

Ethnobiological Studies From *Manusmriti* : II Concept of Ecological Food Chain

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ABSTRACT Studies on '*Manusmriti*' reveals that the ecological concept of food chain is of ancient origin.

'*Manusmriti*' is not only a legendary epic containing human ethics only (Gold Stucker, 1977); it also has many diverse aspects of science (Murthy, 1994; Behera, 1996). In the process of researching the efficacy of the contents of *Manusmriti* with modern scientific knowledge, we recently reported that the Blackbuck (*Antelope cervicapra* L.) is an ecological indicator for an environment conducive for human habitation (Padhy and Dash, 1995) since the vedic period. The classification of animals and plants given by *Manu* around 2000 B.C. may give him the status as the father of Biological classification. His theory of creation of life, geological time period, conservation of nature and evolution, may be said to be no less in its scientific merit as compared to modern science. This paper presents the ancient idea of ecological food chain in *Manusmriti* (see Buhler, 1886; Roy, 1968; Das, 1995).

It is well known that the transfer of energy in the form of food from the producers, through a series of organisms (herbivores to carnivores) with repeated eating and being eaten, is known as food chain (Sharma, 1990). The plants are the primary producers which trap the radiant energy during photosynthesis and occupy the first position in the trophic level. The herbivores are the primary consumers, which in turn are consumed by carnivores which are called secondary consumers. The herbivores and carnivores constitute the second and third trophic levels, respectively. The

movement of energy in the ecosystem along with the food chain is unidirectional and responsible for its maintenance.

The chapter-5 in *Manusmriti* is devoted to narrate the lawful and forbidden food. The stanza 28 of this chapter reads as follows.

*Praanaasyaanna Midam Sarbam
Prajaapatitakalpayat
Sthaabaram Jangamanchaiba Sarbam
Praanasya Bhojanam.*

Meaning : The Lord of creatures (*Praja-pati*) created this whole (world to be) the sustenance of the vital spirit; both the immovable and the movable (creation is) the food of the vital spirit (Buhler, 1886).

The word *Prana* is explained as the vital spirit (or life force) which is responsible for holding of the biological creation. The maintenance of life requires food and according to need either the plants (immovable) or animals (movable) are used for the purpose. The creation power of the nature (the Lord of creatures '*Prajapati*') has created everything (in the form of food) for the sustenance of the life force.

Stanza-29, Chapter-5, *Manusmriti* :
*Charanaamannamachara Danstrinaamapya
Danstrinah
Ahastaascha Sahastaanaam
Sooraanaachaiba Bheerabah*

Meaning : What is destitute of motion is the food of those endowed with locomotion; (animals) with out fangs (are the food) of those with fangs, those with out hand of those who possess hands, and the timid of the bold (buhler, 1886).

In the process of food chain all organisms come under two category : (1) eater and (2)

being eaten. Accordig to *Manu* the being eaten group may be of :

- destitute of motion,
- without fangs,
- without hands and
- timid by nature

and the eater group with opposite characters. The destitute of motion (immovable) group are the plants (*achara*) which are eaten by herbivores (*chara*). Even though all the animals possess the locomotion capacity (*chara*), the sanskrit word *charan* is used for the eating process of herbivores only. So *Manu's* use of word *chara* is pointed to herbivores. The *achara - chara* relation constitutes the first link of the food chain between first and second trophic level.

Further the food link between the animals without fangs (long sharp teeth) and with fangs is clearly a herbivore-carnivore relationship, the second link of the food chain. All the herbivores are without fangs and the food chain can be framed as follows.

Destitute of motion	---->	Endowed with motion-without fangs	---->	Endowed with motion-with fangs
(Plants)		(Herbivores)		(Carnivores)

The third link described my *Manu i.e.* those who possess hands, eat those with out hands. The word hand in English language is explained in the following manner : at hand-close by; on hand-available; out of hand-out of control; to hand-within reach (Howkins, 1981). In Sanskrit the word *Hasta* means the power of capturing. The use of the word *Hasta* should not be attributed to the human beings only. The organisms with the power of capturing (tentacles, jaws, claws, tail of reptiles, tusk of elephants, pino-and phago-cytosis of *Amoeba* and the modified capturing organs of carnivorous plants etc.) can eat the organisms without such power. Similarly the organisms with an inherited psychological character like timidity are used as pray by those bold. The explanation of food chain by *Manu* is based on acquired, physical, physiological and psychological characters compared to modern scientific view which is related to food habit only.

The succeeding stanza 30, Chapter 5, *Manusmruti* :

*Naattaa Dooshyatyadannaadyaan Praanino-
hanyahanyaapi
Dhatraiba Srushta Hyaadyaascha Praninot-
taara Abacha.*

explains the following meaning :

The eater who daily even devours those destined to be his food, commits no sin, for the creator himself created both the eaters and those who are to be eaten (for those special purposes) (Buhler, 1886).

The eater in the food chain commits no sin by doing so. This shows that as a food habit the activity is not unlawful rather a natural process, as the creation is such for its own maintenance. In a modern scientific point of view food chain is natural for the flow of energy that maintains the eco-system.

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