

## ETHNOBIOLOGICAL INFORMATION IN *PARĀŚARA SAMHITĀ*

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Analytical studies of the Sanskrit works reveal diversity and extent of relationship of man with plants and animals in ancient India. *Parāśara Samhitā* is a *Dharmaśāstra* written in Sanskrit. Though its time of origin and provenance have not yet been determined, it has been influencing a section of the Hindu society for centuries through its discussions on *Ācāra*, *Prayaścitta*, *Vyavahāra*, and *Rājadharmā*. Many ethnobiological data are scattered in these discourses. The same have been collected from different chapters and recorded under the following heads – (1) Forest, (2) Agriculture, (3) Cows and Bulls, (4) Plants in religious rites, (5) Vegetal materials for expiation, (6) Biological materials for purification, (7) Animals and Sexual orgy, (8) Inedibles, and (9) Atonement for killing birds, quadrupeds and other animals. Similar information, available in some other Sanskrit works, have been discussed along with the data collected from *Parāśara Samhitā* with a view to finding out the possible course of evolution of ethnobiological aspect of ancient Indian culture. It appears that though this *Samhitā* bears discussions on many themes, certain important topics e.g. dietary biodiversity, religious biodiversity, protection of plants, etc., are not considered in it. Further, *Parāśara Samhitā* bears close similarities with the *Atri Samhitā* on some points.

**Key words:** Agriculture, Birds and other animals, Cows and Bulls, Ethnobiology, *Parāśara Samhitā*

### INTRODUCTION

Ethnobiology denotes the entire realm of the relationship of man with plants and animals through the ages. Ethnobiological information of ancient period helps to comprehend not only the utilitarian aspects of plants and animals, but also in assessing the cultural relations of earlier human

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societies with ambient flora and fauna. It may be stated here that the progress of human culture has always been conditioned by the knowledge about other living objects; and some of the ancient cultural trends and social customs are still operative. Further, ethnobiological information of the past may enlighten about the comprehension of the older societies about environment and the earlier methods of conservation of biodiversity.

Ethnobiological information, pertaining to hoary past, can be gathered by studying the primitive ethnic communities, which are less affected by later civilisations, and by analyzing the ancient literature.

India is the homeland of more than four hundred Scheduled Tribes and it is also a seat of an ancient culture. In India more than 50,000 phanerogamic species of plants and approximately 90,000 species of animals (including protozoa and other lower animals) are still available. Of these 5,800 species of vascular plants<sup>1</sup> and about 28,100 species of animals<sup>2</sup> are endemic. Indian civilisation - tribal and textual - is primarily dependent upon and influenced by forests. Hence it is logical that analytical investigations of ancient culture would unearth wealth of ethnobiological information, some of which may be of practical value even now. While a good number of scientific investigators have been studying the ethnic communities, settled in diverse ecological niche, little efforts have so far been made to scrutinize systematically the works written in different languages of ancient India. Sanskrit is one such language. Though no specific work on ethnobiology has yet been discovered in this medium, there are many works of different nature which contain ethnobiological information. The same should be collected, documented, and analyzed. With this aim in view the *Parāśara Saṃhitā*, a *Dharmaśāstra* having important influence on the Hindu society, has been selected for the present study.

#### MATERIALS AND METHODS

*Parāśara Saṃhitā* is a *Dharmaśāstra*, the authorship of which is ascribed to the sage *Parāśara*. The time of origin and provenance of this work have not yet been decided. Kane<sup>3</sup>, however, maintains that it saw the light during the first centuries of Christian era.

This work consists of five hundred eighty two (582) verses distributed in twelve (12) chapters. The chapters and verses are serially numbered. This

work contains dissertations on the usual topics of a *Dharmaśāstra*, viz. *Ācāra* (established rule of conduct), *Prāyaścitta* (the sacrament of panance), *Vyavahāra* (legal procedure, competency to manage one's own affairs), and *Rājadharmā* (duties of a king, including laws relating to a king). In these discussions many ethnobiological data are available. The same have been collected from the Bangabasi edition of the text, edited by Tarkaratna (1316 BS)<sup>4</sup>. The data have been recorded in this article under the following nine heads: Forests, Agriculture, Cows and Bulls, Vegetal materials for expiation, Plants in religious rites, Biological materials for purification, Animals and sexual orgy, Inedibles, and Atonement for killing birds, quardupeds and other animals. The Sanskrit names of the plants and animals, as mentioned in the text, have been retained in this article, while the common English names and the botanical and zoological equivalents of the same, wherever possible, have been mentioned in parenthesis. References to the respective chapter and verse have been cited in bracket along with each information.

#### ENUMERATION OF INFORMATION

##### 1. Forest:

The *Samhitā* (methodical arranged collection of texts/verses) does not contain much information about forests, it (1.1a) mentions only that the hermitage of the sage called Vyāsa is situated at the top of a snowclad mountain (*himaśaila*) within the forest of *devadāru* (*Cedrus deodara*). The text names (1.5b) the hermitage of *Parāśara* as *vadarikāśrama*, perhaps indicating the preponderance of *vadari* (*Zizyphus* sp.) in and around the asylum. According to the work (1.6 & 7) there are many species of flowering and fruit-laden trees, and varieties of animals and birds are living merrily in the hermitage.

##### 2. Agriculture:

The work contains some fragmentary data on various aspects of agriculture in different chapters. These have been recorded below:

a) *Agriculture and caste*: While discussing the duties of different castes, i.e. *Brāhmaṇa*, *Kṣatriya*, *Vaiśya* and *Śūdra*, the works mention (1.60) that farming and animal husbandry usually are the avocations of *Vaiśyas*.

The work (2.2b), however, adds that those Brāhmins who do not perform their normal six duties can take part in agricultural activities (*ṣaṭkarma nirato vipraḥ kṛṣikarmāni kārayet*). In another place (2.7) it states that the paddy required for *yajña* should be cultivated by the worshipper himself or earned by him.

b) *Bulls in agriculture*: According to this work (2.3a), drawing of a plough with the aid of eight bulls is religious (*halamaṣṭagavaṃdharmyaṃ*). The text mentions in the same verse that employing six bulls for the purpose is of mediocre merit (*ṣaḍgavaṃmadhyamaṃsmṛtaṃ*), and only cruel persons use four bulls (*caturgavaṃnṛṣaṃsānāṃ*), while employing two bulls to draw the plough is as good as killing the bulls (*dvigavaṃvṛṣaghātināṃ*). The text (2.4a) ordains that hungry, thirsty or tired bulls must not be attached to a plough (*kṣudhitaṃ tṛṣitaṃ śrāntaṃ valivardaṃ na yojayet*).

c) *Tilling and sin*: The work states (2.10) categorically that a tiller is a sinner like a hunter (*vyādha*), nooser (*pāsaka*), fisherman (*matsyaghātī*), fowler (*śākunika*), and a non-doner (*adātā*). The *Samhitā* indicates (2.12) that a tiller accumulates sin by felling trees, by piercing earth, and by killing animals (insects?) and worms, but he can get rid of all the sins by performing *yajña* (*vṛksāmschittvā mahībhittvā hatvā tu mṛgakīṭakān/ karṣakaṃ khalu yajñe sarvapāpāt pramucyate*).

### 3. Cows and bulls:

It appears that the *Samhitā* considers cows and bulls as wealth. It dwells, rather elaborately, on the use, husbandry, and donation of these animals in different chapters. The same is recorded below:

a) *Use of bulls*: It has been mentioned earlier that the *Samhitā* approves the use of bulls in tilling the agricultural fields, of course with some restrictions. The work states (2.4) that limbless, diseased or sexless (*kliva*: castrated?) bovine animals should not be used by the Brāhmins (*vipra*) for ploughing or carrying load. The work continues (2.5) that the bulls having the under-mentioned features can be utilized for works - well built (*sthūlāṅgaṃ*), free of ailments (*nīrujaṃ*), and radiant (*drptaṃ*). And these bulls should work for half of a day only.

b) *Care of the animals*: The work mentions (8.38-40), of course in connection with expiation, the following measures for care of the animals.

The person seeking atonement should do the following:

- i) look after the animals during the day and follow them (probably from pasture to pasture);
- ii) sleep in the byre during night, and only after the animals have gone to sleep;
- iii) protect the animals from the hazards of excessive heat, rains, winter and gale even at the risk of one's own death;

**Table 1: Nature of offence and the bulls/cows donated**

Sl. No.	Nature of the offence	In addition to some religious rites one has to donate the following	Reference
1	Killing of an artisan, <i>Śudra</i> or a woman,	eleven bulls	6.15b
2	Killing a <i>Kṣatriya</i> or a <i>Vaiśya</i> for no offence,	twenty cows	6.16
3	Killing a workless Brahmin or a <i>Vaiśya/Śudra</i> deeply attached to works (of religious nature?)	thirty cows	6.17
4	Committing forbidden sexual intercourse	two cows	10.4 & 10.14
5	When a Brahmin does sexual intercourse with a <i>Caṇḍālī</i> (woman of <i>caṇḍāla</i> caste) or <i>Śvapākī</i> (woman of outcaste tribe)	<i>Gomithuna</i> (a pair consisting of a cow and an ox)	10.7
6	If a <i>Kṣatriya</i> or a <i>Vaiśya</i> intercourses with a <i>Caṇḍālī</i> or <i>Śvapākī</i>	Same as above	10.8
7	If a <i>Śudra</i> inter-courses with a <i>Caṇḍālī</i> or <i>Śvapākī</i>	Same	10.9
8	Committing sexual intercourse unknowingly with a sister or mother	ten cows and ten oxes	10.12
9	Consuming forbidden food	Brahmin should donate one cow, while a <i>Kṣatriya</i> two, <i>Vaiśya</i> three, and <i>Śudra</i> four cows	11.13

- iv) drink water only after quenching the thirst of the animals;
- v) not disturb the animals even if they eat crops from other's house, field or granary;
- vi) recover the animal(s), if bogged.

c) *Donation of the animals*: That the *Samhitā* considers, the animals as wealth can be understood from the fact that it recommends donation of cows/bulls to Brāhmins in connection with expiation of different types of sins. The number of animals to be donated, of course, varies according to the nature of offence (Table 1).

d) *Cow slaughter*: According to the *Samhitā* killing of cows and bulls is a sin, and the gravity of the offence depends upon the method of killing the animal(s). The work states (9.4a) that the killing of the animal(s) may be caused by any of the following four ways – (i) confinement, (ii) tethering, (iii) yoking, and (iv) hitting (*rodhavandhana yoktrāṇi ghātanaṛca caturvidham*). In another place (9.31) the *Samhitā* writes that death may be caused to the animals in six ways, viz., confining to a place, tying, yoking, forcing to carry heavy load, hitting, and sending to some inaccessible place after securedly fastening the animal (s) with a yoke (*rodhavandhanayoktraṛca bhārapraharaṇam tathā/durgapreraṇayoktraṛca nimittāni vadhasya śaṭ*). In any case, the offender has to expitiate. The work prescribes the methods of atonement for different grades of crime (Table 2). It, however, states (9.51) that according to Manu, in any case, the offender has to perform *Cāndrāyaṇa Vrata* for killing a cow.

e) *Blood test*: The text mentions (*hateṣu rudhiram drśyam vyādhi-grastah kṛśo bhavet/nānā bhavati drṣṭeṣu evamaṇveṣaṇam bhavet* |9.50|) that for ascertaining the gravity of the crime, the blood of the slain animal should be examined with a view to finding out whether the animal was weak or diseased before death.

#### 4. Plants in religious rites:

The *Samhitā* does not contain description of religious rites, but in some phrases here and there it mentions about importance and use of some vegetal items in the sphere of religion. These bits of information have been recorded below:

**Table 2: Method of killing and penance prescribed**

Sl. No.	Method of killing	Penance prescribed	Reference
1	Hitting with wood	<i>Sāntapana vrata</i>	9.24a
2	Hurling of roundish small lump of earth	<i>Prajāpatya vrata</i>	9.24a
3	Throwing stones	<i>Taptakṛcchra vrata</i>	9.24b
4	Striking by a weapon held in hand	<i>Atikṛcchra vrata</i>	9.24b
5	Excessive burning of some part of the animal during branding the same	One-fourth of the atonement ( <i>ekapāda prāyaścitta</i> )	9.29a
6	Forcing to carry excessive load	Half of the process of penance ( <i>dvipāda prāyaścitta</i> )	9.29a
7	Piercing the nose	Three fourth of the process of expiation ( <i>tripāda prāyaścitta</i> )	9.29b
8	Committing all the above crimes together	Full process of the atonement	9.29b
9	Expiry of the animal during the efforts of rescuing the same while drowning in the well, or trapped under fallen tree	Three fourth of the process of atonement ( <i>tripāda prāyaścitta</i> )	9.38

a) *Sanctity of Kuśa* (holy grass, *Desmostachya bipinnata*): It has been mentioned in this work (10.41) that under no condition this grass becomes unholy.

The water sanctified by *kuśa* is considered as an element of *brahmakurca* and *pañcagavya* (11.27, 30, 33).

b) *Vegetal materials in Agnihotra saṃskāra*: *Agnihotra* is a special religious rite of sacrificing to sacred fire. The *Parāśara Saṃhitā* describes (5.15-22) this ritual meant for a *sāgnika* brahmin (a brahmin in whose house the sacred fire continues to burn incessantly) who dies abroad; perhaps this ritual is performed while the corpse of the deceased person is not available. The work states that a replica of human body is to be made by spreading *kuśa* over skin of a blackbuck. Then seven hundred flowers and some leaves

of *palāśa* (*Butea monosperma*) should be distributed over that replica according to some pattern - the number of flowers meant for each part of the human body has been specified in the work. Then pieces of *sāmī* (*Prosopis cineraria*) should be placed beneath the back and scrotum region of the effigy and *taṇḍula* (grains of paddy: *Oryza sativa*) and seeds of sesame (*Sesamum indicum*) should be strewn on mouth. Then *ghee* (clarified butter) is to be offered before kindling the fire.

#### 5. Vegetal materials for expiation:

According to this *Samhitā* (10.18-21) if any woman cohabits with a *caṇḍāla* (a person of a very low caste), she is to perform a prolonged and complicated process of expiation. At various stages of this process the following vegetal materials are to be used - *jāvakaudana* (cooked mashed grains of *yava*: *Hordeum vulgare*), extract of root, leaf, flower and fruit of *Samkhapuṣpi*.

#### 6. Biological materials for purification:

The work describes various rituals for purification of personnel belonging to the upper castes, if they commit some offence.

It states (10.23-24) if one unknowingly drinks water from a well touched by any utensil of a *caṇḍāla*, one has to subsist by drinking cows urine and *yāvaka* for three consecutive nights. If a brahmin consumes food prepared by a *caṇḍāla*, he is to eat for ten consecutive nights the diet of *yāvaka* and cow's urine (10.30). On coming to know that a *caṇḍāla* lived in a Brahmin's house incognito, the Brahmin has to consume food made of *tila* (*Sesamum indicum*) mixed with cow's urine for three days along with milk, subsequent three days mixed with ghee and then three days with curd (10.33-35).

#### 7. Animals and sexual orgy:

The *Samhitā* prescribes methods of expiation for sexual intercourse with animals. For sexual assault on *mahiṣa* (buffalo: *Babulus bubalis*), *uṣṭri* (she camel : *Camelus dromedarius* or *C. bactrianus*), *kapi* (female monkey: *Macaca mullatta* or *Hylobates* sp.), *kharī* (female ass: *Equus hemionus*), *śukarī* (female boar: *Sus scrofa*) one has to perform *prājāpatya vrata* (10.15),

and for assaulting a *go* (cow: *Bos indicus*) one has to donate a cow to a Brahmin after observing *trirātra vrata* (ritual for three consecutive nights; 10.16).

### 8. Inedibles:

It appears that the *Samhitā* (11.10) considers the following items as inedible by a *vipra* - milk white *laśuna* (garlic: *Allium sativum*), fruits of *vṛntāka* (egg plant : *Solanum melongena*; some people consider *Chenopodium album* as the correct equivalent of *vṛntāka*), *grñjana* (carrot: *Daucus carota*), *palāṇḍu* (onion: *Allium cepa*), *kavaka* (fungus grown on trees), *vṛkṣaniryāsa* (exudate of tree) and *devasva* (articles meant for worshipping of gods). The *Samhitā* states further that even unknowingly drinking milk of *uṣṭra* or *avi* (sheep: *Ovis ammon*) by a Brahmin causes sin fit for expiation (11.11a). The work mentions that consumption of beef (11.1a), meat of *maṇḍuka* (frog: *Rana tigrinal* toad: *Bufo melanostictus*), *muṣika* (rat: *Bandiocola bengalensis*) (11.12a) necessitates penance of different types.

### 9. Atonement for killing birds, quadrupeds and other animals:

It appears that the act of killing of birds, quadrupeds and other animals is considered by the *Samhitā* as sinful and this Sanskrit work, like many other *Samhitā*, prescribes various rituals for atonement for killing different species of birds, quadrupeds and other animals (Table 3).

## DISCUSSION AND CONCLUSION

Though the *Samhitā* contains various types of information, it must be admitted that it is not rich in ethnobiological data. It is rather difficult to comprehend the possible reason(s) for scanty references to forest and forest-flora in this ancient work. It may be mentioned here that most of the Sanskrit works contain, directly/indirectly, reckonable quantum of information about forests and wild flora.

Disussions on agriculture in this work evoke interest. It grades the tilling process as sin (2.10), because the same involves felling of trees and other plants for clearing agricultural area of lands, furrowing the earth's crust, and in the process killing insects and worms. By declaring agriculture as an avocation of the Vaiśyas, this work dissociates upper two castes, viz.,

Table 3: Nature of offence and the atonement prescribed

Sl. No.	Nature of offence	Atonement prescribed and reference
1	<p>Killing any of the following birds:</p> <p>(a) <i>haṃsa</i> (swan: <i>Anser anser</i> or <i>A. indicus</i>), <i>sārasa</i> (stock: <i>Ciconia</i> sp. or <i>Amastomus</i> sp.), <i>karuñca</i> (crane, heron: <i>Grus</i> sp. or <i>Ardeola grayii</i>), <i>cakravāka</i> (ruddy sheldrake: <i>Tadorna ferruginea</i>), <i>kukkuṭa</i> (domestic fowl: <i>Gallus domesticus</i>), <i>jālapāda</i> (one type of swan), <i>śarabha</i> (a mythical creature).</p> <p>(b) <i>balākā</i> (common teal: <i>Nettion crecca</i>), <i>ṭiṭṭibha</i> (pheasant-tailed jacana i.e. <i>Hydrophasianus chirurgus</i>, or bronze winged jacana i.e., <i>Metropidius indicus</i>), <i>śuka</i> (parrot: <i>Psittacula krameri</i>), <i>pārāvata</i> (blue rock - pigeon: <i>Columba livia</i>), <i>āṭi</i> (according to Monier Williams<sup>5</sup> it is <i>Turdus ginginiamus</i>), <i>baka</i> (cattle egret, heron: <i>Bubulcus ibis</i> or <i>Ardea</i> sp.).</p> <p>(c) <i>bhāsa</i> (white backed vulture: <i>Gyps bengalensis</i>), <i>kāka</i> (crow: <i>Corvus splendens</i> or <i>C. macrorhynchus</i>), <i>kapota</i> (a variety of <i>pārāvata</i>), <i>sāri</i> (common myna: <i>Acridotheres tristis</i>), <i>tittiri</i> (francoline partridge: <i>Francolinus</i> sp.).</p> <p>(d) <i>grāhṛa</i> (vulture: <i>Gyps bengalensis</i> or <i>G. indicus</i>), <i>śyena</i> (falcon: <i>Falco peregrinatus</i>), <i>śikhi</i> (peacock: <i>Pavo cristatus</i>), <i>grāha</i> (according to Monier Williams<sup>6</sup>, it means a rapacious animal living in fresh or sea water, any large fish, crocodile, shark, serpent, Gangetic alligator or hippopotamus), <i>cāṣa</i> (blue jay: <i>Coracias benghalensis</i>), <i>uluka</i> (owl: <i>Bubo bubo</i>).</p> <p>(e) <i>vastuṇī</i>, <i>caṭaka</i> (sparrow: <i>Passer domesticus</i>), <i>kokila</i> (cuckoo: <i>Eudynamis scolopacea</i>), <i>khañjariṭa</i> (wagtail: <i>Motacilla</i> sp.), <i>lāvaka</i> (<i>Perdix chinensis</i>), <i>raktapāda</i> (a variety of <i>pārāvata</i> having red feet).</p>	<p>The offender should:</p> <p>(a) fast continuously for one day and one night (6.2)</p> <p>(b) eat only in the night after starving the day (6.3)</p> <p>(c) stand in water and do <i>prāṇāyama</i> in the morning and evening (6.4)</p> <p>(d) consume uncooked food in the day and only air in night (6.5)</p> <p>(e) fast for a day and eat in the night only (6.6)</p>

Table 3 (Continued)

Sl. No.	Nature of offence	Atonement prescribed and reference
	(f) <i>kāraṇḍava</i> (a kind of coot: <i>Fulica atra</i> ), <i>cakora</i> (Chukar: <i>Alectoris chukar</i> ), <i>piṅgala</i> (according to Monier Williams <sup>7</sup> , it is a small kind of owl i.e., <i>Bubo bubo</i> or <i>Athene brama</i> or lizard or snake), <i>kurara</i> (osprey: <i>Pandion haliaetus</i> ), <i>bhāradvāja</i> (skylark: <i>Alauda gulgula</i> ).	(f) worship śiva (6.7)
2	Killing any of the following animals: (a) <i>nakula</i> (mongoose: <i>Herpestes auropunctatus</i> or <i>H. edwardsii</i> ), <i>mārjāra</i> (cat: <i>Felis domesticus</i> ), <i>ajagara</i> (python: <i>Python molurus</i> ), <i>ḍuṇḍubha</i> (a non-venomous water snake: <i>Natrix piscator</i> ). (b) <i>śallakī</i> (procupine: <i>Hystrix indica</i> ), <i>śāsaka</i> (hare: <i>Lepus nigricollis</i> ), <i>godhā</i> (iguana: <i>Varanus</i> sp.), <i>matsya</i> (fish), <i>kūrma</i> (tortoise: <i>Kachuga</i> sp.) (c) <i>vrka</i> (wolf: <i>Canis lupus</i> ), <i>jambuka</i> (jackal: <i>Canis aureus</i> ), <i>r̥kṣa</i> (bear: <i>Melursus ursinus</i> ) <i>tarakṣu</i> (hyena: <i>Hayena hayena</i> ) (d) <i>gaja</i> (elephant: <i>Elephas maximus</i> ), <i>gavaya</i> ( <i>Bos gaurus</i> ), <i>turaṅga</i> (horse: <i>Equus caballus</i> ), <i>Mahiṣa</i> (buffalo: <i>Bubalis bubalis</i> ), <i>uṣṭra</i> (camel: <i>Camelus dromedarius</i> or <i>C. bactrianus</i> ). (e) <i>mrga</i> (deer: there are five species belonging to four genera in India; it is difficult to identify specifically in absence of detail description), <i>ruru</i> (a kind of spotted or black antelope: <i>Antelope cervicapra</i> ), <i>varāha</i> (wild boar?: <i>Sus scrofa</i> ) (f) any wild quadruped ( <i>catuṣpadānāñca sarveṣam vanacāriṇām</i> )	The offender should: (a) feed a Brahmin with <i>kṣara</i> (rice boiled with sesame) and donate him an iron rod (6.9) (b) subsist one day and night by consuming only fruits of <i>vr̥ntāka</i> (egg plant: <i>Solanum melogena</i> ) (6.10) (c) donate one <i>prastha</i> of sesame to Brahmin after fasting for three days (6.11) (d) should fast for seven days and then satisfy (method not mentioned) the Brahmins (number not specified) (6.12) (e) should subsist by consuming nonagricultural products (wild?) only for one day and one night (6.13) (f) fast for one day and one night and continuously recite silently the <i>vijamantra</i> , i.e., basic esoteric sacred hymn (6.14).

Brahmins and Kṣatriyas, from the process. Further, does the *Samhitā* tries to establish that cultivation is not a respectable job by stating that only those Brahmins who do not perform their normal six duties can participate in it? It may be remembered here that with the development of agriculture it became possible for the human communities to adopt settled life renouncing the nomadic way of living. Agriculture is considered as an important benchmark in the progress of human civilisation. In this background should it be imagined that this *Dharmaśāstra* was compiled/written at an age when agriculture was new to India? If so, then it may be stated that his Sanskrit work is very old in age.

Regarding the use of bulls in agriculture it contains observations (2.3a, & 2.4a) which are similar to the postulates of the *Atri Samhitā*. Should these resemblances lead one to guess that both the *Samhitās* originated more or less at the same period of time, and in neighbouring areas?

That in this *Samhitā* the cows and bulls are considered as important wealth can be understood from the instructions about care and donation of the animals. These animals are still being regarded as living treasures in India.

Methods of penance for killing cows and bulls prescribed in the *Parāśara Samhitā* have some differences with the same mentioned in the *Atri Samhitā*. It may be stated here that other *Dharmaśāstras* do not contain such elaborate discussions on the atonement for causing death to cows and bulls. In the traditional Hindu Society not only killing of these animals but natural death too still now calls for expiation. At times religious beliefs inhibit scientific principles of conservation.

Reference to the postmortem blood test (9.50) for ascertaining the premortem state of health of a killed cow/bull, however, is rather significant. Blood test involves advanced physical and chemical microtechniques. It is true that animal husbandry developed well in ancient India and a number of Sanskrit works on the upkeep of different domestic animals have been discovered, yet vigorous efforts should be made to gather corroborative evidences for comprehending the method(s) of blood test.

The holy grass is still being used in all important religious rites of the Hindus and also for burning effigy. Actually this species of plant has

been regarded important in religious rites since the time of the *Ṛgveda* (1.191-3)<sup>9</sup>, while the medicinal use of it has been mentioned in the *Atharva Veda*<sup>10</sup> and *Suśruta Saṁhitā*<sup>11</sup>.

According to the *Parāśara Saṁhitā* flowers of Bengal Kino (*Butea monosperma*) tree should be used in *Agnihotra Saṁskāra*, while some other *Dharmaśāstras* and *Purāṇas* consider the wood fit for making staff for Brahmin *Brahmacārins* and *Yatis*. The *Suśruta Saṁhitā* mentions the wood is useful medicinally.

The use of *śāmī* wood, as mentioned in the *Parāśara Saṁhitā* can be traced from the *Atharva Veda* (6.11.1). Even now the wood is used for performing any *yajña* by the Hindus. *Suśruta*, however, maintains that the fruits of this species are important medicinally.

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The instruction (5.15-22) of this *Saṁhitā* about spreading sesame grains on the mouth region of the effigy is interesting. With what purpose in view the *Parāśara Saṁhitā* gives this instruction? It may be mentioned here that Mehra<sup>12</sup> informs that the use of sesame as an article of food is mentioned in *Atharva Veda*, *Maitrāyani Saṁhitā*, *Śatapatha Brāhmaṇa*, *Taittirīya Saṁhitā* and *Vājasaneyī Saṁhitā*. Banerjee<sup>13</sup> states that according to the *Abhijñana Śakuntalam* of Kālidāsa the grains of sesame have to be eaten in certain expiatory rites. Grains of sesame, however, are still being used in *śrāddha* and in many religious rites by the Hindus and also in preparation of some sweet dishes. Thus it may be said that the grains of sesame have been continuously used in India for more than 3000 years as an article of food and also for religious purpose.

Indians have been using grains of barley as food and in religious rites since the time of *Ṛgveda*<sup>14</sup>. *Yava* is regarded very sacred and capable of washing off many sins. Thus it appears that the instruction contained in the *Parāśara Saṁhitā* (10.18-21) regarding the use of *Yava* in the process of expiation is in tune with one of the traditional use of the same.

More than five botanical equivalents for *Śamkhapuspi* have been suggested by different authorities. In the absence of appropriate botanical identification it is not possible to comment upon the use of *Śamkhapuspi*.

From the instructions mentioned in the *Parāśara Saṃhitā* (10.15-16) it appears, that it was not uncommon with some persons of that period to use animals for quenching sexual thirst. It shows the depth of degradation of some people. However, the *Parāśara Saṃhitā* considers this as a moral offence.

Regarding the inedible vegetal materials the *Parāśara Saṃhitā* (11.10) follows the instructions of *Manu Saṃhitā*<sup>15</sup> and *Yājñavalkya Saṃhitā*<sup>16</sup>, but adds *Vṛntāka* in this list without assigning any reason. But fruits of this species are now being consumed by Indians as vegetable. It appears from the *Parāśara Saṃhitā* (11.1a and 11.12a) that Indians of that period used to eat beef and meat of *maṇḍuka* and *mūṣika*, but this Sanskrit work considers the practice as sacrilegious. Actually consumption of beef is forbidden for the Hindus since long past, though the actual period from when this instruction is in vogue has not yet been determined. Regarding the drinking milk of camel and sheep the *Parāśara Saṃhitā* (11.11a) echoes the injunction prescribed by *Manu Saṃhitā*, *Yājñavalkya Saṃhitā* and some other Sanskrit works.

The *Parāśara Saṃhitā* contains instructions about atonement for killing birds, quadrupeds and other animals. In the process it names more than thirty (30) species of birds and twenty one (21) species of quadrupeds. There are also references to fishes (*matsya*, 6.10), snakes (*piṅgalā*, 6.7) as groups, of course the *Saṃhitā* specifically mentions two snakes e.g. *ajagara* and *duṇḍubha*. The including of *śarabha* (eight legged deer - a mythical animal), *grāha* (rapacious animals living in land, river and sea), and *piṅgalā* (snakes/monkeys) along with birds is rather queer. It is, however, obvious from these instructions (6.2-14) that the *Saṃhitā* is concerned about protecting these creatures- domestic and wild - from the assault of man. But the *Parāśara Saṃhitā* does not contain a single verse about the protection of plants and other vegetal materials. In this regard this *Dharmaśāstra* bears close similarities with the *Atri Saṃhitā*<sup>17</sup>.

Further, in both of these Sanskrit works, the act of killing animals is considered, it appears, as a moral offence and the punishments prescribed

(*Atri Samhitā*: verses no. 220, 222, 223, and *Parāśara Samhitā*: 6.2 to 14, 9.24, 29, 38) are religious in nature. It may be recollected here that the instructions regarding the conservation of biodiversity in *Śātātapa Samhitā*<sup>18</sup> and a number of *Purāṇas*<sup>19</sup> are also imbued with religion, but the same in *Kauṭīliya Arthaśāstra* (a work of c. 4th century BC)<sup>20</sup> and *Agni Purāṇa* (a text of c.9th century AD)<sup>21</sup> are more secular in character, while the directions in *Manu Samhitā* (a work gathered between the 2nd century BC and the 2nd century AD), *Yājñavalkya Samhitā* (a text originated between 100 AD and 200 AD), and *Viṣṇu Samhitā* (a work readied earlier than the 2nd century AD)<sup>22</sup> are of mixed character- financial and religious. Thus a gradual shift in attitude towards the methods of conservation of biodiversity is reckonable. The possible reason(s) for this change should be brought out.

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