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# A NEW SPECIES OF WHIPWORM FROM A SOUTH AMERICAN HYSTRICOMORPH RODENT

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*A new species of whipworm,* Trichuris robusti, *is described from the cecum and large intestine of the rodent,* Ctenomys robusti, *collected in northern Chile. The nematode shows close affinity to* T. bradleyi *and* T. chilensis, *both having been described from Chile but because of the possession of certain specific morphological characters, particularly the disposition of the proximal cloacal tube, could not be assigned to either of them. A key is presented to some of the* Trichuris *species reported from hystricomorph rodents in Chile and the biographical significance of speciation of chilean trichurids is discussed.*

Key words: *Trichuris robusti* n. sp. – trichurids – *Ctenomys robustus* – spicular tube – proximal and distal cloaca tube – hystricomorph rodents – speciation – biogeography

During routine helminthological investigation of hosts in La Huayca Tarapaca province, located in the foothills of the Andes mountains of northern Chile eleven specimens of *Trichuris,* including five male and six female worms, were collected from a single animal, *Ctenomys robustus.* The worms were fixed in 70% alcohol and later cleared in lactophenol and studied for morphological detail. Based upon the absence of a true spicular tube and the presence of the spicule in the distal portion of the cloaca, the specimens could be readily distinguished from most species of the genus. However, in regards to these specific characters, the *C. robustus* worms showed a close affinity to *T. bradleyi* (Babero et al., 1975) and *T. chiliensis* (Babero et al., 1976), both having been previously described from Chile. Because of certain specific morphological differences, the present worms cannot be assigned to either of the two preceding species. They are, therefore, herein described as new and range of measurements based primarily upon three male and three female specimens are given in millimeters unless otherwise stated.

*Trichuris robusti* n. sp.
(Figs 1-3)

## DESCRIPTION

*Male:* total length 20.10-26.65; esophageal region 10.26-14.70; posterior portion of body 9.44-14.20. Width esophageal region at tip 0.002-0.003; in mid-region 0.09-0.12; maximum width of posterior body 0.41-0.57. Cloaca long; divided into proximal and distal portions. Total length of proximal cloaca 1.65-2.60; maximum width 0.62. Total length of distal cloaca, 2.31; maximum width 0.01. Spicule lies in distal cloaca 2.30-3.90 in length; width at head 0.030 at mid-region and tip 0.01-0.03. Spicular sheath tube-like with numerous fine spines uniformly distributed throughout its length. Extension of sheath variable may extend 5.00 from posterior end of body around which it may coil. Ejaculatory duct 2.60 long unites with intestine and vas deferens. Length of vas deferens not clearly discerned. Testes with 39-44 lobations.

*Female:* total length 37.35-46.10; esophageal region 14.00-24.36; posterior portion of body 18.35-27.00. Width esophageal region at tip 0.030-0.041; at junction of intestine 0.028-0.035. Maximum width of posterior body 0.63-0.80; at vulva 0.27-0.36. Vulva usually at level of esophageal intestinal junction but may be slightly above or below it. Lips of vulva not prominent. Muscular vagina, 1.10-1.86 long; width 0.09-0.12. Ovary from posterior end 0.20-0.44. Measurements of ova based upon

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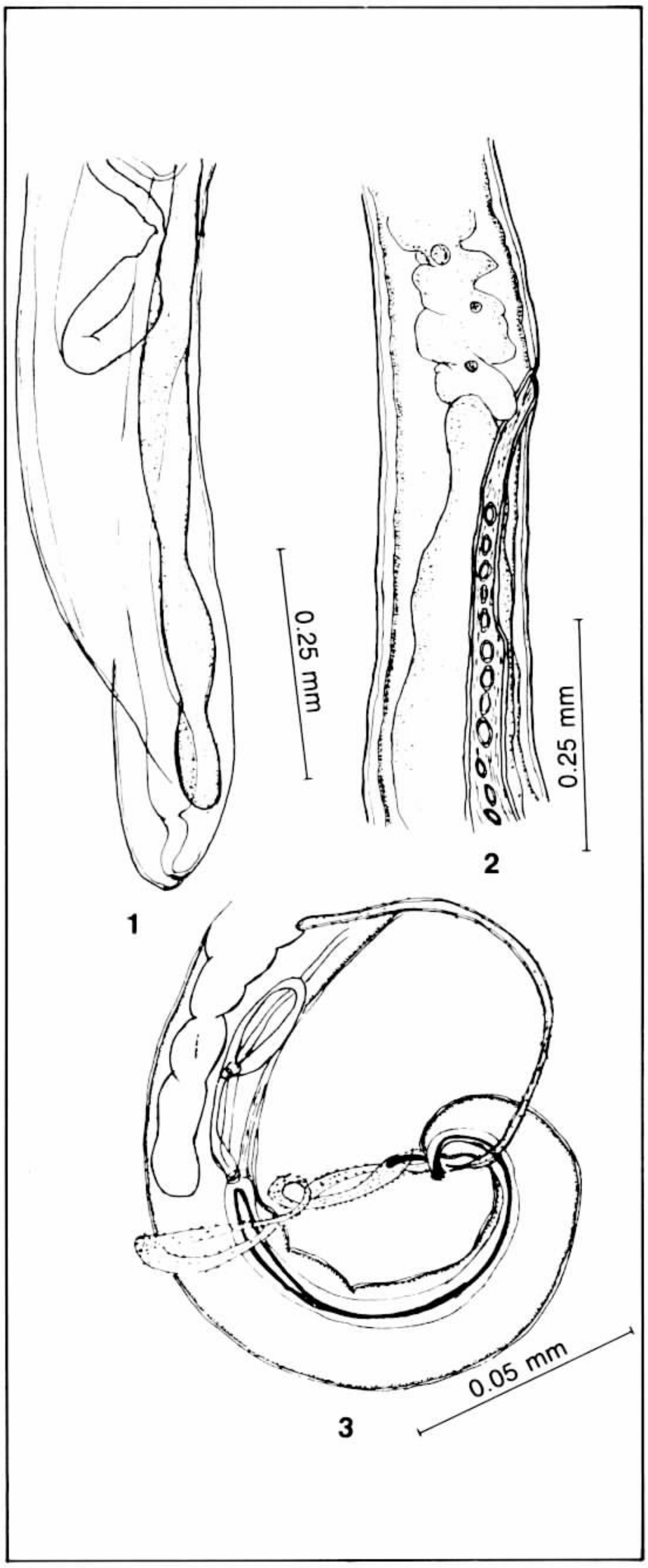


*Trichuris robusti* – Fig. 1: tail of female. Fig. 2: vaginal region of female. Fig. 3: tail of male.

10 mature eggs from seven worms 0.057-0.065 long by 0.029-0.036 wide. Rectum 0.31-0.50 long.

Location: cecum and large intestine.

Type locality: LaHauyca, Tarapaca Province, Chile.

Type specimens: USNM Helm. Coll. holotype male No. 79569.

Allotype female No. 79560, and paratypes No. 79570.

## DISCUSSION

From hystricomorph rodents in Chile three other species of *Trichuris* have been previously described: *T. bradleyi; T. chilensis* and *T. fulvi* Babero & Murua, 1986. A key for identifying the four species from this host group is presented.

### KEY TO SOME *TRICHURIS* SPP. REPORTED FROM HYSTRICOMORPH RODENTS IN CHILE

1. Spicule in distal portion of cloacal tube . . .2
   Spicule in true spicular tube . . . . . .*T. fulvi*
2. Proximal cloacal tube looped posteriorly in "8"-shaped form . . . . . *T. bradleyi*
   Proximal cloacal tube looped otherwise . . .3
3. Proximal cloacal tube looped posteriorly in "U"-shaped form . . . . . *T. chilensis*
   Proximal cloacal tube looped anteriorly in "e"-shaped form . . . . . *T. robusti*

That an evolutionary parallel exists between nematodes and their hosts, has been suggested by numerous investigators (Dougherty, 1937-1951; Osche, 1958; Chabaud, 1965; Inglis, 1965; cited by Quentin, 1971). In Chile, based upon the morphology of the cloacal tube and the location of the spicule, apparently two groups of *Trichuris* are present. In one group, a true spicular tube is obviously present whereas in the second group the spicule lies in the distal portion of the cloaca. It is probable that elimination of the spicular sac may represent a subgeneric or generic trend. From a biogeographical viewpoint, Chile tends to be separated from its other South America neighbors by the Andes Mountain range, which probably serves as a natural barrier for the isolation of certain host species and thus serves to promote parasitic speciation. It can be anticipated that further investigation of rodent hosts in Chile may reveal other species showing male reproductive characteristics typical of both morphological nematode groups.

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