

## Variability of some external characters in *Pratylenchus vulnus* Allen & Jensen, 1951 (Nematoda: Tylenchida)

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In a recent work, the existence of a considerable intra-specific variability in some morphometric characters of *P. vulnus* was established by the comparison of six isolates of different geographical origin (Doucet *et al.*, 1996). On the other hand, light microscopy did not show any differences in morphological characters among the isolates.

A similar evaluation was carried out with the same specimens using scanning electron microscopy (SEM). The results are given in this article. The origin of each isolate and the corresponding code are as follows: Pv RO-S (Spain, Barcelona, associated with *Rosa multiflora*), Pv AP-S (Spain, Gerona, associated with *Malus silvestris*), Pv AT-F (France, Antibes, associated with *Prunus armeniaca*), Pv U-UK (England, locality and host unknown), Pv WA-A (Argentina, Córdoba, associated with *Juglans regia*), and Pv WA-U (USA, Idaho, associated with *Juglans regia*).

The nematodes were removed from the slides where they had been mounted in glycerine and rinsed in liquid fixative (Netscher & Seinhorst, 1969) for 1 h. Then they were dehydrated in a graded series of alcohol solutions, critical point dried with CO<sub>2</sub>, and coated with gold. The specimens were examined with a Jeol SM-U3 microscope, at an accelerating voltage of 15 kV. The observations were made on cephalic region, lateral fields, and end of the tail region of female specimens (Fig. 1).

### Cephalic region

With the exception of the slightly flattened shape observed in specimens of isolate Pv RO-S, the speci-

mens from other populations had high rounded heads, in agreement with previous data (Corbett & Clark, 1983). Number of cephalic annules variable from two (Pv RO-S) to five (Pv WA-U); in the Pv WA-U population, the edges of annules have various folds and anastomoses; annule width also variable from narrow (Pv AP-S, Pv U-UK) to wide (Pv RO-S).

Although the combination of number of cephalic annules and shape of the cephalic region is taxonomically useful (with both optical and scanning electron microscopy), both characters are somewhat variable. Consequently, it is important to evaluate the number of annules in more than one individual so as to define precisely the number that characterizes the population studied (Baujard *et al.*, 1990).

### Lateral fields

Lateral fields marked by three bands that are prominent (Pv AP-S, Pv RO-S, Pv U-UK, Pv AT-F) or not prominent (Pv WA-U). Central band of the same width or slightly wider than lateral bands, which are areolated or not areolated; central band always flat, without the oblique striae previously reported in other populations (Corbett & Clark, 1983).

### Tail terminus

Tail terminus varying from conical pointed (Pv AP-S) to rounded (Pv WA-U). Although smooth tail ends were observed under optical microscopy, SEM observations showed crenate (Pv WA-A, Pv AP-S, Pv WA-U) or digitate (Pv WA-U) tail ends.

It has been said that it is always possible to recognize characteristic types of tails for each species of the genus *Pratylenchus* (Corbett & Clark, 1983), but the variability observed in this study confirms the fact that this character is too variable to be used for differentiating species (Tarte & Mai, 1976; Townshend *et al.*, 1978).

It has not been possible to associate particular states of the evaluated characters with some of the isolates studied. Each character was highly variable, and the limits of this variability have not yet been defined. Also, due to the relatively low number of specimens observed, it was impossible to determine any correlation between the different states of these three characters.

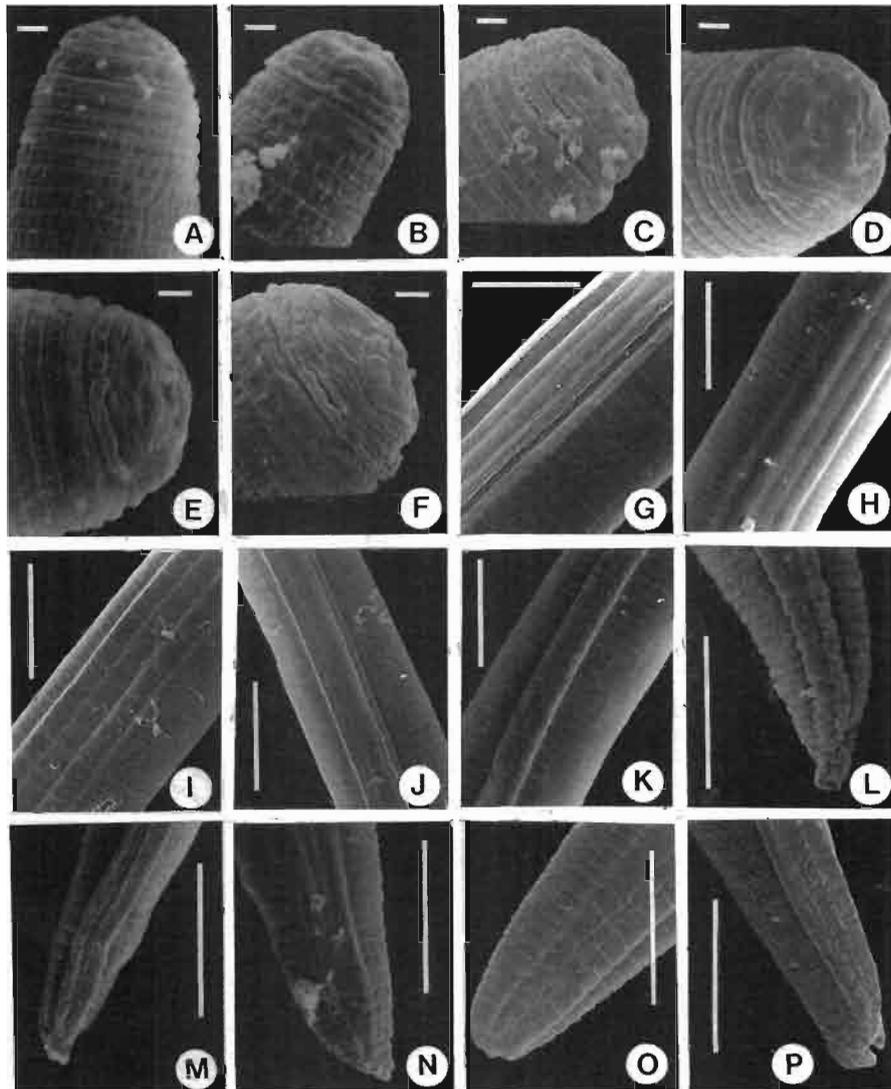
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**Fig. 1.** *Pratylenchus vulnus*, females. A-F: Anterior region; G-K: Lateral fields; L-P: Tail terminus (A,N: *Pv* AP-S; B-G-K: *Pv* AT-F; C,I: *Pv* RO-S; D,J: *Pv* U-UK; E,H,L,M: *Pv* WA-A; F,O,P: *Pv* WA-U; scale bars = A-F = 1  $\mu$ m; G-P = 10  $\mu$ m).

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