Uttar Pradesh J. Zool. 16(1) :36-38, 1996 ISSN 0256-971X

THREE KNOWN SPECIES OF *LAGENONEMA* ANDRASSY, 1987 FROM MANIPUR

N. MOHILAL, Y. ANANDI AND CH. DHANACHAND

LIFE SCIENCES DEPARTMENT, MANIPUR UNIVERSITY, CANCHIPUR - 795003, INDIA.

A survey of soil nematodes in Manipur revealed the presence of three species *viz. Lagenonema caudatum, Lagenonema longicaudatum* and *Lagenonema clavicaudatum* n. comb. *Thornenema clavicaudatum* is transferred to the genus *Lagenonema.* It is considered a synonym of *Lagenonema clavicaudatum.*

INTRODUCTION

Andrassy (1987) proposed the genus *Lagenonema* for those species of *Thornenema* Andrassy, 1959 which possess bottle shaped anterior end, abruptly narrowing to a cylindrical truncate lip region about half width of adjacent body, amalgamated lips, sclerotized labial framework, small amphid, straight odontostyle which is slightly concave distally on ventral side, monoopisthodelphic female reproductive system and elongate conoid to long filiform tail. He designated *Lagenonema caudatum* (Jairajpuri *et al.,* 1979) Andrassy, 1987 as type species and transferred another two species also. He also described one species of this genus.

Specimens collected from Manipur were studied. They represent three species of *Lagenonema viz. Lagenonema caudatum, Lagenonema longicaudatum* and *Lagenonema clavicaudatum* N. Comb. Gambhir & Dhanachand (1990) described *Thornenema clavicaudatum.* On careful examinations of paratypes and additional specimens found in type locality it appears that the nematode belongs to the genus *Lagenonema* and is accordingly transferred.

MATERIALS AND METHODS

The collected soil samples were processed by Cobb's (1918) modified sieving and decantation technique. The nematodes were killed and fixed in F. A. 4 : 1 solution, dehydrated by slow method. Measurements were made from the specimens mounted in pure Glycerine.

OBSERVATIONS

Lagenonema Caudatum

(Jairajpuri, Ahmad and Dhanachand, 1979) Andrassy, 1987

1. Banana, *Cynodon* sp., Imphal, Manipur

Females (10) : L = 0.60 - 0.89 mm, a = 22 - 31, b = 3.5 - 4.5, c = 8 - 10, c' = 3 - 4, V = 44 - 52, G_2 = 12 - 18, odontostyle - 13 - 15 µm, odontophore = 13 -17 µm, oesophagus = 160 - 166 µm, expanded part of oesophagus = 56 - 63 µm, Female reproductive system opisthodelphic, reflexed, pre-rectum = 30 - 55 µm, rectum = 20 - 28 µm, tail elongate, filifrom, 78 -94 µm long.

Male : Not found

2. Banana, Moirang, Manipur

Females (10) : L = 0.68 - 0.70 mm, a = 21 - 22, b = 3.5 - 3.6, c = 7.0 - 7.2, c' = 4.4 - 4.8, V = 53.1 - 54.2, G_2 = 17.2 - 17.8, odontostyle = 11.2 - 12.8 µm, odontophore = 9.6 µm, oesophagus = 192.0 - 195.2 µm, expanded part of oesophagus = 86.4 - 88.0 µm, female reproductive system opisthodelphic, reflexed, 120 µm long, rectum = 25.6 - 27.2 µm, pre-rectum = 33.6 - 35.2 µm, tail filiform, 97.6 - 99.2 µm, ABD = 20.8 - 22.4 µm.

Male : Not found.

Habitat & locality : Soil around the roots of (1) Banana, met grass from Canchipur, Imphal, (2) Banana, Moirang, Manipur.

Remarks : Lagenonema caudatum is widely distributed in the valley of Manipur. Those population of Imphal district have dimensions and descriptions conforming well with those described by Jairajpuri *et al.* (1979). Those specimens collected from Moirang have similarity with those described by Jairajpuri *et al.* (1979) except in the percentage of V, c' and length of tail, odontostyle and odontophore.

Lagenonema longicaudatum

(Jairajpuri, Ahmad and Dhanachand, 1979) Andrassy, 1987.

1. Wild flowering plants, Luwangsangbam, Imphal

Females (10) : L = 0.67 - 0.74 mm, a = 26 - 31, b = 4.3 - 4.7; c = 3 - 4, c' = 13 - 15, v = 33 - 41, G_2 = 11 - 15, odontostyle = 10 - 11 µm, odontophore = 12 - 13 µm, Nerve ring 60 - 65 µm from anterior end, pre - rectum = 22 - 40 µm, rectum = 15 - 18 µm, tail = 175 - 225 µm.

Male : Not found

2. Banana, Jiribam, Manipur

Females (8) : L = 0.67 - 0.71 mm, a = 28.0 - 28.8, b = 4.6 - 5.0; c = 2.9 - 3.2, c' = 15.2 - 16.1, V = 35.1 - 37.7, G_2 = 13.3 - 20.0; odontostyle = 8.0 - 8.8 µm, odontophore = 11.2 - 12.8 µm, oesophagus = 140.8 - 145.6 µm from anterior end of body : expanded part of oesophagus = 56.0 – 64.0 µm, cardia = 9 - 10 µm, pre - rectum = 35.2 - 36.8 µm, rectum = 19 - 20 µm, tail = 219.0 - 232.0 µm, ABD = 14 - 15 µm.

Male : Not found

Habitat & locality : Detected from soil around the roots of (1) unidentified wild flowering plants from Luwangsangbam, Imphal, Manipur.

(2) Banana, *Musa paradisiaca* Linn. from Jiribam, Manipur

Remarks : The present specimens conform well with dimensions and descriptions given by Jairajpuri *et al.* (1979) except in the 2nd case of Jiribam where they have a slightly shorter odontostyle, odontophore and longer tail.

Lagenonema clavicaudatum

(Gambhir and Dhanachand, 1990) n. comb.

Syn. *Thornenema clavicaudatum* (Gambhir and Dhanachand, 1990)

1. Pomegranate, Kakching, Manipur

Females (10) : L = 0.57 - 0.64 mm, a = 24 - 27, b = 3.9 - 4.5, c =12 - 13, c' = 2.6 - 2.7, V = 38 - 43, G_2 = 10 - 20, odontostyle = 6 - 9 µm, odontophore = 7 - 8 µm, lip region amalgamated, 4.8 µm wide and 3.2 µm high, distinctly sclerotised, amphid 2.4 µm wide, guiding ring situated at 4.8 - 5.6 µm or a little more than lip width from anterior end of body. Oesophagus = 146 µm, expanded part of oesophagus = 62 - 64 µm, DO = 61 - 62, DN = 60 - 62, DO - DN = 1, S_1N_1 = 69, S_1O_1 = 67 - 68, S_1N_2 = 78 - 79, S_1O_2 = 70 - 71, S_2N = 88 - 89, S_2O = 87. Female reproductive system mono - opisthodelphic, reflexed, pre - vulval uterine sac short, 10.8 µm long, pre - rectum = 40 - 45 µm long. Tail 46 - 48 µm long, elongate with a clavate terminus, ABD = 17 µm.

Male : Not found

Habitat & locality : Soil around roots of pomegranate, *Punica granatum* Linn. from Kakching, Thoubal District, Manipur.

Remarks : The species *Thornenema clavicaudatum* was originally described by Gambhir & Dhanachand (1990) in the genus *Thornenema* Andrassy, 1959. From their descriptions and illustrations it is quite evident that it has more resemblance to the genus *Lagenonema* in having bottle

shaped anterior end that abruptly narrows to a cylindrical truncate lip region, amalgamated lips, sclerotized labial framework, small amphid, straight odontostyle which is slightly concave distally on ventral side, mono - opisthodelphic female reproductive system and elongated conoid tail. So *Thornenema clavicaudatum* is transferred to *Lagenonema*. The measurements and descriptions of the present specimens conform well with those of Gambhir & Dhanachand (1990).

ACKNOWLEDGEMENTS

The authors are thankful to the Head, Dept. of Life Sciences, Manipur University for providing laboratory facilities.

REFERENCES

ANDRASSY, I, 1987. The superfamily Dorylaimoidea (Nematoda) - a review. Family Thorniidae and Thornematidae. *Acta Zool. Hung.* **33** (3-4) : 277 - 315.

GAMBHIR & DHANACHAND, CH. 1990 : Nematodes of Fruit plants in Manipur - I - three known and one new species of *Thornenema* Andrassy, 1959 (Thornenematidae : Dorylaimida) from Manipur, India. *Indian J. Hill Farming.* **3** (2) : 33 - 37.

JAIRAJPURI, M. S., AHMAD, M. & DHANACHAND, CH. 1979. Two new species of the genus *Thornenema* Andrassy, 1959 from Manipur, India. *Nematologica.* **25** : 136 - 141.

1980 : Nomenclatorial notes on *Thornenema thienemanni* with a key to species of *Thornenema* (Nematoda : Dorylaimida). *Ibid.* **26** : 182 - 186.

SAUER, M. R. 1981 : Comparative morphology of six *Thornenema species. Ibid.* **27** : 72 - 81.