

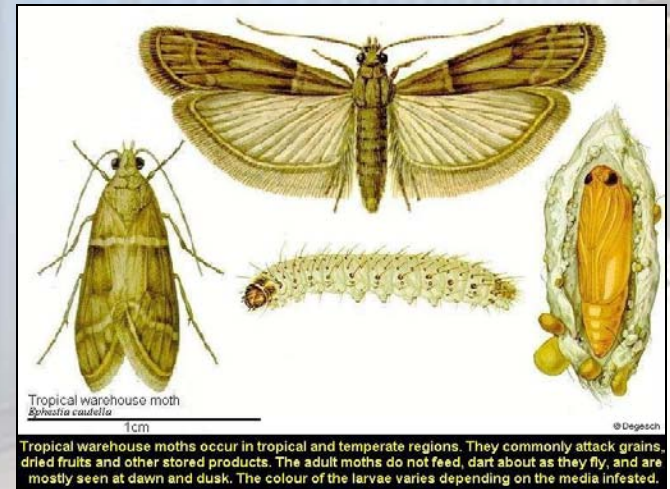


Inspecting Empty Containers for Insects

Operational Science Program

This presentation will outline:

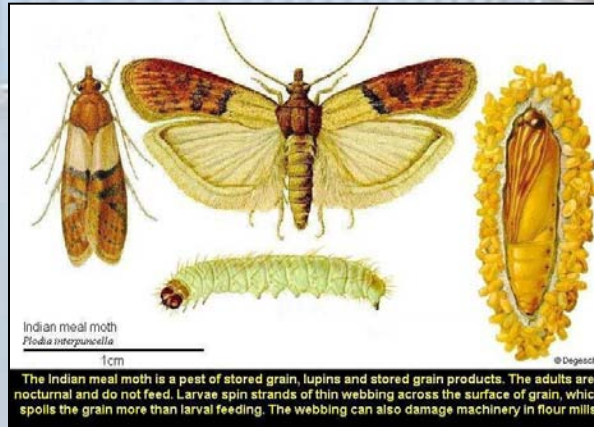
- Main insect pests likely to be encountered when inspecting shipping containers
- Pests of Quarantine concern
- Timber pests to be aware of
- Summary.



Main Insect Pests Likely to be Encountered

MOTHS

- Vary in size
- Encounter eggs, caterpillars, pupae & adults
- Caterpillars cause feeding damage
- Adults & pupae don't feed on stored products, but degrade product quality.



Main Insect Pests Likely to be Encountered



PSOCIDS

- Small insects
- Large heads, some species winged
- Feed on particulate matter, often find on residues from previous cargoes.

Main Insect Pests Likely to be Encountered



BEETLES

- Small to large
- Encounter adults & larvae
- Many pests of plants & plant products.

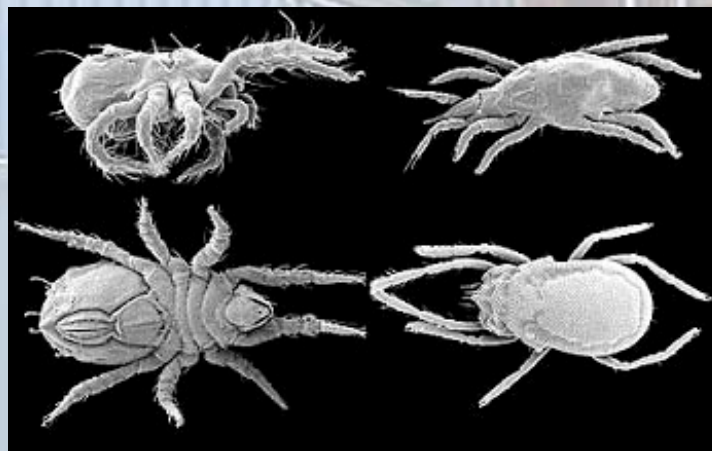
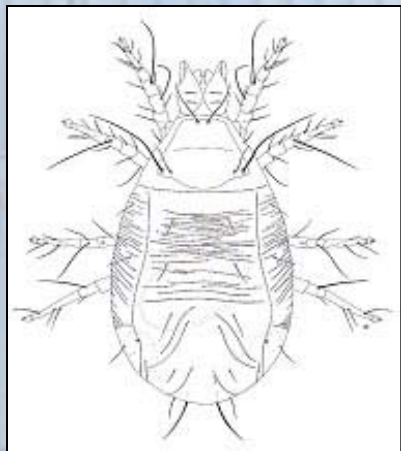
Main Insect Pests Likely to be Encountered

BUGS

- Small to large insects
- Variable in shape & colour
- Immature stages resemble adults
- Many are strong fliers & have pierce-sucking mouthparts.



Main Insect Pests Likely to be Encountered



MITES (not insects – related to spiders)

- Very **small**, 8 legged tick-like animals
- Many are serious pests of plants
- Variable in shape & colour.

Pests of Quarantine Concern

KHAPRA BEETLE

- World's most destructive pest of stored grain & vegetable products
- Larvae are hairy & reach up to 6mm long
- Larvae cause damage via feeding & contaminate product with cast skins
- Cast skins very distinctive.



Pests of Quarantine Concern

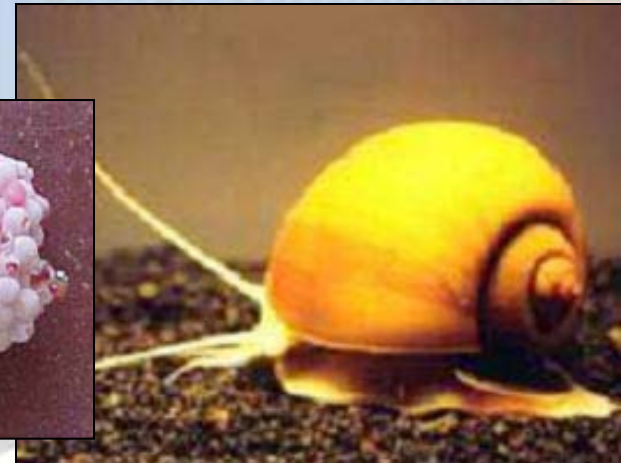
GIANT AFRICAN SNAIL (GAS)

- Large tropical snails, grow up to 20cm (shells)
- Attack more than 500 spp of plants, incl. ornamentals, vegetable & legumes
- Find snails &/or eggs inside or outside containers



GOLDEN APPLE SNAIL

- Indigenous to Sth America, now established in most of SE Asia & PNG.



Pests of Quarantine Concern



TERMITES

- Commonly known as white ants, but are in fact not related to ants
- Damage timber
- 3 types – Subterranean
 - Drywood
 - Dampwood
- Social insects, have castes i.e.. workers, soldiers, queens & kings
- Pale bodied, head maybe sclerotised
- Termites very cryptic - more likely to encounter frass &/or damage.

Be Aware of these Timber Pests

- Australia's timber pests mostly attack unseasoned timbers (except lyctids & termites)



- Many exotic seasoned timber pests, including:

- Bostrichid beetles

- eg. *Sinoxylon* & *Heterobostrychus* spp.

- European house borer

- Asian longhorn beetle

- Carpenter ant.



Pests of Quarantine Concern

ASIAN GYPSY MOTH

- Severe forestry pest, attacks more than 600 spp. of trees
- Caterpillars capable of defoliating trees overnight
- Found throughout Nth America, Europe & Asia
- AGM introduced into Nth America from Russian ships
- Means of introduction is by egg masses or newly emerged larvae which balloon on silken threads
- Adult females attracted to wharf/ship lights lay eggs on all types of surfaces.



Pests of Quarantine Concern

JAPANESE/WHITE SPOTTED TUSSOCK MOTH

- Belongs to the same family as Asian Gypsy Moth
- Found in Japan, Korea, Taiwan, China & Russian Far East
- Attacks trees of apples, pears, plums, willow, maples & oak
- Studies suggest NZ *Pinus* sp. also are at risk
- Like the Asian Gypsy Moth eggs can be deposited on cars and other exposed cargos from Japan, Taiwan, China & Russia.



Inspecting Containers for Insects

Pay special attention to:

- Rubber seals around doors & loading hatches
- Joints & junctions of walls, floor & roof
- Floors, esp. wooden planks as residues &/or insects collect
- Bulkheads
- Tops of doors
- Behind wall panels/liners
- Ledges & loose supports.

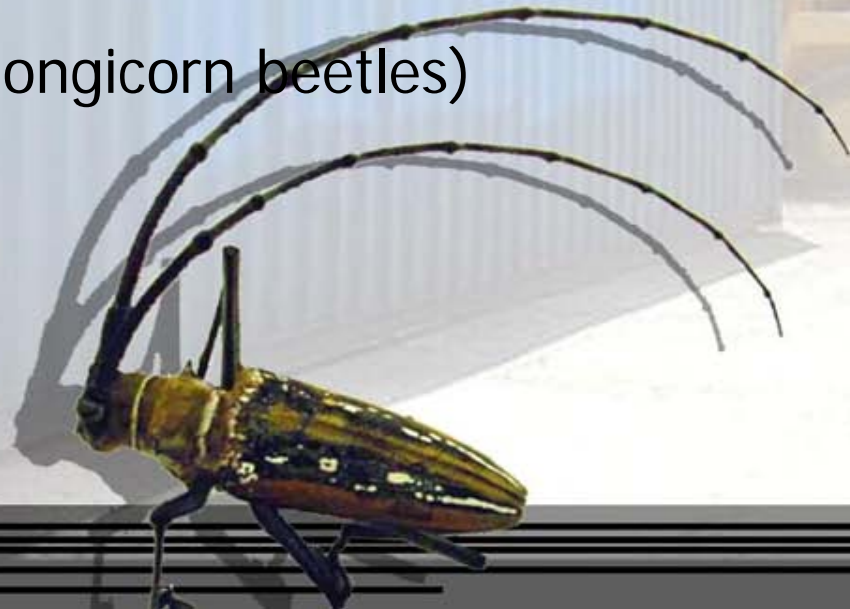


If you find insects of Quarantine Concern...

- Contact AQIS immediately.
- If an egg mass is found, it is critical that quarantine are notified ASAP to prevent larvae hatching &/or dispersing.
- Required to:
 - supervise the removal & treatment of egg masses, insects, residues
 - organise treatment or cleaning
 - re-inspect the container

Summary

- The most likely pests you will find are moths, psocids, beetles, bugs & mites
- The pests of quarantine concern are:
 - Khapra Beetle
 - Giant African Snail
 - Golden Apple Snail
 - Termites
 - Other borers (eg. auger & longicorn beetles)
 - Asian Gypsy Moth
 - Japanese Tussock Moth
- Contact AQIS immediately if you detect any of these pests.



A photograph of a blue shipping container in a yard. The container has several white labels on its side, including one with the number '4125611' and '4310'. In the background, other containers and a yellow forklift are visible. The text 'Acknowledgments', 'Operational Science Program', and 'DAFF' is overlaid in the center of the image.

Acknowledgments
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