

The Ṛgveda pre-dates the Sarasvati-Sindhu Culture.

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1. Introduction. All dates are BCE except where stated as CE (and after Authors in brackets). There are several important features of the Harappan (=Sarasvati-Sindhu) Culture absent in the *RV*(=Rgveda). These very features are found in post-rigvedic texts (Brāhmaṇa, Sūtra etc). Then, both the Brāhmaṇa explications of rigvedic brief allusions and the teachers lists in the Bṛhadāraṇyaka Upaniṣad suggest the passing of very many centuries from the composition of the *RV* hymns. These postrigvedic texts can be assigned to the end of the 4th millennium on astronomical considerations and the beginning of the 3rd. Finally, the palaeoastronomical examination of star and planet allusions in the *Mahābhārata* suggest dates c 3000 or little after. All such considerations suggest a *RV* of many centuries earlier. Thus, since the SSC (=Sarasvati-Sindhu Culture) arises c3000 and the *RV* knows nothing of its important features, then its composition must be placed several centuries earlier. Since the river Sarasvatī was flowing to the ocean only before 3200, and the *RV* knows it as such, then its bulk must be assigned at c3800-3500.

However, before we embark on the presentation of all these types of evidence and the reasoning supporting them, I must clarify three modern misconceptions regarding the terms *pur*, *ratha* and *samudra* which occur frequently in the *RV*.

2. *pur*. I have dealt very fully with this issue in my *Ṛgvedic Pur* (2003, 2006). Back in 1994 G. Erdosy had also dealt with the matter in his ‘The meaning of Ṛgvedic pur’ published in J.M. Kenoyer’s *From Sumer to Meluha* (Wisconsin Univ. Press). Here I shall present only some of the evidence. This word was used in post-rigvedic texts (and today!) very obviously in the sense of castle/fort/town; the same holds for *pura* as in *Hastinā-pura* or modern *jai-pur(-a)* etc. This is not so in the ancientmost Indoaryan text.

The word *pur* occurs in the *RV* (= *Rgveda*) more than 70 times, when compounds *pūrbhiḥ* and *puramdarā* are put aside. Mayrhofer (1956-) rightly questions a relation with *piparti* ¹ ‘füllt, fills’ but surprisingly makes no connection with *pipartī* ² ‘rettet, schützt / saves, protects’; the ancient *Dhātupāṭha* gives √*pr* *pālanapūraṇayoh* ‘in the sense of protecting and filling’, where obviously the first meaning connects with *pur*.

The word is recognized as cognate with Greek *polis*, Lithuanian *pilis* and Lettish *pils*, all three meaning ‘town, fort’. However, a careful examination of the use of *pur* in the *RV* (with the aid of A. Lubotsky’s *Concordance...* and the *Vedic Index*) shows that it has only the meaning of defence or protection. Take the example of Śuṣṇa’s ‘mobile’ *carīṣṇu pur*, VIII 1, 28. None of the structures mentioned above can fit here: no such structure in the Rigvedic material world is mobile and, in any case, this *pur* belongs to the demon of drought, a supernatural figure. (It was once suggested that *pur* might be a chariot, but *pur* is a defensive structure and not offensive like the chariot.) K. Geldner translates *wandelnde Burg* ‘mobile/mutable town/fort’ and adds in a note (28a) *die Zauberburg* ‘the magical Burg’ which seems correct (1951-7). He helps further by giving two references: (a) I 121, 10 is ambiguous because it speaks of light and darkness, of Śuṣṇa’s *ojas* ‘might’ and of his *phaliga* which has uncertain meaning but has been thought to be ‘cloud’ or ‘cave’; (b) V 31, 7 is unambiguous in that it lauds Indra’s strength shown in killing the serpent Ahi, in arresting Śuṣṇa’s *māyā* ‘magic, occult power’ and in driving away the Dasyus. Then, ṛṣi Agastya prays (I 166, 8) to

the Maruts (regarded as Storm-gods) to protect (*rakṣ-*) from evil (*agha*) and injury (*abhihruti*) the man they favour (*av-*) “with hundred-fold purs *śatābhujibhiḥ pūrbhiḥ*”: here too no physical structures with hundred walls or folds could possibly protect a man from evil (sin or impurity) and injury; no such many-walled structure existed (allowing for a hyperbole) and, in any case, the Maruts are not builders. Here, however, Geldner gives (1951-7) *Mit hundertfachen Burgen* ‘with 100fold Burgs (=towns/forts)’ – which means nothing. Of course it could be argued that the use here is metaphorical, but we shall find that in all instances the use is “metaphorical” and that *pur* rarely denotes unambiguously a material fortification and nowhere a town. Most frequently it denotes a supernatural, occult or magical protective force or field.

Some other occurrences of *pur* to which writers often refer (Bisht 1999/2000, Frawley 2002) are *RV* 6.48.8, 2.4.6, 4.27.1 and 1.189.2.

a) The first reference 6.48.8 is a prayer to god Agni to protect (*pāhi*) from anxiety (*aṃhas*) the one-who-kindles-the-fire with *śatām pūrbhiḥ* “a hundred purs” – whatever *pur* might be. Here the text *does not* say there are 100 ‘cities’ but that a specific type of person should be protected with 100 *purs*; obviously, as above, a fire-kindler can’t be protected from anxiety with 100 forts or cities!

b) The second reference (2.4.6) is to Indra crushing the 100 purs of Śambara, a much repeated motif in the *RV*. Śambara is not a native aboriginal king against whom the Aryans are fighting but is a fiend or demonic figure in a magical, *non-material* dimension of the world we know; his 100 (or 99) *purs*, prove nothing about the existence of actual Aryan cities.

c) The third reference is again to 100 *purs* but these are *āyasī*, i.e. of metal (copper, bronze ?), and surely the Vedic people had no metal-made cities. What is more, these 100 metallic *purs* are said to guard/confine/conceal (*rakṣ*) the celestial Eagle (or some such divine figure). There is no conceivable sense in which 100 cities could possibly do such a thing; here Geldner translates *hundert eherne Burgen* ‘100 bronze Burgs’ but connects them with demons (Dämonen, n 1c). (Further down, in note 2, he considers the possibility that these purs are within the womb *garbhe*.) Consequently all three references (and one could quote several more just as inapt) do not indicate that there were cities in the ordinary world of the *RV*.

d) However, in a fourth reference the *pur* is ‘wide, broad and extensive’ (in *RV* I 189,2). But in this hymn also the poet prays to Agni to lead him and his clan or people afresh and with prosperity (*svastibhiḥ*) beyond all difficulties and become (*bhāvā*) a *pur* “wide, broad and extensive” for them and their offspring (*tokāya tānayāya*). It is again inconceivable that Agni would become a “city”. Here, surely Agni will become divine protection – something quite unknown to us and to material considerations.¹

e) Ignoring W. Rau (1976) and Mayrhofer (1996), I advert briefly to the entry in the *VI* (=Vedic Index) (1912) which describes “strongholds of iron” (*āyasī pur*: very common) as

1. If one thinks the rigvedic people lived in towns and had forts, one should look for other kinds of evidence – though I think there is no indication of urban structures in the *RV*.

"probably only metaphorical". The entry concludes with reference to post-rigvedic "sieges of forts" and the fire used in a siege in *RV* 7.5.3. This last point is based on the AIT (=Aryan Invasion Theory). It is well established now that no Harappan towns had been sacked by allegedly invading Aryans. *RV* VII 5,3 says merely that the 'dark tribes' (*viśa ásiknīh*) fled in disarray for fear of Agni Vaiśvānara, the god (not ordinary fire, surely) who shone glowing while 'rending' (*darayan*, not 'burning down') their purs. The 'dark tribes' could be fiends or fears active at night and/or evil, demonic forces.

f) Interesting are some references to 'autumnal' *śārādī purs* but not many. In I 131,4 Indra overpowered unspecified "autumnal *purs*" known in former times. In I 174,2 he broke down the seven autumnal *purs*, shelter of tribes "with abusive speech *mṛdhrāvāc*". Here these tribes could be human beings. In VI 20,10 Indra again destroys seven autumnal *purs*, shelter of Dāsas. Here too the Dāsas may be said to be human beings. These may be instances where the *purs* could belong to humans. However, the recurring mystical number 7 and the destruction by a god introduce strong elements of doubt and suggest again the supernatural. Moreover, I wonder if we are entitled to translate this adjective *śārada-* as 'autumnal'. It would be more correct, perhaps, in these cases to translate as 'ancient/old/enduring', or 'annual' in the sense of being renewed every year. These are ancient or annual (and to us) supernatural means of protection.

In connection with the supernatural aspect, most interesting is the curious reference to Agni's metallic *purs* and particularly the one which is *satabhujī*, VII 15,14: obviously this fiery field with 100 folds or encirclements can only be magical or occult. One may argue that it is ordinary physical fire that destroys the *purs* of enemies but it is difficult to see how such a fire (or many fires) could repulse inimical armies. (Surely the enemies also could use fire as a weapon.) Fire would dispel the darkness of night or creatures of darkness like ghosts and fiends – or wild animals. Then, there are the prayers that Agni should guard people against distress and anxiety with his *purs* (I 58,8; VI 48,8), which would involve an esoteric psychological or spiritual type of protective means. The *śatābhujī pur* of the Maruts, I 166,8, is not very different, as was indicated earlier.sl 2

g) Just as interesting is the reference to *āmāsu pūrṣu parāḥ* wherein is protected the Offspring-of-Waters *Āpām Napāt* II 35,6. W. O' Flaherty translates this as "far away in fortresses of unbaked bricks" (1981:105) and one can't help but wonder where she found the "bricks", since the *RV* mentions them nowhere! I can only assume she follows Geldner who translates *In den rohen Burgen* 'in raw towns/forts', which means nothing, and who, to cover up the deficiency, adds in a note (6c) *nicht wie die gewöhnlichen Burgen aus gebrannten Ziegelsteinen gemacht* 'not like the usual Burgs made from baked bricks' (!) without telling us where in the *RV* we find 'usual Burgs made from baked bricks' (1951-7) – since there are no such constructions! Then O' Flaherty in an explanatory note mentions Agni, "safe... among enemies who do not control fire and so do not fire their bricks, or who (as the sun) is safe from his enemies... in his own 'natural' citadels not made of baked bricks, i.e. the clouds". The confusion here is almost unbelievable. Why and how exactly would Agni feel safe in such conditions and who are these "enemies"? Fire's biggest enemy is water; so fire dives and dwells in the waters protected within fortresses of unbaked bricks! Is this at all sensible? I don't think so. As for the sun, are not the clouds themselves his only traditional enemies? Neither unbaked-brick-fortresses (in water?!) nor physical enemies are involved here. *āmā-* here (and perhaps elsewhere) should mean 'non-artificial, natural'. Thus *Āpām Napāt* in his own non-artificial, natural, divine condition with his own occult, defensive

powers (*pūrṣu*) is protected against any malignity or niggardliness (*arāti*) and falsehood or unrighteousness (*anṛta*). If we had even one description of material forts/towers elsewhere in the *RV*, we could take *pūrṣu* here as being metaphorical towers (billows, perhaps).

h) Another interesting case is the *gómāti púr* in *RV* VIII, 6, 2. The phrase at first sight presents a difficulty since the adjective is usually translated as 'having kine'. But *go-* can mean 'wealth' by extension and certainly 'star, light'. So the phrase can just as plausibly be translated as 'protective-fold rich in light'. So this is ambiguous: it could be a pen with cows also but hardly a city.

3. Ratha. Here, the mainstream basic assumption that the rigvedic *ratha* was like the chariots of the NE or Europe in the 2nd millennium may be justifiable under the preconceptions of the AIT but it is not warranted by the testimony of the *Rigveda*. Although many references to *ratha* and its aspects in the *RV* are mythological and we cannot be certain that they apply to human physical realities, there are enough others to enable us to form a good picture. The many more realistic details in the later Vedic texts are too far removed in time to be of indubitable relevance. Many interpretations of rigvedic issues suffer from precisely this drawback: because of insufficient information in the *RV* scholars seek help from later texts and even from non-Indic material, always under the spell of the AIT. Such procedures have generated assumptions that are untrue and arguments that are circular (as those noted by Bryant, 2001: 117, 144, etc). Here I shall use only rigvedic evidence and such references from later texts as do not affect it; I shall ignore historical semantics since most such material comes from IE branches of late attestation.

M. Witzel refers at length to an Egyptian chariot of the 15th century (now in Florence) with parts of it made of elm, ash, oak and birch, all imported from places like south Russia, and weighing 30 kg (2000:6). He does not say here that this is like the rigvedic chariot but as he states elsewhere that the latter also weighs *c* 30 kg (2001: n 192), this is what he intends. This may be legitimate but utterly irrelevant and misleading since the rigvedic vehicle is made of *śalmali* (X 85, 20; also *kiṃsuka* ?) or *khadira* and *śiṃśapā* (III 53,19) and its axle of *aratu* (VIII 46, 27) - all these woods being native to India. We have no information at all about its weight.

Most of the evidence is collected in the *VI* (= *Vedic Index*) under *Anas* and *Ratha* and all other erudite studies add nothing - except confusion imported from other texts and/or non-Indic material. Under *Anas* it is said that the cart is "sometimes expressly contrasted with the chariot (*ratha*) for war or sport": the reference III 33,9 is given (but note that the phrase "for war or sport" is not of rigvedic origin but an imported notion that beclouds the matter). This hymn doesn't present any express contrast: it says simply (in stanzas 9 and 10) that Visvāmitra "has come from afar *ānasā ráthena*, ie "by means of *anas/ratha*" which may mean "by cart [and] chariot" or "by cart [which is] chariot" (or vice versa). One must wonder here why a priest of high order, a renowned *ṛṣi* who displays magical powers in stopping the onrush of the river-waters, would need a chariot "for sport or war". The *VI* corrects its first statement saying (now under *Ratha*) that "this distinction [between *anas* and *ratha*] is not absolute". Indeed, Uṣas has *ratha* in (late) I 48, 10 and (early) III 61, 2 but *anas* in (early) IV 30, 11 and (late) X 73, 7. Indra, the mighty warrior who is called arranger *ājīkṛt* and lord *ājīpati* of the race (or battle: VII 53, 6-14), is said to be *anar-viś* (in late I 121, 7) "seated on a cart" not chariot. The references are by no means exhausted but enough has been

said to show that, in fact, there is little if any distinction in *anas/ratha* : "of differences in the structure of the two we have no information " (*VI, Ratha*).

4. Here it is worthwhile to say a few words about the 'horse' *aśva*, also *atya*, *vājin*, *haya* etc. The assumption that these words denote the *equus caballus*, the usual horse we know, is quite unwarranted. The rigvedic horse has 34 ribs (1.62.18, a late hymn) not 36 as in the usual horses found in other IE regions. R.S. Sharma confirms this distinction (1995: 17). So the horse was not brought by in coming Indoaryans; it is indigenous.

The only race described in the *RV* is that of Mudgala-Mudgalānī in a late hymn, 10.102: here the animals are oxen! We find also asses pulling *rathas* in races as in 1.34.9, 1.116.2, 1.162.21, 3.53.5 etc etc. The two Aśvins who are in fact the 'horse-gods' have their vehicle drawn by asses *rāsabha* (1.34.9) or birds (1.118.4; 4.45.4; etc). Uṣas, the Dawn-goddess, has oxen (1.92; 5.80) as often as *aśvas* 'studs' (3.61; 7.75). Then, Pūṣan's car is drawn by goats (6.55)!

Thus in reality the horse (if *aśva* etc be 'horse') is not at all common and we don't find it in places where we would expect it as in the Aśvins' car.

The horse was not, I think, quite as common as is generally believed. Certain hymns mention, of course, large numbers of horses: VI 63, 10 has 100s and 1000s; VIII 46, 22 has 60,000! In VIII 55-3, 400 mares are mentioned in a *dānastuti* "praise of gift". What would anyone want with 400 or even 100 horses let alone thousands, unless they had a large force of cavalry ? Or they drank the mares' milk and ate horse meat. Or have we here hyperboles?.. Other hymns speak of very few horses: IV 32, 17; VI 45, 12; etc. Now, if there were plenty of horses why should a sage like Vāṁvadeva (IV, 32) be praying to Indra for horses (for his whole clan, the Gotamas)?... Perhaps, and I repeat perhaps, the horse was not so common in Saptasindhu as is usually thought. Elst (1999:181) and R Thapar (1996:21) suggest that the horse was "symbolic of nobility" thus giving social status. I would add that there is so much admiration and so much praying for horses precisely because it was not at all plentiful.

5. Measurements and dimensions of the chariot are given in the much later Śulba Sūtras, so I shall ignore them. But there is one passage in the *RV* that is helpful (perhaps more). In VI 61,13 the river Sarasvatī is likened to a chariot: *rātha iva brhatī*: "like a chariot tall/big/stately/bright". So if a large river is compared to a chariot for size (*brhat-*), the chariot cannot be a small and narrow contraption of 30 kg. (In III 33,2 a river is again compared or related to a chariot *rathyā+iva* but the size is not explicit here). This hint of large size is reinforced by the references that follow.

These vehicles, *anas* or *ratha*, were drawn by 1,2,3 or 4 animals. "Horses were normally used for chariots but the ass (*gardabha*) or mule (*aśvatari*) are also mentioned" (*VI, Ratha*) as indeed we saw above. What is surprising is that while in the Upanishads the cars are said to have two wheels, in the *RV* they have one wheel (I 53,9 & 164, 2; VI 54,3; VIII 63,2 where the sun is obviously meant), sometimes 3 wheels (e.g. that of the Ṛbhus in IV 36,1), sometimes 7 (II 40,3) - all obviously mythological. Once the car has 2 wheels and, all-golden, is that of the Aśvins (VIII 5,29, again mythological) but in six other instances this car is said to be 3-wheeled *tricakra*. These cars have another curious aspect in the *RV*: in III 6,9

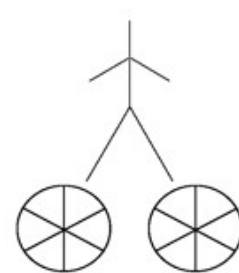
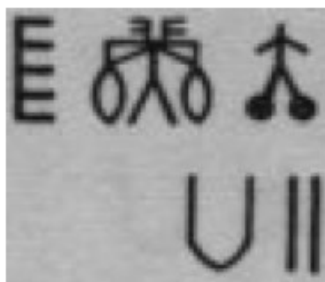
and VI 47,9 the *ratha* carries three and more on its *vāriṣṭhe ... vandhūre* : "widest seat/box". Then in (late) X 53, 7 we find a chariot *ratha* that has seating for 8 *aṣṭvāndhura*.

All these details (plus the fact that, as we saw in §1, above, the chariot is drawn by an ass or ass and horse) constitute the picture of a vehicle that is not at all like the (war) chariots appearing in the 2nd millenium in the NE. P Raulwing's admirably erudite study on the IE chariots and horses sheds not one ray of light on the rigvedic vehicles. The evidence for the development in the NE of the first light chariots for war (Littauer & Crouwel 1996) as against the Pontic Steppe (Anthony & Vinogradov 1995) seems fairly convincing. But neither the former nor the latter tell us anything useful about the *RV*.

6. Wheels. S. Piggott established the presence of a sophisticated type of vehicle with "one or two pairs of wheels with their axles... from the Rhine to the Indus by around 3000" (1992: 18).

Archaeological evidence does not consist only of the actual remains of buildings, weapons, tools, chariots etc. Pictures, reliefs, toys and figurines of these things are also evidence. Many years ago H. K. Sankalia had pointed out that the six-spoked wheel appears on seals and signs of the alphabet (1974: 363). S. R. Rao found at Lothal "terracotta wheels ... with diagonal lines suggesting spokes" (1973: 124). This representational practice seems to have been widespread, for S. Piggott mentions similarly marked wheels found in the Karpathian Basin from the Earlier Bronze Age (1983: 91-92). In his recent study, Lal presents four terracotta wheels (from Mature Harappan sites Banawali, Kalibangan, Rakhi-garhi) with spokes painted on (2002:74, Figs 3.28ff). The Harappans had the technology for making spoke-wheels (Kazanas 1999:33; Basham 1954:21).

Finally, it was A. Parpola, an inveterate adherent of the AIT, who identified the figure on Harappan seal No 3357 as representing simplistically a man with outstretched arms standing on two six-spoked wheels (of a chariot) realizing that this was "a later invention of the Aryans" (1969: 24). The later notion that it is a potter on two wheels is obviously far-fetched and, in any case, the wheel is spoked (Sethna 1992)! L. S. Rao has recently presented many more finds of models of terracotta toy wheels with spokes from Harappan locations in *Purā-tattva*, vol 36 (pp 59-66), 2006.



Spoked Wheel

The question of course is whether there were spoked wheels before 3000 since the *RV* uses the word *ara* which is usually translated as 'spoke' (1.32.15; 5.58.5; etc). We don't

know. Some Indian scholars approach the issue strategically and say that Rigvedic hymns with *ara* are later intrusions from the second millennium when the spoked wheel was quite common. This is possible of course, since we know that some hymns are later interpolations. However, there could have been spoked wheels as we know them even at c3200 and before. But then again, *ara* need not mean 'spoke'. It could mean a section of the (solid) wheel. After all, different IE branches have a different stem for spoke (Gk *aktis*, *knēmē*; L *radius*; Gmc *speca/speihha*, etc) which suggests that spokes were developed after the dispersal (in the 6th or 8th millennium, or whichever). So *ara* could well have meant something other than spoke and only later acquired the meaning of 'spoke', as we know it now. The spoked wheel poses, in fact, no problem for dating the *RV*.

7. Samudra. This word means literally 'confluence/mass of water' *sam+ud-ra*. M. Mayrhofer (1956-96) gives *Ozean* 'ocean', *Flut* 'flood' and *Meer* 'sea' (for the *RV*) and also 'a large river formed by the confluence/combination (*Vereinigung*) of two or more rivers'. Certainly in some cases in the *RV* *samudra* denotes a confluence. Equally certainly, in other cases it denotes ocean/sea.

It is well established that the Harappans knew the ocean and had maritime trade with Mesopotamia since the late third millennium if not earlier (Saggs 1989: 130; Crawford 1994: 148; Lal 1997: 182-8). They had large ports like Lothal and perhaps Dholavira (on an island) and Dvaraka (later) and obviously large ocean-faring ships and smaller craft, sailing up and down the Indus and the other rivers. Surely, even in the AIT frame, it is not likely in all those decades and centuries that the Aryans never heard from the natives about the expanse of the ocean in the south and the former trade. Then, the Aryans themselves were intrepid adventurers who had trekked 100s of miles over rough and dangerous regions and had conquered the Saptasindhu. Surely it is not likely that nobody thought of travelling by chariot to the south, or by boat down the Indus and so gain first-hand knowledge of the ocean. And if a few did this, then more would follow and, in any case, knowledge of the ocean would spread among the Indoaryans, including some of the composers of the hymns.

Thus common sense compels us to accept that the Indoaryans had knowledge of the ocean/sea even in the AIT scenario. With its customary caution the *Vedic Index*, which does not at all promote indigenism or an early *Rgveda*, but adheres to the AIT, states "knowledge of the ocean... was almost inevitable to people who knew the Indus" (vol 2, 432). Why modern scholars abandon common sense is a mystery.

We should note that the recent claims about *samudra* denoting various water-masses other than the ocean are not new nor more "scientific". The *Vedic Index* (1912) mentions some scholars who rejected totally the meaning 'ocean', others who accepted it in few and others in many cases. It cites Zimmer who thought *samudra* "denotes the river Indus when it receives all its Panjab tributaries" and gives numerous references (see example no 10, end). But it adds "even Zimmer who is inclined to restrict [the Vedic Indians'] knowledge of the sea as far as possible admits it in one passage of the Rigveda and of course later" (*Vedic Index II* 431). Zimmer's one exception is VII 95, 2, (*Vedic Index II* 432), Sarasvati flowing *giribhya ā samudrāt* 'from the mountains to the ocean' (which Witzel takes as 'terminal lake')! K. Klaus (1989: 365) also in his study agrees with Zimmer and accepts that in this passage *samudra* may denote *Meer* 'sea'. On the other hand, in some instances *samudra*

can denote 'confluence' (*RV* III 33, 2) and in others primeval celestial 'ocean' (*X* 190, 1-2), while in yet others earthly 'ocean/sea'. Let us now pass to some examples in the *RV*.

a) 1.116.4. 'For three nights and three days' *tisráḥ kṣāpas trír áha-* o Áśvins, you carried Bhujyu *samudrásyā dhánvan ādrásyā pāré* 'to the distant dry-shore of the watery samudra'. Here, in this allusion to the oft-mentioned rescue of Bhujyu by the Áśvins, the twin gods need three nights and days to ferry Bhujyu across samudra in the flying car. The key here is three nights and days. No confluence or lake could be so large as to require so much time to be crossed over by the Áśvins. Only the vast expanse of the ocean will do here. K. Klaus refers to this passage but mentions only the aspect of moisture (*feucht*) and ignores all else (Klaus 1989: 366, n12). The tale may be pure myth but this does not invalidate the long duration of the Áśvins' flight to the dry sandshore *dhánvan* and the enormous expanse of the samudra. Consequently, in the other allusions to this incident (1.118.6; 6.62.6; 7.69.7; etc) also samudra denotes 'ocean'. And since we know that Bhujyn was a human being tossed about in a tempest, the ocean was not the heavenly one – which is also mentioned in other instances.

b) 5.55.5 *úd īrayathā marutaḥ samudrató yuyám vṛṣṭim varṣayatha* 'O Maruts, you raise up rain from the samudra [and] cause-rainfall'. Here there is plainly an upward (*ud*) movement of water/moisture/vapour and then rainfall caused by the storm-gods. The upward movement excludes an atmospheric/heavenly ocean; so *samudra* must be a terrestrial water-mass. Since it is singular it must be only one. Therefore it cannot denote river-confluence or lake since there are many of them; if it were so it would have been in the plural or it would have had the adjectival *sarva* – 'every, all'. Rivers and confluences are waters in motion and therefore not amenable to evaporation. Nor would lakes be so large as to provide sufficient vapour for the rain of the Stormgods. This leaves only the ocean which is a large enough stationary watermass. Then again, the *ṛgvedic* seers must have known that evaporation occurs more in hot conditions rather than cold and that in the south it was hotter. So they obviously referred to the vast ocean that lay far south of Saptasindhu (Ignoring all these aspects Klaus takes this as a reference to the river Indus: 1989: 370!).

c) 7.6.7: Agni Vaiśvanara received treasures at the rising of the sun *ā samudrāt ávarad āpárasmād ... divá ā prthivyāḥ* 'from the samudra lower and upper, from sky and from earth'. Here we have a lower and an upper samudra, then sky and earth in a chiasmus figure (ad - bc: *avara samudra* with *prthivī* and *para samudra* with *dyu-*). Since the upper one is the heavenly ocean, well-known from many passages, and since neither the Indus river nor a confluence of streams would provide the contrast demanded by the poetic figure, the lower one can only be, by explicit contrast, the ocean on earth *prthivī*.

Other instances could be cited and analysed: 1.32.1-2; 1.56.2; 2.35.3; 5.33.2; 5.78.8; 8.20.25, etc. They all denote the ocean unequivocally.

A final example.

d) 10.98.5 *sá úttarasmād ádharam samudrám apó divyā asṛjad:* 'from the upper to **the lower samudra** he [Ṛṣi Devāpī] released the celestial waters'. Since it can't be a confluence, surely it must be the terrestrial ocean here.

When *RV* 7.95.2 states that the river Sarasvatī flows 'pure in her course from the mountains to the *samudra*', it refers to the ocean, as we shall see below in § 12 . Let us now turn to our main subject which is the precedence of the *Ṛgveda* over the *SSC*.

8. Features of SSC not in the *RV*. The Harappan or Sarasvati-Sindhu Culture has certain characteristics which help to define its uniqueness. A number of these features are absent from the *RV* and this absence indicates that the *RV* is pre-Harappan. Arguments *e silentio* are not decisive since absence of evidence is not always evidence of real absence. But in this case the features are far too many. (Some of these were noted by Sethna, 1992.)

a) *iṣṭakā* ‘brick’. The *RV* mentions as building materials metal, stone, mud and wood but not ‘brick’, which was the basic material in Harappan constructions. This is found in post-Rigvedic texts: the word *iṣṭakā* is not in the *RV*. Archaeologists write of the early Harappan or Ravi phase (ie 3300-2800): “These early settlers built huts made of wood with wattle-and-daub” (K. Kenoyer and R. H. Meadow 2008:125). This is the common habitation in the whole of the *RV*. Brick-walls came later, as Kenoyer pointed out much earlier: these appear after this early phase, ie after 2800 (Kenoyer 1997/2000:56). The dates 3300-2800 BCE are different from those given by S. P. Gupta who places this early phase c 3700 and before and calls it Hakra-Ravi (2007:223).

b) Fixed altars or hearths are unknown in the *RV* but common in the SSC cities. The Rigvedic altar is a shallow bed dug in the ground and covered with grass (e.g. *RV* 5.11.2, 7.43.2-3; Parpola 1988: 225). Fixed brick-altars are very common in post-Rigvedic texts.

c) No cotton *Karpāsa* appears in the *RV* although this plant was extensively cultivated in the SSC and the fabric was exported as far as Egypt in the middle of the 3rd millennium while the Mesopotamians adopted the name as *kapazum* (? from prākṛta *kapāsa*). The *RV* has ‘skin’ *eta* (1.166.10; *ajina* in *AV* 5.21.7 etc), ‘wool’ *avi* (*RV* 9.78.1) and *śāmulya* (10.85.29) and numerous terms for clothing and weaving but no mention of cotton. Be it noted that *karpāsa* is the only word for cotton in Sanskrit. It is found first in the sūtra texts, in Gautama's (1.18) and in Baudhāyana's (16.13.10) *Dharmasūtra*. Now, although cotton seeds were found at Mehrgarh period II, c5000, none were found in subsequent periods. Cotton cultivation appears only in the Mature SSC, after 2600. Thus these sūtra-texts can be placed at this period at the earliest, i.e. c2600.

d) Silver *rajata* also makes no appearance in the *RV* though gold and copper are well attested and silver is plentiful in the SSC. The word *rajata* occurs in *RV* 8.25.22 and it denotes a steed or a chariot ‘shining white’. Only in later texts is it used singly (*AV* 5.28.1) or with *hiranya* to denote ‘silver’ or ‘white gold’ = ‘silver’ (see *Vedic Index* 2: 196-7 and Lubotsky 2: 1169).

e) Urbanization is wholly absent in the *RV*. There certainly was “nomad pastoralism” as mainstreamers emphasize repeatedly but there were also agricultural settlements (a fact which mainstreamers underplay or do not mention). The hymn to Kṣetrapati ‘Lord of the Field/Soil’ (4.57) alone should suffice but also the girl Apālā refers to her father’s *urvarā* ‘fertile field’ (8.91.5); then there are many cultivation implements *khanitra* ‘shovel’, *lāṅ-gala/sīra* ‘plough’, *śṛṇī* ‘sickle’, etc. Moreover, there is weaving with loom, shuttle, warp and woof (*RV* 1.134.4; 1.3.6; etc, etc) and metallurgy with smithies of sorts (4.2.17; 5.9.5; etc). Such activities imply settlement.

Some writers think the Rigvedic and Harappan cultures converge (Gupta 2005, Bisht 1999, Lal 1998, Singh 1995). As evidence is cited the word *pur-* which denotes ‘city, citadel, fort, town’ as its Greek and Baltic cognates ‘*polis*’ and ‘*pil(i)s*’ do. This is a very

general misconception. In the *RV pur* never means anything other than an occult, magical, esoteric defence or stronghold which is not created nor ever destroyed by humans as we saw earlier (§2, above). The SSC cities had regular blocks, large buildings, also domestic and urban water-supply (McIntosh 2001: 100-101): the *RV* knows nothing of all these. There are references to *oka*, *gr̥ha*, *dama*, *dhāma* etc, all of which can denote any type of 'home/house' (made of wood and mud), or the thousand-pillared mansion of kings Mitra and Varuṇa in the sky (2.41.5; 5.62.6: probably suggested by sunrays streaming down through clouds; for not even SSC cities had such mansions!). These most certainly do not indicate any urbanization: neither brick- nor stone-walls are mentioned nor other features as in the SSC towns.

The words for 'council' *sabhā* and *samiti* are also cited but, surely, any community can have a council of elders without urbanization. Allusions in the *RV* to chiefs/kings *rājā* and overlords/emperors *samrāt* also do not show urbanization since such offices can just as easily exist in rural communities. (The Red Indians in North America, nomadic and rural tribes, had local chiefs and overlords.) Pathways and/or roads (*path-*) also have been mentioned as crossing or branching out, but these too can be just as easily seen in a rural context. (For all these claims see Singh 1995; Bisht 1999 and Lal 2002, 2005.)

f) Many cities were abandoned and fell to ruination after 1900 BC when the Harappans began to move eastward because of the drying up of the Sarasvatī and of the more general desiccation due to tectonic disturbances and climatic changes. The *RV* knows nothing of such ruins even though, according to the AIT, the IAs moved through these regions c 1700-1500 (in small waves, settled there, in the midst of deserts, and wrote the hymns which praise the mighty Sarasvatī!). Some attempts have been made to read hymn 1.133 with its *arma-ka* (=of unknown meaning, really) as a description of a ruined city (e.g. Burrow 1963, Rao 1991:32) but, in fact, the hymn mentions no ruined buildings, no fallen walls and no materials such as wood, stone or bricks! It is a ghostly scene of frightful desolation, peopled only with unfriendly she-fiends and demons (*yātumati*, *piśāci* and *rakṣas*). In sharp contrast the Old English poem *The Ruin* contains such persuasive details of the ancient remains (from Roman times?) that some scholars think it refers to the town of Bath (Mitchell & Robinson 1996:252-5).

g) **Literacy is not known in the *RV*.** Some writers claim that a verse in *RV* 10.71.4 refers to writing (e.g. Kak 2003): *utā tvaḥ páśyan na dadarśa vācam utā tvaḥ śṛṇvān na sṛṇoty enām* 'someone though seeing has not seen Vāk, someone though hearing has not heard her'. Here Vāk is the goddess as the subsequent hemistich makes it clear "To someone she has shown her beauty as to her husband a loving well-dressed wife". Vāk is always Speech and only much later do we find other terms to cover language and writing: the first line of the hymn confirms this since Bṛhaspati sent forth *vācāḥ* 'utterances, words' and gave names. Verse four says figuratively that some people do not appreciate the essence (=force, real meaning) of Vāk and that she reveals this to those very close to herself. Then, verse three says that 'seven singers (*rebhāḥ*) praise her in harmony (*sám-navante*)': here we have an explicit statement and no hint at all of any writing or reading. D. Frawley thought that a passage in *AV* 19.72 may refer to writing: 'From whichever receptacle *kośāt* we have taken the Veda, into that we put it down'. Books in ancient India consisted in collections of palm-leaves or strips of birch-bark and were kept in boxes (1991: 249). Whether this is enough to establish knowledge of writing is doubtful. The word *veda* is 'knowledge' generally and not

necessarily one of the three Vedas which in any case were transmitted orally. The word *kośa* could refer to some (metaphorical) non-material storing-place, e.g. memory, lower mind (*manas*), higher mind (*-cetas*, *bodha*, both in *AV*) etc.

In any case there is no other passage even remotely hinting at writing. Words like *likh-*, *lekha(-na)* and mainly *lipi* denoting 'writing' are not in use before the *sūtra* texts (see also H. Falk 1992). The vast corpus of *Brāhmaṇa*, *Aranyaka* and *Upaniṣad* texts have not a single hint about writing and so create an enormous gap between the *AV* and the *sūtra* period. Someone would have made a reference to writing somewhere in all these texts! Any mention of the alphabet, syllables, words or language, when scrutinized, is seen to refer to sound(s) and oral speech: the *Prātiśākhya*s deal with pronunciation (and sandhi, of course) and contain no hint of writing. So writing was known in the SSC and the *sūtras* but not in the *RV*.

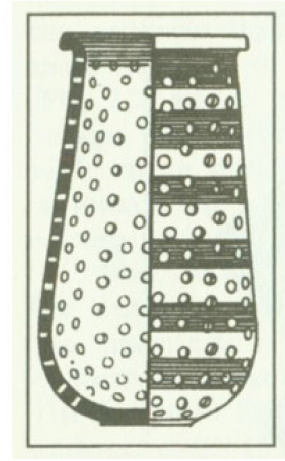
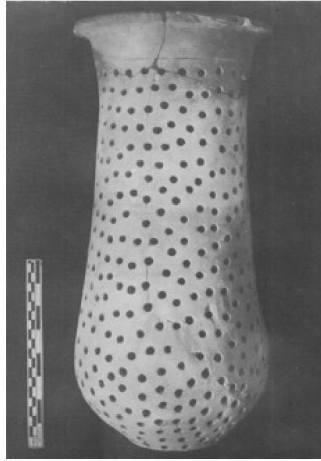
h) Rice *vrīhi* too is absent from the *RV* although it appears in various sites of the SSC from at least 2300 (and in the Ganges Valley from the 6th millennium)². The *RV* knows only *yava* 'barley'. Rice becomes important in post-Rigvedic ritual and the more general diet. Some writers argue that the *RV* has food-preparations of rice like *apūpa*, *puroḷās* and *odana* (Talageri 2000:126-7). This is possible of course. All three are in post-rigvedic tradition said to be rice-preparations (though *apūpa* is given as flour-cake in most texts and 'wheat' in Lexica). But *odana* is primarily a water or fluid preparation (root *-ud*) and *odatī* 'refreshing, dewy' is an epithet of Uṣas, the Dawngoddess. Since *vrīhi* 'rice' does not appear in *RV* (but does appear in *AV*) and rigvedic *yava* is from the earliest tradition accepted as 'barley', I take it that the rigvedic people had barley and not rice. (The *puroḷās* preparation is of uncertain constitution – until much later texts).

i) The *RV* has no allusions to artistic iconography – paintings, relief representations, statue(-tte)s or seals, all so common in the SSC. (The *RV* 4.24.10 asks “Who will buy this my Indra” and this is thought by some to refer to a statuette, but this could be a transfer of favour and it is the only reference in the whole *RV* without the use of any word for statue or icon.)

j) We must also take into account that many iconographic motifs, Harappan artefacts, decorations or seals, show affinity with elements found in post-Rigvedic texts. Thus PK Agrawala (2005) draws attention to round-bottomed perforated pots from Harappan sites and a vessel (*kumbha*) with nine holes (*navavitṛṇṇa*) or 100 holes (*śatavitṛṇṇa*) mentioned in *Śatapatha Br* 5.5.4.27 and *śatatrṇṇā kumbhī* 'a pitcher with 100 perforations' in 12.7.2.13. These and other similar descriptions echo the White Yajurveda (*Vājasaneyī Saṃhitā*) verse 19: 87 'a pitcher with 100 streams'. Such vessels were used for ritual sprinkling. A second parallel is furnished by the two-horned bovine-like animal, duplicated and

2. Private communication from the late S.P. Gupta, Chairman of Indian Archaeological Society (June 2006). See also Sharma 1980 for rice in the Ganges basin in the 5th millennium and R. Tewari et al in *Purātattva* 2006 (vol 36: 68-75) for rice, again in the Ganga basin, north-east, in the district Sant Kabir Nagar (UP) in 7th millennium. These locations are too far from Vedic Saptasindhu but it seems likely that by 3000 the composers of the *AV* had become acquainted with rice *vrīhi* and later this grain was cultivated in the SSC too.

facing itself, on a Mohenjodaro seal with long necks and the pipal tree growing out of their juncture. This corresponds (writes Agrawala) to the two-headed cattle *dvāyā* in *AV* 5.19.7. Some see in this the precursor of OM (Rajaram 2005). Agrawala mentions other parallels of a two-headed tiger and a two-headed bird (2005: 10 - 13). Thus it is indeed the later Vedic texts that have parallels with the Harappan arts and crafts, not the *RV*.



Pot with 100 perforations: *Śatapatha Br* 12.7.2.13.
No such perforated jars in *RV*.



dvāyā in *Atharvaveda* 5.19.7 / symbol of OM ?

9. Some Brāhmaṇas comment on or give explanations of incidents in the Rigvedic hymns. For example, the *Aitareya Br* 7.13.33 narrates extensively the story of *Śunahśepa*, alluded to briefly in *RV* 1.24.12-13 and 5.2.7, while the *Śatapatha Br* 11.5.1 comments on the Pururavas and Urvaśī love story given elliptically in dialogue form in *RV* 10.95. Another point to note. Some legends in the *RV* remain unexplained. For instance, who was Bhujyu whom the Aśvins saved from a tempest (1.116.3-4; etc) and how did he find himself in that predicament? The later texts say nothing more. Or, take the birth of Indra; was he an unwelcome child to Aditi and did he commit parricide (4.18.1ff; etc)? Again, the Brāhmaṇas tell us nothing. Obviously such exegetical texts would not be composed until the understanding regarding the older texts has lapsed: this implies many centuries.

What is the date of the Brāhmaṇas? Well, S. Kak ascribes the *Śatapatha* to the early third millennium (1997, 1994) saying that the Pleiades/Kṛttikas not swerving from the east, as is stated in this *Brāhmaṇa* (2.1.2.3), could only occur c2950 BCE. Narahari Achar (Prof. Astrophysics, Memphis, USA) using computer and planetarium apparatus arrived at a date c 3000 pointing out that S. B. Dikshit had arrived at similar conclusions 100 years earlier but was ignored by Western scholars (1999): these scholars really had no knowledge of astronomy.

So we could again place the *RV* easily before 3000.

10. The Bṛhadāraṇyaka Upaniṣat has three vaṁśas, i.e. list of teachers, each comprising 65-70 names. The first 4 or 5 are names of gods in the normal Indic way which ascribes the beginning of every human activity to some deity. Let us take the mainstream date of early sixth century for this text (say 550) according to the AIT premises and let us take 60 teachers giving to each one an average of 15 years, though 20 and 30 would be more realistic. This exercise is already tilted very heavily in favour of the AIT and mainstream views because, in truth, in this text we read “I ask about that upanishadic Person (*aupaniṣadam puruṣam prcchāmi* 3.9.26) which indicates that there was a traditional upanishadic teaching about Puruṣa as a spiritual being (=Self) and this aspect we meet in the *Atharvaveda*. However, let us bypass this point. These calculations ($60 \times 15 = 900$ plus 550) give us a date c1450 for the inception of the doctrines in this Upaniṣat. The chief doctrine is that the self of man (*ātman*) is the same in all beings and the same as the Self of the universe (*brahman* ‘Mystic Spirit’ or ‘Absolute’). We should also bear in mind that the teachers’ names are quite different from those of the seers of the *RV* hymns as given by the native tradition. Following others, M. Witzel thinks these lists “rest on typically weak foundations” (2001, §19) but this is a typically weak subterfuge because the results of calculating the number of years prove how unrealistic the AIT chronologies are! Let us see, then.

The Upanishadic doctrine of the identity of the individual self and the universal self, in the formulations *ayam ātmā brahma* and *ahaṁ brahmāsmi* ‘the Self is the Absolute’ and ‘I am the Absolute’, should be known, then, c1500 or 1300 or 1200, when, according to the AIT, the *RV* was composed. Yet, for undetermined reasons, quite surprisingly, this doctrine is totally unknown in the *RV* in these terms (although enunciated differently) and begins hesitantly to appear in the *AV* (e.g. 10.2.32-3; 11.4.23; etc). Consequently, the *AV* should be placed at least c 1600 and the *RV* c 1800, always following the AIT assumptions. But the *RV* is composed, even according to Witzel (2005: 90), in Saptasindhu, yet the IAs do not appear

in this area before, at the very earliest, 1700, and the *RV* gets composed after several centuries!

This is one of the comical paradoxes that the mainstream chronology refuses obdurately to resolve. Yet, on the grounds given in §§8-9 above, we saw that the *RV* should be assigned to the 4th millennium, say around 3600. Now subtracting two hundred years for the *AV* hymns and the start of the Upanishadic doctrine and a further 900 or 1000 years (for the teachers) we should place the early Upaniṣads at the start of the period of the Mature Harappan, i.e. 2500 (with the *ātma-brahman* doctrine having come down orally) and the Sūtra texts immediately after. These dates satisfy yet another requirement. The word for cotton *karpāsa* is first used in the Sūtra texts as we saw in §8,c above and the cultivation of the plant (although seeds of it were found in much earlier periods) gets well established c 2500. All these dates are, of course, approximate.

11. Astrophysicist Achar pursued his **palaeoastronomical research** into the *Mahābhārata* epic also, examining astronomical references in Books 3, 5 and 18. His sky map showed that all these converge in the year 3067. (Achar 2003; see also Kazanas 2002: 295-7). Achar acknowledged that, in 1969, S. Raghavan had arrived at the same date. Now, it is obvious that the *Mbh* had acquired many accretions over many centuries and that it was streamlined stylistically perhaps first in the 2nd millennium and finally at about the start of the Common Era. It is obvious that it contains much late material like 2.28.48-9, which mentions Rome and Antiochia (*romā* and *antakhī*): this could not be earlier than 300 BCE since Antioch was founded in 301. On the other hand, the frequent use of the bow and, moreso, the use by Bhīma of a (tree trunk as a) club show much more primitive conditions.

Thus the war took place in 3067 and the core of the *MBh* in poems and songs was laid down in that year. This and the native traditional view that the Kali Yuga came at 3102 are both correct, according to Achar. He pointed out that the Kali Yuga had no full force until the death of Kṛṣṇa which occurred 35 years after 3067, at 3032 (private communication June 2006); but immorality had set in already, as is shown by the unjust behaviour of the Kauravas and some reprehensible acts during the war itself. Surely no bards (compilers or redactors) in the 3rd cent CE or the 3rd cent BCE could possibly know the star and planet positions relative to the *nakṣatras* or the zodiac signs of the year 3067. The astronomical references examined by Achar (and Raghavan) are so numerous that chance coincidence has to be discarded (Achar 2003). However, that the war took place in 3137 and bards began to sing of these events two generations later should not be precluded. Personally, I still tend towards the traditional view of the War taking place in 3137. The Megasthenes report (from c300 BCE) of the ancient kings from 6000+, surviving in Arrian and other classical writers, supports these long periods of the past (Kazanas 2003). Then, deterioration in behaviour would have started in the *sandhyā* transitional period before the onset of the Kali Yuga – when also the Kṣatriyas passed away. Here a question remains: how did the astronomers (and Āryabhaṭa especially) determine the date for Kali Yuga as 3102?

12. The Sarasvatī river furnishes useful literary and archaeological evidence for dating the *RV*. It is a mighty river extolled in all Books of the *RV* except the fourth. It is *nadītamā*, *ambitamā*, *devitamā* ‘best river, best mother, best goddess’ (2.41.16); it is swollen and fed by three or more rivers *pīnvamānā sindhubhiḥ* (6.52.6); it is endless, swift moving, roaring, most dear among her sister rivers; together with her divine aspect, it nourishes the Indoaryan

tribes (6.61.8-13). In 7.95.2 the river is said to flow pure in her course “from the mountains to the ocean” *giribhyaḥ ā samudrāt*. Then 7.96.2 and 10.177 pray to the rivergoddess for sustenance and good fortune while 10.64.9 calls upon her (and Sarayu and Indus) as “great” and “nourishing”. Clearly then, we have here, even in the late Bk 10, a great river flowing from the Himalayas to the ocean in the south, fed and swollen by other rivers and sustaining the tribes of the IAs on its banks – not a river known in the past or in some other region, or a river now considerably shrunk (Witzel 2001)³.

Some scholars claim that here *samudra* does not mean ‘ocean’ but confluence and especially the place where a tributary flowed into the Indus (e.g. Klaus 1989 and Witzel 2001). The last point can be discarded since there is not the slightest hint elsewhere that the Sarasvati flowed into the Indus – in which case the Indus and not Sarasvati would have been lauded as the best river (2.41.16) We can also aver with full certitude (as the *Vedic Index* does under *Samudra*) that the rig-vedic people knew the ocean (see §4, above; also Prabhakar 1994). The meaning ‘terminal lake(s)’ adopted by Witzel is entirely fanciful. In his Dictionary M. Mayrhofer gives for *samudra* only ‘confluence’ and ‘ocean/sea’ (1996 *EWA*). And the Vedic poet would certainly have used (not *ā samudrāt* but) *ā sārrobhyaḥ* ‘to the terminal lakes’ maintaining his – ॐ – cadence. This phrase would then have indicated clearly the alleged fanciful etymological connection of the name *Saras-vatī* ‘she who has (terminal) lakes’. The name means rather ‘she who has swirls and currents’, since the primary sense of \sqrt{sr} (>*saras*) is ‘movement’ (*gatau*) or ‘flowing, leaping, rushing’.

Please, consider also that the Vedic **-s-** is inherited from PIE, according to all IEnists, whereas Avestan **-h-** is a devolved, not PIE, sound. Vedic \sqrt{sr} has many primary and secondary cognates like *sara*, *sarit* etc. Now Avestan has no cognates for \sqrt{sr} and its products, and the Avestan noun for lake is *vairi-* while *vār-* is ‘rain(-water)’=S *vāri* (?). The stem *hara-* (cognate with Vedic *saras*) occurs only in the river name *Hara^xvaiti*. Consequently, it is the Iranians that moved away from the Indoaryans as, indeed, is shown by their memory of having lived in a location they called *Haptahəndu* = Saptasindhu. The root *sr* has cognates in other IE branches, Gk *hial-*, Latin *sal-*, Toch *sal-* etc as is shown by Rix H., 1998. Now, it would be ludicrous to claim that the IAs left the common Indo-Iranian habitat, as per the AIt, moved into Saptasindhu and turning the *Hara^xvaiti* name into *Sarasvatī* gave it to a river there to remember their past while they proceeded to generate the root *sr* and its derivatives to accord with other IE languages. Occam’s razor, which here is conveniently ignored by AIT adherents, commands the opposite: that the Iranians moved away, lost the root *sr* and derivatives but retained the memory of the *Sarasvatī* river in its devolved form *Hara^xvaiti* and gave it to a river in their new habitat. This, together with the fact that, like Greek, Avestan has no obvious system of roots and derivatives (as Sanskrit has), should be enough to question if not refute various IEnists’ claims that Avestan retains older forms of nouns and verbs and that therefore the Indoaryans were with the Iranians in Iran in the common Indo-Iranian period – before moving to Saptasindhu. One should also

3. The mainstream view (Witzel's really) that the Vedic river is merely a memory of the Iranian *Hara^xvaiti* which belongs to the common Indo-Iranian period, when the Iranoaryans lived together in Iran before the IAs moved further southeast (according to the AIT), is no more than modern myth-making. Mainstreamers often invoke Occam’s razor (i.e. that the simpler solution is more probable) but here they forget it and prefer their own complex scenario.

note that these linguists rely entirely on linguistic facts amenable to a reverse interpretation and ignore other aspects – literary, mythological, archaeological and genetic (for which see §14).

The river Sarasvatī in Saptasindhu is thought to have dried up almost completely by 1900 (Allchins 1997: 117; Rao 1991: 77-79). In previous years it had lost tributaries to the Indus in the West and the Ganges in the East. Is there any evidence that it flowed down to the Indian (or Arabian) ocean at any earlier period?

G. Possehl examined (1998) all the palaeoenvironmental and geological data relevant to the Sarasvatī river and concluded that the river could have flowed down to the ocean only before 3200 at the very latest and, more probably, before 3800! He re-stated his finds in his study of 2002 (pp 8-9). P-H. Francfort has been just as certain of a date 3600-3800 in his survey of 1992.

All this helps us place the passages ascribing the grandeur of river Sarasvatī at a date before 3200 at least. (For a detailed examination of this entire issue see Kazanas 2004a; for more recent scientific investigations through satellite showing the course of the old Sarasvatī reaching the ocean see Sharma J.R. et al 2006.)

13. In a recent publication **Dr S. Levitt** (of New York), who is by no means an indigenist, examined the development of the “early Indic tradition” and the development of religion in ancient Mesopotamia.

After comparing several elements in the Vedic and Mesopotamian religions, Levitt concluded: “We can date the early Indic tradition on the basis of comparable points in ancient Mesopotamia. By this, the *Rgveda* would date back to the beginning of the third millennium BC, with some of the earliest hymns perhaps even dating to the end of the fourth millennium BC” (2003: 356).

However, unaware of Levitt’s paper, I myself made at about that time a very detailed comparative study of Vedic and Mesopotamian religious (mythological) motifs, published in *Migration and Diffusion* vol 24, 2005⁴. In this I showed that since more than 20 motifs in the Vedic texts had close parallels in other IE branches (e.g. the horse mythology, the skyboat of the Sungod, the Flood, the elixir from heaven, the creation of cosmic parts from the dismemberment of a divine being, etc) and were therefore of Proto-Indo-European provenance, they could not have been borrowed by the Vedics from the Mesopotamians as is usually alleged (McEvilley 2002; Dalley 1998) but must be inherited and therefore older than the Mesopotamian (Sumerian, Babylonian etc) parallels. Since the Mesopotamian culture (starting with old Sumerian) surfaces c 3000, the Vedic motifs must be earlier. Most of these have no parallels in Ugarite, Hebrew and other intermediate Near-Eastern cultures.

Thus again we arrive at a date before 3000 for the bulk of the *RV*.

14. Since, according to the preceding discussion we must now assign the (bulk of the) *RV* to c 3200 at the latest and since the *RV* by general consent was composed in Saptasindhu, then it follows that the IAs were ensconced in Saptasindhu by 3200 and that the SSC was a material manifestation of the early oral Vedic tradition expressed in the *RV*. A large number of archaeologists, experts on the SSC, insist on the unbroken continuity of this civilization

4. This was badly printed and the Sanskrit transliterations are unreadable! A revised version was published in *Adyar Library Bulletin* 2007.

and preclude the significant entry of any other culture until the Persian invasions after 600 BCE (Gupta and Lal 1984; Shaffer 1984 and with Lichtenstein; 1999; Rao 1991; Allchins 1997; Kenoyer 1998; Possehl 2002/3; McIntosh 2001; et al). This issue was treated by me extensively in preceding papers and no more need be said now. I should only add that, in fact, more and more scholars in the West have re-examined the issue and rejected wholly or in part the mainstream view advocating instead a movement Out of India into Europe: Schildmann 1998; Elst 1999; Klostermaier 1998, 2000; Friedrich 2004; Hasenpflug 2006.

To all this I should add the increasing evidence from Genetics which declares that no substantial flow of genes occurred from Europe or the northwestern adjacent areas into India before 600 BCE. On the contrary, recent genetic studies show an outflow from India into countries west and north and Europe (Sahoo et al 2006; Oppenheimer 2003).

Why mainstreamers insist on the AIT is a mystery. Lord C. Renfrew wrote of the AIT (1989:182): "this comes rather from a *historical assumption* about the 'coming' of the Indo-Europeans" (my emphasis). Then Edmund Leach wrote (1990): " Because of their commitment to a unilateral segmented history of language development that needed to be mapped onto the ground, the philologists took it for granted that proto-Indo-Iranian was a language that has originated outside India or Iran... From this we derived the myth of the "Aryan invasion"." These are the two legs of clay upon which stands the AIT and its variants.

Leach went further saying that after the discovery of the Indus-Sarasvati Civilization "Indo-European scholars should have scrapped all their historical reconstructions and started again from scratch. But this is not what happened. Vested interests and academic posts were involved" (1990). This is still true. But the new genetic evidence will soon perhaps force linguists to reconsider their theories. And we must not forget that there may well have been an IE continuum from the Steppe to Saptasidhu and the IAs did not move from their location. It is worth noting that S. Zimmer admitted (2002) that (although himself a mainstream non-indigenist) he could not be certain of the exact location of the PIE homeland since the facts are so obscure in those far-off times. More recently, H-P Francfort, the eminent excavator of Shortughai, expert on Central Asia Oxus area (or BMAC) and N-W India, critiqued V. Sarianidi, E. Kuzmina and J. Mallory and their theories about [proto-]Indo-Iranian movements through Oxus region (2005: 262-8); further on (p 283 ff) he pointed out that the pantheon in the Oxus iconography has a dominant goddess and so does not tally with Iranian and Indoaryan religions: on the whole he is most reluctant to accept Indo-Iranians (or Aryans) passing through that area c 1800-1400 BCE. So even some mainstreamers have now serious doubts about the alleged Aryan immigration/invasion.

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