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First report of *Tinocallis kahawaluokalani* Kirkaldy (Homoptera: Aphididae) infesting *Lagerstroemia speciosa* (L.) Pers. (Lythraceae) from Odisha and Jharkhand, India

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Abstract
Crapemyrtle aphid, *Tinocallis kahawaluokalani* Kirkaldy was observed during a field survey in Odisha and Jharkhand infesting leaves of *Lagerstroemia speciosa* (L.) Pers. which is a new record from these two states. Therefore, it is a report for new geographical distribution along with new host plant record which impose a significant contribution to insect-plant interaction.

Keywords: *Tinocallis kahawaluokalani*, leaf infestation, *Lagerstroemia speciosa*

Introduction
Aphids (Homoptera: Aphididae) are one of the major pests in ornamental plants [4, 8]. They cause damage to plant by sucking their sap directly, and by injecting toxic salivary secretions indirectly, transmitting pathogens, attracting ants and favouring the development of black sooty mould on the surface of the leaves [10, 18]. Another important feature is the alteration of host plants due to the presence of many generations in one season, including winged morphs which are responsible for locating to secondary or new host plants [16]. The species of exotic origin plays a vital role, especially in new areas and under favourable condition can become invasive [19, 20] and can harm the native species [21] or the endemic plants of that region [22]. The *Tinocallis kahawaluokalani* Kirkaldy causes a grey to black film to cover the tree and objects below the tree, thus, reducing its aesthetic qualities [9]. Severe infestation causes honeydew shower which can be felt while standing beneath the infested trees. *Tinocallis kahawaluokalani* has been reported from North America [12, 13], Hawaii [17], China, Japan, Taiwan [17, 12], Thailand [5], India [1], Argentina [2], Brazil [11], Mexico [14], Greece [15] and Iran [7]. Here, the aim of the present study is to understand the host range of *Tinocallis kahawaluokalani* and its distribution in Odisha and Jharkhand state of India.

Materials and Methods
A field survey of avenue plantations from different localities and plantation areas of Bhubaneswar, Odisha (20°15'47.1''N 85°48'45.8''E) and Ranchi, Jharkhand (23°26'34.4''N 85°18'54.4''E) from the post rainy season (September- November) was conducted. All infected trees were selected for sample collection. To find the infested trees two characteristics were taken into consideration for newly and old infested trees. For newly infested trees honeydew shower can be observed under its canopy and for old infested trees sooty black mould can be observed on the upper surface of the leaves.
The samples were collected with the help of fine Camlin paintbrush and kept in 70% ethyl alcohol in 15ml glass vials. Then slides were prepared under OMAX 40X-2000X Digital Lab LED Binocular Compound Microscope. The identification was done by Entomologist of College of Agriculture, Orissa University of Agriculture and Technology, Bhubaneswar, Odisha and by available literature [1, 10, 18].

Results and Discussion
Tinocallis kahawaluokalani Kirkaldy is pale yellow in colour with dark brown markings on the head and prothorax. The antennae are 6 segmented and the process us terminal is < 1.5 times as long as the base of the sixth antennal segment.

Paired tubercles present on the tergum of the first and second abdominal segments and presence of dark veins on the forewings are very distinctively marked and easily identified. Winged viviparous females can reach lengths from 1.02 to 1.8 mm. The cornicles are highly reduced which cannot be externally visible with the help of naked eye rather small protrusion of it can be observed under a compound microscope (Fig:1). *T. kahawaluokalani* is a monoecious and holocyclic species, producing oviparous female and a late male in autumn [6]. It infests the underside of the leaves of the plants in ornamental nurseries and landscapes and particularly attracted to new flush of leaves [3]. It was found that the infestation of *Tinocallis kahawaluokalani* is from October to end of December in Odisha whereas it's occurrence in Ranchi, Jharkhand is from October to end of November. This reduction in one month was due to a very low average temperature in Ranchi than Bhubaneswar in the same month.

Earlier it was only reported from *Lagerstroemia indica* but now its host range has expanded to *Lagerstroemia speciosa* from India. Therefore, it is a report for new geographical distribution along with new host plant record which imposes a significant contribution to insect-plant interaction.

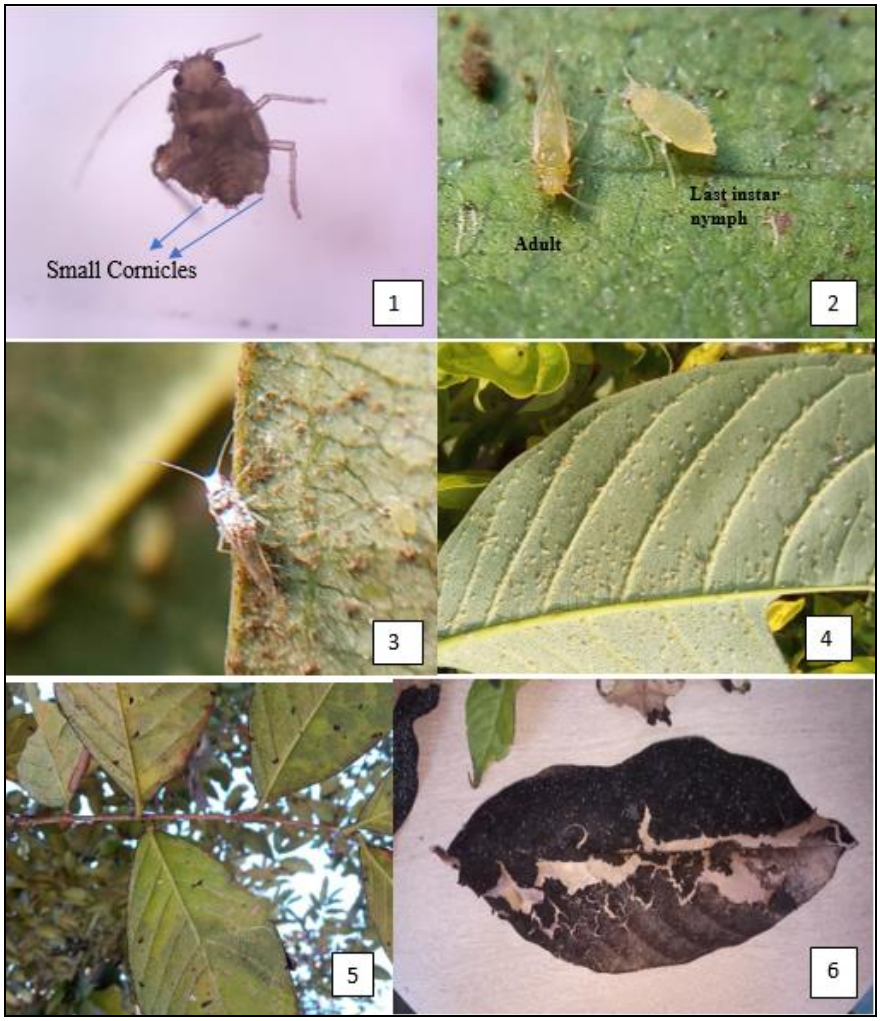

Fig 1: Showing last instar nymph with very small cornicles, **2:** Adult and nymph of *Tinocallis kahawaluokalani*, **3:** Adult with coating of its excretion, **4:** Severe infestation on *Lagerstroemia speciosa* leaves, **5:** No Sooty mould formation on the lower side where aphid feeds, **6:** Occurrence of sooty mould on the upper surface of the leaf due to the fact that honeydew falls from the above leaves where aphids were feeding on the lower side.

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