Occurrence of *Chrysomya bezziana* in a buffalo in Jammu

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Received: 17 December 2012 / Accepted: 8 February 2013 / Published online: 3 March 2013
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Abstract Cutaneous myiasis caused by the Old World screw-worm fly, *Chrysomya bezziana*, is a commonly occurring infestation of livestock and man in Southeast Asian and African countries. A buffalo, aged five years was presented with traumatic wound in the abnormal growth at the base of tail, housing maggots in it. Based on morphological features, the collected larvae were identified as *C. bezziana* larvae. The first ever occurrence of *C. bezziana* in a buffalo from this part of country and its public health significance have been discussed.

Keywords Buffalo · *Chrysomya bezziana* · Jammu · Morphology · Myiasis

Introduction

Cutaneous myiasis caused by the Old World screw-worm fly, *Chrysomya bezziana*, is a wide spread infestation of domestic animals and man in Southeast Asian and African countries (Soulsby 1982; Hall et al. 2001; Mahon et al. 2004). *Chrysomya bezziana* is an obligatory parasite of warm blood animals, lays eggs in necrotic tissues and/or wounds caused by ticks and lice which offer a favourable environment for the development of their larvae. It causes serious health problems and economic losses in domestic animals. Cutaneous myiasis of domestic animals in the study region is known to be caused by *Calliphora*, *Lucilia*,

Phormia and *Sarcophaga* spp. (Kour 2011). The present study reports the first ever occurrence of *C. bezziana* in a buffalo from this part of country.

Materials and methods

The third stage larvae of *C. bezziana* were obtained from a buffalo, aged five years and were suffering from myiasis at R.S. Pura, Jammu, India. The buffalo had a traumatic wound in the abnormal growth at the base of tail, housing maggots in it (Fig. 1). The larvae were collected in normal saline and processed in the laboratory for identification according to Zumpt (1965) and Sukontason et al. (2006).

Results and discussion

The collected larvae were cream coloured, measured 10–15 (12.4 ± 2.3) mm in size and had typical muscoid shape that gradually tapers anteriorly (Fig. 2). The anterior end was armed with minute paired hooks which connected posteriorly with black cephalopharyngeal skeleton that was visible internally through the prothorax in the cephalic region of the body (Fig. 3). They possessed cuticular inter-segmental transverse bands of spines except on the last segment. The dorsal tracheal trunk was not darkly pigmented except in posterior half of 12th segment. The stigmal plates were dark black in colour, opened and were not situated in cavity but clearly exposed with radially arranged three separated winding slits (Fig. 4). Morphological characteristics of palmate shaped anterior spiracles situated on the dorso-posterior margin of the 2nd segment with 4–6 lobes arranged in a single row (Fig. 3) confirmed the identification as *C. bezziana* larvae.

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Fig. 1 The presence of larvae of *C. bezziana* in traumatic wound in the abnormal growth at the base of tail of a buffalo

Fig. 2 The third instar larvae of *C. bezziana*

Fig. 3 Anterior end of 3rd stage larva of *C. bezziana* showing cephalopharyngeal skeleton (large arrow) and anterior spiracle (small arrow)

Fig. 4 Posterior spiracles of 3rd stage larva of *C. bezziana* showing three radial winding slits

Chrysomya bezziana is an obligatory parasite of warm blood animals, lays eggs and the larvae develop in necrotic tissues and/or wounds. The larvae secrete enzymes which liquefy the skin flesh of the animal and penetrate deeply in tissues with the help of strong oral hooks (Zumpt 1965). The larvae burrow into healthy tissues adjacent to wounds and could also penetrate into bones surrounding the wounds (Prasad et al. 2000). The animals which live or spend a great deal of time outside are most at risk, especially those which have draining wounds or inflamed tissues (Sood et al. 2008). The suffered animals show obvious signs of distress. The lesions and the presence of maggots therein are irritating. They spend less time grazing and more time rubbing and biting affected areas of the body. If bacterial infection is there, it may lead to death from septicæmia or toxæmia (Soulsby 1982) and there are huge losses in terms of monetary gains to their owners.

This fly also attack human beings and the larvae may be found in various tissues such as the scalp, subdermis of the throat, the gangrenous wound, the foot and the mouth (Papasarathorn et al. 1967; Vitavasiri et al. 1995; Nacapunchai and Laohavichit 1999; Prasad et al. 2000; Ng et al. 2003). The larvae invade foul smelling or suppurated wounds, particularly in rural areas where people may come in direct contact to the animal population, or in elderly or handicapped people or in the population who live in poor hygienic conditions (Sood et al. 1976; Singh et al. 1993).

In view of the greater significance of *C. bezziana* and its public health significance, there is an immediate need for conducting a systematic planned epidemiological survey to know the status of *C. bezziana* in domestic animals and to formulate an appropriate control strategy to minimise the perpetuating financial losses to animal owners in the region.

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