# A new species of Trichogramma (Hymenoptera: Trichogrammatidae) from Malawi, parasitizing eggs of Chilo diffusilineus (de Joannis)

by

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ABSTRACT. — A new species of *Trichogramma* belonging to the minutum group viz *Trichogramma mwanzai*, is described from Malawi (Central Africa). This new species was found to parasitize up to 7% of the eggs of *Chilo diffusilineus* (de Joannis) present in the rice fields of southern and central Malawi.

## INTRODUCTION

During an inventory of rice pests in Malawi an undescribed *Trichogramma* species was reared from eggs of *Chilo diffusilineus* (de Joannis) (Lepidoptera: Pyralidae; Crambinae). This new species belongs to the minutum group (cf. Nagarkatti & Nagaraja, 1977). The terminology used in describing the genitalia follows Nagarkatti & Nagaraja, 1971. The new species is named after dr. N. P. Mwanza, formerly principal at Chancellor College (University of Malawi):

*Trichogramma mwanzai* sp.n.

Adults small, 0.59-0.68 mm long; total width across the head 0.20-0.22 mm.

Male: reared from eggs of *C. diffusilineus* at 25° C and 70% R.H. yellowish-brown but head, pronotum, mesoscutum and hind coxae somewhat darker brown. Longest of marginal setae of forewing about one-fourth width of wing (fig. 1). Antennal flagellum unsegmented with short hairs, the longest of which is of equal length as the maximum width of the antenna (fig. 2).

Genitalia (fig. 3-6): The dorsal expansion of gonobase is more or less triangular with tapering apex which extends to level of chelate structures (fig. 3). Aedeagus slightly longer than apodemes (fig. 4), both together clearly shorter than hind tibia. Large chelate structures (fig. 5) located far below level of gonoforceps. Small but conspicuous protuberances below the base of chelate structures. Median ventral projection (fig. 6) very distinct and long with two chitinous ridges extending anteriorly to about one-third of entire length of genitalia.

Female: Pigmentation and wing trichation as in male. Ovipositor somewhat longer than hind tibia (fig. 7).

Distribution. This species was reared from eggs of *C. diffusilineus* collected in the rice fields in the Lake Chilwa area and near Salima between 1971 and 1975.

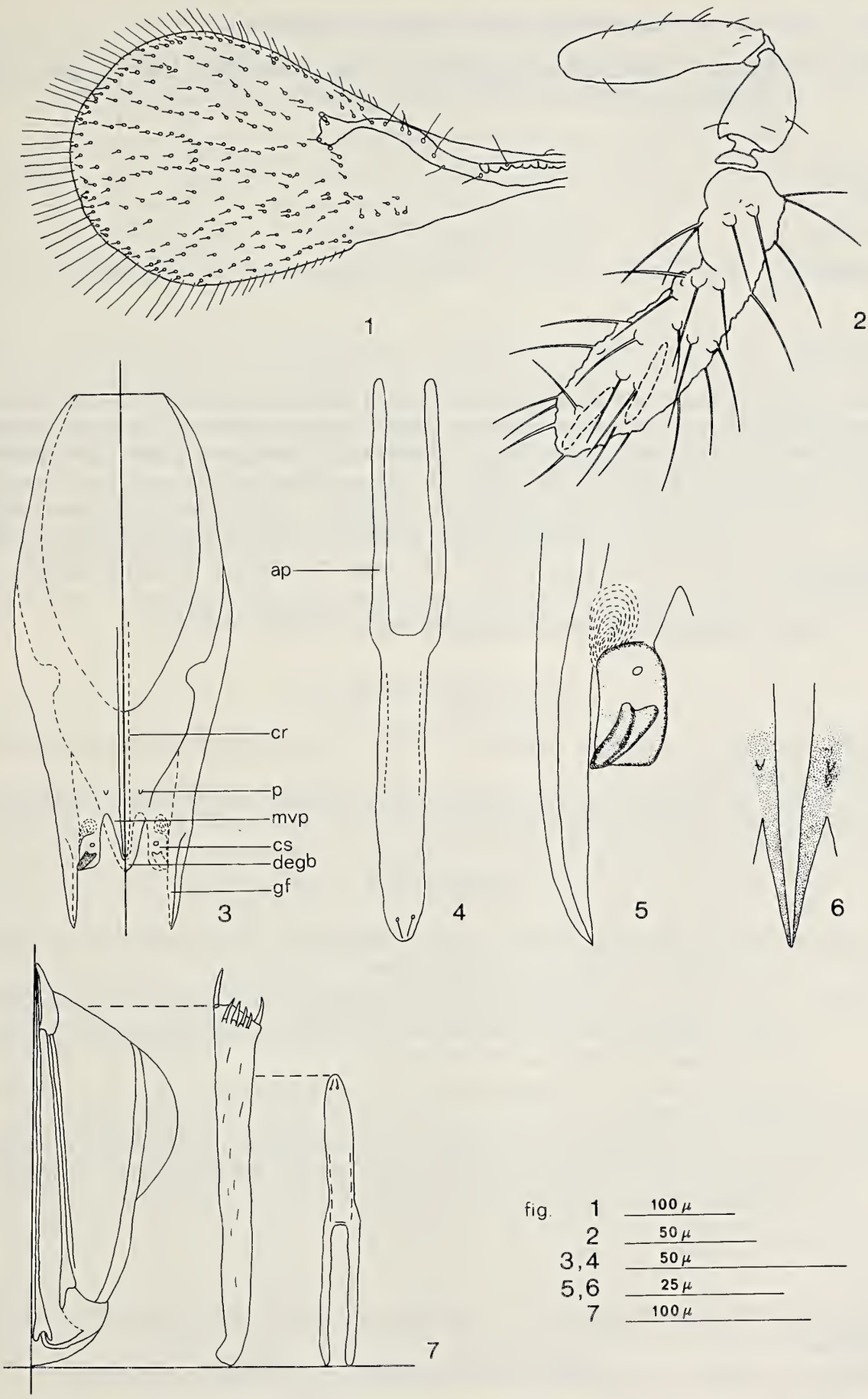
Holotype. Male from Likangala rice scheme, Lake Chilwa, Malawi ex egg of *C. diffusilineus* on rice, March 1974, on a slide, at the Institute of Taxonomic Zoology (Zoölogisch Museum), Entomology Department, University of Amsterdam.

Seven slides each with 1-9 paratypes and females. Paratypes in Amsterdam, the Commonwealth Institute of Biological Control, Bangalore, India, and the Instituto di Entomologia Agraria "F. Silvestri" Portici, Italy.

Remarks. This species resembles *T. brevicapillum* Pinto, Platner and Oatman, 1978, because of its short antennal hairs but is completely different as to other characters.

## PARASITISM

During the period of research *T. mwanzai* was only found as a parasitoid of eggs of *C. diffusilineus*. It did not parasitize the egg of diopsids, sciomyzids, *Chilo partellus* (Swinhoe), *Thopeutis* sp., nor eggs of various other moths, beetles, chrysopids, bugs and leafhoppers occurring in the area of investigation.




Figs. 1-7. *Trichogramma mwanzai* sp. n. 1, forewing. 2, antenna of male. 3, male genitalia; cs-chelate structure; cr-chitinous ridge; degb-dorsal expansion of gonobase; gf-gonoforceps; mvp-median ventral projection; p-protuberance. 4, aedeagus, ap-apodeme. 5, enlarged view of chelate structure. 6, enlarged view of median ventral projection. 7, relative lengths of aedeagus, hind tibia and ovipositor.

Table 1. Parasitism of 73 full egg clutches (9213 eggs) of *C. diffusilineus*.

| Parasitoid | No. of clutches parasitized | No. of eggs parasitized | Parasitized eggs (in %) | Parasitoids hatched ♂ | ♀ | ?* | % ♀♀ | oviposition rate |
|---|---|---|---|---|---|---|---|---|
| Telenomus spec. | 29 | 2488 | 27.0 | 1196 | 401 | app. 750 | 74.9 | 1.00 |
| T. mwanzai | 8 | 668 | 7.3 | 178 | 49 | " 310 | 78.4 | 1.00 |
| T. pinneyi | 1 | 3 | 0.03 | 2 | 1 | | 66.7 | 1.00 |

* not sexed

The eggs of *C. diffusilineus* are black and flat. They are laid in clusters with an average of 131 eggs. In total 83 clusters were found, 10 of which had already hatched. Three egg parasitoids were found: a *Telenomus* species (Hym.: Scelionidae), *Trichogramma pinneyi* Schulten & Feijen and *T. mwanzai* (Table 1). The *Telenomus* species was originally identified as *T. ullyetti* Nixon (cf Feijen & Schulten 1981). However, it possibly is a related but as yet undescribed species. *Telenomus* proved to be the main egg parasitoid of *C. diffusilineus*, parasitizing 27.0% of its eggs. *T. mwanzai* came second with 7.3%, while *T. pinneyi* only parasitized eggs of *C. diffusilineus* on one occasion (0.03%). The percentage of females in *T. mwanzai* was 78.4% (n=227) and the oviposition rate was one egg per host egg.

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