

Ethnobiological Studies from *Manusmriti* VIII. Had Maharshi *Manu* Talked of Human Genetics?

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ABSTRACT The *Chaturvarna* classification of the society as *Braahmana*, *Kshatriya*, *Vaissyas* and *Ssudra* and the concept of *Varnassankara* in *Manusmriti* was apparently a genetic study among the human beings which is very evident.

INTRODUCTION

Manusmriti, the monumental work composed in 2000BC (?) regarded as the compendium of pioneer compilation of human ethics (Gold Stucker, 1977), also has deep insights into the creation of life, geological changes, biological classification, ecological phenomena like environmental pollution, conservation of biota, and other multifarious ethical, metaphysical, moral and cultural aspects of human society (Padhy et al., 1997 a, b; Dash and Padhy, 1996, 1997 a, 1998 a, b). But in the Indian scenario, the four fold classification (*Chaturvarna*) of the society as *Braahmana*, *Kshatriya*, *Vaissyas* and *Ssudra* as represented in *Manusmriti* is very much misunderstood and misinterpreted (Murthy, 1994) and it is belittled as a source to propagate caste and class hatredness. But a deep study into Ssloka 87 of *Addhyaaya* I of *Manusmriti*, gives clue that the *Chaturvarna* division of the society is a natural phenomenon which is attributed *ipso facto* to the divine creation, rather than *Manu* as the classifier.

Sarbasyaasya tu sargasys guptyarthya sa mahaadyudih, Mukhabaahu roopajjaanaam pruthak karmaanya kalpayat (87/I)

Meaning : But in order to protect this universe, He, the most resplendent one, assigned separate (duties and) occupations to those who sprang from his mouth, arms, thighs and feet (Buhler, 1886).

The creation of different classes (*Chaturvarna*) from the different body parts of the Almighty is ambiguous; but this gives an indirect message that the intellectual either who guided society in the right perspective, were considered as mouth of the society, the *Braahmanas*; *Kshatriyas* are the arms who rendered protection to all concerned; *Vaissyas* are the strength of the society shouldering the broad spectrum of economic responsibility, are the thighs; and *Ssudras* are the feet rather the root on which the society stands. The duty of the *Ssudras* is not very much defined rather they are expected to support the other three classes in order to have a smooth run of the society. In this context no class can be considered as a neglected one.

According to *Manusmriti* the ethnic groups are divided as *Raakshaasa*, *Pissaacha* and *manushya*, on the basis of food habit and cultural activity (Dash and Padhy, 1997 a). Similarly the division of *Chaturvarna* as per *Manusmriti*, was not a matter of birth right, rather on the basis of *Guna* (quality) and *Karma* (action). This view is strongly supported by versions of *Sreemad Bhagavad Geeta* which states as follows :

*Chaaturvarnyam mayaa srushtam guna
karma vibhaagasah,*

*Tasya kartaaramapimaam biddhya
kartaaramasyayam (Geeta 13/IV)*

Meaning : The four orders of the society (*viz.* the *Braahmana*, the *Kshatriya*, the *Vaissyas* and the *Ssudra*) were created by Me classifying them, according to the mode of *Prakruti* predominant in each (by the different distribution of *Guna* and *Karma*) and apportioning corresponding duties to them; though the author of this creation, know Me, the immortal Lord, to be a non-doer. (Gayandka, 1984).

This *sloka* further supports the view that *Chaturvarna* classification was not of *Manu*.

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rather it is due to the nature's manifestation which follows the principle of *Guna* and *Karma*.

What is Guna and Karma ?

All aspects pertain to *Guna* and *Karma* are depicted in *Sslokas* 24 to 29 of *Adhdhyaaya* XIII of *Manusmriti*. Analysis of the above *Sslokas* from the view point of *Saankshya* and *Yoga* philosophy reveals that in the universal condition, the cosmic substance *Prakruti* (nature) consists of three constituents or powers called as *Gunas* (Quality : the property and the essence of all things). They are named as *Sattva*, *Raajas* and *Taamas*. The existence of *Prakruti* can not be realised in the absence of the *Gunas* (as one can not expect the presence of fire in absence of heat). So any individual (may be a plant, animal or a man) which is a product of the nature must carry the *Gunas* as a psychological basis (Bernard, 1989).

The function of the three *Gunas* in the order of *Sattva*, *Raajas* and *Taamas* as cosmic substance in the universal condition of nature is to reveal, move and restrain; in the phenomenal world they signify adhesion, cohesion and disintegration; from psychological point of view they eliminate, activate and obscure; on the basis of moral plan they are emancipation, affinity and sin respectively. The *Gunas* never separate from each other nor function separately; they coexist in every thing, they support one another. But one of them or the other may predominate and the variegated arrangements of the *Gunas* account for the manifestation of the nature.

However in relevance to the analysis pertains to this paper, *Gunas* are to be analysed from mental point of view which is an expression of human characters as follows, can be studied directly.

Sattva Guna

It is the abstract principle of illumination or the power of the nature that reveals all manifestations with qualities like compassion, concentration, courage, detachment, enlightenment, faith, forbearance, forgiveness, humility, indifference, gay, modesty, pure action and valour.

Raajas Guna

It is the abstract principle of activity or the power of activating or exciting without which the other two *Gunas* can not manifest their quali-

ties. *Raajas Guna* has qualities like argumentation, attachment, abusiveness, animosity, back biting, braggadocio, craving of the senses, desire to afflict and kill, desire to buy and sell, deception, doubt, disrespect, druggery, egoism, envy, frenzy, falsehood, gambling, habit of evil thoughts, heedlessness, insulting criticism, irregularity in conduct, jealousy, lack of shame, opinion, ostentation, quarrelling, remorse, selfishness, scepticism, scandal mongering, suspicion, treachery, thievery, wrath, all temptations and fancies.

Taamas Guna

It is the abstract principle of restraint or the binding potency of nature. Its function is to resist motion with qualities like avarice, carelessness, delusion, deluded connection, fear, grief, ignorance, indecision, insolence, laziness, lewdness, lassitude, pride sleepiness, stolidity and want of faith, discrimination, knowledge, memory and liability.

Similarly *Karma* means to do, make, perform or action which obeys the organic laws of cause and effect which is neither arbitrary nor whimsical. As one sows, he reaps accordingly. The power of the *Gunas* indulge some one to perform a *Karma* and the action (resultant) there of leave an indelible trace in the subconscious region of the mind. This is the seed or the *Samskaara* which is carried in the subconscious memory as experiences of one's past life and grows into a character or destiny in the present life. So *Samskaara* is the mental impression resulted as the effect of *Karma* transmitted from life to life as explained in Hindu Philosophy (Sarma, 1984). The vast explanation in this regard and the principles followed to overcome the cause and effect of *Guna* and *Karma* are beyond the scope of this paper.

Earlier Genetic Studies Samskaara and Modern Genetics

It is difficult to corroborate the *Samskaara* of Hindu Philosophy with Mendelian traits and the principles of modern genetics. But such an attempt is not unscientific. The concept of inherited characters as conceived by *Manu* is reflected in the following *Sslokas*.

Karmaanaam cha vivekaartham dharmaa dharmo vivechayaat, Dwaandaira yoja

yachchemaah sukha dukhaadibhim prajaah (26/i).

Meaning : Moreover, in order to distinguish actions. He separated merits from demerits, and be caused the creatures to be affected by the pairs (of opposites) such as pain and pleasure (Buhler, 1886).

Ssloka 28/I states :

Yamtu karmani yasmin sa nyamyuymkta prathamam prabhum, Satadeba swayam bheje srujyamaanah punah punah (28/I).

Meaning : But to whatever course of action the Lord at first appointed each (kind of beings), that alone it has spontaneously adopted in each succeeding creation (Buhler, 1886).

Ssloka 29/I states

Himsraa himsre mrudu kroore dharmaa dharma dhrutaa noote, Yadyasya sobadhaat sarge tattasya sruyamaabissat (29/I).

Meaning : Whatever He assigned to each at the (first) creation, noxiousness or harmlessness, gentleness or ferocity, virtue or sin, truth or falsehood, that clung (after words) spontaneously to it (Buhler, 1886).

Further it is explained with examples in Sl. 30/I that :

As at the change of the seasons, each season of its own accord, assumes its distinctive marks, even so corporeal beings (resume in new births) their appointed course of action (Buhler, 1886).

Analysis of the above sslokas in the light of modern genetics, the characters in pairs of opposites such as pain and pleasure realised by *Manu* can be corroborated with beneficial and harmful characters (may be morphological or physiological). The idea of spontaneous appearance of the characters in succeeding creation (generation) was a clear cut idea of the ancient genetic studies. It is worthy of noting here that human qualitative characters like mental ability and general intelligence (IQ) and special, aptitudes like musical ability, ability in mechanics, mathematics, drawing, painting, sculpture and other special field seem to be inherited genetically (Winchester, 1951). The science claims that there are genes for worrying (Phillips, 1996) and winning of Olympic gold medal is an inherited capability instead of training (Deeyfuss, 1997).

The expression of the above said characters are often related to *Samskaara* in the Hindu philosophy which strongly believes that a subject takes birth with his own *Samskaara* and the environment plays further role for expression of the latter. But to explain the genetic views of *Manusmruti* through the principles of modern genetics the following questions are required to be answered.

1. Is the inheritance of qualitative characters in the form of *Samskaara*, beyond the DNA of modern genetics?
2. Is the DNA influenced by the *Samskaara*, expressed accordingly?

Any study in Biology should not always dragged to be explained through the principles of physical sciences and the expression for the phenomenon of life demands the formulation of new laws (Wald, 1958). It is yet to establish scientific principles if any, to contemplate the meta-physical phenomenon of *Samskaara*.

Four fold Classification of Society Based on Guna and Karma

Braahmana, *Kshetriya* and *Vaissya* are considered as twice born (*Dwijia*) because of earning of education after *Upanayana* while *Ssudra* is illiterate and uneducated (Sl.4/X). The educational status of the former three castes is considered as the second birth as the orientation of the life style gets changed due to education. But all the tribes which are excluded from the community, may be from any caste of the above four, are called '*Dasyus*' (undevoted to the society irrespective of the language they speak either refined or unrefined) (*vide Sl. 45/X; Das, 1995*).

The person enriched with *Sattva guna* is considered as a *Braahmana* with duties are teaching, studying, sacrificing own and for others, giving and accepting (Sl. 88/I ; 80/X). The *Kshatriya* quality is identified with a person with mixed dominance of *Raajs* and *Sattva gunas*, who are commended to protect the society. They are expected to be alert round the clock, can bestow gifts, to after sacrifices, to study *veda*, and to abstain from attaching himself to sensual pleasure (Sl. 89/I; 79, 80/X).

Similarly the *Vaissya* is predominated with *Taamas* and *Raajas gunas* with duties like tending cattle, to bestow gifts, to offer sacrifices, to study *vedas*, to trade, to lend money and to cultivate lands (Sl. 90/I; 326, 329 to 333/IX and

80/X). But the *Ssudra* due to illiteracy, being unable to perform any specific occupation, is prescribed to serve (*i.e.* to help and support) the other castes to perform their duties thus maintaining equilibrium in the society (*Sl.* 91/I; 334/IX; 79 & 80/X).

Manu's observations on Varnassankaras (Mixed Varnas)

The concept of *Varnassankara* in *Manusmriti* is depicted in Adhdyaya (Chapter X). They are emerged out due to :

1. Sex adultery of different *Varnas*,
2. Marriages with the women who ought not to be married.
3. Neglecting duties and occupation prescribed to each *Varna* (*Sl.* 24 X).

The product of these events are considered to be of obscured status of their *Varnas*. This is because the *Varnassankaras* had no exclusive inherent intrinsic values like that of their parents who descend from a specific *varna* bounded by specific social ethics. So the word *Varnasankara* should not be attributed to the hybrid quality (*Ssankarikarana*) of modern genetics which is much recognised and emphasized. The phenomenon of *Varnassankara* was not at all encouraged in *vedic* culture which has a reflection in first chapter of *Geetaa* (*Sl.* 41, 42,43/I).

The *Varnassankara* with different parental origin had different specific duties, as the duties of four *Varnas* are very much specified (*Sl.* 88-91/I; 329-334/IX and 79-80/X). Whether performance of such duty was a prescription form the society or was due to their inherited quality, seems to be ambiguous. The following narrations indicate that the occurrence of *Varnassankaras* can not remain undetected in the society.

A. Identification of *Varnassankaras* to parental resemblance as :

Sl. 59/X states :

Pitryam baa bhakatesseelam maaturibobha - yameba baa, Na kathanchana duryonih prakrcition stree noyachchati (59/X).

Meaning : A base borne man either resemblences in character his father, or his mother, or both; he can never conceal his real nature (Buhler, 1886), and

Sl. 60/X says :

Kule mukhaepi jaatasya yasya syaadyoni ssankarah, Samsrayatyeba tachheelam narolpamapi baa bahu (60/X).

Meaning : Even if a man, born in a great family, sprung from criminal intercourse, he will certainly possess the faults of his (Parents), be they small or great (Buhler, 1886).

B. Identification of *Varnassankaras* due to expression of characters as :

Sl. 58/X says :

Anaaryataa nishthurataa kroorataa nishkriyaatmataa, Purusham byanjayanteeha loke katusha yonijam (58/X).

Meaning : Behaviour, unworthy of an *Aryaan*, harshness, cruelty and habitual neglect of the prescribed duties betray in this world a man of impure origin (Buhler, 1886).

C. Identification of *Varnassankaras* due to its *Karma* (Occupation) as :

Sl. 40/X states :

Sankare jaayatestvataahstvetaah pitru maartru pradrassitaam, prachhannaa baa prakaassa baa veditabyaah sukarma bhiih (40/X)

Meaning : These races, (which originate) in confusion (if the caste and) have been described according to their fathers and mothers,

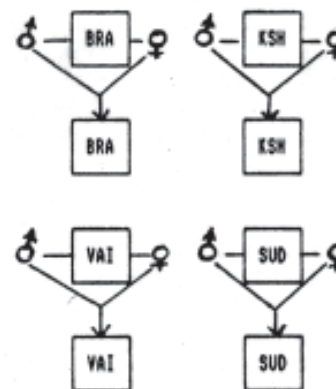


Fig. 1. Pure line inheritance

may be known by their occupations, whether they conceal or openly show themselves (Buhler, 1886).

Sl. 57/X says :

Varnaapetamabijnatam naram kalushayonijam, Aaryaropamibaanaar yam karmabhih sveibirbhaabayct (57/X).

Meaning : A man of impure origin, who belongs not to any caste, (*Varna*, but whose character is) not known, who (thought) not an *Aryan*, has the appearance of an *Aryan*, one may discover by this acts (Buhler, 1886).

The above narrations indicate that a *Varnassankara* can be detected out from his inheritance of parental characters, behaviour and occupation. Moreover his appearance (phenotype) is given less importance (*Sl. 57/X*) compared to behaviour and action.

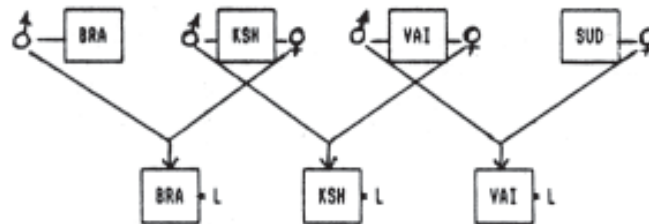


Fig. 2. Anuloma - One step lower

I. Pure Line Inheritance

It is declared by *Manu* that *Braahmana* (BRA), *Kshatriya* (KSH), *Vaissya* (VAI) and *Ssudra* (SUD) are the four *Varnas* and there is no fifth *Varna*. This shows that any mixed *Varna* is to be considered '*Varnassankara*'. The children of the parents in the direct order on wedded wives, equal in caste and married as virgins are to be considered as belonging to the same *Varna* as their fathers (*Sl. 5/X*). (Fig. 1)

II. Anuloma Varnassankara Inheritance

The descendants out of the male of a higher *Varna* and the female of any lower *Varna* are considered to be *Anuloma Varnassankaras*.

a. Anuloma One Step Lower

(Descendants of females one degree lower than their male partner *vide Sl 6/X*) Fig. 2)

1. These descendants are declared to be similar in *varna* to their father.
2. They have the duties of the twice born man (*Dwija*) and can undergo *upanyana Samskaara*.
3. They are known to be *Anantara varna* (one step lower) : BRA-L, KSH-L, VAI-L.
4. But blamed on account of fault inherent in their mothers.
5. This combination seems to be recognised in the society even though it is *varnassankara*.

b. Anuloma Two Step and Three Step Lower

(Descendants from females two and three step

lower *varna* than their male partner *vide Sl. 8,9/X*) (Fig. 3)

1. The two degree lower product *Amboshtha* is a combination of BRA male and VAI female; is expected with an occupation as medicine man with art of healing (*Chikitsaka*) (*Sl. 47/X*).
2. The two degree lower product of *Kshatriya*, is the *Ugra* described as ferocious in his manners, delighting in cruelty because of inheritance of characters from both *Kshatriya* and *Ssudra*. They used to live with an occupation by catching and killing animals of burrowing habitat (*Sl. 49/X*).
3. Similarly the three degree lower prod-

uct of BRA emerges as *Nishaada* or *Paarishada*, who is lowest among *Anulomas* live on killing fishes. They

specifically declared.

III. *Pratiloma Varnassankara Inheritance*

The *Pratiloma* combination is a product of

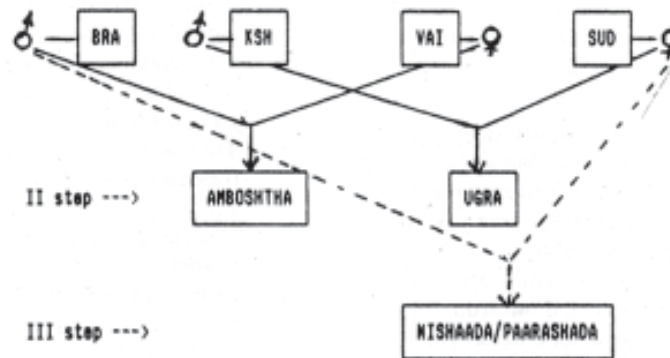


Fig. 3. *Anuloma*-second and third step lower

seem to be higher than the *Ugra* (KSH two degree lower) in their professional status (Sl. 48/X).

- Further a combination of *Ugra* and *Amboshtha* females with BRA male produce *Aabruta* and *Abheera* whose profession is not mentioned. This upward combination is probably given a chance

males of lower *varnas* with females of higher *varnas*. They are comparatively considered to be lower in origin than the *Anulomas*. The first, second and third step lower *Pratiloma* (*Varnassankara*) inheritances are as follows (Sl. 16,17/X) (Fig. 5)

- The *Soota varnassankara* is lower than KSH; the *Maagadha* (one step) an *Vaideha* (two

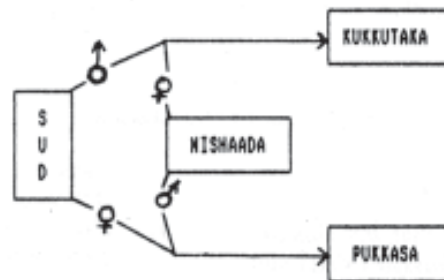


Fig. 4. *Ssudra, Nishaada* interaction

for the upliftment of lower *Anulomas* which will be discussed later in reference to Sl. 64/X.

- Since *Nishaada* is a product of BRA male and SUD female, it has a fair chance to interact with SUD again as follows (Sl. 18/X). (Fig. 4)

The profession of *Pukkasa* is as that of *Ugra* but the profession of *Kukkutaka* is not

step) are lower than VAI and the *Ayaogaba* (one step), *Kshatta* (two step) and *Chandaala* (three step) are lower than SUD. This shows that even if they are the products of higher *varna* females, they are less than the *varna* of their male parent. Hence any *Pratiloma* combination is lower than the pure *varnas* (Sl. 16,17/X).

- The above six *Pratilomas* if arranged according to the degree of lower trend, the order will be

<i>Soota</i>		- I
<i>Maadadha</i>		
<i>Ayaogaba</i>		
<i>Vaideha</i>		- II
<i>Kshatta</i>		
<i>Chandaala</i>		- III

5. The *Pratilomas* have the following occupations in the society as
- Soota* : management of horses and chariot (Sl. 47/X).
 - Maagadha* : Trade (Sl. 48/X).
 - Ayaogaba* : Carpentry (Sl. 48/X).
 - Vaideha* : Service to women (Sl. 47/X);
 - Kshatta* : Catching and killing of ani-

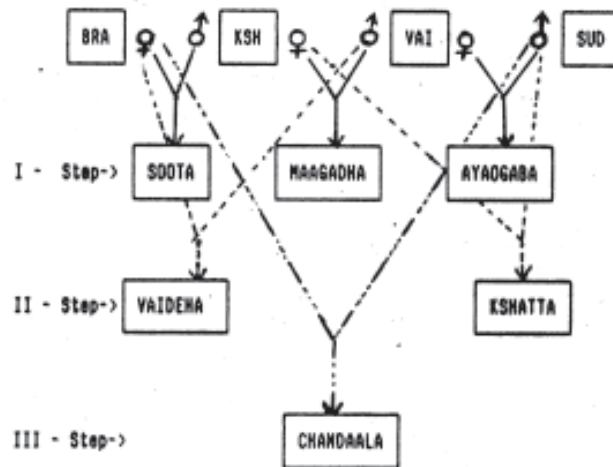


Fig. 5. *Pratiloma* inheritance

But the order of presentation (may be the order of superiority) as has been pointed out by Manu (Sl. 26/X) is as follows :

<i>Soota</i>	<i>Vaideha</i>	<i>Chandaala</i>	<i>Maagadha</i>	<i>Kshatta</i>	<i>Ayaogaba</i>
1	2	3	4	5	6
Braahmana father			Kshatriya father		Vaissya father

This shows that the degree of down trend is of less importance, compared to the *Varna* of father. The *Chandaala* is described as *Naraadhama* (Sl. 26/X) i.e. worst human. Yet in view of BRA father is kept in third place in the list of superiority.

3. The above six *Pratilomas* beget similar *Varnas* on female of their own mother's or higher *Varnas* (Caste). For example *Kshatta* male will produce the like, either with a *Kshatta* or *Kshatriya* or *Braahmana* female (Sl. 27/X).
4. Similarly the combination of BRA male with *Ayaogaba* female leads to another *Varnassankara* known as *Dhigguana* (Sl. 15/X) who lives on working with leather (Sl. 49/X).

mals of burrowing habitat (Sl. 49/X) like that of Ugra and *Pukkasa anulomas*; and

- Chandaala* : Their function is very well elaborated through six *Slokas* (Sl. 51 to 56/X) such as :
- a. They should be out side the village wonder from place to place and should not move during night time.
 - b. They should not be given food in self used vessels generally have to eat in broken (earthen, pots.)
 - c. Their dress shall be the garments of dead persons and ornaments should be in black iron.
 - d. Their wealth is usually dogs and donkeys.
 - e. Their occupation is to carry the corpses of persons who have no relatives and by the order of the king always to slain the

criminals and shall take their clothes, beds and ornaments.

6. Similarly the *Kshatta*, *Urga*, *Pukkasa* and *Dhigguana* are scheduled to live near burial grounds or well known trees or mountains in groups and will live by their peculiar occupations (Sl. 49,50/X).

7. The Vaahya and Dasyu Caste :

The development of further descendants by the inter breedings of six *partilomas* like *Soota* and others (*vide* point no. 5) with their corresponding higher trends produces 15 *Varnassankaras* which are considered to be *Vaahya Varnassankaras* (out castes). They are not included within the *Aryaan* society. This shows that *Anulomas* and *Partilomas* upto three step lower like *Soota* etc are included in *Aryaan* society. The occurrence of the above 15 outcastes is depicted in Sl. 31/X. which states.

Pratikoolam vartamaanaa vaahyaa vaahyataraan punah, Heena heenaan prasooyante varnaa panchadassaiva tu (31/X).

Meaning : But men excluded by the *Aryaans*, (*Vaahya*), who approach females of higher rank, beget races (*Varna*) still more wor-

thy to be excluded, low men (*Heena*) still lower races, even fifteen in number (Buhler, 1896).

Such 15 outcastes are explained in the light of interpretation given by Kullukabhata (Buhler, 1886) as follows :

- a. The lowest among the above, the *Chandaala* with females of the rest five higher *Pratilomas* may produce 5 degraded races.
- b. Similarly *Kshatta* will produce 4; *Ayaogaba* 3; *Vaideha* 2 and *Maagadha* 1; the sum total of all is 5+4+3+2+1 = 15. All these out castes and their further in/interbreeding products are considered more and more lower trend and designated as *Dasyu* (Sl. 45/X).

IV Interactions between Anulomas and Pratilomas :

An interesting observation is found in Sl. 19/X, which shows a systematic study of interaction between 2 step lower *Anulomas* and *Pratilomas*.

(Chances of such marriage were more because of similarity of parental sources). Studies from the above features indicate that the

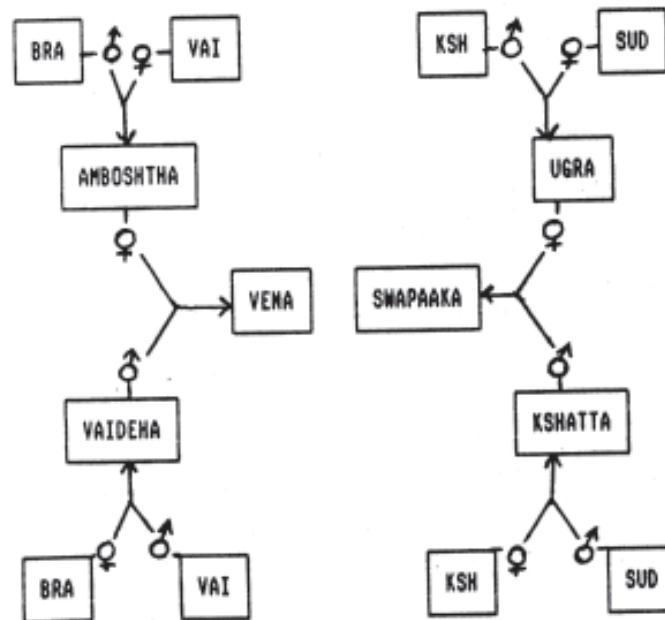


Fig. 6 . Products of *Anuloma* and *Pratiloma* interaction

Anuloma product of the combination between BR male and VAI female. (i.e. *Amboshtha*) and *Pratiloma* product of VAI male and BRA female (i.e. *Vaideha*) given rise to a product *Vena* (out of *Amboshtha* female and *Vaideha* male). Similarly the *Ugra* and *Kshatta* respectively *Anuloma* and *Pratiloma* products of KSH and SUD given rise to *Swapaaka* (out of *Ugra* female and *Kshatta* male). The interesting point to note here, in both the cases the female of *Anulomas* (i.e. low *Varna* female) mix with male of *Pratiloma* (low *Varna* male). But however the products were of still lower like *Vena* who

lives by drum beating (Sl. 49/X) and *Swapaaka* who were equivalent as that of *Chandaala* (Sl. 51/X).

V. Attempt for elimination of Varnassankara
Sloka 64/X States

Ssudraayaam braahmanaajaatah ssreyasaa chet prajaayate, Assreyaan ssreyaseem jaatim gachhatyaasaptamaadyugaat (64/X).

Meaning : If (a female of the caste) sprung from a *Braahmana* male and *Ssudra* female, bear (children) to one of the higher caste, the inferior (tribe) attains the highest caste within seventh generation (Buhler, 1886).

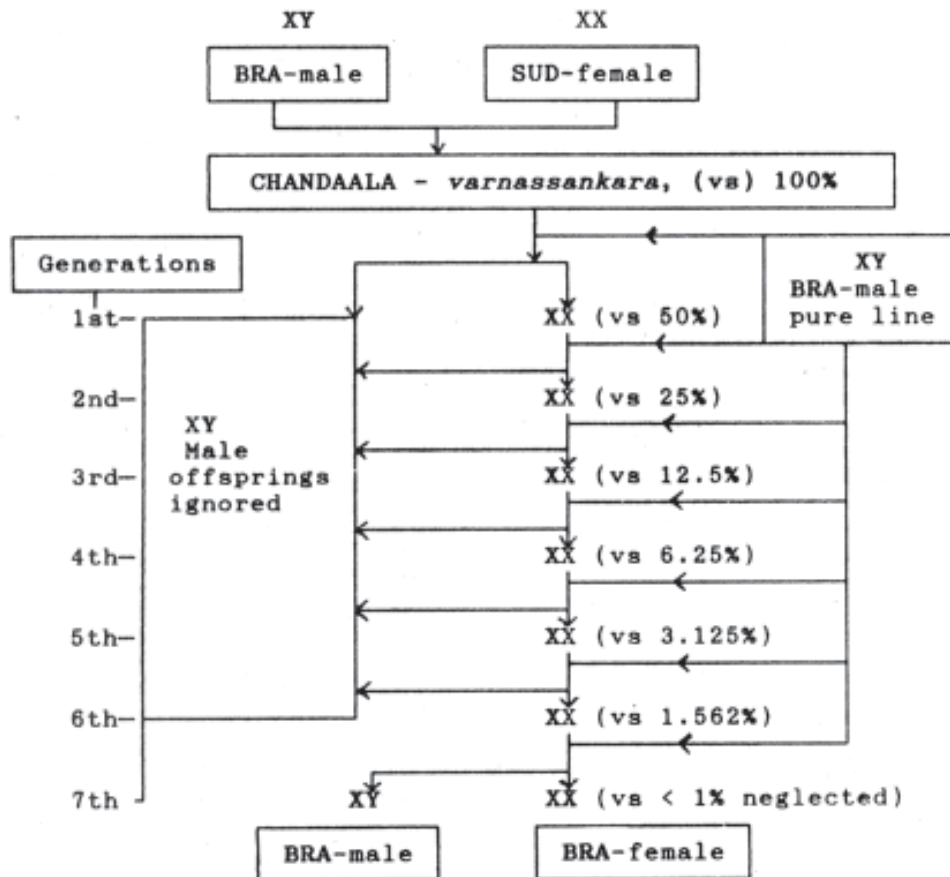


Fig. 7. Diminishing trend of the *Varnassankaras* (vs) in seven generation as explained in *Manusmruti* (Sl. 64/X)

The above *Ssloka* gives a clue that there is possibility to eliminate *Varnassankara* character through suitable union (marriage) with males of higher *Varnas*. This *Ssloka* is very well interpreted by four Indian expert commentators on *Manusmruti* like Medhatithi, Govindaraga, Kuluka Bhatta and Raghavananda that for example if the daughter of a *Braahmana* male and *Ssudra* female and her descendent females all marry *Braahmana* males, the offsprings of the sixth female descendent (*i.e.* Seventh generation both males and females) of the original couple will be *Braahmana* (Buhler, 1886; Roy, 1968).

In this process the male offsprings up to the sixth generations are ignored and female importance is emphasized. In every succeeding generation the emerging female offsprings are allowed to marry only with a *Braahmana* male (pure line). This process is also applicable for KSH and VAI (*Sl.* 65/X).

On the contrary, according to modern genetics breeding between a dominant homozygous (AA) and a recessive homozygous (aa), can yielded a heterozygous (Aa). Now the inbreeding of the heterozygotes (Aa) will produce the offsprings in the ratio 1 (AA) : 2 (Aa) : 1 (aa). This shows that the second generation, halves the population of the hybrids. By extrapolating the same principle $1/2^n$ (where n = number of generations *i.e.* 50% in the first generation and so on) in each successive generation it will be less than 1% in seventh generation which is negligible (Singh, 1988).

From a recent study it is recorded that the Paternal genes on X-chromosome influence a subject's social behaviour (Anonymous, 1997). On this basis the above genetic studies are extrapolated with XY (sex) chromosomes of human beings. Thus in the above explanation the *Varnassankara* female (considered to be apparently heterozygous) who is allowed to marry a *Braahmana* male (apparently homozygous), an attempt has been made to explain the elimination of *Varnassankara* quality, being represented in sex chromosomes (Fig. 7). The seventh generation offsprings carry 0.781% *Varnassankara* which is negligible and hence would considered as pure *Varna*.

Further it is observed that no interaction of one step lower *Anulomas* and *Pratilomas* are found. The one step lower *Anulomas* are equally treated with their fathers (*Anantara Varnas*). Similarly the *Pratiloma* product *Soota* with a father of KSH possessed an occupation of horse management and chariot driving (*Sl.* 47/X) which is connected to KSH occupation. The *Maagadha* (*Pratiloma* product of VAI males) has an occupation of business even though he has not given the status of VAI. This shows that the one step lower *Anuloma* and *Pratiloma* conserved themselves and consciously avoid for further lowering. Mostly the interaction of upper *varnassankaras* are comparatively less but the chance for interaction of lower *varnassankaras* are more.

VI. Miscellaneous Inbreeding

The interaction between the lower *anulomas* and *pratilomas* within themselves and out castes resulted still ten lower *varnassankaras* like *Soureendhra* (Occupation : Lives like a slave though not a slave, skilled in adorning and attending his master and sharing of animals), *Maitreya* (O : Ringing of bell on appearance of dawn, continually praised great men), *Kaivartta* (O : Boatman), *Kaaraavara* and *Aahindika* (O : Leather works), *Andhra* (O : Vagabond, slaughterer of wild animals), *Medha* (O : same as *Andhra*), *Paandu sopaaka* (O : Bamboo and cane works), *Sopaaka* (O : less than *Chandaala* lives of his sire), *Chunchu* and *Madgu* (O : Slaughterer of wild animals) *Sslokas* 32 to 39 and 48/X) out of them in five either *Vaideha* female or male has taken part. May be this is due to *Vaidehas* with a profession of service to women, has scoped them for diversified interactions.

DISCUSSION

It may be different to claim that *Manu* has either conducted or recorded the results of inbreeding between different *varnas* from genetic point of view. The records are on social or cultural basis. But deep studies and systematic presentation of the data seems eye catching as if

genetic studies (eugenics) are carried out. As a summary, the following principles are followed for these studies.

Principles followed by Manu

1. BRA, KSH, VAI and SUD are considered to be the pure line varnas and there is no other fifth *varna*. Adulteration between any two groups result a *Varnassankara*.
2. On the priority of *Sattva*, *Rajas* and *Tamas gunas*, the *Varnas* BRA, KSH, VAI and SUD are arranged on the trend of superiority. Hence some one's caste is not necessarily a birth right.
3. The mixed origin (*varnassankaras*), resulted out of males of higher *varna* on the females of lower *varna* are considered *Anuloma*.
4. Similarly *Varnassankaras*, originated

Table 1 : Division of plants, animals and human beings based on *Guna* and *Karma* (Das, 1995)

<i>Taamasa</i>	<i>Rajasa</i>	<i>Sattva</i>
Lowest : (Sl. 42/XII)	Lowest : (Sl. 45/XII)	Lowest : (Sl. 48/XII)
<ul style="list-style-type: none"> • Immovable beings (plants) : <i>Sthaabaraah</i> • Insects (Small and big) : <i>Krumikeetaah</i> • Fishes : <i>Matsyaah</i> • Snakes : <i>Sarpaah</i> • Tortoises : <i>Kachhapaah</i> • Cattle : <i>Pasabah</i> • Wild animals : <i>Mruqa</i> 	<ul style="list-style-type: none"> • Hired slayers : <i>Jhallaah</i> • Cart robbers Plundering Wealth : <i>Mallaah</i> • Aborigines live on exhibiting circus : <i>Nataah</i> • Persons subsist by despicable occupations and armed servants to give projection : <i>Ssastravrutayah Purushaah</i> • Addicted to Gambling and Drinking : <i>Dyutapaana prasaktaah</i> 	<ul style="list-style-type: none"> • Hermits : <i>Taapasaah</i> • Ascetics : <i>Yatayah</i> • Reciter of vedas <i>Bipraah</i> • Researchers (specialist) <i>Vaimaanikaa ganaah</i> • Earner of livelihood through Astrology : <i>Nakshtraani</i> • Demons with higher austerities <i>Daiityaah</i>
Middle (Sl. 43/XII)	Middle (Sl. 46/XII)	Middle (Sl. 49/XII)
<ul style="list-style-type: none"> • Elephants : <i>Hastinah</i> • Horse : <i>Turangaah</i> • Lions : <i>Singhaah</i> • Tigers : <i>Byaaghraah</i> • Boars : <i>Varaahaah</i> • Despicable barbarians : <i>Mlechhah Garhitaash</i> • Sudra : <i>Sudraah</i> 	<ul style="list-style-type: none"> • Kings : <i>Raajanaah</i> • Kshetriyas : <i>Kshetriyaah</i> • Domestic Priest of Kings : <i>Raagnyam Purohitaah</i> • People delight in the warfare of disputation : <i>Baada yuddha Pradhaanaah</i> 	<ul style="list-style-type: none"> • Sacrificer : <i>Yajjawaanaah</i> • Sages : <i>Rooshayao</i> • Qualified astronomers : <i>Yotimshi batsuraa</i> • Realiser of Vedas : <i>Vedaah</i> • Realiser of God/Devine spirit (enlightened) <i>Devaah</i> • Protector/Savior : <i>Pitaraah</i>
Highest : Sl. 44/XII)	Highest : (Sl. 47/XII)	Highest : (Sl. 50/XII)
<ul style="list-style-type: none"> • Chaatukaar : <i>Chaaranaah</i> • Birds : <i>Suparnaah</i> • Daambhikaah • Carnivore man with higher status : <i>Raakshaasa (Himsruka)</i> • Carnivore man with lower status : <i>Pissaacha (Dooraachaari)</i> 	<ul style="list-style-type: none"> • Professional singer : <i>Gandharvah</i> • Professional Musicians : <i>Guhyakaah</i> • Egoistic * miserly people <i>Yakshaah</i> • Blind Followers of enlightened persons : <i>Bibudhaah anucharaah</i> • Beautiful artistic women : <i>Apsaraah</i> 	<ul style="list-style-type: none"> • Truthful implementor of Vedas : <i>Brahmaa</i> • Saints of high order : <i>Blisswa srujaah</i> • Founder of principles : <i>Dharmaatmaa</i> • Great Souls : <i>Mahaatmaa</i> • Spiritual guides (<i>Sadgurus</i>) <i>Mahaan byaktaimeba</i>

out of females of higher varna, on males of lower varna are considered Pratiloma.

5. The morphology is an auxiliary character and the *Karma* (action) and the behaviour are considered as the primary indentifying characters of *Varnal Varnassankara*.
6. There is possibility to eliminate the *varnassankara* character through suitable back crossing with males of higher *varnas*.
7. Both the parents (male and female) are responsible for transmission of *samskaara* (cultural character) to offspring hence the so called theory of patriarchal society of Hindu cult is not true in genetic studies as the male of higher *varna*, is unable to give equal status to his children produced from female of lower *varna*).

The above study indicates that the division of *Chaturvarna* was not a matter of birth right in the beginning. However in course of time it has taken the shape as a birth right. The presentation of interaction between different *varnas* and *varnassankaras* in a systematic form indicates that Manu had studied the phenomenon in the society, but may not be the originator of this view. In this regard the low opinion and blames thrown on Manu as the procreator of caste system in Indian scenario and the antithesis of *Manuwaad* should be altered. Moreover inbreeding of different *varnassankaras* in all these past thousands of years has generated many castes and sub castes. At present it is difficult to trace out the origin and purity of any caste. But slowly the trend of the society is tending towards the division of the people primarily on the basis of their educational, financial (economic) and cultural status where as their birth and origin became secondary and of minor importance. Hence it is difficult to classify the society on the basis of *Chaturvarna*, because the knowledge on the scientific basis of such classification *i.e.* on *guna* and *karma* is lacking. It must be kept in mind that the *Chaturvarna* classification was not only for human beings, but for all the living creatures which is evident from *Sslokas* 42 to 50/XII (Table 1) (Das, 1995).

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