

## Research Note

### New record of *Scaphanocephalus expansus* from the Canary Islands (Spain)

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#### Summary

The osprey, *Pandion haliaetus* (L), is a cosmopolitan Falconidae that in the Canary Island (Spain) is considered as “endangered” by the Canary Government. No helminthological data of this host are available for this archipelago due its protected status. Forty three *Scaphanocephalus expansus* were found from the small intestine of one animal. A morphological and morphometric description is given in this work. The species *S. expansus* can be considered specialists in ospreys, since it has not been found in any other host. It has been found in Europe, Egypt, Asia and North America. According to the references, this is the first report on the helminth fauna of *P. haliaetus* in the occidental area of Africa.

The osprey, *Pandion haliaetus* (L), is a cosmopolitan, monotypic member of the family Falconidae comprising its own subfamily Pandioninae. Ospreys breed primarily in the Northern Hemisphere (North America and Eurasia) and in winter in the Southern Hemisphere (South America, Africa, and India), with the exception of two nonmigratory subspecies in the Caribbean and Indonesia (Poole, 1989). Although this raptor was wiped out in some European countries during the XIX and XX centuries (Cramp & Simmons, 1980) and considered threatened in North America in the 1960's, it has made a strong recovery and is now common in many parts of its former range (Ewins, 1994; Thibault *et al.*, 1996). Perhaps because of its protected status, the osprey has not been studied in depth for helminth parasites until Kinsella *et al.* (1996), who recovered 28 helminth species in animals from the United States.

In the Canary Islands (Spain) *P. haliaetus* is considered as “endangered” by the Canary Government (Anonymus, 2001). In these Islands, it breeds in four of them (Lanzarote, Tenerife, La Gomera and El Hierro) (Martín &

Lorenzo, 2001). No helminthological data of this host are available for this archipelago. The aim of this work was to report new geographic record of helminths of *P. haliaetus* in this area.

The Canary Archipelago is located in the NW of Africa (13° 23' to 18° 8' W and 27° 37' to 29° 24' N). For this study, three natural dead male ospreys (*P. haliaetus*) from Tenerife Island were received for the helminthological survey. The animals were dissected, and their intestinal package extracted and opened lengthways with saline solution at 0.9 ‰ for macroscopic observation. Other organs were also observed.

Forty three specimens of digenean trematodes were found in the small intestine of one of the ospreys. They were stored in 70 % ethanol, stained with Semichon's acetocarmine, dehydrated, cleared in xylol and mounted in Canadian balsam. The worms were identified as a member of the Family Heterophyidae Leiper, 1909, Genus *Scaphanocephalus* Jägerskiöld, 1904, *S. expansus* (Creplin, 1842) Jägerskiöld, 1903 (Fig. 1). The genus *Scaphanocephalus* was included in the Subfamily Scaphanocephalinae Yamaguti 1958, however, in a recent new classification of the Family Heterophyidae, this Subfamily is suppressed and considered synonymous of Heterophyidae (Pearson, 2008). These helminths showed a dorso-ventrally cuticle spinulate body. Its mean (standard deviation) measurements were 3260.8 (448.5) µm long and 925.7 (126,4) µm maximum width at the final part of the body. This species has very large wing-like anterior expansions with a maximum width of 1690.3 (454.9) µm. The oral sucker, located in the anterior part in a subterminal position, has a diameter of 101 (6.2) x 86.2 (3.0) µm. The digestive system begins in the mouth, situated in the centre of the oral sucker, and continues with a prepharynx 84.3 (12.0) µm long, with a developed pharynx 76.2 (6.5) x 58.1 (11.6) µm, oesophagus

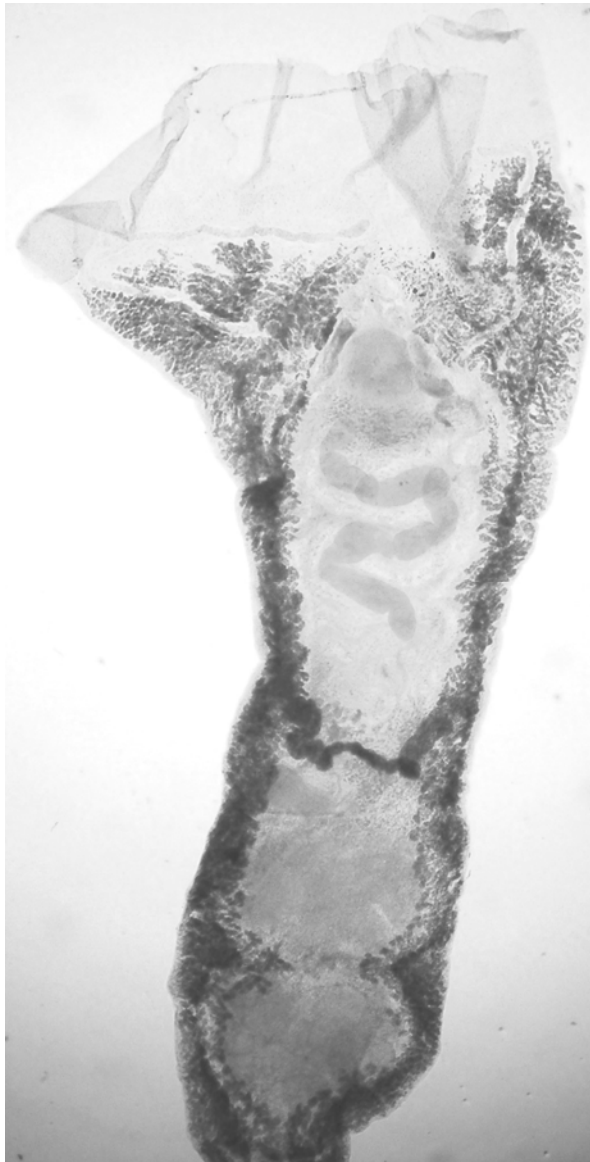


Fig. 1. *Scaphanocephalus expansus* from *Pandion haliaetus* from the Canary Islands, Spain

214.9 (52.5)  $\mu\text{m}$  long, and two non-branched caeca which extend as far as the posterior end of the parasite. Cecum is forming an incomplete loop in each wing of the forebody, serpentine posterior, opening at posterior extremity into the excretory vesicle. Acetabulum imbedded in body parenchyma, opening into the genital atrium lying immediately behind. The masculine reproductive system is located in the posterior extremity of the body, with two large lobulated in tandem testicles, measuring 592.8 (71.7) x 375.1 (74.1)  $\mu\text{m}$  the anterior and 634.2 (85.7) x 428.2 (89.1)  $\mu\text{m}$  the posterior. The seminal vesicle is tubular and long, winding in median fields dorsal to uterus. The ovary is located median and pretesticular, separated for the seminal receptacle, multilobate in shape 298.1 (74.8) x 170.9 (36.5)  $\mu\text{m}$ . The seminal receptacle is situated in the middle, immediately in front of the anterior testicle, measuring 1497.8 (226.5) x 105.1 (38.3)  $\mu\text{m}$ . Laurer's canal is pre-

sent. The vitelline glands are symmetrically situated in the lateral fields, extending from posterior extremity to base of forebody where they extend into the cecal loop. The very developed uterus describes a tortuous trajectory, which is highly coiled between the acetabulum region and the ovary, opening through the female genital pore into the genital atrium. The eggs measure 25.2 (5.5) x 17.8 (3.8)  $\mu\text{m}$  and they are oval-round in shape. Excretory vesicle Y-shaped, stem bifurcating immediately behind posterior testis and uniting again between two testes as well as in front of anterior testis, thus encircling each testis, two arms approaching each other in front of acetabulum and then turning outward abruptly.

The subfamily Scaphanocephalinae was created by Yamaguti (1958) for the genus *Scaphanocephalus*, to separate it from the rest of the Heterophidae based on the presence of the wing-shape expansions in the anterior end of the body. *Scaphanocephalus expansus* was redescribed in detail by Jägerskiöld (1903). Later, Dubois (1960) contributed more information on this species.

The species *S. expansus* can be considered specialists in ospreys, since it has not been found in any other host. It is highly probable that it was acquired through the ingestion of fish intermediate hosts, both freshwater and marine (Kinsella *et al.*, 1996), because the osprey's diet consists almost exclusively of fish (Poole, 1989; Ewins, 1994).

*Scaphanocephalus expansus* has been found in Europe, Egypt, Asia and North America (Yamaguti, 1971). This species was reported in Africa (White Nile, Egypt) by Jägerskiöld (1904). In the case of America, there are data only for North America, where all the authors who found the adults form cited them in *P. haliaetus*. Hoffman (1953) wrote the first geographic report for the EEUU, Schmidt & Huber (1985) found it in Mexico, and Kinsella *et al.* (1996) also in EEUU. On the other hand, Hutton (1964) and Skinner (1978) found the metacercaria form in marine fishes in EEUU. With respect to Europe, Dubois (1960) also found it in *P. haliaetus* from France.

According to these references, this is the first report on the helminth fauna of *P. haliaetus* in the occidental area of Africa.

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