



Citrus orthezia

PRAELONGORTHEZIA PRAELONGA



Figure 1. *Praelongorthezia praelonga* infestation on sea grape in Saint Lucia © Chris Malumphy

Background

The citrus orthezia, *Praelongorthezia praelonga* (Douglas) (Hemiptera: Ortheziidae), is a highly polyphagous scale insect that causes plant damage both directly by its feeding and indirectly due to its associated sooty moulds growing on the honeydew excreted by the insects. It occurs widely in the Neotropical region and during the last decade it has become a more common and significant pest in many parts of the Caribbean. It has been comprehensively reviewed by Kondo *et al.* (2013).

Within the UK Overseas Territories (UKOT) it was recently recorded from the British Virgin Islands and poses a plant health risk to all the UKOTs in the Caribbean.

Geographical Distribution

Praelongorthezia praelonga occurs widely in the Neotropical region although its precise native range is unknown. It has recently been introduced to Africa (Kondo *et al.*, 2013).

North America: Mexico.

Central America: Panama.

South America: Argentina; Brazil; Colombia; Ecuador; Guyana; Peru; Venezuela.

Caribbean: Antigua and Barbuda; Barbados; Bolivia; British Virgin Islands; Dominica; Grenada; Guadeloupe; Jamaica; Marie-Galante; Martinique; Puerto Rico and Vieques Island; St. Barthélemy; St. Martin; Trinidad and Tobago; US Virgin Islands.

Africa: Democratic Republic of Congo; Republic of Congo.

Host Plants

Praelongorthezia praelonga is highly polyphagous and has been recorded feeding on more than 180 host plant species in 50 plant families, including many crop, ornamental and native plants (Kondo *et al.*, 2013). It shows a preference for the Asteraceae, Euphorbiaceae, Fabaceae and Malvaceae.

Acanthaceae: *Graptophyllum* sp., *Hemigraphis colourata*, *Pseuderanthemum atropurpureum*, *Sanchezia* sp., *S. nobilis*, *Thunbergia* sp., *T. speciosa*.

Amaranthaceae: *Achyranthes* sp., *Alternanthera dentata rubiginosa*, *Amaranthus* sp..

Anacardiaceae: *Anacardium occidentale*, *Mangifera indica*, *Mangifera* sp..

Annonaceae: *Annona muricata*. **Apiaceae:** *Petroselinum crispum*, *Pimpinella anisum*.

Apocynaceae: *Cryptostegia madagascariensis*, *Plumeria alba*, *P. rubra*.

Araceae: *Anthurium andreanum*, *A. cordatum*, *Anthurium* sp., *Philodendron* sp..

Araliaceae: *Hedera helix*, *Schefflera arboricola*, *Schefflera* sp..

Arecaceae: *Cocos nucifera*.

Asparagaceae: *Dracaena* sp..

Asteraceae: *Ageratum conyzoides*, *Baccharis* sp., *Bidens pilosa*, *Chrysanthemum morifolium*, *Coreopsis grandiflora*, *Conyza* sp.; *Dahlia* sp., *Eupatorium* sp., *Sphagneticola trilobata*, *Sphagneticola* sp., *Vernonia cinerea*, *V. squamulosa*, *Vernonia* sp., *Wedelia paludosa*, *Wedelia* sp..

Bignoniaceae: *Spathodea campanulata*, *Tabebuia* sp., *Tecoma speciosa*.

Begoniaceae: *Begonia* sp..

Boraginaceae: *Cordia corymbosa*.

Bromeliaceae: *Ananas comosus* var. *comosus*, *Ananas sativus*, *Tillandsia aeranthos*.

Cactaceae: *Cactus* sp..

Caprifoliaceae: *Lonicera* sp..

Caricaceae: *Carica papaya*, *Carica* sp..

Combretaceae: *Terminalia catappa*.

Commelinaceae: *Commelina benghalensis*.

Convolvulaceae: *Merremia dissecta*, *Ipomoea carnea*, *I. fistulosa*.

Cucurbitaceae: *Cucurbita pepo*, *C. moschata*, *C. charantia*.

Euphorbiaceae: *Acalypha wilkesiana*, *Acalypha* sp., *Codiaeum variegatum*, *Croton* sp., *Euphorbia tirucalli*, *Euphorbia* sp., *Jatropha integerrima*, *Manihot esculenta*, *M. utilissima*, *Sapium* sp..

Fabaceae: *Bauhinia alba*, *B. variegata*, *B. sp.*, *B. monandra*, *Caesalpinia peltophoroides*, *Cajanus indicus*, *Cajanus sp.*, *Cassia sp.*, *Centrosema virginianum*, *Gliricidia sepium*, *Gliricidia sp.*, *Haematoxylum campechianum*, *Haematoxylum sp.*, *Indigofera hirsuta*, *Macroptilium sp.*, *Mimosa pudica*, *Pterocarpus violaceus*.

Gesneriaceae: *Besleria sp.*

Goodeniaceae: *Scaevola plumieri*.

Lamiaceae: *Aegiphila pernambucensis*, *Coleus blumei*, *Coleus sp.*, *Hyptis sp.*, *Leonotis nepetifolia*, *Mentha piperita*.

Lythraceae: *Lawsonia inermis*.

Loranthaceae: *Loranthus sp.*

Malpighiaceae: *Byrsonima sericea*, *Malpighia emarginata*, *M. glabra*, *Malpighia sp.*

Malvaceae: *Dombeya acutangula*, *Gossypium sp.*, *Hibiscus rosa-sinensis*, *H. syriacus*, *H. tiliaceus*, *Malvastrum coromandelianum*, *Malvastrum sp.*, *Malvaviscus sp.*, *Sida urens*, *S. rhombifolia*, *Sida sp.*, *Theobroma cacao*, *Triumfetta semitriloba*.

Moraceae: *Artocarpus altilis*, *A. heterophyllus*, *Ficus canonii*.

Myrtaceae: *Eugenia jambos*, *E. uniflora*, *Psidium guajava*, *P. araca*, *P. sp.*

Nyctaginaceae: *Bougainvillea spectabilis*, *Bougainvillea sp.*, *Mirabilis jalapa*, *Pisonia sp.*

Passifloraceae: *Passiflora edulis*, *P. quadrangularis*.

Phyllanthaceae: *Breynia nivosa*, *Phyllanthus distichus*, *P. corcovadensis*, *Phyllanthus sp.*

Piperaceae: *Peperomia sp.*, *Piper marginatum*, *P. nigrum*, *Piper sp.*

Plumbaginaceae: *Plumbago coerulea*.

Poaceae: *Brachiaria purpurascens*, *Digitaria insularis*, *Panicum plantagineum*, *P. sp.*, *Saccharum sp.*

Polypodiaceae: *Polypodium vacciniifolium*.

Polygonaceae: *Coccoloba uvifera*, *Coccoloba sp.*, *Triplaris felipensis*, *T. surinamensis*, *Triplaris sp.*

Portulacaceae: *Portulaca sp.*

Rosaceae: *Eriobotrya japonica*, *Rosa sp.*

Rubiaceae: *Coffea arabica*, *C. canephora*, *Coffea sp.*, *Gardenia florida*, *G. jasminoides*, *Ixora coccinea*, *I. sp.*, *Paederia sp.*, *Pentas sp.*

Rutaceae: *Citrus aurantium*, *C. latifolia*, *C. limonia*, *C. limetta*, *C. paradisi*, *C. reticulata*, *C. sinensis*, *C. sinensis*, *Citrus sp.*, *Fortunella sp.*

Sapindaceae: *Talisia esculenta*.

Sapotaceae: *Achras sapota*.

Solanaceae: *Brunfelsia sp.*, *Capsicum frutescens*, *Capsicum sp.*, *Solanum asperum*, *S. balbisii*, *S. tuberosum*.

Verbenaceae: *Durante repens*.

Violaceae: *Viola sp.*



Figure 2 *Praelongorthezia praelonga* adult female, showing the dorsum mostly covered with white wax plates, British Virgin Islands © Fera



Figure 3 *Praelongorthezia praelonga* infestation on bougainvillea, Saint Lucia © Chris Malumphy



Figure 4 *Praelongorthezia praelonga* infestation on an unidentified wild plant, saint Lucia © Chris Malumphy



Figure 5 *Praelongorthezia praelonga* infestation on *Codaieum*, Saint Lucia © Chris Malumphy



Figure 6 *Insignorthezia insignis* infestation on aubergine © C. Fera



Figure 7 *Insignorthezia insignis* adult showing large bare patches on the dorsum © Fera

Description

The adult female (Fig. 2) is nearly 2 mm long, 1.25 mm wide, with the body dorsally completely covered with fragile white secretion, showing a more or less distinct, but narrow bare streak near each margin, separating the dorsal and marginal plates, the secretions are arranged in lateral and dorsal tufts. Mature females carry a posterior, elongate ovisac, up to 6 mm long.

Kondo *et al.* (2013) provide detailed morphological descriptions, illustration and photographs of the adult female, and a key to the genera in the tribe Ortheziini. Kozár (2004) provides identification keys in a monograph to the Ortheziidae of the world.

Praelongorthezia praelonga may easily be confused in the field with the greenhouse orthezia *Insignorthezia insignis* (Browne) (compare Fig. 6 with Figs 3-5). The latter species occurs throughout the tropics and subtropics, including most of the UKOTs, and is an occasional glasshouse pest in temperate regions. It is also highly polyphagous and shares many of the host plants with *P. praelonga*. They may be separated using a x10 hand lens; the dorsum of *P. praelonga* is mostly covered with wax plates (Fig. 2), whereas the dorsum of *I. insignis* has large bare patches (Fig. 7).

Biology

Praelongorthezia praelonga is sexually reproductive, lays eggs in an ovisac that is carried by the adult female, has multiple overlapping generations per year and a lengthy life cycle lasting between 40 and 200 days. The duration of the life cycle is affected by the host species and temperature. The optimal temperature for development is about 25°C, with the maximum temperature limit of 38°C, and the minimum limit of 15°C.

Dispersal and Detection

All developmental stages (except the eggs) are mobile. First instars may be dispersed in air currents and *P. praelonga* may be transported over long distances in plant trade. Large infestations of *P. praelonga* are highly conspicuous due to the white wax secretions but low density populations may be difficult to detect during routine phytosanitary inspections due to its relatively small size and sessile nature.

Economic Impact

Praelongorthezia praelonga is an economic pest of citrus in the Neotropics, causing dieback, premature leaf loss, reduction in yield (due in part to the fruit being smothered with sooty moulds growing on the honeydew excreted by the insects) and occasional death of trees. It can also be a serious pest of many ornamental plants including *Bougainvillea* (Fig 3), *Coccoloba* (Fig. 1), *Codiaeum* (Fig. 5), *Malpighia*, *Plumeria* and *Spathodea*, causing leaf loss, dieback, and occasional mortality. The economic importance, damage and control are reviewed by Kondo *et al.* (2013).

Advisory Information

Systemic and contact pesticides may be used to control scale insects depending on the crop and growing conditions. Chemical applications should only be targeted at focal points of infestation and applications to an entire orchard should be avoided in order to preserve the natural enemies that keep *P. praelonga* under an ecological balance. Before using any pesticide the appropriate government body or plant protection service needs to be contacted to check the current regulation and the label instructions must be followed.

References

- Kondo, T., Peronti, A. L., Kozár, F. & Szita, E. 2013. The citrus orthezia, *Praelongorthezia praelonga* (Douglas) (Hemiptera: Ortheziidae), a potential invasive species. In Peña, J. E. (Ed.). *Potential Invasive Pests*. CAB International, Wallingford, UK, pp. 301-319.
- Kozár, F. 2004. *Ortheziidae of the World*. Plant Protection Institute, Hungarian Academy of Sciences, Budapest.

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