

RECORD OF SOME ETHNOMEDICINAL SPIDERS IN RELATION TO THEIR USAGE AS DRUGS AMONG THE TRIBALS OF EASTERN SUNDARBAN INHABITED ZONE, WEST BENGAL, INDIA

S. C. MAJUMDER AND R. S. MRIDHA*

*Sundarban Field Research Station, Zoological Survey of India,
Canning town, South 24 Parganas, West Bengal, India*

INTRODUCTION

Sunderban is composed of a group of Islands encompassing the area from the mouth of the river Hoogly on the West and extends up to river Meghna in the East covering four districts North and South 24 Parganas within Indian territory and Khulna, Bagherhat and part of Barisal in Bangladesh. It lies between 21.0 and 21.21 N latitude and 88.0 and 89.0 longitudes occupying an area of 9827 sq.km., of which 4264 sq.km. falls within the jurisdiction of India. The name Sundarban derives from the 'Sundari' tree, which is predominant in the area. Vegetation includes wet evergreen mangrove forest. The area is divided into three zones – (1) Inhabited zone. (2) Buffer zone and (3) Core area. The study area includes only in the eastern inhabited zone of 2 districts, south and north 24 Parganas, West Bengal, India.

No report has yet been made on Ethnomedicinal spiders from the tribal people of Sundarban inhabited zone. Rather few contributions were available in literature dealing with the medicinal spiders. With some ethnomedicinal notes. Savoray (1935) stated that in rural areas of Europe Jaundice and Constipation were also treated by ingesting up *Tarantula* spider (Family : Lycosidae). In some areas of Europe and America, Gout and Rheumatism were also treated by rubbing up theridiid spiders Gertch (1979). Tikader (1968) made taxonomic studies on megalomorph spiders of the families Ctenizidae and Theraphosidae from India. Tikader (1987) further reported some phidippus spiders possessing lethal venom, which is not harmful to human beings. Majumder (1987) worked on the venom of spiders of the families Theraphosidae, Clubionadae and Loxoscelidae from India. Farrington (1834) established 10 species of spider in Homoeopathic therapeutic system of medicine. Kent (1970) added another 6 species of spiders in the Homoeotherapeutic System of medicine.

The present paper deals with two **Ethnomedicinally** important spiders viz., 1. *Pardosa birmanica* Simon, 2. *Cheiracanthium himalayensis* Gravely (Families : Lycosidae & Clubionidae).

The medicinal effects of these species have been confirmed on the basis of exhaustive data collected from their medical usage for health care among the tribal people of the eastern part of Sundarban inhabited zone.

This study also initiated by the extraction of venom from these two species of spiders by Indian Homoeopharmaceutical process and these extracts were also applied orally on fowl (*Gallus gallus*). After application of the extracts/drugs, the pathological data of blood report of the fowl were also made simultaneously. The medicinal effect of these spiders' species was also confirmed on the basis of pathological data of the blood of *Gallus gallus* after administration of the extracts.

MATERIAL AND METHODS

Survey work was conducted near the areas of tribal population in the inhabited zone of Sundarban. Exhaustive data sheet was prepared to ascertain the role of spiders used as drugs among the tribal people of Sundarban inhabited zone. Hand picking was employed for the collection of the specimens and night observations were also made whenever possible. The studies were conducted in two seasons viz., the summer (April – June) and the winter (Nov. – January). Collected samples were then brought to the laboratory and were preserved in 70% alcohol, single specimen in single vial for further studies (Tikader, 1987).

OBSERVATIONS, RESULT AND DISCUSSION

Detailed usage of spiders as ethnomedicine in tribal people of inhabited zone of Sunderban are appended in tabular form.

Sl. No. & Name of the spider used by the tribes	Mode of application	Diseases	Name of the tribes, places & Districts
1. <i>Cheiracanthium himalayensis</i> Gravely (Family : Clubionidae)	The spider was rotten and mixed with mastered oil and rubbing on the affected parts	Applied only for Rheumatism	Santal of Chottomollakhali, Dist : South 24 Parganas
2. <i>Cheiracanthium melanostoma</i> Thorell (Family : Clubionidae)	The spider dried up, powdered and mixed with honey, taken every morning	Applied for cardiac and Asthmatic problems	Munda of Hemnagar, Dist : North 24 Parganas

Sl. No. & Name of the spider used by the tribes	Mode of application	Diseases	Name of the tribes, places & Districts
3. <i>Cheiracanthium himalayaensis</i> Gravely (Family : Clubionidae).	Fresh spider mixed with Datura leaf	Applied only for Rheumatism	Santal of Rhadhanagar, Dist : North 24 Parganas
4. <i>Cheiracanthium himalayensis</i> Gravely (Family : Clubionidae)	The fresh spider boiled with honey and taken twice daily after cooling	Applied for heart disease	Munda of Amtali, Dist : South 24 Parganas
5. <i>Cheiranthium himalayensis</i> Gravely (Family : Clubionidae)	Spider dried up, made powder and mixed with honey, taken twice daily	Applied for recurrent cold and cough of children	Munda of Kumirmari, Dist : South 24 Parganas
6. <i>C. himalayensis</i> Gravely (Family : Clubionidae)	The powder mixed with mustard oil and applied on the affected parts	Applied for Gout and Rheumatism	Santal of Chottomollakhali, Dist : South 24 Parganas
7. <i>Pardosa birmanica</i> Simon (Family : Lycosidae)	The spider dried up, made powder all the portion and mixed with ripe banana (<i>Musa sepientim</i>) taken every morning	Applied only for Asthma.	Munda of Sandeshkhali, Dist : North 24 Parganas
8. <i>Pardosa sumatrana</i> Throell (Family : Lycosidae)	The spider dried up, made powder and mixed with honey, taken twice daily	Applied only for Asthmatic complaints	Santal of Baramollakhali, Dist : South 24 Parganas
9. <i>Pardosa birmanica</i> Simon (Family : Lycosidae)	The spider dried up, made powder only of the cheliceral parts mixed with honey taken twice daily.	Applied for Asthma of children.	Santal of Minakhan, Dist : North 24 Parganas
10. <i>Pardosa birmanica</i> Simon (Family : Lycosidae)	The spider dried up, made powder all the portion and mixed with ripe banana (<i>Musa sepientim</i>) taken every morning	Applied for Asthmatic problem	Munda of Uchal, Dist : North 24 Parganas
11. <i>Naphila maculata</i> (Aud.) (Family : Araneidae)	Web of the spiders collected and mixed with Kalmegh leaves, (Family : Acantheceae (<i>Andrographis peniculata</i>)) taken every morning	Applied for Intermittent fever	Munda of Kumirmari Dist : South 24 Parganas

From the above observations *Cheiracanthium himalayensis* Gravelly and *Pardosa birmanica* Simon were used as Ethnomedicine for treating the diseases like Asthma, recurrent cold and cough of children, rheumatism and heart diseases.

In the case of pathological observation the usage of spiders as drugs was also made on the system of Indian Homoeopathic Pharmacopoeia. The spider species viz., 1. *Cheiracanthium himalayensis* and *Pardosa birmanica* which were collected from the fields and kept in the laboratory were dried up in the sun, collected only the cheliceral parts and prepared into powder and then

Table 1 : Blood report before and **after application** of drug (*Cheiracanthium himalayensis* Gravelly) on fowl blood (*Gallus gallus*)

Name of the Spider (Drug)	Blood content of the fowl	Fowl No. 1 Blood report before application of the drug	Fowl No. 2 Blood report after application of the drug
<i>Cheiracanthium himalayensis</i> Gravelly	T.C.	16,000	16,000
	E.S.R.	8	9.8
	Eosinophil	00	01
	Lymphocyte	54	52
	Monocyte	01	01
	Basophil	00	00
	Neutrophil	45	46

Table 2 : Blood report before and **after application** of drug (*Pardosa birmanica* Simon) on fowl blood (*Gallus gallus*)

Name of the Spider (Drug)	Blood content of the fowl	Fowl No. 1 Blood report before application of the drug	Fowl No. 2 Blood report after application of the drug
<i>Pardosa birmanica</i> Simon	T.C.	16,000	16,000
	E.S.R.	7.9	8
	Eosinophil	00	01
	Lymphocyte	54	52
	Monocyte	01	01
	Basophil	00	00
	Neutrophil	45	46

kept in separate vials. These powders were mixed with 70% alcohol in a proportion of 1 : 9 i.e. 1 part of powder and 9 parts of 70% alcohol in the separate vials. Two vials, one with *Cheiracanthium himalayensis* and other with *Pardosa birmanica* were kept in a cold room for one month and thus the extraction of these species was completed. They were then ready for using as a drugs for oral application to the domestic fowl (*Gallus gallus*). Two fowls were selected for the purpose, Fowl-1 and Fowl-2. Before application of the drugs blood reports were taken. Next 15 days after the application of the two drugs i.e. *Cheiracanthium himalayensis* and *Pardosa birmanica*, blood reports were again taken, after application and before application of this drugs, use blood reports for T.C., Eosinophil, Lymphocyte and monocyte were also taken as in the tables 1 & 2.

CONCLUSION

From the above account and the data collected from the tribal people of the eastern part of the Sundarban inhabited zone on the Ethnomedicinal drugs as extracted from the above mentioned spiders and the pathological observation on the fowl blood after the application of the drugs prepared on the basis of Indian Pharmaceutical system, we come to the conclusion that in future further steps of this direction more efficient effect may be procured for the preparation of drugs from these spider species. In view of their pathological observation, changes of Eosinophil in fowl blood indicate the probable source of drugs of Asthma and skin diseases. Secondly changes of Lymphocyte and Neutrophil in fowl blood indicate the probable source of drugs for heart disease and Rheumatism, because high Lymphocyte and less Neutrophil are the causative factor of Heart disease and Rheumatic factor. High E.S.R. is also an indicator of infection of blood. Hence, these spider species viz., 1. *Pardosa birmanica* Simon (Family : Lycosidae) and *Cheiracanthium himalayensis* Gravely (Family : Clubionidae) may be considered as medicinal spiders of Sundarban.

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REFERENCES

- Farrington, E. A. (1834) : *Metiera Medicale Clinique de Ferrington. Edition francaese Parla Dr. J. Pavl, Tasier Paris* : 1-715.
- Gertch, W. J. (1979) : *American spiders Ven Nostrand Reinhold Co. New York* : 1-274.
- Kent, J. T. (1970) : *Lecture on Homoeopathic Materia Medica with New Remedies & Therapeutic Index, Calcutta Homoeopathic Laboratory, 2* : 1-527. New adition

- Majumder, S. C. (1987) : Biological Studies of Tarantula spiders, their economic and medicinal importance, *34, Homeopathic medical Association of India, West Bengal Branch, 1* : 1-19.
- Newlands and P. Akinson, (1988) : Review of South African spiders of Medical importance with a note on the sign and symptoms of invenomation, *South African Medical Journal, 73* : 235-239.
- Savoray, T. H. (1935) : *The Arachnida*. Academic Press, New York, : 1-340.
- Tikader, B. K. (1968) : Studies on some Megalomorph spiders of the families Ctenizidae and Theraphosidae from India, *J. Bombay nat. Hist. Soc., 74* : 306-319.
- Tikadar, B. K. (1987) : *Hand Book Indian spiders*, Director, Zoological Survey of India : 1-251.