

Ethno-entomological practices in Tirunelveli district, Tamil Nadu

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Insect based traditional knowledge on medicinal importance, although in usage from ancient times, is still less explored. Ancient palm leaf literature reveals that numerous insect species were advantageously utilized by tribal and village physicians for medicine. Kanikars and Paliyars, the tribal people living in Western Ghats of Tirunelveli district and village physicians use insects to prepare medicine. In the present investigation, 11 species of insects used to prepare traditional medicine were identified and details about their therapeutic value are enumerated. Insects are used as medicine to cure various ailments like urinary diseases, neurological problems, hair loss, skin diseases, respiratory illness, etc. Also insects like termites are consumed as healthy food.

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In recent days insects are targeted as a source for antibiotic and anticancer drugs. Since insects have evolved over 500 million years ago and flourish in all sorts of habitats they must be manufacturing a wide assortment of compounds to counter microbes that threaten them¹. The insects are exposed to a cocktail of nasty bacteria and fungi so that their immune system unleashes all its power against the pathogens. Entomed, a French medical company has identified two bio-active compounds from insects, which have

been proved to have a good therapeutic value. A report says that insects could soon graduate from being cursed as pests to being hailed as saviours¹.

Ancient palm leaf literature also speaks much about insect medicine. Insect medicine is prepared along with plant drugs and given to people suffering from different health problems. Such practices are common in the village areas of Tirunelveli district of Tamil Nadu (Fig. 1). The tribal people, both Kanikars and Paliyars of Western Ghats of Tirunelveli district also use insect medicine. Much work has been carried

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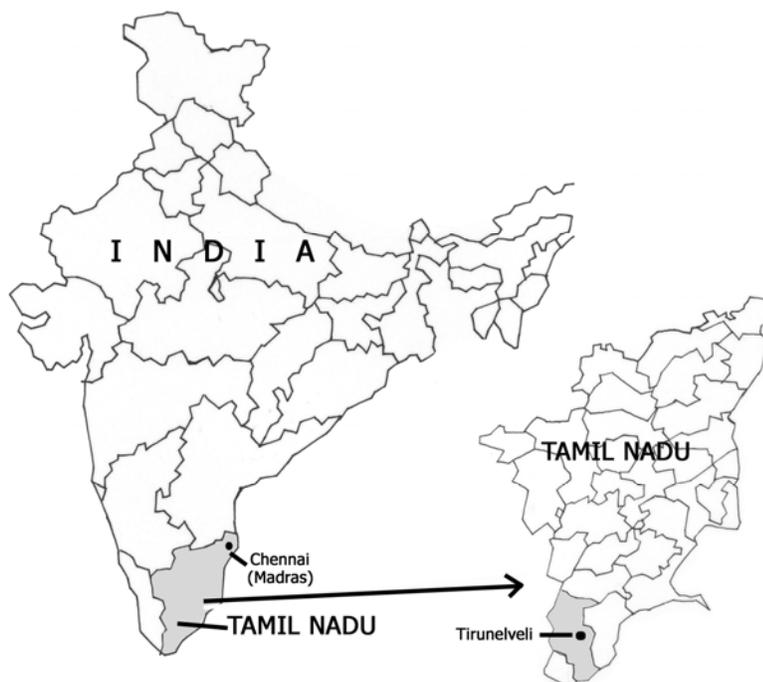


Fig. 1. Location map of Tirunelveli District, Tamil Nadu

out on ethnobotany of these tribes, but less attention has been focused on ethnozoology, particularly ethnoentomology of tribal people. There are some reports on the medicinal value of insects²⁻⁵; however less data is available on insects that are used in ethnomedicine. Hence, the present study is planned to collect details from tribal people and village physicians on insect species that are used to prepare medicines.

Methodology

For documentation of ethno-entomological information and collection of insect material, tours were undertaken during June 2001. Documentation consisted of interviews with 25 traditional healers, viz.

medicine men, *Vaid*, tribal heads, elder people, based on the method given by Jain⁶.

Results

Extracts of several species of insects are used for preparing oils, medicine and as nourishment tonics. About 11 species of insects were used by traditional healers. The insects with medicinal value were identified and the various ailments for which they were used are given below:

1. Honey bee: (*Apis* spp., Apidae: Hymenoptera)

Honey, wax, propolis and bee venom are valuable medicine and are in usage since ancient time. In the study area,

people use the honey produced by *Apis dorsata* (Rock bee), *Apis cerana indica* (Indian bee), and *Apis florea* (Little bee). There is a good demand for Rock bee honey. Rock bee honey collected during November–December from Western Ghats area is dark brown in colour and it is believed to have many curative properties.

Honey is used for curing several problems. It is given to old people and children every day by mixing it with water or milk. Honey is also used to cure skin abrasions, small cuts, ulcers, mouth ulcers and wounds. It is also used as a vehicle for plant medicine that are used to treat cough, even whooping cough, asthma, fever and dyspepsia. Cleaned termites and earthworms are put into honey and that honey is given to children suffering from respiratory problems. The honeycomb of the Little bee, *Apis florea* yields little amount of honey but it has a great medicinal value than the honey produced by other species. Honey collected from the hives of *Apis florea* is a good remedy for respiratory problems. For throat infection or any inflammation, honey mixed with lime (calcium carbonate) is applied on the affected area. Traditional healers use bee wax to prepare medicine to treat fistula, piles and rheumatic pain.

2. Cucurbita bug (*Aspogonopus janus*, Pentatomidae: Hemiptera)

Entire bugs are crushed with herbal extracts prepared from plants and applied on skin, where leucoderma patches appear. The treatment is carried out for 40 days.

3. Silkworm (*Bombyx mori*, Bombycidae: Lepidoptera)

The cocoon of the silkworm, *Bombyx mori* is used as medicine. The cocoon ash of the silkworm is used as a styptic, tonic and astringent to check profuse menstruation, leucorrhoea and chronic diarrhoea. After boiling, the cocoon is separated and the killed larvae are taken as nutrient food by some local people. Ancient palm leaf literature collected in this area also revealed that the cocoons of the silkworm have an aphrodisiac potentiality. Its ashes were also used to treat eye infection and catarrh.

4. Cochineal insect (*Dactylopius coccus*, Dactylopiidae: Hemiptera)

Cochineal insects are seen on the xerophytic plants like Cactus. The insects are collected, crushed, put into boiling water and then dried to prepare powder. The powder is used to treat whooping cough. The powdered form of this insect has sedative properties and is also mixed with country made liquors.

5. Velvet ant (*Dasymutilla occidentalis*, Mutillidae: Hymenoptera)

It is a bright scarlet ant with velvety appearance. The dried specimen of the ant is powdered and used as nerve tonic and as antispasmodic. The powder of this ant is mixed with honey and given to patients suffering from paralysis. Along with bees wax, the powder of this ant is used to prepare ointment to treat inflammation.

6. Ant (*Dorylus labiatus*, Formicidae: Hymenoptera)

There is a saying that “Eating thousand ants gives strength like that of an elephant”. These ants are collected, put

into honey and after a fortnight the honey is taken to strengthen nervous system and to restore good health. The household black ants, *Componotus compressus* and *Monomorium* spp. are also used as medicine.

7. Weaver ant (*Oecophylla smaragdina*, Red tree ant, Formicidae: Hymenoptera)

These ants called “*Musuru*” in Tamil, are commonly seen on mango trees. The ants construct nests by webbing the leaves together. If disturbed, they bite and cause annoyance. Inside the nest they have eggs. The eggs of this ant have several medicinal properties. From several ancient palm leaf literature, it is learnt that the eggs of this insect are used to prepare medicine with several species of medicinal herbs and administered to patients suffering from tetanic fever, ear pain, high fever and even malarial fever. The eggs are also used to prepare aphrodisiac medicine. The secretion used by this ant to build the nest has antibacterial activity.

8. Preying mantid (*Hierodula ocellata*, Mantidae: Dictyoptera)

The ootheca of this insect is collected and powdered. It is mixed with milk and given to patients suffering from pneumonia.

9. Lac insect [*Laccifer lacca* (Kerr), Lacciferidae: Hemiptera]

Lac insect is an economically important insect yielding a resinous secretion called lac. Lac insects are cultivated to produce lac, which is used to prepare shellac. Shellac has several medicinal properties. It is widely used

both for external applications as well as for internal administration. Powdered shellac is mixed with honey and is used as remedy for caries. “*Lakshadi Thaila*”, used to bring down chronic fevers and to cure rheumatism has shellac as its main ingredient. As a drug, it has germicidal, febrifuge and astringent properties². Lac is also used to prepare medicine along with plants to cure liver problems, cough, epilepsy, neural problems and fever.

10. Blister beetle (*Mylabris* spp., Meloidae: Coleoptera)

Like the “Spanish fly” *Lytta* (*Cantharis*) *vesicatoria*, the blister beetle belonging to *Mylabris* genus, yields cantharidin. Cantharidin is prepared by drying the beetle. A tincture prepared from cantharidin is used to treat urinary diseases and externally as vesicant and counter-irritant. It is also used as diuretic. Its powder is used to prepare oils to cure headache and hair fall. Species of *Mylabris* yield a larger amount of cantharidin than *Lytta* spp.⁴.

11. Termite (*Macrotermis* spp., Termitidae: Isoptera)

Termites are consumed by local population as a nutritive product. The alate swarms of termites are harvested on rainy days and roasted with maize or rice and taken as delicious food. The roasted rice with termites gives a very pleasant flavour. Children with weak health are given this preparation.

Termites are put into honey for 21 days and taken as a drug for vigour and vitality. Termite powder in honey mixture is given to cure wheezing, bronchial

problems, and also as diuretic. The soil taken from termite mounts (Termitorium) is used to cure skin diseases and several local traditional physicians give "Termite mount soil bath" to cure many diseases. Local people use entire termites, the stored fungal bed of termites, eggs, and soil of termitorium for various ailments.

Discussion

In the present study, information on insects used by traditional healers and local population of Tirunelveli district of Tamil Nadu is highlighted. In several other countries, different species of insects are taken as nutritious food. But in India, only in selected places some insects are used as food and as medicine. As insects are able to survive in odd environment, their entire body or produce has many pharmaceutical properties. Unlike the herbal medicine, the insect medicine is less explored and is still confined to tribal people. Allantian isolated from secretions of fly maggots has properties of healing deep wounds and cantharidin isolated from the blister beetle, *Lytta vesicatoria* is useful to treat urinary diseases². A Tamil book, "*Rajavaiithiyapothini*", published in the year 1914 describes the medicinal value of the eggs of weaver ants, "*Musuru*".

However, there is no detailed information on various insects that are used and on experimental studies to prove their validity. After the survey, efforts are being made through several experimental studies to find out the antibacterial, immunomodulatory and disease curing properties of termites, weaver ants and blister beetle.

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