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RESEARCH ARTICLE

BIOLOGY IN JAINISM: A REVIEW

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Abstract

The history of science is not just a chronological description of events of scientific discovery; but it is a story of an ongoing process of the interaction of science and society. It is a story of how socio-economic conditions of a given society necessitate particular inventions and innovations. These processes are neither time restricted nor space restricted. In the sense, they are of universal applied value. In this context, it is worth remembering that, the rich heritage of India, comprises science and technology too, though only few people are aware of this. However, only recently, since few decades, people are attempting to popularize the scientific facts hidden latent in ancient works which have been mostly written in either Sanskrit or Halegannada. The present paper attempts to disclose the various aspects of biology that have appeared in major works of **JAINISM**. Eight major works pertaining to Jainism basically were studied in depth to gather information relevant to biological sciences and compiled to obtain a comprehensive report.

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Introduction:-

Preamble

The history of science is not just a chronological description of events of scientific discovery; but it is a story of an ongoing process of the interaction of science and society. It begins in the primitive human society and threads its way through different ages which have seen different forms of society up to the modern times. It is a story of how socio-economic conditions of a given society necessitate particular inventions and innovations. These innovations are used and absorbed by the society leading to the state of social stagnation. During this stage, new ideas in science and technology arise which get stabilized and reach the society of next epoch. This process at each step takes society to a quantitatively higher phase and each higher phase has more complex problems and social relations, creating even more complex and unforeseen problems for science to solve.

The facts presented in the introductory paragraph are neither time restricted nor space restricted. In the sense, they are of universal applied value. It simply means any civilization, any society, any country would have navigated through all the stages referred above and India doesn't form an exception indeed. The rich heritage of India, encompasses science and technology too, though only few people are aware of this.

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However, only recently, since few decades, people are attempting to popularize the scientific facts hidden latent in ancient works which have been mostly written in either Sanskrit or Halegannada. This work needs to be carried out at two stages for its successful and faithful completion.

To begin with, whatever relevant information regarding different disciplines of science is available in ancient literature needs to be collected from different sources and published.

Secondly, the scientific information available in such works needs to be translated to vernacular languages and explained in an understandable manner.

Finally, the conformational analysis and evaluation of the facts in the light of modern science and technology needs to be taken up.

The present paper attempts to disclose the various aspects of biology that have appeared in major works of **JAINISM**, so that one can appreciate the intellect of those times.

Materials and Methods:-

The major works pertaining to Jainism were studied in depth and relevant information pertaining to biological sciences was scanned through and compiled to obtain a comprehensive report. Table 1. lists the major works that were investigated for the current studies.

Table 1:- Major works of Jainism that was investigated.

Sl.No.	Name of the work	Epithet used	Name of the author	Probable date
01	Siddharta saara sangraha	S.S.S.	Acharya Narendra Senaacharya	1093 A.D.
02	Tatvaartha sutra yoga	T.S.Y.	Aacharya Umaswamy	After 84 B.C.
03	Dravya sangraha	D.S.	Nemichandra siddhanta chakravarthy	10 th century A.D.
04	Jeeva vichara prakaranam	J.V.P.	Vaaadivetaala sri shanthi bhadra sureeshwarajee	Mid 11 th century A.D.
05	Padaartha saara and Siddhantha saara	P.S. and S.S.	Maaghanandi Acharya	Between 11 th and 13 th century A.D.
06	Jeevaabhogama sutra	J.S.	----	-----
07	Pauuavana sutra	Pu.S.	----	-----
08	Tatvaartha sutra	T.S.	----	-----

Results And Discussion:-

According to Jainism, there are only two kinds of matter (Dravya) in this world. They are “JEEVA” and “AJEEVA”.

“JEEVAMAJEEVAM DRAVYAM” (1. D.S.)

Jeeves And Their Classification:

1.Jeeva:

Various authors have defined ‘Jeeva’ in different manners as follows:

“Trikaalee chatuhu praanaaha indriya, balamaayuraana praanaascha vyavahaaraat sa jeevaata” (2. D.S.)

Indriya balaayuruchwasanishwasavemba naalku praanagalindaateeta kaaladol bandudu vartamaanakaaladol jeevisuttirpudum bhavikaaladol jeevisaldeedirduda mendintu jeevavembudu “(P.S.)

“.....chatuhu saadharanaihi praanairjeevayam jeevateetyapi “(S.S.S.)

All the views more or less describe the ‘Jeeva’ as the one which live through four praanas such as ‘Indriya’, ‘Bala’, ‘Age’ and ‘Breathing’ during the past, present and future.

The four praanas include: 1) five indriyas 2) three balas 3) one ayushya and 4) one shwaasocchwaasa (Total. 10).

Samsaaree Jeeva And Mukta Jeeva:

Jeeves are further divided into samsaaree jeeves and mukta jeeves.

“Samsaarino muktaascha” (T.S.)

Samsaaree jeeves are further classified into 1) Sthavara jeeves (locomotionless) and 2) Trasa jeeves (locomotory). The former ones have only one indriya (Ekeendriya) Viz:-‘Sparshana’ (touch), while the latter may have two to five indriyas.

Those which are not bothered by different agents such as water, fire, weapons have been referred to as sookshma ekeendriya jeeves and those which are bothered as baadaraikeendriya jeeves. Those only with few sense organs have been classified as Indriya Apoorna and those with all the sense organs as Indriya Poorna.

Starting from Ekeendriyas through panchendriyas all jeeves have been further classified into 1) Paryaaptaka and 2) Aparyaptaka jeeves. Complete energy status is called paryaapti and it is of six kinds such as ‘Aaahaara’, ‘Shareera’, ‘Indriya’, ‘Ucchwaasa’, ‘Nishwaasa’, ‘Bhasha’ and ‘Manassu’. Each one of these concepts has been defined precisely.

There is reference regarding the number of praanas borne by different jeeves.

Table.2 reveals the number of praanas borne by paryaaya and aparyaaya jeeves categorized under Manassahita panchendriya and Manarahita panchendriya jeeves.

Table 2:- Number of Praanas of different jeeves.

	Paryaaya	Aparyaya
Manassahita panchendriya jeevigalu	10 praanas	07 praanas
Manarahita panchendriya jeevigalu	09 -- (Mana- one less)	07 --
Manarahita chaturindriya jeevigalu	08 -- (Ear- one less)	06 -- (Ear -one less)
Manarahita trindriya jeevigalu	07 -- (Eye- one less)	05 -- (Eye -One less)
Manarahita dweendriya jeevigalu	06 -- (Nose- one less)	06 -- (Nose- one less)
Manarahita eekendriya jeevigalu	04 -- (Tongueless)	04 -- (Tongueless)

Further there is analysis of the sense organs borne by Ekeendriya jeeves through panchendriya jeeves. The details of the names of Indriyas and number of praanas borne by different jeeves are tabulated in Table.3.

Jaraayuja, Andaja And Pota Jeeves:

Acharya Umaswamy has classified jeeves into three types in his work. (T.S.)

“Jaraayu chandaja potaanamgarbhaha”

Table 3:- Name of indriyas and number of praanas of jeeves.

Type of Jeeves	Indriya	Number of praanas
Eekendriya jeeves	Sparshana (only one)	07
Dwindriya jeeves	Skin and Tongue (two)	06
Trindriya jeeves	Skin, Tongue and Nose (three)	07
Chaturindriya jeeves	Skin, Tongue, Nose, Eye (04)	08
Panchendriya asanghni	Eye, Nose, Tongue, Ear, Skin (five)	09
Panchendriya sanghni	-----“----- -----	10

Those which are born are covered with a coating of mucus, blood are Jaraayujas. e.g.: cow, man, etc., (viviparous). Those which hatch out of the eggs are called Andajas. e.g.:

Birds etc., (oviparous). Those which are born without of mucus cover are called potas.e.g.: horse, lion etc., Same kind of analysis is also available in Ayurvedic texts such as ‘Sushruta samhita’, ‘Charka samhita’etc.,. They classify the jeevees into four categories as follows:

Jaraayuja-----Viviparous

Andaja-----Oviparous

Swedaja-----those which are born out of sweat and

Udhhija-----those which are born out of mud

The reference regarding pota jeevees is not available in their texts.

List of Dweendriya, Teendriya, Chadurindriya and Panchendriya jeevees as has been mentioned in the Pannavanna Sutra:

Dweendriya Jeevees:

Chank, Cypraea, Gandalohulu(?), Leech, Chandanaka(?), Earthworm, Lahaka(?), White ants (Termites ?) etc.,. Twenth nine different varieties have been mentioned. Of course, some of the names are ambiguous and can't be correlated to any of the species currently available.

Teendriya Jeevees:

Centipede, Bed bug, Ant, Head Louse, Ticks, White ants, Black ants, Worms in pulses, Worm in butter, Hair Louse, Flea, Millipede etc., have been categorized as the ones with three indriyas. Thirty nine different varieties have been mentioned.

Chadurindriya Jeevees:

Thirty eight different species have been mentioned in this category. Some of them are : Scorpion, Cow bug, Honey bee, Beetle, Grasshopper, Fly, Gungaadu, Mosquito, Moth, Spider, etc.,.

Panchendriya Jeevees:

This category includes:

- 1.) Naarakeeyaru
- 2.) Tiryanchas
- 3.) Human beings and
- 4.) Gods

Further, it is interesting to realize that habitat based classification of panchendriya jeevees is also available. Tiryancha panchendriya jeevees have been classified as **AQUATIC, TERRESTRIAL AND AERIAL ORGANISMS**.

“Jalachara, Sthalachara, Khechararsu trividha’! Panchendriyo astiryancha shishumaaraa, maatsyahaa, kacchupaa, graaha, makarrascha jalacharraha!

According to pannavana sutra, Ekeendriya and Dweendriya jeevees can have their birth without the involvement of their parents. Tindreeya jeevees arisse from shit, while the chadurindriya jeevees from the shit and saliva of its own species.

The statistical data pertaining to the diversity of different jeevees on this earth is also available in works pertaining to Jainism:

According to them they are as follows:

Sthavara-----22
Tiryancha panchendriya-----20
Vikalendriya (2,3,4 indriya)-----06
Naarakeeyaru-----14
Humans-----303
Gods-----198

Total-----563

Furhter SSS has also discussed the maximum life span different jeevees:

Dwindriyas-----12 yrs.

Tindriyas-----49-“-
Chadurindriyas-----06months
Aquatic organisms-----84,000years
Aerial organisms-----72,000-“-
Snakes-----53,000-“-
Organisms which move with the hands42,000-“-

The basis of the above speculation remains obscure and in no way acceptable as per our calendar.

There is also mentioning of various plant species under the category of Anantakaayika jeevees (pannavana sutra). The following plants species find their mentioning.

Onion, Garlic, Beetle leaves, Mushroom, Algae, Ginger (three types), Carret, Guggulu, Gaduchi, Amorphopholus, Radish, Potato, Dicots, Various species of grass, Brinjal, etc.,.

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