non-Aryans must have begun as early as at least c. 1900 BC.

Which language can have changed Prehistoric Indo-Aryan so drastically? As far as I can see, there are at this moment only three candidates: Buruṣaski, the Indus language and Dravidian. Whatever other languages there may have been, our knowledge is restricted to Buruṣaski and Dravidian. If we join Michael in rejecting Buruṣaski as a candidate, there would remain Dravidian, which

can fully account for all innovations, including the characteristic use of iti after onomatopoeas. To this scenario, however, there is one serious objection: as Michael implicitly but rightly observes, such a close contact as presupposed by this scenario would certainly have left some traces in the vocabulary of the Rigveda. Close contact there was, but judging from our sole source this was with the Munda-speakers: some poets were of Munda descent and one was demonstrably a bilingual, whose first language must have been Old Munda. Can then Munda have been the medium, which first adopted these innovations and then transmitted them to the Indo-Aryan-speakers? There is no answer, since our knowledge of Munda dates from the second half of the 19th century. The prefixes of Old Munda, c. 1500 BC, are similar to the Austro-nesian ones but whether or not it had already introduced the innovations cannot be determined. (The spelling Kanva- with a retroflex n does not necessarily prove that Old Munda had the opposition dental vs retroflex). It is on these minutiae that we have to base our reconstruction of the past.

However that may be, I think there is some reason to suppose that the ultimate origin of the retroflexes must be sought in Dravidian. In contrast to Indo-Aryan and Munda, which have a dual system of dentals and retroflexes, Old Tamil had a tripartite system of dentals /t,n/, alveolars /t̪,n̪/ and retroflexes /t̪̃,ñ̪/ and I think the same system can be reconstructed for Proto-Dravidian (although Burrow and Emeneau assume a different phoneme for /t̪̃/)*) Dravidian can have transmitted a reduction of its system to other languages but it is hard to imagine that any language with a dual system should have been the source of the Dravidian one.

How do these small pieces of the jigsaw puzzle fit into place? Possibly too many other pieces are missing. Possibly more data will force us to give up entirely the idea that Dravidian was an important factor in the process, but for the moment I do not see an acceptable alternative. On the other hand, the obstacle of Michael's implicit objection is insurmountable: one may try a sociological interpretation of the absence of Dravidian words in the Rigveda instead of the chronological one, the Dravidians having belonged to the lowest strata of the society, but this is hardly workable.

Anyway, it is Michael's merit to have stressed the predominance of the Mundas in the Rigveda and the nearly absence of the Dravidian-speakers and to have confronted us with what to me is still a historical dilemma.

*) For the tripartite system see Indo-Iranian Journal 6 (1962), 60-64.

Comments on Witzel's "Early Sources for South Asian Substrate Languages"

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Michael Witzel's paper is quite a tour de force, the most comprehensive thing of its kind to come along in many years – if ever? The range of its argument is enormous, from Kashmir and Nepal – and even Sumer – to Sri Lanka and beyond. There are many good specialists who have their hands full just trying to deal with one facet of this complex situation, entrenched in their often mutually conflicting opinions, and not inclined to venture very far out of their specialties. It takes a brave man indeed to try to put all the pieces together, always at the risk of treading on specialist toes of one variety or another – but it is a task that nevertheless should be attempted every so often, and one which paradoxically gets ever more difficult as specialist knowledge increases and the amount of data to be dealt with also increases. This attempt is obviously based on much hard work and marshals a bewildering amount of data, to the point where one feels overwhelmed and diffident about commenting at all.

Witzel is a specialist himself, of course, in Vedic, and along with what is perhaps the most thorough combing of Vedic materials for alien elements to date, one of the contributions he makes in this paper is a clear division of the Vedic literature into three periods, each with a different regional provenance and focus, which is in turn important for the dating and source of loanwords. That is, different strata turn out to have different kinds of loanwords, e.g. Dravidian (but not what he calls "Para-Munda") loanwords are absent from the "earliest" stratum ("1700-1500 B.C."). Incidentally this conflicts with his conventional statement at the beginning that "the Vedas [as a whole] were orally composed c. 1500-500 B.C." – this needs to be clarified, since the dating prior to 1500 B.C. is crucial to this argument.

His most revolutionary conclusion (p.12) is that the language of the Indus civilization was (on the basis of loanwords in the RgVeda at any rate) "Para"-Munda (not to be confused with Munda or even Proto-Munda, with which [i.e. with Pinnow's tentative reconstruction?] he admits there are few if any direct correspondences), that is, "a western form of Austro-Asiatic". Now I recall colleagues (probably the Zides) cautioning me long ago to take Mayrhofer's Austroasiatic attributions in the EWA with a grain of salt, that he had a strong tendency to throw anything he couldn't explain into that box, with no real basis for doing so. However, although he cites him abundantly, Witzel is apparently not relying entirely on Mayrhofer in this regard. There is also Kuiper, and Pinnow, and in particular a revisiting of the (fossilized?) "prefixing" evidence. Since most of these (with a few exceptions, e.g. *ki-*, *ka-*, *ku-*, etc. which are variously interpreted as articles, as related to "persons and animals", or countries) seem to be meaningless, I don't know what to make of this [are they perhaps markers of noun-classes, as in Bantu languages (again KI-, among other things), or NE Caucasian languages?]- but their subtraction on whatever basis does pare down polysyllabic words into something more plausible (and comparable) as roots.

In any vast undertaking of this sort there will inevitably be instances where one can quibble over the details. I will confine myself to the following:

1) Citing Kuiper, he says prefixes are not "typical" of Burushaski. I'm not sure if he means by this that Bu. does not *have* prefixes; if so, this is incorrect. Pronominal and other (e.g. negative, detransitive, 'causative', absolutive) prefixes play a fairly prominent role in Burushaski inflection and derivation, especially verbal (Berger 1998.1:44-46, 105-125). If he wants to say that Bu. prefixes do not seem to be related to or function like Munda (or Mon-Khmer) prefixes, that is another matter. With phonetically short, common segments, however, it may be difficult to tell. E.g., does the negative prefix *a-* in Bu. mean that it is connected with or has influenced or been influenced by Sanskrit and Greek?

2) The statement is made that "Sumerian has implosive consonants, just as Munda, Khasi, Khmer, the Himalayan language Kanauri and the Kathmandu Valley substrate, all of which may point to a S./S.E. Asian areal feature." And further that, "apart from Munda, [implosives are] otherwise not

found in South Asia.” None of the Munda languages (Santali, Mundari, Sora, Korcu) or Khasi or Khmer are described in Ruhlen 1975 as having implosives. Osada 1992, citing Ladefoged, denies that the ‘checked’ final consonants of e.g. Mundari (which seem to be the only candidates for such a classification) are implosives. Vietnamese apparently has implosives, but again phonetically, not contrastively. Where does the idea that Sumerian had implosives come from? How could we know? Meanwhile, Sindhi, which was unmentioned, is the preeminent SA language with implosives.

3) In the discussion of “millet”, it is important to remember that this catch-all English term represents a number of different grains, with different origins, and naturally, different names.

4) Some speculations published in MT and elsewhere, e.g. a connection between Nahali and Ainu, are treated as facts, although they are contraindicated by other, more solid, speculations.

5) The notion that the Dravidians are recently arrived pastoralists has to be weighed against the deep involvement of Tamil semantics in the very topography of the Tamil country.

My major quarrel, however, is with the loose use of the term *substrate*. A distinction should be made (Thomason & Kaufman 1988 et al.) between *borrowing*, first of all of words, and language shift, or *substratum*, where a substantial group of speakers shifting to another language carries over into it first of all structural features (“learner’s errors”) from its original language (not words) which ultimately are imitated by erstwhile native speakers of the target language. The use of some local proper names and borrowing of words for peculiar plants, etc. does not mean that the source language of such borrowings constitutes a *substratum*. The fact that names and words like *Potomac*, *Massachusetts*, *wigwam*, *woodchuck*, *skunk*, and *chipmunk* have been borrowed from Algonquian does not mean that it is a substratum for American English.

It does mean that Algonquian speakers were here, of course, and in the same way, if Witzel’s etymologies are correct, it would indicate that speakers of “Proto-Austro-Asiatic” (not “Munda” – using that term even in the coinage “Para-Munda” might be confusing) were once distributed much further west – before being pushed or simply pushing on eastward? – which in turn might hearken back to an early phase of the peopling of the planet.

More broadly, Witzel’s attempt to reopen discussion of early South Asian linguistic history in general is provocative in a good sense, and most welcome. Specific needs of the field are also pointed out, e.g. etymological dictionaries of Sindhi and Kashmiri in particular.

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Asha Mundlay's (Invited) Comments on Michael Witzel's Article

{Editor's Note: Dr. Mundlay's original handwritten copy has been typed, i.e., 'keyboarded in', and somewhat reduced in size.}

First and foremost it is refreshing to come across a scholar who is willing to examine linguistic and cultural evidence in one breath. When I was a student in the hoary past, linguistics -- modern linguistics -- was just coming into its own. Chomsky and all that. So all other considerations except internal linguistic (mainly phonetic and purely lexical -- to the negligence of deep semantic concepts) were not kosher even in a student's article.

To match this, sociological, anthropological and archeological investigations paid only the most cursory attention to language. (These three to my mind are basically one and the same thing. Only there is a different context in time and location on the face of the earth -- viz., first-world contemporary studies are sociology and third world studies are anthropology even if contemporary.) I remember one scholar after another making authoritative statements about 'peoples' without ever learning to speak their language. Paid interpreters -- often illiterate but friendly informants wanting cash -- were considered "enough" source.

Anyway this is all by the way and may the tribe of "Witzels" increase!

Now about the content: I fully agree with his broad supposition that there is reason to believe that there exists an earlier period in Indian history (including modern Pakistan) when people who created the Vedic literature were in direct linguistic contact with the "Munda" group; and perhaps the Indus civilization was "Munda" rather than "Dravidian".

Modern Indian Linguistic Mapping is like a patchwork quilt of remnants where each square may date from a different time frame. A more extensive lexical data collection is necessary, especially from dialects of MIA and MD (modern Dravidian).

I'll give only one example. The words for rice are many more. [koḷāmba] is a variety of rice grown locally in Gujrat and western Maharashtra. There is reason to believe that growing this local variety is very ancient. Also methods of cultivation are basically two. One, planting once during the late summer -- early rains. Second, planting in a small plot and then re-planting. {Editor's query: is this a matter of 'dry rice' versus 'wet rice'? Each has its own record in southeast Asia, 'dry rice' being earlier or first in most places.}

So while examining the words for rice, words for varieties current since earlier times must be collected -- also method of traditional planting to be noted. This would explain two different entry points of rice into India.

Recipes of rice sweets are also very ancient. [âpāpâ] ... is from Vedic times and still prepared in much the same way -- at least in rural Orissa. Other places have more sophisticated recipes, e.g., Maharashtran brahmins decorate it with white poppy seed on top, etc.

One sweet called [koḷakāttai] in Tamil is also very ancient. Boiled rice paste cover with coconut filling. That sweet is prepared by tribals also. This is significant.

Vocabulary Areas to be looked into:

1) Place names. This includes village names and names of sub-localities in bigger cities. Also where there is historical renaming (as in many places in India named after Muslim kings, noblemen, saints, etc.), the earlier names must be looked into. For example, Bombay was earlier **mumbai** and it is once again **mumbai** nowadays. [mumbai], [vasai], etc., are names of a kind -- where the end part is abbreviation of the Dravidian word for mother. And the earlier (preceding) part is the name of the local goddess.

Even today Hyderabad, Ferozabad, etc., all have local goddesses and earlier names preserved in the oral tradition.

2) River names, tributary names. Fortunately, rivers in India have not been widely renamed by either the British or the Islamic rulers. The reasons for that are interesting. One reason is that one definitely does not tread lightly over the toes of "religious sensibilities of water which is sacred." However, river names have certainly been changed or Sanskritized from earlier *proto-Munda or *proto-Dravidian names. Even here folk memory preserves traces of earlier names. Quite often earlier names are preserved in river songs, tales, etc.

3) Names of minor local goddesses and spirits -- evil and benevolent. They show an area of influence overlapping with tribes. This is significant. For example, in Maharashtra worshipping an areca nut placed in a mound of rice placed in a basket woven in a certain fixed style is shared by **konkanastha brahmins** and **warlis** (agricultural pioneers/tribals of that area). A bundle of such traits exists and to me proves early acceptance of Warli women as brides into the upper caste.

4) List of 'holy' days according to the lunar calendar. They have Sanskritized names and local names which are from either a Dravidian or a Munda source.

Finally, I believe that just as 'linguistic reconstruction' on historical lines is possible on phonological and morphological grounds -- we must seriously extend that area and methodology to reconstruction of patterns in cultural history. Discernible territorial boundaries emerge as a result.

The overlap and vertical introduction of tribal customs in upper castes, especially brahmins, does show long-standing contact.

One very promising area is music and dance steps related to the holi festival. There is a continuous pattern all over India and westwards. And culturally the festival of holi is definitely from the Austro-Asiatic source.

It is interesting to see how later highly sophisticated myths are created to explain every single fact as a part of "Vedic and post-Vedic brahmanical tradition -- the so-called Great Tradition." This process is still going on.

(Signed) ASHA MUNDLAY

Appendix. **Haldi** and **Kumkum**. Haldi (turmeric) is definitely Munda. Genuine Kumkum is roasted Haldi powder with lime water added to change color. This is Dravidian contribution.

The overly heightened significance of Haldi and Kumkum in all rituals and rites in today's practices are like a long-standing tacit truce in the cultural area. An appreciation of rival beliefs.

The original Vedic tradition is devoid of both Haldi and Kumkum.

There are other such assimilations but this is the most extensive area-wise, and community/caste-wise.

The widow, however, is rigidly excluded even from touching these things. In very recent times a widow who won the election was give aarti (? - Ed.) but red mark was not put on her forehead. This was seen on the TV.

This excessive mourning of deaths of males is to my mind a result of deep-seated subconscious memories of deaths of young men in battles during armed conflicts between the three major rival cultural streams.

People are settled in a definable geographical area. However, within that area they may migrate seasonally. This is still prevalent in India.

Alternately, within that area they may traverse the same trade route every year and during some defined months of the year, they stay put where they think 'home' is. This is also still prevalent in India.

It is likely that *IA speakers, *Dravidians, and *Mundas came in contact by overlapping settlements, trade routes as well as political conflict for supremacy.

Present sub-groups still retain folk memories of this through myths, i.e., Rama and Ravena, King Nala and the Five Gods (Rivalry between *IA and *Munda groups.)

Memories of conflict and intermarriage with *Dravidians are less subtle and still going on.

Sometimes there is a total willful 'blocking out' of historical memory. This is true of the Buddhist rule in India. Even today history books in schools are very vague about it, e.g., the sudden regression in the achievements of Bihar and Orissa (...) is never explained in school history.

What I am trying to say is that "winners" write their own justifications and tales.

The story of Indian Civilization thus becomes very difficult to unravel.

But kolis, i.e., fishermen on the west coast of India are definitely a good link (unbroken) from earlier times to the present and their dialects must be separately studied and compared. Kolis to my mind are *Munda. Certainly on the west coast and further into modern Pakistan. I have no information about seafaring communities of the east coast.

Myths, Music, Dance Step, Musical Instruments, Place Names, River Names, God Names, etc., from dialects (rather than standard forms) are a large underexplored clue.

In a preliminary letter of acceptance of this assignment, Dr. Mundlay made some other comments which can suitably be recorded here.

(September 13, 1999)

Research is never unbiased.

I'd like 'Indus Civilization to be *Early Munda -- but more evidence is certainly needed.

After all, early Munda contributions to Indian History have been neglected so long that a little delay on my little bit (offering - ED) against that trend -- is not much.

It is my contention that because political victors also took care to preserve their own records (orally) and did suppress 'other' contributions -- and because this also agreed with 'the white man's burden' of the later victors (British, Europeans) -- the evidence of non-Vedic streams was not studied to that extent, until sporadic insights forced it to be recognized.

Robert Blust reports interesting revisions of Austronesian taxonomy

Last May at the Eighth International Conference on Austronesian Linguistics (Taipei, Taiwan) he gave a paper (keynote address) on Subgrouping, circularity and extinction: some issues in Austronesian comparative linguistics.

It is one of the finest pieces of work done by a long ranger in a long time; that is the Editor's personal opinion. Perhaps we could revise the title to the elements of greatest interest to ASLIP -- "Taxonomy, using precise sophisticated methods, and dispersal theory"

The interesting revisions that Blust presents are actually to his own earlier classifications. Although we have reported some of his taxonomy in earlier issues, it is now convenient simply to refer to Ruhlen's GUIDE (1991 update). The main thrust of Blust's work has been the emphasis on three primary sub-phyla (major branches) on the island of Formosa and one primary sub-phylum consisting of all the rest of Austronesian. Or (1) Atayalic, (2) Tsouic, (3) Paiwanic, and (4) Malayo-Polynesian (it alone spread all over the southwest Pacific and eastward to Hawaii and Easter Island). In the (3) Paiwanic branch were included a group of "Sinicized" languages, seven of which had expired, viz., Ketangalan, Basay, Taokas, Papora, Babuza, Hoanya, & Siraya. Blust adds Kulon, Taivulon, Makatau, Trobiawan, & Qauqaut. Babuza is joined to Favorlang. Where Ruhlen had reported 959 languages for all of Austronesian, Blust reports a new count by Grimes et al (1995) for a total of 1202! In the whole world this number is matched only by Niger-Congo (whose internal differences are far greater and older.)

The new internal taxonomy (sub-grouping) includes the extinct languages in a significant way and arrives at an astounding nine sub-phyla on Formosa but still all of Malayo-Polynesian in just one! This must be the most lopsided distribution of sub-phyla or branches in the world and the homeland of Malayo-Polynesian obviously must be 'on or near' Taiwan¹. In this phrase Blust's 'near' means south China.

While Blust's classification is shown overleaf, we still must mention three other things about his paper. First, he uses only the criterion of shared innovations combined with ample reconstruction for sub-grouping. His use is strict but intelligent, almost Neo-Grammarian in its full impact, but with far more collegial discussion and much more detailed phonetic reconstruction than most of us ever see. As we have said before, these ought to be the only conditions under which the strict criterion of shared innovations should be used. We have suffered many poor taxonomies around the world, as scholars have dreamed up reconstructions designed to support their sub-groupings.

¹ For the first 20 years of my life the island was called Formosa and was occupied by the Japanese, so I use Formosa and Taiwan interchangeably. Formosa was first reported to Europeans by the Portuguese in the 1590s when the Chinese influx was beginning. The Dutch also held parts of it for a while but were driven off by a Ming dynasty pirate war lord, Cheng Ch'eng kung, in 1661 AD, after which Fukien (Min) Chinese immigrated and absorbed the native Formosans in the western lowlands.

Second, he examines regularity issues for sound correspondences, the Neo-Grammarians position, and the logical impasse that position entails. It is a fine and valuable discussion.

Third, he does prehistory in the marvelous tradition of Oceanic anthropology. Combining the inferences of historical linguistics with the conclusions of archeology, he plots the sources and routes of the world's phylum most committed to living in maritime conditions on islands spread over many thousands of miles of ocean. He has keen and probably true hypotheses about the technologies of ocean travelers and eras of 'long pauses' where new adaptations have to be made. It is perhaps the most interesting area on earth for anthropologists! Since the amazing expansion of Austronesian is not far from the ages of the Indo-European and Bantu expansions, the three cry out for comparison!

Table 3.² A CLASSIFICATION OF THE FORMOSAN LANGUAGES BASED ON SHARED INNOVATIONS IN PHONOLOGY
(p.45)

1. Atayalic (self-evident)
2. East Formosan:
 - 2.1 Northern branch (†Basay-†Trobiawan; Kavalan)
 - 2.1.1 Basay-Trobiawan
 - 2.1.2 Kavalan
 - 2.2 Central branch (Amis)
 - 2.3 Southwest branch (†Siraya)
3. Puyuma
4. Paiwan
5. Rukai
6. Tsouic
7. Bunun
8. Western Plains:
 - 8.1 Central Western Plains
 - 8.1.1 †Taokas-†Babuza
 - 8.1.2 †Papora-†Hoanya
 - 8.2 Thao
9. Northwest Formosan:
 - 9.1 Saisiyat
 - 9.2 †Kulon-Pazeh ("Pazeh is on the brink of extinction".)
- - - - -
10. Malayo-Polynesian (Not listed in Table 3 because not on Formosa)

Note: One ethnographically reasonably well-known people, the Yami, live on Formosa but their language belongs in the Northern Philippines section of Western Malayo-Polynesian.

Note: Blust's paper does not present a full or up-to-date taxonomy of Malayo-Polynesian. That shown in Ruhlen's GUIDE is not necessarily exactly what Blust would propose today, but it is likely to be close.

² Book reference: Symposium Series of the Institute of Linguistics (Preparatory Office), Academia Sinica, Number 1. Selected Papers from the Eighth International Conference on Austronesian Linguistics, edited by Elizabeth Zeitoun and Paul Jen-kuei Li. Taipei, Taiwan. May 1999. Blust is pages 31-94. The parts of Table 3 which specify which phonetic mergers characterize which branch are not shown on our presentation of Blust's taxonomy.

BOOK REVIEWS

Daniel McCall examines Jared Diamond's Guns, Germs, and Steel, 1997 hard cover, 1999 paperback, from the standpoint of a Kroeberian 4-fields anthropologist, Africanist, and but with a 'minor' in Mediterranean studies.

Guns, Germs, and Steel by Jared Diamond (W.W. Norton, & CO., New York, 1997) was already a National Bestseller and winner of the Pulitzer Prize when I picked up my copy of the just released paperback edition (1999). What I found quite surprising is that a book that constructs human prehistory on a global scale from the data of archaeology, historical linguistics, population genetics, ecology, paleobotany, zoobiology, and epidemiology of human diseases sold thousands of copies! One might imagine that with these ingredients the sales would be mainly to academic libraries.

Part of the reason for its great appeal is the lucidity of explanations of technical detail and an easy narrative style. But probably more important is the orientation of the presentation. Jared Diamond is not concerned foremost to write history; he is explaining the lack of scientific foundation for racist interpretations for the different levels of cultural and technological progress among various peoples around the world. His sub-title *The Fates of Human Societies* is more illustrative of his purpose than is the title itself. To make an effective non-racist case for higher or lower achievements in social and technological complexity by various peoples, he demonstrates an explanation of varied historical 'fates' that has a firm basis in scientific data.

In 1972, Diamond was in New Guinea studying bird evolution when he was asked by a Papuan named Yali a question that set him off on a quest for an answer. Yali's question in essence was why did Europeans come by ships and airplanes with guns and other instruments to dominate New Guineans rather than New Guineans moving out and overriding Europeans? Many Europeans who had given explanations said or implied that the New Guineans were less intelligent than Europeans. Yali did not believe that and neither did Diamond: his book is dedicated to six New Guinean "friends and teachers – masters of a difficult environment."

A short answer to Yali could be, Diamond suggests (p.25): "History followed different courses for different peoples because of differences among peoples' environments, not because of differences among peoples themselves." The long answer required well over half of the book. It required seven chapters to explore the "most important cluster of ultimate causes." A chapter on Farmer Power, as he dubs it, details the ways in which food production is the indispensable basis for any further growth (beyond what is possible with hunting-gathering) in population numbers and social organization.

Peoples in some parts of the world developed food production, while others received domesticated species from neighbors, and some never did either. Another whole chapter is devoted to the factors aiding or inhibiting the innovation, or borrowing, of agriculture

or pastoralism. Diamond devotes five chapters to explore the reasons for these differences.

Geographic availability of species for domestication was a significant factor, and this varied greatly from continent to continent. And the diffusion of food production depended to a considerable extent on the "orientation of the continents' axes: predominantly west-east for Eurasia, predominately north-south for the Americas and Africa." Plants and animals domesticated in and around the Fertile Crescent of Southwest Asia and those domesticated in East Asia soon were spread throughout Eurasia from the Atlantic to the Pacific, but the domesticates of Mesoamerica had an obstacle in the change of climatic zone to overcome before they could reach the Andean area of domestication, and vice versa, with the result that these two centers of food production relied on essentially different crops.

Reliable food supplies "ultimately led to the immediate factors permitting" domination of one group by another. Intelligence or other human qualities had little to do with the outcome of competition for territory and other resources.

Moving from the "ultimate cause of food production to the proximate causes" of dominance, Diamond elucidates the origins of human disease. Domesticating animals made people susceptible to the germs with which the animals were infected. Pneumonia and smallpox came from cattle, flu from pigs and ducks, and so on. At first, these were lethal to most of the humans who lived with the animals, but over generations the descendants of survivors acquired degrees of immunity. When peoples carrying germs, to which they are immune, come into contact to peoples without these immunities, the result is epidemics among the peoples who have been intruded upon. Amerindians are a prime example: more of them were killed by European diseases than by European guns.

But it was no accident that the germ-carrying Europeans had guns and the peoples they intruded upon did not. Guns and epidemic diseases are related in their origin; both are outgrowths of dense populations made possible by food production. Food surpluses enable societies to support specialists in various endeavors who do not have to produce their own food. Technologies are improved by these specialists, and without them there would have been no guns, nor would there have been writing which makes possible long distance communication that favors the military operations of the gun-bearers against the already handicapped people who could not manufacture guns.

Inventors and scribes are not the only specialists supported by food surpluses. Political leaders, and bureaucrats, who can administer large areas and conquered peoples (and those who submitted without organized resistance), establish empires, rather than merely conduct raids. And social organization of any complexity is achieved only on the basis of a certain degree of density of population, again dependent on food production.

With these proximate causes of technology and disease and the ultimate causes of food production and continental axes explicated, the prehistory can be presented. New Guinea would be a strange place for a global account to begin, but in deference to Yali and his

question, it is not surprising in this instance. New Guinea, Australia, and Tasmania were joined as one land mass during the Ice Ages when the sea level was lower than it is today.

Greater Australia was divided as the sea rose and the larger part, the Australia of today, is the only continent on which food production did not develop indigenously. No suitable animals or plants were available. But New Guineans, who inherited the tropical north of the sundered continent, domesticated bananas, yams and some other plants. Genetically these varieties arose from wild plants different from the Southeast Asian bananas, etc. New Guinea also has high mountain valleys suitable to cultivation, whereas Australia has a large arid central band. The New Guinea coasts, in addition to providing land for farms, has fishing to supplement food supplies, and along the north coast speakers of Austronesian languages once sailed along and mixed with some communities, contributing pigs and fowl to the larder. New Guineans seem 'backward' to Europeans but in comparison to Australians, they are 'advanced.'

Greater Australia (still unseparated), was reached by 'anatomically modern humans' 40,000 to 50,000 years ago. They had an advantage in that much of the area that now is sea was land at that time (map p.299), but they still had to cover some miles of open sea to reach the Australian continent. Thus they had some maritime skills, which most of their descendants didn't perpetuate. Their suspected relationship to Veddoid peoples of southern India, Andaman Islanders in the Bay of Bengal, the Semang of Malaysia, and Negritos of the Phillipines is mentioned (p. 332-3), but a linguistic datum that connects them is not presented. The language relationship of the Andaman islanders is to the Papuan languages of New Guinea, both constituting J.H. Greenberg's Indo-Pacific language family. The Semang and the Phillipine Negritos have adopted the languages of their Austronesian neighbors, as have some coastal New Guineans.

Thus begins "Around the World in Five Chapters" which is Part Four. Chapter 14, the first in Part Four, is titled "Yali's People," reminding us where we began with the Prologue: "Yali's Question." The Austronesian impact on New Guinea provides a segue to China, the point of departure of the earliest Austronesians. China is a locus of early domestications, and has the largest population of any country. Given the importance of population density, it is a logical place to proceed to at this point. Its population growth was sustained by rice, millet, pigs, fowl, and citrus fruits. Chinese expanded southward, absorbing or pushing ahead of them peoples speaking languages of three other families, remnants of which still exist in pockets within China (see maps, p. 326).

Also developments which began in China affected, both by diffusion and by certain population movements, the history of New Guinea and the islands of Indonesia and those of the Pacific Ocean. The evidence is archaeological and linguistic. Taiwan, has ancient sites with pottery of a style found on the China coast opposite the island; this ceramic tradition was overlaid with pots indicating Han Chinese expansion. What language the earlier potters on the mainland spoke is unknown, but on Taiwan three surviving languages are a cluster from which other Austronesian languages developed during a series of migrations by outrigger canoe. Taiwanese, Phillipine, Indonesian, and Malayo-Polynesian languages comprise the Austronesian phylum. All these languages derive from population movements by sea that began from Taiwan. "Outrigger," "sail," and

many names of sea creatures have been reconstructed for Proto-Austronesian. A trace of pottery styles, modified over time and space, help mark the routes. Polynesia is the youngest of all human occupied regions, its population relatively small, and its cultural innovations relatively minor, so the detailed presentation of its settlement here gets disproportionate prominence in a world history.

The rest of Eurasia and the Americas get only the amount of space Polynesia received. They can be considered together since the populating of the Americas came from northeastern Eurasia. The point of departure in this narrative, however, is the arrival of Europeans in the Americas, resulting in the "largest population replacement of the last 13,000 years." Amerindians were decimated by germs and guns. Euroamericans replaced them. This is a harsher reality that was met by Yali's people. This opening seems placed to require ethical reflection before the prehistory of the Americas is outlined.

The hypothesis that arriving hunters with effective hunting methods exterminated the large fauna of America is obliquely referred to but whatever the extinctions were due to the result was that the only sizable animal 'suitable' for domestication was the llama. Why the buffalo was not as suitable as cows is not fully convincing as presented. In an earlier chapter, Francis Galton, 19th century British scientist, is quoted: "it would appear that every wild animal has had its chance of being domesticated, that [a] few ... were domesticated long ago, but that the large remainder, who failed in one small particular, are destined to perpetual wildness." Gazelles, for example, are subject to panic. "Just imagine," Diamond invites us, "trying to herd an animal that bolts, blindly bashes itself against walls, can leap up to nearly 30 feet, and can run at a speed of 50 miles per hour!" Gazelles, and some others, can be exempted, but bison? "Unpredictably aggressive behavior on the part of a large and potentially dangerous mammal" is cited as a reason (p.172, not specifically about bison), but are bison any more difficult in this regard than the wild ancestors of cattle?

American societies, in any event, lacked animal muscle power comparable to that used in Eurasia. Whether dogs were independently domesticated in the New World or brought in from the Old is not discussed: it apparently is assumed that there was a separate domestication. The time of arrival in Alaska, 12,000 BC (p. 363) would probably not be too early for Asian dogs to accompany humans, but if as some argue, the arrival time was c. 30,000 kya, then the dogs were either domesticated from New World wild canines or brought in by a subsequent migration. Unlike Australia, which had only marsupial mammals, a placental canine – the dog called a 'dingo' – had to be introduced by a later contact, after the 40 + kya human settlement, the American case is open to question so long as the date of New World settlement is in dispute.

The handicap of the Americas due to their north-south axes was earlier discussed in the chapters on the factors affecting 'fates' of societies. The comparison of the advantages and disadvantages of Europeans and Amerindians in their time of 'colliding' are toted up in several tables and pages of discussion. This comparison is the culmination of the problem set out at the beginning of the book; it leaves no doubt that the outcome of the 'colliding' would be the victory of the well-equipped Europeans and the demolishing of the societies of the Amerindians. Atahualpa, the Inca emperor, was the "absolute

monarch of the largest and most advanced state in the New World” while Pizarro with 168 Spanish soldiers arrived on ships, armed with guns and mounted on horses, conquered his domain.

Although the goal has been reached, the question posed by Yali has been eloquently and definitively answered, but inasmuch as a global perspective was adopted at the beginning, there is still a continent undiscussed (except fragmentally mentioned in illustration of the ‘proximate causes’). Finally, therefor, there has to be an overview of Africa, which is well done, but in the circumstance seems like an appendix. Africa does get a chapter to itself, more than Europe received (subsumed in Eurasia, but unlike China didn’t get a separate treatment). New Guinea, known only to Papuans and some Austronesians until the 17th century, is held central to this history, while Africa, where humanity originated, is merely a supplement! Now, in the last chapter, we are appraised that “our remote ancestors originated there around 7 million years ago, and anatomically modern *Homo sapiens* may have arisen there since then.” Then distinctions between the major human groups on the continent are detailed, and population movements (“who got where before whom”) are reviewed; in doing this tribute is paid to “Stanford University’s great linguist Joseph Greenberg” whose taxonomy makes possible “fascinating contributions” to “understanding African history.” Archaeology, however, is not neglected nor the achievement of domestications. Madagascar, which was neglected when Austronesian was discussed earlier, is now given a brief notice.

An Epilogue – The Future of Human History as a Science – defends the approach of *Guns, Germs, and Steel*. “The discipline of history is generally not considered to be a science, but something closer to the humanities. At best, history is classified among the social sciences, of which it rates as the least scientific.” And “[m]ost historians do not think of themselves as scientists and receive little training in acknowledged sciences and their methodologies.” Despite borrowings from all the social sciences in this century, Diamond’s assessment of ‘most historians’ is correct. Historians of Africa, however, have used the results of linguistic taxonomy and of archaeological reports in their narratives on the past of the sub-Saharan regions. Culture history in North America earlier pioneered reconstruction of Amerindian societies. Also, historians join archaeologists, linguists and anthropologists in the American Society for Ethnohistory. Genetics, has been too recently become a contributor of data for historical interpretation to have been used yet to any great extent by historians.

Diamond reminds us that astronomy, climatology, ecology, evolutionary biology, geology, and paleontology are historical sciences; he should have also mentioned population genetics. Historical sciences he points out are different from non-historical sciences such as physics, chemistry, and molecular biology. A.L. Kroeber made this point a generation ago to his fellow anthropologists during their dispute about how historical it was possible for anthropologists to choose to be. The differences between historical and non-historical sciences, Diamond notes, are in methodology, causation, prediction, and complexity.

“Historical sciences are concerned with chains of proximate and ultimate causes. In most of physics and chemistry the concepts of ‘ultimate cause,’ ‘purpose,’ and ‘function’ are

meaningless, yet they are essential to understanding living systems in general and human activities in particular.” The ensuing essay on causation, prediction and complexity is worth pondering by historians, but the crux is the problem of methodology. Two approaches are offered: “the comparative method and so-called natural experiments.” The comparative method is not unknown to social science; one looks for “the presence or absence (or in the strong or weak effect) of some putative causative factor.” ‘Natural experiments’ are used by epidemiologists who draw inferences about human diseases “by comparing groups of people (often by retrospective historical studies).” Ecologists also use this method “where direct experimental interventions to manipulate relevant ecological variables would be immoral, illegal, or impossible.” Examples from other historical sciences are possible; the model is recommended to historians. Historians have shown themselves to be eclectic in choosing how to elucidate what they focus on, and this suggestion, one may be confident, will not go unnoticed.

Diamond asserts that “Yali’s question goes to the heart of the current human condition, and of post-Pleistocene human history.” That is undeniable. Food production created ‘population explosions’ which soon were pushing one group into the territory of another with the result of extermination, or near extermination, of many peoples. Why then do we not find at this point a call for stabilization of population?

His intricate weaving of evidence from multiple sources was – one cannot doubt – done to counter racism that is still so prominent in the world. That is an admirable purpose. The motivation is apparent. With a few additional words, here and there, the book would be a condemnation of over-population (and of wars resulting therefrom) as well as of racism. For some reason, the author held back from stressing these conclusions. It is his call on what should be emphasized, as historians are well aware. The point here is not why he did or didn’t stress one or another conclusion, but is history, whether scientific or humanistic, to be a problem-solving discipline? The only problem that many, perhaps most, historians want to solve is what actually happened, insofar as that can be accomplished with extant evidence, in the selected time and area and within the relationships focused on.

The question is posed, then, should history be geared to problem-solving? This is what Diamond’s history is driven by, and this affects the form and the content. Beginning with New Guinea, for example, in a global history. This does not mean that the history thus organized is untrue. However skewed it may be, it is a legitimate way to organize the selected data. But it leaves room for history writing that does not attempt anything beyond explicating (as nearly as can be known) what has transpired in the past within the framework chosen by the historian. Problem-solving is an enterprise to be undertaken when an opportunity presents itself to a scholar who feels drawn to the task, but that can never be the beginning and end of historical research, and it is good that it should not.

Everything covered by Diamond was covered by other non-historian historians who did not direct their results toward any contemporary social problem. Scientists in a field different from that of Diamond’s surveyed the entire human history via analysis of as much genetic data as was available to them and put their own specialized information and interpretations alongside archaeological, linguistic, paleoanthropological, and other data.

This work was given a title that is descriptive rather than spectacular: *History and Geography of Human Genes*, (hereafter HGHG) by L.L. Cavalli-Sforza, Paolo Menozzi, and Alberto Piazza (1994. Princeton University Press).

They begin their "genetic history" (after an introduction of concepts and methods) with Africa, then take Asia, Europe, America, and Australia (subsuming New Guinea, and the Pacific islands) – the opposite of Diamond's order. Putting Africa first is adopting the chronological order for the beginning of developments, but after Asia the order becomes arbitrary: anatomically modern *Homo sapiens* were in Australia before they were in Europe. Diamond's map (p.37) "The spread of humans around the world" includes both archaic and modern forms, obscuring the lateness of Europe in this 'spread' of anatomically modern *H. sapiens*. He also is cautious in selecting 40 kya for Australia; HGHG puts it this way: "There is agreement on setting the date of first arrival at 40 kya or earlier, with direct evidence of settlement about 39 kya, on the extreme southeast, far from the areas of entry." And "thermoluminescence dates have indicated arrival in southern Australia at 50-60 kya."

HGGH organizes the data for each continent in this order: geography and environment; prehistory and history; linguistics; physical anthropology; genetic analysis. Sometimes these categories are broken down by regions, and particular attention is given to specific ethnic groupings. There is also an Epilogue, in which there is an appeal for the multidisciplinary approach, which their own work, drawing from many sciences, exemplifies so well.

HGGH is a scientific history without setting out to solve any social problem. The senior author, Cavalli-Sforza is as ready to counter racism as anyone may be. He does this in a chapter in a book written with his son. *The Great Human Diasporas*. (1995. Addison-Wesley). My admiration for Diamond's work makes this commentary on his epilogue an uncomfortable exercise. My point is that *Guns, Germs, and Steel* is a fine history, but as a history with an ulterior purpose is not appropriate as a model for writing history; HGHG would fit that purpose better. History may serve various purposes, or at least is used by writers for some immediate goal, but the discipline, as a whole is committed first to discovery. Only after that can the discovered past be discussed in terms of the present or the future; this is not to say that a condition in the present may not inspire a particular piece of research – it often does. But an archaeologist, for instance, doesn't know what will be found before the excavation begins (he may have good guesses, but is apt to be surprised), nor does an historian know what will be revealed when a search for references to a neglected topic is undertaken in a set of documents. Linguists have to reconstruct proto-vocabularies before anyone can say what artifacts the speakers of the ancient language used. And so on. The distinction between obtaining data and interpreting it must be kept clear. Facts don't exist by themselves; they have to be defined as such. Evidence is recognized only when a problem has been stated.

Book Review

Alondra Yvette Oubré. 1997. Instinct and Revelation: Reflections on the Origins of Numinous Perception. The World Futures General Evolution Studies, Volume 10. Gordon and Breach Publishers. Australia, Canada and Elsewhere. ISBN 90-5699-527-8.
Reviewed by C. John DiCara (El Paso, Texas)

(Numinous is from Latin numen "nod of the head; divine power". Its modern dictionary definition in English includes "supernatural, filled with a sense of a supernatural presence, spiritually elevated, sublime". Spacing in the original text has been compressed. <- Editor)

Using a barrellful of compound and complex sentences and polysyllabic words, Alondra Yvette Oubré takes the reader where she wants to be. She scans the ages, starting with the hominid landscape of four million years ago, until she reached 40,000 years in the Upper Paleolithic Period. At that time, "symbolic thought found solid grounding in hominid consciousness once human ancestors began to practice rituals." She suspects that numinous perception appeared among selected proto-shamans within the context of bio-cultural evolution.

The word "numinous" denoted the supernatural, and "numinous perception" describes an effect that is deeply spiritual or mystical. The author's goal is to present "an interdisciplinary model for understanding the origins of human consciousness in relation to incipient transcendental awareness." She examines cranial volumes in different cultural settings as well as such evidences of cultures as tool dependency and shelters. In this way she looks at the human lineage to speculate about the origins of the hominid brain and the self-generation of consciousness.

Her monograph illustrates that forces (biological, cultural, behavioral, and ecological) have provided innovation for human adaptation. Hominids, Oubré points out, constitute a peculiar lineage of creatures such that learned behavior has had a unique role in their evolution.

In the journey of millions of years to Homo sapiens sapiens, consciousness was developed as the result of natural selection and it, in turn, influenced the general course of hominid evolution and the development of the Homo sapiens sapiens brain. Later, the numinous perception evolved and, about 40,000 years ago, Oubré suggests, that adaptation was achieved, as evidenced by an enlargement of the cerebral cortex (encephalization). The enlargement was one of the developed mechanisms for facilitating evolutionary biocultural advances within the society of our ancestors. So equipped, the hominids were capable of transforming their perception, in proto-chanting ceremonies of a psycho-spiritual nature, to an inner world, yielding imaginary thoughts and prolific symbols that connected the subjective mind with an inner world source as well as the outer world.

The mother lode that is explored is consciousness. According to the neurosciences, we are told that the conscious state is to be found in the processes that take place in the frontal, temporal, and parietal areas of the human brains. The integration of information within these areas provides behavioral flexibility, a tremendous leap beyond rigid instinctual actions. Consciousness is more than intelligence,

since it envelopes mentation, affect and somatovisceral awareness.

Homo erectus, the ancestor who lived between 1.0 million and 0.3 million years ago, was qualified to be the first hominid to possess a more-than-ape like consciousness because of his capacity to use fire, as well as his Acheulean tool industry and the manufacture of clothing and tents. Anthropologists speculate that he possessed proto-language, including vocal calls in unison. Such calls integrated the brain areas associated with acoustical sensitivity and rhythmic motor strategy that could have selected through evolutionary biological adaptive terms for neural re-organization.

Oubré advises skeptics that a role for mystical revelations in evolution is credible in light of the knowledge about evolution of the hominid brain, the origins and nature of REM sleep, the biology of the unconscious, and transcendental perception at different levels of material culture.

The author tells the story in 200 pages, consisting of an introduction, five chapters and an epilogue. One hundred additional pages provide a glossary, chapter notes, references and the index.

The story builds in a timely manner after a very thorough introduction. As a novice, I learned a lot about the "facts and fanciful nature of human evolution" and the review of the "limits of biological anthropology as a science", all in Chapter 1. Chapter 2, "a primer of human evolution" also kept my interest very well. The book heats up with Chapter 3 on the evolution of the hominid brain and the interplay between brain and behavior in the process of such evolution, including biologically adaptive responses to behavioral innovations.

Chapters 4 and 5 staff out Oubré's central hypothesis that meta-physical awareness among proto-humans was linked indirectly to the biological development of the brain. First, she explores the plausible role of the numinous perception within the context of proto-human consciousness, and she concludes that over hundreds of millennia the brain accommodated ratiocination -- the capacity for thought of past, present, and the future -- and, then, accommodated the specialized variety of symbolic thought called numinous awareness. Chapter 5, entitled the Nectar of Chant, specifically focuses on the neurobiology of chanting that triggered neurophysiological changes that were conducive to the transcendental. For the loci of these changes, we are to look at the refinements of electrochemical and anatomical pathways coursing the major neuronal systems that link the limbic (emotional) one with the neo-cortical (cognitive) one. Thus, ancestors of humans experienced the world through cortical perception while simultaneously retaining instinctive behaviors that encouraged emotional catharsis.

In the epilogue, Oubré looks forward to the possibility of a genetically encoded transcendental consciousness in modern humans that would contribute to a good life and have survival value. Such an enlarged consciousness would heighten serenity and intergroup accord through the promotion of physiological and psychological health. She puts out the call to the scientific community to research this area for a new perspective on transcendence.

I am pleased that Oubré exposed me to biological, cultural, and physical anthropology, biochemistry, Darwinian evolution, holographs,

paleoneurobiology, zoopharmacognosy and systems theory. Yet, when I finished the manuscript, I felt a lack. In the introduction, she promised an epistemological inquiry, and, to me, that means a study of the nature of the numinous experience, as well as its origins. I found only a sentence or two on each of the following: Buddhism, Kundalinic yoga, Shamanism, and -- interestingly -- the Quaker religion. I would like to know what is the knowing that these disciplines seek as the epitome of moral and creative truth. The walking of the spiritual path is supposed to be worthy of a lifetime of effort, in meditation. Achievements of a transcendental state of awareness appear to go well towards stress management and self-healing. What scholars know of these should be worth sharing since Oubré tells us that mankind's future might be in the hands of an enlightened Homo sapiens sapiens transcendalis.

{Editor's note: while a long time member of ASLIP, DiCara's background differs from most of the rest of us. Formally trained in Economics, he served many years in the Foreign Service (U.S.) in cultures as unlike as Afghanistan, Germany, and Malaysia. Since leaving government, he has been particularly interested in religion and has spent much time trying to understand the 'insides' of the Quaker religion and various New Age sects. In his youth he pondered the mysteries of Catholicism.}

On the Origin of Diversity in Language: A/The Hopi Theory

Another contribution from El Paso. Sue DiCara suggests that the Hopi theory of languages may be useful, indeed fascinating, because of the striking resemblances to Judaic Biblical myths (theories), but without any clear evidence of borrowing from one to the other. I am indebted to her for a passage from Book of the Hopi by Frank Waters. In his Chapter 2, entitled "Tokpa: The Second World" we begin, thus:

"So the First People kept multiplying and spreading over the face of the land and were happy. Although they were of different colors and spoke different languages, they felt as one and understood one another without talking. It was the same with the birds and animals. They all suckled at the breast of their Mother Earth, who gave them her milk of grass, seeds, fruit, and corn, and they all felt as one, people and animals.

But gradually there were those who forgot the commands of Sótuknang and the Spider Woman to respect their Creator. More and more they used the vibratory centers of their bodies solely for earthly purposes, forgetting that their primary purpose was to carry out the plan of Creation.

There then came among them Lavaíhoya, the Talker. He came in the form of a bird called Mochni [bird like a mocking bird], and the more he kept talking the more he convinced them of the differences between them: the difference between people and animals, and the differences between the people themselves by reason of the colors of their skins, their speech, and belief in the plan of the Creator.

It was then that animals drew away from people. The guardian spirit of animals laid his hands on their hind legs just below the tail, making them wild and scatter from the people in fear. You can see this slightly oily spot today on deer and antelope -- on the sides of their back legs as they throw up their tails to run away.

In the same way, people began to divide and draw away from each other -- those of different races and languages, then those who

remembered the plan of Creation and those who did not.

There came among them a handsome one, Káto'ya, in the form of a snake with a big head. He led the people still farther away from one another and their pristine wisdom. They became suspicious of one another and accused one another wrongfully until they became fierce and warlike and began to fight one another.

All the time Mochni kept talking and Káto'ya became more beguiling. There was no rest, no peace.

But among all the people of different races and languages there were a few of every group who still lived by the laws of Creation. To them came Sótuknang. He came with the sound as of a mighty wind and suddenly appeared before them. He said, 'I have observed this state of affairs. It is not good. It is so bad I talked to my uncle, Taiowa, about it. We have decided this world must be destroyed and another one created so you people can start over again. You are the ones we have chosen'. --> They listened carefully to their instructions.

Said Sótuknang, 'You will go to a certain place. Your kópavi [vibratory center on top of the head] will lead you. This inner wisdom will give you the sight to see a certain cloud, which you will follow by day, and a certain star, which you will follow by night. Take nothing with you. Your journey will not end until the cloud stops and the star stops.'

So all over the world these chosen people suddenly disappeared from their homes and people and began following the cloud by day and the star by night. Many other people asked them where they were going and, when they were told, laughed at them. 'We don't see any cloud or any star either!' they said. This was because they had lost the inner vision of the kópavi on the crown of their head; the door was closed to them. Still there were a very few who went along anyway because they believed the people who did see the cloud and the star. This was all right.

After many days and nights the first people arrived at the certain place. Soon others came and asked, 'What are you doing here?' And they said, 'We were told by Sótuknang to come here.' The other people said, 'We too were led here by the vapor and the star!' They were all happy together because they were of the same mind and understanding even though they were of different races and languages.

When the last one arrived Sótuknang appeared. 'Well, you are all here, you people I have chosen to save from the destruction of this world. Now come with me.'

He led them to a big mound where the Ant People lived, stamped on the roof, and commanded the Ant People to open up their home. When an opening was made on top of the anthill, Sótuknang said to the people, 'Now you will enter this Ant kiva, where you will be safe when I destroy the world. While you are here I want you to learn a lesson from these Ant People. They are industrious. They gather food in the summer for the winter. They keep cool when it is hot and warm when it is cool. They live peacefully with one another. They obey the plan of Creation.

So the people went down to live with the Ant People. When they were all safe and settled, Taiowa commanded Sótuknang to destroy the world. Sótuknang destroyed it by fire because the Fire Clan had been its leaders. He rained fire upon it. He opened up the volcanoes. Fire came from above and below and all around until the earth, the waters, the air, all was one element, fire, and there was nothing left except the people safe inside the womb of the earth.

This was the end of Tokpela, the First World." (End of quoting)