

**FIRST REPORT OF *PRIONCHULUS KRALLI* (MONONCHIDA: NEMATODA)  
FROM INDIA WITH A REVISED AND UPDATED KEY TO SPECIES  
OF THE GENUS *PRIONCHULUS* COBB, 1916**

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**Summary.** The species *Prionchulus kralli* Winiszewska et Susulovsky, 2004 is reported for the first time from India. To date, twenty-nine species of the genus *Prionchulus* have been described from various parts of the world, but only three have been described from India. Two females but no male specimens of *P. kralli* were found. They showed body of medium length (L = 1.71 mm, 1.82 mm), 11-12 sub-ventral minute denticles, arranged in two parallel longitudinal rows opposite to the dorsal tooth; long muscular oesophagus with distinct glands; gonad amphidelphic; tail elongate-conoid without any gland and spinneret opening. An updated list of species under the genus *Prionchulus* Cobb, 1916 and a revised key for their identification are included.

**Keywords:** Description, list of species, India.

The species *Prionchulus kralli* Winiszewska et Susulovsky, 2004 is reported for the first time from India. In India, the genus *Prionchulus* Cobb, 1916 is not very common as only three species have been reported so far of the twenty-nine *Prionchulus* species reported worldwide. Earlier, Jairajpuri and Khan (1982) mentioned five species and Andrassy (1993) mentioned twelve species under this genus. Since then, seventeen further species have been described from various parts of the world. Winiszewska (2002), Susulovsky et al. (2003), Winiszewska and Susulovsky (2003, 2004), Susulovsky and Winiszewska (2002, 2006) published a series of papers on *Prionchulus*, made a few revisions and re-described some of the species from type materials. An updated list of species under the genus *Prionchulus* Cobb, 1916 and a revised key to species identification are included herein, along with a description of the *P. kralli* specimens recovered from Arunachal Pradesh in India.

## MATERIALS AND METHODS

The nematode specimens were extracted from the soil by a modified Baermann's funnel technique (Christie and Perry, 1951), nematodes were fixed following Seinhorst's (1966) method of fixation, in hot (90°-100°C), diluted FA solution (10 parts 40% formalin, one parts acetic acid and 89 parts distilled water), mounted on slides in anhydrous glycerin and sealed. Preserved specimens were observed under different magnifications with an Olympus BX-51 trinocular light

microscope (Olympus Inc., Japan). Drawings were made with the aid of a camera lucida attached to the microscope. Images were captured with a CCD digital camera (Meyer Instruments Inc., TX, USA) integrated with the microscope. Body dimensions were tabulated using de Man's formula (de Man, 1880).

## DESCRIPTION

*PRIONCHULUS KRALLI*  
**Winiszewska et Susulovsky, 2004**  
(Table I, Figs 1 and 2)

*Measurements.* See Table I.

*Female.* Body of medium length, tapering towards the tail terminus, which appears ventrally curved after fixation. Cuticle smooth, its thickness varies from lip region to caudal region. Lateral chord about one third of the total body width. Height of the lip region about one sixth of its width. Amphids small with oval aperture. Buccal cavity bearing a large dorsal tooth which spans more than three quarters of the buccal cavity length from its base. Apex of dorsal tooth directed forward and opposed by 11-12 minute denticles, arranged in two parallel longitudinal rows. Oesophagus long, slender, muscular, measuring one quarter of total body length; oesophageal glands prominent; oesophago-intestinal junction non-tuberculate. Excretory pore situated behind the nerve ring. Gonad didelphic-amphidelphic; ovary reflexed, sphincter present at oviduct-uterus junction, *pars proximalis vaginae*, *pars refringens vaginae* and *pars distalis vaginae* distinct. Tail elongate-conoid. Rectum length less than one anal body diameter. Caudal glands and spinneret opening absent.

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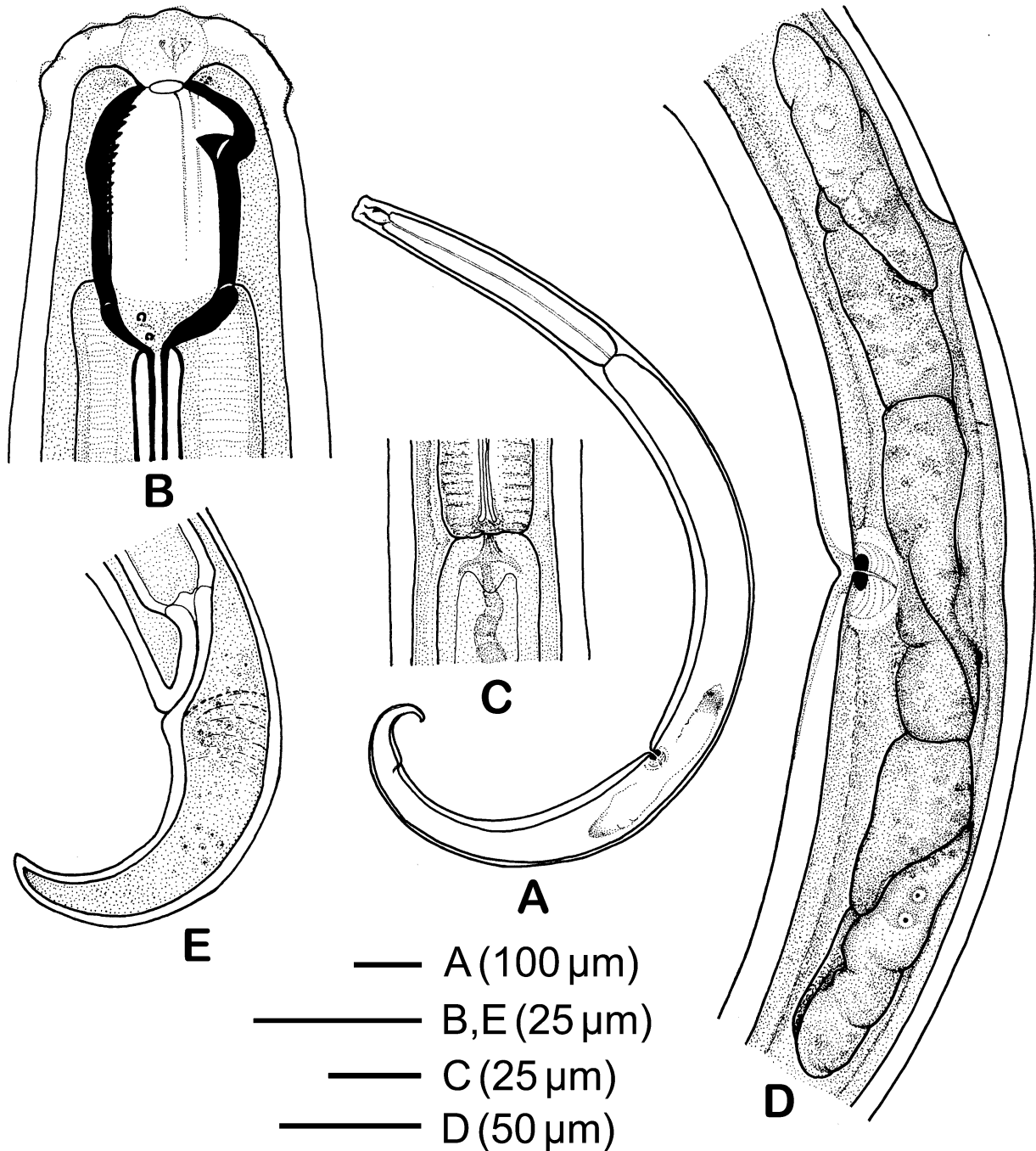
*Male.* Not found.

*Materials examined.* The two females (Slide no. WN 1245) were deposited in the National Zoological Collection of the Zoological Survey of India, Kolkata, India.

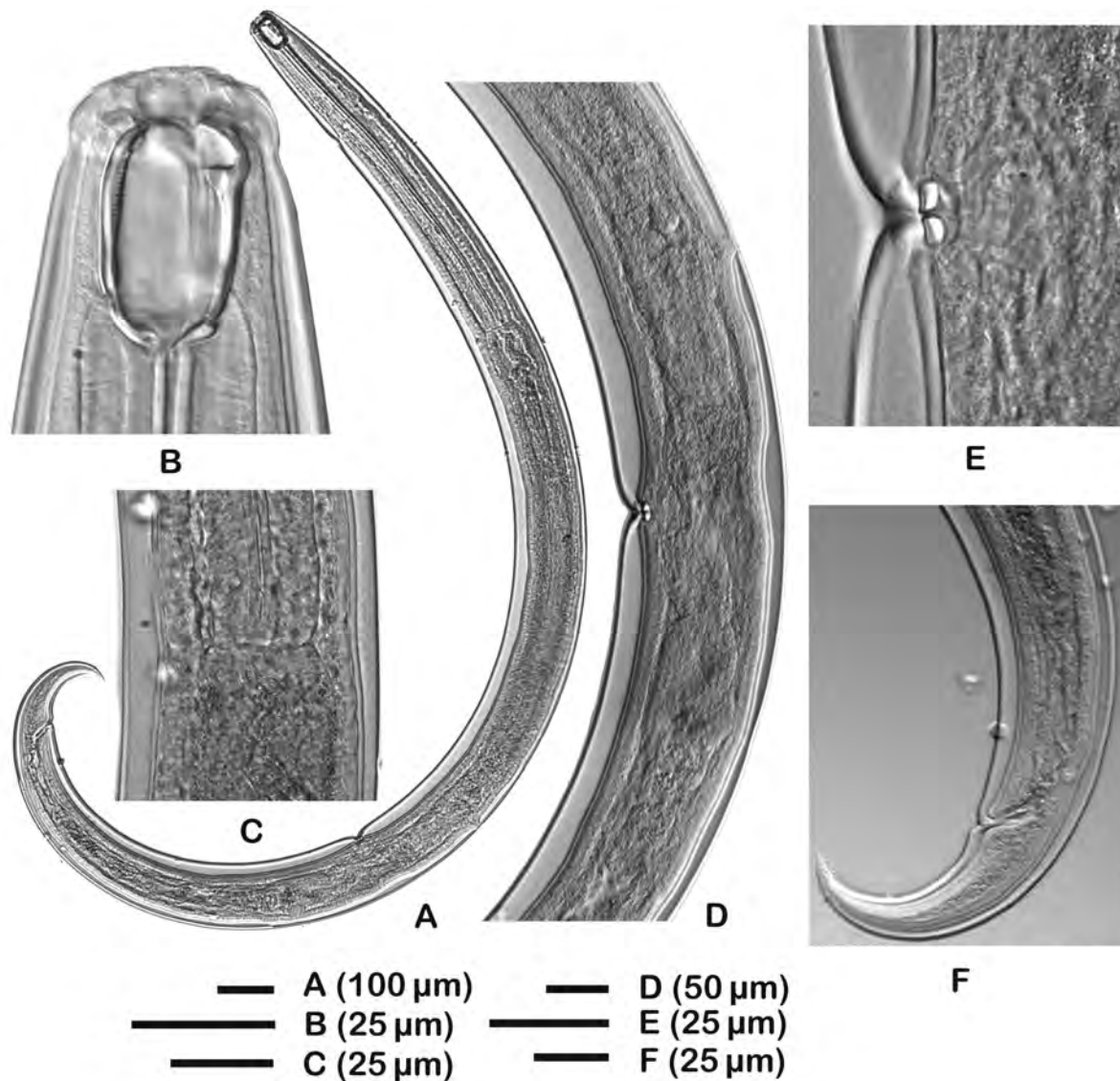
*Locality and associated plants.* The two specimens were collected from the moist soil associated with fern from Dirang, West Kameng district, Arunachal Pradesh, India in March, 2008.

*Remarks.* No males were found during our study. Prior to this work, this species had only been reported

from Tallinn, Estonia. Winiszewska and Susulovsky (2004) mentioned 9-11 sub-ventral minute denticles in the longitudinal rows in front of the dorsal tooth in *P. kralli*. However, in the present study, a single specimen was found with 12 minute denticles, arranged in two parallel longitudinal rows, possibly due to intra-specific variation. Transverse striae in cuticle not or faintly visible, lip region truncated and slightly offset by a depression, labial and cephalic papillae small and conical. Genital branches almost symmetrical. Tail tip is hyaline but the hyaline portion is very small in *P. kralli*.



**Fig. 1.** Camera lucida drawings of female *Prionchulus kralli*. A, whole body; B, head; C, oesophago-intestinal junction; D, gonad; E, tail.



**Fig. 2.** Photomicrographs of female *Prionchulus kralli*. A, whole body; B, head region; C, oesophago-intestinal junction; D, gonads; E, vulval region; F, tail.

#### List of species under the genus *Prionchulus* Cobb, 1916

- P. altherri* Zell, 1985  
*P. auritus* Andrassy, 1985  
*P. bogdanowiczi* Susulovsky *et* Winiszewska, 2006  
*P. borealis* Andrassy, 2003  
*P. brevicaudatus* Winiszewska, 2002  
*P. ctenodentatus* (Tysowski, 1915) Mulvey, 1967  
     Syn. *Mononchus ctenodentatus* Tysowski, 1915  
*P. fagi* Zell, 1985  
*P. ferox* Winiszewska *et* Susulovsky, 2003  
*P. fistulosus* Susulovsky *et* Winiszewska, 2002  
*P. hygrophilus* Susulovsky *et* Winiszewska, 2006  
*P. kamchaticus* Susulovsky, Winiszewska *et* Gagarin, 2003  
*P. kralli* Winiszewska *et* Susulovsky, 2004  
*P. longus* (Thorne, 1929) Andrassy, 1958  
     Syn. *Mononchus longus* Thorne, 1929  
     *Prionchulus longus* Andrassy, 1958  
*P. major* Gagarin, 2001  
*P. mordax* Andrassy, 1993  
*P. muscorum* (Dujardin, 1845) Wu *et* Hoeppli, 1929  
     Syn. *Oncholaimus muscorum* Dujardin, 1845  
     *Mononchus muscorum* Bastian, 1865  
     *Mononchus (Prionchulus) muscorum* Cobb, 1916  
     *Prionchulus muscorum* Wu *et* Hoeppli, 1929  
     *Mononchus bastiani* de Man, 1876  
     *Prionchulus medius* Eroshenko, 1975  
*P. obtusidentatus* Vinciguerra, 1984  
*P. oleksandri* Winiszewska *et* Susulovsky, 2003  
*P. pinophilus* Winiszewska *et* Susulovsky, 2004  
*P. polonicus* Winiszewska *et* Susulovsky, 2004

- P. prasadi* Saha, Lal *et* Singh, 2006  
*P. pseudolongus* Winiszewska *et* Susulovsky, 2004  
*P. punctatus* (Cobb, 1917) Andrassy, 1958  
*P. septentrionalis* Winiszewska *et* Susulovsky, 2004  
*P. spectabilis* (Ditlevsen, 1911) Cobb, 1916  
*P. thornei* Winiszewska *et* Susulovsky, 2004  
*P. ukbrum* Mohilal *et* Dhanachand, 1996  
*P. vescus* Eroshenko, 1975  
*P. zelli* Winiszewska *et* Susulovsky, 2003  
 Syn. *Prionchulus bastiani* Zell, 1985 nec  
*Mononchus bastiani* de Man, 1876  
*Prionchulus oxycercus* Zell, 1985

**Table I.** Morphometrics of female *Prionchulus kralli* (all measurements are in  $\mu\text{m}$ , except L, in mm).

Character	Female (No. 2)
L	1.71, 1.82
a	22.5, 23.9
b	3.9, 4.1
c	19.9, 20.9
c'	2.2, 2.7
V	65.6, 61.8
G <sub>1</sub>	19.3, 17.9
G <sub>2</sub>	16.4, 15.8
Cuticle thickness at head region	4.6, 4.5
Cuticle thickness at mid-body	7.4, 8.2
Cuticle thickness at tail region	4.9, 5.2
Lip height	6.1, 6.1
Lip diameter	34.3, 35.5
Mid-body diameter	76, 76
Anal diameter	29.2, 31.2
Length of buccal cavity	39.2, 39.2
Diameter of buccal cavity	14.3, 15
Distance of dorsal tooth from the base of buccal cavity	31.9, 32.2
Position of dorsal tooth as % of total buccal cavity length	81.3, 82.1
No. of sub-ventral minute denticles	12, 11
Distance of amphids from the anterior end	6.1, 6
Width of amphidial aperture	4.6, 4.6
Distance of excretory pore from anterior end	164.2, 161.5
Length of oesophagus	436.1, 439
Length of cardia	17.2, 18
Diameter of cardia	68.6, 68.6
Position of nerve ring from anterior end	115.2, 117
D	47.2, 45
AS1	31, 30
AS2	33.3, 35
PS1	88.5, 87.5
PS2	90, 88
Length of glandularium	235.2, 237
Length of anterior gonad	330, 325
Length of posterior gonad	280, 288
Distance between anterior end and vulva	1122.1, 1124
Total length of vagina	24.5, 26
<i>Pars proximalis vaginae</i>	14.7, 15
<i>Pars refringens vaginae</i>	4.9, 5.1
<i>Pars distalis vaginae</i>	4.9, 5.9
cw (width of <i>pars refringens vaginae</i> )	13.8, 12.6
Rectum length	19.4, 20.2
Tail length	85.8, 87
Tail length as % of total body length	5, 4.7

Key to the species of the genus *Prionchulus*

1. Larger species, body always more than 4 mm in length. Female: L = 4.3-5.1 mm; a = 34.1-38.8; b = 4.8-5.5; c = 21.26.9; V = 56.9-62.8; c' = 2.4-3.0. Male: L = 4.1-5.02 mm; a = 31.7-40.4; b = 4.9-5.4; c = 31.9-38.1; PO = 9-13. (Russia) ..... *major*  
Gagarin, 2001
- Smaller species, body 4 mm in length or less ..... 2
2. Body about 1.5 mm in length ..... 3
- Body generally more than 1.5 mm in length ..... 5
3. Sub-ventral denticles 9-11 in each sub-ventral wall (weakly denticulate). Female: L = 1.3-1.7 mm; a = 22-24; b = 4.1-4.9; c = 12-14; V = 60-61; c' = 2.8-3.1. Male: unknown. (Korea) ..... *mordax*  
Andrássy, 1993
- Sub-ventral denticles 12-15 in each sub-ventral wall (well denticulate) ..... 4
4. Lip region narrow, 29-31 µm wide; buccal cavity small (32-33 × 16-18 µm); c' = 2-3. Female: L = 1.1-1.57 mm; a = 16-30; b = 3.1-4.4; c = 12-15; V = 59-69; c' = 2-3. Male: L = 1.2 mm; a = 18; b = 3.4; c = 16; PO = 16. (Germany, Poland, Russia [Far East], Central Alaska) ..... *vescus*  
Eroshenko, 1975
- Lip region 39-40 µm wide; buccal cavity large (47-48 × 25-26 µm); c' = 3-3.7. Female: L = 1.43-1.66 mm; a = 20-21; b = 3.2-3.3; c = 11.2-13.5; V = 65-66; c' = 3.0-3.7. Male: unknown. (India) ..... *prasadi*  
Saha, Lal et Singh, 2006
5. Tail less than or about 100 µm long ..... 6
- Tail generally more than 100 µm long ..... 8
6. Body length less than 2 mm; hyaline part at tail terminus weakly expressed. Female: L = 1.58-1.66 mm; a = 24.2-26.5; b = 3.9-4.3; c = 16.6-20.3; V = 63.9-65.5; c' = 2-3. Male: unknown. (Estonia, Tallinn, India) ..... *kralli*  
Winiszewska et Susulovsky, 2004
- Body length more than 2 mm ..... 7
7. *Pars distalis vaginae* absent; dorsal tooth spans 22.5-25.6% of the total buccal cavity length (from base). Female: L = 2.35-2.41 mm; a = 25-29; b = 4.1-4.9; c = 31.0-33.6; V = 63.9-65.4; c' = 1.4-1.6. Male: Unknown. (Poland) ..... *brevicaudatus*  
Winiszewska, 2002
- Pars distalis vaginae* well developed; dorsal tooth spans 15.8-20% of the total buccal cavity length (from base). Female: L = 2.19-2.71 mm; a = 23.7-36.6; b = 4.5-5.4; c = 20.9-31.0; V = 65.4-70.5; c' = 1.7-2.9. Male: L = 2.14-2.80 mm; a = 27.4-40.0; b = 4.5-5.1; c = 22.1-33.2; PO = 25-29. (Creek City, USA) ..... *thornei*  
Winiszewska et Susulovsky, 2004
8. Hyaline portion at the tail terminus always more than 8 µm ..... 9
- Hyaline portion at the tail terminus always less than 8 µm ..... 10
9. Number of sub-ventral denticles 8-11; position of vulva much anterior; ventromedian supplements in male 18-29. Female: L = 2.5-4.0 mm; a = 31-42; b = 4.4-5.7; c = 24-31; V% = 54-58.2; c' = 2.4-3.0. Male: L = 2.2-4.0 mm; a = 35-50; b = 4.1-5.3; c = 25-45; PO = 18-29. (Germany, Switzerland, Hungary, Denmark, Greenland, Sweden, Finland, Lithuania) ..... *spectabilis*  
(Ditlevsen, 1911) Cobb, 1916
- Number of sub-ventral denticles 14; position of vulva posterior; ventromedian supplements in male 16. Female: L = 2.71-3.06 mm; a = 23.1-32.3; b = 4.3-4.5; c = 12.7-14.8; V% = 60.0-64.1; c' = 2.9. Male: L = 2.72 mm; a = 30.3; b = 4.5-5.1; c = 4.0; PO = 16. (Germany) ..... *fagi*  
Zell, 1985
10. Dorsal tooth with pointed apex, directed forward ..... 11
- Dorsal tooth obtuse with broadly rounded apex. Female: L = 2.1-2.4 mm; a = 26-27; b = 3.8-4.0; c = 13-14; V = 63-65; c' = 2.5. Male: unknown. (Sardinia, Italy) ..... *obtusidentatus*  
Vinciguerra, 1984
11. Body generally less than 2 mm long ..... 12
- Body generally more than 2 mm long ..... 17
12. c' generally 1.5-3.0 ..... 13
- c' generally more than 3 ..... 14
13. Female tail longer (c = 12-15). Female: L = 1.6-1.9 mm; a = 20-30; b = 3.9-4.8; c = 12-15; V = 58-66; c' = 2.5. Male: unknown. (Germany) ..... *altherri*  
Zell, 1985
- Female tail shorter (c = 15.7-21.6). Female: L = 1.70-2.23 mm; a = 21.5-30.5; b = 4.2-5.1; c = 15.7-21.6; V = 60.0-67.8; c' = 1.8-3.1. Male: L = 1.70-2.13 mm; a = 25.9-33.1; b = 4.1-4.6; c = 18.5-26.0; PO = 18-22. (Poland) ..... *polonicus*  
Winiszewska et Susulovsky, 2004

14. Female tail generally longer than 150  $\mu\text{m}$  or rarely shorter; buccal cavity large (44-56  $\times$  24-34  $\mu\text{m}$ ) ..... 15  
 Female tail always less than 150  $\mu\text{m}$  long; buccal cavity small (36-42  $\times$  19-26  $\mu\text{m}$ ) ..... 16
15. *Pars refringens vaginae* with angular sclerotised pieces, *pars distalis vaginae* well expressed; vulva posterior (V = 62-69). Female: L = 1.43-2.01 mm; a = 22.7-27.3; b = 3.2-3.7; c = 11.1-15.3; V = 62.3-69.2; c' = 2.9-4.0. Male: unknown. (Chin Ting Farm, Taiwan) ..... *bogdanowiczii*  
 Susulovsky *et* Winiszewska, 2006
- Pars refringens vaginae* with rounded, drop-shaped sclerotised pieces, *pars distalis vaginae* weakly developed; vulva anterior (V = 58-63). Female: L = 1.81-2.17 mm; a = 22.9-29.9; b = 3.4-3.9; c = 9.6-12.6; V = 58.6-62.9; c' = 3.5-5.1. Male: L = 1.7-1.92 mm; a = 23.9-29.0; b = 3.3-3.5; c = 13.5-14.0; PO = 14-18. (Ukraine) ..... *bygrophilus*  
 Susulovsky *et* Winiszewska, 2006
16. Tail strongly curved, hook-like; buccal cavity larger (measured as: 40-42  $\times$  23-25  $\mu\text{m}$ ). Female: L = 1.60-1.74 mm; a = 25-32; b = 3.4-3.6; c = 11-15; V = 61-64; c' = 3.2-3.5. Male: unknown. (Central Alaska) ..... *borealis*  
 Andrassy, 2003
- Tail slightly curved, much pointed; buccal cavity smaller (measured as: 36.8-37.4  $\times$  19.2-25.5  $\mu\text{m}$ ). Female: L = 1.7-1.8 mm; a = 23.7-33.3; b = 3.7-3.9; c = 13.3-15.2; V = 60.6-62.4; c' = 3.5-3.6. Male: unknown. (India) ..... *ukhrum*  
 Mohilal *et* Dhanachand, 1996
17. Tail broadly rounded, strongly curved ventrad ..... 18  
 Tail never broadly rounded, slightly bent ventrad ..... 25
18. Buccal cavity broad, its length always greater than 50  $\mu\text{m}$  ..... 19  
 Buccal cavity not very broad, its length about 50  $\mu\text{m}$  or less ..... 20
19. *Pars refringens vaginae* relatively large, with rounded, triangular or trapezoid sclerotizations; *pars distalis vaginae* well developed; vulval lips asymmetrical. Female: L = 2.2-2.9 mm; a = 21.9-31.5; b = 3.8-4.3; c = 13.5-17.9; V = 60.5-67.2; c' = 2.4-3.5. Male: unknown. (Germany, Ukraine, Poland, Czech Republic) ..... *zelli*  
 Winiszewska *et* Susulovsky, 2003
- Pars refringens vaginae* relatively short, rounded, drop-shaped or hemispherical sclerotizations with characteristic granular structure; *pars distalis vaginae* very short; vulval lips symmetrical. Female: L = 1.8-2.6 mm; a = 25-33; b = 3.3-4.4; c = 10-18; V = 58-67; c' = 3-5. Male: L = 2.2 mm; a = 36-37; b = 4.0-4.1; c = 18-20; PO = 16-22. (Holland, Belgium, Germany, Denmark, Great Britain, Sweden, Poland, Switzerland, Austria, Hungary, Romania, Yugoslavia, Spain, France, Italy, Russia [Far East], Iran, Korea, Mongolia, India, China, Hainan, Canary Islands, Egypt, Kenya, Zaire, Mauritius, Canada, United States [California, Florida, Oregon, Wisconsin], St. Lucia, Dominica, Columbia, Brazil, New Zealand) ..... *muscorum*  
 (Dujardin, 1845) Wu *et* Hoeppli, 1929
20. *Pars refringens vaginae* very weakly sclerotized. Female: L = 2.14-2.20 mm; a = 19.6-20.7; b = 3.7-3.8; c = 11.6-12.2; V = 60.6-62.4; c' = 3.1-3.4. Male: unknown. (Russia) ..... *kamchaticus*  
 Susulovsky, Winiszewska *et* Gagarin, 2003
- Pars refringens vaginae* well sclerotized ..... 21
21. Length of buccal cavity less than 40  $\mu\text{m}$ , egg shell echinulate. Female: L = 1.5-2.2 mm; a = 25-39; b = 3.6-4.8; c = 14-22; V = 59-67; c' = 2-4. Male: L = 2.0-2.4 mm; a = 32-34; b = 3.7-4.5; c = 20-25; PO = 18-21. (Holland, Germany, Belgium, Great Britain, Poland, Switzerland, Austria, Romania, Yugoslavia, France, Nepal, Korea, Iran, Canada, United States [Oregon, Wisconsin], Columbia, Mexico) ..... *punctatus*  
 (Cobb, 1917) Andrassy, 1958
- Buccal cavity always longer than 40  $\mu\text{m}$ , egg shell never echinulate ..... 22
22. Labial and cephalic papillae relatively small. Female: L = 2.27-2.60 mm; a = 27.1-34.5; b = 4.1-4.7; c = 14-17.2; V = 59.8-65.8; c' = 2.6-3.8. Male: unknown. (Ukraine) ..... *oleksandri*  
 Susulovsky *et* Winiszewska, 2003
- Labial and cephalic papillae distinctly raised and protruding beyond the body outline ..... 23
23. Tail terminus wide with broadly rounded tip ..... 24  
 Tail terminus narrow, elongated, slightly conical with almost rounded tail tip. Female: L = 1.74-2.30 mm; a = 18.4-28.5; b = 3.3-3.9; c = 11.3-14.6; V = 59.5-64.6; c' = 2.8-3.7. Male: unknown. (Russia) ..... *ferox*  
 Winiszewska *et* Susulovsky, 2003
24. Amphids at the level of the dorsal tooth apex; vulva relatively posterior; *pars refringens vaginae* with angular sclerotizations; tail terminus broadly rounded. Female: L = 1.78-2.63 mm; a = 21.9-34.1; b = 3.6-4.6; c = 14.0-20.2; V = 61.5-66.9; c' = 2.4-3.4. Male: L = 1.94-2.71 mm; a = 25.3-30.5; b = 3.8-4.6; c = 16.0-18.4; PO = 17. (Ukraine) ..... *fistulosus*  
 Susulovsky *et* Winiszewska, 2002

- Amphids at the anterior level of the sclerotized buccal cavity; vulva relatively anterior; *pars refringens vaginae* with drop shaped sclerotizations; tail terminus finely rounded. Female: L = 2.2-2.4 mm; a = 30-32; b = 4.0-4.2; c = 13-14; V = 59-62; c' = 3.3-4.2. Male: unknown. (Sri Lanka)...
25. Lip region offset from the adjacent body ..... 26  
Lip region continuous with the adjacent body ..... 27
26. Sphincter present at oviduct-uterus junction; hyaline part at tail terminus weakly expressed; value of c' higher (c' = 3.2). Female: L = 2.12 mm; a = 28; b = 4.2; c = 15.6; V = 61.7; c' = 3.2. Male: L = 2.34 mm; a = 34.2; b = 4.4; c = 18.9; PO = 25. (Russia) ..... *pinophillus*  
Winiszewska et Susulovsky, 2004
- Sphincter absent; hyaline part tail terminus distinct; value of c' lower (c' = 2.1-2.9). Female: L = 1.94-2.43 mm; a = 22.5-30.0; b = 4.0-4.5; c = 15.8-22.5; V = 61.6-67.3; c' = 2.1-2.9. Male: unknown. (Poland, France) ..... *ctenodentatus*  
(Tysowski, 1915) Mulvey, 1967
27. Vulval papillae present. Female: L = 2.1-3.1 mm; a = 24-31; b = 3.8-4.6; c = 14-22; V = 61-69; c' = 2.5-3.0. Male: L = 2.0-2.9 mm; a = 23-33.8; b = 3.5-4.1; c = 20-27; PO = 17-27. [Italy, Nepal, Canada, United States (Colorado)] ..... *longus*  
(Thorne, 1929) Andrassy, 1958  
28
- Vulval papillae absent ..... *pseudolongus*  
Winiszewska et Susulovsky, 2004
28. Lip region flattened; hyaline part at tail terminus distinct. Female: L = 1.98-2.66 mm; a = 25.8-31.1; b = 4.2-5.2; c = 19.9-24.1; V = 61.0-67.8; c' = 2.1-3.5. Male: L = 1.77-2.32 mm; a = 27.1-37.4; b = 4.2-4.7; c = 17.4-23.6; PO = 19-22. (Poland) ..... *septentrionalis*  
Winiszewska et Susulovsky, 2004
- Lip region rounded; hyaline part at tail terminus feebly marked. Female: L = 2.26 mm; a = 33.2; b = 4.3; c = 18; V = 68.8; c' = 3. Male: L = 2.22-2.46 mm; a = 40.3-44.8; b = 4.0-4.3; c = 22.2-23.0; PO = 13-17. (USA [Southern Alaska]) .....

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## LITERATURE CITED

- Andrassy I., 1993. A taxonomic survey of the family Mononchiidae (Nematoda). *Acta Zoologica Hungarica*, 39: 13-60.
- Christie J.R. and Perry V.G., 1951. Removing nematodes from soil. *Proceedings of the Helminthological Society of Washington*, 18: 106-108.
- de Man J.G., 1880. Die Einheimischen, frei in der reinen Erde and im süßen Wasser lebende Nematoden. Vorläufiger Bericht und descriptivsystematischer Teil. *Tijdschrift der Nederlandsche Dierkundige Vereeniging*, 5: 1-104.
- Jairajpuri M.S. and Khan W.U., 1982. *Predatory nematodes (Mononchida) with special references to India*. Associated Publishing Company, New Delhi, India, 131 pp.
- Seinhorst J.W., 1966. Killing nematodes for taxonomic study with hot F.A. 4:1. *Nematologica*, 1: 178.
- Susulovsky A. and Winiszewska G., 2002. *Prionchulus fistulosus* sp. nov. (Nematoda: Mononchina) from Ukraine. *Annales Zoologici*, 54: 483-488.
- Susulovsky A. and Winiszewska G., 2006. Two new species of the genus *Prionchulus* Cobb, 1916 (Nematoda: Mononchina). *Annales Zoologici*, 56: 241-248.
- Susulovsky A., Winiszewska G. and Gagarin V.G., 2003. New and little known *Prionchulus* species (Nematoda: Mononchina) from Kamchatka Peninsula, Russia. *Annales Zoologici*, 53: 749-754.
- Winiszewska G., 2002. *Prionchulus brevicaudatus* sp. nov. (Nematoda: Mononchina) from Poland. *Annales Zoologici*, 52: 343-346.
- Winiszewska G. and Susulovsky, A., 2003. Revision of the genus *Prionchulus* Cobb, 1916 (Nematoda: Mononchina). I. *Prionchulus muscorum* (Dujardin, 1845) Cobb, 1916 and related species. *Annales Zoologici*, 53: 559-577.
- Winiszewska G. and Susulovsky A., 2004. Revision of the genus *Prionchulus* Cobb, 1916 (Nematoda: Mononchina). II. *Prionchulus spectabilis* (Ditlevsen, 1911) Cobb, 1916 and related species. *Annales Zoologici*, 54: 491-509.