
**A Global Serious Pest of Chestnut Trees,
Dryocosmus kuriphilus:
Yesterday, Today and Tomorrow**



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NARO

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To the memory of Dr. Nobuhiko Cho



Top left: Italian *Dryocosmus kuriphilus*, center: Galls formed on a European chestnut shoot in Italy, right: Japanese *D. kuriphilus*.

Middle left: Italian chestnut orchard, right: Japanese chestnut orchard.

Upper left: Italian chestnut orchard just invaded by *D. kuriphilus* in 2008. Almost all the shoots are free from *D. kuriphilus*, but one shoot has galls, as indicated by the arrow.



Bottom left: European chestnut trees damaged severely by *D. kuriphilus* 2-3 years after its invasion in Italy.

(photos: S. Moriya and G. Bosio)



Mated *Torymus sinensis* are kept in a glass tube (lower left) and then released in the field (upper and middle left). Upper right: releasing *T. sinensis* in Italy in 2008, lower right: releasing *T. sinensis* in Japan in 1985. See the text in Quacchia *et al.*, pp. 14-17.



Left: *Torymus sinensis*, showing long ovipositor.

Right: *T. beneficus*, a native parasitoid in Japan, closely related to *T. sinensis*.

(photos: S. Moriya)

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