Short Communication

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The Two Lac Insects of South Indian, A Wild and A Cultivated Species. *Part I*

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The lac insects growing in a colony produce an encrustation of lac. This adhering to the twig on which the insects were feeding is called stick - lac. This is crushed and granules of lac melted and filtered to produce the shellac of commerce. India exports a large quantity so that the problem exists as to its biological sources. There are several species among them, two in south India; one as a wild species *Kerria communis* and the other cultivated *Kerria mysorensis*. Both have been named by me.

Kerria communis is usually found as small chunks, two to three inches long. Its favourite host plant in Mysore is *Ficus mysorensis* and a specimen is illustrated here as Fig. 1. It is slightly enlarged 1/10th more than natural size. In Hyderabad city it has been found on *Ficus sengalensis*. Also on the same tree in Madras. Specimens of this species were sent to me while I was working at the Indian Institute of Science, Bangalore from Vizianagar near the east coast and from Travancore in the south. It is found in *Zizyphus jujuba* in Koukan and a specimen collected in Goa was illustrated by Garcia de Orta, physician to the Portugese Governor of that time (in the 16th Century). His picture is enlarged 1:1.5 and is seen here as Fig. 2. When each picture, Figs. 1 and 2, is reduced to natural size. The encrustation appear to be of the same size or a little over 2 inches. Thus it can be stated that *Kerria communis* is found all over South India, always as small chunks which can be collected but nowhere cultivated although there is no scarcity of its host plants. It may be pointed out that its biology was never studied before and those interested in lac cultivation always ignored it as it never grows in large colonies to produce large encrustations of lac.

There are two life cycles, one covers the five months of the humid period or the monsoon period and the other of seven months of relatively dry season from Nov. to May. The mother insects growing during the humid season are well developed but the next generation issuing from them consists of only males. The question arises how does the species continue at all. The scattered larvae as single insects from being males become bisexual, and such hermaphrodite individuals produce a generation of both sexes and the species continues. The single bisexual insect gives rise to the generation which produces chunks of lac as shown in Figs. 1 and 2. From such sources the next generation would be all males. This explains why the insect *K. communis* is nowhere cultivated and can be considered as a typical wild species.

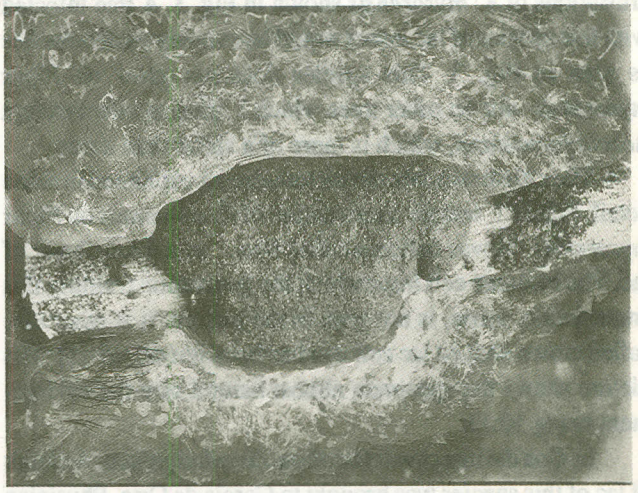

Fig. 1. A dry encrustation of lac produced by the species *Kerria communis*, on *Ficus mysorenscis*, collected at Bangalore after November.

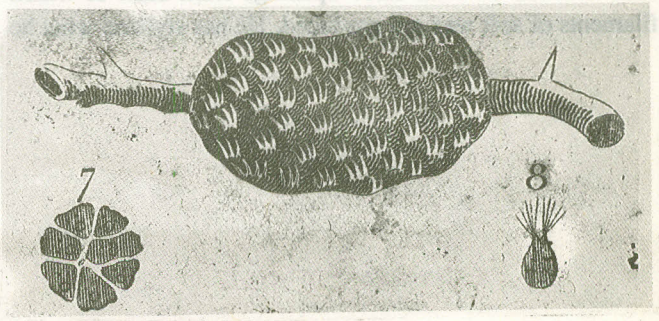

Fig. 2. An encrustation of lac on *Zizyphus jujuba* in Goa with living insects producing filaments of soft wax. Drawing by Garcia de Orta (16th Century).

Fig. 3. A branch of *Shorea talura* at Bangalore covered by the encrustation of lac by the species *Kerria mysorensis*. The insects are alive and produce soft white wax.

The other species found in south India is *Kerria mysorensis* which grows on *Shorea talura,* in Kanarise. It is the smallest species of them that are cultivated. It has three life cycles during thirteen lunar months. As such it would be most prolific. In Mysore state it is seen in the districts of Bangalore and Tunikur. A branch of *Shorea talura* covered with the encrustations of *K. mysorensis* shown in Fig. 3. A tree infected with this species of lac insect would have many such branches as seen in Fig. 3. This species does not grow on *Ficus mysorensis* nor on other trees which I tried to infect except *Acacia farnesiana*, which is more of a shrub than a tree.

The article requires the pictures being explained in some detail. Figure 1 was an encrustation of *K. communis* on *Ficus mysorensis*. It was collected after Nov. as a dried chunk of lac. The bisexual cell from which the generation forming this encrustation arose, is not seen in the picture. It is otherwise called crown shaped lac cell and has been illustrated [1]. The picture shows the specimen almost natural size the enlargement being 10:11.

In Goa the insect was found on *Zizyphus jujuba*. A chunk of lac of this species was brought to Garcia de Orta, Physician to the governor of Portugese, Goa during the 16th Century. His specimen showed living insects producing filaments of soft wax. The lac cell has three openings from each of which filaments of soft wax are produced. He has stylized what he found and defined them as three white threads paralelled to one another. Specimen shown in Fig. 1 was collected when the insects were dead and dry. Figure 2 shows two thorns on the twig and indicate that it belonged to *Zizyphus jujuba*. To show the details I have enlarged his picture as 10:15 when Figs. 1 and 2 are reduced to natural size they would be a little larger than 2 inches. Figure 3 shows a branch of *Shorea talura* with encrustations of lac produced by *K. mysorensis*. The tree was well infected and there were many such lac covered branches. The insects within the encrustations were alive.

Summary. *Kerria communis* is a wild species of lac insect. Insects growing during the monsoon season, as mother insects give rise to a generation only of males. In rare cases, male larvae become bisexual and single hermaphrodite insects continue the species. Such insects form crown shaped cells. The species is found all over in south India and is nowhere cultivated. The other species found in south India is *Kerria mysorensis* with *Shorea taluva* as its host plant. It produces 3 life cycles in 13 lunar months. It is the smallest among species that are cultivated. No other species is cultivated in south India.

Key words : Lac insects, Wild species

Reference

1. S. Mahdihassan, Zalt. Ang. Entom., **53** (3), 310 (1964).