Mites and ticks, collectively known as the Acari, constitute the second most diverse group of animals on the planet today and are of interest to humans for a variety of reasons. They directly affect our well being as parasites, vectors of diseases, and producers of allergens. They are responsible for millions of dollars worth of economic losses each year as a result of infestation to our agricultural systems (Acari 2005). Today, there are over 48,000 described species of mites and ticks worldwide while current estimates place total diversity at over a half-million species (Krantz 1978; Clayton and Humble 2000). Although acari are harmful, Oudhia (2001) had reported that insects, mites and spiders also possess medicinal properties like plants that can be exploited for the benefits of human beings.

Over 500 species of insects and mites are (Oudhia 2002, 2003, 2004 & 2008) in use as traditional medicine in Chhattisgarh state of India and in this state over 3500 traditional healers are practicing their unique knowledge. Further, Oudhia (2009) reported that the oil from red velvet mite, Trombidium grandissimum is useful for paralysis. Also, due to its ability to increase the sexual desire, Trombidium is named as “Indian Viagra”. In Raipur City in India a special type of chewing material, Paan is prepared with Red velvet mite for the newly married couple. Thus mites form an important constituent of traditional zootherapy. Among different mites, red velvet mites known to natives as birbahoti, “rain insect”, “the red velvet insect”, the lady cow and Rani Keeda is much used in traditional medicine. They are used for the treatment of more than ten important diseases including malaria, urinogenital
disorders, paralysis and sexual stimulant. There is no scientific documentation of the medicinal and biological importance of this mite *Trombidium grandissimum* Koch.

### 1.1 ETHNOZOOLOGICAL STUDIES:

The medicinal use of animals and animal derived products called zootherapy is an important component of ethnozoology. According to zootherapeutic universality hypothesis of Margues (1994), all human civilization with a structured medical system will utilize animals as medicines. Animal based medicines have always played a significant role in the healing practices, magic rituals and religions of indigenous and Western societies all over the world (Angeletti *et al*, 1992, Rosner 1992). Although the phenomenon of zootherapy is widespread it has only recently aroused the interest of researchers.

Animals have been used as medicinal resources for the treatment and relief of a myriad of illnesses and diseases in practically every human culture. Although considered by many as superstition, the pertinence of traditional medicine based on animals cannot be denied since they have been methodically tested by pharmaceutical companies as sources of drugs to the modern medical science. The phenomenon of zootherapy represents a strong evidence of the medicinal use of animal resources. Indeed, drug companies and agribusiness firms have been evaluating animals for decades without paying anything to the countries from where these genetic resources are found. The use of animal’s body parts as folk medicines is relevant because it implies additional pressure over critical wild populations. It is argued that many animal species have been overexploited as sources of medicines for the traditional trade. Additionally, animal populations have become depleted or endangered as a
result of their use as experimental subject or animal models. Research on zootherapy should be compatible with the welfare of the medicinal animals, and the use of their by-products should be done in a sustainable way. It is discussed that sustainability is now required as the guiding principle for biological conservation.

Chemicals from nature have been a part of human civilization ever since our early ancestors began exploiting natural compounds to improve and enrich their own lives (Agosta 1996). A major part of these chemicals come from animals. Indeed, animals are therapeutic arsenals that have been playing significant roles in the healing processes, magic rituals, and religious practices of people from the five continents (Costa-Neto and Marques 2000). The healing of human ailments by using therapeutics that are obtained from animals or ultimately derived from them is known as zootherapy. Animal-based medicines have been elaborated from parts of the animals body, from products of its metabolism (corporal secretions and excrements), or from non-animal materials (nests and cocoons).

The ample geographical distribution of zootherapy has made Marques (1994) to state that all human culture that shows a developed medical system will utilize animals as medicines. Such a statement forms the basis of what he has called as ‘zootherapeutic universality hypothesis.’ Because medical systems are organized as cultural systems, the use of animal substances should be understood according to a cultural perspective.

It is well known that the annual global trade in animal-based medicinal products accounts for billions of dollars per year (Kunin and Lawton 1996). The
investigation of traditional medicines has proven a valuable tool in the developing art of bio-prospecting for pharmaceutical compounds. Of the 252 essential chemicals that have been selected by the World Health Organization, 11.1% come from plants, and 8.7% from animals (Marques 1997). And of the 150 prescription drugs currently in use in the United States of America, 27 have animal origin (World Resources Institute 2000).

1.2 USE OF ANIMALS IN TRADITIONAL MEDICAL SYSTEM:

The traditional medical knowledge of indigenous people throughout the world has played an important role in identifying biological resources worthy of commercial exploitation. Indeed, the search for new pharmaceutical products from naturally occurring biological material has been guided by ethnobiological data (Blakeney 1999). For example, Alexiades (unpublished data) recorded the medicinal use of 50 animals by the Ese Eja people from Peru. The blood of the black Caiman (Melanosuchus niger) is used to treat epilepsy and stroke; ants of the genus Pseudomyrmex are smashed and put in toothache, or are left to bite for painful joints. In the area of Sierra Madre people use to say “The more poisonous the animal, the more potent is its antipoison” (Werner 1970). Various anatomical parts of the rattlesnake (Crotalus sp.) are used for infirmities ranging from boils to bronchitis.

EL-Kamali (2000) has recorded 23 animals that are used as sources of remedies in the Sudanese traditional medicine. For example, the fresh manure of a dromedary (Camelus dromedaries) is applied externally on the affected parts to alleviate arthritis; honey is used in the treatment of hepatic and gastrointestinal disorders, gastric ulcers, as well as to heal wound; the fats of the lion (Panthera leo)
and hyena (*Crocuta crocuta*) are used topically to alleviate abdominal pains. Adeola (1992) has also recorded 23 species and their by-products (hooves, tusks, bones, feathers, skins) for their daily animal protein supply and preparation of traditional medicine. For example, the tusks of hippo (*Hippopotamus amphibious*) are used for aphrodisiacs and ornamentals. Other custom includes the use of fat extracted from a manatee (*Trichechus senegalensis*) to cure rheumatism, boils, and backache. Hollow parts of the hooves of duikers (*Sylvicapra grimmia*) and antelopes (*Hippotragus equines*) are special containers for concoctions with herbs to invoke or appease traditional Gods and witches. Most Africans believe that there are some magical powers which are attached to special healing acts when wild animal’s by-products are used as directed by a traditional healer. Consequently, the traditional medicine man, in his preparation of drugs, employs different means—including use of herbs, roots, leaves, bark, mammals, and birds. For the majority of the people both in the Sudan and in Nigeria, traditional medicine remains the main or only source of health care.

In China, research on medicinal uses of earthworms has a history of nearly 4,000 years (Zhang *et al.*, 1992). *Compendium of Materia Medica* written by Li Schizhen in 1578 AD was a comprehensive summary of pharmacological knowledge accumulated in China up to his time. According to traditional Chinese medicine, earthworms possess antipyretic, antispasmodic, diuretic, antihypertensive, antiallergic, antiasthmatic, detoxic, and spermaticidal effects. Earthworm medicines are prescribed to treat over 80 diseases (e.g., asthma, hypertension, mumps, ulcer, epilepsy, cancer, etc.). Earthworm extract is worth for further study especially as a new spermaticide (Zhang *et al.*, 1992).
Over 500 species of insects, mites, and spiders are used as medicines to cure both common and complicated ailments in Chhattisgarh, India (Oudhia 1995). For example, the oil from the red velvet mite (*Trombidium grandissimum* Koch 1867) is useful for paralysis. Also due to its ability to increase the sexual desire, these mites are named as Indian Viagra. The pod borer, *Helicoverpa armigera* (Hubner 1805) alone or in combination with herbal drugs is used to treat more than 50 common diseases. Folk doctors from Chhattisgarh said that those insects with high medicinal value can be easily identified through their specific behavior and feeding habits. Indeed, insect behaviour can help to discover useful compounds for various ailments than chemicals (Joyce 1991). If ants turn up their noses at a fallen leaf, or predators avoid an insect’s egg when it is covered with its mother’s saliva, chemistry is at work. By keeping a lookout for this kind of telltale behavior, ecologists can spot interesting compounds.

Artisanal fishermen from Siribinha Beach in the State of Bahia, Northeastern Brazil, have been using several marine/estuarine animal resources as folk medicines (Costa-Neto and Marques 2000). Twenty-four fish species were recorded as having some therapeutic use when they were questioned about their folk medicine. Although interviews focussed on fish-based remedies, fifteen other animals with medicinal properties were also cited. This makes up a total of 39 resources, which are distributed in six scientific taxonomic categories, such as fish (62%), crustaceans (13%), reptiles (10%), echinoderms (8%), mollusks (5%), and mammals (2%). A total of 66 raw materials including scales, spur, shell, fat, skin, globe of the eye, tentacles, and otolith are used in the elaboration of remedies, to treat locally diagnosed ailments. These folk remedies are administered to the patients in the form
of plasters, teas, smokes and food. Asthma, bronchitis, strokes and wounds are the most usual illnesses treated by these animal-based medicines.

During his voyage through the inner of Brazil in the nineteenth century, von Martius (1939) recorded many folk uses by the Indigenous people. For example, a deer’s *bazoar* (intestinal stones) considered as an excellent medicine against indigestions, and the fresh fat of a caiman, when applied directly, was regarded to alleviate rheumatism. Yet today, country people use a collar made with caiman’s teeth as a protective device against snakebites.

In India nearly 15-20 percent of the Ayurvedic medicine is based on animal-derived substances (Unnikrishnan 1998). There are references to nearly 380 types of animal substances in *Caraka samhitā*, the oldest available Ayurvedic classic. The material used in Ayurveda include animal parts, products, and processed products. Many of the animals used in Ayurvedic classics seem to have been incorporated from the rich folk traditions which are wide spread and carried by oral literature through generations. Folk traditions commonly use wide variety of fauna for ailments such as rheumatic condition, asthma, piles, night blindness, paralysis, general debility, leprosy, impotence etc. History also states the use of animal organs for transplantations. The use of goat’s eye and animals teeth for cosmetic purposes are a few examples of this kind. Animal parts were also used for making different instruments used for diagnostic purposes as well as surgical management. For example, horns of different animals are used for the purpose of blood letting.
1.3 THERAPEUTIC POTENTIAL OF INVERTEBRATES:

Leeches are undergoing a triumphant resurgence in medicine, particularly in microsurgery. Traditionally, leeches are usually used in conditions like abnormal swellings, piles, inflammatory abscess, skin diseases, rheumatoid arthritis, eye diseases, poisonous bites, erysipelas etc. The revival of interest in leech therapy was caused due to the unsatisfactory results of conventional treatment of many cardiovascular diseases, and to new findings about the leech salivary components and its influence on the human organism. Leech compounds under study include an anticoagulant, a local anaesthetic, a vasodialator and an antibiotic, all of which are useful to their producer’s blood-sucking properties and capable of being turned to therapeutic advantage. Indeed, *Hirudo medicinalis* has been described as a slithering pharmacopoeia (Huxtable 1992). The leech agents are more effective than heparin at inhibiting fibrin formation because, being smaller, they penetrate the clot more effectively. Also, whereas heparin acts indirectly by activating the anticoagulant antithrombin III, leech anticoagulants inhibit specific steps in the coagulation cascade.

Insects have proven to be very important as sources of drugs for modern medicine since they have immunological, analgesic, antibacterial, diuretic, anaesthetic, and anti-rheumatic properties (Yamakawa, 1998). In fact, antimicrobial peptides were first discovered in insect larvae by Dr. Hans Boman of the Karolinska Institute (Diamond 2001). Chemical screening applied to 14 insect species has confirmed the presence of proteins, terpenoids (triterpenoids and steroids, carotenoids, iridoids, tropolones), sugars, polyols and mucilages, saponins, polyphenolic glycosides, quinones, anthraquinone glycosides, cyanogenic glycosides, and alkaloids (Andary et al., 1996). Chitosan, a compound derived from chitin, has been used as an
anticoagulant and to lower serum cholesterol level, as well as to repair tissues, and even in the fabrication of contact lenses (Goodman 1989). Kunin and Lawton (1996) have recorded that promising anticancer drugs have been isolated from the wings of Asian sulfur butterflies (Catopsilia crocale) and from the legs of Taiwanese stage beetles (Allomyrina dichotomus). Oldfield (1989) records that about 4% of the extracts evaluated in the 1970s from 800 species of terrestrial arthropods (insects included) showed some anticancer activity.

The major component of bee venom, the tetrameric polypeptide melittin, may be responsible for the often-reported anti-arthritic and anti-inflammatory effects (Bisset 1991). He comments that a toxin named margatoxin has been isolated from the venom of the scorpion Centruroides margaritatus. This chemical compound blocks lymphocyte activation and the production of interleukin – 2 by human T-lymphocytes. The Merck Company had filed a patient application for the use of margatoxin as an immunosuppressant, which may be potentially useful in treatment of autoimmune diseases or in preventing the rejection of organ transplants.

The use of animal toxins to determine nerve action mechanisms could prove to be the starting point for designing new treatments for Alzheimer’s disease (Phillipson 1989). Konno et al., (1998) states that the venoms of the solitary wasps, Anoplius samariensis and Pseudagenia (Batozonellus) maculifrons Smith, may be useful not only for basic neuroscience research but also for the development of therapeutic agents of neurological disorders.
The marine environment is a rich source of biologically active natural products of diverse structural types, many of which have not been found in terrestrial sources (Carte 1996). The sponge *Luffariella variabilis* produces relatively large amounts of a chemical with anti-inflammatory activity known as monoalide. It was found that monoalide inhibits the action of an enzyme called phospholipase-A2. The powerful immunosuppressive agent discodermolide originates from another sponge, *Discoderma* sp. (Faulkner 1992). Fusetani (1996) had isolated a novel sterol sulfate named halistanol sulfate as an antimicrobial metabolite from a species of *Halichondria* collected in Ishigaki Island, Japan. As he said, sponges had been a prime target for anticancer discovery program, which led to isolation of such important antitumor agents as halichondrin B and spongistatins/althythrians. Carte (1996) stressed that an increasing number of novel marine metabolites are reported in the literature every year, indicating that the marine environment is likely to continue to be a profile source of new natural products for many years to come.

1.4 ETHNOMEDICO-ENTOMOLOGY:

Insects and the substances extracted from them have been used as medicinal resources by human cultures all over the world. Besides medicine, these organisms have also played mystical and magical roles in the treatment of several illnesses in a range of cultures. Science has already proved the existence of immunological, analgesic, antibacterial, diuretic, anesthetic, and antirheumatic properties in the bodies of insects. Several authors have surveyed the therapeutic potential of insects, either recording traditional medical practices or employing insects and their products at the laboratory and/or clinical level. Thus, insects seem to constitute an almost inexhaustible source for pharmacological research. Chemical studies are needed to
discover the biologically active compounds which are actually present within insect bodies. The therapeutic potential of insects represents a significant contribution to the debate on biodiversity conservation, as well as opening perspectives for the economic and cultural valuation of animals traditionally regarded as useless. Their use needs to be at a sustainable level to avoid over exploitation.

### 1.5 ETHNOENTOMOLOGICAL STUDIES IN DIFFERENT COUNTRIES:

<table>
<thead>
<tr>
<th>Study</th>
<th>Author</th>
<th>Year</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Antonio Tango</td>
<td>1994</td>
<td>Insects in Zaire</td>
</tr>
<tr>
<td>2.</td>
<td>Azmi and Ali</td>
<td>1998</td>
<td>Invertebrates – India</td>
</tr>
<tr>
<td>4.</td>
<td>Banjo et al.,</td>
<td>2003</td>
<td>Ethnoentomology- Nigeria</td>
</tr>
<tr>
<td>5.</td>
<td>Beattie et al.,</td>
<td>1986</td>
<td>Antibiotics from ants</td>
</tr>
<tr>
<td>6.</td>
<td>Chen, Y1</td>
<td>1994</td>
<td>Ants as food in china</td>
</tr>
<tr>
<td>7.</td>
<td>Cherry Ron</td>
<td>1985</td>
<td>Sacred insects in Egypt</td>
</tr>
<tr>
<td>8.</td>
<td>Conconi</td>
<td>1986</td>
<td>Insect medicine in Mexico</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2002, 2003</td>
</tr>
<tr>
<td>10.</td>
<td>Fasoranti</td>
<td>1997</td>
<td>Traditional insect medicine in Nigeria</td>
</tr>
<tr>
<td>11.</td>
<td>Gudger</td>
<td>1925</td>
<td>Stitchery wounds with mandibles of ants</td>
</tr>
<tr>
<td>12.</td>
<td>Illingworth</td>
<td>1915</td>
<td>Cockroach in medicine</td>
</tr>
<tr>
<td></td>
<td>Author(s)</td>
<td>Year</td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>15.</td>
<td>Konno</td>
<td>1998</td>
<td>Bioactive peptides from wasp</td>
</tr>
<tr>
<td>16.</td>
<td>Marie</td>
<td>1955</td>
<td>Therapeutic insect</td>
</tr>
<tr>
<td>17.</td>
<td>Moata</td>
<td>1991</td>
<td>Uses of arthropods in Zambia</td>
</tr>
<tr>
<td>18.</td>
<td>Namba et al.</td>
<td>1988</td>
<td>Insect derived drugs in China</td>
</tr>
<tr>
<td>19.</td>
<td>Pemberton</td>
<td>1999</td>
<td>Arthropods used as drugs in Korea</td>
</tr>
<tr>
<td>20.</td>
<td>Ramos et al.</td>
<td>2000</td>
<td>Medicinal insects – Mexico</td>
</tr>
<tr>
<td>21.</td>
<td>Rolt et al.</td>
<td>1957</td>
<td>Medicinal uses of Cockroaches</td>
</tr>
<tr>
<td>22.</td>
<td>Sherman et al.</td>
<td>2000</td>
<td>Medicinal Maggots</td>
</tr>
<tr>
<td>23.</td>
<td>Da Silva</td>
<td>2002</td>
<td>Immune potentiating insect drugs</td>
</tr>
<tr>
<td>24.</td>
<td>Trowell</td>
<td>2003</td>
<td>Drugs from bugs</td>
</tr>
<tr>
<td>25.</td>
<td>Vander wall</td>
<td>1999</td>
<td>Ethnobiology of grasshoppers</td>
</tr>
</tbody>
</table>
1.6 ETHNOENTOMOLOGICAL STUDIES IN INDIA:

India is gifted with immense faunal and floral diversity. There are about 45,000 species of plants and 89,451 species of animals (Mo EF, 1999). Tribal and rural population who depend on plants and animals for their day-to-day life and health problems are the real custody of the knowledge of medicinally important plants and animals. Unlike ethnobotany information on ethnozoology is less explored scientifically. Therefore, the immediate concern of the scientific community is to document the indigenous knowledge related to the therapeutic use of animal species and to devise strategies to preserve and tap this rich knowledge in a more sustainable way for the benefit of mankind.

In India, though there have been many studies on the ethnobotany, ethnozoological particularly ethnoentomological studies are limited. Mahawar and Jaroli (2008) reviewed the traditional zootherapeutic practices in India. According to them, 109 animals are used for more than 270 types of diseases. The mammals constitute the highest number of animals used for medicinal purposes (40%) and invertebrates constituted 22%.(Sharma 1996, Unnikrishnan 1998, Sharma 2002, Trivedi 2002, Patel
In the Indian traditional system of medicine, Ayurveda and Siddha, animals and their products have been used for a long time to treat many ailments. In Tamil Nadu, tribal people and rural people are using many insects for their food and to cure diseases. Natkarni (1954) had reported the utilization of animal products in the preparation of Indian medicines. Sharma (1990) reported the ethnomedico-zoological studies on the invertebrates of Rajasthan state. Oudia (1995, 2001-2005) gave a list of insects, mites and spiders that were used to prepare medicine by the tribal population in Chhattisgarh State. The utilization of animal products in Ayurvedic medicine had been elaborated by Unnikrishnan (1998). Singh *et al.*, (1998) listed out the various animals that were used in the ethnomedicozoological importance in Manipur. Lalramghinglora (1999) highlighted the folklore medical zoology in Mizoram State. Rajan *et al.*, (2002) carried out an interesting study on the ethno biology of Nilgiri hills. Ranjitsingh and Dhasarathan (2002) listed out the medicinal value of animals. Sharma (2002) reported that insects could soon graduate from being cursed as pests to being hailed as saviours. Since insects had 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 them. Sharma, (2003) listed out the ethnozoolgical practices in Rajasthan. The insects and mites are exposed to a cocktail of nasty bacteria and fungi so that their immune system unleashes all its power against the pathogens Sharma, (2002). Ranjit singh and Padmalatha (2004) had identified 11 species of insects that were used to prepare
traditional medicine. A survey conducted by Solavan et al., (2004) among the South Indian tribes revealed that, most of the tribes have been using the termites to treat asthma. Solavan (2004) had reported that the termites had high nutritive value and promote lactation in women. It had also been clear that termites are used as human food in the South and North Eastern parts of India (Maxwell 1909, Gope and Prasad 1983, Rajan 1987).

1.7 MEDICINAL MITES:

Mites (Acari or Acarina) are the most diverse and abundant of all arachnids. They are also among the oldest of all terrestrial animals, with fossils known from the early Devonian, nearly 400 million years ago. Mites are also used to prepare several traditional medicines in India. Oudhia (2001,2002, 2003) listed out the medicinal importance of red velvet mites (Trombidium sp.) in the Chhattisgarh State in India. In Khumudi, the native people prepare an oil using fresh Trombidium. This oil is used for the massage of patients suffering from lakwa (paralysis). He had also reported that the extract of Trombidium has the ability to increase the sexual desire and he named Trombidium as “Indian Viagra”. The survey on the medicinal practice of Traditional healers in Chhattisgarh State, India revealed that Trombidium is used with other herbal preparations to treat more than ten important diseases including malaria, urinogenital disorders, paralysis, male infertility, sexual stimulant etc. Oudhia (2003).

Although the Red velvet mites are available in all parts of India and in other countries, there is no scientific probe into the medicinal properties of Red velvet mites. Hence the present study has been planned to study the medicinal importance of Red velvet mites.
### 1.8 RED VELVET MITES:

#### Classification:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phylum</td>
<td>Arthropoda</td>
</tr>
<tr>
<td>Sub Phylum</td>
<td>Chelicerata</td>
</tr>
<tr>
<td>Class</td>
<td>Arachnida</td>
</tr>
<tr>
<td>Subclass</td>
<td>Acari</td>
</tr>
<tr>
<td>Super Order</td>
<td>Acariformes</td>
</tr>
<tr>
<td>Order</td>
<td>Actinedida</td>
</tr>
<tr>
<td>Sub Order</td>
<td>Parasitengona</td>
</tr>
<tr>
<td>Super Family</td>
<td>Trombidoidea</td>
</tr>
<tr>
<td>Family</td>
<td>Trombidiidae (Velvet Mites)</td>
</tr>
<tr>
<td>Genus</td>
<td>Trombidium</td>
</tr>
<tr>
<td>Species</td>
<td><em>grandissimum</em> Koch</td>
</tr>
<tr>
<td>Locally Called</td>
<td>Rani Keeda (Hindi)</td>
</tr>
<tr>
<td></td>
<td>Velvet Poochi (Tamil)</td>
</tr>
</tbody>
</table>
1.9 TROMBIDIUM GRANDISSIMUM KOCH:

The red velvet mite *T. grandissimum* is a terrestrial mite. It is usually found in the soil or mulch and feeds on vegetable matter. It comes out during rainy months. It has eight legs organised in four sets of two. They are burrowing in habit. These mites are predatory in nature. They have tiny lobster-like claws that serve as mouthparts. These mites make their home in the litter of soils. They can live in the soil for a period of one year to several years. As larvae, they attach themselves to a variety of arthropods and feed parasitically (Annandale, 1906). They will suck blood from a moth or grasshopper. They don’t injure the body of the hosts and after sucking a while they drop off. They then burrow into the soil, and moult into nymph and then emerge as adults, they take to the soil to devour much smaller prey, including other mites and their eggs, the eggs of insects and snails, and primitive wingless insects (Joanna, 2007). They do not bite humans, neither do they sting. The presence of red velvet mite is extremely important to the environment. These mites are part of a community of soil arthropods that is critical in terms of rates of decomposition in woodlands and in maintaining the structure of the entire ecosystem. By feeding on insects that feed fungi and bacteria, they stimulate the decomposition process. (Zhang, 1998).

Adult male mites release their sperms on small twigs or stalks. That ritual is followed by the male laying down an intricate silken trail to the sperm. Female spot these trails, then seek out the individual male. If he’s to her liking, she sits in the sperm gardens; he will promptly destroy it and replace it with its own (Joanna, 2007).
The body of these mites is covered with fine hairs giving its “Velvety appearance”. It is usually found wandering on bare soil or through grass after rainy (winter) seasons and bury themselves before the soil becomes hard again. Like other mites they have no antennae. The front pair of legs are used as feelers to check wherever they go. It is only to be found for a few weeks in the year, but it has a great reputation among the Mohomedians as an aphrodisiac. So it is collected and kept for sale in bazzar (Rs. 25 – 50) /100 mites. They had been kept for several months and had not putrefied at all. On pressure they exude deep red oil. It is this oil which is used externally as medicine (Zhang 1998). This oil is used to treat arthritis and to stimulate male genitalia.

According to Oudhia (2008) the tribal people in Chhattisgarh state of India collect fully matured yellow fruits of *Solanum melongena*. In each fruit 60 pipal (*Ficus religiosa*) leaves are pierced and the fruit is hanged with the help of a bamboo. After complete drying, it is boiled in base oil. At the time of boiling, the tribes add freshly collected *T.grandissimum*. This oil is applied on male genitals to prolong sexual act. This oil is applied one hour prior to intercourse. According to Oudhia (2008), the application of oil increases the retention time to get delayed ejaculation to get more pleasure etc. Further the tribal people in this state prepare a special chewing pan (beetivine) using the plant *Mucuna pruriens* and to this pan, they add dried *Trombidium* to enhance sexual desire.

According to Oudhia 2008, the traditional healers of Chhattisgarh prepared an oil called Birbahutti or Ranikeeda oil (oil from *T.grandissimum*) for the treatment of paralysis (Lakwa). The oil extracted from freshly collected mites is mixed with
mustard oil (Sarson katel) and sesamum oil (til oil). The traditional healers also collect the red velvet mites during rainy season, kill them and dry them in shade for future use. For the treatment of paralysis, it is used both externally and internally. For the preparation of oil, female mites are preferred. The oil is heated and regularly massaged in the affected area for a few weeks to get complete cure. Each traditional healer has his own way of preparing red velvet mite oil. Many pharmaceutical companies in Banaras, India, sell this red velvet mite oil to cure paralysis. Many traditional healers also add herbs like Nirgundi and Bach (Acorus calamus) in this red velvet mite oil inorder to make it more potential. This new combination with red velvet mite oil was reported to be very effective. For internal use, the healers remove the legs of mites collected and advised the patients to swallow it. In general, one mite a day is recommended. In case of hesitation, the healers use betel wine (pan) leaves or banana fruit as carrier and give it to the patients without informing that the carrier contain mites.