Landcare Research
Manaaki Whenua

Tradescantia Biocontrol Update

Simon Fowler

- Brazilian plant that has become a serious understorey weed in New Zealand

- Dense mats prevent regeneration of native forest

Dense mat of *Tradescantia fluminensis* in Waipu Gorge

Tradescantia Biocontrol, 2002 - present

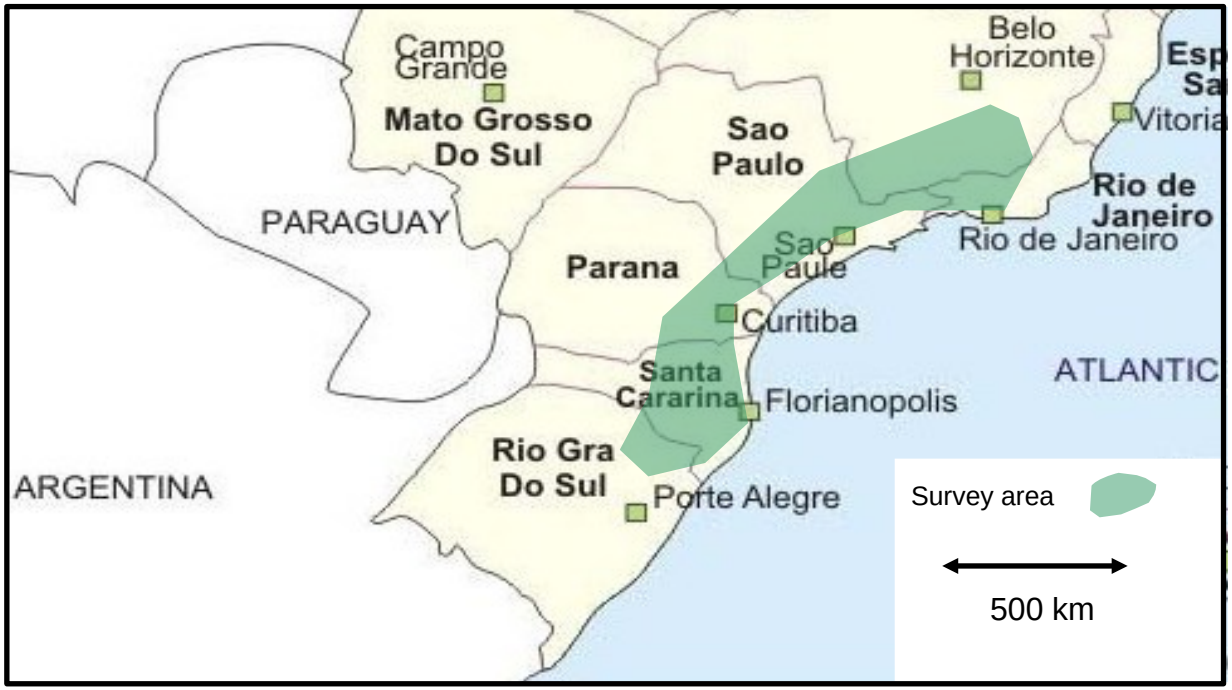
- Key collaborators in Brazil

- Entomologist with biocontrol skills: Professor Pedrosa, Uni Parana

- A leading biocontrol plant pathologist: Dr Barreto, Uni Vicosa

Surveys in Brazil

- From Rio de Janeiro south - main areas have been the higher altitude (cooler) areas in southern three states: Paraná, Santa Catarina and Rio Grande do Sul



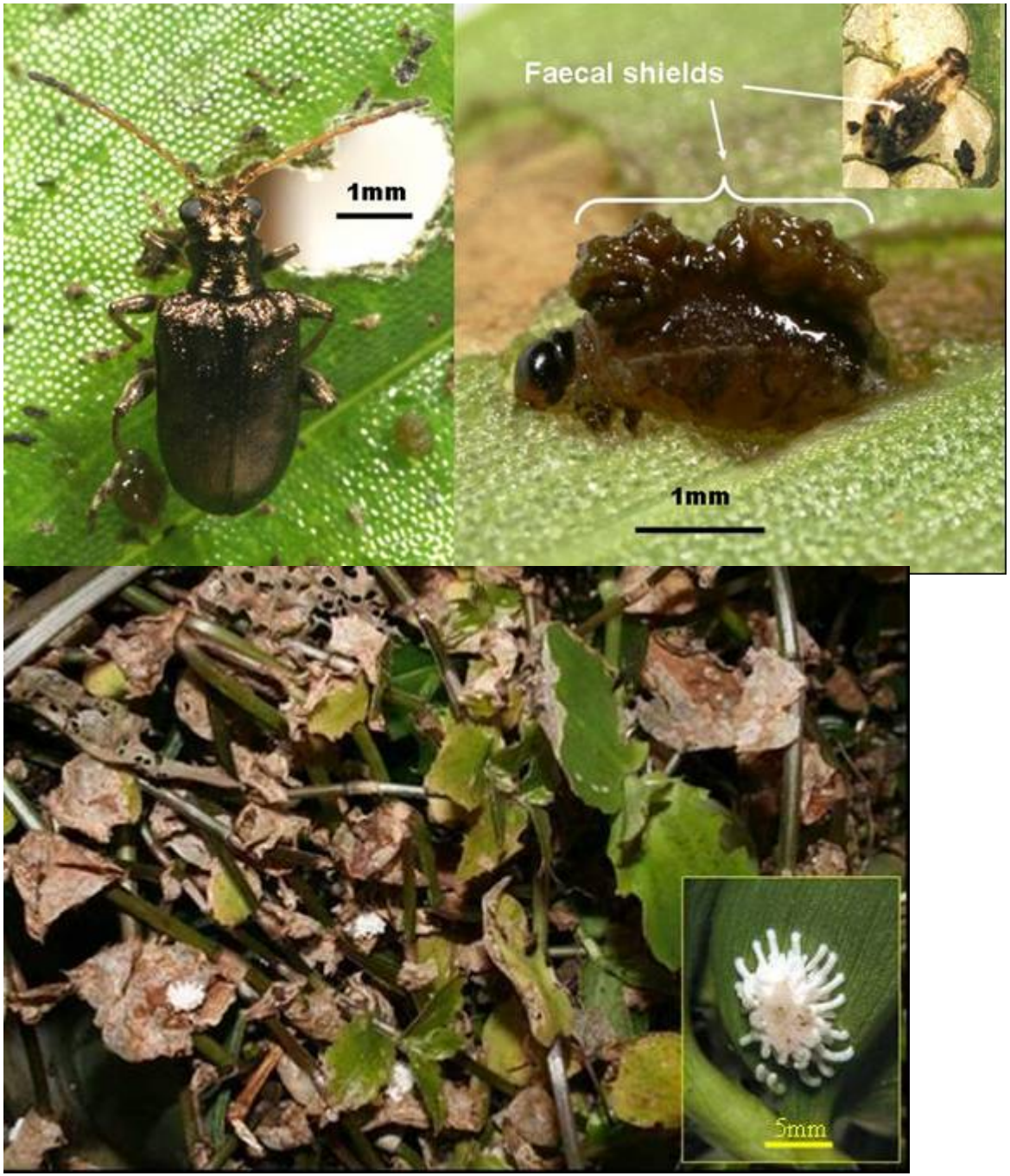
Serra do Rio do Rastro, Santa Catarina, alt. 1500m

Surveys

- Plenty of insects and pathogens
- First agent studied was a pathogenic bacterium – failed initial host range tests
- Then several insects and a rust fungus discovered
- Rust failed as insufficiently pathogenic

Neolema ogloblini,

Leaf beetle



Two other very promising, related beetles

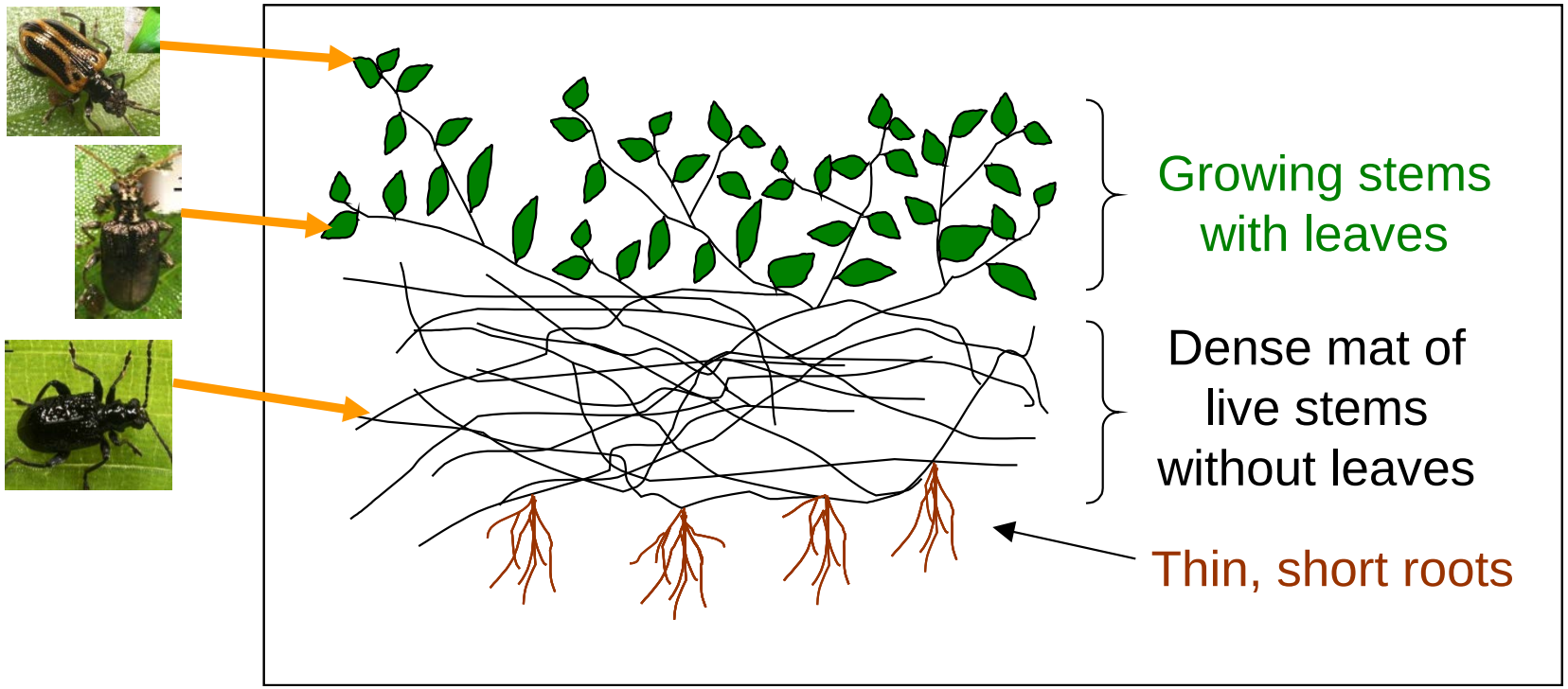
Neolema abbreviata – larvae bore tips

Lema basicostata – larvae stemborers

- Host range testing and ERMA applications for all three beetle species successful

Agent feeding ecology

- Larvae of the insect agents selected have complementary feeding methods



Another promising pathogen

- Common leaf disease, *Kordyana tradescantae*

- Host range testing and EPA application successful

Logistic Problems with *Kordyana*

- Logistics – inoculation failed
- Spore drop from live infected leaves
- Leaves only infective for 48h – need to hand-carry
- What else might drop with the spores?
- Endophyte studies…important to have science back-up from Beating Weeds

Progress with the beetles

- Imported – leaf beetle (1st), stripy and knobbly (long-term collaboration and $$)
- Gregarine gut parasites ☹ (Beating Weeds science back-up again)
- Finally managed to rear clean colonies
- Mass rearing, now all three released…

Releases and their status

- Leaf beetle: >10,000; knobbly (stem borer): >4000; stripy (tip feeder) >3000
- Slow but steady progress, some damage
- Suspect need all 3 agents

Update on *Kordyana*

- Culture lost in Brazil
- Australia now coming on board
- They will continue with *Kordyana* – taking over importation/cleaning etc
- Less cost for us, but a bit more delay?
- Wait and see what insects do before moving to *Kordyana*?
- Stripy now exported to South Africa and shortly to be sent to Australia

Final remarks

- String of often unpleasant surprises – research from Beating Weeds (LCR core) essential
- Success could be high profile
- Stakeholders/LCR need to exploit PR if/when impacts happen
- Range of sectors (conservation, lifestyle, urban gardens, dog allergies)
- Best assessed weed bc programme yet given baseline ecological research
- Nobody likes this plant – perhaps other than Gandalf and the hobbits….

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