CHAPTER XIV

Seineura sasseris n.sp.
SEINEURA Fuchs 1931

The German worker Fuchs (1931) established the genus *Seineura* with *S. mali* as type species. Unfortunately, *Seineura* has not been accepted as a valid genus by most nematologists, and the genus was synonymized with *Pathoaphelenchus* Cobb, 1927 by Steiner (1931) and later with *Aphelenchoides* Fischer, 1894 by Goodey (1933). The diagnosis given by Fuchs was in brief but accurate and his sketches shows important diagnostic characters. These diagnostic characters gives sufficient evidence to justify full generic rank. So Goodey (1960) restablished the genus *Seineura* and listed fifteen valid species under this genus.

Linford and Oliveira (1937) made an important and interesting investigation that the members of the genus *Seineura* are predators on other nematodes. *Seineura tenuicaudatus* was especially responsive and proved to be highly specialized predators. It readily attack larger nematodes with inserting the spear and paralysis the prey by injecting secretion of the dorsal esophageal gland.

Christie (1939) reported a key for the identification of nine species described at that time.
The number has since been increased to about fifteen. Hechler and Taylor (1965) reviewed the genus and included a key for seventeen species based mainly on female characters. Since then thirteen more species has been added to, this genus. Husain and Khan (1965) described *S. nagini* from India. A Russian nematologist Dritrenko (1960) recorded *S. chertkovi* from tomato roots Khan (1965) described *S. variobulbosa* from the roots of winter rye.


A number of specimens of the genus *Seineura* were obtained from the soil around the roots of garden croton (*Codiaeum variegatum*). On examination these were found to be only females, male were not procured. The roots of garden croton were also having heavy infection of *Rotylenchus reniformis*. 
Seineura sassers n.sp.  
(Plate 28 Fig.57, 58 Plate 29 Fig.59, 60, 61  
Plate 30 Fig.62, 63).

Seventeen Females (Paratype)

\[
\begin{align*}
L &= 0.39 \ (0.35-0.43) \text{mm.} ; \ a = 23.21 \ (20.00-25.21)  \\
b &= 7.25 \ (7.22-7.28) ; \ b'l = 7.73 \ (7.57-7.88)  \\
b' &= 4.28 \ (3.82-5.16) ; \ B = 0.59 \ (0.46-0.75)  \\
G_1 &= 20.50 \ (14.50-30.60) ; \ G_2 = 13.61 \ (10.00-15.41)  \\
C &= 9.20 \ (6.00-15.20) ; \ C' = 6.46 \ (5.58-7.80)  \\
V &= 60.30 \ (57.70-63.40) ; \ V' = 72.81 \ (71.81-73.60)  \\
VL/VB &= 9.82 \ (7.52-10.20) ; \ m = 47.0 \ (44.40-50.00)  \\
PO &= 41.30 \ (24.70-50.50) ; \ Spear = 8.16 \ (7.50-9.00) \mu m
\end{align*}
\]

Female (Holotype)

\[
\begin{align*}
L &= 0.38 \ \text{mm} ; \ a = 25.20  \\
b &= 7.28 ; \ b'l = 7.58  \\
b' &= 3.82 ; \ B = 0.46  \\
G_1 &= 30.60 ; \ G_2 = 11.00  \\
C &= 6.00 ; \ C = 7.80  \\
V &= 59.80 ; \ V = 71.80  \\
VL/VB &= 10.20 ; \ m = 50.00  \\
PO &= 50.50 ; \ Spear = 8 \mu m.
\end{align*}
\]
One Male (Paratype)

L = 0.326 mm ; a = 19.10
b = 6.25 ; b = 6.50
b' = 4.43 ; C = 12.00
B = 0.58 ; SP/L = 0.050
T = 41.21 ; MB = 68.00
m = 42.81 ; Gubernaculum = 7.00 μm.
Spicule = 16.00μm ; Spear = 7.00 μm.

FEMALE CHARACTERS

(Plate 28 Fig.58  Plate 29 Fig.59, 60, 61 Plate 30 Fig. 63)

The body of female is moderately arcuate ventrally, cylindrical, tapering more towards the posterior end. Cuticle is finally striated and striate are one μm apart at the mid body region. Lateral field marked by three incisures and occupy one fourth of corresponding body width. Deirids and phasmids are not observed in these specimens.

Lip region is slightly offset, hemispherical with poorly developed sclerotization. It is 3.5 μm high and 5.5 μm wide. The spear is well developed, delicate and without basal swellings. Its anterior part is shorter but more refractile than the posterior one. A
small guiding ring is present just anterior to the middle of the spear.

The procorpus is cylindrical about 31.00 (27.00-38.00) μm in length and 10-20μm in breadth. It has distinct valvular apparatus located at 60 percent of bulb length. The median oesophageal bulb is spherical, measures 12.00-16.00 in length and 6.50-9.00 μm in breadth. It has centrally located crescentic valve. The oesophageal gland lobes overlap intestine dorsally and measure 38.6 (21.00-50.00) in length. The lumen of intestine in wide just posterior to the median oesophageal bulb, narrowing rapidly behind the nerve ring and widening just anterior to the valve. The rectum is tubular and measure 5.00-9.00 μm in length.

Nerve ring is situated posterior to the median oesophageal bulb and approximately 58.00 (50.00-65.00) μm from the anterior end. Excretory pore opens ventrally anterior to the nerve ring at the level of posterior margin of the median oesophageal bulb. Its distance from anterior end is 63.00 (60.00 - 66.00)μm. Hemizonid is 2-3 annules wide and located about 21 μm. posterior to the median oesophageal bulb.

The genital tract is monodelphic and prodelphic valve is transverse slit like which opens
into vagina. Vagina is perpendicular to the body axis, slightly anteriorly directed. It is 5.50-10.00 μm in length. Ovary is long, outstratched and extends upto the posterior margine of oesophageal gland lobes. It is separated from uterus by a constriction. Spermatheca is large oval filled with rounded sperms. The post uterine branch is shorter than vulva – anus distance.

The tail is long about 63.00 (60.00 – 67.00)μm in length and shorter than vulvar – anus distance. It tapers gradually but suddenly narrows anterior to the middle into a cylindrical flagellum with pointed terminus.

MALE CHARACTERS

(Plate 28 Fig.57 Plate 30 Fig.62)

Males are elongated cylindrical slightly shorter than females. The length of body measures about 0.326 mm. Head, oesophagus, oesophageal gland lobes, cuticle, position of nerve ring, excretory pore are similar to the female.

The testis is single and outstretched. The spicules are massive arcuate and measure about 16 μm in length. Gubernaculum is about 7.00 μm in length.
The tail of male nematode is arcuate a small ventral projection is found on the tail tip and measures 27 \( \mu \text{m} \) in length.

**Habitat** - The parasite has been collected around the rhizosphere of Bainjal (*Solanum melongena* Linn.)

**Locality** : Indra Nagar, Rewa.

**DISCUSSION**

There are seven species of genus *Seineura* in which present new from closely related to *Seineura linfordi* (Christie, 1939) Goodey, 1960; *S.indica*, Suryawanshi 1971; *S.varicaudatus* Singh and Jain, 1982.

The new species can be distinguished from *Seineura linfordi* in having shorter length of body. The length of body is *S.linfordi* is 470-620 \( \mu \text{m} \) whereas the new species has 0.32-0.38 mm body length. It has lower value of "a" and "v" as compared to *S.linfordi*, in which "a" = 27.3 - 34.3 and \( v = 70.00 - 74.50 \). The length of spear is shorter e.i. 7.00 \( \mu \text{m} \) whereas in *S.linfordi* its length is 15.8 \( \mu \text{m} \).

It also differs from *S.indica* Suryawanshi, 1971 in having higher value of "b", "c" and lower value
of "v" and shorter spear, lateral field marked by only three incisures and presence of male. In *S.indica* "b" = 3.7; c = 7.5; v = 70; spear = 19μm and lateral line has five incisures.

This species resembles with *S.varicaudatus* in many respect but differs in having shorter body length e.i. 0.39 (0.35 - 0.44) mm whereas in *S.varicaudatus* the body length is 0.62 (0.57-0.71) mm. The spear of new species is 8.16 (7.50-9.00) μm whereas *S.varicaudatus* has spear of 17.4 (15.00-20.00) μm in length. The value of "a" and "v" in this species is 23.00 (20.00 - 25.00) and 60.30 (57.70 - 63.40) respectively. The tail of new species is longer as compared to *S.varicaudatus* 45.60 (40.00 - 52.00)μm. The male has been procured but in *S.varicaudatus* the male is unknown.

As a result of these differences the author feels justified in creating a new species for this worms and named as *Seineura sasseris* in honour of Professor J.N.Sasser, Department of Plant Pathology, North Carolina State College Raleigh, North Carolina.
PLATE 28

Explanation of figures

*Seineura sasseris* n.sp.

**Fig. 57** Entire body of male.

**Fig. 58** Entire body of female.
PLATE 29

Explanation of figures

_Sineura sasseris_ n.sp.

**Fig. 59** Vulval region of female

**Fig. 60** Anterior region of female

**Fig. 61** Lateral line incisures in the middle region of female body.
PLATE 30

Explanation of figures

**Seineura sasseris** n.sp.

**Fig. 62** Tail region of male.

**Fig. 63** Tail region of female.