

**NEW RECORD OF *Coomansus venezolanus* (Loof, 1964)
Jairajpuri & Khan, 1977 (Mononchida: Mononchidae) FOR VIETNAM
WITH FIRST DESCRIPTION OF A MALE**

Vu Thi Thanh Tam

Institute of Ecology and Biological Resources, VAST

ABSTRACT: *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977 from Cao Loc, Lang Son province is described and illustrated and represents a new record for Vietnam. The species is characterized by its body size, 1.9-2.1 mm long, a strongly sclerotized buccal cavity with apex of dorsal tooth situated at 26-30% of buccal cavity length from anterior end and vulva at 60-64% of body length from anterior end. A single male specimen is reported for the first time and is characterized by having fifteen spaced ventromedian precloacal supplements, a 74 μm long spicule; well developed lateral accessory pieces, 12.5 μm long and a weakly developed gubernaculum, 11.4 μm long. Measurements and description of the Vietnamese female specimens fit well the holotype, except for a slightly slenderer body ($a = 27-31$ vs 21) and shorter tail ($c = 20-28$ vs 18); they also agree with the specimen from Himachal Pradesh, India apart from a slightly shorter tail and a slightly stouter body.

Keywords: Mononchidae, *Coomansus*, new record, Lang Son, Vietnam.

Citation: Vu Thi Thanh Tam, 2016. New record of *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977 (Mononchida: Mononchidae) for Vietnam with first description of a male. Tap chi Sinh hoc, 38(3): 293-297. DOI: 10.15625/0866-7160/v38n3.8023.

*Corresponding author: vtam7572@yahoo.com

INTRODUCTION

Coomansus venezolanus (Loof, 1964) Jairajpuri & Khan, 1977 was originally described as *Mononchus venezolanus* (Mononchidae) by Loof (1964) [4] from only one female collected together with a juvenile from soil around roots of garlic at 1500-1800 m altitude, from El Jarillo, Venezuela. The main characters were: (i) a strong massive dorsal tooth with its tip located in the anterior third of the buccal cavity; and (ii) absence of 'ventral' ridge in the buccal cavity. Jairajpuri & Khan (1977) [2] proposed the new genus *Coomansus* Jairajpuri & Khan, 1977 (Mononchidae), based on the following main characters: (i) lip and labial papillae well developed; (ii) the absence of the ventral ridge in the buccal cavity, and transferred two species of *Mononchus*, *M. campbelli* Allgen, 1929 and *M. venezolanus* Loof, 1964, to the new genus *Coomansus*. Jairajpuri & Khan, 1982 recorded *Coomansus venezolanus* from Himachal Pradesh, India based on a female with a slightly slenderer body than in the holotype [3].

In Vietnam, up to now, studies on predaceous nematodes of the order Mononchida have revealed 63 species, which belong to ten genera of four families [5, 8, 9]. Currently, only one species of the genus *Coomansus*, *C. parvus* has been reported in Vietnam [5]. In the present paper, *C. venezolanus* was identified from Cao Loc, Lang Son province, Vietnam, representing a new record for the nematode fauna in Vietnam. For the first time, a male specimen was found and described.

MATERIALS AND METHODS

Soil samples were collected from natural forest areas in Cao Loc, Lang Son province, Vietnam. Nematodes were extracted from soil sample by modified Baermann funnel technique (Southey, 1986) [7], killed by heat, fixed in formaldehyde 4%, transferred to anhydrous glycerol according to Seinhorst (1959) [6], and mounted on glass slides for microscopic observation. Permanent slides were stored at the Department of Nematology, IEBR. Figures were drawn using an Olympus microscope

CH40 with drawing tube and illustrations were edited by Adobe Illustrator CS6. Photographs were taken with an Olympus DP digital camera on an Olympus microscope BX51 and edited by Adobe Photoshop CS6.

IEBR stands for Institute of Ecology and Biological Resources; VAST stands for Vietnam Academy of Science and Technology.

RESULTS AND DISCUSSION

Coomansus venezolanus (Loof, 1964) Jairajpuri and Khan, 1977 (Fig. 1)

Material: Five females and 1 male in good condition. Measurements: See table 1.

Description:

Female: Moderately stout nematodes of medium size, 1.8-2.1 mm long. Habitus after fixation ventrally arcuate, especially towards posterior end. Cuticle smooth under light microscope, 3 μm thick throughout body. Lip region offset from body contour, 35-38 μm width and 12-14 μm height. Labial papillae prominent, protruded. Amphideal fovea cup-shaped, aperture 4 μm , situated at 16-18 μm from anterior end of body or at the level of apex of dorsal tooth. Buccal cavity medium size 40.5-41.5 μm long and 19.4-20.4 μm wide, strongly sclerotized. Apex of dorsal tooth sharp, pointing forward, located at 26-30% of buccal cavity length from anterior end. No weak longitudinal ridges observed in ventro-sublateral walls of buccal cavity. Oesophagus cylindroid, 473-473 μm long, nerve ring at about one-third of its length from anterior end; secretory-excretory pore located just posterior to nerve ring. Oesophago-intestinal junction non-tuberculate. Rectum straight, thick-walled and muscular, 31.5-34 μm . Reproductive system didelphic-amphidelphic, both branches equally developed with ovary reflexed. *Sphincter* absent between oviduct and uterus. Vulva, a transverse slit in ventral view, vagina short with *par refringens vaginae* sclerotized and visible as 2 pieces in optical section. Tail bent ventrally, 92-101 μm long, conoid, tapering regularly to narrowly rounded terminus. Caudal glands rudimentary and *spinneret* absent.

Male: Similar to female in general morphology and size, 1.8 mm long. Buccal cavity 39.6 μm long and 19.4 μm wide, strongly sclerotized. Apex of dorsal tooth located at 27% of buccal cavity length from anterior end. Oesophagus cylindroid, 436 μm long. Rectum and pre-rectum indistinct. Tail similar to female but relatively shorter and with more rounded terminus, 85.5 μm long. Caudal glands rudimentary and terminal opening absent. Fifteen spaced ventromedian precloacal supplements present. Testes paired, opposed, outstretched. Spicules paired, ventrally arcuate, 74 μm long and 10 μm width. Lateral accessory piece well developed with bifurcated tip, 12.5 μm long. Gubernaculum weakly developed, 11.4 μm .

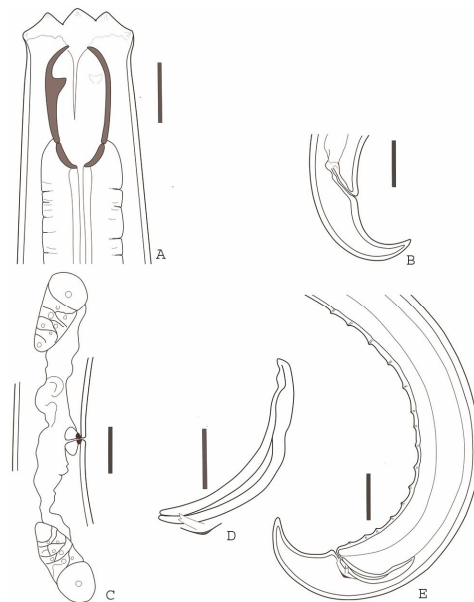


Figure 1. *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977
A. Female anterior region; B. Female tail; C. Female genital system; D. Spicule, gubernaculum and lateral accessory piece; E. Male tail region. Scale bars: A, D=20 μm ; B, C, E=40 μm .

Locality: Cao Loc (Lang Son province, Vietnam).

Remarks: The measurements and description of Vietnamese specimens correspond well to the holotype from Venezuela (Loof, 1964) [4] and a female specimen from

Himachal Pradesh, India (Jairajpuri and Khan, 1982) [3], except for slightly slenderer body (1.62 vs 21) and shorter tail ($c = 20.5-28.7$ (22.4 ± 3.56) vs 18-19). A male specimen is here compared with the holotype ($a = 27-31$ ($28.2 \pm$ described for the first time.

Table 1. Morphometric data of *Coomansus venezolanus* (Loof, 1964) Jairajpuri and Khan, 1977

	<i>Coomansus venezolanus</i>			
	Locality	Type El Jarillo, Venezuela	Himachal Pradesh, India	Lang Son, Vietnam
		Loof, 1964	Jairajpuri & Khan, 1982	Present paper
n		Holotype ♀	1 ♀	5 ♀♀ 1 ♂
L (µm)		2200	2550	1918 - 2036 (1952 ± 47.38)
a		21	34	27 - 31 (28.2 ± 1.62)
b		4.2	4.5	4.1 - 4.4 (4.2 ± 0.1)
c		18	19	20.2 - 28.7 (22.4 ± 3.56)
c'		2.7 ^a	3	1.7 - 2.7 (2.3 ± 0.38)
V (%)		60	61	60.7 - 64 (62 ± 1.21)
Buccal cavity length (µm)		42	38	40.5 - 41.4 (41.2 ± 0.45)
Buccal cavity width (µm)		18	16	19.4 - 20.3 (20 ± 0.4)
Apex of dorsal tooth position from anterior end of buccal cavity (%)		25 ^a	20	26 - 30 (27.2 ± 1.79)
Lip width (µm)		36.8 ^a	37	35 - 37.5 (36 ± 1.34)
Lip height (µm)		12	16	12.3 - 14 (13 ± 0.72)
Neck length (µm)		524	567	473 - 473 (473 ± 0)
Body diameter at vulva (µm)		87.5 ^a	75 ^a	62.5 - 75.7 (69.8 ± 4.82)
Anal body diameter (µm)		44.7 ^a	44 ^a	37.5 - 40 (38.2 ± 0.95)
Tail length (µm)		122 ^a	130	67.5 - 101 (98.1 ± 12.73)
Spicule length (µm)		-	-	-
Lateral accessory piece (µm)		-	-	-
Gubernaculum (µm)		-	-	-
Supplements		-	-	-

^acalculated from original figure and description.

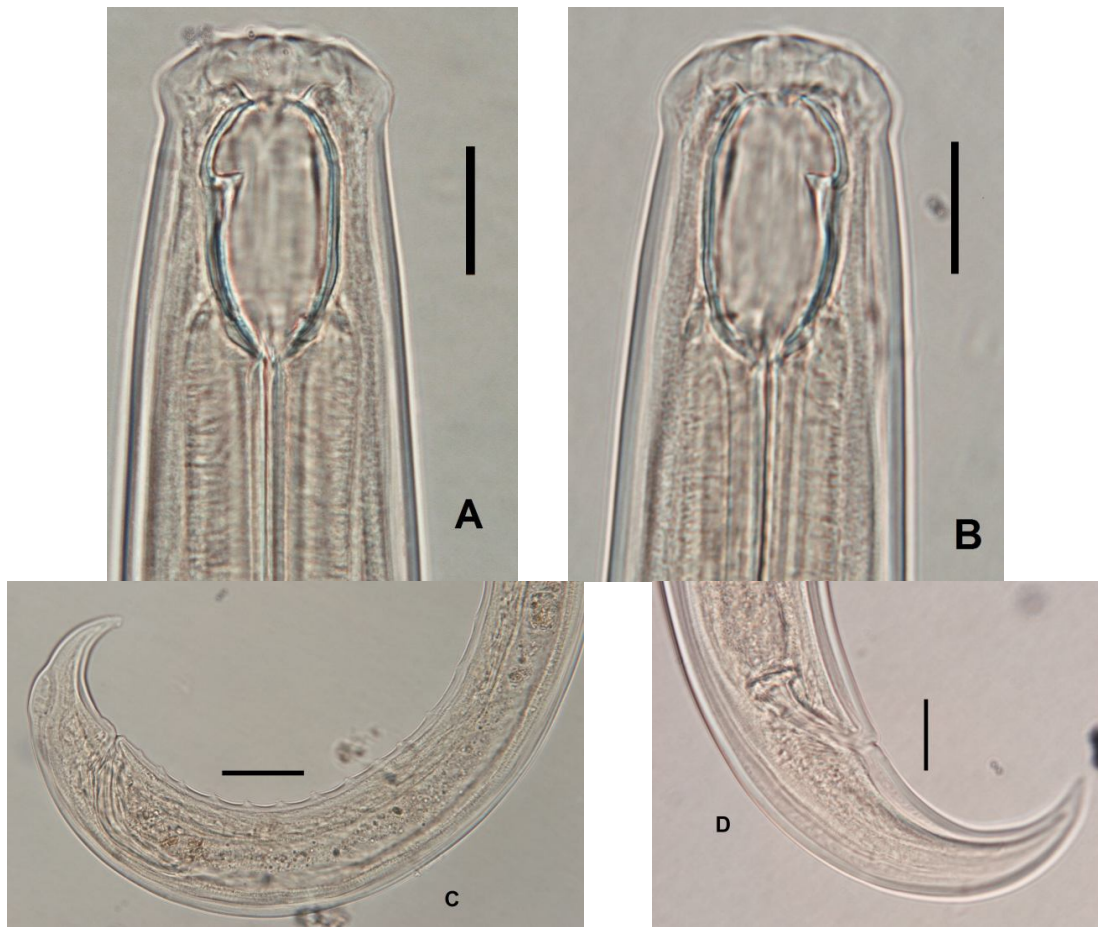


Figure 2. *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977

A: Female head region; B: Male head region; C, Male tail region; D, Femae tail region. Scale bars: A, B, D=20 μ m, C=40 μ m. Currently, two species of *Coomansus* have been recognized in Vietnam.

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GHI NHẬN MỚI LOÀI *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977 (Mononchida: Mononchidae) CHO KHU HỆ TUYẾN TRÙNG VIỆT NAM VỚI MÔ TẢ LẦN ĐẦU CÁ THỂ ĐỰC

Vũ Thị Thanh Tâm

Viện Sinh thái và Tài nguyên sinh vật, Viện Hàn lâm KH & CN Việt Nam

TÓM TẮT

Loài tuyến trùng *Coomansus venezolanus* (Loof, 1964) Jairajpuri & Khan, 1977 được ghi nhận mới và mô tả cho khu hệ tuyến trùng Việt Nam. Con cái có kích thước cơ thể trung bình; dài 1,9-2,1 mm; xoang miệng được cutin hóa mạnh, đỉnh của răng lưng lớn nằm ở vị trí 26-30% chiều dài của xoang miệng tính từ trên xuống; $V = 60-64\%$. Một cá thể đực cũng đã lần đầu tiên được ghi nhận có 15 nhú sinh dục nằm cách đều nhau; spicule có chiều dài 74 μm , phần phụ bên dài 12,5 μm và gubernaculum dài 11,4 μm . Số đo và các đặc điểm mô tả của quần thể tuyến trùng ở Việt Nam phù hợp hoàn toàn với số đo và mô tả của mẫu chuẩn ngoại trừ cơ thể hơi mảnh mai hơn ($a = 27-31$ so với $a = 21$) và đuôi hơi ngắn hơn ($c = 20-28$ so với $c = 18$). Số đo này cũng phù hợp với số đo của một cá thể khác được ghi nhận ở Himachal Pradesh, Ấn Độ.

Từ khóa: *Coomansus*, ghi nhận mới, tuyến trùng, Lạng Sơn, Việt Nam.

Received: 1 April 2016, accepted 20 September 2016