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RESEARCH ARTICLE

TYPES OF SNAKES IN SIDDHA MEDICINE – A LITERATURE REVIEW

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ABSTRACT

The four common venomous land snakes which are found in India region include the Common cobra (*Naja naja*), the Common krait (*Bangarus caeruleus*), the Russell's viper (*Viperarusselli*) and the Saw scaled viper (*Echiscarinatus*) (*Virmani SK and Dutt OP. A., 1987, Kulkarni ML and Anees S., 1994*). Although venomous snake bite is a life threatening emergency, it is rarely considered as a priority for health research in developing countries like India. In Siddhar's view they listed 64 snakes in texts therefore I need to analysis the types of snakes with modern and ancient texts by literature review research. Enumerate the types of snakes which are list in ancient Siddha medical system and available modern text books and e-books is aim of this research. And primary objective - to list-out the types of snakes available or not in present according to ancient siddha texts. Secondary objective - to compare the name of snakes are same or change between modern and ancient siddha texts. Siddha Toxicology, *Visha Vaida Aaruda Noolgal*, *Visha Vaidya Chinthamani* were selected for siddha literatures and The essential of Forensic Medicine and Toxicology, Principles of Forensic Medicine and Toxicology, and Guidelines for the management of snake bites, were selected as modern literature about types of snake. Finally concluded as; siddha classical text said 64 types snakes were available in modern text and distributed in South Asian countries such as; Sri Lanka, Bangladesh etc.

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INTRODUCTION

World population of snakes is comprised of about 2,800 species of which 375 are venomous of this vast number of faunal spectrum of snakes only 242 species of snakes have been known from the Indian region of which only 57 species are poisonous or harmful (*Sharma BD, 2002*). Poisonous snakebites are a serious health challenge in tropical regions due to their incidence, morbidity and mortality (*Chippaux JP, 1998*). More than 200,000 cases of snake bite are reported in India each year. Envenomation by poisonous snakes is an occupational hazard for the farmers and farm laborers, plantation workers, herders and hunters in tropical and subtropical countries (*Reid HA., 1968*). The actual incidence of snake bites may be much higher as majority of cases occurring in rural population go unreported. The four common venomous land snakes which are found in this region include the Common cobra (*Naja naja*), the Common krait (*Bangarus caeruleus*), the

Russell's viper (*Viperarusselli*) and the Saw scaled viper (*Echiscarinatus*) (*Virmani SK and Dutt OP. A., 1987, Kulkarni ML and Anees S., 1994*). Although venomous snake bite is a life threatening emergency, it is rarely considered as a priority for health research in developing countries like India. In Siddhar's view they were listed 64 snakes in texts therefore I need to analysis the types of snakes with modern and ancient texts in literature review research design way.

Aim and objectives: Enumerate the types of snakes which are list in ancient Siddha medical system and available modern text books and e-books.

Objectives

Primary: To list-out the types of snakes available or not in present according to ancient siddha texts.

Secondary: To compare the name of snakes are same or change between modern and ancient siddha texts.

Review of literature: Collection of literature review from siddha aspect and modern view of herpetological text books.

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Following aspect such as;

- Siddha aspect
- Modern aspect

Siddha Aspects**In Tamil ancient siddha medical book literature view collected from**

- Siddha Toxicology, Dr. Pon. Gurusironmani, Dept. of Indian medicine and Homoeopathy, Chennai – 600 106, First edition – 1999, Re print – 2010 (86-91)
- Vishavaidaaarudanoolgal, R. C. Mohan, Thamarainoolagam, July, 2013
- Vishavaidya Chinthamani, S. Munusamy Muthaliyar, South Indian Book Depot, 1931.

According to the tamil literature verse, there are countless venomous snakes in water. There are so many varieties of poisonous creatures. Cobra, Viper, *Lycodenautilus*, tree snake or *Dendrelaphistristis*, sanagam, long nosed genus, beaver snake, mandala, savudi, mayakkaravu, earth snake, rat snake, maniyam, spider, tiger faced insect..... Are the poisonous creatures.

Modern Aspects

In modern aspect data collected from following book are;

- The essential of Forensic Medicine and Toxicology, Dr. K. S. Narayanan Reddy, Medical book company, 21st edition, 2002, (481- 488).
- Principles of Forensic Medicine and Toxicology, Dr. Rajesh Bardale, Jaypee Brothers, First edition, 2011.
- Guidelines for the management of snake bites, WHO – Regional Office for South-East Asia, WHO – 2010.

There are common three families of venomous snakes in South-East Asia, Elapidae, Viperidae and Colubridae.

- Total number of species: 300
- Endemic species including Andaman and Nicobar: 113, including two subspecies (Superscripted with)
- Species endemic to Andaman and Nicobar Islands: 17 (Superscripted with)
- Number of genera: 86
- Maximum species containing genera: *Uropeltis*(23), *Oligodon*(21), *Hydrophis*(19), *Trimeresurus*(16), *Lycodon*(15), *Dendrelaphis*(11) and *Hebius*(10)
- Number of genera represented by only one species in India: 43
- Monotypic genera: 16 (*Brachyophidium*, *Pseudoplectrurus*, *Teretrurus*, *Archelaphe*, *Argyrogena*, *Elachistodon*, *Oreocryptophis*, *Wallaceophis*, *Blythia*, *Amphiesma*, *Cantoria*, *Dieurostus*, *Ferania*, *Fordonia*, *Gerarda* and *Grypotyphlops*)
- Endemic genera: 11 (*Brachyophidium*, *Melanophidium*, *Platyplectrurus*, *Plectrurus*, *Pseudoplectrurus*, *Teretrurus*, *Uropeltis*, *Wallaceophis*, *Dieurostus*, *Xylophis* and *Grypotyphlops*)
- Maximum endemic species containing genera: *Uropeltis*(23), *Trimeresurus*(9), *Oligodon*(8), *Dendrelaphis*(6), *Lycodon*(6) and *Boiga*(5)

- Number of families: 19
- Endemic family: 1 (*Xylophiidae*, endemic to Western Ghats)
- Maximum number of species containing families: *Colubridae* (108), *Elapidae* (40) and *Uropeltidae* (39) = 187
- Minimum number of species containing families: *Acrochordidae* (1), *Pseudoxenodontidae* (1), *Xenodermatidae* (1), *Xenopeltidae* (1), *Leptotyphlopidae* (2), *Pareatidae* (2), *Erycidae* (3), *Pythonidae* (3), *Xylophiidae* (3), *Sibynophiidae* (4), *Gerrhopilidae* (5) and *Lamprophiidae* (5) = 31 species under 12 families.
- Maximum endemic species containing families: *Uropeltidae* (39), *Colubridae* (35) and *Viperidae* (10)

MATERIALS AND METHODS

Study Design: Literature review

Data collection

Information collected: Available 03 Tamil Text Books about snakes and 03 English books.

Data collection procedure: Literature review by coding and data entry with MS Excel.

Data analysis: In literature review research data analysis; collected data analysis with RCS – Related Citation Score. These references to key dummy tables that are attached in appendices.

Practical considerations

Logistics for data collection: Chief investigator arrangement for the data collection time schedule with Librarian, GSMCH, Palayamkottai Staff during working hours in weekdays without lunch hours.

RESULTS

There was list in siddha Tamil literatures mentioned in following snake types;

Name of the Snake	ST
The hood spreading Cobra	8
Hissing & biting natured Viper	6
Reeling & biting natured Viper	4
Beaver Snake (water snake - <i>Chersdrusgranulatus</i>)	6
Earth snake	6
Rat snake (<i>Ptyasmucosus</i>)	5
Carpet snake (<i>Echiscarinatus</i>)	4
Koozhaipambu	2
<i>Dendrelaphistristis(mookan)</i>	3
Sanaagamookan	2
<i>Lycodenautilus / L. tidae</i> (ground snake)	6
water snake	6
green whip snake (<i>Dryophisnasutus</i>)	2
John's Earth snake (<i>EruthalaiManiyan</i>)	1
Python (<i>malaipambu</i>)	2
Poonaagam (snake found in the screw pine)	1

ST: Siddha toxicology

Name of the Snake	VSA
Viper	16
Beaver Snake (water snake - <i>Chersdrusgranulatus</i>)	16
Earth snake	1
Rat snake (<i>Ptyasmucosus</i>)	5
Carpet snake (<i>Echiscarinatus</i>)	4
Dendrelaphistristis (<i>mookan</i>)	2
Lycodenaulicus / L. tidae (ground snake)	4
green whip snake (<i>Dryophisnasutus</i>)	1
poisonous snake	8
king Cobra	1
Black snake	1
paranaagam	1
kalnenjan	1
kanneriyaAnjaaNaagam	1
savadu	2

VSA – Vida SangaraArudam

Name of the Snake	VVC
The hood spreading Cobra	8
Viper	2
Rat snake (<i>Ptyasmucosus</i>)	1
Sanaagamookan	1
Karaveekaram	26
Mandali	36
Rajamantha	13
Nirvisha	4
Vaikaranjam	3
Karu Naagam	1
Siru Naagam	1
Vazhalai	1
KaruVazhalai	1
Mayakum Sarpam	1
Murukkum Sarpam	1
Pudayan	1
Mannuli Paambu	1
Kaaliyan Kutti	1
Kan Koththippambu	1
VenaanthaiPaambu	1

VVC – VishaVidyaChithamani

S. No.	Name of the Snake of images
1.	Common spectacled cobra (<i>Najanaaja</i>)
2.	North Indian or Oxus cobra - <i>Najaioxiana</i>
3.	Monocellate cobras - <i>Najakaouthia</i>
4.	Andaman cobra <i>Najasagittifera</i>
5.	Indo-Chinese spitting cobra - <i>Najasiamensis</i>
6.	Sumatran spitting cobra - <i>Najasumatrana</i>
7.	<i>Najasputatrix / Najanubiae</i>
8.	<i>Najamandalayensis</i>
9.	King cobra or hamadryad (<i>Ophiophagushannah</i>)
10.	Common krait- <i>Bungaruscaeruleus</i>
11.	<i>Bungaruscandidus</i>
12.	<i>Bungarusmulticinctus</i>
13.	<i>B. nigrus</i>
14.	<i>B. faciatus</i>
15.	<i>B. flaviceps</i>
16.	Spotted coral – <i>Calliophismauliceps</i>
17.	Death adder - <i>Acanthophislaevis</i>
18.	<i>Micropechisikaheka</i>
19.	<i>Oxuyuranusscutellatus</i>
20.	Black snake - <i>Pseudechispapuanus</i>
21.	Eastern brown snake - <i>Pseudechistextilis</i>
22.	Sea snake - <i>Enhydrinaschigtosa</i>
23.	Spotted sea snake – <i>Hydrophis cyanocinctus</i>
24.	Banded sea snake – <i>Hydrophis fasciatus</i>
25.	Russell's viper – <i>Daboiarusselii</i>
26.	Eastern viper – <i>Daboiasiamensis</i>
27.	Saw scaled viper – <i>Echiscarinatus</i>
28.	Blunt nose viper – <i>Macroviperalebetina</i>
29.	Pit viper – <i>Calloselasmahodostoma</i>
30.	Mount pit viper – <i>Garthiachaseni</i>
31.	Hump nose viper – <i>Hypnalehypnale</i>
32.	Green pit viper – <i>Cryptelytropalbolabris</i>
33.	Spot tail green viper – <i>Cryptelytropserythrus</i>
34.	Mangrove pit viper – <i>Cryptelytropspurpleomaculatus</i>
35.	<i>Gloydus brevicaudus</i>
36.	<i>Ptyas nigromarginata</i>

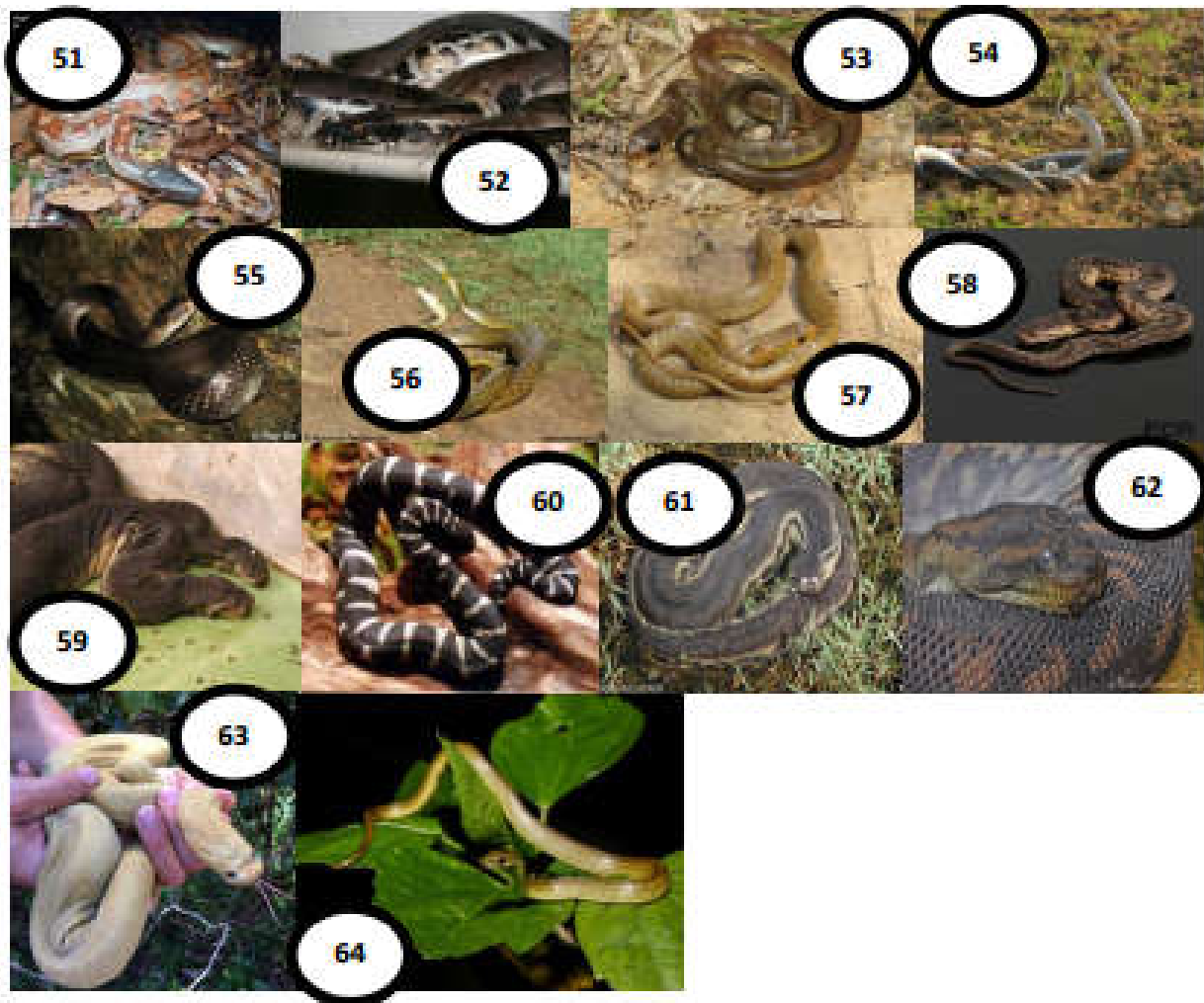
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37. *Protobothrops mucrosquamatus*
38. Bamboo viper – *Trimeresurus gramineus*
39. Palm viper – *Trimeresurus puniceus*
40. Temple viper – *Tropidolaemus wagleri*
41. *Dendrolephis grandoculis*
42. *Eryx johnii*
43. *Ahaetulla mycterizans*
44. *Ahaetulla nasuta*
45. *Lycodon aulicus*
46. *Lycodon calamaria*
47. *Lycodon septentrionalis*
48. *Lycodon striatus*
49. *Lycodon fasciatus*
50. *Lycodon flavicollis*
51. *Python molurus*
52. *Python bivittatus*
53. *Ptyas mucosus*
54. *Ptyas nigromarginata*
55. *Ptyas ventromaculatus*
56. *Ptyas korros*
57. *Ptyas bholanathi*
58. *Acrochordus javanica*
59. Trunk snake
60. *Chersydrus granulatus*
61. *Acrochordus arafurae*
62. *Acrochordus granulatus*
63. Elephant trunk
64. Screw pine snake

Following indicated numbers mentioned in above table







Name of the Snake	ST	matching	Images no.
The hood spreading Cobra	8	✓	1-8
Hissing & biting natured Viper	6	✓	29-34
Reeling & biting natured Viper	4	✓	35-38
Beaver Snake (water snake - <i>Chersdrusgranulatus</i>)	6	✓	58-63
Earth snake	6	✓	10-16
Rat snake (<i>Ptyasmucosus</i>)	5	✓	53-57
Carpet snake (<i>Echiscarinatus</i>)	4	✓	24-28
Koozhaipambu	2	✓	59,61
Dendrelaphistris (<i>mookan</i>)	3	✓	39-41
Sanaagamookan	2	✓	17,29
Lycodenaulicus / L. tidae (ground snake)	6	✓	45-50
water snake	6	✓	21-24
green whip snake (<i>Dryophisnasutus</i>)	2	✓	43,44
John's Earth snake (<i>EruthalaiManiyan</i>)	1	✓	42
Python (<i>malaipambu</i>)	2	✓	51,52
Poonaagam (snake found in the screw pine)	1	✓	64

DISCUSSION AND CONCLUSION

List-out the types of snakes available or not in present according to ancient siddha texts. Compare the name of snakes are same or change between modern and ancient siddha texts. Enumerate the types of snakes available in present and ancient by siddha, modern text books and e-books. Enumerate the types of snakes which are list in ancient Siddha medical system and available modern text books and e-books is aim of this research. And primary objective - to list-out the types of snakes available or not in present according to ancient siddha texts. Secondary objective - to compare the name of snakes are same or change between modern and ancient siddha texts.

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