Plants and animals have been used traditionally as food and medicine in most of the countries. However, the research on the medicinal properties of plants are more when compared with plants. Animals and their products are now-a-days given much importance due to their neutraceutical and therapeu tical potential. As zootherapy is advancing, a threat to the biodiversity is also increasing. Several searches are going on to unearth the myriad of information on ethnomedical zoology. Marine animals particularly sponges provides a lot of pharmacological products to cure many ailments including cancer. A record of over 180 medicinal animals represent a strong evidence of the medicinal use of wildlife resources (Costa-Neto, 2004). Old Field (1989) argues that many animal species have been over exploited as sources of medicines for the folk medicine trade. Of the different invertebrate groups of animals particularly arthropodan forms constitute an important component in Zootherapy (Drugs from bugs have become a promising area in pharmacology (Trowell, 2003)).

In India, tribal population living in different states use different animals to prepare their folk medicine. The tribal people in Chhattisgarh use more than 500 species of insects, mites and spiders as medicine to cure both common and complicated ailments. This people believe that the drugs prepared from crawling creatures along with plant extract can cure paralytic problems. Many arthropodan animals that have the pest status are used to cure a lot of diseases. A herbal preparation with grasshopper is used to treat asthma, skin diseases and veneral diseases. Bed bug remedies for epilepsy, piles, urinary disorders and they promote
growth also. Freshly crushed fire flies are used to stop bleeding and earache. In Thailand, Korea, Brazil and China several insects are used as food and medicine. Many Asian and African countries have been consuming bugs such as mealworm, grasshopper and even scorpions for food. Many of these are considered as good sources of protein and statistics rate that termites and grasshoppers as the two-most-eaten insects in the world. (Ranjitsingh, Padmalatha 2003, Solavan 2004, Wilsanand 2007).

Among the arthropodan animals the arachnid group also holds a good name in ethnomedicine. The medicinal important arachnid, red velvet mite Trombidium grandissimum Koch is commonly available in all states. It is a seasonal arthropod and appear mostly during rainy seasons. The tribal and rural population in the study area also use the red velvet mites for many ailments. However, there is no scientific evaluation of the nutraceutic and therapeutic properties. Hence in the present study a novel approach was attempted to find out the therapeutic and neutraceutical potential of T. grandissimum.

The nutraceutic activity of the mite was evaluated using a rodent model, swiss albino mice. The treatment of mice with the extracts of red velvet mites enhanced their growth and reproductive act. The extract treated mice developed pregnancy twice in a year. Further the mice that received the extracts of T. grandissimum showed a good spermatogenic activity. The sperm production, sperm motility and fertility were high in mice that received the extract of the mites. This study clearly confirms the tribal belief in India that the extracts of red velvet mite is an alternative to “Indian viagra” that stimulates and extend sexual desire. —The active compounds in the
extracts of the mites had stimulated hormonal changes and good growth of Sertoli and Leydig cells.

In the present study, attempts had been made to scientifically validate the medicinal uses of *T. grandissimum*. In the Chhattisgarh state, the tribal population uses the extracts for many diseases including malaria. Hence, therapeutic potential of the extracts of mites to enhance immunity and defend the body against invading pathogens like bacteria and fungi were studied. The antibacterial activity of the extracts of *T. grandissimum* against human pathogens were tested. The *T. grandissimum* extracts were found to inhibit the growth of even deadly human pathogens like *Clostridium tetani*. The extracts of the mites also inhibited the growth of certain fungal pathogens. Antiinflammatory assays further confirmed the effectiveness of the mites to alleviate inflammation.

Eventhough previous review on the general biology and ecology of some members of Trombidoidea is available, there is no detailed account on the eco – biology of *T. grandissimum* commonly seen in India. Hence in the present study an attempt was made to find out the seasonal occurrence, habits and habitats, life cycle, feeding and reproductive behaviours of red velvet mite.

It was observed that the red velvet mites made their appearance twice in a year. They were found during North East monsoon season (November- December) and South West monsoon (June – July). They appeared at the morning hours, (6-10AM). The animal showed sexual dimorphism. It is univoltine and the life cycle consists of four stages. The larval and nymphal stages of *T. grandissimum* was found
to lead an ectoparasitic life. They lead a parasitic life on the black ant, *Camponotes compresses*. During the nymphal stage they started foraging on the soil surface and plants. Adult mites lead a predatory mode of life. They feed on termites and insects associated with the small plants and grasses on the field.

In the present study, a mean density of 3-4 adult mites/m$^2$ were observed in the field during June- July season and 9-12 adult mites/ m$^2$ were seen during November – December. The present study also revealed that the red velvet mite form the food of some birds like crow, mynah, *Acridotheres tristis* and the sparrow, *Dicrurus macrocerus*. An interesting reproductive behaviour was also noticed in red velvet mite. During mating the males and females performed encircling movement under a small plant or hiding places. Dance signalling threads were deposited by the males and the females came along the sperm thread to capture them. The eggs were laid in masses in soil, humus and leaf litter.

The present study highlights the neutraceutical and therapeutic values of *T.grandissimum*. Hitherto, no scientific documentation has been made on the medicinal value of this arachnid mite. Hence, efforts must be taken not only to develop new drugs but also to prevent over exploitation and export of this valuable bio-diversity.