PHLOEOSINUS SERRATUS (COLEOPTERA: SCOLYTIDAE) 
ATTACKING CUPRESSUS LUSITANICA IN JAMAICA: 
A NEW HOST RECORD

ERIC GARRAWAY
Department of Zoology, University of the West Indies, 
Mona, Kingston 7, Jamaica, W.I.

Phloeosinus serratus (LeConte) is the only member of the genus reported from Jamaica. It was first recorded as an endemic species, P. neotropicus Schedl (Bright 1972) but later this name was placed in synonymy under P. serratus (Wood 1982). P. serratus occurs from Oregon and Washington in northeastern USA to Tlaxcala in Mexico (S.L. Wood, personal communication). Several workers (Bright 1972, Garraway & Freeman 1981, Garraway 1982, C. Subadan unpublished) recorded this beetle from weakened or recently cut trees of Juniperus barbadensis L. (Taxodioidae) in Jamaica. In 1990 I found a small colony of P. serratus in recently cut logs of Cupressus lusitanica Miller (Cupressineae), at Whitfield Hall.

Whitfield Hall coffee plantation, on the southern slopes of the Blue Mountains (parish of St. Thomas) is at an elevation of approximately 1400 m. C. lusitanica is common at this site but J. barbadensis is not. P. serratus was recorded attacking J. barbadensis at this locality in 1978 and 1980 but attacks on C. lusitanica were not observed (Garraway unpublished).

At a previous study site at Clydesdale (parish of St. Andrew) on the western slopes of the Blue Mountains at the same altitude as Whitfield Hall, C. lusitanica was at least twenty times more abundant than J. barbadensis yet no attacks by P. serratus on the former were noted (Garraway 1982). In a laboratory experiment (Garraway 1982) beetles emerging from J. barbadensis were exposed to J. barbadensis or C. lusitanica in separate rearing cages. Galleries were readily initiated in the former but not in the latter.

Traces of P. serratus in two C. lusitanica Holts 30 cm long and 20 cm in diameter, collected at Whitfield Hall in 1990 were analyzed using the methods of Garraway & Freeman (1981). The mean egg gallery length was 3.5 ± 0.2 cm (± SE) and there were 78.5 ± 0.8 eggs per gallery (N = 47); the developmental mortality was 90.2% (3944 eggs) and mortality caused by the larval parasitoids Notospathius sp. (Braconidae) and Rhizophilicus sp. (Pteromalidae) was 1.3%. The mean of 78.5 eggs per gallery was significantly greater than that of 58.4 ± 2.7 (N = 1049, P <0.001) recorded for the population attacking J. barbadensis in the Clydesdale area (Garraway & Freeman 1981). The
developmental mortality in *C. lusitanica* was the same as that in *J. barbadensis* (90%); however, the mortality of 1.3% due to parasitoids was much lower than the 9.6% noted in *J. barbadensis*.

Members of the genus *Phloeosinus* in Europe and North America have been recorded almost exclusively from the Taxodioidae and the Cupressineae; some species of beetles attack one or more members of a particular genus while others attack several species from both families (Wood 1982). *P. serratus* has been recorded only from *Juniperus* spp., *J. deppeana* Stendel, *J. monosperma* (Engelemann), *J. occidentalis* (Hooker), *J. osterosperma* (Torrey), *J. scopulorum* Saragent, and *J. barbadensis* (Wood 1982, Garraway & Freeman 1981), but never before from any species of *Cupressus*. This beetle has never been recorded from *C. lusitanica* in Jamaica in spite of the abundance of this host relative to *J. barbadensis*. This attack on *C. lusitanica* was characterized by high fecundity and a developmental mortality similar to that in its primary food plant.

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SURFING ANTS

**KLAUS JAFFE**

Departamento de Biología de Organismos
Universidad Simon Bolívar
Apartado 89000, Caracas 1080, Venezuela

Ants are frequently associated with aquatic habitats. *Acromyrmex heyeri*, for example, inhabits swamps in Parana, Brasil (Goncalves 1961), and *Acromyrmex diasi* is adapted to live in swamps where it builds elevated corridors and bridges with grasses to walk and live over the water (Goncalves 1982). *Solenopsis geminata* and other ant species form knotted balls of workers clinging to a piece of floating wood when their nests are flooded during the rainy season in the Brazilian Pantanal and the Colombian and Venezuelan Llanos (personal observation). Similarly, nests of *Lasius* and *Myrmica* species build plant covered nests of sand in tidal meadows of Denmark (Nielsen 1986). Species of *Brachymyrmex* and *Forelius* are reported to build their nests in the sand in the intertidal areas of beaches in Mexico (Yensen et al 1980); and *Iridomyrmex purpureus* has been observed feeding on polychaete worms and other strand line invertebrates in Australia (Buckley 1980).

Here I report two observations of ant-water interactions in intertidal areas of sandy