The eggshell morphology of *Heterodoxus spiniger*, infesting dog, *Canis familiaris* (Boopidae, Mallophaga)

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**Abstract:** The eggshell morphology of *Heterodoxus spiniger*, infesting dog, *Canis familiaris* (Boopidae, Mallophaga) has not been studied by previous workers. In present contribution, an attempt has been made to describe the external features of the eggshell of an amblyceran species, *Heterodoxus spiniger* occurring on dog, *Canis familiaris*.

**Keywords:** Dog louse, Egg morphology, Phthirapteran egg

**INTRODUCTION**

Phthirapteran eggshells often exhibit distinctive external chorionic morphological features. Different workers have provided information on the egg morphology of selected species from time to time. However, detailed SEM studies on eggs of few species have been given by selected workers (Balter, 1968a, b; Bilinski and Jankowska, 1987; Saxena *et al.*, 2000; Castro *et al.*, 1996; Zawadzka *et al.*, 1997; Gupta *et al.*, 2004, 2008 (In press); Beg *et al.*, 2004 and Kumar *et al.*, 2003, 2007). However, a look on literature indicates that eggshell of dog louse, *Heterodoxus spiniger* has not been studied by previous workers. In present contribution, an attempt has been made to describe the external features of the eggshell of an amblyceran species, *Heterodoxus spiniger* occurring on dog, *Canis familiaris*.

**METHODOLOGY**

Freshly laid eggs were obtained from the infested dogs. Hair bearing eggs were gently cut from host body and subjected to SEM. For SEM studies, eggs were fixed in 2.5% gluteraldehyde and passed through 0.2M phosphate buffer, dehydrated, arranged on aluminium stubs (covered with double sided cellotape), gold coated and examined under SEM (Mode Leo 435 VP SEM).

**RESULTS AND DISCUSSION**

The eggshell of *H. spiniger* is a miniature rice-grain like structure (measuring 0.80mm to 0.82mm in length) in appearance (Figs. 1, 2). The eggs are principally laid on abdomen, breast and back region. They are glued to the hair laterally. Freshly laid egg is pearly white in appearance and start turning yellowish from 3rd day. The egg mouth is covered with a flat disc like operculum. The apical end of opercular rim bears a row of 13-14 micropyles, arranged in more or less circular row. The micropyles are located on tall cup-shaped projections, which unite to give ridge like appearance. The centre of the disc bears short thick rod like polar thread.

The eggshell of *H. spiniger* bears pentagonal / rectangular scutes (scale like sculpture) arranged obliquely. The opercular disc of the egg bears tall cup shaped micropyles which unite to give ridge like appearance. The centre of the disc bears short thick rod like polar thread. The eggshell chorion bears peculiar rectangular/ pentagonal scutes (scale like structure), arranged in rows obliquely on the eggshell (Fig. 5). The eggshell contains nearly 20-22 oblique rows of such scutes. Most of the scutes present on the eggshell hang outwards (giving appearance of spines) in the lateral view. Presence of apophyses (bristle like structure) on the eggshell has not been noted. The nature of stigma (occurring at the posterior end of the eggshell) remained obscure.

Available literature indicates that eggshell of dog louse, \textit{H. spiniger} deserved investigation. Present studies show that the eggshell of \textit{H. spiniger} exhibits certain distinctive features i.e. presence of scale like markings (in oblique rows), occurrence of micropyles on tall cup like structures (joined together to make a thick ridge as opercular disc) and also a distinct polar thread, which provide it fascinating look. Further studies on the eggshells of different phthirapteran species occurring on diverse mammalian hosts may provide more information on the eggshell architecture of Phthiraptera.

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REFERENCES
