

## A NEW NEMATODE *SEURATUM BILQEESAE* FROM INDIAN GERBIL *TATERA INDICA* (HARDWICKE, 1807)

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### ABSTRACT

A new nematode *Seuratium bilqeesae* is reported and described from Indian gerbil *Tatera indica* (Hardwicke, 1807). The new species is different from the previously described species of the genus and is characterized by having small body size; esophagus small, muscular; unequal spicules; a single pair of cloacal caudal papillae situated away from the margin, while at the tip of tail there are three pairs in form of a bunch. Cuticular dentate files 24-26 in males and 28-30 in females; slender gubernaculum; vulva situated in mid-body region; vagina highly muscular; uterus packed with eggs. Eggs thick-shelled, oval to rounded, 0.05-0.055 by 0.03-0.035 in size.

**Key words:** Nematode, *Seuratium bilqeesae*, n.sp., *Tatera indica*, Pakistan.

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### INTRODUCTION

During a survey of nematode parasites of Indian gerbil *Tatera indica* (Hardwicke, 1807), twenty-four specimens belonging to the genus *Seuratium* Hall, 1916 were recovered from the stomach, which represent a new species of the genus. In the present paper this new species viz. *Seuratium bilqeesae* n.sp. is being described and illustrated.

### MATERIALS AND METHODS

The specimens were fixed in 70% alcohol for 24 h and then cleared in a mixture of equal amounts of 70% alcohol and glycerine for two days for detail study. Diagrams were made with a camera Lucida and measurements are given length by width in millimeters. Specimens are in the senior authors' collection.

#### *Seuratium bilqeesae* sp.n. (Figs.1-6)

Type host:	<i>Tatera indica</i> (Hardwicke, 1807)
Location:	Stomach
Localities:	Landhi and Pipri Rice Godowns, Sindh Pakistan
Number of specimens recovered:	2 male, 22 female
Number of host examined:	15
Number of hosts infected:	3
Date of collection:	July 1991
Specimen numbers:	MZVPCI:1913-1936

### DESCRIPTION

Based on 2 males and 22 females, temporary mounted specimens. Delicate worms, male slender and much smaller in size than the females. Caudal region in male curved ventrally; caudal extremity in both male and female more attenuated than the anterior extremity and terminate into a sharp pointed spine. Cuticle with fine transverse striations, with longitudinal straight bands, presenting in the line of each band, a dentiform thickening of the transverse striation with the points directed backwards. Mouth simple, bounded by two lateral lips provided with two pairs of papillae. Buccal cavity very short, esophagus small, entirely muscular. Male tail short, conical, caudal alae well developed, narrow, spicules unequal, less chitinized. Gubernaculum present. Vulva little anterior to the mid body region, eggs oval to rounded and embryonated.

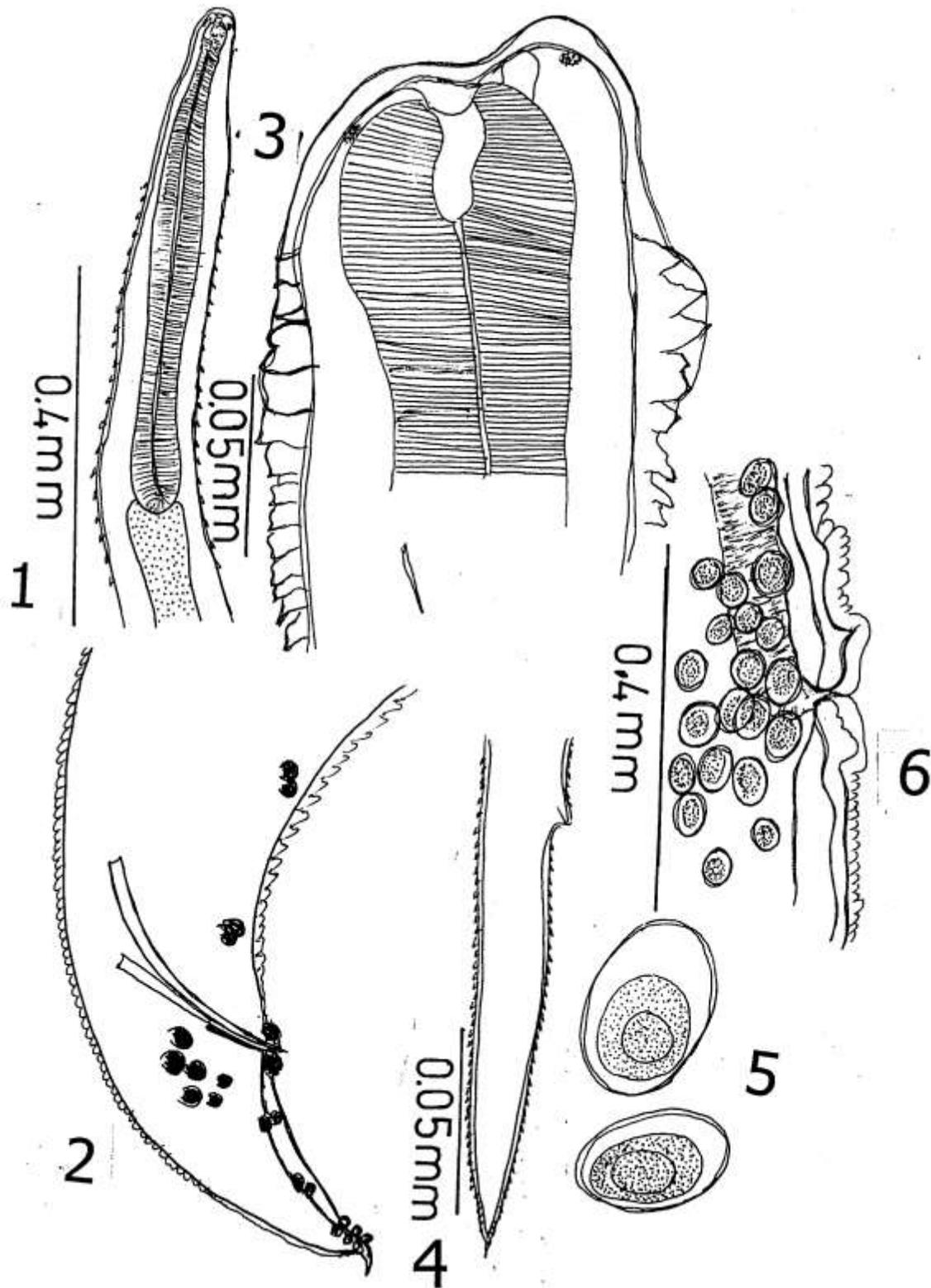


Fig.1-6. *Seuratium bilqeesae* n.sp., 1. Anterior region of holotype male, showing muscular oesophagus and some part of intestine; 2. Male posterior region, showing spicules and caudal papillae; 3. Anterior end of allotype female enlarged; 4. Caudal region of female; 5. Vulva opening, Lateral view; 6. Uterine eggs.

**Male (Based on a holotype and 1 paratype)**

Small and slender worms. Body 1.6-1.77 (1.68) long and 0.09-0.1 (0.095) wide. Mouth with two simple membranous lips, provided with two pairs of papillae. The cuticular dentiform thickenings start at a distance of 0.20-0.22 (0.21) from the anterior end. Esophagus small simple and entirely muscular 0.54-0.55 (0.545) long and 0.045-0.05 (0.0475) wide at its distal end. Nerve ring situated at a distance of 0.09-0.1 (0.095) from the anterior end, longitudinal cuticular dentate bands 24-26 in number, the dentate rows end a little anterior to the cloacal region. Caudal region curved ventrally. Caudal alae absent. Caudal papillae 10 pairs, sessile, 3 pairs precloacal, one pair cloacal and six pairs postcloacal; the postcloacal papillae are situated in rather two groups, the first one comprises of three pairs lying some distance below the cloacal opening. The first post cloacal pair lies dorsal in position, while the second postcloacal pair lies at a distance of 0.02 from the cloacal opening. The third pair lie at a distance of 0.015 from the second one. Three pairs of postcloacal papillae lie just on the tip of the tail which is provided with a backwardly directed spine. Additionally a bunch of some caudal papillae is also obvious (Fig.2). Spicules two, lightly chitinized, unequal, thin and smaller in size with pointed ends 0.06-0.07 (0.065) and 0.042-0.048 (0.045) long. Gubernaculum small 0.022-0.025 (0.024) long lie attached to the spicules. Tail 0.06-0.067 (0.064) long.

**Female (Based on an allotype and 21 paratypes)**

Much larger in size than the males. Body 9.05-12.06 (10.55) long and 0.31-0.35 (0.33) wide. Cephalic region bounded with two membranous lips, each provided with a pair of papillae, situated on the medio-lateral sides of the lips, mouth simple, leads into the esophagus which is entirely muscular. Anterior cuticle in the cephalic and part of cervical region devoid of cuticular dentition 0.06-0.07 (0.065) from the anterior extremity. Nerve ring situated at a distance of 0.20-0.21 (0.225) from the anterior extremity. Esophagus simple, muscular 0.71-0.74 (0.73) long and 0.04-0.05 (0.045) wide, intestine simple. Longitudinal dentate rows 28-30 in number, the denticles are directed backwards, these dentate rows run across the whole body length and end at the tip of the tail which is provided with a sharp tail-spine. Vulva situated nearly in the mid body region or little anterior to it 4.45-4.80 (4.62) from the anterior end, vulvar lips simple not protruded out, vagina highly muscular, directed backwards. Uterus packed with eggs. The eggs are thick-shelled, oval to rounded and embryonated 0.05-0.055 (0.052) x 0.03-0.035 (0.032) in size. Tail 0.55-0.56 (0.55) long.

**DISCUSSION**

Relatively few species of the genus are known in the literature parasitizing small mammals. Yamaguti (1961) have listed: *Seuratium tacapense* (Seurat, 1915) Hall, 1916 in *Ctenodactylus gundi* in Taiwan; *S. cadarachense* Desportes (1947) in *Eliomys quercinus* in France; *S. cancellatum* (Chitwood, 1938) in *Natalus mexicanus* in Yucatan, Texas., *S. congolense* (Sandground, 1937) in *Pipistrellus nanus* and *Myotis bocagei* in Africa; *S. mucronatum* (Rudolphi, 1809) Chitwood, 1938 in *Vespertilio auritis* in Europe. Le Van Hoa, 1964 reported *S. nguyenvananii* from the intestine of *Suncus murinus* in Vietnam Gupta and Kalia, 1981 described *S. inglisi* from the bat host *Pipistrellus mimus mimus* in India. Khalil and Salam (1985) described *S. kuwaitensis* from the hedgehog *Hemiechinus auritus* in Kuwait.

Present species is described from the stomach of the Indian gerbil *Tatera indica* in Pakistan, it resemble *S. nguyenvananii* in the body size of both male and female; size of the spicules, size of the tail and size of the eggs in females. Main differences are evident in the number of cuticular files which are 24-26 in male and 28-30 in females in the present specimens, whereas the dentate bands are 17 in *S. nguyenvananii*. From rest of the species the present species differs in the body size being too small, male being 1.6-1.77 long and female 9.05-12.06. From *S. mucronatum* present species differ in having unequal spicules, differential arrangement of caudal papillae; the post cloacal ones are arranged in two batches in which the front two papillae and the last two tend to be dorsal in position whereas in present species a single pair in the post cloacal papillae is situated away from the margin, and at the tip of the tail there are three pairs in form of a bunch. *S. inglisi* differ from the present species in having equal spicules, boat shaped gubernaculum, larger in size and with the third and 6<sup>th</sup> pair of post cloacal papillae being distinctly dorsal in position. *S. cancellatum* and *S. congolense* differ from the present species in having equal spicules and larger size of gubernaculum. *S. cadarachense* differ from the present specimens in having larger size of gubernaculum formed of two superimposed pieces and buccal cavity with bi or polycuspid denticles *S. tacapense* differ from the present specimens mainly in possessing equal spicules and a buccal cavity without denticles. *S. kuwaitensis* differ from the present species in having forked tips of the spicules, triangular mouth opening with denticles on its rim, while in the present specimens the spicules end in pointed tips and the mouth cavity is without denticles. Because of the presence of following characters such as much smaller in size; 24-26 cuticular dentate files in male, and 28-30 in females, unequal and less chitinized spicules and a slender gubernaculum, and a different host

and locality serve to distinguish the present specimens under study as new to science. *S. bilqeesae* sp.n. is proposed in honour of the eminent parasitologist Dr. Bilqees Fatima Mujib in recognition of her great contributions towards the subject in Pakistan.

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