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SHORT COMMUNICATION

PREVALENCE OF *SCHISTOSOMA NASALE* OVA IN BUFFALOES *(BUBALUS BUBALIS)*

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SUMMARY

The boomerang-shaped ova of *Schistosoma nasale,* the causative agent of bovine nasal schistosomiasis, was found in 6 (29%) out of 21 nasal scrapings of buffalo *(Bubalus bubalis)* examined in Labu, Negeri Sembilan. The buffalo constitutes a new host record for this parasite in Peninsular Malaysia.

Keywords: Schistosoma nasale, buffaloes

Several species of *Schistosoma* have been reported in Malaysia in large and small mammals, including man and birds (Basch, 1966; Fischthal and Kuntz, 1973; Lee *et al.,* 1986; Greer *et al.,* 1988; Krishnasamy *et al.,* 1991, 1995; Inder *et al.,* 1997). *Schistosoma nasale,* the causative agent of nasal schistosomiasis, was first reported in Malaysia in a local oxen by Whitworth (1939) and subsequently, Saharee *et al.* (1984) reported it in an adult Sahiwal-Friesian cow that was brought as a calf from New Zealand.

Rao (1933) named the causative agent as *Schistosoma nasalis,* based on specimens obtained from cows in India. However, Dutt (1967) amended the name to be known as *S. nasale*, which has been associated later with bovine granuloma (Saharee *et al.,* 1984). In this paper, *S. nasale* is reported in water buffaloes, *Bubalus bubalis,* which represents a new host for the parasite in Peninsular Malaysia.

During a survey for *Schistosoma spindale* in Labu, Negeri Sembilan, 38 nasal scrapings were obtained from slaughtered animals. Twenty-one scrapings were from buffaloes, 9 from cows and 8 from goats. The scrapings were preserved in 70% alcohol prior to examination for ova. In addition, the entire cranial part of the nasal cavity was opened by two horizontal incisions inside the nasomaxillary incisure, one above the nasal process of the incisive bone while the other under the nasal bone. The lateral wall, the conchae and the underlying part of the nasal septum were collected. The samples were examined individually for the presence of *S. nasale* ova. At the same time, 400 faecal samples from large and small ruminants were examined for the presence of *Schistosoma* ova.

The *S. nasale* ova, obtained from the samples were studied and measured in glycerol. The identification was based on the description and measurements provided by Rao (1934).

Six (29%) out of 21 nasal scraping samples obtained from the buffalo yielded *S. nasale* ova. The size ranged between 300 to 580 μm in length and 69 to 115 μm in width (Table 1). Scrapings from the cows and goats did not reveal any ova. Similarly, all faecal samples examined were negative for *S. nasale* ova. Search for adult *S. nasale* in the nasal cavity proved futile.

Table 1. Comparisons of egg* measurements of *Schistosoma nasale* from various sources

Host	Egg Size		Source
	Length	Width (μm)	
Cow	336 -581	60 - 80	Rao (1934) India
Cow	-	-	Whitworth (1939) Malaysia
Cow	420 - 500	54 - 150	*Saharee et al.* (1984) Malaysia
Buffalo	300 - 580 (450)	69 - 115 (90)	Present study Malaysia

*Eggs obtained from nasal scrapings only

The ova were elongated and spindle-shaped. The middle third of the body was concave, with elongated horn on either side (Fig. 1). One side of the horn was bluntly rounded while the opposite side terminated into a sharp spine. The spines were almost straight in some ova, but in the majority of mature ova, it curved either slightly or sharply, like a hook, toward the concave margin of the body.

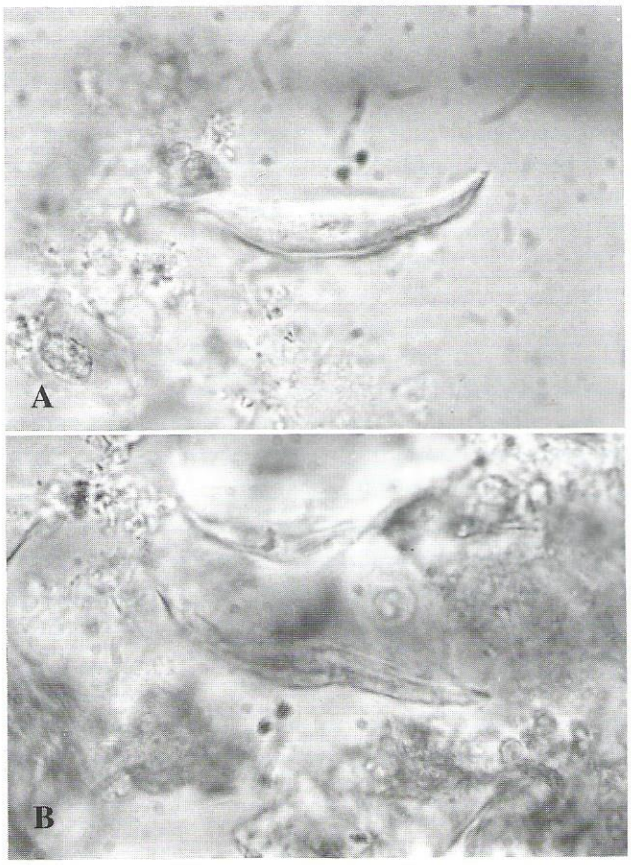

Fig. 1. Ova of *Schistosoma nasale* in nasal scrapings of buffalo. x100

Mature ovum contained a miracidium, and majority of the miracidia had their snouts pointed toward the spine-end of the ovum. The miracidia were found occupying the central area of the ova, while the horns of the ova contained a clear fluid. It is believed that an increase in the volume of this fluid causes a rupture of the shell, thus liberating the miracidium. Similar observation has been reported earlier by Malkani (1933) and Rao (1934). The ova of *S. nasale* bear some resemblance to that of *S. spindale,* but were very much smaller. The ova of S. *nasale* observed in Malaysia were essentially similar in morphology and measurements to those observed in India.

S. nasale is widespread in India, and was reported to occur in Burma, Bangladesh and Sri Lanka (Crawford, 1935; Mahadevan, 1946; Kumar and de Burbure, 1986; De Bont *et al.,* 1989). Rao (1934) showed that cows and buffaloes are the host of *S. nasale* in India. Whitworth (1939) and Saharee *et al.* (1984) reported the presence of *S. nasale* ova in cows in Peninsular Malaysia while this study found them in buffalo. Other hosts of *S. nasale* include goats and sheep, particularly in India (Achuthan and Alwar, 1973).

Although 400 faecal samples collected in the vicinity of the study area were examined, no ova of *S. nasale* were found. The ova were only found in the nasal scrapings, thus showing that *S. nasale* eggs were only excreted through nasal discharge.

The snail, *Indoplanorbis exustus,* has been implicated as the intermediate host for *S. nasale* in India (Rao, 1934). *I. exustus* is ubiquitous in Peninsular Malaysia and is recognised as the intermediate host of *S. spindale* in this country. Thus, it would be reasonable to assume that concerted search for *S. nasale* in the country may reveal additional foci of the parasite.

Efforts were made to obtain the adults of *S. nasale* in the same area where ova were collected. The study of adults will leave no doubt as to its occurrence here.

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RINGKASAN

PREVALENS OVUM SCHISTOSOMA NASALE *DALAM KERBAU* (BUBALUS BUBALIS)

Ovum berbentuk bomerang Schistosoma nasale, *agen penyebab skistosomiasis nasum bovin, ditemui dalam 6 (29%) daripada 21 kikisan nasum kerbau* (Bubalus bubalis) *yang diperiksa di Labu, Negeri Sembilan. Kerbau merupakan satu rekod perumah baru untuk parasit ini di Semenanjung Malaysia.*