PARASITISM OF BACTERIAL NODULES BY THE RENIFORM NEMATODE

The reniform or kidney-shaped nematode, *Rotylenchulus reniformis* Linford and Oliveira 1940, was originally described from cowpeas, *Vigna sinensis* Endl. in Hawaii[1]. In a second publication of the same year 65 species of plants were listed as hosts, among them 9 leguminous plants[2]. Since then it has been reported as occurring in many other crops, including *Phaseolus vulgaris* L.[3], and *Emelista tora* (L.) Britton and Rose[4,5]. Although these legumes regularly carry bacterial nodules on their roots no instance of the attachment and feeding on such nodules by this nematode appears to have been recorded. Such an observation is recorded here.

In a recent greenhouse experiment concerning a study of the susceptibility of six plant species to the attacks of an undescribed species of *Rotylenchulus*, obtained from pigeonpeas, *Cajanus indicus* Spreng., from the Isabela Substation, many of the bacterial nodules of the pigeonpea roots were observed attacked by females of the reniform nematode. Several of these fully grown females, covered by their gelatinous secretions containing eggs, and with adhering soil particles were seen (fig. 1,A). Five females, each covered by the mentioned gelatinous secretion, and a sixth one without such are shown. As may be seen, the size of the females on these nodules as well as their gelatinous cover is identical with those attached directly to the roots.

In figure 1, B, two females from which the gelatinous cover and adherent soil particles had been removed may be seen enlarged attached to a bacterial

[1] Linford, M. B., and Oliveira, J. M., *Rotylenchulus reniformis* nov. gen., n. sp., a nematode parasite of roots, *Proc. Helminth. Soc. Wash.* **7** (1) 35–42, 1940.

[2] Linford, M. B., and Yap, F., Some host plants of the reniform nematode in Hawaii, *Proc. Helminth. Soc. Wash.* **7** (1) 42–4, 1940.

[3] Peacock, F. C., The reniform nematode in the Gold coast, *Nematol.* **1** (4) 305–10, 1956.

[4] Steiner, G., Plant nematodes the grower should know, *Soil Soc. of Fla.* **4** 72–117, 1942.

[5] Steiner G., Some little-known nematodes parasitic on roots, *Phytopath.* **37** (6) 441, 1947.

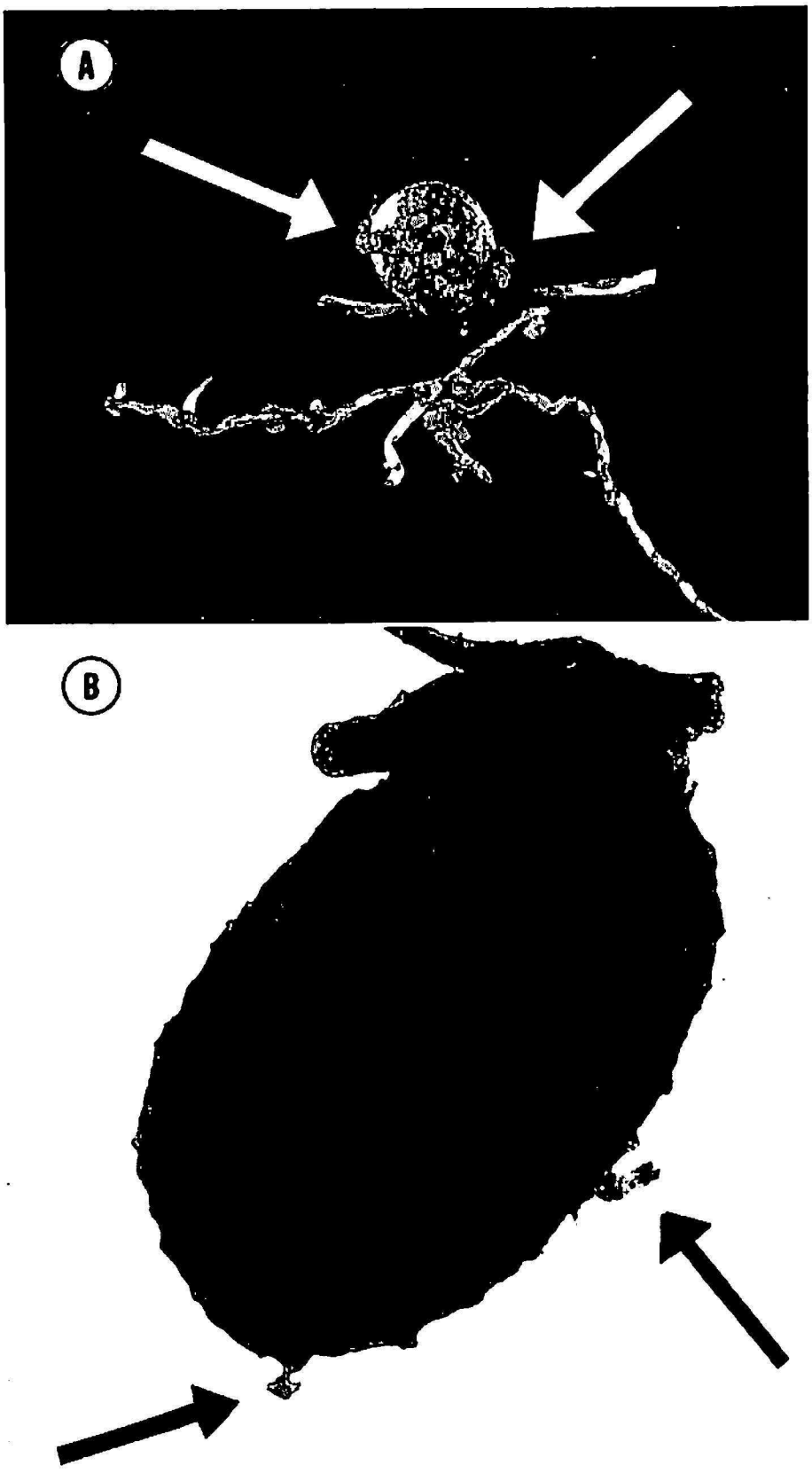

FIG. 1.—The reniform or kidney-shaped nematode, *Rotylenchulus* n. sp. A, Pieces of *Cajanus indicus* roots with specimens of *Rotylenchulus* sp., and bacterial nodules with females attached. Notice 5 females covered with gelatinous secretion with eggs and soil particles, and observe uncovered female. B, Close-up of a bacterial nodule of the same roots to which females are attached. The gelatinous secretions have been removed to expose the female nematodes. (Pictures taken at USDA laboratories in Beltsville, Md., through courtesy of the Nematology Section).

nodule. One may notice the small size of the nematode compared to that of the nodule.

How the nematodes affect the bacterial nodules and whether they feed on the bacteria or on the cortical tissue around them has not been investigated. But it is evident that they are feeding on the nodules since development is achieved and eggs are produced as by those parasitizing the roots directly.

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