

*HETEROPSYLLA* SP. - A BIOLOGICAL CONTROL AGENT FOR GIANT SENSITIVE PLANT (*MIMOSA INVISA* MART.) IN NORTH-EASTERN QUEENSLAND

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*Abstract.* *Mimosa invisa* Mart., commonly known as giant sensitive plant, is a native of tropical South America that has become a widespread weed in many Pacific and south-east Asian countries, including north-east Queensland. Listed as one of the world's worst weeds by Holm et al, (1) it is a fast-growing, scrambling, annual legume with recurved spines. It is invasive, competitive, unpalatable to stock and a prolific seeder, spreading rapidly in most situations, eg. along roadsides and rivers and in crops and pasture.

Insects potentially suitable for biological control were sought in Brazil by the Department of Lands; two species were introduced in 1985. Both were approved for release after quarantine testing at the Alan Fletcher Research Station, and were forwarded to the Tropical Weeds Research Centre for mass-rearing and field release. A psyllid, *Heteropsylla* sp, has been the most effective after two years of field release.

*Heteropsylla* is a small, sucking bug about 2.5 mm long and pale green. Tiny yellow oval eggs, visible to the naked eye are laid on the upper leaf surfaces. There are five nymphal instars and a development period of about 28 days (C. A. Garcia, unpublished report, Queensland Department of Lands). This short life cycle, combined with high egg numbers, makes it possible for the population to increase very rapidly. High numbers cause plant distortion, thickening and brittleness of the stem particularly at the growing points.

During the 1988/89 summer, a dramatic reduction in the vigour of giant sensitive plant clumps was seen and seeding was reduced by over 88%. New seedling establishment was also reduced and, in some instances, advanced plants were killed.

A decision was made not to reinfest original areas of spread this summer to allow for natural increases of the insect population after winter. The insect has survived over winter in the field and is currently increasing in numbers in many areas, despite the ongoing chemical control programme which involved late season spraying of giant sensitive plant. Their total impact for the summer of 1989/90 is yet to be assessed.

The impact of possible predators and parasites is, as yet, unknown. Syrphid flies, predators as both larvae and adults, have been seen in association with the psyllid. Predatory beetles and parasitic wasps of closely related leucaena psyllid (*H. cubana*) occur in some Pacific countries and will probably severely affect the giant sensitive plant psyllid if introduced to Australia.

Monitoring of the insect populations will continue and it is hoped that the initial spread and obvious effect on giant sensitive plant can be maintained.

#### REFERENCES

1. Holm, L.G., Plucknett, D.L., Pancho, J.V. and Herberger, J.P. 1977. The World's Worst Weeds - Distribution and Biology (University Press of Hawaii, Honolulu.) 609 pp.