Notes brèves

A RE-EXAMINATION OF *NEOAPLECTANA RARA* DOUCET, 1986 (STEINERNEMATIDAE : RHABDITIDA)

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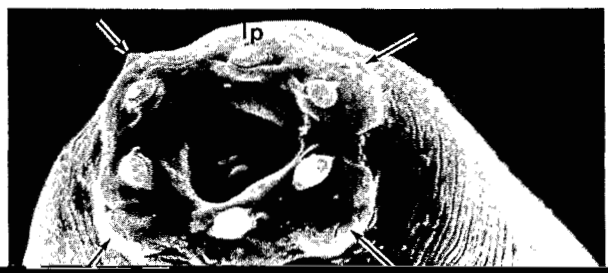
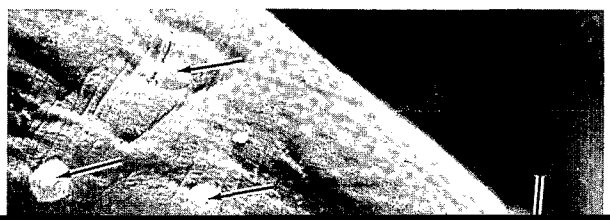
In 1986, Doucet published a description of *Neoaplectana rara,* originally found parasitizing *Heliothis* larvae (Lepidoptera : Noctuidae) in Córdoba, Argentina. Doucet commented that the species was distinguished from other members of the genus by the absence of cephalic papillae and the possession of only nineteen genital papillae in the male. This was very surprising since all previously examined members of the genus *Neoaplectana* are known to possess four cephalic papil-



GENITAL PAPILLAE

Both light microscope and scanning electron microscope studies (Fig. 2 *b*) demonstrated the presence of two rows of five precloacal genital papillae starting just anterior to the cloacal opening and running ventrolaterally anteriorly up the body. In addition, there were two pairs of papillae at the level of the cloaca, one pair adjacent to the cloaca, and one pair lateral and three pairs of papillae on the tail tip (Fig. 2 *a*, 2 *b*). Together with the single, ventral adanal papilla, it provides a total of 21 genital papillae.



genus *Neoaplectana*. A total of 21 genital papillae were observed on the tail of the male. This is two more than was reported in the original description of Doucet (1986) but is still two less than what is normally found in members of this genus. This deviation from the norm in male genital papillae is interesting since with *N. rara* the same pair of papillae were always « missing », namely a pair that would normally occur in the region posterior to the cloaca. It should be noted that some variation also occurs in relation to the single preanal papilla. This papilla, which is normally single in members of the genus *Neoaplectana*, frequently is paired in *N. rara*. This pairing can consist of two papillae lying side by side (Fig. 2 *b*) or one above the other. In rare cases, this papilla may occur as a ventral precloacal series of three or four papillae extending up the tail or be absent altogether. Considering the amount of variation present regarding this and occasionally other papillae, there is a possibility that the " missing " pair is present in a relatively small proportion of the population which

from all other described species except *carpocapsae*. From this latter species, *N. rara* can be distinguished by a smaller average distance from the head to the pharynx base (102 (89-120) µm in *N. rara vs* 120 (103-190) µm in *N. carpocapsae*) and differences in ratio D (distance from the head to the excretory pore divided by distance from head to base of pharynx) which range from 0.30-0.39 in *N. rara* and 0.23-0.28 in *N. carpocapsae* (in infective juveniles).

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IN VITRO RESPONSE OF *CRICONEMELLA XENOPLAX* TO NONFUMIGANT NEMATICIDES

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Greenhouse tests have been conducted with populations of *Criconemella xenoplax* (Raski) Luc & Raski, stressed monthly with low doses of nonfumigant nematicides (NFN) (Yamashita, Viglierchio & Kuo, 1988). All stressed populations appeared to respond differently to one or more NFN treatments than did a wild population with no previous history of NFN stressing.

An *in vitro* bioassay was used previously to characterize various populations of *Xiphinema index* (Yamashita & Viglierchio, 1987 *a*), *Meloidogyne incognita* and *Pratylenchus vulnus* (Yamashita & Viglierchio, 1986 *b*) and *Heterodera Schachtii* (Viglierchio & Brown, 1989) for demonstration of consonant behaviors. A 24-hour exposure of nematodes to relatively high concentrations of NFN served to express other characteristics not evident in results from field and greenhouse trials. Differences between stressed and wild populations were often consistent with those expressed under greenhouse testing.

Subsequent studies implicated at least two general modes of increased tolerance to NFN (Yamashita & Viglierchio, 1987 *b, c*). One involved apparent genetic characteristics unique to specific populations, suggesting true resistance. A second mode appeared in all populations following a pulse with low NFN doses, suggesting a transient phenomenon much like enzyme production (Yamashita & Viglierchio, 1978 *b*). The following studies seek additional characterization of wild and various NFN-stressed populations of *C. xenoplax* for comparison to other nematode species and an impro-

with no previous history of nematicide treatments) and four nematicide-stressed populations with over a year history of continuous monthly subnematicidal stressing. One population was stressed with carbofuran (C-S-P), a second with oxamyl (Ox-S-P), a third with phenamiphos (P-S-P) and a fourth with aldicarb (A-S-P). The stressing procedures were as previously described (Yamashita, Viglierchio & Kuo, 1988).

The techniques utilized for the *in vitro* testing were essentially those previously described (Yamashita & Viglierchio, 1986 *b*, 1987 *a*; Viglierchio & Brown, 1988). The concentrations of nematicides employed are indicated in Table 1.

Experience revealed a tendency for slight variations between different stock culture pots within a population. Therefore the experiment was repeated three times, each time with nematodes from a different stock culture pot of the population being evaluated. Because of slight variations of nematode numbers in the aliquant, data were evaluated following a logit transformation [ln (number of active plus 0.5 divided by the number of inactive plus 0.5)]. Mean column comparisons were conducted using a Duncan's multiple range test with an upper significance level of 5 %.

Results

The observed touch responses are summarized in Tab. 1. The stressed population controls were signifi-