

What are the needs for professional education? (pests and diseases)

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@Entoprof



UK Plant Sciences Federation

Training and Skills Working Group

Implementation plan

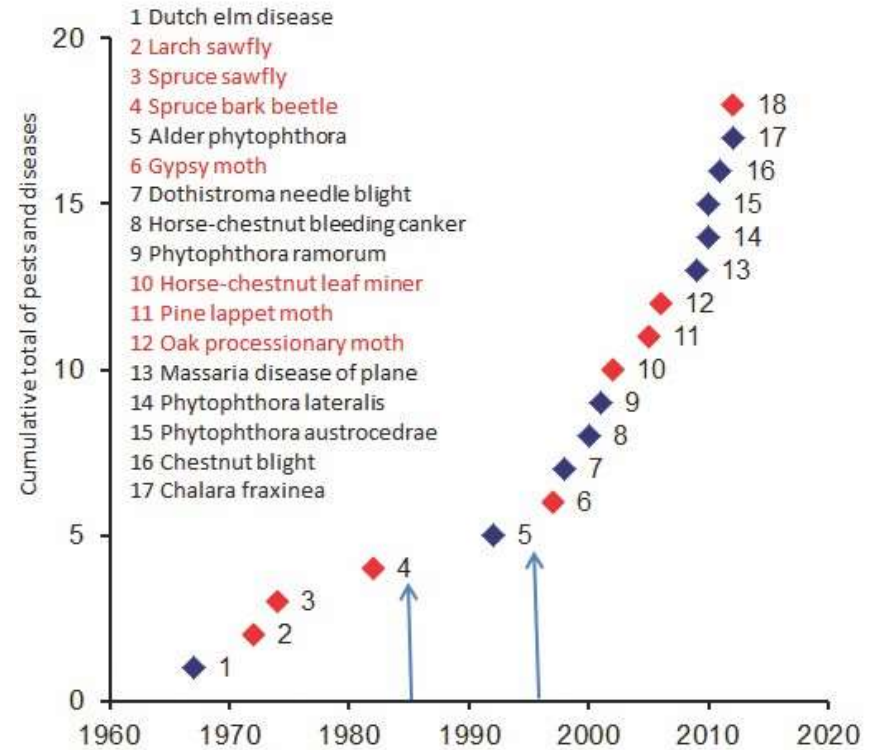
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How do we inspire a new generation of plant scientists and ensure that education and training meets the needs of industry and employers?

We are under attack



A growing problem

- School biology
 - Very molecular & human based
 - Lack of plant science expertise
 - Lack of field work
- Students arrive 'ignorant'
- Specialist teaching staff rare



What do future foresters need to know?



Essential

- Basic insect taxonomy
- Basic fungal taxonomy
- Ability to recognise damage symptoms
- Ability to tell the goodies from the baddies
- **Practical experience**
 - How to look at a tree

Looking at a tree

- Canopy
 - Sparse or dense?
- Foliage
 - Colour, presence, sticky
- Stem/branches
 - Bark, resin flow, holes
- Neighbours



What is being taught
and by whom?

Bangor Year 2 Forest Health

- An introduction to new and emerging tree health issues within the UK and current concerns within forests and urban tree ecosystems
 - Pests and pathogens of concern, and causes of problems
 - The importance of plant and fungal genetics and quarantine
 - Indigenous and long established problems, their impact and control
 - Past failures in forestry and major international tree pathology events over the last 2 centuries.

Forestry Aberdeen 4th Year

The Biology & Ecology of Forest Health

- Lectures provide the basic framework for considering the range of abiotic and biotic agents that cause forest damage.
- A specialist on forest insect pests delivers a section of the course, providing students with an expert's insights into current issues in forest health.
- Preparation of two case studies, one on a disease and one on an animal pest, provide students with an opportunity to pursue their own interests and develop specialist knowledge.
- An extended essay provides an opportunity to strengthen skills in synthesis and written presentation.

Cumbria

Forest Health & Protection Year 2

- Pests, diseases, lack of nutrients and changes to climate can threaten the health of forests. This module will help you identify, understand and manage the main threats. The module includes classroom sessions, laboratory work and visits to woodland.

Other courses

- Plumpton Year 2 Tree Pests & Diseases
- Sparsholt Pest & Diseases (taught by an ex-student)
- The Scottish School of Forestry – HND
Year 2 Forest protection

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- MSc Conservation & Forest Protection
 - Biology & Taxonomy of Insects
 - Laboratory and field-based
 - Assessment by lab report and ID quiz
 - Forest Pathology & Forest Pests
 - Laboratory and field-based
 - Assessment by field report & ID quiz

How well would you do?







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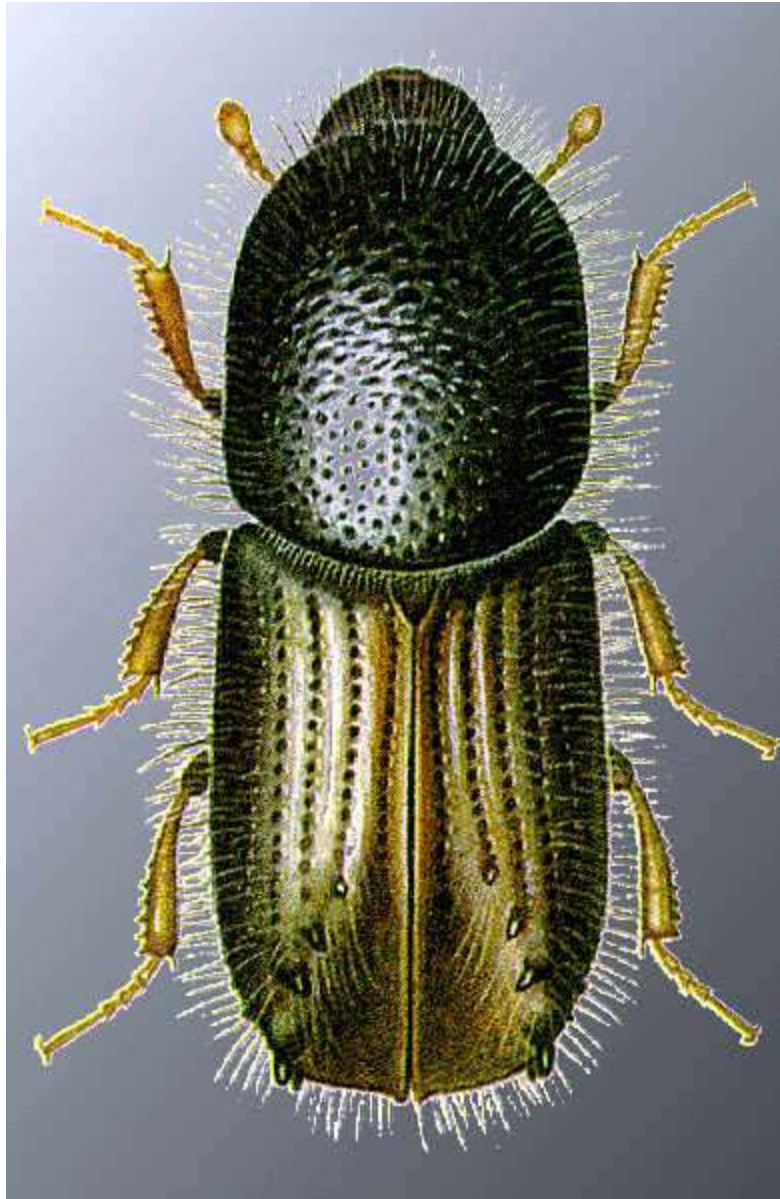


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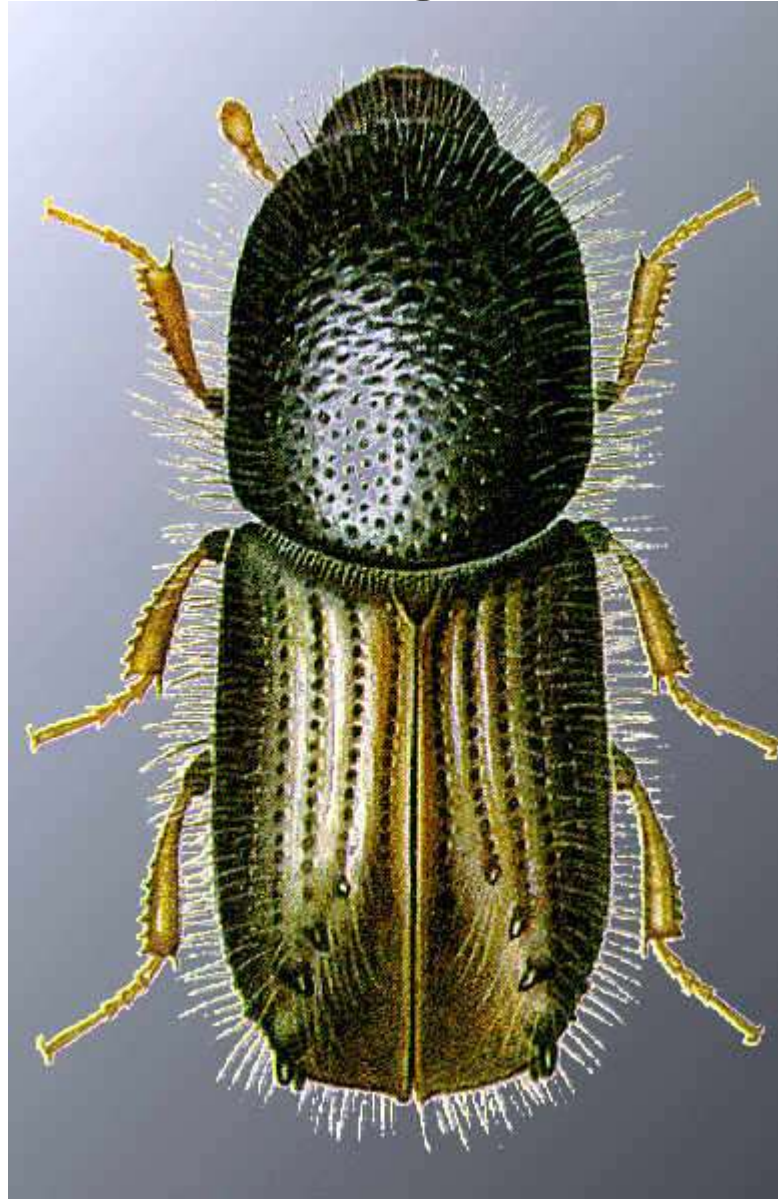
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Ips typographus





Predatory fly larva



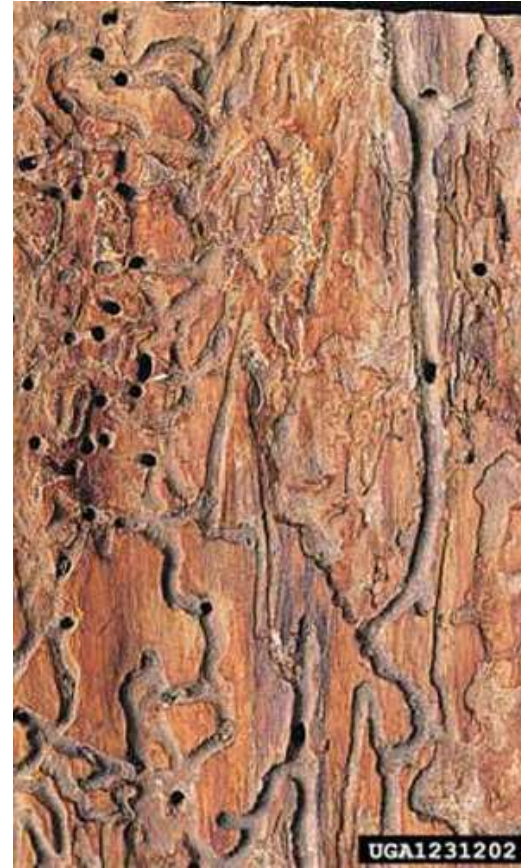


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Clerid beetle - predator







Tomiscus piniperda

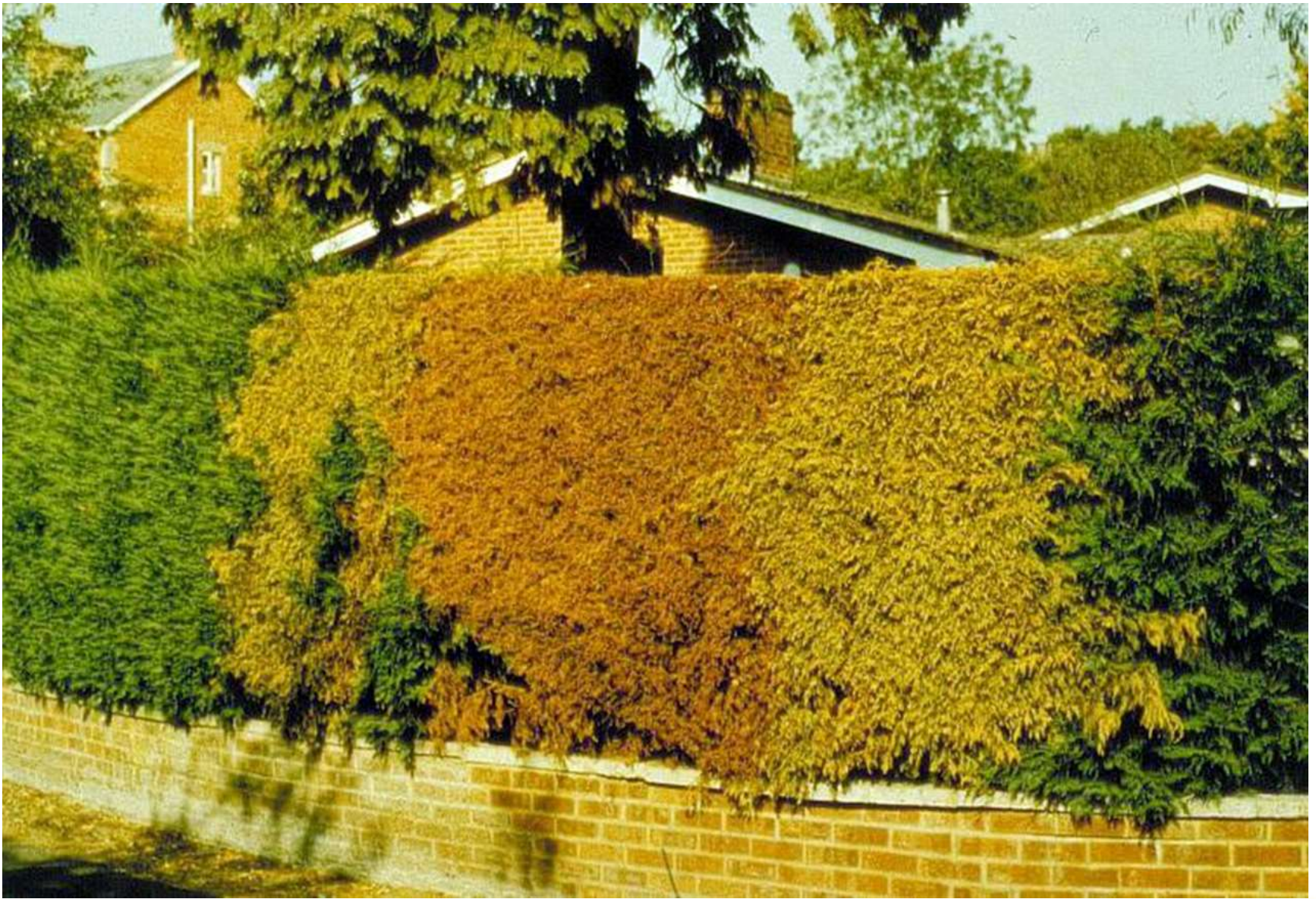


circular exit holes, 10-12
mm diam









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Take home message

- Students need
 - More emphasis on identification skills
 - More practical experience
- Professionals need
 - To keep their eye in
 - Set aside 'forest health' days
- Universities need
 - To employ more entomologists and pathologists



Any questions?

