Unaspis lansivora sp. n. (Hemiptera: Diaspididae), a new pest of Lansium domesticum (Meliaceae), and a key to Unaspis species

GILLIAN W. WATSON

Plant Pest Diagnostic Center, California Department of Agriculture, 3294 Meadowview Road, Sacramento, CA 95832, U.S.A.
E-mail: gillian.watson@cdfa.ca.gov

Abstract

Since 2004, an undescribed species of Unaspis (Hemiptera: Diaspididae) has become a damaging pest on Lansium domesticum Corrêa in the Philippines. Its attack on the leaves causes premature senescence and defoliation, resulting in the production of few, underdeveloped, sour fruit and sometimes killing the trees. The scale was misidentified initially as Lepidosaphes ulmi (Linnaeus) and then as Unaspis citri (Comstock), but further study indicated that it was an undescribed species of potential plant quarantine significance. The pest is described as U. lansivora sp. n. and an identification key to all 19 species of Unaspis is provided. Its distribution, host range and prospects for its biological control are discussed.

Key words: invasive species, scale insect, lanzones, langsat, damage

Introduction

Lansium domesticum Corrêa (family Meliaceae) is a tree native to western Malesia (Mabberley, 1997); it grows wild in the forests of southern Sumatra (Anonymous, 2014). It requires a fairly narrow range of environmental conditions to thrive: moist, well-drained, acid to neutral soil, an altitude of 0–600 m. above sea level, 2000–4000 mm of rain per year and a two-month dry season to initiate flowering (Galang, 2012). The nutritious fruit are very popular in South-East Asia and several varieties are cultivated where environmental conditions permit, from southern India to the Philippines (mainly in southern India, Malaysia, Thailand, Cambodia and Vietnam). It has been successfully introduced also to Hawaii, Surinam (Tacio, 2008) and Costa Rica (Anonymous, 2014). Other parts of the plant have multiple medicinal uses (Tacio, 2008).

In the Philippines, L. domesticum is called lanzones or langsa, while in other South-East Asian countries it is called langsat, duku or other local names. Lanzones is grown in home gardens and commercial orchards, mainly for local consumption. Once ripe, the fruit are highly perishable and deteriorate rapidly, so are difficult to transport. However, demand is strong in South-East Asia so there is potential for export to international markets like Taiwan, Hong Kong, mainland China and Singapore (Galang, 2012). In 2009, the main lanzones-producing provinces in the Philippines were (in order of importance): Sulu in Mindanao (75% of the total); Camiguin island; Davao del Norte, Davao City, Zamboanga del Norte in Mindanao; and Laguna and Batangas on the island of Luzon (based on Tacio, 2008; and Galang, 2012).

In 2004, in North Cotabato province in Mindanao, lanzones were reportedly attacked by “snow scale” (Provido, 2007), also in South Cotabato in the towns of Banga and Tupi, and in Malungon and Maitum in Sarangani province (Tacio, 2008). “Snow scales” are species of Diaspididae in which the immature males with white scale covers form conspicuous clusters. The identity of the scale insect species responsible was given as Lepidosaphes ulmi (Linnaeus) (Hemiptera: Diaspididae), but the source of this identification was not mentioned (Anonymous, 2007). Clearly the identification was erroneous, as immature male Lepidosaphes have brown scale covers, not white.

Provido (2007) recorded the same lanzones scale insect pest from South Cotabato, Sarangani and Davao City provinces in Mindanao, stating that the scales fed on the leaves, turning them red and causing defoliation, so
Acknowledgements

I wish to thank Ms Susan McCarthy (Branch Chief of the Plant Pest Diagnostic Center at CDFA) for permitting the study of samples from the Philippines at this facility. Travel to the Philippines and collection of specimens by Drs Merle Shepard and Gerald Carner of Clemson University, North Carolina, U.S.A. were funded by the United States Agency for International Development and the generous support of the American people through USAID Cooperative Agreement Number EPP-A-00-0400016-00. Thanks are also due to Drs Bonifacio Cayabyab and Candida B. Adalla (University of the Philippines at Los Banos) for collection activities and sending me samples to work on. I am grateful to Drs Chris Hodgson (National Museum of Wales, Cardiff, Wales, U.K.) and Douglass Miller (ex-United States Department of Agriculture, retired) for helpful critique of the manuscript. Dr Chaofan Shi (School of Earth Science and Geological Engineering, Sun Yat-Sen University, Guangzhou, China) kindly translated some text from Chinese to English.

References

Chen, F.G. (1983) [The Chionaspidini (Diaspididae, Coccoidea, Homoptera) from China.] Science & Technology Publishing House, Sichuan Province, China, 175 pp. [In Chinese]
Kuwana, S.I. (1928) The diaspine Coccidae of Japan. V. Genera Chionaspis, Tsukushiaspis [n. gen.], Leucaspis, Nikkoaspis [n. (140x437)]


Zeng, T. (2000) [Species of *Unaspis* MacGillivray in China (Homoptera: Coccoidea: Diaspidiae).] *Journal of South China Agricultural University*, 21 (1), 51–52. [In English; summary in Chinese]