



Fatal *Syngamus trachea* Infection in a Barn Owl (*Tyto alba*) in Cross River State, Nigeria.

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INTRODUCTION

Syngamiasis is the infection caused by the nematode worm *Syngamus trachea*. *S. trachea* is a nematode affecting the respiratory system of a variety of domestic and wild avian species (Sanmartin et al., 2004). *S. trachea* is also called the forked “worm” with a letter “Y” shaped appearance due to the male and female's permanent copulating position and “gape worm” because of the gaping stance of affected birds. Syngamiasis is typified by tracheitis, respiratory distresses manifesting as coughing, sneezing and attempts to stretch the neck (Huschen and Horn, 2012). Fatalities are common in young birds and major risk factors are inclement weather, diets of the birds and the quality of ration consumed (de Witt, 1995; Huschen and Horn, 2012).

Barn owls (*Tyto alba*) are medium sized and globally spread species of owls. They are common, medium-sized pale owls with golden buff and grey upperparts, a white, heart shaped facial disc and off-white under parts. It is much paler than the African Grass-owl, with less contrast between under parts and upper parts (Birdlife International, 2012). In flight the barn owl has a distinctive large head and short tail. It inhabits open areas from woodland to savannah avoiding dense forests (Sinclair and Ryan, 2003). It often roosts in caves, hollow trees, and mine

shafts but not on the ground. They have been documented to be afflicted by a variety of parasites (Lamka et. al. 1997,; Sanmartin et. al, 2004). They are smaller than their close relative, the African Grass-owl (*Tyto capensis*)

CASE HISTORY: The barn owl was donated to the conservation outfit by a petty trader and a complaint of lack of interest in feed. The donor claimed the husband picked the owl up on their farm. She did not disclose the length of stay in captivity. The owl was very light and weighed 120g, with pronounced bony prominences. The animal was not aged but it was considered to be an adult bird. Beef was macerated in saline and administered to the owl via an oesophageal tube. Faeces were collected and common salt (NaCl) floatation test revealed light infestation with nematode eggs which were not distinctively that of *Syngamus* spp. The owl was displaying gaping, attempting to stretch the neck incessantly and slight difficulty in breathing. Ivermectin was administered orally to the bird (Tarello, 2008). The owl died overnight and post mortem was carried out in an attempt to diagnose the cause of death.

POST MORTEM RESULTS

The carcass of the owl, especially the heart and muscles were markedly pale (Figure 1). The carcass was generally in poor body



Figure 1: Owl carcass showing pale heart and viscera



Figure 2: *Syngamus trachea* within the trachea lumen



Figure 3: Engorged *Syngamus trachea* removed from the trachea of barn owl at post mortem

(Figure 2). On slitting through the trachea, ecchymotic haemorrhages were evident. There were eight live fully engorged nematodes, *Syngamus trachea* in the lumen of the trachea (Figure 2). The 'Y' shaped worms in permanent copulating position measured 10-12mm length. The owl was observed to be a male with well developed testes in the abdominal cavity.

A simple floatation test on the faecal sample collected at post mortem revealed ova which are however not operculate. The lungs, pro-ventriculus and intestines were devoid of adult forms of any parasite.

DISCUSSION

Syngamiasis is the infestation of avian respiratory system with *Syngamus trachea* and is noted to be widespread in Africa and Asia (Sanmartin, 2004). Limited documented report of Syngamiasis in wild birds in Africa does not however support this level of spread. Pathogenicity of *S. trachea* is severe (Subramanian, 2003) with profound loss of muscle mass (deWitt, 1995) and massive mortalities (Huschen and Horn 2012) having been recorded in birds. The trachea is the predilection site for the adult worms (Welte and Kirkpatrick 1986).

The bird came in with extreme cachexia but the length of stay with the donor was not established. It is possible that the owl was picked easily because of an existing disease condition. However it is worthy of note, that the owl might have been neglected in captivity due to anecdotal beliefs and attachments of evil and negative spiritual connotation about owls in Nigeria. Starvation therefore is considered as a major contributory factor to the death of the barn owl. Infection in birds is mainly via ingestion of the transport invertebrate host (Cole, 1999) either directly or indirectly by preying on animals. Barn owls may opt for invertebrate preys in instances of food scarcity. Moderate *Syngamus*

trachea infestation, compounded with starvation and captivity stress is believed to have contributed to the respiratory distress, cachexia and anaemic state which resulted in the death of the barn owl. This to our knowledge is the first case of Syngamiasis reported in a Strigiform bird of prey in Nigeria.

REFERENCES:

- BIRDLIFE INTERNATIONAL "Tyto alba"
IUCN Red List of Threatened Species
Version 2013/2 International Union for
Conservation of Nature 2012
- COLE, R.A. (1999) Tracheal worms In:
MILTON, F., and FRANSON, J.C. Eds.
Field Manual of Wildlife Diseases:
General Field Procedures and Diseases
of Birds Biological Resource Division,
Madison USA: 229-232.
- DeWITT, J.J. (1995) Mortality of Rheas
caused by *Syngamus trachea* infection
Vet Q 17(1): 39-40.
- HUSCHEN, M.S. and HORN, D.J. (2012)
Mass death of wintering American
robins (*Turdus migratorius*) in Decatur,
Illinois Transactions of the Illinois State
Academy of Science 105(1 & 2): 51-55.
- LAMKA, J., SVOBODRA, V., and
SLEZKOVA, J. (1997) Anthelmintic
efficacy of ivermectin against *Syngamus*
trachea and *Capillaria* spp. in pheasants
Vet Med (Praha) 42(6): 157-160.
- SANMARTIN, M.L., ALVAREZ, F.,
BARREIRO, G., and LEIRO, J. Helminth
fauna of Falconiform and Strigiform
birds of prey in Galicia North west Spain
(2004) Parasitol Res. 92: 255-263. DOI
10.1007/s00436-003-1042-2
- SINCLAIR, I. and RYAN, P.A. (2003)
Comprehensive illustrated field guide-
Birds of Africa, South of Sahara, New
Holland Publishing SA 236.
- SUBRAMANIAN, K., S. (2003)
Syngamiasis in a Pea fowl (*Pavo*
cristatus) Zoo Print Journal 18(9):1204.
- TARELLO, W. (2008) Efficacy of
ivermectins against intestinal
capillariosis in falcons Parasite 15(2):
171-174.
- WELTE, S.C. and KIRKPATRICK, C.E.
(1986) Syngamiasis in juvenile American
robins (*Turdus migratorius*) with a note
on prevalence of other faecal parasites
Avian Disease 30: 736-739.