

Relationship of predator to chironomids and rice pests in the rice ecosystem.

Because predators tend to capture them rather than the other insects, the beneficial effects of predators is reduced. In some fields, spiders have no effect on the pest population when the chironomid population is high.

Any field research on rice pests and predators that ignores chironomids is unrealistic and may give unreliable information on the development of integrated rice pest control. With Thai entomologists, Yasumatsu and Hashimoto are making an extensive survey of the chironomid fauna in the rice paddies of Thailand. ■

Occurrence of *Sogatodes oryzzicola* (Muir) in upland rice in Goias, Brasil

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During 1977–78 a preliminary survey of insect pests of upland rice in the experimental fields of the National Rice

and Beans Research Center in Goiania revealed diverse species of leafhoppers and planthoppers in the cultivar IAC47. The insect that occurred most frequently was *Sogatodes oryzzicola* (Fulgoroidea – Delphacidae) (see table). This insect, a vector of the virus disease hoja blanca, is an important rice pest in Latin American countries. It was first reported in Brazil at Resende, Rio de Janeiro, as *Sogatodes brasiliensis*. In 1965, R. G. Fennah considered it as a synonym of *S. oryzzicola*. The host species of the latter has, however, not been reported. Thus, this note is the first report of *S. oryzzicola* as a rice pest in Brazil. Compared with the various leafhoppers and planthoppers counted on the cultivar IAC47,

Percentage incidence of *Sogatodes oryzzicola* in a leafhopper and planthopper population established on the cultivar IAC47, Brazil, 1977–78.

Collection time (days after sowing)	<i>S. oryzzicola</i> (%)		
	Adults	Nymphs	Total
45	17	2	19
58	18	60	78
80	25	68	93
104	9	90	99
130	48	49	97

S. oryzzicola had a high population.

Hoja blanca disease has not yet been reported in Brazil, but because a vector exists, appropriate measures should be considered to prevent the introduction and spread of a potential cause of large crop losses. ■

Tetrastichus sp. (Hymenoptera: Eulophidae), a new parasitoid-predator of the brown planthopper

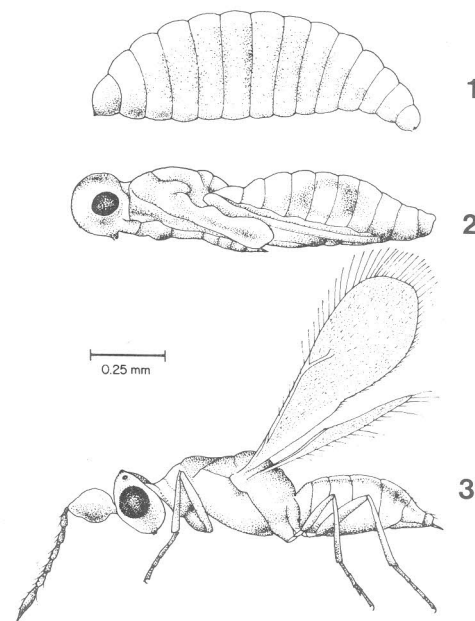
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During investigations on mymarid egg parasitoids, larvae of *Tetrastichus* sp. were often found preying on eggs of brown and whitebacked planthoppers at IRRI. The hymenopteran had never been known to attack the eggs of rice hoppers, but further investigations revealed its remarkable parasitic and predatory habits.

Adults are about 1.2 mm long, yellow with brown spots, and have 4-segmented tarsi and greatly enlarged antennal scapes (see figure). They parasitize brown planthopper eggs inside which the first-instar larva develops by feeding on the egg contents. Parasitized host eggs are indistinguishable from those parasitized by mymarids – both turn yellow. Unlike mymarids, which complete their entire life cycle in one host egg, *Tetrastichus* larvae that have consumed the host egg contents emerge and behave like predators by feeding on several additional host eggs before pupating in the leaf sheath tissue. Young larvae are colorless with a yellow-pigmented alimentary canal and sharp mandibles. As they feed, their gut turns reddish and increases greatly in size. The pupa is naked, white with

bright red eyes and ocelli, and has a yellow mass in the middle of the abdomen (see figure). Adults emerge after a pupal period of 4 days.

The field population of this parasitoid-predator does not appear high compared with that of the mymarid and trichogrammatid parasitoids. The larvae may still contribute to significant pest mortality because each normally destroys several host eggs before pupating. ■



Tetrastichus sp.: 1) full-grown larva, 2) pupa, 3) adult (female).