



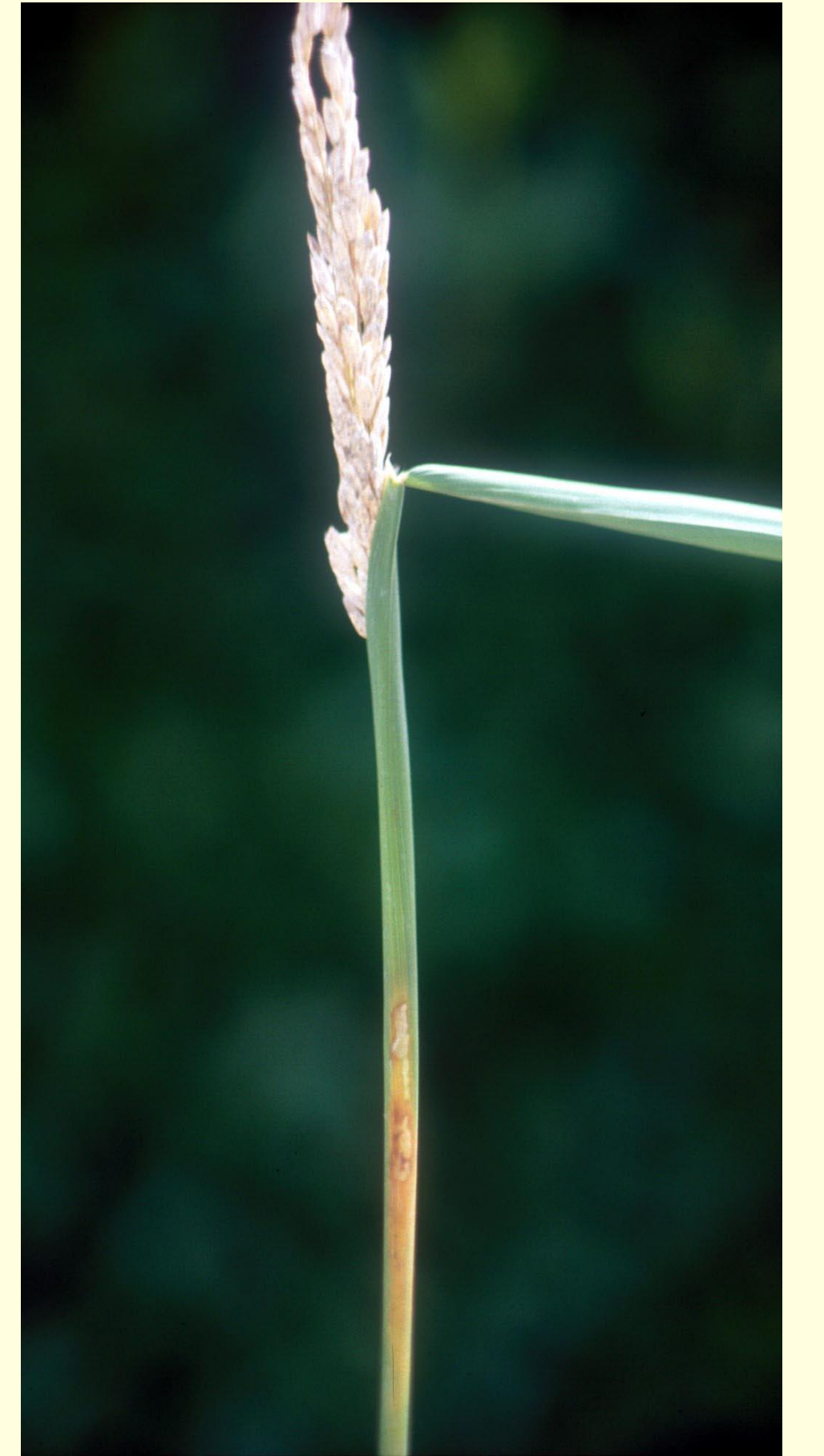
OSTRINIA NUBILALIS (HÜBNER) STEM BORER OF RICE IN ITALY

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The presence of discoloured panicles just after flowering was sporadic without causing yield loss in Italian rice-fields in the last thirty years, whereas it has increased in the last two-three years, particularly in the 2003 summer. Therefore a survey starts in the Italian rice cultivated area in order to improve our knowledge on this phenomenon. Affected plants bear white and dried panicles with unfilled spikelets and their panicles come out easily, if gently pulled out from the sheath of the flag leaf, showing the brownish, bored and rotting stem: this phenomenon is due to insect larvae which, feeding on culm tissues, interfere with the translocation of water and nutrients. This symptom is called "white head" and is the typical one resulting from the attack of stem borers after panicle initiation.



The only stem borer found during our survey is the European corn borer, *Ostrinia nubilalis* Hb. (Lepidoptera: Crambidae). This insect was present in the districts of Pavia, Milan, Vercelli and Ferrara and it was mostly noticed where plants were more vigorous in rice-fields that had received high rates of nitrogen fertilisers. It infested both old and new varieties, such as Titanio, Torio, Rubino, Baldo, Volano, Ariete, Cripto, Loto, Rodeo, etc., and, in great number, also the vegetation on field borders. Our preliminary observations are here referred, but they have to be confirmed and integrated pursuing this research. In the summer 2003, adults of both the sexes were first noticed in rice-field in mid-Jun, but a far greater number was observed at late July-early August.



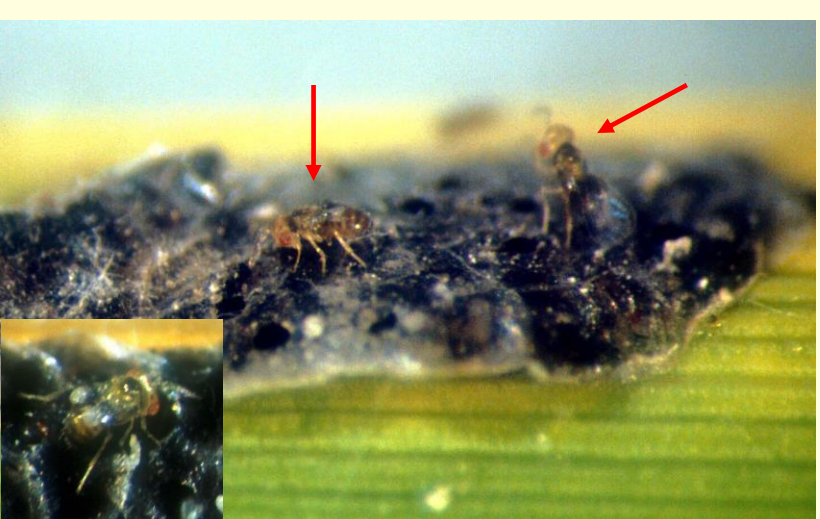
Eggs overlapped like fish scales in two-three regular and parallel rows and were laid preferably on the underside of the leaf blade of the first and second internode below the flag leaf.



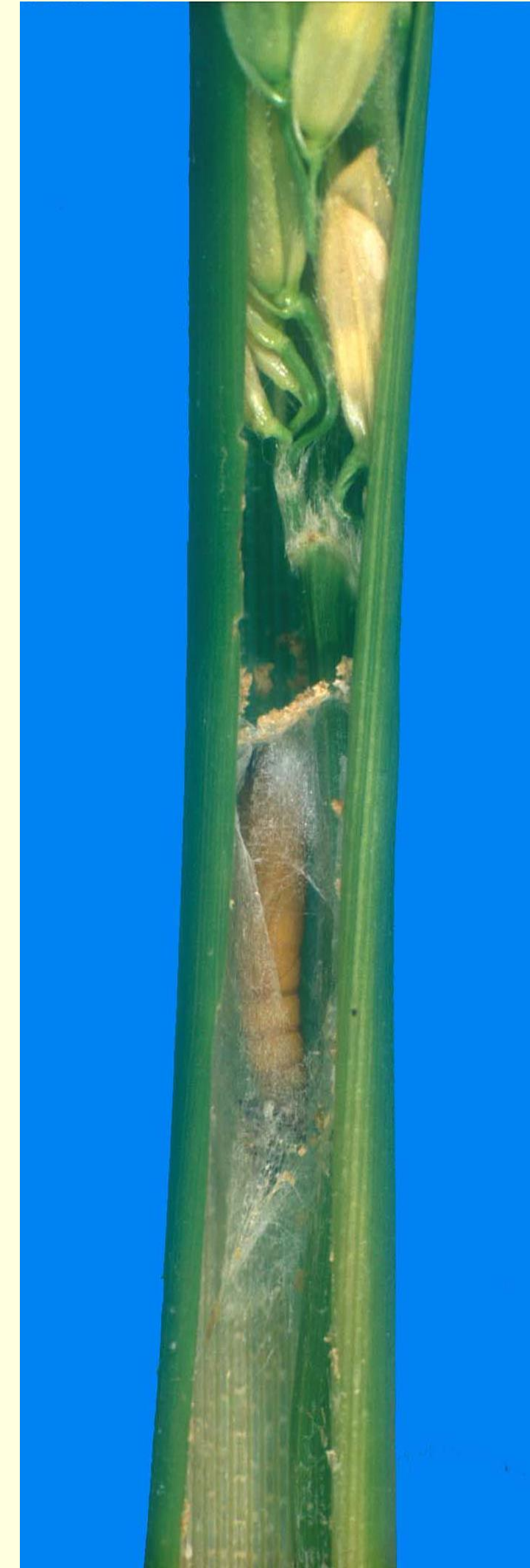
The day before hatching eggs appear to have a black centre corresponding to the head capsule of the developing larva.



Very seldom more than one larva per culm was found.



Egg masses were often parasitised by tiny wasps of the genus *Trichogramma* (Hymenoptera: Trichogrammatidae).



The pupa has always been found in the sheath of the flag leaf, few centimetres below the panicle, which sometimes was chewed by the larva. The crysalid, with the exuvia still on its caudal end, was almost always protected by a very light silken web woven by the caterpillar before pupation. The pupa position in the flag leaf sheath and the fact that its head was put always towards the plant apex suggest that moths should exit going up and getting the same natural opening through which the panicle emerges.

In some cases the panicle spikelets were not empty but partially filled because the stem had been bored after the grain formation was started.



The larval feeding on the leaf sheath inside surface made the sheath itself turn yellow-brownish, often in the areas corresponding to the hole and to the chewed parts of the culm, or of the panicle when it was gnawed before rice heading.



Each stem showed a only hole, always on the upper internodes. The hole in the culm was more frequently found between nodes, but sometimes larva bored just the node.



The European corn borer is polyphagous but it is the first time it is reported on rice in Italy, whereas in the U.S.A. the first severe infestation in rice occurred in 2003. Probably in the Italian rice growing areas, *O. nubilalis* migrated, not at damaging levels, from the less attractive early maturing corn to the more succulent rice plants owing to the unusual summer high temperatures, which in 2003 were also accompanied by extraordinarily dry weather.