

## Short Communication

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## THE POOR ADHESIVENESS TO THE HOST PLANT CHARACTERIZING THE CHINESE LAC INSECT

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## INTRODUCTION

Lac is the crude name for the entire product of the lac-insect of which there are several species. The chief product is a resin which, in its purified form, appears as shellac on the market. This resin is secreted from dermal glands in the insect body. The other product is the lacye found within the body of the lac insect. This dye does not take to cotton hence it was not popular as dye in India where cotton clothes are mainly used. It takes to wool when properly mordanted while it dyes silk as such. Accordingly it was employed in China where silk is a popular fabric. Now the species that produces lac best is *Kerria nagoliensis*. In trade it is called Nagoli lac, from the Word "Nag=jewel",

the resin granules being translucent were compared to precious stones. This lac, like other kinds, adheres to its host plant. It is difficult to separate the lac from the twigs, the material being called stick-lac. It requires to be crushed by beating the raw material with stones or using a stick like a hammer.

There is the solitary case of Chinese lac, *Kerria chinensis*, which permits the separation of complete encrustation, as one piece, from its twig. This species is cultivated on *Cajanus indicus* in Assam. Material received from Nowgong years ago at Bangalore was illustrated in an article published [1]. It is reproduced here as Fig. 1. Now this feature easily enables identifying the material illustrated by some previous authors Fig. 2 is a lac encrustation illustrated by Ledermuller [2] and Fig. 3 what Comstock depicted [3]. A monograph published in Shanghai entitled, Chinese Materia medica, gives illustrations of lac encrustations collected from a shop dealing with drugs. In this book chapter 12, is entitled "Tzu Khuang, Lac, Shellac". The terms used as synonyms to

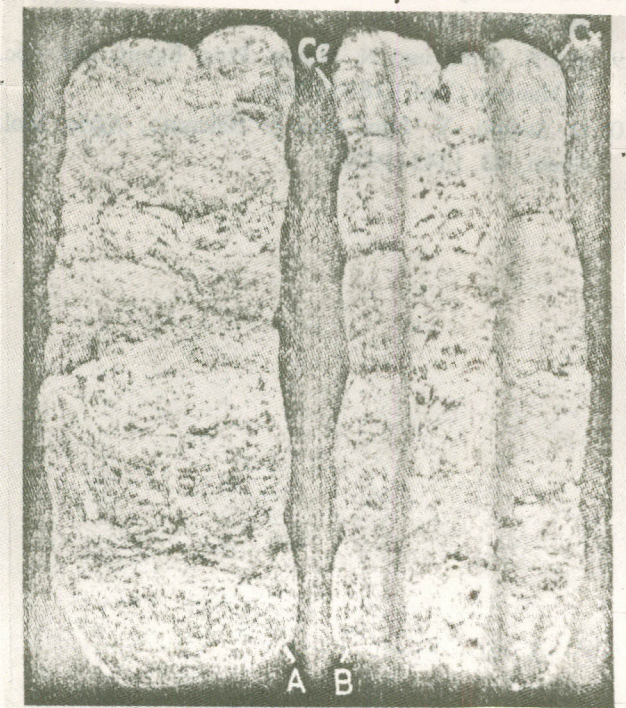


Fig. 1. *Lakshadia chinensis*, encrustations on *Cajanus indicus*, Assam, monsoon season. Twig was easily removed. "B" shows a thicker edge on the more convex, Cx, than on its concave, Ce, side. The hollow central channel shows the thickness of the twig. "A" shows the other surface of the same encrustation. Magnification, 11:10.

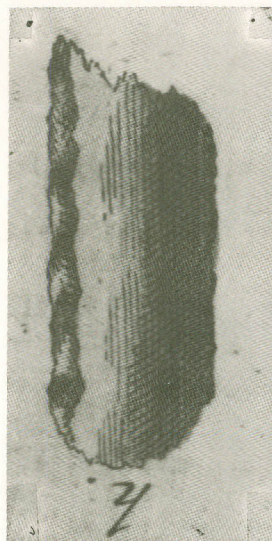


Fig. 2. Encrustation of *Lakshadia chinensis*, detached from a thick stem; the raised edge to the left shows a gradual decline in thickness and indicates its position as it grew in nature. It is Ledermuller's picture, turned upside down. Natural size.



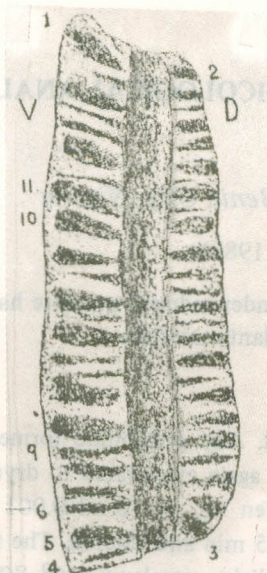


Fig. 3. Longitudinal section, natural size, of an encrustation of *Lakshadia chinensis* that had enveloped a twig. It was nearly but not exactly vertical, the side inclined towards the earth is ventral, V, where the row of cells are larger, than cells on the opposite or dorsal side, D. From Comstock.



No. 12. Gum lac. Shanghai drug store, \$0.95 a catty.

specify the material. From this book, Fig. 4 is taken. The encrustations to our right show them to be from some adhering plant material. The scale further enables comparing Figs. 4 and 1. Unfortunately the title page, with some others, are lost so that further particulars of this source cannot be offered. What however is obvious is that all the Figures 1 to 4 show lac encrustations having been separated completely from the twigs to which they were attached. In as much as lac was in used to dye wool, it was this material that was used by preference. This explains how the early illustrations of lac all imply the species *K. chinensis*. Summary: Stick-lac is the trade name of what may be called the "Honey-comb" of the lac insect. It signifies the encrustation of lac adhering to the twing on which the insects were feeding. When lac resin is sufficient the encrustation of lac adheres to the twig. In the case of Chinese lac insect resin secretion is poor. This enables the encrustation to be separated as one piece. Such encrustation have been illustrated in the past and can only refer to Chinese lac insect. While it is poor as source of resin it is rich in lac dye. Formerly lac dye was popular and material belonging to Chinese lac insect was the one best marketed. This explains how some early authors have illustrated material belonging to the Chinese lac insect.

Key words: Lac, Adhesive, Chinese lac insect.

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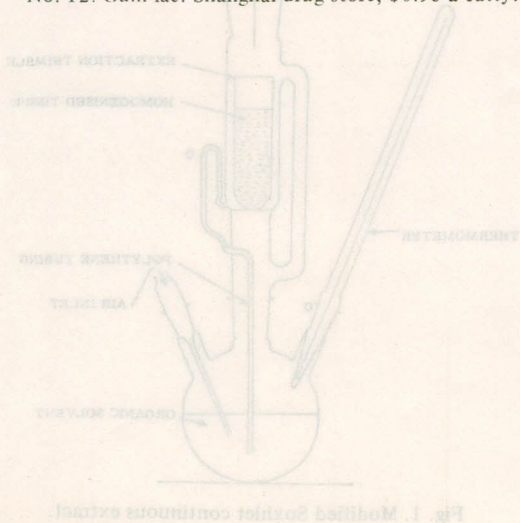


Fig. 1. Modified Soxhlet continuous extractor.