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## Description of *Amplimerlinius uramanatiensis* sp. n. (Nematoda: Merliniidae) and observations on three other species of the genus from Iran

REZA GHADERI & AKBAR KAREGAR<sup>1</sup>

Department of Plant Protection, Faculty of Agriculture, Shiraz University, Shiraz, Islamic Republic of Iran.

E-mail: [rgsh2009@gmail.com](mailto:rgsh2009@gmail.com); [karegar@shirazu.ac.ir](mailto:karegar@shirazu.ac.ir)

<sup>1</sup>Corresponding author. E-mail: [karegar@shirazu.ac.ir](mailto:karegar@shirazu.ac.ir)

### Abstract

A new species of the genus *Amplimerlinius* is described and illustrated from the rhizosphere of *Vitis* sp. from Kurdistan province in western Iran. *A. uramanatiensis* sp. n. is characterized by having seven to eight head annuli up to the end of the outer extension of the cephalic framework, 29–31 µm long stylet and cylindrical-clavate tail with a thin hyaline region (9–11 µm) and smooth terminus. Furthermore, *A. paraglobigerus* and *A. macrurus* were identified and intra-specific variability of *A. globigerus* was studied in detail, based on 21 populations collected from different regions of Iran. A key and diagnostic compendium to the species of the genus is provided.

**Key words:** Key, compendium, morphology, nematode, new species, variability, *Vitis*

### Introduction

Siddiqi (1976) proposed the genus *Amplimerlinius* in Merliniinae for the species with abnormally thickened cuticle at the tail terminus which in the female is hemispherical and annulated, lip annuli not marked with longitudinal indentations, sclerotized cephalic framework, a robust stylet and cylindrical to clavate tail. He transferred *Merlinius clavicaudatus* Choi & Geraert, 1975, *M. icarus* (Wallace & Greet, 1964) Siddiqi, 1970, *M. intermedius* Bravo, 1976, *M. macrurus* (Goodey, 1932) Tarjan, 1973, *M. socialis* (Andrássy, 1962) Siddiqi, 1976, and *M. viciae* Saltukoglu, 1974 to the new genus and described *A. amplius* Siddiqi, 1976 and *A. nectolineatus* Siddiqi, 1976. Sturhan (2012) mentioned that the genus diagnosis should be emended to include some additional diagnostic characters such as tail terminus without a distinct refractive inner cuticle layer, females having six incisures at deirid level and third- and fourth-stage juveniles with six, but second-stage juveniles with four incisures in the lateral field. With the description of *A. omentelus* Kleynhans & Heyns, 1983 and of an undescribed species in the present study, the generic diagnosis must also be emended to include species with non-annulated tail terminus.

Bello *et al.* (1987) documented diagnostic data on 14 identified species, Siddiqi (2000) and Andrássy (2007) listed a total of 20 valid species, and Geraert (2011) added two other species, *A. planitierum* (Eroshenko, 1984) Eroshenko & Volkova, 1988 and *A. truncatus* (Poghossian, 1979) Geraert, 2011. Sturhan (2012) transferred *A. ekbali* Khan & Singh, 1999 to the genus *Paramerlinius* Sturhan, 2012, due to having off-set cephalic region and absence of a hyaline tail portion.

Review of the Iranian literature revealed that *A. globigerus* Siddiqi, 1979, *A. icarus* (Wallace & Greet, 1964) Siddiqi, 1976, *A. macrurus* (Goodey, 1932) Siddiqi, 1976, *A. sikkimensis* Shaw & Khan, 1992 and *A. socialis* (Andrássy, 1962) Siddiqi, 1976 have been reported from different localities in the country (see Ghaderi *et al.* 2014a). In the present paper, a description of *A. uramanatiensis* sp. n. is given, morphometrics of the Iranian populations of *A. paraglobigerus* Castillo, Siddiqi & Barcina, 1990 and *A. macrurus* are presented and some observations are made on intra-specific variation in Iranian populations of *A. globigerus*. Furthermore, a key and diagnostic compendium is provided for species identification.

*Amplimerlinius globigerus* closely resembles some species including *A. socialis*, *A. planitierum*, *A. truncatus* and *A. umbonatus* Ivanova, 1982. Andrásy (2007) noted that because stylet length is the only difference between *A. globigerus* and *A. socialis*, *A. globigerus* may be a junior synonym of *A. socialis*. However, stylet length in Iranian populations of *A. globigerus* overlap somewhat with that of *A. socialis*. Three other species, namely *A. umbonatus*, *A. planitierum* and *A. truncatus* differ from *A. globigerus* in areolated lateral field on the female tail, slightly shorter stylet (19–21 µm) and truncate tail, respectively. However, as Geraert (2011) noted, these species are very similar to *A. globigerus*. Nevertheless, specimens of *A. globigerus* from Iran very rarely display areolation on the tail and this may be considered as a diagnostic character for separating it from *A. umbonatus*.

From the drawings in the original description of *A. clavicaudatus* Choi & Geraert, 1975, it may be concluded that *A. clavicaudatus* has a distinct refractive inner cuticle layer and thus, it may be transferred to the genus *Paramerlinius* Sturhan, 2012. We propose study of the paratypes of *A. caroli*, *A. planitierum*, *A. umbonatus* and *A. truncatus* to establish their validity and of those of *A. clavicaudatus* to clarify its taxonomic position.

### Key to the species of *Amplimerlinius*

(Modified after Geraert, 2011)

1. Female tail terminus smooth . . . . . 2
- Female tail terminus annulated (with fine or distinct annuli) . . . . . 3
2. Female stylet 29–31 µm; head with 7–8 annuli . . . . . *A. uramanatiensis* sp. n.
- Female stylet 19–22 µm; head smooth or with one annule . . . . . *A. omentelus*
- Female stylet 24–26 µm; head with 5 annuli . . . . . *A. sikkimensis*  
(however, tail terminus drawn as annulated in the original description and this species comes close to *A. socialis*).
3. Ratio  $c = 10–12$ ; tail terminus clavate . . . . . *A. clavicaudatus*
- Ratio  $c = 13–30$ ; tail terminus hemispherical to slightly clavate . . . . . 4
4. Female stylet 19–24 µm . . . . . 5
- Female stylet 24–26 µm . . . . . *A. socialis* (*A. sikkimensis* is very similar)
- Female stylet 26–30 µm . . . . . *A. macrurus*
- Female stylet 31–47 µm . . . . . 7
5. Head annuli 4–5 . . . . . *A. parbati* Zarina & Magbool, 1990
- Head annuli 5–7 . . . . . 6
- Head annuli 8–10 . . . . . *A. paraglobigerus*
6. Lateral field on tail areolated . . . . . *A. umbonatus*
- Lateral field on tail not areolated . . . . . *A. globigerus* (*A. planitierum* and *A. truncatus* are similar)
7. Mean body length 1–1.4 mm;  $c' = 1.4–2.5$  . . . . . 8
- Mean body length 1.5 mm;  $c' = 2.9–3.5$  . . . . . *A. longicauda*
- Mean body length 1.7–2 mm;  $c' = 1.8–3.6$  . . . . . 11
8. Head annuli 6–7 . . . . . *A. viciae* (*A. siddiqii* cannot be distinguished)
- Head annuli 8–10 . . . . . 9
9. Female tail annuli 53–75 . . . . . *A. intermedius*
- Female tail annuli 41–49 . . . . . 10
10. Basal pharyngeal bulb oval, length/width ratio = 2; lateral field on tail not areolated . . . . . *A. hornensis*
- Basal pharyngeal bulb cylindrical, length/width ratio = 3; lateral field on tail areolated . . . . . *A. nectolineatus*
11. Head annuli 7–10; female stylet 40–47 . . . . . *A. magnistylus* Castillo, Gómez Barcina, Vovlas & Navas, 1991
- Head annuli 4–7; female stylet 33–42 . . . . . 12
12. Female tail annuli 37–47; lateral field on tail usually areolated . . . . . *A. amplus*
- Female tail annuli 50–61; lateral field on tail usually not areolated . . . . . *A. icarus* (*A. quercinus* Mahajan, 1996 cannot be distinguished)

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