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**Records of the
Zoological Survey of India**

**Studies on some Ethnomedicinal Crustaceans,
Fishes, Reptiles, Birds and Mammals in relation
to their usage as drugs among the tribals of
Sundarban, West Bengal, India.**

**S. C. MAJUMDER
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INTRODUCTION

Sundarban is composed of a group of Islands starting from the mouth of the river Hooghly on the west and extending up to the river Meghna in the east, covering four districts at present viz, North and South 24 Parganas (Hooghly to Raimangal river) of India, Khulna Raimangal to Madhumati river) and Backergunje, Barisal district (Madhumati to Meghna river) of Bangladesh. It lies approximately between 21°31'-22°30' North latitudes and 87°51'-19°30' longitudes occupying an area of 16706 Sq. Km of which 7529 Sq. Km. falls within the jurisdiction of India. The vegetation includes wet evergreen mangrove forest. The area is divided into three zones: i) Inhabited zone ii) Buffer zone and iii) Core area. The study area includes only in the inhabited zone under two districts North and South 24- Parganas, West Bengal, India. Mainly three types of tribal population live in the inhabited zone of Sundarban namely Munda, Oraon and Santhal. According to the census of 2001, the recorded tribal populations in the South 24 Parganas, Santhal, Oraon and Munda approximately 1922 in the Kakdwip Division; 574 Oraon and Santhal in Namkhana Block; 1922 Santhal, Munda and Oraon in Patharpratima Division; 4406 Santhal and Munda in the Kultali Division, 850 Santhal and Munda in Joynagar II, only 22 Santhal in Joynagar I, 10,847 Santhal in the Canning II, 2,834 Munda and Santhal in Canning I; 305 Santhal and Munda in Mathurapur Block-I; 2,847 Santhal in Mathurapur Block-II, 591 Munda in Sagar Island and 19,683 Munda, Santhal and Oraon in the Gosaba block. The last one is the largest tribal population. In North 24-Parganas 19245 Munda, Santhal and Oraon population inhabit in Minakhan, Haroa, Hingalgunge and Hasnabad Blocks. Altogether approximately 81,000 tribal populations inhabit in the sundarbans inhabited zones. The survey was carried out mainly in these inhabited areas to collect the data of ethnomedicinal uses of Crustaceans, Fishes, Reptiles, Birds and Mammals by these tribal peoples. No attention was made regarding the ethno medicinal uses of these groups. Ferrington (1834) made taxonomic and ethnomedicinal studies on 4 species of crustaceans, 2 species of fishes, 3 species of reptiles, 1 species of bird and 2 species of mammals and recorded their uses among the people of rural areas of America. Further he established the uses of the species of insect and arachnid in the homoeopathic system of medicine. Now a days these drugs have been included in the homoeopathic system of Indian Pharmacopia and still going on as glorious drugs in the modern society. Joseph (1988) made an attempt on ethnomedicinal studies on crustacea, reptiles, birds and mammals from Madhya Pradesh and Orissa. Joseph (1990) made an extensive ethnomedicinal observation on reptiles and birds from Madhya Pradesh.

So far the ethnomedicinal uses of animals by the tribal people of Sundarban are concerned some works were done on arachnids and insects. The important works on these aspects were done by Majumder (1987), who made a biological study and reported 12 species of arachnids used as a drugs in the homoeopathic system of Medicine. Majumder and Mridha (2004) reported two medicinal spiders and their usage as drugs among the tribal inhabited zone of

Sundarban, West Bengal. Majumder and Dey (2005) made an extensive study on ethnomedicinal uses of arachnids and insects by the tribal people of Sundarban.

The present paper deals with medicinal importance of crustacea, fishes, reptiles, birds and mammals and their uses as drugs by the tribal people of Sundarban. This work also includes the habitat of the species of crustacea, fishes, reptiles, birds and mammals used as medicine by the tribal people, the places of collection, parts of the animal used as medicine, method of preparation of medicine and the application of the same, the type of diseases cured and the name of tribes used as the medicine.

MATERIAL AND METHOD

Surveys were undertaken to the different tribal areas of Sundarban in different times. The informations were collected from the tribal peoples incorporated in a data sheet, with the informations of the animals used for medicine, collected areas, method of preparation of medicine and the uses and the symptoms and remedies of diseases at different times. The similar information also collected from the local B.D.O. office and nearby health centers for comparison. The samples of the animals and plants used for medicine were collected and brought to the laboratory for identification of species.

The medicinal information were generally collected from a particular person who is well equipped in medical appliances of plants and animals of a particular area called Baidyaraj or Hakim. All the medicinal application generally collected from the tribal person who expert in the uses of such medicines. The vernacular and scientific names of the plant species used in medicinal applications are as follows :

Table-1 : Showing the vernacular and scientific names of the plant species used in medicinal applications.

Vernacular Name	English Name	Scientific Name
Akanda	Gigantic swallow wort/Madar	<i>Calotropis gigantea</i> (Linn.)R.Br.exatt
Alkushi	Cowitch plant/Cowhage	<i>Mucuna pruriens</i> (Linnaeus)
Am	Mango	<i>Mangifera indica</i> Linnaeus
Anantamul	Indian Sarsaparilla	<i>Hemidesmus indicus</i> (Linnaeus)
Apang/Apamaraga	Prickly Chaff Flower	<i>Achyranthes aspera</i> Linn.
Aparajita	Clitoria	<i>Clitoria teratea</i> Linnaeus
Arjuna	Arjun	<i>Terminalia arjuna</i> (Roxb.) W.&A
Ash sheora		<i>Atista indica</i>
Ashwattha	Ficus	<i>Ficus religiosa</i> Linnaeus

Vernacular Name	English Name	Scientific Name
Bakul		<i>Mimusops elengi</i> (Linnaeus)
Bel	Bengal quince	<i>Aegle marmelos</i> (Linn.) Corr. ex. Roxb.
Bhant		<i>Clerodendron infortunatum</i> Linnaeus
Bon-bheranda	Angular leaved Physic nut	<i>Jatropha curcas</i> (Linnaeus)
Chai	Tea	<i>Piper retrofractum</i> Vahl
Chameli	Jasmine	<i>Jasminum officinale</i> Linnaeus
Chhotachand	Serpentina	<i>Rauwolfia serpentina</i> S.Benth. ex.. Kurz.
Chirata	Indian gentian	<i>Gentiana kurroo</i> Royle
Dalim	Pomegranate	<i>Punica granatum</i> Linnaeus
Dandakalas	Drona	<i>Leucas aspera</i> (Willd.)
Dhutura	Thorne apple	<i>Datura festusa</i> Linn.
Dudh kalmi	Indian Jalap	<i>Operculina turpethum</i> Linnaeus
Dumur/Angira	Fig	<i>Ficus carica</i> Linnaeus
Durba	Huralee grass	<i>Cynodon dactylon</i> (L) Pers.
Golmarich	Black pepper	<i>Piper nigrum</i> Linnaeus
Gulanha		<i>Tinospora cordifolia</i> (Willd.) Miers ex. Hook. F.& Thoms.
Halud	Tumeric	<i>Lindenbergia indica</i> (Linn.)
Hakuch	Bavachi	<i>Psoralea corylifolia</i> Linn.
Haritaki	Chebulic Myrobalan	<i>Terminalia chebula</i> Retz
Harkuchkanta	Sea Holly	<i>Acanthus illicifolium</i> Linn.
Hijal	Indian Oak	<i>Barringtonia racemosa</i> (L.) Roxb.
Jaba	China rose	<i>Hibiscus rosa sinensis</i> Linn.
Jagatmadan		<i>Justicia gendarussa</i> Burm.
Jeol		<i>Lanea coromandelica</i> (Houtt)
Jhinga	Ribbed Gourd	<i>Luffa acutangula</i> (Linn.)
Jhumka lata		<i>Micanica micrantha</i> Kunth
Kala	Banana /Plantain	<i>Musa paradisiaca</i> Linn.
Kala Jam /Jamun	Black plum	<i>Syzygium cumini</i> (L.) Skeels
Kalkashunda	Senna Sophera	<i>Cassia sophera</i> Linn.

Vernacular Name	English Name	Scientific Name
Kalmegh	The Creat	<i>Andrographis paniculata</i> (Burm.f.) Wall ex. Nees
Kamini		<i>Murraya paniculata</i> Linn.
Kantikari	Yellow berried Night shade	<i>Solanum surattense</i> Burm. f.
Karabi	Sweet scented Oleander	<i>Nerium indicum</i> Mill.
Karala	Bitter gourd	<i>Momordica charantia</i> Linn.
Khamo	True Mangrove	<i>Rhizophora macronata</i> Lamarck
Karpus tula	Amrican cotton	<i>Gossypium hirsutum</i> Linnaeus
Kuksima		<i>Blumea odorata</i> Linn.
Kule Khara		<i>Hygrophila spinosa</i> T. Anderson
Kurchi	Conessi/Kurchee	<i>Holarrhena antidysentrica</i> (Linn.)
Lajjabati	Sensitive plan	<i>Mimosa pudica</i> Linn.
Mehedi	Henna / Samphire	<i>Lawsonia inermis</i> Linn.
Muktabarshi/ Muktajhuri	Indian Acalypha	<i>Acalypha indica</i> Linn.
Nata	Physic nut / Bonduc nut	<i>Caesalpinia bonducella</i> (L.) Roxb.
Nim	Indian Lilac/Neem Tree	<i>Azadirachta indica</i> L.f.
Olat kambal	Devil's cotton	<i>Ambroma angusta</i> Linn
Patherkuchi	Indian Borage	<i>Coleus ambonicus</i> Laur.
Penpay	Papaya	<i>Carica papaya</i> Linn.
Piplamul	Long pepper	<i>Piper longum</i> Linn.
Piyara	Guava	<i>Psidium guajava</i> Linn.
Potal	Pointed Gourd	<i>Trichosanthes dioica</i> Roxb.
Punarnava	Spreading Hogweed	<i>Boerhaavia diffusa</i> Linn.
Rangan	Jungle geranium	<i>Ixora coccinia</i> Linn.
Sajna	Drumstick	<i>Moringa oleifera</i> Lam.
Sasha	Cucumber	<i>Cucumis stivus</i> Linn.
Shalpani		<i>Desmodium gangeticum</i> (Linn.) DC
Shephalika /Seoli	Night Jasmine	<i>Nyctanthes arbor-tristis</i> Linn.

Vernacular Name	English Name	Scientific Name
Sona		<i>Oroxylum indicum</i> Vent.
Sona Gurmar	Vine	<i>Gymnema sylvestre</i> R. Br. ex. Schult.
Suryamukhi	Sunflower	<i>Helianthus annuus</i> Linn.
Susnishak	Marsilea	<i>Marsilea minuta</i> Linn.
Swetakanda	Gigantic swallow wort	<i>Calotropis procera</i> (Ait) R. Br.
Tamak	Tobacco	<i>Lobelia nicotianifolia</i> Roth
Telakucha	Ivy Gourd	<i>Cephalandra indica</i> Naud.
Thankuni	Indian pennywort	<i>Hydrocotyle asiatica</i> Linn.
Titodhundul	Ridged Gourd	<i>Luffa acutangula</i> var. <i>amara</i> (Roxb.)
Tomato	Tomato	<i>Solanum esculentum</i> Mill.
Tulsi	Holy basil	<i>Ocimum sanctum</i> Linn.
Vasaka	Malabarnut Vosalha	<i>Adhatoda Zeylanica</i> Medic

RESULT AND DISCUSSION

The present work deals with altogether 328 medicinal uses of 28 species of crustacea, fishes, reptiles, birds and mammals, which are commonly used as medicine by the tribal people of Sundarbans. Data were collected among 3 tribes of Sundarbans, belonging to 2 districts of West Bengal, India.

Out of these 28 species 4 species are crustacea, 6 species of fishes, 6 species of reptiles, 7 species of birds and 5 species of mammals.

In these observations only the animal part was used as medicine in some cases whereas in other cases the animal part used with medicinal plant and their products as medicine. It was also observed that some time only one species used as medicine; sometimes more than one species mixed together and used as medicine or sometimes a number of species mixed with some medicinal plants and other substances and used as medicine.

It had also been observed that drug prepared from one species used for successful remedy of one disease or in some cases more than one disease. It was also observed that Rheumatism and heart troubles treated successfully with poisonous animals species.

Among these 328 medicinal applications, 38 medicinal applications were made from crustacea, 22 from fishes, 80 from reptiles, 107 from birds and 81 from mammal species. Some of these medicinal applications used locally and some of them applied orally for the

cure of diseases. Among the crustacea the oral applications generally for the cure of Pulmonary Tuberculosis, Bronchitis, Allergy and Hay fever, Stomatitis and Abdominal pain, Haemoptysis, Insomnia, Epileptic fit, Genito-urinary disorder, Contraceptives, Leucorrhoea, Spermatorrhoea, Menorrhagia, Spondylosis, Intestinal Colic. The local applications for the cure of Urticaria, Bone fracture, Haemorrhoids, Boils, Burns, Measles, Ulcers and Wounds, Convulsion, Dandruff, Typanitis. In the case of Rheumatism, Dropsy and Allergy both the oral and local applications were made.

Among the fishes, the local applications helped for the cure of Cervical spondylitis, Epileptic fit, Leprosy, Carbuncles, Bronchial spasm, Conjunctivitis, Syphilis, Otorrhoea, Corns, Burns and Ulcers, Warts on palm and Insect bites. The oral applications for the cure of Bronchitis, Pneumonia, Intestinal colic, Allergic skin diseases, Anaemia, Insomnia, Sterility of males, Bacillary dysentery, Renal colic, Haemorrhage, Typanitis and Fever.

Among the reptiles, local applications used for the cure of Psoriasis, Polio, Sexual weakness, Eczema, Rheumatism, Lumbago, Poisoning Ulcer, Dandruff, Ophthalmia, bleeding Piles, Carbuncles, Boils, Ringworm, Leucoderma, Scabies and Pemphigus, Ichthyosis, Oedema, general weakness, Rachitis, Erysipelas, Osteo-arthritis, eye infection, Iritis, Asthma, Obesity, Paralysis, Haemorrhage and Sepsis, Sciatica, Urticaria, Epileptic fit, Tuberculosis, Hysteria and poisonous bites. The oral applications used for the cure of Renal calculi, Impotency, Tuberculosis, enlargement of Spleen and Liver, Vertigo, Constipation, Oedema, Epistaxis, Cough and Cold, Pneumonia, Kala-azar, Filariasis, sterility of females.

Among the birds, local applications used for the cure of Otorrhoea, deafness, Drowsiness, Muscular pain, Boils, Carbuncles, Psoriasis, Eczema, Leprosy, Hydrocele, Epididymitis, Rheumatism, Rheumatoid-arthritis, Migraine, Hemicrania, Tonsillitis, Pharyngitis, Alopecia, Acne-rosacea, Lupus, Leucorrhoea, Pruritus vulva, Elephantiasis, Haemorrhoids, wounds, poisonous insect bites, Sciatica, gangrenous ulcer, Paralysis, Ophthalmia, Oedema, Hypertrophy of Liver, Syphilitic ulcer, Uvulitis, Mastitis, Enuresis, Warts and breast tumors. The oral applications used for the cure of Cough, Vomiting, Loss of appetite, Dyspepsia, Headache, Chicken-pox, Measles, Gastric ulcer, Pneumonia, Constipation, Urticaria, Allergy, general weakness, Tuberculosis, Asthma, Hay fever, granular Conjunctivitis, Tape worm infection, Urino-genital disorder, abdominal Colic, Myositis and Hypochondriasis.

Among the mammals, local applications used for the cure of Psoriasis, Ringworm, Bedsore, Leucoderma, Bone fractures, Bronchial Asthma, Pharyngitis, Gout and Rheumatism, Boils, Carbuncles, Anal fistula, bleeding Piles, chronic Ulcer, Leprosy, Haemoptysis, Chicken-pox, Paralysis of limbs, Urticaria, Synovitis, Dermatitis, Warts, breast tumors, Alopecia, Epileptic fit, and Conjunctivitis. The oral applications used for the cure of Asthma, Bronchitis, Epistaxis, Hypochondriasis, Dyspnoea, Rickets, Impotency, Tuberculosis, Birth control, enlargement of gall bladder and spleen, Gall stones, Dysentery, Intermittent fever, Hepatitis B, Jaundice,

Endocarditis, Myocarditis, high blood pressure, abortion, to prevent pregnancy, Hydrophobia, Haemoptysis, chronic Gleet, Diabetes mellitus, Renal stone, Night blindness, Anaemia, Rheumatic pain, Headache and burns.

The diseases like Rheumatism, Haemorrhoids, Bronchitis, Asthma, Urticaria and Dropsy have been cured by all these five groups of animal medicines. Boils, Insect bites, Leprosy, Epilepsy, Alopecia, Ringworm cured by the medicines prepared from fishes, reptiles, birds and mammals. Diseases like Psoriasis, Carbuncles, Sciatica, Epistaxis, Otorrhoea, Ophthalmia, Haemoptysis and Chicken-pox have been cured by the medicines prepared from reptiles, birds and mammals. The diseases like Leucorrhoea, Chronic fever, Leucoderma, Obesity, Bone fracture, Gall stone, Impotency, Breast tumors, Mastitis and Anal fistula by the medicines prepared from birds and Mammals.

Majority of these medicinal applications the animals or their parts mixed with medicinal plants and their products and used as medicine.

From the above account it is established that the traditional animal- drugs are much more relevant today than any other time because the great majority of the people in developing countries can not afford allopathic treatment, especially in complicated and serious cases, owing to the exorbitant cost. This system has an added advantage when compared to the allopathic system. Its efficacy has been proved by the generations and it has practically no side effects.

Therefore, it is the high time that every modern primary health care center should have a physician well versed in traditional drugs. It is also required to open training and research center to bring traditional drugs on firmer scientific footing, if researches show that some of these drugs used in curing disease and have pharmaceutical value. In conclusion it may be stated that this being a new concept, study needs many years of painstaking research for its proper development.

CRUSTACEA

Class CRUSTACEA
Order BRACHYURA
Family PORTUNIDAE

1. *Scylla serrata* (Forskol) (Mud Crab)

Habitat : Common edible crab of India found in the brackish water burrowing on the banks in Southeast Asia. It can adapt to freshwater. Available in large quantities in Sundarbans throughout the year.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Area/District
1. Flesh of the crab separated and cooked with leaf juice of Telakucha.	To be taken orally to cure Pulmonary Tuberculosis.	Santhal	Malancha, Uchalda, Minakhan, North 24 Parganas.
2. Flesh cooked with Tomato juice.	To be taken orally to cure Rheumatism of right elbow joint.	Santhal	Chaital, Minakhan block, North 24-Parganas.
3. Flesh juice mixed with stem bark juice of Gulancha and boiled for 15 minutes.	To be taken orally, in the case of Urticaria and burning of the skin.	Munda	Uchalda, Minakhan. North 24-Parganas.
4. Flesh juice mixed with stem bark juice of Punarnava and boiled for 15 minutes.	To be taken orally, to cure dropsy and body swelling.	Munda	Nafargunj, Basanti. South 24-Parganas.
5. Flesh juice mixed with root bark juice of Ash sheora in the proportion of 3 : 1 and boiled for 15 minutes.	To be taken daily, to cure Stomatitis and abdominal pain.	Santhal	Jharkhali, Basanti. South 24-Parganas.
6. The carapace burnt out into ashes mixed with stem bark dust of Kurchi.	Applied externally with cow ghee on the affected part to cure Dropsy.	Oraon	Nafargunj, Basanti. South 24-Parganas.
7. Legs of the crab dried and powdered mixed with stem bark dust of Kurchi.	Applied externally on the affected parts to cure boils.	Munda	Uchalda, Minakhan. North, 24-Parganas.
8. Legs and carapace burnt and made ashes mixed with Lajjabati and make paste.	Applied externally on the affected parts, to cure pain, burn and bleeding of Hemorrhoids.	Oraon	Kathalberia, Basanti, South 24-Parganas.
9. The crab burn in fire and then the flesh separated from the carapace and mixed with root pest of Alkushi.	Applied on the affected part to cure dropsy.	Oraon	Kathalberia, Basanti, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Area/District
10. The crab burn in fire and then make pest and mixed with leaves pest of Alkushi plant.	Applied on the affected parts and tightly bandaged to cure bone fracture.	Santhal	Masjitbari, Basanti, South 24-Parganas.
11. Flesh juice mixed with plant juice of Halud.	To be taken orally once in a day, to cure chronic Bronchitis and Asthma.	Munda	Kaliaghata, Namkhana, South 24-Parganas.
12. Legs and carapace burnt and made ashes mixed with juice of stem bark of Am (Mango).	To be taken orally to cure uterine Hemorrhage and Haemoptysis.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
13. Flesh juice mixed with leaf juice of Susnishak, in equal quantity and boiled for 15 minutes.	To be taken orally to cure Insomnia.	Santhal	Digambarpur, Patharpratima, South 24-Parganas.
14. The body content mixed with unripe Kala (Banana) and boiled and made paste.	Applied externally to cure burns skin.	Santhal	Sridharpur, Patharpratima, South 24-Parganas.
15. The flesh cooked with Kulekhara leaves.	To be taken orally to cure Rickets of children.	Oraon	Budhakhali, Namkhana, South 24-Parganas.
16. The body content mixed with leaf juice of Karabi (Sweet scented Oleander) and boiled for 15 minutes and made paste.	Applied externally around the eyes to cure Ophthalmia and Copious Lachrymation	Munda	Beguakhali, Sagar Islands. Budhakhali, Namkhana, South 24-Parganas.
17. Fat mixed with Nata seed powder.	Applied externally on the affected parts, to cure Measles.	Oraon	Kaliaghata, Namkhana. South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Area/District
18. Flesh juice mixed with leaf juice of Piyara (Guava) made into paste.	Applied externally on the affected parts, to cure Ulcer and Wound.	Oraon, Santhal	Budhakhali, Namkhana. GPlot, Patharpratima, South 24-Parganas.
19. The crab boiled with young shoot or leaves of Piyara (Guava) and boiled for 30 minutes.	To be taken orally to cure Epilepsy and Chorea.	Santhal	Sridharpur, Patharpratima, South 24-Parganas.
20. The body content mixed with leaf paste of Piyara (Guava) made into paste.	Applied externally on the affected parts, to cure Convulsion.	Oraon	Budhakhali, Kakdwip, South 24-Parganas.

Order DECAPODA
Suborder DENDROBRANCHIATA
Family PENAEIDAE

2. *Penaeus monodon* Fabricus (Bagda)

Habitat : Largest Indian marine prawn more common on East coast, especially Orissa and West Bengal. Distributed from South African coast to Southern Japan. Juveniles enter into estuaries. Inhabit in the benthic region and feed on living animals and organic matter mixed with sand and mud.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Area/ District
21. The carapace burn into ashes and mixed with seed dust of Shephalika (Night Jasmine) in the ratio of 1:1.	Applied once daily before bath to cure Dandruff from the head.	Santhal, Oran	Hingalgunj, Durbachati, Patharpratima, North 24-Parganas; and South 24-Parganas.
22. The digestive fluid mixed with seed dust of Tulsi (Holy basil).	To be taken orally with honey, to cure Cold and Cough and Genito-urinary disorder	Oraon, Santhal	Chaital, Minakhan, North 24-Parganas; Brajaballavpur, Patharpratima, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Area/ District
23. Flesh mixed with seed powdered of Golmarich (Black pepper) and boiled.	To be taken orally, to removed weakness and birth control of recent delivery mother.	Santhal	Dakhin Roypur, Patharpratima, South 24-Parganas.
24. Flesh mixed with stem of Chai (Tea) and boiled with water for 30 minutes.	To be taken orally, to cure renal disorder and Typanitis.	Santhal	Sahebkhal, Hingalganj, North 24-Parganas
25. Flesh mixed with leaf and fruit of Karala (Bitter gourd) and boiled.	To be taken orally, to cure Diabetes mellitus.	Santhal	Dakhin Roypur, Patharpratima, South 24-Parganas.
26. Digestive fluid mixed with fruit juice of Karala (Bitter gourd).	To be taken before intercourse, as contraceptives.	Santhal	Sambhunagar, Gosaba, South 24-Parganas

Suborder PLEOCYEMATA
Family PALAEMONIDAE

3. *Macrobrachium rosenbergii* (De Man) (Prawn)

Habitat : Found in tropical and sub-tropical regions of the Indo-pacific region, including India. Lives in benthic region in fresh and brackish waters, but not in marine water having of very high salinity. Feeds on living animals and vegetable matter available nearby as well as dead organic matter.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
27. The whole animal burn and made paste and mixed with stem bark paste of Suryamukhi (Sunflower).	This paste applied as bandage, to cure bone fracture.	Santhal	Hingalganj, North 24-Parganas; Achintanagar, Patharpratima, South 24-Parganas
28. The body content mixed with root juice of Jaba (China rose).	Applied externally on the affected part, to cure Lumbago and Rheumatism.	Munda	Deulbari, Kultali, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
29. Flesh mixed with Tomato juice and cooked.	Taken orally, to cure dust Allergy and Hay Fever.	Oraon	Jalaberia, Kultali, South 24-Parganas.
30. Digestive fluid mixed with plant juice of Lajjabati.	To be taken orally, to cure Leucorrhoea.	Santhal	Jharkhali, Basanti, South 24-Parganas.
31 The flesh mixed with leaf juice of Mehedi.	To o be taken orally, to cure Spermatorrhoea	Oraon	Jalaberia, Kultali. South 24-Parganas.
33. Yolk mixed with Jaba (China rose) flower and fry with cow ghee.	To be taken orally, to cure Menorrhagia.	Santhal	Jharkhali, Basanti. South 24-Parganas.

Class ARACHNIDA
Family XIPHOSURIDAE

4. *Carcinocorpius rotundicoda* (Latreille) (King Crab)

Habitat Occurs in sandy, muddy bottom from the tide line to depth of 20 fathoms. Breeds in summer within the intertidal zone and lay eggs in muddy sand, particularly in creeks of swampy river mouths subjects to tidal influence.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
34. A piece of tail was tight on wrist.	To cure wrist Rheumatism.	Santhal	Chhottomollakhali, Gosaba, South 24-Parganas.
35. The blood extracted and mixed with leaf juice of Tulsi (Holy basil) boiled.	To be taken orally with honey, to cure acute Bronchitis and Pneumonia.	Oraon	Chaital, Minakhan. North 24-Parganas
36. The carapace dried and powdered mixed with Nim Oil.	Applied externally. to cure Scabies and Allergenic skin diseases.	Santhal	Uchalda Mnakhan, North 24-Parganas.
37. The whole animal boiled with mustard oil and seed of Sephalika.	The oil taken out and message to cure acute Spondylosis.	Santhal	Digambarpur, Patharpratima, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
38. The blood extracted and mixed with leaf juice of Jhinga (Ribbed Gourd) and boiled.	To be taken orally, to cure Intestinal Colic.	Oraon	Chaital, Minakhan, North 24-Parganas.

FISHES

Class PISCES
 Subclass SELACHII
 Order LAMNIFORMES
 Suborder SCYLIORHINOIDEI
 Family CARCHARHINIDAE

5. *Scoliodon sorrakowah* (Cuvier) (Shark)

Habitat : Inhabitant of tropical continental coastal and offshore waters.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
39. Fat separated from the flesh mixed with the seed dust of Sephalika.	Applied on the affected part as message, to cure Cervical spondylosis.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
40. Skin burn and the fumes passes through the nostril.	To cure Epileptic fit.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
41. Flesh juice mixed with root of Piplamul (Long pepper) and boiled for 30 minutes.	To be taken orally, to cure Chronic Bronchitis.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
42. Fat mixed with the bark Bon-bheranda (Angular-leaved Physic nut).	Applied on the affected parts, to cure Leprosy.	Santhal	Amlamethi Gosaba, South 24-Parganas.
43. Fat mixed with gum of Jeol.	Applied externally, to cure burning of Carbuncle and Sore.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
44. Fat mixed with root bark dust of Sajna (Drumstick).	Applied on the affected parts, to relief of Bronchial spasm.	Santhal	Amlamethi, Gosaba, G-Plot, Patharpratima, South 24-Parganas.

Subclass TELEOSTOMI
Superorder OSTARIOPHYSI
Order CYPRINIFORMES
Family CYPRINIDAE

6. *Labeo rohita* (Hamilton) (Rohu)

Habitat Common carp found in almost all freshwater resources, mainly in ponds, ditches, lakes and rivers throughout India, except Western Ghat. Feeds on vegetable debris, microscopic plants, decayed higher plants, detritus and mud. Predominantly column feeder plantophage.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
45. Gall bladder of the fish eaten directly by the patient.	Taken orally, to cure Syphilis and Allergic skin diseases.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
46. Scales burn and made into ashes mixed with leaf juice of Jhinga (Ribbed Gourd).	Applied externally around the eyes, to cure granular Conjunctivitis.	Munda	Hemnaga, Hingalgunj North 24-Parganas.
47. Fat mixed with leaf of Chameli (Jasmine) and boiled for 30 minutes.	Applied externally, to cure Otorrhoea.	Oraon	Sadhupur, Gosaba South 24-Parganas
48. Skull burnt into ashes and mixed with leaf juice of Chameli (Jasmine).	Applied on the affected part, to cure Corn.	Santhal Oraon	Amlamethi, Gosaba Hiramba-gopalpur, Patharpratima, South 24-Parganas.

Order SILURIFORMES
Family CLARIIDAE

7. *Clarias batrachus* (Linnaeus) (Magur)

Habitat : Freshwater of Bangladesh, India, Malacca, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand. Carnivorous, bottom feeder, feeds on worms, prawn, insects, smaller fish and decayed organic matter.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
49. Flesh mixed with green fruit of Kala (Banana) fry with mustard oil. The oil taken out.	Applied the oil on the affected part and bandage with a new leaf of banana, to cure burning Ulcers.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas
50. Flesh cooked with leaf juice of Kule khara.	To be taken orally, to increase the haemoglobin of blood after Typhoid and other anaemic disorder.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
51. Flesh juice mixed with leaf juice of Shalpani.	To be taken orally, to cure sleepiness and drowsiness.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
52. Flesh cooked with stem bark juice of Olat kambal.	To be taken orally, to cure Sterility of males.	Santhal	Amlamethi Gosaba, South 24-Parganas.
53. Skull and bone made into dust and mixed with white glue of Dumur (Fig).	Applied externally, to cure warts of the Palm and fore head.	Oraon	Sadhupur, Gosaba, South 24-Parganas.

Family HETEROPNEUSTIDAE

8. *Heteropneustes fossilis* (Bloch) (Singhi)

Habitat : An air breathing fish commonly found in India, Pakistan, Nepal, Sri Lanka, Bangladesh, Thailand, Laos. Omnivorous, bottom feeders, feeds on insects, ostracods, debris and algae.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
54. Flesh mixed with the leaf juice of Thankuni.	To be taken orally, to cure Bacillary dysentery.	Santhal	Chotto-mollakhali, Gosaba, South 24-Parganas.
55. String and fins dried and made powdered mixed with root bark dust	Applied externally to cure poisonous insects bites.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
of Dudh kalmi (Indian Jalap).			
56. Flesh juice mixed with stem bark juice of Chai (Tea) and boiled for 20 minutes.	Juice taken orally, to cure Tympanites, renal disorder and Colic.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
57. Bones and strings dried and roasted and made powdered mixed with the stem bark dust of Akanda.	Applied on the affected part, to promote suppression of the boils and relief from burning.	Santhal Oraon	Atgharia, Haroa block; North 24-Parganas; Sridharnagar, Patharpratima, South 24-Parganas.

Superorder ACANTHOPTERYGII
Order PERCIFORMES
Family ANABANTIDAE

9. *Anabas testudineus* (Bloch) (Anabus)

Habitat : Freshwater and brackish waters of Asia and South Africa. Found in canals, ditches, lakes, ponds and swamps and other freshwater resources. It can leaves in water with deficiency of oxygen due to presence of accessory respiratory organs. It also go on dry land and by means of lateral movements of the tail and paired fins, it is able to cross some dry patches. Feeds on insects, water fleas, vegetable debris, fish etc.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
58. Flesh juice mixed with the leaf juice of Telakucha.	To be taken orally to cure haemorrhage of stomach, Jaundice and flatulence.	Santhal	Chaital, Minakhan, North 24-Parganas.
59. Head roasted and made powdered, mixed with root dust of Telakucha.	Applied externally with honey on the area, to cure burning and pain of Epigastric.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
60. Flesh juice mixed with Tomato juice and boiled for 15 minutes.	The juice taken orally, to cure dust Allergy and the fever.	Oraon	Sadhupur, Gosaba, South 24-Parganas.

REPTILES

Class REPTILIA
Order CROCODYLIA
Family CROCODYLIDAE

10. *Crocodylus porosus* (Schneider) (Estuarine Crocodile)

Habitat : Sluggish and lethargic creature associated with brackish waters, like coastal mangrove swamps estuaries but also visits freshwater rivers and grassy swamps. Well adapted to semi-aquatic mode of life and a shallow water feeder.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
61. Skin wrapped or scaped and burnt to ashes mixed with leaf dust of Thankuni in the ratio of 3:1	Applied locally with Nim oil, to cure Psoriasis.	Santhal Oraon	Sambhunagar Gosaba, South 24-Parganas.
62. Fat extracted and boiled to prepared oil.	Applied externally to cure Polio.	Santhal	Jharkhali, Basanti, South 24-Parganas.
63. Penis dried with root bark of Olat kambal mixed with ghee or honey.	Message on the penis to cure sexual weakness.	Munda	Sahebkhali, Hingalgunj, North 24-Parganas.
64. Oil prepared from the fat.	Applied externally, to cure Eczema.	Munda	Sitalea, Hingalgunj, North 24-Parganas.
65. Nails of the animals taken mixed with leaves of Kantikari.	Used to cure Renal stone.	Munda	Sitalea, Hingalgunj, North 24-Parganas.

Order TESTUDINES
Family TRIONYCHIDAE

11. *Aspideretes gangeticus* Cuvier (Indian softshell Turtle)

Habitat : Found in the drainages of the Indus, Ganges and Mahanadi among the large river systems. Carnivorous species attracted to rotting flesh. It is also very prominent scavenger.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
66. The blood and flesh mixed with Olat kambal roasted and cooked.	Taken in the case of sexual weakness /impotency.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
67. Flesh taken out and cooked with Vasaka leaf.	Taken orally in the case of Tuberculosis	Munda	Jeliakhali, Sandeskhali, North 24 Parganas.
68. Skin burnt to ashes mixed with Nim oil.	Applied locally on the affected part to cure Psoriasis.	Santhal	Balli II, Gosaba, South 24-Parganas
69. Carapace burnt into ashes and mixed with mustard oil.	Message to cure sacral Rheumatism	Oraon	Jharkhali, Gosaba, South 24-Parganas.
70. The carapace ashes mixed with bark dust of Nim.	Applied to the affected part, to cure Poisoning Ulcer.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
71. The carapace ashes mixed with bark dust of Titodhundul.	To be taken orally one teaspoon daily, to cure enlargement of Stomach and Spleen.	Santhal Oraon	Barunhat, Sahebkhali, North 24 Parganas; Dakhin Roypur, South 24 Parganas.
72. The carapace ashes mixed with leaf dust of Nim.	Applied externally with coconut oil to remove dandruff of head.	Munda	Atghara, Hemnagar, Hingalgunj, North 24-Parganas.
73. Carapace powder mixed with root bark of Akanda and powdered and mixed with mustard oil.	Applied externally to cure Lumbago.	Munda Oraon	Jeliakhali, Sandeskhali Hiramba-gopalpur, North and South 24 Parganas.
74. Carapace powdered mixed with Haritaki.	Applied to cure Vertigo and Constipation.	Santhal	Balli II, Gosaba, South 24-Parganas.
75. Carapace burnt into ashes and mixed with root dust of Durba.	Applied externally around the eye in case of Ophthalmia.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
76. The carapace ashes mixed with root dust of Aswattha.	Applied on bleeding Piles to check the haemorrhage.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of tribe	Place/ District
77. Carapace powdered mixed with root dust of Punarnava.	Applied orally for 7 to 15 days to cure Oedema and neighbourhood wounds.	Santhal	Balli II, Gosaba, South 24-Parganas.
78. Carapace dried up and powdered, mixed with leaf juice of Mukтажhuri.	Applied in case of Epistaxis.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
79. The carapace powdered mixed with Nim oil.	Applied externally to cure Boils of the skin.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
80. Carapace ashes mixed with Mustard oil.	Applied externally to cure Boils of head.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
81. Carapace powdered mixed with root dust of Punarnava in the ratio of 3:1.	Applied externally to cured the swelling of the neck.	Santhal	Balli II, Gosaba, South 24-Parganas.
82. Carapace dried up and powdered, mixed with leaf dust of Nim.	Applicable on head to removed the scales and killing lice.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.
83. The carapace burned and the smoke passed through the anus.	To cure Piles.	Oraon	Sambhunagar, Gosaba, South 24-Parganas.

Order SQUAMATA
Suborder SAURIA
Family VARANIDAE

12. *Varanus bengalensis* (Daubin) (Common Indian Monitor)

Habitat : Found in various habitats such as forest, desert, riverbanks, by the side of nallah, marshy land, tidal creeks and sea coast. Mostly diurnal. Occupies burrows, dense clump of vegetation, hollows of tree, cracks and crevices. They are good climber and simmer.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
84. Fat separated from the flesh mixed with the root juice of Ashwattha in the proportion of 3:1 and boiled for 20 minutes until they will mixed with each other.	Applied locally to ulcerated tongue and mouth cavity to cure Aphthae and sore stomach.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
85. Fat separated from the flesh mixed with the bark powder of Ashwattha in the proportion of 1:3 mixed with honey and boiled for 10 minutes.	Applied locally on burns and carbuncles.	Munda Oraon	Hemnagar, Hingalganj, North 24 Parganas; Bonoshyamnagar, South 24-Parganas.
86. Fat extracted from the flesh mixed with milky juice of Penpay in the proportion of 1:1 and boiled fro 5 minutes.	Applied on the affected part of the skin to cure Ringworms.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
87. The flesh mixed with unripe fruit of Penpay in the proportion of 1:1 and made curry.	Stimulate milk secretion of the mother of new born baby.	Santhal	Amlamethi Gosaba, South 24-Parganas.
88. Fat separated from the flesh mixed with the leaf powder of Thankuni in the proportion of 3:1 and boiled for 15 minutes until they will mixed with each other.	Applied locally for massage on the affected part of Psoriasis.	Santhal Oraon	Chottomollakhali, Gosaba, Dakingangadharpur, Patharpratima, South 24-Parganas.
89. Fat separated from the flesh mixed with the root powder of Punarnava in the proportion of 9:1 and heated for 15 minutes.	Applied locally on the affected part of Oedematous swelling.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
90. Fat extracted from the flesh boiled for 15 minutes and cool it for 30 minutes and boiled with seeds of Hakuch (Bavachi) in the proportion of 9:1 minutes.	Applied on the affected part of the skin to cure Leucoderma.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
91. The fat separated from flesh and boiled with Nim leaves for 5 minutes.	Applied on the affected part of skin in the case of Scabies and Pemphigus.	Santhal	Amlamethi Gosaba, South 24-Parganas.
92. Fat separated from the flesh mixed with the leaf juice of Telakucha in the proportion of 9:1 and boiled for 20 minutes.	Taken to cured Vomitting and arrest haemorrhage of the stomach.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
93. Fat separated from the flesh mixed with the glue or milk of Akanda in the proportion of 9:1 mixed with honey and boiled for 10 minutes.	Applied locally on the affected part of skin to cure Ichthyosis.	Munda Oraon	Hemnagar, Hingalgunj, North 24 Parganas; Achintanagar, Patharpratima, South 24-Parganas.
94. Fat extracted from the flesh mixed with leaf juice of Swetakanda in the proportion of 9:1 and boiled for 15 minutes.	Applied on the affected part, to cure Oedema of legs.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
95. The fat extract mixed with common salt in the proportion of 9:1.	Applied externally to cured swelling of neck.	Santhal	Khasbalada, Haroa, North 24-Parganas.
96. The fat extracted and heated.	Message all over the body in case of ill health and general weakness.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
97. Fat separated from the flesh mixed with mustard oil and boiled.	Message all over the body in case of Rickets.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
98. Fat extracted from the flesh and mixed with the root dust of Aparajita and boiled for 15 minutes.	Applied in the case of scorpion bites	Oraon	Sadhupur, Gosaba, South 24-Parganas.
99. The oil extracted from the flesh mixed with leaf juice of Tulsi (Holy basil) and boiled.	Applied locally on the affected part in the case of Erysipelas.	Santhal	Amlamethi Gosaba, South 24-Parganas.
100. Gut contents mixed with leaf juice of Potal and boiled for 20 minutes.	Applied orally to children suffering from Chronic Fever with nausea.	Santhal	Chotta-mollakhali, Gosaba, South 24-Parganas.
101. Fat separated from the flesh and boiled for 15 minutes.	Use to message on the affected part to cure Osteo-arthritis.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
102. Fat mixed with honey and boiled for 10 minutes.	Taken to cure Cough and cold and Pneumonia.	Oraon	Sadhupur, Gosaba, South 24-Parganas.
103. The fat mixed with the root dust of Punarnava and boiled for 15 minutes.	Taken orally. in the case of Kala azar.	Santhal	Amlamethi, Gosaba, South 24-Parganas.
104. Fat separated and boiled.	Applied locally around the red eyes infection.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
105. Fat separated from the flesh and warmed.	Applied locally around the eyes in case of Iritis.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
106. Fat extracted from the flesh and boiled.	Message on the affected part to cure Swelling.	Oraon	Sadhupur, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
107. The fat separated from flesh and boiled with Nim leaves.	Applied to cure boils and Carbuncles.	Santhal	Amlamethi Gosaba, South 24-Parganas.
108. Fat separated from the flesh mixed with the leaf juice of Sweth Akanda and boiled.	Applied on swelling necks of bull.	Santhal	Chotta-mollakhali, Gosaba, South 24-Parganas.
109. Fat and flesh mixed with together and boiled.	Message on chest to cure Asthma of children.	Munda	Hemnagar, Hingalgunj North 24-Parganas.
110. Fat mixed with leaf juice of Kalkasunda and boiled for 15 minutes.	Taken orally to cure Bronchitis.	Oraon	Sadhupur, Gosaba, South 24-Parganas.

13. *Varanus solvator* (Laurenti) (Indian water Monitor)

Habitat : Inhabits on wet, marshy, humid forests, banks of rivers, estuarine forests etc. It can swim far off in the sea in search of food. Omnivorous in diet but very much found of bird's eggs and fishes.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
111. The oil extracted from the flesh and mixed with root dust of Aswattha	Applied externally as message to cure obesity.	Munda and Oroan	Gosaba, South 24-Parganas.
112. The fat extracted from the animal and boiled and mixed with root dust of Durba in proportion of 3 : 1.	Applied externally in the case of Skin injury and haemorrhage.	Santhal	Chottomollakhali, Gosaba, South 24-Parganas.
113. Oil extracted from flesh mixed with root dust of Olat kambal.	Applied externally as massage on penis in the case of Sexual vigour.	Munda	Chemaguri, Sagar Island, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
114. Flesh separated and roasted.	Taken orally in the case of sterility of female.	Oraon	Bhangar, South 24-Parganas.
115. The fat extracted from the flesh and mixed with seed dust of <i>Sephalika</i> in the proportion of 3 : 1.	Applied externally as message to cure Paralysis of lower limb and Synovitis.	Munda and Oroan	Rajatduli, Gosaba, South 24-Parganas.
116. The fat extracted from the animal and boiled.	Applied externally as message in the case of Gout and Rheumatism.	Santhal	Chaital, Minakhan, North 24-Parganas.
117. Oil extracted from flesh mixed with bark dust of <i>Punarnava</i> in the ratio of 3 : 1 use locally on the affected part.	Applied externally to cured Oedematous of lower eye lids.	Munda	Chimaguri, Sagar Island, South 24-Parganas.
118. Flat separated from the flesh and mixed with bark dust of <i>Akanda</i> in the proportion 3:1.	Applied externally as message, to cure Costocarditis (rib pain).	Oraon	G-Plot, Patharpratima, South 24-Parganas.
119. The fat extracted from the animal and boiled.	Applied externally as message in the case of Muscular pain.	Santhal	Hingalgunj, North 24-Parganas.
120. Fat extracted and orally administered in the cattle.	Use in the case of general weakness of Cattles.	Munda	Chemaguri, Sagar Island, South 24-Parganas.
121. The vertebrae separated and prepared neckless with <i>Nata</i> seed weared by pregnant women.	To avoid abortion.	Oraon	Bhangar, South 24-Parganas.

Family AGAMIDAE
14. *Calotes versicolor* Daduin

Habitat : Common in high mountain and plains. This lizard ventures out to capture its prey in the morning when the temperature is not high. Found throughout India.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
122. The skin was burnt and powdered, mixed with leaf juice of Tulsi (Holy basil).	Applied externally, to cure Eczema and Ringworm.	Oraon	Bhangar, South 24-Parganas.
123. The skin and flesh crushed in water, mixed with leaf juice of Nim and boiled for 15 minutes	Applied locally as message to cure Rheumatic pain and Lumbago.	Munda	Sagar Island, South 24-Parganas.
124. The flesh separated and crushed in water mixed with Dhurba in the 1:1 ratio and boiled for 15 minutes.	Applied externally on the affected part to arrest haemorrhage and septic cases.	Munda, Oraon	Kaorakhali, Kultali, Dakhin Roypur, Patharpratima, South 24-Parganas.
125. The tail of animal separated and dried up mixed with the leaf dust of Tulsi (Holy basil).	Applied externally with lime water on the affected part to cure Ringworms.	Munda	Dakhin gangadhar- pur, Patharpratima, South 24-Parganas.
126. The skin separated and burn. The ashes mixed with the bark dust of Nim, 3:2 and mixed with honey.	Applied externally on the affected parts to cure Eczema of nose and ear.	Oraon	Bhangar, South 24-Parganas.
127. The flesh roasted in fire and taken.	Taken orally to cure Rachitis.	Munda	Sagar Island, South 24-Parganas.
128. The nails collected and powdered mixed with root dust of Thankuni, 1:1 and mixed with honey.	Applied externally around the infected eyes in case of Opthalmia.	Munda	Kaorakhali Kultali, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribes	Place/ District
129. The fat separated from flesh and boiled for 15 minutes.	Applied externally to cure boils.	Munda	Dakhingangadharpur, Patharpratima, South 24-Parganas.
130. The fresh animal boiled with mustard oil for 30 minutes.	Used as massage oil in case of Nodositis of joint.	Munda	Kaorakhali Kultali, South 24-Parganas.
131. The skin wrapped on the affected part.	To cure the septic condition.	Munda	Dakhingangadharpur Patharpratima, South 24-Parganas.

Suborder SERPENTES
Family COLUBRIDAE
Subfamily COLUBRINAE

15. *Xenochrophis piscator* (Schneider) (Non Poisonous snakes)

Habitat : Common species widely distributed in the Hugli-Matla basin prey on small fishes and frogs.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
132. The fat mixed with leaf juice of Thankuni and boiled for 15 minutes.	Applied externally on the affected parts, to cure Filaria.	Munda	Sandeshkhali, North 24-Parganas.
133. The fat mixed with leaf juice of Dhutura and boiled for 10 minutes.	Applied externally to cure Sciatica.	Santhal	Rupmari, North 24 Parganas; Jharkhali, South 24-Parganas.
134. The fat mixed with leaf juice of Nim and boiled for 10 minutes.	Applied on scalp to cure Alopecia.	Munda	Rajballavpur, Patharpratima, South 24-Parganas.
135. The fat mixed with Gulancha and boiled for 10 minutes	Applied on the affected parts in the case of Urticaria.	Santhal	Sagar Island, South 24-Parganas.

Subfamily HOMOLOPSINAE
16. *Endydris enhydris* (Schneider)
(Common smooth water snake)

Habitat : An aquatic species frequently found in fresh and brackish water of northeastern state, Coastal Andhra Pradesh to Uttar Pradesh. Mainly feeds on fish, occasionally on frogs, toads and other small vertebrates available by the sides of river.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
136. Flesh dried up and roasted with the hemipteran insect (<i>Chrysocoris purpureus</i> (Westwood)).	The fumes passes through the nostril of the patient, in the case of Epileptic fit.	Santhal, Oraon	Chhottomollakhali, Lakhmijonar dhanpur, Gosaba, Patharpratima, South 24-Parganas.
137. Flesh dried up and roasted with Nim leaf.	The fumes passes through the nostril of the affected patient, to cure epileptic fit.	Munda	Namkhana, South 24-Parganas.
138. The flesh dried up and roasted with Akanda leaf. The fumes passes through the nostril of the affected person.	Applied to cure Tuberculosis.	Munda	Jeliakhali, Sandeshkhali, North 24-Parganas.
139. The flesh dried up and roasted with feather of Pigeon (<i>Columba livia</i>).	The fumes passes through the nostril of the affected person, in the case of Hysteria.	Munda	Kumirmari, Gosaba, Dakshingangadharpur, Patharpratima, South 24-Parganas.
140. The bones burns and powdered mixed with Dandakalas (Drona).	Applied with mustard oil, in the case of Cat, Rat and Scorpion bites.	Munda	Kumirmari, Gosaba, South 24-Parganas.

BIRDS

Class AVES
Order CICONIFORMES
Family ARDEIDAE

17. *Bubulcus ibis coromandus* (Boddaert) (Crane)

Habitat : Resident, common and gregarious, usually seen in attendance on grazing cattle both in the forest and countryside. Breeds from June to August.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
141 Feather roasted and powdered mixed with honey.	To be taken orally, to cure Cough and Vomiting.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
142. Feather roasted and powdered mixed with Chirata.	To be taken orally, to cure abdominal pain and loss of Appetite.	Munda	Kultali, South 24-Parganas.
143. Feather roasted and powdered mixed with seed of Karpas tula (Cotton).	To be taken orally with milk or honey, to prevent Chicken-pox.	Munda	Kalisthan, Namkhana, South 24-Parganas.
144. Feather roasted and powdered mixed with leaf juice of Jhumka lata.	To be taken orally, to cure the Gastric ulcer.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
145. Feather roasted and powdered mixed with leaf juice of Potal.	To be taken orally, to cure Chicken Pox and Measles	Munda	Harobhanga, Canning, South 24-Parganas.
146. Lower part of foot boiled in Mustard oil.	Applied externally in the ear, to cure ear trouble (Otorrhoea).	Munda	Kultali, South 24-Parganas.
147. Lower part of the foot mixed with root dust of Apang/Apamarga dissolved in Mustard oil.	To cure the deafness in the old age.	Munda	Kalisthan, Namkhana, South 24-Parganas.
148. Bone powered dissolved with leaf juice of Vasaka in the ratio of 1:5.	Taken orally, to cure Pneumonia.	Santhal	Lahiripur, Gosaba, Durbarchati, Patharpratima, South 24-Parganas.
149. Liver roasted and powdered mixed with root dust of Shalpani.	Applied externally with mustard oil for message to cure Muscular pain.	Munda	Harobhanga, Canning, South 24-Parganas.
150. Gut contains mixed with bark dust of Akanda.	Applied externally to cure Promots suppuration of pas in the boil for extraction	Munda Oraon	Chital, Minkhan, North 24 Parganas; Kultali, Kaorakhali, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
151. Bone powdered mixed with root juice of Akanda.	Applied externally to cure Carbuncle and foul ulcer.	Munda	Kalisthan, Namkhana, South 24-Parganas.
152. Fat mixed with white glue of Penpay.	Applied externally to cure eczema behind ear.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
153. Fat mixed with leaf and stem dust of Thankuni.	Applied externally on the affected part to cure Psoriasis.	Munda	Harobhanga, Canning, South 24-Parganas.
154. Flesh juice mixed with leaf juice of Muktabarshi.	Taken orally to cure Whooping Cough with Vomiting.	Munda	Brajaballav-pur, Patharpratima, South 24-Parganas.
155. Lower part of the foot mixed with root dust of Nata.	Applied externally for the removal of pus from abscess and Carbuncle.	Munda	Kalisthan, Namkhana, South 24-Parganas.
156. Flesh juice mixed with root juice of Kuksima.	Taken orally, to cure Headache and loss of Appetite.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
157. Flesh juice mixed with leaf juice of Kuksima.	Taken orally, to cure dropsical swelling and Constipation.	Munda	Harobhanga, Canning, South 24-Parganas.
158. Fat mixed with dry leaf powder of Muktabarshi.	Applied to cure bed-sore.	Munda	Kultali, South 24-Parganas.

Order FALCONIFORMES
Family ACCIPITRIDAE

18. *Milvus migrans govinda* Sykes (Pariah kite, Cheel)

Habitat : Resident, common, gregarious about town and villages. Found throughout India except Nicobar Islands. Scavenger in habit. Breeds between September and April.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
159. Fat mixed with the bark juice of Karabi (Sweet scented Oleander) and wormed.	Applied externally, to cure Leprosy and Skin diseases.	Santhal	Sambhunagar, Gosaba, South 24-Parganas.
160. Vertebrae roasted and powdered mixed with the leaf juice of Lajjabati (Sensitive plant).	Applied externally in the case of Hydrocele and glandular swelling.	Oraon	Laharipur, Gosaba, South 24-Parganas.
161. Fat separated mixed with plant juice of Lajjabati (Sensitive plant).	Applied externally to cure Rheumatoid-arthritis.	Santhal	Amtoli, Gosaba, South 24-Parganas.
162. The feather roasted and powdered mixed with plant juice of Lajjabati (Sensitive plant).	Applied to cure Migraine.	Santhal	Patikhali, Canning II, South 24-Parganas.
163. Feather roasted and powdered mixed with dry flower powered of Bakul in the ratio 1:1.	Applied externally to cure Hemicrania and chronic headache.	Santhal	Amtoli, Gosaba, South 24-Parganas.
164. The nails roasted and powdered mixed with root juice of Dudh kalmi.	Applied to cure Scorpion bite.	Santhal	Patikhali, Canning II, South 24-Parganas.

Order GALLIFORMES

Family PHASIANIDAE

19. *Gallus gallus* (Linnaeus) (Hen, Murghi)

Habitat It is a resident bird, common. Breeds mainly in March to May but odd clusters may be found from January to Octobera. Laying eggs.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
165. The egg yolk separated and mixed with leaf juice of Shephalika and stirred for 5-10 minutes.	Applied on scalf to cure boldness of head.	Santhal	Amlamethi, Gosaba South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
166. The egg yolk separated and mixed with leaf juice of Tulsi (Holy basil) and stirred for 5-10 minutes.	Applied externally on the affected part in the case of swelling of throat and Tonsillitis.	Santhal	Sadhupur, Gosaba, South 24-Parganas.
167. The egg yolk separated and mixed with flower dust of Nim.	Applied on the scalf to kill lice.	Munda	Pathankhali, South 24-Parganas.
168. The egg yolk separated and mixed with stem bark dust of Gulancha.	Taken in the case of Utricaria.	Oraon	Purandar, Basanti, 24-Parganas.
170. The egg yolk separated and mixed with Kantikari.	Applied on the scalf in the case of Alopecia.	Oraon	Purandar, Basanti, South 24-Parganas.
171 The egg mixed with the milky juice of Penpay and strided for 15 minutes.	Applied externally on the affected parts in the case of Psoriasis and Ringworm.	Oraon	Purandar, Basanti, South 24-Parganas.
172. The egg contain separated and mixed with dry leaf powdered of Thankuni.	Applied on the affected part to cure Lupus and Acnerosacea.	Munda	Pathankhali, Gosaba, South 24-Parganas.
173. The egg albumen separated and mixed with leaf dust Thankuni.	Applied on the affected part to cured Leucorrhoea and Pruritus valva.	Oraon	Purandar, Basanti, 24-Parganas.
174. The egg yolk separated and mixed with root juice of Thankuni.	Applied externally on the affected parts to cure Carbuncles and Boils.	Oraon	Dakhin Radhanagar, Gosaba, South 24-Parganas.
175. The egg yolk separated and mixed with plant dust of Thankuni.	Applied on the affected part to cure Elephantiasis.	Munda	Achintanagar, Patharpratima, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
176. The egg yolk separated and mixed with powdered of Nata in the ratio of 3:1	Applied on the affected part to cured swelling and pain of the Hydrocele and Epididymitis.	Oraon	Purandar, Basanti, South 24-Parganas.
177. The egg yolk separated and mixed with root dust of Nata in the ratio of 3:1.	Applied over the abscess to draw out pus from it.	Oraon	Purandar, Basanti, 24-Parganas.
178. The egg orally taken for one to two weeks.	For general weakness of the body.	Santhal	Hingalgunj, North 24 Parganas; G-Plot, Patharpratima, South 24-Parganas.
179. The egg yolk separated and mixed with root juice Olat Kambal.	Taken orally in the case of sexual weakness.	Oraon	Purandar, Basanti, South 24-Parganas.
180. The egg yolk separated and mixed with leaf juice of Tulsi (Holy basil).	Applied externally on the affected parts to cure swelling of gland.	Oraon	Purandar, Basanti, South 24-Parganas.
181 The egg shell roasted and powdered mixed with root bark dust of Ashwattha.	Applied on the affected part with mustard oil to cure painful Haemorrhoids.	Munda	Digambarpur, Patharpratima, South 24-Parganas.
182. The egg yolk separated and mixed with root juice of Dandakalas (Drona).	Applied on the affected part to cured poisons affect in case of scorpion bite.	Oraon	Purandar, Basanti, South 24-Parganas.
183. The egg contain mixed with goat milk and boiled for 5 to 10 minutes.	Taken orally daily in the case of Tuberculosis.	Santhal	Chaital, Minakhan, North 24-Parganas.
184. The egg shell roasted and powdered mixed with mustard oil.	Applied externally into the ear to cure Otorrhoea with pus formation of ear.	Munda	Pathankhali, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
185. The egg yolk separated and mixed with antler powdered of Deer (<i>Cervus unicolor</i>).	Applied externally for message to cure ribs pain (Costocarditis).	Oraon	Purandar, Basanti, South 24-Parganas.
186. The egg yolk mixed with juice of green banana (Kala).	Applied on the affected part in case of Burn.	Oraon	Purandar, Basanti, South 24-Parganas.
187. The egg contain mixed with leaf juice of Vasaka.	To cure Bronchitis.	Munda	Pathankhali, South 24-Paragonas.
188. Flesh cooked with root of Olat Kamba.	Taken orally in case of male impotency.	Oraon	Purandar, Basanti, South 24-Parganas.
189. The egg yolk mixed with leaf juice of Kule khara.	Taken once in a day, to cure Anamae, Lathergy and Weakness.	Santhal	Malancha, Minakhan, North 24-Paragonas.
190. The egg yolk mixed with dry leaf powdered of Muktabarshi.	Applied externally on the wounds and bedsores.	Munda	Uchalda, Minakhan, North 24-Parganas.
191. The egg yolk separated and mixed with fruit powdered of Kantikari.	Applied externally on the swelling to cure pain and promote the extraction of pus from the fingers nail.	Oraon	Purandar, Basanti, South 24-Parganas.
192. The egg yolk mixed with leaf juice of Harkuchkanta.	Applied on the affected part to cure burn of bites of poisonous insects bite like Scorpion, Scolopendra etc.	Oraon	Purandar, Basanti, 24-Parganas.
193. The egg yolk mixed with honey.	Taken orally, to cure Cough and Cold of children.	Oraon	Purandar, Basanti, South 24-Parganas.

Order COLUMBIFORMES
Family COLUMBIDAE

20. *Columbia livida intermedia* Strickland (Pigeon, Payara)

Habitat It is a resident bird commonly found in the human habitations. In the wild state live in colonies, roosting on ledges in fiddures and holes in rock scarps, crumbling hill forts, ancient ruins of down the shafts of old weel. Breeding season throughout the year. Laying eggs on the prepared nest in the houses.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
194. Fat mixed with Nim seed dust and the blood mixed with leaf of Kule khara and boiled.	Message externally on the affected part and blood taken orally to cure Sciatica.	Oraon	Amlamethi, Gosaba, South 24-Parganas.
195. Fat mixed with seed dust of Shephalika.	Applied externally on the affected part to cure Frogen shoulder.	Munda	Kumirmari, Gosaba, South 24-Parganas.
196. Fat mixed with bark dust of Akanda.	Applied in the case of Foul and gangrenous ulcer.	Santhal	Dakhin Roypur, Patharpratima, South 24-Parganas.
197. Fat mixed with stem bark dust of Akanda and the same time blood mixed with leaf juice of Punarnava and boiled.	Applied externally as message and the blood taken orally in the case of Paralysis of Fore limbs.	Oraon	Kumrakhali Canning II, South 24-Parganas.
198. Fat mixed with Nim seed dust and the flesh juice mixed with leaf juice of Punarnava and boiled.	Applied externally as message and the flesh juice taken orally to cure Sciatica.	Santhal	Satjelia, Gosaba, South 24-Parganas.
199. Fat mixed with seed dust of Shephalika and the same time blood mixed with root juice of Shephalika.	Applied externally as message on the affected parts and the blood taken orally in the case of Frogen shoulder.	Oraon	Kumrakhali Canning II, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
200. Blood mixed with stem bark dust of Gulancha and boiled.	Taken orally to cure Urticaria and Allergy.	Santhal	Satjelia, Gosaba, South 24-Parganas.
201. Blood mixed with leaf juice of Gulancha.	Taken orally to cure Bronchial Asthma of Children.	Oraon	Kumrakhali Canning II, South 24-Parganas.
202. Flesh juice mixed with leaf juice of Muktabarshi and boiled.	Taken orally, to cure Pulmonary tuberculosis.	Santhal	Sreenarayanpur Patharpratima, South 24-Parganas.
203. Flesh juice mixed with Tomato juice	Taken orally to cure Hay Fever.	Oraon	Kumrakhali Canning II, South 24-Parganas.
204. Blood and Tomato juice mixed and boiled. Fat mixed with Nim seed oil and used for message.	Juice taken orally and the oil used as message to cure Rheumatism of hand.	Santhal	Satjelia, Gosaba, South 24-Parganas.
205. Flesh and blood boiled and mixed with bark dust of Arjuna.	Taken orally with milk or ghee to cure Cardiac trouble with low pulse rate.	Oraon	Kumrakhali Canning II, South 24-Parganas.
206. Flesh juice mixed with seed dust of Shephalika and boiled. Fat mixed root bark dust of Akanda.	Juice taken orally and message externally with fat on the affected part to cure Osteo-arthritis.	Santhal	Satjelia, Gosaba. South 24-Parganas.
207. Blood mixed with stem bark dust of Shephalika and the same time fat mixed with Kulekhara.	Taken orally and message externally on the affected parts to cure Rheumatoid-arthritis.	Oraon	Kumrakhali Canning II, South 24-Parganas.
208. Flesh juice mixed with Muktabarshi leaf juice and boiled.	Orally taken to cure Pulmonary tuberculosis.	Santhal	Satjelia, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
209. Bones roasted and powdered mixed with Muktabarshi leaf juice.	Taken orally to cure Bronchitis of Children.	Oraon	Kumrakhali, Canning II, South 24-Parganas.
210. Flesh and blood mixed with leaf of Punarnava and the fat mixed with stem dust of Akanda and heated used for message.	Taken orally and the message externally with fat to cure Paralysis.	Santhal	Gosaba, South 24-Parganas.
211. Flesh juice mixed with leaf juice of Shalpani and boiled.	Taken orally to cure Drowsiness and muscular pain.	Oraon	Kumrakhali, Canning II, South 24-Parganas.

Order PASSERIFORMES
Family STURNIDAE

21. *Acridotheres tristis tritis* (Linnaeus)
(Common Myna, Salik)

Habitat Common bird distributed throughout India along with crow and sparrow a confirmed commensal of man, quick to colonized in any area. Breeds in March to September.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
212. Feather burn into ashes mixed with root bark juice of Anantamul (Indian Sarsaparilla).	Taken orally, to cure loss of appetite and Dyspepsia.	Munda	Patharpratina, South 24-Parganas.
213. Bones of the legs powdered and dissolve in leave juice of Jhinga (Ribbed Gourd).	Taken orally to cure granular conjunctivitis of children.	Santhal	Satjelia, Gosaba, South 24-Parganas.
214. Nails burn to ashes and dissolve in stem bark juice of Dalimgachh (Pomegranate).	In the case of Tapeworm infection of children.	Santhal	Atghara, Haroa block, North 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
215. Flesh boiled and mixed with seed powdered of Tulsi (Holy basil).	Taken orally to cure disorder of genito-urinary system.	Santhal	Sahebkhali, Hingalgunj, South 24-Parganas.
216. Flesh burnt to ashes and mixed with root bark juice of Karabi.	Taken orally to cure Cardiac trouble and diuretic.	Santhal	Sahebkhali, Hingalgunj, South 24-Parganas.

Family Corvidae

22. *Corvus splendens splendens* Viellot
(Indian house Crow; Kak)

Habitat : Common house crow found making nest on tree near human habitation. Gregarious, sociable, clannish, cunning, intelligent and omnivorous. Breeding season March/April to July/August, lay eggs on the nest.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
217. Egg shell roasted and made powdered mixed with honey.	Applied around the eyes to cure Ophthalmia.	Santhal	Uchalda, Minakhan, North 24-Parganas.
218. The liver roasted and dried up, powdered and mixed with root dust of Punarnava.	Applied externally with honey to cure inflammation of lower eyes lid (Oedema).	Oraon	Sreenarayanpur, Patharpratima, South 24-Parganas.
219. The liver roasted and dried up, powdered and mixed with root dust of Potal.	Taken orally with curd to cure Hypertropy of Liver.	Santhal	Satjelia, Gosaba, South 24-Parganas.
220. Flesh roasted and dried up mixed with Thankuni in the ratio of 1:1.	Applied locally with honey to cure Hydrocoel of children.	Santhal	Purandar, Basanti, South 24-Parganas.
221. Flesh roasted and dried up mixed with Mustard oil.	Applied around eyes to cure blepharitis.	Oraon	Minakhan, North 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
222. The egg shell roasted and powdered mixed with mustard oil in the ratio of 9:1.	Applied as ear drop in the case of Otorrhoea.	Santhal	Barunhat, Hingalgunj, North 24-Parganas.
223. Yolk mixed with leaf juice of Punarnava.	Applied locally as message on knee swelling and pain.	Santhal	Purandar, Basanti, South 24-Parganas.
224. Yolk mixed with leaf juice of Thankuni.	Applied externally in the case of swelling of Testis.	Oraon	Minakhan, North 24-Parganas.
225. Egg shell mixed with juice of green banana.	Applied locally in the case of burn.	Santhal	Satjelia, Gosaba, South 24-Parganas.
226. Egg shell roasted and powdered mixed with leaf juice of Bhant.	To be taken orally for abdominal Colic and loss of appetite.	Santhal	Purandar, Basanti, South 24-Parganas.

23. *Corvus macrorhynchos levaillantii* Lesson
(Jangle Crow; Bankuya)

Habitat : Found in the jungle, making nest on the tree. Breeding period February to June. Size larger than house crow with entire plumage glistening jet black.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
227. Feather roasted and powdered mixed with root dust of Kantikari.	Applied externally to cure Blepharitis.	Munda	Hemnagar, Hingalgunj North 24-Parganas.
228. Fat mixed with root dust of Thankuni.	Applied externally to cure Syphilitic ulcer.	Munda	Brajaballavpur, Patharpratima, South 24-Parganas.
229. Flesh juice mixed with leaf juice of Tulsi (Holy basil) and boiled.	Taken orally mixed with honey, to cure infection and swelling of uvula (Uvulitis).	Munda	Kalisthan, Namkhana, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
230. Bone powdered mixed with leaf juice of Tulsi (Holy basil).	Applied externally with honey to cure inflammation of Tonsillitis.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
231. Blood mixed with leaf juice of Ash sheora and boiled.	Taken orally mixed with honey to cure Pharyngitis and Hoarseness.	Munda	Harobhanga, Canning, South 24-Parganas.
232. Feather roasted make powdered mixed with bark dust of Gulancha.	Taken orally with honey to cure Allergy and Urticaria.	Munda	Sreenarayanpur, Patharpratima, South 24-Parganas.
233. Flesh mixed with leaf juice of dust of Punarnava.	Taken orally to cure Myositis.	Munda	Kalisthan, Namkhana, South 24-Parganas.
234. Fat mixed with stem bark dust of Akanda.	Applied to cure Rheumatism of knee joint.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
235. Flesh juice mixed with leaf juice of Punarnava.	Taken orally to cure Urethritis.	Oraon	Harobhanga, Canning, South 24-Parganas.
236. Fat mixed with seed powdered of Shephalika.	Applied externally to cure Costocarditis and Rheumatism.	Munda	Brajaballavpur, Patharpratima, South 24-Parganas.
237. Feather roasted and powdered mixed with Nim seed oil.	Applied externally to cure backache and Muscular pain.	Munda	Kalisthan, Namkhana, South 24-Parganas.
238. Blood mixed with white glue of Penpay.	Taken orally to cure Dyspepsia, Constipation and headache.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
239. Bone powdered mixed with seed dust of Haritaki.	Taken orally with honey to cure Anal fistula.	Munda	Harobhanga, Canning, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
240. Bone powdered mixed with seed dust of Nata and mixed with fat.	Use as message to cure Mastitis (inflammation of mammary gland).	Santhal	Achintanagar, Partharpratima, South 24-Parganas.
241. Feather roasted and made powdered and mixed with leaf dust of Thankuni.	Taken orally to cure Leucorica and prutis vulva.	Munda	Kalisthan, Namkhana, South 24-Parganas.
242. Foot bones burn into ashes and mixed with glue of Dumur (Fig) and Am (Mango).	Taken orally with honey and message on the affected part to cure warts and Breast tumors.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
243. Foot bones burn and made ashes mixed with white glue of Penpay.	Taken orally to cure headache and Dyspepsia.	Munda	Harobhanga, Canning, South 24-Parganas.
244 Bone roasted and mixed with seed dust of Tulsi (Holy basil).	Applied externally as message on affected part to cure Hemiplegia.	Munda	Achintyanagar, Patharpratima, South 24-Parganas.
245. Lower part of vertebral bone framed in Copper	Wear by the children to cure Enuresis.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
246. Flesh juice mixed with leaf juice of Akanda.	Taken orally to cure Obesity.	Munda	Harobhanga, Canning, South 24-Parganas.
247. Flesh juice mixed with root juice of Ash sheora.	Taken orally to cure Hypochondriasis.	Santhal	Dakhin Roypur, Patharpratima, South 24-Parganas.

MAMMALS

Class MAMMALIA
Order CHIROPTERA
Family PTEROPODIDAE

24. *Pteopus giganteus giganteus* (Bruennich) (Bat; Badur)

Habitat It is the most conspicuous and common bat of West Bengal and observed in all districts in rural as well as urban areas. It roost in the open on branches of trees situated near some source of water.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
248. Fat separated from flesh mixed with seed powdered of Nata.	Applied on the affected part to remove freckles from the face.	Santhal	Sadhupur, Gosaba, South 24-Parganas.
249. Flesh juice mixed with bark juice of Sajna (Drumstick) and boiled for 10 minutes.	Taken orally to cure Asthma and Bronchitis.	Oraon	Hemnagar, Hingalgunj, North 24-Parganas.
250. Fat mixed with white glue of Pappya in the ratio of 3:2.	Applied locally to cure Ring worm and Psoriasis.	Munda	Radhanagar, Gosaba, South 24-Parganas.
251. Flesh juice mixed with root dust of Durba in the ratio of 3:2 and boiled for 10 minutes.	Taken orally to cure Epistaxis.	Santhal	Rangabelia, Gosaba, South 24-Parganas.
252. Fat separated from flesh mixed with dry leaves of Muktabarshi in the ratio of 5:3 and warmed for 5 minutes.	Applied to cure bed sore and wounds.	Santhal	Satjelia, Gosaba, South 24-Parganas.
253. Fat mixed with seed dust of Golmarich (Black pepper) in the ratio of 3:2 and worm for 5 minutes.	Applied on the affected part to cure Leucoderma.	Oraon	Hemnagar, Hingalgunj, North 24-Parganas.
254. Bones burn and powdered mixed with root bark dust of Bel	To be taken orally, to cure Hypochondriasis.	Munda	Radhanagar, Gosaba, South 24-Parganas.
255. Bones burn and powdered mixed with root bark dust of Gurmar.	Taken orally, to cure Dyspnoea with Swelling.	Santhal	Rangabelia, Gosaba, South 24-Parganas.
256. Wings roasted and powdered mixed with leaves or pest of Surjamukhi (Sunflower).	Applied externally, to cure fracture of bones.	Munda	Radhanagar, Gosaba, South 24-Parganas.
257. Flesh mixed with bannana (Kala) fruit.	Taken orally, to cure Rachitis.	Santhal	Rangabelia, Gosaba, South 24-Parganas.

Order CARNIVORA
Family FELIDAE

25. *Panthera tigris tigris* (Linnaeus) (Tiger: Bagh)

Habitat : Lives in varied habitats like dry open jungles, humid evergreen forests and mangrove swamps. It's endowed with good swimming power. Tiger hunts between sunset and dawn and cover long distances in the course of night's hunting. It is enormously powerful and all kinds of animals fall victim of its prey.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
258. Tongue dried and powdered mixed with hen's egg. The paste applied externally.	In the case of bronchial and Asthmatic spasm.	Oraon	Bipradaspur, Gosaba, South 24-Parganas.
259. Teeth roasted and powdered mixed with the leaf juice of Sona in the ratio 1:4.	Applied externally to cure glandular swelling (Pharyngitis).	Munda	Amlamethi, Gosaba, South 24-Parganas.
260. Fat mixed with seed dust of Sajna (Drumstick) in the ratio of 9:1 and warmed for 10 minutes.	Applied externally in the case Gout and Rheumatic pain.	Oraon	Kumirmari, Gosaba, South 24-Parganas.
261. Teeth and nails roasted nad powdered mixed with seed dust of Kantikari.	Applied locally with honey to prompt supuration of boils and Carbuncles and anal-fistula.	Oraon	Bipradaspur, Gosaba, South 24-Parganas.
262. Teeth and nails roasted and powdered mixed with the leaf and stem juice of Lajjabati (Sensitive plant).	Applied externally to cure bleeding Piles.	Munda	Amlamethi, Gosaba, South 24-Parganas.
263. Nails and teeth grind to powdered and mixed with leaf of Alkushi (Cowditch plant).	Applied externally on the affected part, to cure burning of cancer and carbuncles.	Oraon	Kumirmari, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
264. Nails roasted and powdered mixed with root dust of Rangan (Jungle flame).	Applied locally with honey, to cure Sore and Chronic ulcer.	Oraon	Bipradaspur, Gosaba, South 24-Parganas.
265. Fat mixed with the stem bark dust of Bon-bheranda (Angular leaved Physic nut).	Applied externally to cure Leprosy and Rheumatism.	Munda	Amlamethi, Gosaba, South 24-Parganas.
266. Fat mixed with green banana (Kala) roasted and applied.	Applied externally on the affected part, to cure burn and Haemoptysis (one side Paralysis).	Oraon	Kumirmari, Gosaba, South 24-Parganas.

Order ARTIODACTYLA
Family SUIDAE

26. *Sus scrofa cristatus* Wagner (Wild bore; Buno Suor)

Habitat : Recorded from the almost all the districts of West Bengal. But now restricted to Darjiling, Jalpaiguri, Puruliya, West Dinajpur and North and South 24 Paragonas districts. The population declines due to habitat destruction and poaching for flesh.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
267. The fat boiled and mixed with seed dust of Nata in the ratio of 9:1.	Applied externally in the case of Chicken-pox.	Munda	Nafargunj, Basanti, South 24-Parganas.
268. The fat mixed with seed dust of Sajna (Drumstick) in the ratio of 9:1 and boiled.	Applied externally in the case Gout and Rheumatic pain.	Santhal	Chunakhali, Basanti, South 24-Parganas.
269. The fat mixed with root dust of Akanda in the ratio of 9:1.	Applied externally to cure Paralysis of limbs.	Santhal	Lahiripur, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
270. The flesh cooked with roots of Olat kambal	Taken orally to cure Impotency.	Munda	Nafargunj, Basanti, South 24-Parganas.
271 The fat mixed with stem dust of Thankuni in the ratio of 9:1.	Applied on the affected part to cure Urticaria.	Santhal	Chunakhali, Basanti, South 24-Parganas.
272. The fat mixed with seed dust of Hakuch (Bavachi).	Applied externally to cure Leucoderma.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
273. Flesh juice mixed with leaves juice of Muktabarshi in the ratio of 3:2 and boiled with Golmarich (Black pepper) for 15 minutes.	Taken orally to cure Pulmonary Tuberculosis.	Santhal	Lahiripur, Gosaba, South 24-Parganas.
274. The fat mixed with roots dust of Potal in the ratio of 9:1 and boiled for 15 minutes.	To be message on the affected part to cure Synovitis.	Munda	Nafargunj, Basanti, South 24-Parganas.
275. Skull burn and made ashes mixed with leaf pest of Alkushi.	Applied on the affected part and plastered to cure fracture of bones.	Santhal	Chunakhali, Basanti, South 24-Parganas.
276. The fat mixed with leaf dust of Badanala (Wild Tabacco).	Applied externally to the affected part to cure Dermatitis.	Santhal	Lahiripur, Gosaba. South 24-Parganas.

Family CERVIDAE

27. *Cervus unicolor niger* Blainville (Sambar)*Axis axis axis* (Erxleben)

(Spotted Deer; Chital)

Habitat Found in the Sundarban forest and scare in the other parts of West Bengal. They are thriving well in the sancturies.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
277. The antler burns and made ashes and mixed with white glue of Dumur (Fig) in the ratio of 1:1.	Applied externally on the affected parts to cure Warts on palm.	Munda	Kumirmari, Gosaba, South 24-Parganas.
278. The antler burns and made ashes and mixed with faces of Pigeon.	Applied externally to extract pus from the abscess.	Oraon	Chingrikhali, Hingalgunj, North 24-Parganas.
279. The antler burns and made ashes and mixed with gum of Am (Mango).	Applied on the affected part to cure Breast tumors.	Santhal	Bipradaspur, Gosaba, South 24-Parganas.
280. The antler burns and made ashes and mixed with seed dust of Haritaki.	Applied externally with honey, to cure Anal fistula.	Santhal	Rangabelia, Gosaba, South 24-Parganas.
281. The teeth of the deer roasted and made powdered mixed with stem bark dust of Akanda in the ratio of 1:1.	Applied externally to remove pus from the nails.	Munda	Kumirmari, Gosaba, South 24-Parganas.
282. Bones burns and made ashes and mixed with root dust of Shalpani in the ratio of 1:1.	Taken orally with honey, to cure Fever and severe pain of the body.	Oraon	Chingrikhali, Hingalgunj, North 24-Parganas.
283. Fat mixed with root bark dust of Karabi (Sweet scented Oleander) in the ratio of 9:1.	Applied externally to cure Leprosy and scaly condition of skin and Psoriasis.	Santhal	Bipradaspur, Gosaba, South 24-Parganas.
284. The antler burns and made ashes and mixed with Karabi (Sweet scented Oleander) in the ratio of 3:2.	To taken orally to cure Epistaxis.	Santhal	Rangabelia, Gosaba, South 24-Parganas.
285. Liver roasted and dried and powdered mixed with Golmarich (Black pepper) in the ratio of 9:1.	Taken orally with leaf juice of Karala for birth control.	Santhal	Bipradaspur, Gosaba, South 24-Parganas.
286. Fat mixed with root bark dust of Kamini in the ratio of 9:1.	Applied externally on the chest, to cure Bronchial Spasm.	Santhal	Bonshyamnagar, Partharpratima, South 24-Parganas.

Family Bovidae
28. *Bos gaurus* Smith (Cow)

Habitat : Pet and domestic animal found throught India.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
287. The urine mixed with leaf juice of Kalmegh.	Taken orally in the case enlargement of Liver and Spleen.	Munda	Chingrikhali, Hingalgunj, North 24-Parganas.
288. Cow milk mixed with leaf juice of Patherkuchi.	Taken orally to cure Gall bladder stone.	Santhal	Dautpur, Gosaba, South 24-Parganas.
289. Curd mixed with juice of Sasa (Cucumber).	Taken orally to cure Gall stones.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.
290. Cow milk mixed with juice of Thankuni.	To be taken orally, to cure Dysentery and Intermittent Fever.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
291. Cow ghee mixed with powdered dust of Shephalika.	Applied externally to cure Paralysis of Lower limb.	Santhal	Dautpur, Gosaba, South 24-Parganas.
292. Curd mixed with leaves juice of Punarnava.	Taken orally to cure Liver Cirrhosis.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.
293. Cow milk mixed with leaves juice of Bel.	To be taken orally, to cure Diabetes mellitus.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
294. Cow ghee mixed with bark dust of Arjuna	Taken orally to cure Endocarditis and Myocarditis.	Santhal	Dautpur, Gosaba, South 24-Parganas.
295. Cow curd mixed with juice of Durba.	To be taken orally and applied externally, to cure chronic gleet and discharge of skin.	Santhal	Chaital, Minakhan, North 24-Pargonas.
296. Cow ghee mixed with root dust of Olat kambal.	Taken orally to cure Impotency.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
297. Cow milk mixed with ripe Penpey (Papaya).	Taken orally to cure Hepatitis B.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
298. Cow urine and dung mixed with leaves juice of Nim.	Applied externally to cure Leucoderma.	Santhal	Dautpur, Gosaba, South 24-Parganas.
299. Cow urine mixed with paste of cotton seed and raw yolk of hen egg.	Taken orally by pregnant women for abortion.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.
300. Cow milk mixed with seed dust of Chhotachand.	To be taken orally, to cure high blood pressure.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
301. Cow urine mixed with row egg and stir it before taken orally.	Taken orally before intercourse to prevent pregnancy.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
302. 200 grms of milk mixed with 10 drops of white glue of Akanda.	Taken orally to prevent Hydrophobia.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.
303. 250 grms of milk mixed with 15 drops of white glue of Karabi (Sweet scented Oleander).	Taken orally to prevent Hydrophobia.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.
304. Cow curd mixed with seed dust of Hijal.	Taken orally to cure Jaundice.	Santhal	Dautpur, Gosaba, South 24-Parganas.
305. Cow milk mixed with root dust of Khamo.	Taken orally to cure high blood pressure.	Santhal	Hirambagopalpur, Patharpratima, South 24-Parganas.
306. Cow ghee mixed with sugar, honey and bark dust of Arjuna.	To be taken orally, to cure Phthisis and Haemoptysis.	Oraon	Dakhingangadharpur, Patharpratima, South 24-Parganas.

29. *Capra sp.* (Goat)

Habitat Pet and domestic animal found throught India.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
307. The curd mixed with root dust of Durba in the ratio 9:1 and stire for 5 minutes.	Taken orally in the case of chronic Gleet	Munda	Amtali, Gosaba, South 24-Parganas.
308. Goat milk mixed with seed dust of Kala Jam in the proportion 3:1 wormed for 5 minutes.	To cure Diabetes.	Munda	Uchal, Minkhan, North 24-Parganas.
309. Milk mixed with leaf juice of Nim in the ratio of 4:1.	To be taken to cure chronic Dysentery.	Santhal	Baramollakhali, Gosaba, South 24-Parganas.
310. Goat urine mixed with leaf juice of Dalim gachh in the ratio of 3:1.	Taken to cure Dysentery.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
311. Goat urine mixed with leaf juice of Kantikari in the proportion 3:2 and boiled for 15 minutes.	Applied externally on scalp to cure Alopecia.	Munda	Uchal, Minakhan, North 24-Parganas.
312. Milk curd mixed with leaf juice of Kantikari in the ratio of 3:1.	To be taken orally to cure Renal stone and Renal Colic.	Santhal	Baramollakhali, Gosaba, South 24-Parganas.
313. Goat urine mixed with hen's egg and taken orally. A root of Penpay (Papaya) introduced into the uterus.	For abortion of women.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
314. Goat liver roasted with mustard gel and taken orally.	Taken orally to cure Night blindness.	Munda	Uchalda, Minakhan, North 24 Paragonas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
315. Goat meat cooked with Kule khara.	Taken orally to cure Anaemia.	Santhal	Barunhat, North 24-Parganas.
316. Goat urine mixed with pigeon excreta.	Applied externally in the chest to cure breathing troubles (Dyspnoea).	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
317. Goat milk curd mixed with Tomato and wormed for 15 minutes.	Taken to cure Asthma and Rheumatic pain.	Munda	Uchal, Minakhan, North 24-Parganas.
318. Goat urine mixed with stem dust of Chirata in the ratio of 3:1.	To be taken to cure Dyspepsia and loss of appetite.	Santhal	Baramollakhali, Gosaba, South 24-Parganas.
319. Goat urine mixed with root juice of Karabi (Sweet scented Oleander) in the ratio of 3:1.	Taken orally for abortion.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
320. Goat milk mixed with hen's egg.	Taken orally to cure Tuberculosis.	Munda	Uchalda, Minakhan, North 24-Parganas.
321. Milk curd mixed with leaf juice of Patherkuchi in the ratio of 3:2.	To be taken orally to cure Renal stone.	Santhal	Baramolla-khali, Gosaba, South 24-Parganas.
322. Fat separated from flesh and boil with seed dust of Sajna (Drumstick) in the ratio of 9:1.	Applied on the affected part in case of burns.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
323. Goat milk mixed with seed dust of Sajna (Drumstick) in the ratio of 9:1.	Applied externally to cure Headache.	Munda	Uchalda, Minakhan, North 24-Parganas.
324. Goat skin and hen's feather burn and the fumes passes through the nostrils of epileptic patient.	To cure Epileptic fit.	Santhal	Baramollakhali, Gosaba, South 24-Parganas.

Mode of preparation of medicine	Use/type of disease	Name of the tribe	Place/ District
325. Goat milk curd mixed with leaf juice of Akanda in the ratio of 3:1.	Taken orally to cure obesity.	Munda	Hemnagar, Hingalgunj, North 24-Parganas.
326. Goat milk mixed with green leaves of Dalim gachh (Pomegranate).	Applied externally around eyes, to cure swelling of the eyes and Conjunctivitis.	Munda	Uchalda, Minakhan, North 24-Parganas.
327. Milk curd mixed with fruit juice of Dalim (Pomegranate) in the ratio of 9:1.	To be taken orally to cure Dyspepsia.	Santhal	Baramollakhali, Gosaba. South 24-Parganas.
328. Goat milk mixed with roots of Jagatmadan and boils for 30 minutes.	Applied on the affected part in case of burns	Munda	Hemnagar, Hingalgunj, North 24-Parganas.

IMPLICATION FOR MEDICAL PRACTICE

The Alma Ata Declaration "Health for All by 2000 AD" is impossible to be achieved in India by Allopathy alone. It is therefore, being increasingly felt necessary to make use as much as possible of traditional systems of medicine. One of the most neglected traditional modes of health care is the medicinal application of crustacea, fishes, reptiles, birds and mammals because of the lack of knowledge as well as the dearth of materials. It is for the first time that detailed data have been collected in these regards and found that many of them utilised by the tribal as well as the other villagers.

A major advantage of this system is that it is of very low costs. It is impossible for an average Indian to afford the cost of prolonged allopathic treatment. Further the service of an allopathic doctors are not readily available in many areas. Even in cases where the necessary facilities are available many of them can not afford the post-hospital or post treatment care. So it is high time that we should use the available traditional medicines as much as possible. Added to it, the system has practically no any side effects.

To get the maximum advantage of the medical applications of Crustacea, fishes, reptiles, birds and mammals, the first thing to do is to establish a few training or teaching and research centres of excellence. Once this is achieved and proper talent is attracted, the system will establish itself. The other handicap is the scarcity of crustacea, fishes, reptiles, birds and mammals. Once the efficacy of the medicine is proved, the animals can be rare.

Unlike the Allopathic doctors, those trained in the traditional system will only be too happy to go back among the villagers, from where they can be drawn for training.

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