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Dear Mr. Siddiqi,

Since we met last at Prof. Narasimhan's place, I have been trying to put together what I have read about ancient Indian thought on 'genetics'. Not much, I am afraid, on genetics proper but some stuff on allied subjects.

Evolution: Our ancients had guessed that life must have started in water. That much is clear from what is known as "The Hymn of the Man" (Purusha Suktha in Sanskrit). The first incarnation of God on earth was in the form of a fish. The next was in the form of an amphibian – a tortoise. The third was in the form of a burrowing animal. Next came a half-man, half-lion imagery. Subsequent incarnations have to do with social evolution.

Their categorization of species, as in the Purusha Suktha, is peculiar.

Creation: Widely varying accounts of our ancients' concept of 'creation' are available. Some are pretty close to modern scientific ideas, particularly their concept of 'cyclic' time as different from the Christian 'linear' idea of time. The time scales they knew are also in line with modern ideas. They had some idea of the relativity of time.

Heredity: They had strange and naïve ideas about reproduction, transmission of traits and so on. I enclose an extract from the Bruhadaranyaka Upanishad and another from the Kaushithaki Brahmana Upanishad.

If these extracts from the Vedas are disappointing, it is only because I have been looking in the wrong place for scientific information. Such information is to be found in the Angas (parts) and Upangas (sub-parts) of the Vedas with which I am not familiar in the least. All my interest in the Vedas has been centered around philosophy and to a smaller extent theology. There must be literature in English on ancient Indian science and there must be people familiar with it, particularly with 'genetics'. If I come across any I shall be glad to get in touch with you again.

With best regards,

Yours truly,

K.A. Parthasarathy

अथ Now यस्य whose जायाम् wife आर्तवम् the periodic impurity विन्देत् may overtake, त्रयहम् for three days कंसेन from a bell-metal vessel पिबेत् (she) should drink, एनाम् her न neither वृषलः S'ūdra man न nor वृषली a S'ūdra woman उपहृन्यात् should touch; त्रिरात्रान्ते at the end of three nights आच्छ्रित्य having bathed अहत-वासाः (she should) put on a fresh cloth त्रीहीन् rice अवघातयेत् (and the husband) make (her) thresh.

13. If one's wife has the periodical impurity, she should for three days drink from a bell-metal vessel, and no S'ūdra man or woman should touch her. At the end of three nights she should bathe and put on a fresh cloth, when (her husband) should make her thresh rice.¹

[This paragraph should be understood to precede paragraph 6 above for the sake of consistency.

¹ For the foods mentioned in paragraphs 14-18.]

स य इच्छेत्पुत्रो मे शुक्लो जायेत, वेदमनुब्रवीत, सर्वमायुरियादिति, क्षीरौदनं पाचयित्वा सर्पिष्मन्तमश्रीयाताम्; ईश्वरौ जनयितवै ॥ १४ ॥

सः He यः who इच्छेत् wishes मम to me पुत्रः a son शुक्लः of fair complexion जायेत be born, वेदम् one Veda अनुब्रवीत (he) should be versed in, सर्वम् full आयुः longevity इयात्

(and) should attain इति, क्षीरौदनम् milk-rice पाचयित्वा having got cooked सर्पिष्मन्तम् mixed with ghee अश्रीयाताम् (both) should eat (it); जनयितवै to produce (such a son) ईश्वरौ (then they would be) able.

14. He who wishes, 'May a fair-complexioned son be born to me, who will be versed in one Veda and attain full longevity', should have rice cooked in milk, and with his wife eat it mixed with ghee. Then they would be able to produce such a son.

अथ य इच्छेत्पुत्रो मे कपिलः पिङ्गलो जायेत, द्वौ वेदावनुब्रवीत, सर्वमायुरियादिति, दध्यौदनं पाचयित्वा सर्पिष्मन्तमश्रीयाताम्; ईश्वरौ जनयितवै ॥ १५ ॥

अथ And कपिलः tawny पिङ्गलः (or) brown, द्वौ two वेदौ Vedas, दधि-ओदनम् rice with curd. (Rest as before.)

15. He who wishes, 'May a son be born to me with a tawny or brown complexion, who will be versed in two Vedas and attain full longevity', should have rice cooked in curd, and with his wife eat it mixed with ghee. Then they would be able to produce such a son.

अथ य इच्छेत्पुत्रो मे श्यामो लोहिताक्षो जायेत, त्रीन्वेदानुब्रवीत, सर्वमायुरियादिति, उदौदनं पाचयित्वा सर्पिष्मन्तमश्रीयाताम्; ईश्वरौ जनयितवै ॥ १६ ॥

स्यामः Dark लोहिताक्षः with red eyes, त्रीन् three वेदान् Vedas, उदौदनम् rice with water. (Rest as before.)

16. He who wishes, 'May a son be born to me with a dark complexion and red eyes, who will be versed in three Vedas and attain full longevity', should have rice cooked in water,¹ and with his wife eat it mixed with ghee. Then they would be able to produce such a son.

[¹ Ordinary rice is meant.]

अथ य इच्छेद्दुहिता मे पण्डिता जायेत, सर्वमायुरियादिति, तिलौदनं पाचयित्वा सपिष्मन्तमश्रीयाताम्; ईश्वरौ जनयितवै ॥ १७ ॥

दुहिता A daughter पण्डिता a scholar, तिलौदनम् rice with sesamum. (Rest as before.)

17. He who wishes, 'May a daughter be born to me, who will be a scholar and attain full longevity', should have rice and sesamum cooked together, and with his wife eat it mixed with ghee. Then they would be able to produce such a daughter.

अथ य इच्छेत्पुत्रो मे पण्डितो विगीतः समितिङ्गमः शुश्रूषितां वाचं भाषिता जायेत, सर्वान्वेदाननुब्रवीत,

सर्वमायुरियादिति, मांसौदनं पाचयित्वा सर्पिष्मन्तमश्रीयाताम्; ईश्वरौ जनयितवै—औक्षेण वार्षभेण वा ॥१८॥

पण्डितः A scholar विगीतः reputed समितिङ्गमः attending assemblies, शुश्रूषिताम् which one likes to hear वाचम् words भाषिता speaking, सर्वान् all वेदान् the Vedas, मांसौदनम् rice with meat औक्षेण with the meat of a young bull वा either वार्षभेण with the meat of a bull वा or. (Rest as before.)

18. He who wishes, 'May a son be born to me, who will be a reputed scholar, attend assemblies, speak words that one likes to hear, be versed in all the Vedas and attain full longevity', should have rice cooked with meat—that of a young or mature bull—and with his wife eat it mixed with ghee. Then they would be able to produce such a son.

अथाभिप्रातरेव स्थालीपाकावृताज्यं चेष्टित्वा स्थालीपाकस्योपघातं जुहोति—अग्रये स्वाहा, अनुमतये स्वाहा, देवाय सवित्रे सत्यप्रसवाय स्वाहेति; हुत्वोद्धृत्य प्राश्नाति, प्राश्येतरस्याः प्रयच्छति; प्रक्षाल्य पाणी, उदपात्रं पूरयित्वा तेनैनां त्रिरभ्युक्षति—उत्तिष्ठातो विश्वावसोऽन्यामिच्छ प्रपूर्व्याम्, सं जायां पत्या सहेति ॥ १९ ॥

अथ Now अभिप्रातः एव early in the morning स्थालीपाक-आवृता according to the rules of the Sthālīpāka आज्यम्

Now, next, the father-and-son ceremony or the transmission, as they call it.

A father, about to depart, calls his son. Having strewn the house with new grass, having built up the fire, having placed near it a vessel of water with a jug, himself covered with a fresh garment the father remains lying. Having come, the son lies down on top touching organs with organs. Or (the father) may transmit to him seated face to face. Then he delivers over to him (thus).

Father: My speech in you I would place.

Son: I take your speech in me.

Father: My breath in you I would place.

Son: I take your breath in me.

Father: My eye in you I would place.

Son: I take your eye in me.

Father: My ear in you I would place.

Son: I take your ear in me.

Father: My tastes of food in you I would place.

Son: I take your tastes of food in me.

Father: My deeds in you I would place.

Son: I take your deeds in me.

Father: My pleasures and pain in you I would place.

Son: I take your pleasure and pain in me.

Father: My bliss, delight, procreation in you I would place;

Son: I take your bliss, delight, and procreation in me.

Father: My movement in you I would place;

Son: I take your movement in me.

Father: My mind in you I would place;

Son: I take your mind in me.

Father: My intelligence in you I would place;

Son: I take your intelligence in me.

If, however, he should be unable to speak much, let the father say summarily, 'My vital breaths in you I would place' and the son (reply) 'Your vital breaths I take in me.'

Then turning to the right he goes towards the east. The father calls out after him: 'My glory, sacred lusture, and fame delight in you.' Then the other looks over his left shoulder. Having hid (his face) with his hand or having covered (it) with the edge of his garment, he says: 'May you obtain heavenly worlds and all desires'. If he should become well the father should dwell under the lordship of his son; or, he should wander (as a mendicant). If, however, he should die let them perform obsequies as they should be performed. (15)
