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ETHNO-MEDICO-BOT ANICAL STUDIES OF CHERIYA ARAYAN-AND VALIYA ARAYAN- (Aristolochia indica, Linn; Aristolochia tagala, Cham)

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ABSTRACT: This paper presents two important species of plants used by the Kanitribes of Agastyar hills of Trivandrum district of Kerala against snake-poison and insect bite.

Introduction

The present study was conducted with the help of Kanitribes settle din the Agastyar hills, Trivandrum District. Kanitribes form the highest populated community among the tribals of kerala state. Cheriya arayan (Aristolochia indica, Linn.) and Valiya arayan (Aristolochia tagala, Cham.) are the two important species of plants used by Kanis against snake poison. Aristolochia is a large genus of herbs or twining plants comprising about 300 species found mostly in the tropical and temperate regions of the world. Eight species are reported to occur in India. The Aristolochias are bitter and poisonous and generally contain alkaloids; a few are medicinal and were formerly reputed to be useful in the treatment of snake bites' (wealth of India).

The therapeutic use of Aristolochia indica, Linn., as an antidote to snake poison was known to the ancient physicians of Ayurveda. It has been widely used against various ailments by the folk medical practitioners of Kerala.

The roots of Aristolochia indica has been found to contain an alkaloid aristolochine C^{17} $H1^{9}$ O^{3} N a yellow bitter principle, isoaristolochic acid C^{17} H^{11} O^{3} N and allantoin. The aroma of roots is due to an essential oil (0.5%) composed of sesquiterpenoid compounds with a trace of camphor (Wealth of India).

Aristolochia tagala, cham, is a lesser known species, when compared with A. indica, Linn for its medicinal value. However, it is to be noted that kanis have accepted A tagala as more powerful and effective than A. indica Apart from the ethno-medico botanical study of these plants, the eauthors have made an attempt to establish a hypothesis on the identify of the 'Arayadwaya' of Kanitribes as 'Nakulidwaya' described in the Ayurvedic system of medicine.

Cheriya arayan and Valiya arayan:

The word ‘Cheriya’ in Malayalam literature means small in siz. The word ‘Arayan’ denoted a sect of people belonging to a particular tribal community. For example Mala arayan (hill tribes), Nattarayan (tribes settled in the plain) and Katal arayan (tribes settle in the coastal area). Ethnologically the word ‘ Arayan’ is added probably like the author’ s name in the modern nomenclature to these twin species, by the Kani tribes, as a panacea, kani tries are using these plants against snake poison and other ailments from time immemorial.

In habit they are climbers with aromatic roots; flowers and needs of both are similar with slight variation. Leaves vary significantly in size and shape.

Botanical identity:-

Aristolochia indica, Linn. (Cheriya arayan)

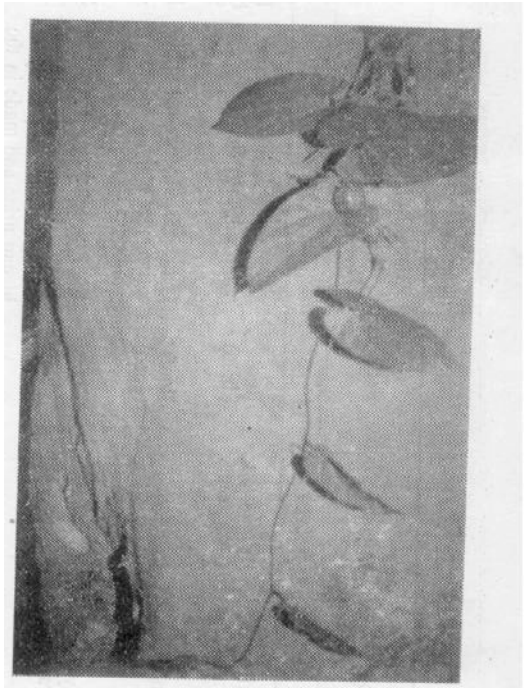
It is a perennial twiner with slender stem, somewhat woody at the base. Alternate and entire leaves are very variable, linear obovate oblong or subpanduriform with rounded or slightly cordate base upto 6 inches in length and 3 inches in breadth. Small bracteates flowers are seen in racemes, in length and 3 inches in breadth. Small bracteates flowers are seen in racemes, in the leaf axils. The perianth is with a greenish whit, basally inflated tube, which is contracted in a cylindrical neck and then expanded in a dilated oblique, oblong and 2 lipped darker li. Six stamens are adnate to and around the style column. The 6celled ovary is inferior with incurved stigmatic lobes. Fruit is a septicidal capsule, splitting through the placenta. Seeds are broadly winged and flattened.

Aristolochia tagala, Cham (Valia arayan)

It is a climbing shrub. Entire and alternate leaves are ovate acute or acuminate and deeply cordate with narrow sinus. They are upto 8 inches long and 4.5 inches broad. The structure and distribution of flowers are basically similar to those of the former species, but here the perianth is with a greenish yellow tube and purple brown lip. The six called ovary is inferior with stigmatic lobes n a cone. Fruits are long talked septicidal capsules, splitting along the placenta and with flattened broad winged seeds.

Ayurvedic identity:-

To trace out the identity of these twin plants with Ayurveda is very interesting and discussive. The twin plants described as ’Nakulidwaya’ in Ayurveda, were brought under a comparative study with ‘Arayadwaya’ of kani tribes. The word ‘dwaya’ shows the twin species of plants belonging to the same family or different families with almost similar properties or possessing less or high therapeutic value. A description of Nakuli dwaya (Nakuli and Gandha Nakuli) is



Aristolochia togala, Cham.

TABLE –I

Local name	Botanical name	Parts used	Method of preparation mode of administration Diet restriction	Tribal use (Indication)	Information documented from
1	2	3	4	5	6
Cheriya arayan	Aristolochia indica, Linn.	Roots (dried)	Pounded mass and decoction. Avoid oil, salt, etc.	Less poisonous snake bite, worm infection Scorpion poison	Pottamavu Tribal settlement, Trivandrum
Garudakkodi	Aristolochia indica, Linn	Roots (dried)	Medicated oil, External application over scalp.	Head ache. Anti-inflammatory	Chembikkunnu tribal settlement, Trivandrum.
Valiya arayan	Aristolochia tagala, Cham.	Roots (dried)	Root is rubbed on the rough surface of Ochlandra stem, adding sufficient quantity of human urine and made in the form of liquid. Minimum sode – 50 ml Internal administration. Avoid over	Snake poison (Krait & Cobra)	Pottamavu tribal settlement

			eating		
Valiya arayan	Aristolochia tagala, Cham.	Leaves	Medicated oil. External application (to be applied during night).	Prevention of snake bite	Pottamavu tribal settlement
Mala arayan	Aristolochia tagala, Cham.	Roots	Pounded mass. External & Internal administration	Snake poison scorpion poison	Chembikkunnu tribal settlement
Cheriya arayan	Aristolochia indica, Linn.	Roots	Rubbed on the rough surface of Ochlandra stem, using human urine and made into liquid for or paste. Internal administration. 50ml daily for 7 days External application over forehead and scalp. Avoid over eating.	Snake poison	Pottamavu tribal settlement
Valilya arayan	Aristolochia tagala, Cham.	Roots	"		
Keerikizhangu	Molineria trichocarpa, Balkr	Rhizome	"		
Valilya arayan	Aristolochia tagala, Cham.	Roots	Rubbed on the rough surface of Ochlandra stem, using human urine and made into liquid form or paste. Internal administration-50 ml daily for 7 days. External application over forehead and scalp. Avoid over eating and day time sleep.	Snake poison	Pottamavu tribal settlement
Cheriya arayan	Aristolochia indica, Linn.	Roots			
Erakanavu	Ochlandra travancorica, Linn	Node			
Mulamuttu	Bambusa Orundinacea, Willd.	Node			

Available in charaka samhita and Ashtanga hridayam. It has been observed that identification of 'Nakulidwaya' in the period of charaka and vaghbhata was not controversial. Later on this knowledge was imparted from generation to generation and now the proper identity of the twin plants is lost by the Ayurvedists. Recent survey carried out by the authors shows that physicians of Ayurveda and other traditional healers are widely using aristolochia indica, Linn. As Iswarimoolam. Iswari I a synonym of kakuli mentioned is Ayurvedic literature. The word 'nakuli' means a plant which is able to remove 'akula bhava' (distrussed condition) or a plant (probably its seeds) having any resemblance to the eyes of a mongoose. Other Sanskrit synonyms of A. indica, Linn. Are Garudi – a climber, said to be originated from the abyss, Ahigandha-


Aristolochia indica, Linn.

TABLE – II

Local Name	Sanskrit Name	Botanical name	Parts used	Textual reference and indication			Others
				Carak Samhita	Susruta Samhita	Ashtanga Hridaya	
1	2	3	4	5	6	7	8
Cheriya arayan	Nakutee	Aristolochia indica, Linn.	Roots	Used as an ingredient in (1) Palamkash adithailam indicated for epilepsy. (2) Mritha Sanjeevani-agada indicated for snake poison and other kind of poison. (3)	Used as an ingredient in a compound preparation indicated for spider poison. (Thrimantala variety) to be administered as nasal drops eyeointment and external application.	Used as an ingredient in (1) a compound preparation indicated as anti-inflammatory (External use) (2) Acompound preparation used for external application	Single: Spider poison, rat poison, snake poison, Intestinal worms etc. (Bhavaprakasha, Gata nigrah) in Yogamrita. A. Indica Linn. Is mentioned

				parama agada indicated for snake poison and other kind of poison.		against tumours (3) A compound preparation in the form of medicated ghee, indicated for highly poisonous snake bite. (4) A compound preparation indicated for spider poison (Internal)	as Karalaka' (Malayalam) and prescribed in combination with other drugs for rat poison, flatulence Intestinal colic and head ache. Paste form of root is a snake repellent. Also used against intestinal worms. (Chikitsa manjari)
Valiya arayan	GandhaNakulee	Aristolochia tagala, Chem.	Roots	Not mentioned	Used as an ingredient in (1) Mahagugandhi agada indicaged for snake poison. (2) Another compound drug along with Meha sugandhi agada indicated for highly poisonous spider. 93) a compound medicated ghee preparation indicated for	Not mentioned	Nil

					attach of Poothanarah (Unknown vira infection?) Fumigation of same drug along with ghee is also recommended.		
Araya Dwayam (Cheriya arayan and valiya arayan)	Nakulee dwayam (Nakulee and Gandha Nakulee)	Arustolochia indica, Linn.	Roots	Used as ingredients in (1) Agurvaditha ilam (medicated oil) indicated for fever with shivering. External application.	Not mentioned	Used as ingredients in (1) a medicated oil, indicated or fever with shivering External application.	Not mentioned.
		Aristolochia tagala, Cham.	Roots	(2) Mahapaisha chika ghritam (Medicated ghee) indicated mainly for insanity and epilepsy. Internal application.		(2) Mahapaishachika ghritam (medicated ghee) mainly for insanity and epilepsy.	

A plant which bears the smell of a snake, Rudajata – a creation of Lord Siva sunanda – an ornamental creeper in gar den, Iswar – wife of Iswara (parvati) – having divine beauty and character, sarpadhani – snake repellent, surasa - juisy plant, sugandha – aromatic plant Nakuleshta – delicoious to mangoods Bhujangakshi – resembling th esyes of a snake (probably the seeds of A.indica, Linn) chatraki – open umbrella shaped dried fruits and sarpakshi – resemblins the eyes of a snake. All the synonyms have direct of indirect relationsip with the physical characters, therapeutic

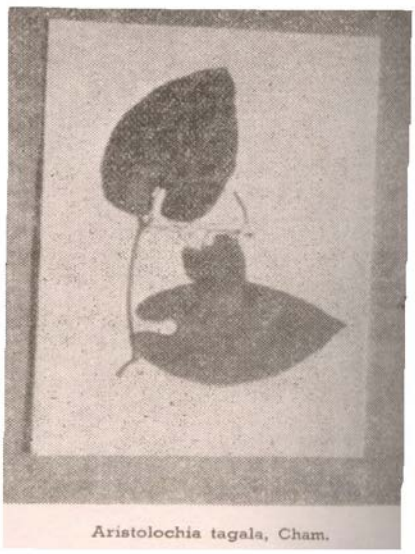
value and divine origin and quality of the plant. Hnece identification of Nakuli as A indica, Linn. is confirmed with the above findings

No new attempt has been made so far to identify the 'Gandha Nakuli', except the poinion given by singh and Chunekar (1972) in this regard. They suggested that Rauwelfi aserpentina, Benth. And aristolochia indica, Linn. may be called Nakuli and Gandha Nakuli, respectively. Providing the above literal and survey findings, the poinion given by chunekar and singh on Rauwolfia serpentine as 'Nakuli' can be ruled out. Further it is to be stated that there is no direct reference available in the classics about the uses of R. serpentine against snake bite.

Gandhanakuli means a plant, wich is more aromatic than Nakuli. Field study finding of the authors, confirm the aromatic nature of these two species and Aristolochia togala is found to be more superior in this respect. Separate synonyms and properties of Gandhanakuli are not mentioned in the Ayurvedic literature, unlike those of Nakuli. Probably it may be due to its similar nature use and equal or higher therapeutic value. According to the kani tribes, A.tagala is more powerful and has got more aroma than A. indica. Roots and leaves of both the plants are used –alone or in combination – by the tribes against snake poison, fever and headache and even for prevention of snake bite.

Other plants described, (by various commentators of Ayurveda), as Nakuli and Gandhanakuli are Hraswa brihiti (salanum torvum swartz) Rasna (Alpinia calcarata, Roxb) keerivalli (Tylophora indica Marr) Cheviyam (Pipr retrofractum,, Vahl.) Chumanna amalpuri (Ranwolfia serpentine, Benth.) etc An important observation to b enoted is that none of these plants possesses such a high therapeutic value as nakuli and gandhanakuli described in Ayurvedic classics. Tribal observation on these two plant species also directly supports the clinical findings, as described in the Ayurvedic classics.

On the basi os fthe above findings the authors have come to the conclusion that aristolochia indica, Linn. and A. tagala, Cham. Are to be considered Nakuli and Gandhanakuli respectively.



Aristolochia tagala, Cham.

Table I shows and various uses of Aristolochia indica, and A. tagala, as claimed by the kani bribes. Table II provides information on various used on Nakuli and Gandhanakkkuli – alone or in combination – as mentioned in Ayurvedic classics. It

shows that antioison was activity of A. idica and A. tagala is clinically well established in Ayurveda. It has been prescribed alone or is in combination against snake poison, spider poison, scorpion poison etc But method of preparation and mode of administration agaist snake out are with an entirely different approach and it seems to be more practicable.

There is an interesting belief among the kani bribes in collecting the plant, Aristolochia tagala, they don't wear any clothes, when they go to collect it, during the night. They don't even touch the roots with knife or anything made of iron. They strongly believe that if they don't observe the rules, the drug would not produce it original therapeutic efficacy.

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REFERENCES

1. Amarakosa – With Ramasrami commentary – edited by pandit Hargovind shastri, chowkamba, varnasi, (1970)
2. Ashtanghridaya samhita – commentary by Aruna Datta Nirnayasagar Press, Bombay (1925)
3. Bhavaprakasha Nighantu – Commentary by Dr. K.C. Chunekar Edited by Dr. g.S Pandey, Chowkamba, Varnasi (1969).
4. Caraka samhita – commentary by chakrapani, Nirnayasagar Press, Bombay (1941)
5. Chikilsamajari – (Malayalam) I K.G. Gopala Pillai, Govt. Press, Trivandrum (1983)
6. Chopra R.N., Nayar S.L. and Chopra I.C. – Glossary of Indian Medicinal Plants, CSIR, New Delhi (1956)
7. Gamble J.S – Flora of the Presidency of Madras, Vol-II, (1956)
8. Gatanigraha – I,II and III of Vaidyasodhala by Sri. Indradevi Tripathi, Chowkamba Sanskrit series (1969)
9. Keerthikar K.R. Basu B.D. – Indian Medicinal Plants Vol-III Lalit Mohan Boss, Leader Road, Allahabad (1933)
10. Nadkarni A.K. – Dr. K.M Nadkarni's Indian Materia medica Vol-I Popular Prakasam, Bombay (1976)
11. Sabdataravali- (Malayalam) – Sri-Kanteswaram G. Padmanabha Pillai, Natmal book stall, Kottayam, Part I & II, (1952)
12. Sharma P.V. – Dravyaguna vigyam vol I & II, chowkamba, Sanskrit series, varnasi (1952).
13. Singh B., Chunekar K.C.—Glossar of vegetable drugs in Brithattrayi, chowkamba Publication, Varnasi (1972).
14. Sir Monier Monier Williams – a Sanskrit-English Dictionary Oxford at the clarendoon Press (1899)
15. Susruta samhita – Edited by Vaidya jadavji Thrivikramji Acharya Nirnaya sagar press, Bombay (1938)

16. Thayyil Kumaran Krishnan – Ayurvediya Oushadhi Nighantu, CCRA New Delhi (1939).
17. Umraosing, Wadhwani, AM. And Johri, B.M – Dictionary of Economic Plants in India, ICAR, New Delhi (1958)
18. Wealth of india , Vol I, CSIR New Delhi (1948)
19. Yogamrita – (Malayalam) L.A Ravivarma, Govt Press, Trivandrum (1960).