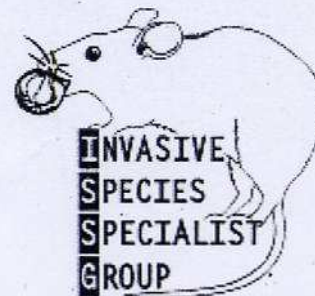


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Little Fire Ant in Tahiti and Miconia in New Caledonia: French connection to tackle “new” invasions in South Pacific Islands

A collaboration between French Polynesia and New Caledonia, two French overseas territories in the Pacific Ocean, has started in 2005 on the management of two highly invasive species: the tree *Miconia calvescens* (Melastomataceae), considered one of the most aggressive plant invaders in tropical islands; and the little fire ant, *Wasmannia auropunctata*, one of the most noxious ant species in tropical countries and islands, “newly” found in New Caledonia and Tahiti, respectively. Both species are native to Central and South America and belong to the 100 world’s worst invasive alien species according to IUCN.

When *W. auropunctata*, also called “fourmi électrique” in New Caledonia where it has been an agricultural and environmental nuisance since the 1960’s (Jourdan *et al.* 2002), was identified by Rudolph Putoa, entomologist of the Department of Agriculture of French Polynesia, in October 2004, the ant had already invaded about 70 ha in a housing development of Mahina district and in the neighbouring gulches (located in the northern part of Tahiti). According to the inhabitants interviewed in February 2005 during the field-survey of the second author (invited by the Government of French Polynesia), they remember having noticed (and being painfully stung) by this tiny orange slow-moving ant as early as 1995, i.e. ten years before its “discovery”. But none of them informed authorities because of a lack of an identified early warning overseeing structure. The introduction may have taken place earlier, in the early 1990’s or even in the 1980’s. Tahitian ant specimens examined in the insect collection of the Bishop Museum in Honolulu in 2004 by Paul Krushelnycky of the University of California at Berkeley and labelled as *Tetramorium simillimum* were identified by him as *Wasmannia auropunctata*! These previously misidentified ants were collected in 1977 in the district of Punaauia (western part of Tahiti). Thus, the noxious ant may have remained unnoticed for 20-30 years in Tahiti. Preliminary field-surveys we have conducted in February 2005, based on phone calls and meetings with local informants, revealed that the ant is also present in the neighbouring district of Papenoo (7 km distant from Mahina). The most probable original source of contamination may be New Caledonia as there are good shipping and airline connections between these two French overseas territories, even if Wallis and Futuna would also be a potential sources of propagules (in the context of an ancient Tahiti contamination hypothesis). This issue will be resolved through genetic markers use into Tahitian populations. The pathway of entrance remains unknown: the ant colony (queens and workers) was probably introduced with potted ornamental plants.

The small tree *Miconia calvescens* was introduced in the 1970’s by Lucien Lavoix, a former active horticulturist, in his 800 ha private property and botanical garden located in the heights of Nouméa between 250-550m elevation below

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Invasive Aquatic Plants book (South Africa)

The Agricultural Research Council plant Protection Research Institute announces the publication of a new book, "Invasive Aquatic Plants", by Lesley Henderson and Carina J. Cilliers.

It is a guide for the identification of 21 species of invasive aquatic and wetland plants in South Africa. It features biological control of the five worst aquatic weeds: water hyacinth, red water fern, salvinia, water lettuce and parrot's feather. The book is printed in A5 format and is illustrated, with 100 colour photos, 22 line drawings and 24 distribution maps. The pages are colour coded for easy identification, dividing the aquatic species according to their growth forms.

This publication has been sponsored by the Water Research Commission and the Working for Water Programme of the Department of Water Affairs and Forestry. It can be ordered from the Agricultural Research Council webpage:

<http://www.arc-aii.agric.za/v-arcroot/institutes/ppri/main/publications/books/aquatic.htm>

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inherent difficulty of tackling emerging/potential/nascent invasive species without a good knowledge of their identity, and without a good prevention/early warning system. To prevent repetition of such cases, public information/education and involvement of local people seems crucial for reporting of new pests and for avoiding the illegal introduction of potentially noxious species. Also needed is effective legislation to dissuade the – culturally undisciplined! – French Pacific islanders from bringing home exotic species.

References

Jourdan, H., Bonnet de Larbogne, L. & Chazeau, J. 2002. The recent introduction of the tramp ant *Wasmannia auropunctata* (Roger) into Vanuatu archipelago and overview of the inferred consequences. *Sociobiology* 40 (3): 483-509.

Meyer, J.-Y. & Florence, J. 1996. Tahiti's native flora endangered by the invasion of *Miconia calvescens* DC. (Melastomataceae). *Journal of Biogeography* 23(6): 775-783.

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the Mount Malaoui. The origin was most likely Tahiti where *Miconia* was introduced in 1937 in a botanical garden and where it covers now two-thirds of the island, more than 70 000 ha, and threatens the native flora (Meyer & Florence, 1996). Ten years ago, Lucien's son Raymond Lavoix who now owns the garden believed that there were only a few reproductive trees and a hundred of plants (pers. comm. to the first author in 1994). During a field-survey in March 2005 of the first author (invited by the Government of New Caledonia) to assess the *Miconia* situation, we found dense stands of reproductive trees (up to 30 trees/100 m²) in a 2 ha invaded core area, carpets of seedlings and isolated trees mainly in treefall gaps, forest edges and wet gulches of a nearly pristine lowland tropical rainforest. By the end of 2004, more than 3,000 plants (including 1,000 trees) were destroyed (by individual herbicide treatment) by Rémy Amice and Jean Qapitro of the Plant Protection Branch (SIVAP) of the Government of New Caledonia within a 120 ha area.

These two cases illustrate (1) the increasing inter-island transport of species (the so-called "globalization



phenomenon") in the Pacific Ocean during recent decades; (2) the lack of strong and coordinated border control to detect and stop the introduction of invasive alien species in both French overseas territories; (3) the existence of a lag phase period between the date of introduction and the first reports of invasion that characterize most invasion events. Invasive alien species can remain unnoticed for decades before their expansion is noticed; (4) finally, they illustrate the

