

**PRINCIPAL INSECTS LIABLE  
TO BE  
DISTRIBUTED ON NURSERY  
STOCK, PP. 3 - 45**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649267668

Principal Insects Liable to be Distributed on Nursery Stock, pp. 3 - 45 by Nathan Banks

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.  
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.triestepublishing.com](http://www.triestepublishing.com)

**NATHAN BANKS**

**PRINCIPAL INSECTS LIABLE  
TO BE  
DISTRIBUTED ON NURSERY  
STOCK, PP. 3 - 45**





## CONTENTS.

	Page.
Introduction .....	9
Tabular statement of insects upon the tree in winter.....	9
Tabular statement of insects feeding on the buds and young leaves in early spring .....	10
Hemiptera (bugs, scale insects, plant-lice) .....	10
Family Coccidæ (scale insects).....	11
Table of scale insects .....	11
The peach lecanium .....	11
The oyster-shell bark-louse.....	12
The scurvy bark-louse .....	14
Aspidiotus (circular or round scales) .....	14
Table of Aspidiotus .....	15
The San Jose scale .....	15
The European fruit scale.....	18
Putnam's scale .....	19
The cherry scale .....	19
The walnut scale .....	19
The greedy scale .....	20
The grape scale .....	20
The peach scale .....	21
The rose scale.....	23
Family Aphidæ (plant-lice).....	23
Table of plant-lice.....	23
The woolly apple aphid.....	24
The black peach aphid.....	25
Apple plant-lice .....	26
The plum plant-lice.....	26
The cherry aphid.....	27
Family Psyllidæ .....	27
The pear-tree psylla .....	27
Family Membracidæ.....	28
The buffalo tree-hopper.....	28
Lepidoptera (butterflies and moths) .....	29
The apple-tree tent caterpillar.....	29
The fall webworm.....	30
The brown-tail moth .....	31
The leaf-crumpler .....	32
The white-marked tussock moth .....	32
The gipsy moth .....	33
Cankerworms .....	35
The peach-tree borer .....	35
The peach twig-borer.....	36
The bagworm .....	37
Other caterpillars .....	38

	Page.
Coleoptera (beetles, weevils).....	38
The round-headed apple tree-borer.....	39
The flat-headed apple tree-borer.....	40
The sinuate pear-borer.....	40
The fruit-tree bark-beetle.....	42
The apple twig-borer.....	43
Acarina (mites).....	43
The pear-leaf blister-mite.....	43
Insects infesting fruits.....	46

## ILLUSTRATIONS.

FIG.		Page.
1.	<i>Lecanium nigrofasciatum</i> .....	12
2.	<i>Mytilaspis pomorum</i> .....	13
3.	<i>Mytilaspis pomorum</i> .....	13
4.	<i>Chionaspis furfurus</i> .....	14
5.	<i>Aspidiotus perniciosus</i> , on branch .....	16
6.	<i>Aspidiotus perniciosus</i> , female .....	17
7.	<i>Aspidiotus perniciosus</i> , on fruit and branch .....	18
8.	<i>Aspidiotus ostreaformis</i> .....	19
9.	<i>Aspidiotus juglans-regie</i> .....	20
10.	<i>Aspidiotus rapax</i> .....	21
11.	<i>Diaspis pentagona</i> .....	22
12.	<i>Aulacaspis rosae</i> .....	22
13.	Eggs of plant louse .....	23
14.	<i>Schizoneura lanigera</i> .....	24
15.	<i>Schizoneura lanigera</i> , work on roots .....	24
16.	<i>Aphis persicae-niger</i> .....	25
17.	<i>Psylla pyricola</i> .....	27
18.	<i>Ceresa bubalis</i> .....	28
19.	<i>Clisiocampa americana</i> .....	29
20.	<i>Hyphantria cunea</i> .....	30
21.	<i>Euproctis chrysorrhoea</i> .....	31
22.	<i>Orgyia leucostigma</i> .....	33
23.	<i>Porthetria dispar</i> , moth .....	33
24.	<i>Porthetria dispar</i> , larva .....	34
25.	<i>Porthetria dispar</i> , chrysalis .....	34
26.	<i>Alsophila pometaria</i> , moths .....	35
27.	<i>Alsophila pometaria</i> , stages .....	35
28.	<i>Palaearcta vernata</i> , moths .....	35
29.	<i>Palaearcta vernata</i> , stages .....	35
30.	<i>Sanninoidea exitiosa</i> .....	36
31.	<i>Anarsia lineatella</i> .....	36
32.	<i>Thyridopteryx ephemeraeformis</i> , cases .....	37
33.	<i>Thyridopteryx ephemeraeformis</i> , insects .....	37
34.	<i>Tmetocera ocellana</i> , larva .....	38
35.	<i>Tmetocera ocellana</i> , work of .....	38
36.	<i>Saperda candida</i> .....	39
37.	<i>Chrysobothris femorata</i> .....	40
38.	<i>Agrilus sinuatus</i> , stages .....	40
39.	<i>Agrilus sinuatus</i> , work of .....	41
40.	<i>Scolytus rugulosus</i> .....	42
41.	<i>Amphicerus bicaudatus</i> .....	42
42.	<i>Rhagoletis pomonella</i> .....	44
43.	<i>Rhagoletis cingulata</i> .....	45



1

2

3

4

5

6

7

8

9

10

11

12

# THE PRINCIPAL INSECTS LIABLE TO BE DISTRIBUTED ON NURSERY STOCK.

## INTRODUCTION.

In preparing this descriptive catalogue of the insects liable to be transported upon nursery stock, it has appeared that there is a great disparity of views as to what insects should be included. To include only such as are known to be very destructive would exclude a great many species that will be found by anyone who examines a tree in the fall or early spring. To include all the species that are known to be found in any stage upon fruit trees in winter would make the list too bulky. Therefore, all species known to be of more than local interest have been treated. Notes on the species infesting fruits are added at the end. The insects have been arranged according to their natural orders, and in the Hemiptera (bugs, scale insects, plant-lice) according to the families. In the Coleoptera (beetles, weevils) and Lepidoptera (butterflies and moths), such an arrangement did not seem desirable. No account of the remedies to be recommended or used is given, as these differ greatly, according to locality and conditions, and the various State laws specify certain treatments.

It will be a great help to those interested in the growth and sale of young fruit trees to be able to recognize the appearance of the various insect pests during the winter; therefore, much attention has been paid to this phase of the subject.

In using this bulletin one should remember that, besides the insects here treated, there may be upon a tree other insects of less importance.

## TABULAR STATEMENT OF INSECTS UPON THE TREE IN WINTER.

### Insects upon the roots:

- Forming swellings on apple roots..... Woolly aphid.
- On peach and plum roots ..... Black peach aphid.

### Insects upon the bark of trunk or branches:

- Plant-lice or aphids ..... Woolly aphid.
- Small brown clear-winged insect in the crevices of bark ..... Pear psylla.
- Scale insects or bark-lice..... See Coccidae.
- Caterpillars in cases or cocoons..... Fall webworm, bud moth, apple  
Bucculatrix, codling moth, pistol-case and cigar-case bearers.

- In nests or bunches of shriveled leaves attached to branches..... Leaf-crumpler,  
and brown-tail moth.

## Insects upon the bark of trunk or branches—Continued.

- In a case or bag hanging from twigs ..... Bagworm.  
 Clusters of eggs on bark ..... Cankerworms, tussock moth, and gipsy moth.  
 A belt of eggs around twigs ..... Apple-tree tent caterpillar.  
 Single small blackish eggs often in groups on twigs or branches ..... Plant-lice.  
 Smaller reddish eggs ..... Clover mite.

## Insects beneath the bark:

- Tiny holes usually near a crotch, each covered by a bit of frass ..... Peach twig-borer.  
 Small brown beetle within the twig ..... Apple twig-borer.  
 Small holes in bark of trunk or larger branches ..... Fruit-tree bark-beetle.  
 A gummy exudation of sap at base of tree ..... Peach tree-borer.  
 Discolored spots or cracks and evidences of frass ..... Round-headed and flat-headed apple tree-borers, and sinuate pear borer.

**TABULAR STATEMENT OF INSECTS FEEDING ON THE BUDS AND YOUNG LEAVES IN EARLY SPRING.**

Feeding on the buds or young shoots.... Bud worm, peach twig-borer, leaf-crumpler, brown-tail moth, pistol-case and cigar-case bearers.

## Feeding upon the leaves:

- Plant-lice ..... Apple plant-lice, plum plant-lice, and cherry aphid.  
 Caterpillars in tents ..... Apple-tree tent caterpillar.  
 Hairy caterpillars ..... Tussock moth, brown-tail moth, gipsy moth.  
 Bare caterpillars ..... Canker worms.  
 A blister or gall upon leaves ..... Pear-leaf blister-mite.  
 Small caterpillars within little cases ..... Pistol-case bearer, cigar-case bearer, leaf-crumpler, and bagworm.

**HEMIPTERA (BUGS, SCALE INSECTS, AND PLANT-LICE).**

The members of this order obtain their food (which is liquid) by sucking it up a slender tube into the mouth cavity. This tube or beak is composed of several needle-like pieces so shaped and arranged that they inclose a minute channel up which the liquid food is drawn. The beak is inserted in the plant often to some distance beneath the surface. The members of this order do not pass through a pupal or chrysalis stage like the butterflies and moths, but there is an approach to it in the males of the scale insects. The insects of this order to be treated are arranged in four families, which may be separated, for our purposes, as follows:

The insect from above apparently without legs, antennæ, or wings, and fixed to the host plant; the adult male (not often seen) usually has two wings.....Coccidæ. (scale insects).

The insect shows distinct legs and antennæ, and often four wings.

Most of the specimens wingless, and provided with two small tubes or cornicles (see fig. 16) near tip of body; not hopping when disturbed .....Aphididæ (plant-lice).

Adult always winged, without the cornicles; hopping when disturbed.

The prothorax not enlarged, with hyaline wings.....Psyllidæ.

The prothorax greatly enlarged; wings obscured.....Membracidæ.