Medico- Ethnozoological Informations of Invertebrate Animals used by Tharu Tribes of Devipatan Division of Uttar Pradesh, India

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Abstract
The medico-ethnozoological system makes extensive use of large number of drugs of animal origin. The importance of drugs of animal origin is being increasingly realized in developed countries and the medico-ethnozoological studies gaining enhanced status in research. The present study reports new medicinal informations of invertebrate animals used by Tharu tribes. The survey was conducted during 2010 to 2012, based on field observations, analysis and interview of more than 150 people of 41 villages of Devipatan division of Uttar Pradesh, India. During the study Interesting informations regarding the medicinal applications of the different parts, organs, secretions and excretions of invertebrate animals were obtained. These animals being used among Tharu tribes for the cure of low blood pressure, obesity, weak sight, night blindness, toothache, pyorrhea, baldness, dandruff, rickets, asthma, bronchitis, tuberculosis impotency, erectile dysfunction and galactochoesia. In the present paper an attempt has been made to document the traditional therapeutic uses of different invertebrates among Tharu tribes of Devipatan division. The study provides a veritable source of information for traditional medicinal practitioners, medico- ethnozoological researchers and also helps in developing strategies for future conservation of traditional therapeutic knowledge.

Citation:

1. Introduction
There is evidence that human beings are familiar with the use of animals for food, cloth, medicine, etc. since ancient times. Enormous work has been done on ethnobotany and traditional medicines; Like plants, animals too and their products are also possessing medicinal properties that can be exploited for the welfare of human beings in various countries.

Ethnozoology also deals with the study among the tribes and rural people for recording their unique knowledge about animal wealth and search for new sources of animal drugs and other aspects of animal products including domestication and conservation of useful and economically important animals. As the importance of animal drugs is being increasingly realized in the developed countries, hence the medico-ethnozoological studies gaining enhanced status in research.

The medico-ethnozoological system makes extensive use of large number of drugs of animal origin. These remedies are beneficial or claimed to be so, in a variety of human ailments. The contemporary society may benefit much from the tribal experiences in its fight against diseases and sufferings. However, this system is likely to suffer from...
drawbacks pitfalls and ostentations. It is high
time to pay more attention to the animal
Kingdom and record such animals before
these eliminated from the area of their
occurrence.

There are a few literatures available in India
on medico-ethnozoology. (Kent, 1970)
described the use of about twelve animal
drugs. (Maiti, 1984) has reported the animal
drugs among the tribals of Bihar state.
(Tikader et al., 1985) have expressed the
highlight of research work done in
ethnozoological field in the last eighties in
India. Whole body of earthworm
recommended in poor lactation, (Sharma,
have studied ethnozoology in Rajasthan and
Assam states in detail and reported various
animal drugs among the tribes of that region.
Azmi and Jahan, 2006 have also studied the
medical uses of fat of animals as practiced by
the tribals of south-eastern area of Rajasthan
covering 6 districts.

In India, many ethnic communities are
dispersed all over the country and these
people are still totally depended on local
traditional medicinal system for their
healthcare.

Among numerous tribal communities, Tharu
is one of the prominent tribe inhabiting in
Devipatan Division of Uttar Pradesh consisting
of Gonda, Bahraich, Shravasti and Balrampur
districts, situated in the north-eastern Terai
region of the Indo-Nepal border and commonly
known as Terai districts. These districts were
surveyed for medico-ethnozoological point of
view and data were collected regarding the
relationship between tribals and animals, viz.
utility of animals in food and medicine. Among
these districts of Devipatan division Bahraich,
Shravasti and Balrampur districts are richly
inhabited by Tharus. Hence the three above
mentioned districts have been chosen as
study area.

Tharus are culturally rich and self contained.
Though predominantly mongoloid in their
physical make-up, they appear to be distinct to
some extent. They are one of the matriarchal
tribes of India, their joint family mostly
resembles as Hindu joint family. The Tharu
village community is a compact social unit. It
seems quite paradoxical that in a patriarchal
society of the Tharus women enjoy a very
dominant position; they also have their own
Panchayat system.

All the Tharus use dung of cow and buffaloes
as fuel after drying it and thus lose a huge
quantity of manure. Fishes and domesticated
animals after death are used as fertilizers.
Parrot, Pigeon and peafowl, among the birds
are common pets. They are fond of fishing
also and as bait they use piece of flesh, small
fishes, small frogs, earthworms etc. Pila is also
considered for fishing. Some of the advanced
Tharu tribes, who live in the vicinity of the
urban areas, are seen catching fishes by nets
and traps.

Most of the Tharus believe in the forecasting
and witchcraft using a number of wild aswell
as domesticated animals. They also believe
that crowing of crow in the early morning on
the top of the house is a symbol of the arrival
of the guest in the house, but if a crow caws
around the mid-night or late night, they
consider it as bad symbol. In the same way, if
a cock crows, around the mid-night, there will
be definite death of a prominent-member of
the community or the family and to avoid the
arrival of misfortune that cock is immediately
killed at the spot. Croaking of the frogs in the
rainy season is mere indication of the heavy
rainfall in short while. The howling of jackal in
the day time and abnormal barking of the dogs
are considered to be a bad symbol. It also
indicates the death of a person in the nearby
area.

A lot of omens are prevalent among Tharus
e.g. if a cat, snake, fox, jackal cross the way or
road from either side in front of a passerby,
then it is considered to be a bad omen. A
together of totem and taboos are also prevalent
among the Tharus. These totems and taboos
are very much helpful in the protection of wild
aswell as domesticated animals. Mostly cows
are considered as totems. They never kill
them. They worship as the goddess. Some of
them do not kill squirrel as they believe that it
had helped “Lord Rama” during the search of
his wife, Sita. They also believe that the
stripes on the body of the squirrel are the
impressions of fingers left by “Lord Rama” as
token of his affection for the service rendered
by them.

Tharus are only tribal who could survive in
the malaria affected areas of Terai region. The
socio-economic condition of this tribal group is
very poor. In fact, they have been struggling
hard to survive against the natural forces for
centuries and have led to a secluded life. Even
today, the Tharus depend upon the outside
world of only such articles as salt, kerosene oil
and cloth. They make use of many animal species to meet their day to day needs.

Indigenous remedies have originated directly or indirectly from folklore’s rituals, magic, and superstitions. The practice of oral tradition is still prevalent among the tribes.

Tharu tribes use many animals and plants species for healthcare practices and have enormous knowledge about their medicinal usage. The knowledge, which is mostly undocumented, is transmitted orally from generation to generation. Since due to various reasons, both natural resources and Tharu culture are depleting at an alarming rate. Therefore, there is urgent need to explore and document this unique and indigenous knowledge of medicine before it is lost forever. Keeping this in mind, the present study was undertaken with a view to explore the possibilities of utilizing the medico-ethnozoological wealth of this remote Terai region of eastern Uttar Pradesh, India for the search of new sources of medico-ethnozoological animals utilized by Tharus. The animal specimens along with detailed informations on the medico-ethnozoology would form a valuable record for future reference and study.

2. Materials and Methods

2.1 Topography of study area

Devipatan division is newly constituted division and located in north-eastern Terai belt of eastern Uttar Pradesh (Fig. 1 and 2). Devipatan division is bounded by territory of Nepal in North, by Basti division (i.e. Distt. Basti and Siddharth Nagar) in East, by Faizabad division (i.e. Distt. Faizabad and Barabanki) in South and by Lucknow division (i.e. Distt. Kheri and Sitapur) in West. Shivalik range of Himalayas in North and river Gaghra in West and South makes the natural boundary of the division. It lies between 26°48’ and 29°24’ North latitude and 81°30’ and 82°40’ East longitude in 14,229.1 km² area and comprises 4.83 percent area of the Uttar Pradesh. The areas of Gonda, Balrampur, Bahraich and Shravasti are 3,977; 3,375; 4,496.8 and 2,380.3 km² respectively, which comprise 28.00, 23.70, 31.60 and 16.7% of the division respectively. Shape of the division is somewhat like a triangle which spreads about 180 km from east to west and about 125 km from north to south.

2.2 Survey of study area and collection of informations

A general idea was collected from the 'Tribal map of India' (Gohain, 1971) about the district-wise distribution of various tribal communities of Terai area of eastern Uttar Pradesh, India. An extensive data sheet was prepared to ascertain the use of animals in food and medicines, their applications, doses and duration. In this study, the data obtained are based on the informations collected through the personal contacts and by the interviews of Tharu tribal community of Terai area of Devipatan division of eastern U.P.

Information of the aboriginals collected from the ‘District Tribal Welfare Officers’ and ‘Block Development Officers’ regarding their location, strength and social structure. In each and every district the same tribes were interviewed from as many localities as possible to get accurate and elaborate information about the animals and their use. Wherever, the language problem arose, the services of interpreters were utilized.

Extensive and intensive survey during 2010 to 2012 was made in Thruhat (Tharu areas) of Devipatan division covering 28 villages of Balrampur district, 6 villages of Bahraich district and 7 villages of Shravasti district to collect the medico-ethnozoological informations. All the medico-ethnozoological informations were collected either by contacting the local healers called Vaid (Fig. 3), Guruwa (Fig. 4), Village Headman (Fig. 5), Elder man (Fig. 6) and elder women (Fig. 7 & 8) having thorough knowledge of animals and animal-based remedies. Knowledgeable persons were interviewed and various medico-ethnozoological aspects of each animal were recorded.

During the course of medico-ethnozoological exploration of the study area, usual field and museum methods were made. Gathered informations were compared with various published literatures. A brief account of the diagnostic characters, nomenclature, clarification of collected specimens and medicinal value are presented in this paper.

3. Results and Discussion

After taking interview of Vaid (Local doctor), Guruwa, Village headman (Pradhan), Elder men and elder women of 28 Tharu villages of Balrampur district, 6 Tharu villages of Bahraich district and 7 Tharu villages of Shravasti district, the interesting informations regarding
the medicinal applications of different parts, organs, fluids, secretions and excretions of invertebrate animals are tabulated in the table-1.

Figure 1: Map of India

Figure 2: Map of U.P. showing Devipatan Division

Figure 3: Vaid (Local Doctor)

Figure 4: Guruwa

Figure 5: Village Headman (Pradhan)

Figure 6: Elder man
Table-1 shows medicinal use of nine invertebrates in which different parts of these animals are used by the Tharus of Devipatan division of Eastern U. P. for treatment of various ailments. These people used the animals for the treatment of more than 35 ailments/diseases like General weakness, Weak-sight, Night-blindness Fits, Fistula, Piles, Ulcer Baldness, Dandruff, Hair fall, Tuberculosis, Asthma, Bronchitis, Jaundice, Low blood pressure, Liver trouble, Impotency, Loss of erectile power, Early ejaculation, Galactoschesia, Tumor, Breast cancer and Rickets.

After collecting data of animal drugs used by a number of tribal wings in various general and chronic diseases, it can be said easily that there is a scientific approach of these people since long back, which can be extended further after pharmacological and bio-chemical researches on the animal drugs. These would be more useful for the poor people. It makes us aware of the need for much more detailed investigation in this field.

The history of animal drugs in India can be traced from the remotest age. Ayurveda “the science of life” is believed to be as old as the ‘Vedas’ themselves. The actual origin and early history of ‘Ayurveda’ like those of Egyptian medicine are however shrouded in mythological legends. The citation of medicinal use of plants and animals has been in ‘Rig-Veda’ which has been written between 4800 and 1600 B.C.

It is generally believed that the fundamental principles of the medicinal sciences were preached in Arabia by Indian physician and professors and that the ‘Charaka’ and ‘Sushruta’ the two extant treaties on ‘Ayurveda’, were translated into the Arabic language. During the long history, the ancient people exploited varieties of opportunities from the nature for their survival since time immemorial.

Aboriginals developed the art of healing through the use of various remedies of zoological origin (Azmi, 1989). These remedies are beneficial or claimed to be so, in a variety of human ailments. There are no side effects of such traditional animal drugs. Rich wealth of such drugs is available in India which can be used in the treatment and to cure the chronic diseases prevalent among tribe races (Azmi and Ali, 1998).

The contemporary, society may benefit from the tribal experiences in its fight against diseases and sufferings. Notably, the established systems of Indian medicine too felt the importance of such drugs for that several drugs are obtained from animals (Puri, 1970). Fat of male animal is believed to produce more heat than of female animals (Hussain, 1771). The study of biologically active substances in the animal kingdom has remained comparatively unexplored which could be very rewarding (Thorp and Cobbin, 1967). Garasiya people of Rajasthan were using 24 animal species for the treatment of over 35 kinds of ailments, including asthma, paralysis, cough, fever, cold, wound healing etc. These animals were used as whole or by-products of these animals like milk, blood, organ, flesh, tooth, honey, feather etc. for the treatment of various ailments and used in the
preparations of traditional medicines (Jaroli et al., 2010).

It is the time to pay more attention to the faunal wealth through systematic exploration of this virgin field. Accordingly appreciable measures have been initiated in this direction.

On close observations of the medicinal use of different parts of invertebrates for the treatment of various ailments by Tharu tribes of Devipatan division of Eastern U.P., it is evident that the different parts of invertebrate are beneficial in a variety of human ailments. The overall reported claims suggest that different parts of animals are used in many Unani medicines. It is mostly used as ointment for external use in inflammations, muscular pains, piles, burns, wounds and sexual debility. Internally it is used as nutrient and also give new vigor.

The findings in the form of report together with these about the use of several species of animals as drugs by the Tharu tribal people of Devipatan division of Eastern U.P. and also the general informations embodied in certain compilations and materia medica may excite biomedical scientists a curiosity that may ultimately lead to momentous undertaking to explore the effectiveness, potentialities and proper utilization of such drugs in our current struggle against diseases and sufferings.

Thus we can say that Medico-ethnozoology is a very interesting branch of life science which should be investigated further for betterment of tribal people on one hand and for the unique scientific development of the country on the other hand. The above mentioned informations suggest that if animal kingdom is scientifically explored, may have much to contribute to our therapeutic informations.

**Table 1: Medicinal applications of some Invertebrate Animals by Tharu tribes of Devipatan division of Eastern U.P.**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Animals</th>
<th>Local Name</th>
<th>Part(s) Used</th>
<th>Mode of Administration</th>
<th>Name of Disease(s)</th>
<th>Name of District(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bed bug Cimex spp.</td>
<td>Khat-kirwa</td>
<td>Whole body</td>
<td>5-6 bugs taken orally along with banana or bread for about 20 days, once daily</td>
<td>Fits, Fistula, Piles, Ulcer</td>
<td>Bahraich, Balrampur</td>
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<td>2.</td>
<td>Cockroach Periplaneta spp.</td>
<td>Telchatti</td>
<td>Appendages</td>
<td>Incinerated, powdered mixed in slightly warmed mustard oil and dropped in ear twice daily, for about one week</td>
<td>Ear troubles of all types</td>
<td>Bahraich, Balrampur, Shravasti</td>
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<td>3.</td>
<td>Crab Carcinus spp.</td>
<td>Kekra</td>
<td>Flesh</td>
<td>Cooked with ginger and garlic and taken by the patient for about one month, once daily</td>
<td>Jaundice, Low blood pressure, Liver trouble</td>
<td>Balrampur, Bahraich</td>
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<td></td>
<td></td>
<td></td>
<td>Whole body</td>
<td>3-4 crabs cooked with little spices and consumed for about 30 days, once daily</td>
<td>General weakness Loss of erectile power, Early ejaculation</td>
<td>Bahraich, Balrampur</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Whole body</td>
<td>4-5 crabs cooked in light spices and consumed for about one month, once daily</td>
<td>Weakness in mother after child birth</td>
<td>Balrampur</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Oil</td>
<td>Oil extracted from the body, applied into the eyes twice daily, for about 21 days</td>
<td>Weak-sight and other eye ailments</td>
<td>Balrampur, Bahraich</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Oil</td>
<td>Oil extracted from the body, applied on the external</td>
<td>Rickets</td>
<td>Balrampur</td>
</tr>
<tr>
<td>No.</td>
<td>Organism</td>
<td>Part Used</td>
<td>Preparation</td>
<td>Application</td>
<td>Symptoms Treated</td>
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<tr>
<td>4.</td>
<td>Earthworm <em>Pheretima posthuma</em></td>
<td>Whole body</td>
<td>4-5 crabs cooked in light spices and consumed for about one month, once daily</td>
<td>Impotency and Erectile dysfunction</td>
<td>Bahraich, Shravasti</td>
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<tr>
<td></td>
<td></td>
<td>Excreta</td>
<td>Dissolved in water and applied around the anus thrice daily, for about 15 days</td>
<td>Fistula, Piles</td>
<td>Bahraich, Balrampur,</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Whole body</td>
<td>Crushed in water and taken with large amount of water</td>
<td>Snake bite and Scorpion poison</td>
<td>Shravasti, Balrampur</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Cooked in animal’s fat and extract is massaged on the lumbo-sacral region once a day at bed time, for about one month</td>
<td>Impotency</td>
<td>Balrampur, Shravasti</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Fried in oil and administered orally by lactating ladies for about 15 days, once daily</td>
<td>Galactosche sia</td>
<td>Bahraich, Shravasti</td>
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<tr>
<td>5.</td>
<td>Glow-worm <em>Not-specific</em></td>
<td>Whole body</td>
<td>1-2 worms taken orally along with banana or ‘Gur’ once daily, for about one month</td>
<td>Night blindness, Weak-sight</td>
<td>Balrampur, Bahraich, Shravasti</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Crushed in water and applied on affected part of the body</td>
<td>Tumour and Breast cancer</td>
<td>Balrampur, Shravasti</td>
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<td>6.</td>
<td>Honey bee <em>Apis indica</em></td>
<td>Whole body</td>
<td>Dissolved in Luke warm water and taken orally in empty stomach in the morning once daily, for about 21 days</td>
<td>Obesity and Swelling</td>
<td>Bahraich, Balrampur</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Applied into the eyes regularly at bed time, for about 30 days</td>
<td>Weak-sight, Night-blindness</td>
<td>Balrampur, Shravasti</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Orally taken thrice daily, for about 7 days</td>
<td>Night-blindness Constipation, Diarrhoea (infant)</td>
<td>Shravasti, Balrampur</td>
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<td></td>
<td>Honey bee <em>Apis indica</em></td>
<td>Whole body</td>
<td>Rubbed along with mustard oil and salt on the gums thrice a day, for about 4-5 days</td>
<td>Toothache, Pyorrhoea and Gum problem</td>
<td>Balrampur, Shravasti</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Dried banana leaves incinerated and Kali Mirch (Black Pepper) mixed with honey and taken orally for about 21 days, twice daily</td>
<td>Asthma, Bronchitis</td>
<td>Balrampur, Bahraich,</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>One table spoon of honey and juice of one lemon is given to the patient in the morning once daily, till the disease is cured</td>
<td>Swelling of body, Weak-sight</td>
<td>Bahraich, Balrampur</td>
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<td>7.</td>
<td><em>Pila spp.</em></td>
<td>Whole body</td>
<td>Burned, powdered, mixed with honey and applied on the ribs for about 21 days, twice daily</td>
<td>Pneumonia and Congestion of lungs</td>
<td>Shravasti, Bahraich</td>
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<td></td>
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<td>Water of inside pallial complex</td>
<td>(i) Dropped into the eyes for 2-3 times daily, for about 15 days</td>
<td>Redness of eyes and Baldness</td>
<td>Balrampur, Bahraich</td>
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<td></td>
<td></td>
<td>Ghongha</td>
<td>(ii) Rubbed on skull (Head)</td>
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<tr>
<td>No.</td>
<td>Animal</td>
<td>Part Used</td>
<td>Preparation</td>
<td>Conditions Treated</td>
<td>Place(s)</td>
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<td>8.</td>
<td>Prawn (Not specific)</td>
<td>Whole body</td>
<td>Cooked with little spices and consumed as food for about one month, once daily</td>
<td>Asthma, Bronchitis, Tuberculosis</td>
<td>Balrampur, Bahraich</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Cooked and consumed once daily, for about 40 days</td>
<td>Loss of erectile power, Low blood pressure</td>
<td>Bahraich, Shravasti, Balrampur</td>
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<td></td>
<td></td>
<td>Whole body</td>
<td>Cooked and consumed for about one month, twice a day</td>
<td>General weakness</td>
<td>Balrampur, Bahraich</td>
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<td></td>
<td>Jhingawa Machhli</td>
<td>Whole body</td>
<td>Cooked with little spices, soup taken orally and flesh consumed as food for about 15 days, daily</td>
<td>Galactosche sia</td>
<td>Balrampur, Bahraich and Shravasti</td>
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<tr>
<td>9.</td>
<td>Unio (Not specific)</td>
<td>Shell</td>
<td>Incinerated, powdered, mixed with milk and given to the children twice daily, for about 30 days</td>
<td>Rickets</td>
<td>Bahraich, Shravasti</td>
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<td></td>
<td></td>
<td>Flesh</td>
<td>Cooked with Ghee and consumed for about 30 days, once daily</td>
<td>Chronic Ulcer of alimentary canal</td>
<td>Balrampur</td>
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<td></td>
<td>Sipi</td>
<td>Flesh and water</td>
<td>Flesh cooked and consumed for about 15 days, once daily. Water filtered and dropped into eyes twice daily</td>
<td>Weak-sight, Night-blindness</td>
<td>Balrampur, Bahraich, Shravasti</td>
<td></td>
</tr>
</tbody>
</table>

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The authors are extremely thankful Village Pradhan, local healer (Vaid) and other elder persons of Tharu belt of Devipatan division, India.

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