

FIRST RECORD OF *PANCERIELLA VARANII* (STOSSICH, 1895) FROM DESERT MONITOR LIZARD, *VARANUS GRISEUS* (DAUBIN, 1803) IN KUWAIT

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ABSTRACT

Five cestodes were found in the intestine of desert monitor lizard, *Varanus griseus* in Amghara, in Kuwait. After staining, these worms were identified as *Panceriellavaranii*. It was differentiated from *p.emiratensis* by the presence of about (28-45) testes and about 300 uterine egg capsules.

KEYWORDS: *Panceriellavaranii*, Kuwait, *Varanus griseus*

Article History

Received: 29 Oct 2019 / Revised: 07 Nov 2019 / Accepted: 19 Nov 2019

INTRODUCTION

Panceriellavaranii is a cestode found in the desert monitor lizard, *Varanus griseus*. It was described by Stossich and Sonsino at the same year 1895 but from different materials. In 1926, Southwell published a drawing of scolex, mature segment and gravid segment but without any description. The images were later copied and redrawn by spasskij (1951) and Beveridge (1994), respectively. In 2012, Schuster found 227 cestodes in the small intestine of desert monitor lizard in Dubai Emirate of the United Arab Emirates, and it was classified as *Panceriellaemiratensis* sp. Nov since it was having smaller number of testes than *P. varanii*. In addition, the gravid segments contain a distinctly lower number of egg capsules (Schuster, 2012). The aim of this paper is to describe *P. varanii* found in desert – monitor lizard in Kuwait.

MATERIALS AND METHODS

On June 2018, a dead grey monitor lizard (*Varanus griseus*) was found crushed by car in Amghara, north Kuwait City (47°46'28.11.90N"E 29° 17' 1078.31 NE), it was one meter long and about 1600gm body weight. On postmortem, five cestodes were observed in the lizard intestine. They were washed, two of them were stained with alum carmine stain, and the rest were stained by lactophenol cotton blue (Henediand El-Azazy, 2015). Photographs were taken by camera (Leica EC3) connected to a microscope (Olympus BX50).

Description of *Panceriella Varanii*

The cestode *Panceriellavaranii* in the present study showed the same features as drawn by Southwell in 1926. The scolex was unarmed with four round suckers, followed by unsegmented neck. At the end of the neck, around forty plain segments were seen. The next 12.5(10-15) segments were rectangular in shape and showed primordia of reproductive organs. Thereafter, the mature segments were hexagonal in shape with a noticeable protrusion at the genital opening at the first third of the segment. The genital system in the next 10.5(8-13) segments were very clear and appeared like a tree where its branches bend towards the gravid system (in opposite direction to the cirrus sac). The cirrus sac was elongated with banana shaped and began with a narrow tube. At the end (top) of the cirrus sac, a coiled vas deferens was clearly seen. The testes were found at the top (anterior) of the genital system in groups, slightly extended towards the gravid segments. Female reproductive system was also clear and found at the left of the cirrus sac. The vagina crossed the cirrus sac at the anterior side (top). The ovaries and the seminal receptacles both looked like a butterfly, where the ovaries were lobed and looked like the butterfly wings and the seminal vesicle represented the body of the butterfly. Vitelline glands were compact, in a semi-circle shape and located above the ovaries. Between the ovaries and the vitelline glands, mehlis glands were found in a breach position. At the end of the mature segments, the genital organs disappear gradually and only the cirrus sac was seen in the gravid segments. The gravid segments were oval and full of eggs. Eggs were round and numerous with double membrane and contained a hexacanth embryo (fig. 1, 2, 3, 4, 5).

Table 1: Showing the Differences Between *Pancerillavaranii* and *Pancerillaemiratensis*

Characters	<i>Pancerillavaranii</i> (n=2) (Kuwait)	<i>Pancerillavaranii</i> (Bear, 1927)	<i>Pancerillaemiratensis</i> (n=15) (UAE)
length	100(80-120) mm	(30-60) mm	14(9-20) mm
Width	1.520(1.44-1.6)	1.5mm	1.3mm
No of segments	>32	-	22(14-35)
Scolex	836.5(700-973) μ m wide	-	550(350-750) μ m wide
Suckers	253(215-291) μ m wide	-	185(160-220) μ m wide
Unsegmented neck	1171(842-1500) μ m length 812(804-820) μ m width	-	760(400-1000) μ m length 778(550-1050) μ m width
Premature segments	No of segments (10-15) 689(584-794) μ m length 1345(1230-1460) μ m width	-	-
No of testes in mature segments	36.5(28-45)	(30-40)	23(16-28)
Testes diameter	41.7(41.5-41.9) μ m	52 μ m	15-25 μ m
Cirrus sac	240(225-256) μ m length 68(62-75) μ m width	(130-150) μ m length 70 μ m width	173(150-200) μ m length 41(30-50) μ m width
Cirrus	-	-	200 μ m length 10 μ m width
Vas deference	149(125-173) μ m length 128(97.3-160) μ m width	-	-
Ovary	80(60-100) μ m length 65(73-57) μ m width	-	-
Seminal receptacles	90(81-99) μ m length	-	-
Vitelline glands	70(60-80) μ m length 96.5(93-100) μ m width	-	-
Vagina	275(144-406) μ m length	-	-
Mehlis glands	98(96-107) μ m length	-	-

Table 1 Contd.,

Gravid segments	2275(1860-2690) μm length 1360(1020-1700) μm width	-	1015(770-1300) μm length 650(500-800) μm width
No of eggs	300- 340	-	23-76
Egg capsule (Diameter)	635(560-711) μm	-	150 μm
Egg (Diameter)	437.5(400-475) μm	-	80-100 μm
Hooks	152.5(137-168) μm	-	30 μm



Figure 1: *Panceriellavaranii*, Scolex.



Figure 2: Mature Segment where the Vagina Crosses the Cirrus Sac Ventrally.

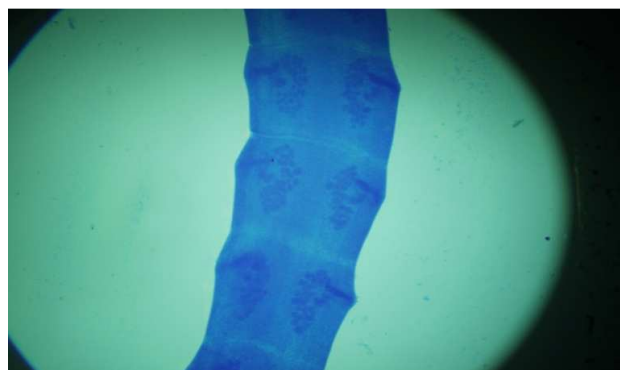


Figure 3: Mature Segments.

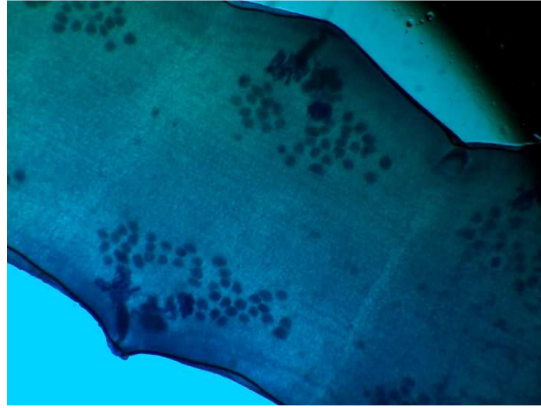


Figure 4: Mature Segments Showing the Reproductive System Clearly.

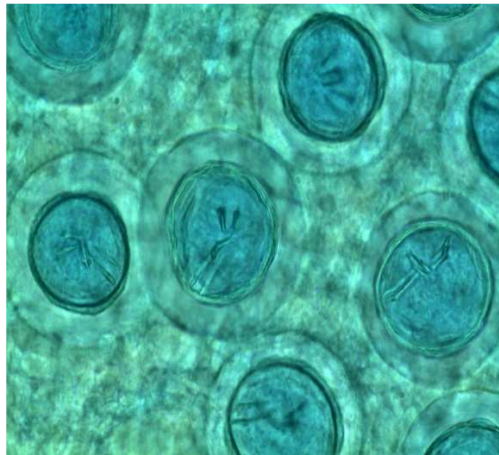


Figure 5: Eggs with Hexacanth Embryo.

Remarks

This is the first study in Kuwait and Arabian Gulf area that described the morphology of *P. varanii* from *Varanus griseus*. It was classified as *Panceriella varanii* due to the common features of *P. varanii* as described by Bear (1927), and the drawing of Southwell (1926).

Even though, the description and measurements of *P. varanii* in this study was in line with Bears results, there are slight variations in some measurements like the testes diameters and cirrus sac length, according to Castro, 1996 the definitive classification of helminthes can be based on the external and internal morphology of egg, larval, and adult stage. The maximum strobila length in our results was about double the length in Bears study, but this is not a representative feature for this species, since in cestodes, when the segment reaches the end of its strobila, it often detaches and passes intact out of the host with feces (Schmidt and Roberts, 2005). Although Bears described the vagina as posterior to the cirrus pocket, Spasskij (1951) and Beveridge (1994) doubted this position due to Bears poorly stained specimens (Beveridge, 1994) and referred to a figure drawn by Southwell (1926) where the vagina crosses the cirrus sac to enter the genital atrium anteriorly (Schuster, 2012), which matches the description of the current study.

The cestodes found in this study does not belong to *P. emiratensis* sp because of the noticeable variations in testes and eggs capsules numbers as mentioned in table 1.

Unsegmented neck was a common feature in *P. varanii* from Kuwait and in *P. emiratensis* however Sonsino (1895) mentioned a basal narrowing and Stossich (1895) described a short neck.

CONCLUSIONS

The cestodes found in this study were belonged to the genus *Panceriellavaranii*, which differ from *P. emiratensis* in some features. Both species were found from the same host but in different countries.

Conflict of Interest

No conflict of the interest exists relative to this paper for all authors.

ACKNOWLEDGMENTS

I would like to thank Dr Baydaa Alsannan and Dr Rolf Schuster for their support.

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